PRELIMINARY RESULTS OF THE FIRST YEAR OF A SIGHTINGS SURVEY OF CETACEANS IN THE CENTRAL TYRRHENIAN SEA

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Up until now, the cetacean sighting cruises in the Mediterranean Sea have concentrated upon the summer and spring months, due to the high costs of equipping the boats that would have to face adverse weather and sea conditions. Therefore, we decided to utilize the ferry-boats of the National Railway that sail between the ports of Civitavecchia near Rome, and Golfo Aranci in the North-Eastern Sardinia, a distance of about 120 nm; this ferry service operates daily throughout the year, whatever the weather conditions.

The area is also an interesting bottleneck between the Ligurian Sea and the Southern Tyrrhenian Sea. From September 1989 to October 1990, 102 weekly trips were made by teams of skilled researchers, with a total of over 700 observation hours per person.

The results presented here concern only the first year of this research, since the second year is still in progress. Moreover, some of the data of the first year are still being analysed.

From over 400 sightings reported, the striped dolphin, *Stenella coeruleoalba* is the most common cetacean in this area in all seasons (see figure 1). The species is concentrated towards the centre of the channel, particularly beyond the western slope of a submerged ridge that runs in a north-south direction. The extremely confiding behaviour of this species prevented the possibility of doing an evaluation of the density of the population by the "line transect" method, since this condition would have surely led to an over-estimation. No significant seasonal differences in group size were noted, although average group sizes were higher in May and December. An analysis of the behaviour of striped dolphins in the presence of boats is still in progress (see figure 2).

The frequency of sightings of sightings of *Balaenoptera* species was of particular interest. Rorquals were present in the Tyrrhenian Sea throughout the year, including the winter months, when, in the past, strandings were only rarely recorded. The geographical distribution of rorquals was similar to that of the striped dolphin but was more extended above the submerged ridge; anyway, it was also recorded over the continental shelf. School sizes appeared to be greater in the winter months; in summer, only isolated individuals or pairs were seen. Isolated breaching animals were recorded twice, in January and in June.

A density estimate, calculated by the "line transect" method, is currently being developed. Sighting comparisons in different sea conditions suggest that those trips made when the sea state was above 3 should be omitted, in order to avoid under-estimating sightings.

Sightings of common dolphins *Delphinus delphis*, were rare, confirming the negative trend shown by other researchers. However, surprisingly in some aspects was the absence of both sperm whales *Physeter macrocephalus*, whose distribution is considered more southern, and long-finned pilot whales *Globicephala melas*, which have been frequently sighted by other authors both in the Southern Tyrrhenian Sea and in the Ligurian Sea.

Also interesting was an encounter with Cuvier's beaked whale *Ziphius cavirostris*, considered rare in the Tyrrhenian Sea; it was also photographed. As expected, Risso's dolphin *Grampus griseus* was sighted very rarely. The limited number of sightings of bottle-nosed dolphins *Tursiops truncatus* can be related to its coastal habit.

Although by using ferry-boats as "platforms of opportunity", some problems arise relating to the impossibility of stopping or altering course to approach the animals, the method appears to be very useful with respect to the large quantity of data collected on the ecology of cetacean populations.

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Table 1 Cetacean sightings in the central Tyrrhenian Sea

	1989				1990									
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
Stenella coeruleoalba	6	15	25	14	25	12	18	15	26	28	21	25	7	237
Tursiops truncatus		2	1	1				3	4		3	2	1	17
Delphinus delphis			1	1							1			3
Grampus griseus		3			1				1					5
Ziphius cavirostris										1		1		2
small whale sp.		1	2	2		4	4	4	9	2	7	8	1	44
medium whale sp.					1		1		1	1			1	5
Balaenoptera sp.		4	1	1	4	4	2	5	12	7	9	6	7	62
large whale sp.			1			1	1	1	1		1	1		7
unidentified cetaceans		2	1	2	2	4	2	5	4	5	6	3	1	37
total	6	27	32	21	33	25	28	33	58	44	48	46	18	419
no. of trips	2	8	10	7	9	7	8	8	10	8	10	8	7	102

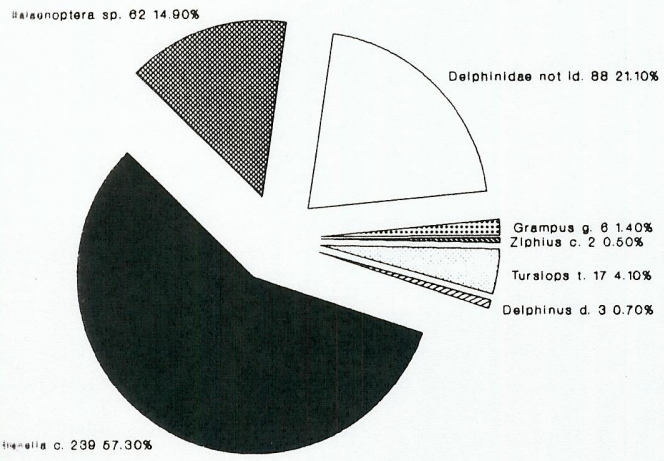

Figure 1 Sightings per species (%)

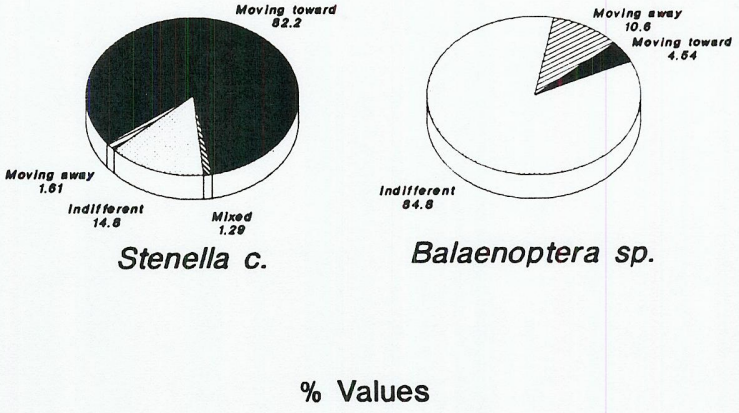

Figure 2 Comparative Behaviour of Schools

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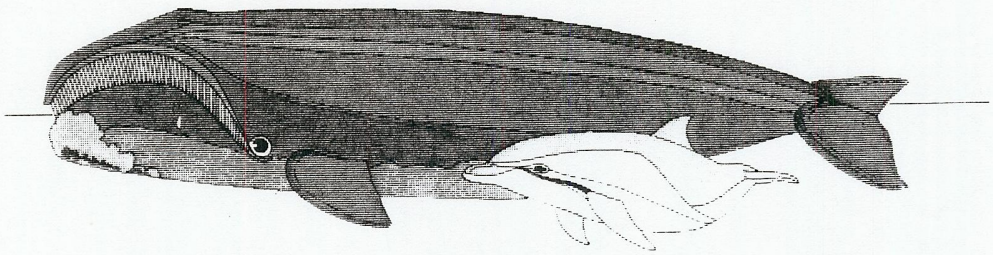

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