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# Marine Turtle Newsletter

## Interviews with Fishers suggest European Longlining Threatens Sea Turtle Populations in Cape Verdean Waters

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European fishing fleets have often been blamed for promoting unsustainable fisheries practices abroad, particularly along the West African coast (e.g. <<http://www.guardian.co.uk/environment/2012/apr/02/eu-fishing-west-africa-mauritania>>). Their environmental impact is potentially related not only to overexploitation, but also to induced mortality on bycaught species. The present note documents what appears to be a problematic situation involving European longliners and sea turtles around the Cape Verde archipelago.

Cape Verde hosts the third-most globally important nesting population of loggerhead turtles, *Caretta caretta* (Marco *et al.* 2012), an Endangered species according to the IUCN (<<http://www.redlist.org>>). This population of high conservation priority (Wallace *et al.* 2011) has been recognised as severely threatened due to the widespread harvest of nesting females; however, recent conservation efforts by several national and international organizations are managing to considerably curb levels of poaching (Marco *et al.* 2012). No other sea turtles nest on these islands, but young green, *Chelonia mydas*, and hawksbill, *Eretmochelys imbricata*, turtles are common in inshore waters (Marco *et al.* 2011). Critically Endangered leatherbacks, *Dermochelys coriacea*, nesting in the Western Atlantic regularly migrate through the area (Hays *et al.* 2006).

Pelagic longlines may represent the single most serious global threat to sea turtles such as loggerheads and leatherbacks (e.g., Lewison *et al.* 2004). Virtually nothing is known on sea turtle bycatch levels in pelagic longlines in the tropical eastern Atlantic (see Carranza *et al.* 2006, Santos *et al.* 2012), although this information is likely critical for the conservation of the Cape Verde loggerhead population, as well as for many other Atlantic sea turtle populations.

Preliminary informal discussions with local fishermen working on the international fishing fleet operating around Cape Verde suggested that mortality levels of turtles might be important. This prompted us to carry out more systematic interviews in order to obtain a first general appraisal of the situation. Interviews took place between November 2011 and February 2012. Semi-structured interviews were carried out by a member of our team (JM), who is a former ship-owner with deep knowledge of the local fishing communities. Fishermen of Cape Verdean nationality and residency, who are seasonally recruited to work on the international fishing fleet, were contacted individually and agreed to be interviewed on the understanding that their identities, and that of the vessels where they worked, would not be disclosed.

Interviews were obtained from 17 fishermen from 4 Cape Verde islands. The diversity of

information on fishermen origins, areas fished and on-board practices, suggests that they covered a wide range of experiences. All fishermen had worked on board Spanish vessels, and six also had worked on Portuguese vessels. Generally, the fishermen work for six months, and then rest for the remainder of the year. Interviewed individuals had  $4.3 \pm 2.0$  SD (range 1-8) years of fishing experience.

All fishermen reported that sharks are the main target of the fishery, despite the fact that vessels are licensed to catch tuna and sharks are officially bycatch. Squid is the main bait used.

All fishermen reported that turtles are regularly captured. Overall, 10 fishermen were willing to present figures and estimated that a mean of  $4.2 \pm 1.5$  SD (range 2-7) turtles were caught per longline set. Most turtles captured are presumed to be loggerheads (reported to be “of a large size”), but several fishermen reported the regular capture of leatherbacks. Most fishermen mentioned that the majority of turtles were dead by the time they are brought onboard. According to 53% of the reports, the dominant practice is to kill the turtles that were still alive, in order to retrieve the hooks and/or to use their meat. Other vessels released live turtles with the hooks still inside. Only 41% of the fishermen said that on some vessels/occasions there was an effort to free the turtles from the hook. Furthermore, five (29%) interviewees mentioned that turtle meat is sold illegally in Cape Verdean ports.

According to the fisheries agreement signed with the EU in November 2011, which is valid for three years, 35 longliners are licensed to fish in Cape Verdean waters: 26 from Spain and nine from Portugal. Furthermore, there is clear evidence of IUU (illegal, unreported and unregulated) longline fishing in Cape Verdean waters, including vessels from Asia, which might be important given the low levels of surveillance and marine law enforcement. Data provided by customs authorities who receive declarations of landings at Mindelo (the main landing port of Cape Verde) indicate declared landings of 1400, 2300 and 12000 tons of shark respectively in 2009, 2010 and 2011, while the corresponding values for tuna were 700, 670 and <600 tons.

Bycatch of sea turtles in long-line fisheries is a global problem with no easy fix, given the current prevalent fisheries management and conservation policies. The situation in Cape Verde, however, is particularly dire. Bycatch is affecting one of the most important loggerhead populations in the world and, according to the present study, the common practice is to kill the turtles that are still alive when they come onboard. In Cape Verde there is a strong tradition of eating loggerhead turtle meat, primarily females taken on nesting beaches. With the increasing control of illegal harvest ashore, the demand for turtle meat promotes the capture at sea and subsequent trade. Hence, there are at least two driving factors for the slaughter of live bycaught turtles: rapid recovery of the hook and profit made from selling turtle meat.

There are limitations of the present study, including: the lack of an estimate of current mortality levels or standardised values of captures per 1000 hooks, and the uncertainty surrounding figures presented here. Nevertheless, there are important lessons to be learnt, with urgent implications for conservation. First, there is a need to stop the unnecessary, illegal and widespread killing and commercialization of turtles caught alive by longliners. This can likely be best achieved through the implementation of an effective fisheries observer program, as well as through awareness campaigns targeted at international fishermen and ship-owners, particularly those from Spain and Portugal. Second, in future fisheries agreements, licenses should make mandatory the adoption of bycatch-minimization measures that are currently being developed and tested worldwide, such as the use of

circle-hooks, the setting of lines at greater depths, or the use of alternative baits, such as fish instead of squid (e.g. Santos *et al.* 2012). Measures aimed at the reduction of IUU longline fishing around Cape Verde probably are also a necessity. Finally, more data and monitoring are needed to quantitatively estimate bycatch and mortality levels and monitor their evolution in response to changes in fisheries practices and conservation initiatives.

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