MULTIPLE THREATS ANALYSIS FOR LEATHERBACK TURTLES IN THE SOUTHWEST ATLANTIC

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The southwest Atlantic (SWA) is an area of development, feeding and reproduction of leatherback turtles.Although the largest rookeries are located in eastern Atlantic (e.g. western Africa) a small nesting population occurs in Brazil, in Espírito Santo. Recent studies with satellite telemetry, mark-recapture and genetics have provided information about habitat use and movements for this species. These studies showed that the adult female leatherbacks that nest in beaches of west Africa migrate to multiple foraging areas, including waters off the coast of South America. In these foraging grounds the leatherbacks, mainly adults, spend most part of the year feeding on jellyfish and other gelatinous preys along neritic and oceanic waters. These areas are subject to a high fishing pressure from multiple fisheries that operate throughout coastal and oceanic environments.

Sea turtles have complex life histories making difficult to identify threats and mortality sources. Thus to better understand and quantify main impacts to leatherback populations in the SWA we conducted a threat analysis based on Bolten et al. (2010) approach.Adapted from Bolten et al. (2010) threats were identified and classified for the different life stages and ecosystems inhabited by the sea turtles. For the construction of the matrix we considered 8 life stages: nesting females, eggs, hatchlings, juveniles neritic, juvenile oceanic, adult neritic, adult oceanic. We grouped all identified threats into six main threat categories: fisheries bycatch, resource use (direct and indirect use), habitat alteration, pollution, species interaction and climate change.Also as threats vary

depending on the ecosystem inhabited by the turtles, thus we incorporated three environments: 1) terrestrial (beach), 2) neritic and 3) oceanic.Annual mortality was estimated for each life stage/ ecosystem, with respect to each specific threat. As the information is very heterogeneous and it is difficult to assign actual mortality rates we used a range of mortality values based on the best available information (e.g. published data, projects database information and expert opinion). Mortality range estimates were classified as follows: 0 (no evidence of mortality); >0 (mortality has been documented or is likely to occur; however data are insufficient to estimate mortality); 1 -100 (low mortality); 100-1000 (medium mortality); >1000 (high mortality).Results pointed out that fisheries bycatch represent a major threat for leatherbacks in the SWA. Juvenile and adults stages are subject to incidental mortality in coastal and high seas fisheries.