

JIMAR ANNUAL REPORT FOR FY 2008

P.I./SPONSOR NAME: Yonat Swimmer, Christofer Boggs, Richard Brill, John Sibert

NOAA OFFICE (Of the primary technical contact): PIFSC

PROJECT PROPOSAL TITLE: Survivorship, Migrations, and Diving Patterns of Sea Turtles Released from Commercial Longline Fishing Gear, Determined with Pop-Up Satellite Archival Transmitters"

FUNDING AGENCY: JIMAR

NOAA GOAL (Check those that apply):

- To protect, restore, and manage the use of coastal and ocean resources through ecosystem-based management
- To understand climate variability and change to enhance society's ability to plan and respond
- To serve society's needs for weather and water information
- To support the nation's commerce with information for safe, efficient, and environmentally sound transportation

PURPOSE OF THE PROJECT (One paragraph): For the past 6 years, the objectives of this project have been two-fold: 1) to provide estimates of delayed mortality in sea turtles following interactions with longline fishing gear, and 2) to compare the movements and behaviors of sea turtles caught and released from longline gear to free-swimming controls. To do this, we've deployed satellite transmitters on longline-caught and free-swimming hard-shelled turtles in the Eastern Tropical Pacific, the North Pacific, and the South Atlantic Oceans and tracked their movements over time in order to infer the impacts of these fisheries interactions.

PROGRESS DURING FY 2008 (One-two paragraphs, including a comparison of the actual accomplishments to the objectives established for the period, and the reasons for the slippage if established objectives were not met):

Due to the poor tag retention for PSATs on hard shelled turtles (independent of attachment technique), we ceased our application of PSATs on turtles and instead chose to work with platform terminal transmitters (PTTs) to improve our understanding and inference of post-release survivorship based on long-term tracking of animals. In the last year and a half, we have deployed a combination of PTTs and PSATs on 25 loggerhead turtles caught and released from longline fishing boats in the South Atlantic Ocean operating out of Brazil and Uruguay (see Fig 1). The tags have provided information on turtles' movements from 27- 535 days post release from fisheries interaction, with a mean number of over 350 days of tracking per turtle.

This far exceeds the number of days we successfully tracked sea turtles with PSATs during the previous years of this study.

This is a higher number of animals tracked than previously predicted, which has been possible due to additional funding from a variety of sources that has allowed us the opportunity to hire personnel in Uruguay and Brazil.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph): We have no more PFRP funds for this work for continued work in 2008-2009. However, we have secured some federal funding in collaboration with other in-kind support to continue this work. Specifically, we plan to tag loggerheads post-release of fisheries interactions working with Spanish vessels in the Southern Mediterranean Sea. These data will be correlated with biochemical correlates to determine stress levels associated with these interactions and in comparison with other types of fisheries interactions (e.g. gill nets vs. longline stress levels).

LIST OF PAPERS PUBLISHED IN REFERRED JOURNALS DURING FY 2008, in the following format: (Author or authors with last name and initials, publication year: Article title. *Journal name*, volume, page range.) For example: Charney, J.G., and A. Eliassen, 1964: On the growth of the hurricane depression. *J. Atmos. Sci.*, 21, 68-75.

Southwood, A, Fritches, K, Brill, R and Y Swimmer (In Press). A REVIEW OF SOUND, CHEMICAL, AND LIGHT DETECTION IN SEA TURTLES AND PELAGIC FISHES: EXPLORING THE POTENTIAL FOR SENSORY-BASED BYCATCH REDUCTION MEASURES IN LONGLINE FISHERIES. ENDANGERED SPECIES RESEARCH JOURNAL.

Swimmer, Y, Chaloupka M, M^cNaughton, L, Musyl, M and R Brill. (In Press) Bayesian hazard regression modelling of factors affecting post-release mortality of loggerhead sea turtles caught in pelagic longline fisheries. *Ecological Applications*.

OTHER PAPERS, TECHNICAL REPORTS, ETC.:

GRADUATES (Names of students graduating with MS or PhD degrees during FY 2008; Titles of their Thesis or Dissertation):

AWARDS (List awards given to JIMAR employees or to the project itself during the period):

PUBLICATION COUNT (Total count of publications for the reporting period and categorized by NOAA lead author and Institute (or subgrantee) lead author and whether it was peer-reviewed or non peer-reviewed (not including presentations):

	JI Lead Author	NOAA Lead Author	Other Lead Author
Peer Reviewed	1	1	
Non-Peer Reviewed			

PERSONNEL:

For projects that awarded subcontracts in the fiscal year, please provide the number of supported postdocs and students from each subgrantee.

IMAGES AND CAPTIONS (We will also be including images for the annual report.

Please send two of your best high-resolution, color images (photo, graphic, schematic) as a **JPEG or TIFF (300 dpi)** with a caption for each image. If you do not have an electronic version of the image, a hardcopy version may be dropped off at the JIMAR office located in the Marine Sciences Building, Room 312):

- Caption 1: Locations of loggerhead sea turtles in the South Atlantic Ocean after their release from interactions with longline fishing vessels as determined by platform terminal satellite tag technology.

