JIMAR ANNUAL REPORT FOR FY 2009

P.I./SPONSOR NAME: Laurent DAGORN and Kim HOLLAND

NOAA OFFICE (Of the primary technical contract): PIFSC

PROJECT PROPOSAL TITLE: Development of Business Card Tags: Inter-Individual Data Transfer

FUNDING AGENCY: NOAA

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):
The Business Card Tag (BCT) is aimed at increasing knowledge regarding schooling cohesion and inter-species association. The overall objective of the project is to assess the feasibility of a two-way transceiver tag (called 'business card' tag), through:

(1) The development of a two-way 'transceiver tag' prototype. The transceiver tag prototype should be able to identify and store acoustic signals sent by other acoustic tags and transmit its own coded signals. The receiver tag should be small enough to be mounted on/in tunas or similar sized animals

(2) Tests of these prototype tags. The prototype tags will be tested on captive fish (controlled situation) and in situ.

PROGRESS DURING FY 2009 (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):

As stated in the previous report, testing of the new tags is the main objective of Years 2 and following years. The project produced excellent results in 2009.

Test on Galapagos sharks: In May 2008, 4 BCTs were deployed on Galapagos sharks around eco-tourism sites. At the time of the previous report, only one BCT was

recovered. A second BCT was recovered in October 2008 and provided excellent data. The following table gives a summary of the BCT deployments on sharks.

Summary data for Galapagos (*Carcharhinus galapagensis*) sharks equipped with BC tags

BCT Number	Total Length (cm)	Sex	Date Deployed	Date Recovered	Days At Liberty
1	185	M	05/19/08	-	-
2	235	M	05/19/08	06/08/08	20
3	230	M	05/19/08	-	-
4	235	M	05/28/08	10/07/08	132

As results from the 1st recovered tag were detailed in the previous report, we only report here results from the 2nd tag. The second BC tag-equipped shark recaptured (BCT #4) was detected regularly around the ecotourism site for 24 days after release. It then left the area for 104 days (prior to tag recovery) and during this time it detected three other sharks (including another BCT shark) that were beyond the range of the array of fixed receivers. These types of result validate the concept of BC tags because the tagged animal was documenting encounters with other tagged animals at locations important to the animals, not simply where receivers had been moored. The data from the two recovered BC tags are reported in a manuscript accepted for publication in Endangered Species Research as a part of the Proceedings of the 3rd International Biologging Symposium.

Test on large tunas: Because of these successful trials, no changes were requested from the manufacturer (Vemco) and the last 10 remaining BCTs were received in Fall 2008. The principle goal is to try to deploy those tags on large tunas caught around Oahu FADs. Difficulties in finding suitable fish did not allow us to deploy those tags during this year.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph):

The plans for the next fiscal year of the project (July 1, 2009 – June 30, 2010) are to continue testing these new tags. The deployment strategy is to deploy the last 10 tags on large tunas caught around Oahu FADs.

LIST OF PAPERS PUBLISHED IN REFERRED JOURNALS DURING FY 2009, 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.

Holland, K.N., Meyer C.G. and L.C. Dagorn. In Press: Inter-animal Telemetry; Results from First Deployment of Acoustic "Business Card" Tags. *Endangered Species Research*

OTHER PAPERS, TECHNICAL REPORTS, ETC.:

GRADUATES (Names of students graduating with MS or PhD degrees during FY 2009; 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		
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:

- Caption 2: