WHAT CAN WE LEARN FROM SEA TURTLE STRANDINGS?

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Stranding datasets may provide important information on sea turtle health, age, size composition, diet, reproductive status, population trends and cause-specific mortality. Additionally, they are also used to infer geographic distribution and abundance or even trends in mortality risk, attributable to anthropogenic threats such as coastal fisheries and pollution. Five species of sea turtle were recorded in 5260 strandings from January 2014 to September 2015, along the Brazilian coast, of which 3903 were *Chelonia mydas*, 914 were *Lepidochelys olivacea*, 290 were *Caretta caretta*, 83 were *Eretmochelys imbricata*, 4 were *Dermochelys coriacea* and 66 could not be identified. Almost 91% (n = 4756) of the stranded turtles were dead, whereas only 9% (n = 504) were alive. Although sea turtles are threatened with extinction as a result of many anthropogenic activities, incidental capture in fisheries is considered the greatest threat to sea turtle populations worldwide. However, stranded sea turtles, whether dead or alive, rarely exhibit external signs of capture in fisheries and the lack of external injuries may therefore underestimate the actual bycatch levels. In order to reduce the possibility of not detecting a turtle interaction, in 2014, we created an evidence protocol that basically distinguishes chronic illness from acute deaths or strandings. 23.2% of the turtles (n = 1220) were in good body condition, based upon subcutaneous and visceral adipose tissue and musculature. This condition suggests that the turtles had been feeding recently and had a sudden death, probably as a result of getting caught in fishing gear. In 12.95% (n = 681) of the stranded turtles, the presence of external tumors, suggestive of fibropapillomatosis, was observed. Most individuals that presented these tumors were green turtles (97.8%; n = 666/681), with CCLs ranging between 27.1 and 81 cm (mean = 43,8 cm). We performed necropsies on 40.39% (n = 1921/4756) of the dead turtles. Marine debris was present in almost 34% of the turtles (n = 653), however, only 13% (n = 249) had their death related to litter ingestion or entaglement. Most turtles affected by marine debris ingestion were juvenile *Chelonia mydas*. These animals are particularly prone to eating litter since they are exposed to pollution in nearshore habitats, where they normally feed. Only 19% (n = 365) of the necropsied turtles had gross evidences of drowning. This percentage is probably underestimated as this diagnosis can not be based on any one finding alone (e.g., sediment in the lungs), but relies on the exclusion of other potential causes of death. So, stranded sea turtles that drown due to incidental capture in fishing gear may have no conclusive cause of death or could be mistakenly attributed

to some other cause. For this reason, we have decided to use parameters other than the cause of death itself, which is sometimes hard to be determined. We believe these results open new perspective on the contribution of stranding data to sea turtle conservation.