Fishery strategy affects the loggerhead sea turtle mortality trend due to the longline bycatch

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The western Mediterranean Sea is an important fishing ground for the Spanish surface longline fleet targeting swordfish, bluefin tuna, and albacore. Spanish Mediterranean waters, including contiguous international waters, are important feeding areas for thousands of juvenile and sub-adult loggerhead turtles. Due to the spatial overlap in fishing grounds between different longline métiers and loggerhead distribution, in the early 2000s, an estimated minimum of 60,000 loggerhead sea turtles were caught as bycatch in Mediterranean longline fisheries, including all countries operating in the area. The Spanish surface longline fleet is continually introducing technological and strategic innovations to improve the economic benefits of the fishery. These innovations lead to high variability in fishing gear and operational strategies from year to year. During the study period, there was a change in the specific contribution of each métier to total effort. Thus, since 2000 to the present, the Spanish traditional home-base surface longline targeting swordfish has been gradually modified or in other cases replaced by other métiers, and in most vessels it has been replaced by a new deeper semipelagic longline targeting the same species; which has led to a dramatic decrease in sea turtle mortality. The main result of this study is that loggerhead turtle post-release mortality due to the bycatch by the Spanish surface fleets using different longline métiers has significantly decreased during the last 8 years of the study period. We estimate an average post-release mortality around 1800 loggerheads sea turtles per year. The observed decrease in turtle mortality was an indirect effect of the introduction of changes in technology and fishing strategies in the fleets in the attempt to improve their economic objectives. © 2018

By-catch

Longline

Mediterranean Sea

Métier