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PROCEEDINGS OF THE TWENTY-EIGHTH ANNUAL SYMPOSIUM ON SEA TURTLE BIOLOGY AND CONSERVATION



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Compiled by:
Kama Dean & Melania C. López Castro

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National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
75 Virginia Beach Drive
Miami, Florida 33149

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THE IMPACT OF SEA LEVEL RISE ON A MAJOR MEDITERRANEAN LOGGERHEAD SEA TURTLE NESTING SITE: ZAKYNTHOS ISLAND, GREECE

Paul A. Whittock¹, Michael Case², Paolo Casale³, and Christopher Dean⁴

¹ University of Edinburgh, Edinburgh, Scotland

² WWF Climate Change Program, Washington D.C., USA

³ WWF Mediterranean Marine Turtle Programme, c/o WWF Italy, Roma, Italy

⁴ ARCHELON - the Sea Turtle Protection Society of Greece, Athens, Greece

Sea turtles are threatened by a variety of anthropogenic factors that have drastically reduced many populations worldwide. While conservation initiatives focused on these factors are now being proposed or implemented, a new threat, climate change, risks to undermine all these efforts. In order to understand how climate change can affect sea turtles in the Mediterranean region, a pilot study was conducted on Zakynthos island, Greece, the single most important nesting site in the region for the loggerhead sea turtle (*Caretta caretta*). The study considered only one of the several consequences of climate change: sea level rise (SLR). A digital elevation model of each one of the six nesting beaches on Zakynthos was created using land elevation data. The beach area, nesting area and land use was also identified from fieldwork and these, along with the digital elevation model, were entered into a geographical information system for analysis. Four scenarios of SLR in year 2100, based on recent predictions made by the Intergovernmental Panel on Climate Change (IPCC), were modelled against the elevation data in order to quantify the areas at risk from inundation. Physical beach characteristics were also identified and these were related to nesting activity, vulnerability to SLR and land use. Beaches with low elevations and low slope profiles were found to be the most vulnerable to SLR, with 13-54% of the beach area being lost to inundation following the different SLR scenarios considered (0.2-1 m). However, beach adaptation through inland regression might contrast such a reduction, but potential for this adaptation is limited by physical constraints on the back of the beaches, such as natural cliffs and artificial structures. In conclusion, the direct impact of SLR on the nesting habitat of Zakynthos can realistically affect the nest success and nesting behaviour of the turtles, ultimately impacting on the Zakynthos and hence on the Mediterranean loggerhead sea turtle population. This highlights the need of including a climate change adaptation strategy in sea turtle nesting beach management, with particular attention to artificial buildings on the back of the beaches. Given the rapid coastal development in the Mediterranean, an assessment of SLR effects on sea turtle nesting beaches is urgently needed at a regional level.

Fisheries

SEFSC SEA TURTLE OBSERVER TRAINING

Lisa Belskis, Sheryan Epperly, and Lesley Stokes

NOAA Fisheries Service, Miami, Florida, USA

NOAA Fisheries Service Southeast Fisheries Science Center (SEFSC) conducts sea turtle training for permitted biologists and fishery observers. The objective is to teach researchers and observers to collect sea turtle life history data, as well as document the gear interaction at capture and subsequent handling and release. Typical training includes classroom presentations, videos, and hands on sessions. Topics covered are handling and safety,