

JIMAR ANNUAL REPORT FOR FY 2009

P.I./SPONSOR NAME: Kim Holland, Laurent Dagorn, David Itano

NOAA OFFICE (Of the primary technical contract): PIFSC

PROJECT PROPOSAL TITLE: Scaling Up: Linking FAD-associated Local Behavior of Tuna to Regional Scale Movements and Distribution

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. This project is designed to quantify the size of the ecosystem used by tuna found in association with Hawaii FADs. That is "where do they go when they leave here?" This information is of direct applicability to formulating possible management options for Hawaii's fishery and understanding the connectivity between Hawaii and other regions of the Pacific. The methodology involves double tagging yellowfin and bigeye tuna with an acoustic tag and either an implanted archival tag or an externally attached pop-up satellite tag.

PROGRESS DURING FY 2009. The reporting period saw continued high activity with over 30 sea days devoted to servicing the acoustic receiver array and in tagging additional fish. Several fish have been recaptured with times at liberty varying from a few days to several months. Data analysis workshops have been conducted to improve the quality of data management and increase the precision of light-based geolocation estimates. Low numbers of large tuna in the 2008/9 season precluded the use of satellite tags – we intend to continue to tray and deploy these in the next year. Our chances are improved by the establishment of a good working relationship with commercial FAD fishermen working on Maui. These data are currently being analyzed. The only objective not achieved was the release of fish double tagged with satellite tags. This was due to not capturing fish of suitable size that were also in good condition. This size of fish will receive special attention during the next year's effort.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph): The next year's work will see continuation of extensive field work to release additional double tagged fish and

maintain the network of receivers mounted on coastal FADs and other locations. These efforts will be assisted by piggybacking electronic tagging efforts with a new tag-and-release (spaghetti tag) project that will incorporate the use of a commercial pole-and-line vessel. Remaining funds will be used to underwrite additional vessel costs associated with continued high fishing/tagging effort and to purchase additional tags. These funds will also be used to support the Fishery Technician employed for the fishing/tagging/system maintenance effort.

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.

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			
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: Inserting archival tag in double tagged yellowfin tuna