# CONSERVATION AND MANAGEMENT OF OLIVE RIDLEY SEA TURTLE (*LEPIDOCHELYS OLIVACEA*) AT INTENSIVE SPORADIC NESTING HABITATS OF ANDHRA PRADESH COAST, BAY OF BENGAL, INDIA

#### Raja Sekhar, P.S

Dept. of Environmental Sciences, Andhra University, Visakhapatnam -530 003, A.P., India

The Andhra Pradesh coast is situated on East Coast of India between 11°24"- 19°54" N latitudes and 80° 02"- 86°46" E longitudes. This part of coastline abutting Bay of Bengal has diversified shore environments of main land beaches, salt water lagoons, backwater swamps and sand spits of Krishna and Godavari River mouths,. The breeding population of olive ridleys (Lepidochelys olivacea) is migrating during winter months (December to March) from Indian Ocean to the Orissa mass nesting sites (Gahirmatha & Rushikulya) they utilize the beaches of Andhra Coast for their sporadic nesting on remote main land beaches and riverine sandy spits & sand bars. Intensity of sporadic nesting activity and nesting density of the olive ridley were found to be varied from river mouth sand spits (>30 nests /km) to the main land beaches (<4 nests /km. Predation of eggs and hatchlings was very high at river mouth beaches due to jackals (Vulpes vulpes), foxes (Vulpes bengalensis), mongoose (Herpestes edwardsi) and shore crabs (Ocypoda sp.). As part of conservation and management of olive ridley sea turtle a total of 3000 Olive ridley nests were relocated at sand spits of Krishna, Godavari and Vamsadhara river mouths and protected naturally (in situ) until hatching of eggs. The newly emerged hatchlings (2000 nos) were reared in captive conditions up to six days old and released them in to marine waters. Besides, sea turtle awareness programs were organized at major fishing harbors for implementation of Turtle Excluder Devices (TEDs) to reduce the incidental catches of breeding population due to shrimp trawl nets. The vulnerable nesting sites of olive ridleys were regularly monitored to protect freshly laid nests, eggs and hatchlings from natural predation and beach erosion along the sporadic nesting sites of Andhra Pradesh coast, Bay of Bengal, India.

## ASSESSING THE INFLUENCE OF NEST RELOCATION ON SEA TURTLES IN NORTH CAROLINA, SOUTH CAROLINA AND GEORGIA

# Michael Shaughnessy<sup>1</sup>, Matthew H. Godfrey<sup>2</sup>, Brian Shamblin<sup>3</sup>, Mark Dodd<sup>4</sup>, DuBose B. Griffin<sup>5</sup>, and Michael Coyne<sup>6</sup>

<sup>1</sup> Duke University, Durham, NC

<sup>2</sup> NC Wildlife Resources Commission, Beaufort, NC

<sup>3</sup> NOAA-NMFS SWFSC, La Jolla, CA

- <sup>4</sup> GA Department of Natural Resources, St. Simons, GA
- <sup>5</sup> SC DNR Marine Turtle Program, Charleston, SC
- <sup>6</sup> SEATURTLE.ORG, Durham, NC

Nest relocation is generally considered a successful tool in sea turtle conservation. It is commonly used by many sea turtle projects in many countries, and often high hatching success in relocated nests has been interpreted as being beneficial for populations overall. However, there has been debate about potential negative effects of nest relocation, such as the possibility that relocated eggs may experience unnatural nest incubation conditions. It has also been suggested that nest relocation may artificially select for poor nesting behavior and possibly result in reduced overall fitness of sea turtle populations. As a way to test for the artificial selection hypothesis, we investigated nest relocation data of >11,000 loggerhead sea turtle nests laid in Georgia, South Carolina and North Carolina during the 2010 and 2011 nesting seasons. Nearly all

known nests laid (>95%) were linked to individual females, through a DNA fingerprinting project. As a result, we were able to assess if relocation of nests was randomly distributed across nests of individual turtles, or if nests of some females were relocated more often than others. This study is the first of its kind, with a large sample size distributed across a wide region. The results from our research will be informative in the ongoing discussion about the possible impacts of nest relocation on sea turtle populations.

## WINNING SEA TURTLE PROTECTION THROUGH LEGISLATION IN CALIFORNIA AND BEYOND

#### Teri Shore and Todd Steiner

Turtle Island Restoration Network, California, USA

Passing several state bills and resolutions supporting sea turtle conservation through the California state legislature and key marine management agencies over the past five years has proven an effective tool for increasing protections for endangered Pacific leatherbacks and raising the profile of the marine species among public officials, policymakers and the public. Turtle Island Restoration Network (TIRN) will explain the history, legislative language and campaign that resulted in successful passage of such bills, including a 2012 bill signed into law that designates the Pacific leatherback as an official state symbol of California. TIRN will also show how we've leveraged legislation and resolutions in other policy arenas - including the ISTS - and how such an approach can be modeled by others to enhance protections for and build constituencies for support of sea turtle conservation in the U.S. and internationally.

#### A COMPREHENSIVE REVIEW OF BEST PRACTICES IN PROTECTED SPECIES ADVISORY GROUPS, AS THEY PERTAIN TO NORTH CAROLINA'S SEA TURTLE ADVISORY COMMITTEE

#### Ainsley F. Smith<sup>1</sup> and Michelle B. Nowlin<sup>2</sup>

<sup>1</sup> Nicholas School of the Environment, Duke University; Duke Environmental Law and Policy Clinic, Durham, North Carolina, USA

<sup>2</sup> Duke University Law School, Duke Environmental Law and Policy Clinic, Durham, North Carolina, USA

In accordance with a 2010 Settlement Agreement between NC Division of Marine Fisheries, NC Marine Fisheries Council and the Karen Beasley Sea Turtle Rescue and Rehabilitation Center, the NC Sea Turtle Advisory Committee (STAC) was formalized. The committee consists of 12 members appointed by the MFC Chairman and the Karen Beasley Sea Turtle Rescue and Rehabilitation Center. The role of the STAC includes: the review of monthly observer reports and fishing effort data, the review of weekly stranding reports, assisting with fishermen education on sea turtle biology, and advising on take-reduction measures such as gear modification or seasonal restrictions. The STAC also reviews and provides comment on all Incidental Take Permit provisions and take calculations prior to formal application to NMFS. After several years in their current capacity, members of the STAC expressed interest in expanding their work from NC gill net fisheries, which were the target of the Settlement Agreement, to advising on other state-managed fisheries that impact sea turtles. In an effort to maximize the STAC's effectiveness and clarify goals, other protected species advisory groups and marine mammal take reduction teams were examined, to determine best management practices and effective strategies. The size and composition of each advisory committee was examined, as well as the committee's mission, goals, and funding, if applicable. A close look is also



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



Baltimore, Maryland USA

5 to 8 February, 2013 Baltimore, Maryland, USA

Compiled by: Tony Tucker, Lisa Belskis, Aliki Panagopoulou, ALan Rees, Mike Frick, Kris Williams, 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

> > May 2013



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

5 to 8 February, 2013 Baltimore, Maryland, USA

Compiled by:

Tony Tucker, Lisa Belskis, Aliki Panagopoulou, ALan Rees, Mike Frick, Kris Williams, Robin LeRoux, and Kelly Stewart

> U.S. DEPARTMENT OF COMMERCE Dr. Rebecca Blank, Acting Secretary

### NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION Dr. Kathryn D. Sullivan, Acting Under Secretary for Oceans and Atmosphere

NATIONAL MARINE FISHERIES SERVICE Samuel D. Rauch III, Acting Assistant Administrator for Fisheries

### May 2013

This Technical Memorandum is used for documentation and timely communication of preliminary results, interim reports, or similar special-purpose information. Although the memoranda are not subject to complete formal review, editorial control or detailed editing, they are expected to reflect sound professional work.

### NOTICE

The NOAA Fisheries Service (NMFS) does not approve, recommend or endorse any proprietary product or material mentioned in this publication. No references shall be made to NMFS, or to this publication furnished by NMFS, in any advertising or sales promotion which would indicate or imply that NMFS approves, recommends or endorses any proprietary product or material herein or which has as its purpose any intent to cause directly or indirectly the advertised product to be use or purchased because of NMFS promotion.

For bibliographic purposes, this document should be cited as follows:

Tucker, T., Belskis, L., Panagopoulou, A., Rees, A., Frick, M., Williams, K., LeRoux, R., and Stewart, K. compilers. 2013. Proceedings of the Thirty-Third Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NOAA NMFS-SEFSC-645: 263 p.

Technical Editor: Lisa Belskis

Copies of this report can be obtained from:

NOAA Fisheries Service Southeast Fisheries Science Center 75 Virginia Beach Drive Miami, FL 33149

PDF version available at http://www.sefsc.noaa.gov/species/turtles/techmemos.htm

or

National Technical Information Service 5301 Shawnee Rd Alexandria, VA 22312 (703) 605-6050, (888)584-8332 http://www.ntis.gov/numbers/htm