

## USING STRANDING DATA AS A KEY TO MITIGATE THREATS AT ONE OF THE LARGEST OLIVE RIDLEY ROOKERY IN THE SOUTH ATLANTIC

Jaqueline Comin de Castilhos<sup>1,2</sup>, Daphne Wrobel Goldberg<sup>1</sup>, Bruno de Barros Giffoni<sup>1</sup>, Marilda I. Weber<sup>1</sup>, Fabio Lira das C. Oliveira<sup>1</sup>, Ederson L. Fonseca<sup>1</sup>, Augusto César C. Dias da Silva<sup>1</sup>, Ana Carolina Corrêa de Melo<sup>1</sup>, João A. G. De Abreu<sup>1</sup>, Erik A. P. Dos Santos<sup>3</sup>, Frederico Tognin<sup>1</sup>, Jeamylle Nillin<sup>2,4</sup>

<sup>1</sup>Fundação Centro Brasileiro de Proteção e Pesquisa das Tartarugas Marinhas. Rua Jose Bispo dos Santos, 73 Bairro: Centro, CEP 49.190.000 Pirambu, Sergipe, Brasil.

<sup>2</sup>Universidade Federal da Bahia. Programa de Pós Graduação em Ecologia e Biomonitoramento. Rua Barão de Geremoabo, 147, Campus de Ondina. CEP 40170-290 Salvador, Bahia, Brasil.

<sup>3</sup>Centro TAMAR-ICMBio, Vitória, Espírito Santo, Brasil.

<sup>4</sup>Departamento de Ecologia, Universidade Federal de Sergipe Av. Marechal Rondon, s/n Jardim Rosa Elze, CEP 49100-000 São Cristóvão, Sergipe, Brasil.

One of the most important olive ridley nesting colony described for the South Atlantic Ocean is located in northeast region of Brazil. The number of nests observed throughout the beaches of Alagoas, Sergipe and Bahia states has clearly demonstrated an increasing population trend. The number of nests changed from 252 in 1990/1991 to 2,206 nests in 2002/2003 and jumped to 8,438 nests in 2013/2014 nesting season. Over the last years, the number of strandings and dead turtles registered in this region have increased considerably, becoming a great concern for the conservation of this population. The main objective of this work is to assess the possible causes of the strandings in order to address viable solutions. For that, daily beach patrols of 268 Km were performed between August 2009 and July 2014. A total of 4,831 sea turtle stranding events were qualified and quantified. Among them, 1,999 were identified as olive ridley. Females with eggs and males with a developed tail, good muscle mass and large layer of adipose tissue were considered indicators that the death happened acutely. Chronic affections would lead the turtle to a condition of inappetence, thickness or cachexia and, in these cases, the turtles would not be able to reproduce or even conduct reproductive migrations. There were no records of active females during nesting process showing the above described characteristics (n = 6,954 approaches) during the last 30 nesting seasons along the study area. On the other hand, lethargic animals, with atrophied musculature and little or none adipose reserve were associated with chronic pathological conditions (diseases). Turtles with lesions due to constriction, presence of fishing gear fixed on the body or in the gastrointestinal tract were associated with fisheries interactions. Among the 1,999 olive ridley turtles stranded, 1,160

(58%) showed macroscopic finds that indicated the possible causes of death or debilitated condition of turtles. We identified six causes: 1) shrimp trawl fishery (91%); 2) coastal gillnet fishery (6,18%); 3) hook and line fishery (1,15%); 4) ingestion of trash (1,15%); 5) natural predation (0,35%) and 6) diseases (0,17%). Beyond the spatial overlap between the area used by the olive ridley turtles and the bottom trawl boats, there is also a temporal overlap between the peak of the nesting season and the highest fishing effort in nearshore coastal waters. Such facts explain the high mortality of olive ridley turtles along the study area. Among the 1,160 turtles analyzed, 678 (58%) were adults (males and females). This significant adult loss may result in negative impacts that are still unknown for this population. Despite the use of the turtle excluder device (TED) been mandatory in Brazil, it reaches only boats bigger than eleven meters. Thus, according to this rule, just a short portion of the shrimp fleet (near 20% of the total fleet) fishing in the area fits in TED's rule. The current shrimp fishing seasonal closure goes from December to mid January, which is a period of high nest density. However, it hasn't been enough to reduce the incidental capture and mortality of olive ridley turtles on this important nesting site. An option to minimize this threat and reduce the loss of adults would be to extend the seasonal closure, matching the peak of the nesting season (November – January) for olive ridley turtles in Brazil.