

**X BEHAVIOUR OF STRIPED DOLPHINS (*Stenella coeruleoalba*) IN THE
CENTRAL TYRRHENIAN SEA (MEDITERRANEAN SEA)
IN RELATION TO COMMERCIAL SHIPS**

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INTRODUCTION This research was carried out during the "Cetaceans Sightings Cruise in the Central Tyrrhenian Sea" between October 1989 and September 1992. By direct observation, the behaviour of striped dolphins (*Stenella coeruleoalba*) was studied in connection with the presence of ferries.

METHODS Observations were made aboard ferries in the area of the Central Tyrrhenian Sea between the continental and Sardinian coasts. During three years research, it was possible to carry out 247 trips (one per week), in any sea condition, corresponding to about 2,000 hours of observations during which we recorded 452 sightings of striped dolphins. The observation height was 13 metres above sea level; the average speed of ships was 16-17 knots.

RESULTS On 77% of encounters, striped dolphins approached the boat (Fig. 1), but rarely seemed to be disturbed by its presence as it moves away. On the majority of occasions, the animals performed "full leaps", while "half leaps", "vertical leaps", and "leaping and rolling" were observed with about the same frequency but less often (Fig. 2). Figure 3 shows the relationship between leaps and the sea state: As sea state increased, the frequency of leaps decreased. When sea state was equal to or higher than 3, the only leap recorded was "full leap". When the dolphins were indifferent to or went away from the ship, fewer leaps were recorded than when the animals approached the ship.

DISCUSSION AND CONCLUSIONS Although the reason remains unknown, it is clear that this species is very attracted to ships: we therefore consider that the transect line sampling method would probably lead to an over-estimation of numbers. During foraging and long distance movement, striped dolphins were indifferent to the presence of the ship.

The high frequency of the so-called "full leaps" may relate to an energetic saving, characteristic of the behaviour of striped dolphins. The meaning of the variety of leaps on the waves, prompted by the ship's presence, is still poorly understood, and at present, we simply classify them as "play activities" since their aim is not directed at feeding, emigration or any other immediate need. Perhaps this kind of leap relates to social interaction which in the striped dolphin is very complicated.

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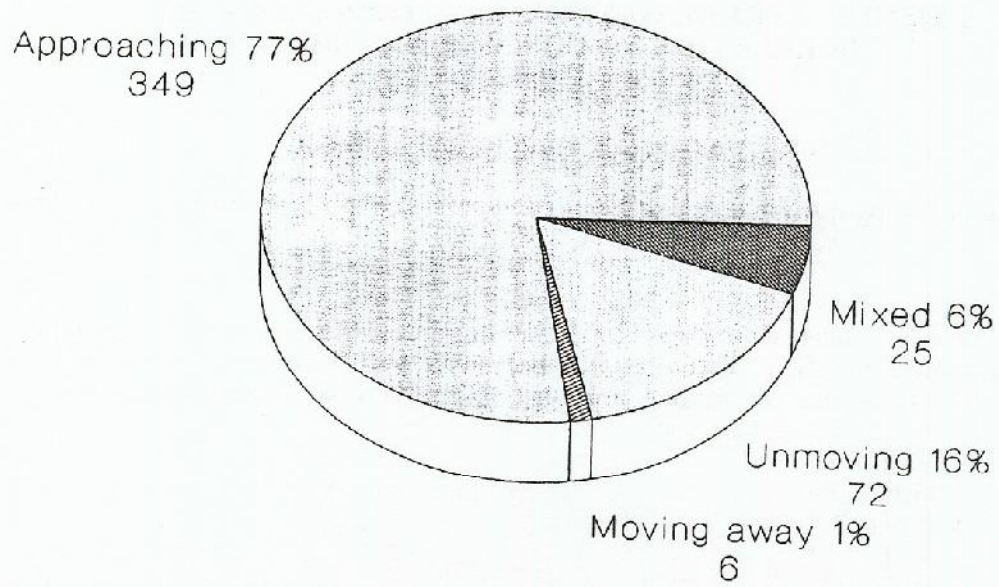


Fig. 1 Behaviour of striped dolphin towards ferries

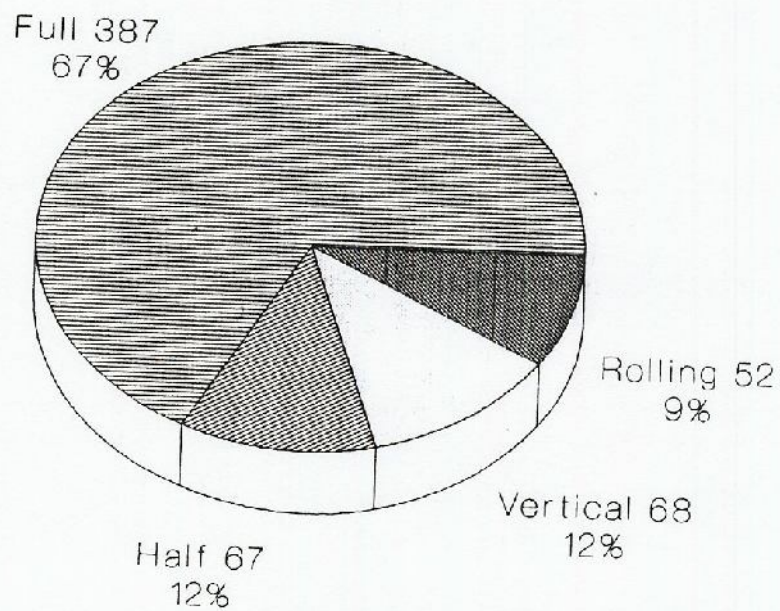


Fig. 2 Leaps of striped dolphin

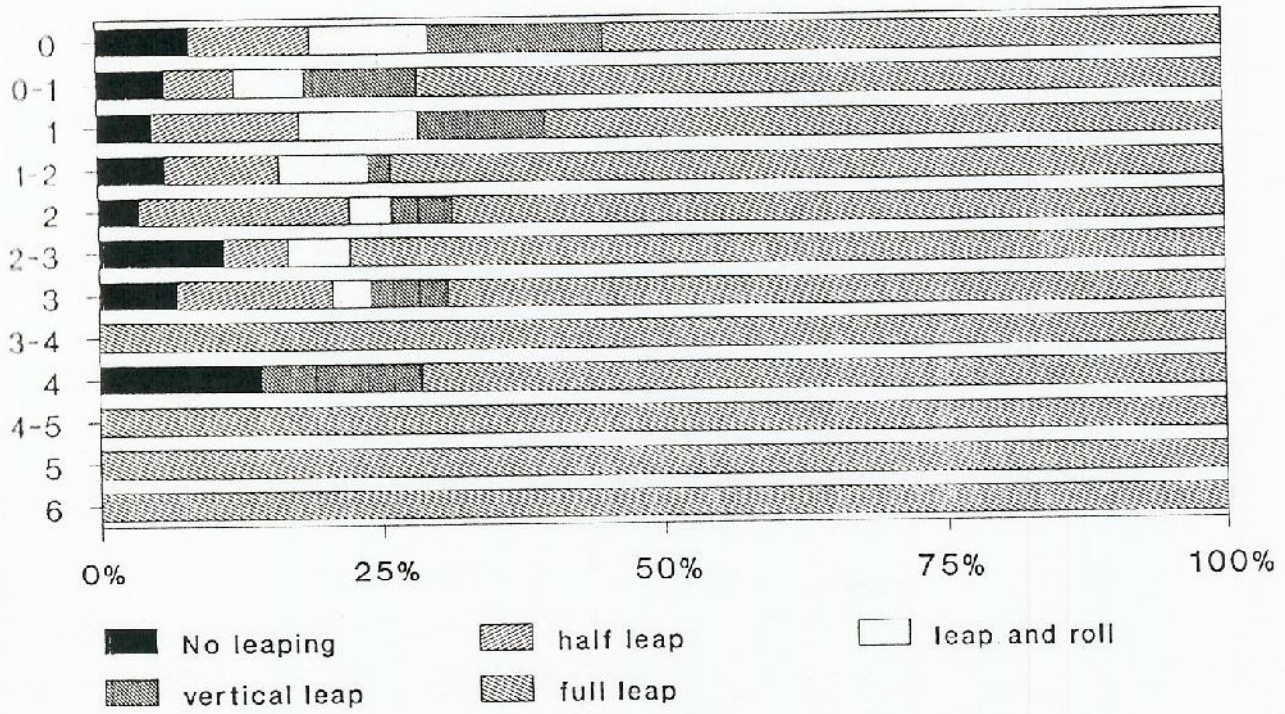
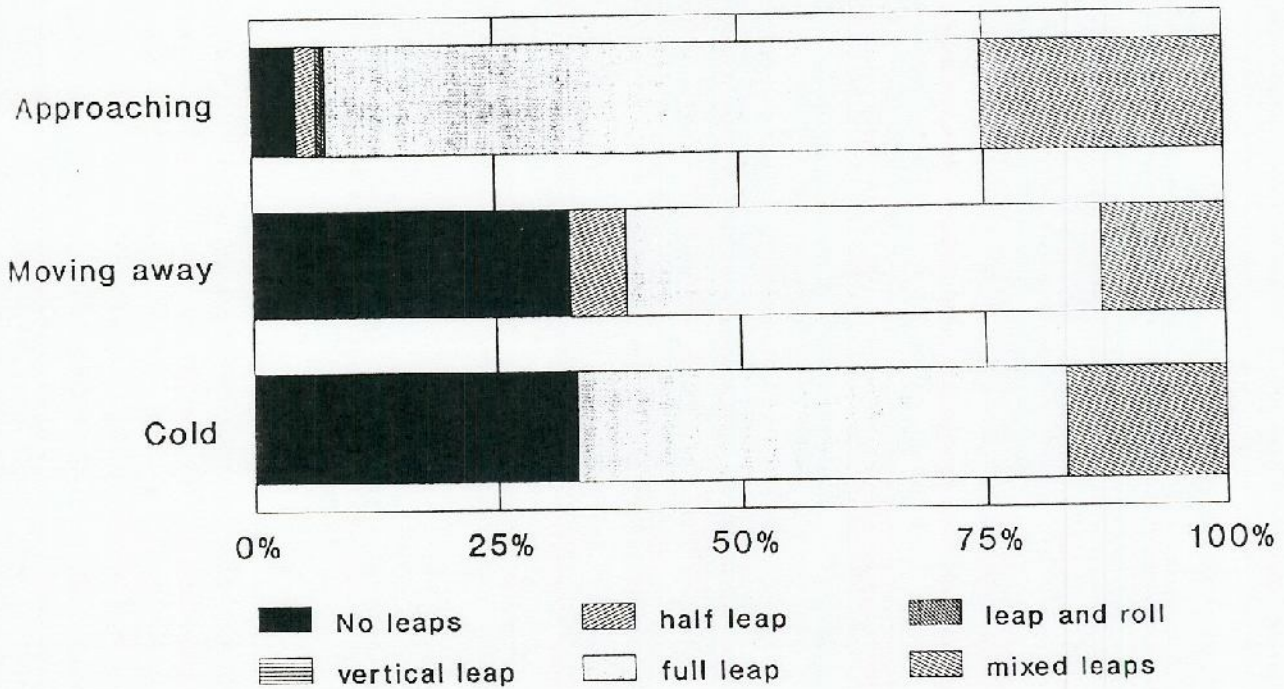


Fig. 3 Relation between sea state and leaping of striped dolphin

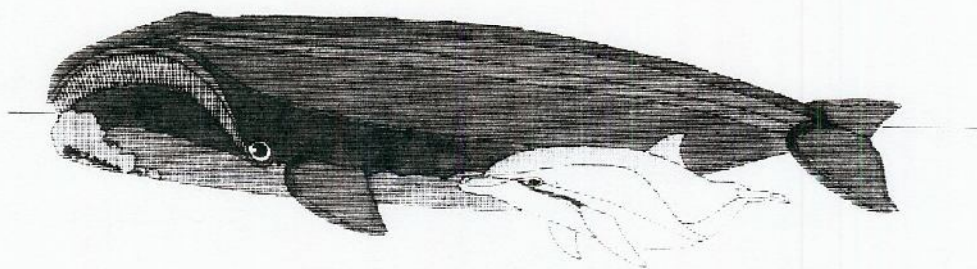


Mixed leaps are performed by large group

Fig. 4 Relations between leaping and behaviour toward the ferries

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