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# MARINE MAMMALS INTERACTIONS IN SCOMBRIDAE FISHERY ACTIVITIES: THE MEDITERRANEAN CASE

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## PREFACE

Whaling activity inside the Mediterranean Sea is historically known in a few places, as in the environs of the Strait of Gibraltar, where true whaling stations worked till about 1950's (BOLOGNARI, 1956), and in the Ligurian Sea, where a tradition is still carried on, killing a certain number of small Delphinidae (Stenella coeruleoalba, Delphinus delphis, Tursiops truncatus) per year, to make dried meat fillets, locally called "musciame", even if a full protection law was adopted by the Italian Government in 1980. Some hundreds of small dolphins (Stenella coeruleoalba and Delphinus delphis) are also reported to be intentionally caught in tuna trolling fisheries in French waters (COLLET, 1983), but it is difficult to make a serious separation between intentional and incidental catches in lines (FAO, in press).

Some volountary killings are also reported occasionally, both by explosives or, much more commonly, by rifles (DUGUY et Al., 1983) in Italian and French waters, but the reasons are to be found into the stupidity of shooters.

A certain number of large whales (Balaenoptera physalus and Physeter macrocephalus) incidentally die by collision with boats and a few specimens of different Cetaceans (Stenella coeruleoalba, Delphinus delphis, Tursiops truncatus, Grampus griseus, Ziphius cavirostris and Physeter macrocephalus) are occasionally killed by harpoons, mostly in the surroundings of the Strait of Messina.

Monk seals (Monachus monachus) were intentionally killed by fishermen several times in the past, but a specimen was harpooned by a scuba diver less than twenty years ago, in the waters around the Isle of Marettimo (Egadi Isles, W. Sicily).

Anyway, only a low number of marine Mammals are reported yearly to be killed intentionally in the Mediterranean Sea.

But the problem, here as in others seas of the world, is the very large amount of incidental catches due to interference with fishery, a problem which is rising up very quickly in the last ten years.



## INCIDENTAL CATCHES IN FISHING GEARS

Fishery is one of the most typical traditional activity in the Mediterranean and here the variety of fishing gears is incredible: a very high number of fishermen and thousands of boats and vessels, using about the totality of the fishing gears known in the world make this sea crowded as a town channel.

Of course, the impact of a so high number of boats and gears on marine Mammals is strictly correlated with the density of boats and with the selectivity of gears.

Some catches are very difficult to explain and they are probably due to real occasional incidents. On the opposite, how to explain the catch of a young Fin whale in a drifting long line, near Syracuse (E. Sicily) or the entanglement of a female Sperm whale in a coastal trammel gillnet near Torrenova (N. Sicily)?

Any gear, on the opposite, has its own range of "preferential" species, in relation to the possibility of interference with marine Mammals.

### Lines

An undetermined number of Striped and Common dolphins are incidentally caught by trolling boats in French waters every year.

### Long lines

Surface drifting long lines are commonly used all around the Mediterranean for tuna, albacore and swordfish fishery but only a few cases of incidental catches are reported, probably due to the high sonar reflectivity of the hooks and so they could be easily checked by Odontocetes, which are reported to eat occasionally on baits.

Two Stenella coeruleoalba has been reported in Italy and Spain, a Risso's dolphin (Grampus griseus) was caught near Acitrezza (E. Sicily) and a Sperm whale was also reported entangled in a long line in the Tyrrhenian seas (DI NATALE, 1983); a rare couple of False killer whale (Pseudorca crassidens) were caught and killed off the Calabrian Tyrrhenian coast (DI NATALE & MANGANO, 1983) and a young Fin whale was unusually caught off Syracuse (E. Sicily). A bottlenose dolphin (Tursiops truncatus) has been recently caught off Genova (Ligurian Sea), in autumn 1989.

In all these cases, the gear was surface difting long line, equipped for swordfish fishery.

Incidental catches of Monk seals have been observed in long lines (unclassified) in Greek waters (NORTHRIGE, 1984).

Surface drift gillnets

This type of gear has been greatly increased in number in the last 15 years, expecially by the Italian fleet. During the swordfish fishery season, which takes place from April to September (occasionally from March to October, depending by favourable weather conditions) a very high density of nets, settled by about 900 Italian boats, creates about a continous barrier (a single net should have an average lenght of about 12 km) in the upper stratum of the sea, with a higher density in the Southern Tyrrhenian Sea and, consequently, Cetacean entanglements happen very frequently.

Several species have been reported entangled in drift nets during the last 15 years (Stenella coeruleoalba, Tursiops truncatus, Grampus griseus, Globicephala melaena, Ziphius cavirostris, Physeter macrocephalus and Balaenoptera acutorostrata) in the Mediterranean (DUGUY et Al., 1983; SCIALLABBA, in press), but only in the last 4 years we obtained an improved statistic from the Italian Seas, after the creation of Centro Studi Cetacei, a special organization of the Italian Society for Natural Science.

The last statistic, concerning the period between 1985 and 1987, shows a list of 2 Fin whales, 24 Sperm whales, 2 Cuvier's Beaked whales, 10 Pilot whales, 5 Risso's dolphins, 13 Bottlenosed dolphins, 58 Striped dolphins and 27 unidentified Cetaceans (DI NATALE, 1990) but a very large amount of small Delphinidae (personally estimated from 3.000 to 5.000 per year) are not officially reported. Nine Sperm whales and four pilot whales were successfully rescued and released at sea in the last three years.

A very rapid increase of surface drift nets fishery effort in the Ligurian Sea appear to be strictly correlated with a high number of entanglements in that area (PODESTA' & MAGNAGHI, in press).

Anyway, the increasing number of reported entanglements in drift nets is a combination of factors: the effect of a rapid increase of the fishing effort and the result of more accurated observation.

It is now generally believed that mediterranean drift nets are the most important mortality factor for the Sperm whale population in this area.



No recent reports from other Mediterranean Countries are known, but this is probably due to the absence of local drift nets fleets or to the absence of a local survey programme.

Other gears

A Killer whale was incidentally captured in a tuna trap, along the northern coast of Sicily (DI NATALE, 1983).

Interferences among Delphinidae and purse seiners for small pelagic fishes have been rarely reported, but tuna purse seiners are known to capture Striped dolphins, Pilot whales and other Delphinidae with a higher frequency (DUGUY, 1983; DI NATALE, 1983; PODESTA' & MAGNAGHI, 1987), even if the total amount of the captures per year is on a very low level.

## SONAR INTERFERENCES

No data on sonar interference with Cetaceans communication systems have been reported in the Mediterranean, but no research have been carried out on this item.

It is expected to have a certain interference in social communication of Cetaceans, particularly in the area in which there is a great density of trawl fishery, becouse sonars are commonly used in such activity.

## PREDATION ON FISHING GEARS

Marine Mammals predation on fishing gears has been reported for years in journalistic articles but no scientific reports are known in the last years; only historical records exist (SCORDIA, 1936), mostly concerning Pilot whales, observed feeding on tuna in the Strait of Messina. Sperm whales have been frequently observed swimming under tuna schools in the Southern Tyrrhenian Sea (SARA', 1984) but they are not known to feed on tuna.

## CONCLUSION

Marine Mammals interference on fishery activities seem to be very frequent in the Mediterranean Sea, but nothing is knon about the real situation in the southern and eastern Mediterranean, while only a undefined percentace of cases have been reported in other parts.

As a consequence of this situation, incidental catches and entenglements are often understimated. Also, died marine Mammals usually

sink (except the Sperm whale) and so only a minimum number is washed ashore.

An immediate intervention of the Mediterranean Governments is now necessary, to limit drift nets effort, to establish new rules and to study new methods to avoid incidental catches, using different technology or modified fishing gears, to allow a certain level of fishing activity and catches, without depleting the Cetacean stock

A correlate effort is to be pursued by the scientists and International Organizations (F.A.O., U.N.E.P., I.C.C.A.T.), to make a first estimation of the Mediterranean population of Cetacean and to understand the real ratio of incidental catches per species.