How to prevent dolphin depredation on fish hooked on a trolling line

Cetacean depredation on hook-and-line caught fish has become a frustratingly common occurrence for commercial and artisanal fishermen of the Pacific Islands. Fishers from Nauru, Solomon Islands, Kiribati, Tuvalu, and Cook Islands have recently reported that fish are being stolen by cetaceans from their lines with increased frequency, and this is exasperating them to the point that some of them have been tempted to kill or harm the "culprits" in the hope that it would solve the problem.

In 2002, a workshop on "Cetacean Interactions with Commercial Longline Fisheries in the South Pacific Region: Approaches to Mitigation" was held in Apia, Samoa, to gauge the gravity of the situation and to identify ways of dealing with the problem. A few angry local fishermen were at the stage of requesting mass culling of any cetaceans that roam their fishing grounds, but most agreed to use passive methods to repel cetaceans rather than aggressive physical methods such as detonators, oil slicks and shooting on sight.

A lot of work has already been done on producing cetacean deterrents for different types of fishing gear and this is constantly being updated to match the adaptability of cetaceans to the deterrent devices.[1] Cetaceans are ingenious creatures that quickly catch on to most passive deterrent methods and almost always find ways around them. Research institutions are still trying to perfect deterrent methods that focus mainly on the senses of sight, hearing, smell and taste. To date, several methods such as acoustic pingers, magnets, taint or metallic streamers have been trialled with varied success. Some of the products are available on the market for fishers who have funds to invest in them.

One newly identified type of cetacean depredation behaviour in the Pacific region is depredation on troll-caught fish. Dolphins were identified as being responsible for these depredations. In some countries of the Pacific region, fishers are wary of dolphins when they go trolling, especially around FADs. Once dolphins are spotted the fishers know they only have a 50/50 chance of landing the fish whole because the dolphins pluck the fish off the hooks or take chunks of them as they are being reeled in. The fishers are perplexed at this behaviour. They are used to sharks trying to rip their catch off the hook but not dolphins. The dilemma now is how to outsmart the dolphins to keep them from interfering with their catch without resorting to aggressive deterrent methods.

A stainless steel wire streamer or something similar is a simple but effective tool. This can be snapped on as soon as a strike is confirmed. The streamer should slide down the mainline to the hook and flail around the caught fish, presenting an obstacle to the dolphin and dissuading it from taking the fish. This is usually the cheapest method and the first resort adopted by fishers to fend off dolphins, although the effectiveness of the method depends on how fast the fisher is able to put the device in place.

The streamer can be constructed in many ways, but the general idea is to crimp a 100–200 cm x 7 mm stainless steel wire cable to a carabineer (mountain climber's snap), or similar device, and unfurl the strands to produce several flailing arms (see diagram). The snap must be smaller than the lure or there must be some sort of stopper to prevent the streamer from falling off the mainline if the fish escapes. Lead sinkers can be added to the strands and a funnel can be rigged just after the snap to help the streamer travel faster down the trolling line. Normally this should do the job but if this is insufficient then several whole wire rope lengths should be used. The trick is to place the streamer on the line as soon as the fish has been hooked so that it gets to the hooked fish before the dolphin. It helps if the vessel is kept moving ahead until the streamer reaches the hook.

This same principle can be applied using a cloth shroud that can be snapped on and slid down the line to cover the fish. Although I haven't yet been able to verify its efficiency, the shroud idea is there for someone to try.

Happy fishing!

For more information:

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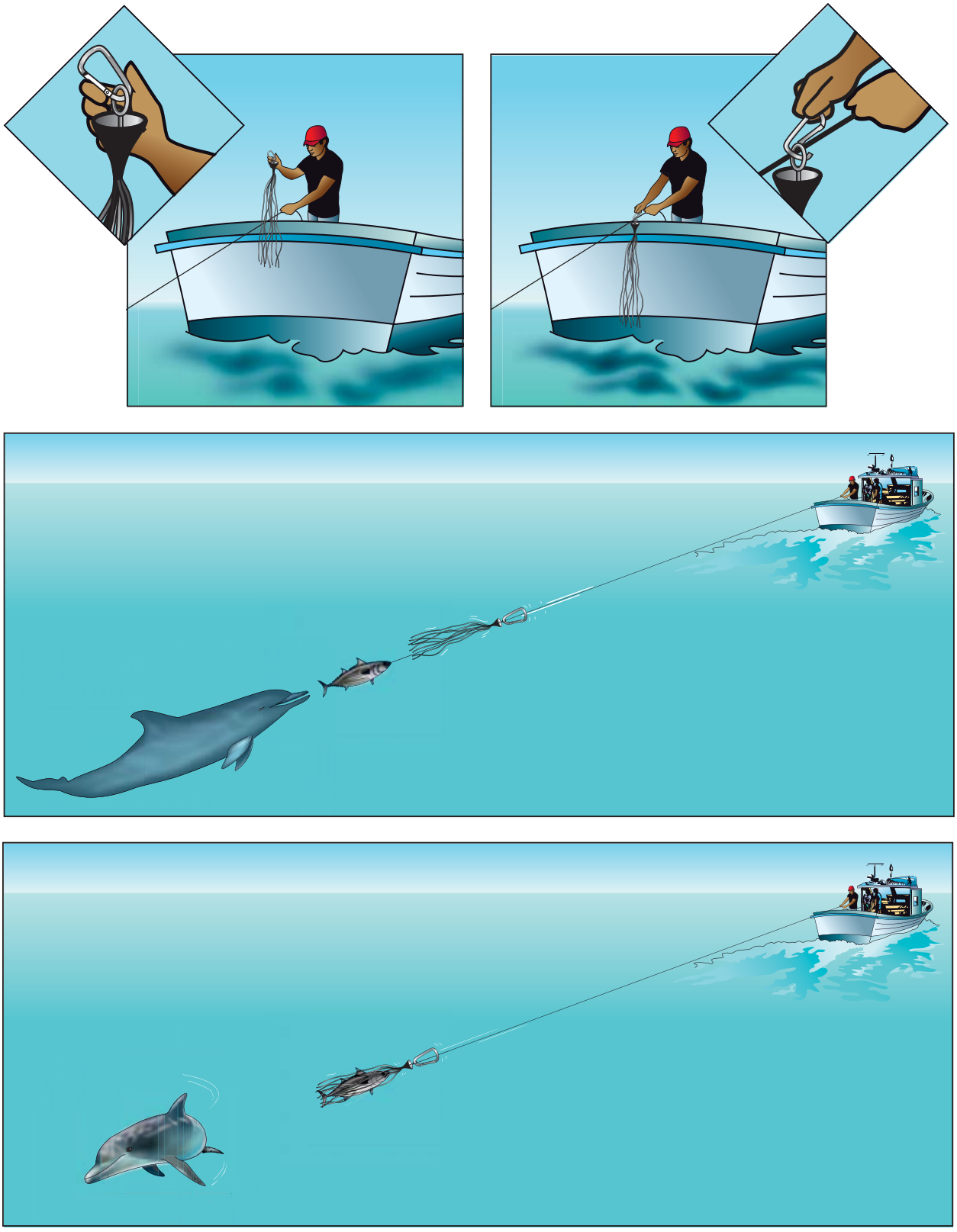
[1] See for example: McPherson G., Nishida T. 2010. An overview of toothed whale depredation mitigation efforts in the Indo-Pacific region. SPC Fisheries Newsletter 132:31–36. (available at: http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/FishNews/132/FishNews132_31_McPherson.pdf)



A fish is hooked, the boat keeps steaming ahead, the streamer is snapped on the trolling line (1 and 2); the streamer slides along the trolling line (3) and covers the fish; the dolphin is fended off by the metallic "hairs" (4). Illustrations by Jipé Le-Bars, SPC.