

Sexual Harassment By A Male Green Turtle (*Chelonia mydas*)

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Male sea turtles (family Cheloniidae) are notoriously indiscriminate in mating behavior, facilitating hybridization among most of the species in this family (Karl et al. 1995). Male turtles are harvested in several locations around the world with crude decoys. Brazilian fishermen use a wooden disc attached to a rope. They reel in the disc after a male turtle mounts it, secure in the knowledge that the turtle will not release the decoy. Caribbean fishermen also use wooden decoys, and Polynesian fishermen use floating taro leaves to attract male turtles for spearing.

Male sea turtles occasionally attempt copulation with human swimmers, snorkelers, or scuba divers (W.N. Witzell, pers. comm.). The loggerhead (*Caretta caretta*) mating population in Southeast Florida lies adjacent to one of the most densely populated coastlines in the world, and every year a few people are approached or (more rarely) mounted by male loggerheads. NOAA diver Jack Javech of the U.S. National Marine Fisheries Service Miami Laboratory reports two copulation attempts by male loggerheads while scuba diving in the Florida Keys (J. Javech, pers. comm.). During a separate incident in the same area, a turtle mounted a male scuba diver and "made good its mating attack on this luckless individual" (Epstein 1989). A commonality in these events is that the male turtle attempts to pin the victim to the bottom. These are large powerful animals, with potential to inflict injury or even drown an unsuspecting swimmer.

On the morning of May 5, 2007, the author was collecting reef fishes at Cocos Island (Australia) on the upper edge of a slope at 20 meters depth. Water temperature was 26°C, and visibility was approximately 30 meters. The dive team included Luiz A. Rocha and Matthew T. Craig from University of Hawaii, J. Howard Choat from James Cook University, and Robert "Greenie" Thorn of Parks Australia. Reef fish collections were conducted with a three-prong spear commonly called a Hawaiian sling.

In five days of fish collections at Cocos Island, the author had previously observed two sea turtles, a mature female green turtle (*Chelonia mydas*) and an immature hawksbill (*Eretmochelys imbricata*; assignments based on morphology, size, and tail length). Both turtles exhibited a common response to scuba divers; they moved away rapidly.

On this occasion, a large green turtle came up the reef slope, and veered towards me rather than exiting the area. This was a mature male green turtle with a large tail, and a mass exceeding 100 kg. The turtle approached slowly, on a course that passed about two meters to my left. Immediately after passing, the turtle veered sharply towards my backside. I turned and placed the tip of the Hawaiian sling (length 2.5 meters) on the turtle's side behind the foreflipper. In this orientation, the turtle and I made three full rotations, with increasing pressure applied on the spear as the turtle tried to approach

my backside. Subsequently the turtle broke off the engagement and continued on his previous track towards the shallow reef.

Upon return to the support boat, Greenie Thorn remarked that the nesting season for Cocos Island sea turtles was approaching. Hence the highest risk of assault may be during the conventional mating season.

While such behavior is known previously, the victims usually lack the experience to identify the species and key behaviors of the male turtle. Hence it is appropriate to record the behaviors that indicate an imminent attack. In this case, the initial indicator was that the turtle changed course and moved purposely towards the target, rather than leaving the area.

Not all sea turtles avoid people. In Hawaii, green turtles routinely swim among bathers and divers with no apparent alarm (Balazs 1996). However, even in this benign environment the turtles may avoid swimmers who move too close, and these turtles do not deliberately approach humans. The Hawaiian nesting beaches at French Frigate Shoals are more than 1000 km from populated centers, so that sexually active males may have less proximity to people, the precondition for problems in Florida.

The green turtle described here did not raise fore-flippers in an attempt to grasp the target, as they do with conventional mating. Probably by the time that occurs, the interaction is inevitable. The only advanced warning was the deliberate approach of a male turtle, and the only acute signal was the ongoing attempt to approach my backside. Both behaviors are unusual and should be regarded as harbingers of a copulation attempt.

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