Longline fishing endangers sea turtles
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When a marine turtle is incidentally by-caught by a longliner, fishermen try to cut the line —without hauling it on board— and release the turtle into the sea. However, a research published in the journal Marine Ecology Progress Series alerts that about 40% of post-released turtles die some months later due to the impact of longline fishing. The study is signed by experts Lluís Cardona and Irene Álvarez de Quevedo, from the Department of Animal Biology and the Biodiversity Research Institute of the University of Barcelona (IRBio), and Manu San Félix, from Vellmari Formentera. It is the first scientific study based on satellite tracking of a group of loggerhead turtles released into the sea after being by-caught by Spanish longliners.

The Mediterranean Sea: a cul-de-sac

Loggerhead turtle (Caretta caretta) is the most common turtle inhabiting Mediterranean grounds and one of the most threatened species around the world. Its migrations are long; it comes back to sandy beaches to nest. Main nesting areas are located at North-American coast, Brazil, Japan, Oman, Australia, Cape Verde and Eastern Mediterranean (specially, Greece, Turkey, Cyprus and Libya). To be exact, in Spanish waters there are turtles of Atlantic and Eastern Mediterranean origin.

The Spanish longline fleet has been reported to by-catch around 10,000 turtles in the Mediterranean annually. However, more than 95% of them are still alive when longlines are collected. When looking for food, turtles bite baits and get caught by longliners’ hooks. When a turtle is by-caught, fishers cut the line. Therefore, those turtles hooked in the jaw or the mouth and those hooked in the esophagus or the stomach are released into the sea.

It is not the hook, it is the line

Forty per cent of turtles released by fishermen die during the following three months. The problem is not the hook, it is the line. Professor Lluís Cardona, member of the Research Group on Large Marine Vertebrates of the UB, alerts: "The turtle shallows the line, and it goes down the alimentary tract until the end comes out through the cloaca".

"In the case of incidental by-catch —points out the expert—, turtles must be hauled on board, using a brail net, and line must be cut level with the hood. That will reduce incidental mortality by half and the impact on population will be acceptable", points out Cardona.

The Mediterranean is more dangerous for turtles of Atlantic origin

Surface longline fishing in the Mediterranean mainly affects turtles of American origin, which are 7,000 kilometres away. "Due to ocean circulation —explains Cardona—, Atlantic populations are trapped in the Mediterranean for many years. Consequently, they are more at risk of incidental catch". Few turtles of American origin which enter into the Mediterranean are able to go out later.
"Paradoxically —he adds—, the problem is not so serious for turtles of Mediterranean origin, which abandon open sea early in order to settle in the continental shelf, where they are less vulnerable to longline fishing. However, trawling fishing affects them more".

How can incidental by-catch be avoided?

Between 10 and 20% of turtles die every year due to nest destruction, incidental by-catch, collision injuries, etc. To draw more deeply, not to use cephalopods as baits and to modify the design of hooks are changes which can be adopted in order to avoid the incidental catch produced by surface longline fishing. "As turtles have a long life span —highlights Irene Álvarez de Quevedo—, a small variance on mortality rates would have a significant impact on populations".

"There are solutions. They only have to be applied, but that involves a cost", stresses Lluís Cardona. "It is more and more common that worldwide fishing fleets include the figure of the observer, a person who guarantees sustainability. If we want to develop a more effective and sustainable surface longline fishing, it is necessary to introduce some changes that involve extra expenses".


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