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# FACTORS AFFECTING LEATHERBACK TURTLE HATCHLING PRODUCTION AT JAMURSBA MEDI AND WERMON BEACHES, BIRD'S HEAD PAPUA BARAT – INDONESIA

*by* Ricardo Tapilatu

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# PROCEEDINGS OF THE THIRTY-FOURTH ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION



## 2014 INTERNATIONAL SEA TURTLE SYMPOSIUM

✿ NEW ORLEANS, LOUISIANA, USA ✿

14 to 17 April, 2014  
New Orleans, Louisiana USA

Compiled by:  
Lisa Belskis, Amy Frey, Michael Jensen, Robin LeRoux, and Kelly Stewart

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Southeast Fisheries Science Center  
75 Virginia Beach Drive  
Miami, Florida 33149

December 2016

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U.S. DEPARTMENT OF COMMERCE  
Penny Pritzker, Secretary

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
Dr. Kathryn D. Sullivan  
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NATIONAL MARINE FISHERIES SERVICE  
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December 2016

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75 Virginia Beach Drive  
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**FACTORS AFFECTING LEATHERBACK TURTLE HATCHLING PRODUCTION AT JAMURSBA MEDI AND WERMON BEACHES, BIRD'S HEAD PAPUA BARAT – INDONESIA**

**Ricardo F. Tapilatu<sup>1</sup>, Manjula Tiwari<sup>2</sup>, Peter H. Dutton<sup>2</sup>, and Thane Wibbels<sup>3</sup>**

<sup>1</sup> *Bird's Head Leatherback (BHL) Conservation Program - Marine Laboratory and Department, The State University of Papua (UNIPA) Manokwari (98314), Papua Barat Province, Indonesia*

<sup>2</sup> *Protected Resources Division, Southwest Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, 8901 La Jolla Shores Dr., La Jolla, CA, 92037, USA*

<sup>3</sup> *Department of Biology - University of Alabama at Birmingham (UAB), AL 35294-1170, USA*

The Pacific leatherback sea turtle is a “Critically Endangered” species that has experienced a long-term decline over past decades. The largest nesting aggregation of leatherbacks in the Pacific occurs on Bird’s Head peninsula, Papua Barat, Indonesia, and represents the largest producer of hatchlings for the entire Pacific. The adult females as well as hatchlings disperse widely to various areas of the Pacific. The impact of a number of biotic and environmental factors on leatherback nests and hatchling production were quantified at the two primary nesting beaches: Jamursba Medi and Wermon, from 2005 to 2012. The primary threats impacting nests were predation, tidal inundation and erosion, and extreme beach temperatures, all of which significantly affected nest survival, hatching success, and subsequent hatchling production. The minor threats impacting nests were opportunistic poaching, predation by monitor lizards, sand crabs, and root invasions. We estimated an average of 34,364±7,579 hatchlings produced during the boreal summer nesting seasons at Jamursba Medi, and 10,469±6,278 hatchlings produced during the austral summer nesting seasons at Wermon. The results indicated that low levels of nest survival and hatching success represents one of the primary factors causing the decline of western Pacific leatherback at Bird’s Head. As such, the low level of hatchling production will necessitate the development and implementation of effective conservation measures that significantly increase hatchlings production on these beaches. The development of a beach management plan to address these threats is a critical to the recovery of the Pacific leatherbacks. I sincerely thank OneWorldOneOcean Foundation and Biology Department–University of Alabama at Birmingham (UAB) for their generous supports to fund my participation in the Symposium. I also thank the International Sea Turtle Symposium, International Sea Turtle Society, U.S. Fish and Wildlife Service, and U.S. National Marine Fisheries Service for supporting my participation in the Symposium.

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**FACTORS THAT INFLUENCED NESTING BEACH SELECTION BY GREEN TURTLES (*CHELONIA MYDAS*) IN VAMIZI, MOZAMBIQUE, BETWEEN 2003 AND 2012\***

**Joana C. Trindade<sup>1,2</sup>, Rui Rebelo<sup>1,2</sup>, Almeida Guissamulo<sup>3</sup>, and Isabel M. da Silva<sup>4</sup>**

<sup>1</sup> *Faculty of Sciences of the University of Lisbon, Lisbon, Portugal*

<sup>2</sup> *WWF Mozambique, Maputo, Mozambique*

<sup>3</sup> *Eduardo Mondlane University, Maputo, Mozambique*

<sup>4</sup> *Faculty of Sciences of the Lúrio University, Pemba, Mozambique*

The identification of the possible clues that drive nest site selection has received considerable attention. Sea turtles are likely to use multiple environmental factors when selecting a nest site. However, the clues that attract nesting females to a specific location of nest placement remain speculative. One method of investigating possible clues used in nest-site selection is to document the spatial pattern of nests in relation to a naturally occurring range of beach conditions. The main goal of this work was to identify the factors influencing nest site selection by green turtles (*Chelonia mydas* L. 1758) in Vamizi, Quirimbas Archipelago, Mozambique, in 2012, 2003-2008 and 2011. The distribution of the nests through the various beach sections was not uniform for any of the years analyzed. Furthermore, there was a change in the distribution pattern of the preferred beaches: Comissete started to be less visited in 2006 and 2007, and Farol and Pangaio started having more nests in 2007 and 2008. This uneven distribution allowed for the identification of three different groups of beaches: Comissete, Soweto+Farol and Pangaio+Munto Nkulo. The change



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