

Commercial fishing endangers dolphin populations

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Extensive commercial fishing endangers dolphin populations in the Mediterranean. Courtesy of the University of Haifa

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"The [Mediterranean Sea](#) has a stable and constant dolphin population off the coast of Israel. Any resolution concerning the sea must also consider the dolphins," says Dr. Aviad Scheinin of the University of Haifa, who carried out the study.

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The study, which was supervised by Prof. Ehud Spanier and Dr. Dan Kerem, examined the competition between the two top predators along the Mediterranean coast of Israel: the Common Bottlenose Dolphin (*Tursiops truncatus*) and bottom trawlers. (Trawling is the principal type of commercial fishing in Israel and involves dragging a large fishing net through the water, close to the [sea floor](#), from the back of a boat.) These two predators off the coast of Israel trap similar types of fish near the sea floor, so the researchers decided to examine the nature of the competition between the two.

Commercial trawling in the Mediterranean off the coast of Israel targets codfish, red mullet and sole, three commercial and sought-after types of fish. The Department of Fisheries in Israel's Ministry of Agriculture has data showing that over the years the amount of fish from the sea floor looted by Israel's commercial trawling is larger than the amount of fish that nature provides, indicating that the sea floor fish population dropped between the years 1949 and 2006.

Would this decline in fish supply necessarily cause direct harm to the dolphins, seeing as their diet might also include other types of fish? In order to verify this, the researcher examined the contents of the stomachs of 26 dolphins that died and landed on the beach, or that had been caught by mistake. He also examined the behavior of living dolphins by carrying out 232 marine surveys over more than 3,000 km. along the central coast of Israel. The dolphins' stomachs contained mainly non-commercialized fish, suggesting that they perhaps do not

compete directly with the commercial trawlers, and that the commercial fishing does not directly affect the dolphins' nutrition.

The living dolphins' behavior, on the other hand, draws an entirely different picture. According to Dr. Scheinin, most of the dolphins were observed around the trawling boats: the chances of observing a school of dolphins near a trawler is ten times higher than in the open sea. This is because the trawler serves as a "feeding station" for the dolphins: there they are not able to feed from the more expensive loot caught in the nets, but they are able to enjoy schools of other types of fish that swim around the trawler. "The problem is that this type of fishing endangers the dolphins. Eight dolphins die each year off the coast of Israel on average, and of those, four die after having been mistakenly caught in trawling nets. Seeing as many studies have proven the high intelligence of the dolphin, it is clear that these sea mammals are aware of this danger, but are left with little choice due to their need to search for food around the trawlers due to the scarcity of other food sources," Dr. Scheinin explains.

This conclusion is reinforced by the suckling female dolphins. These dolphins require larger quantities of food than usual, and despite the risk for the younger and much less experienced dolphins that swim by their side, all of the suckling dolphins have been observed significantly more frequently around the trawlers. This indicates that they could not obtain enough food in other places.

The dolphins off the coast of Israel spend most of their time in search of food while their mates in other areas in the world are far busier with social activities. This fact is yet another contributing factor to the assumption that they suffer a deficiency in food resources.

The present study illustrates, for the first time, the characteristics of the dolphins inhabiting the sea region off the Mediterranean coast of Israel.

This dolphin population is stable and at any given time can be counted at about 350 dolphins. Of these, the researchers are personally familiar with 150 dolphins - on a first name basis - which can be identified by the dorsal fin, the dolphin's fingerprint. Forty of these are seen repeatedly and are permanent inhabitants of opposite the coast of Israel. "There is a stable dolphin population off the shores of Israel, and any resolution concerning the sea must also consider the dolphins. So as to preserve this population we must declare extensive marine nature reserves, so as to regulate fishing and bring an end to sea pollution. Regrettably, we are not considerate enough of the [dolphins](#)," concludes Dr. Scheinin.

Provided by University of Haifa

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