

JIMAR ANNUAL REPORT FOR FY 2011

P.I. NAME: Kevin Weng, Simon Nicol, Dan Margulies, Vernon Scholey

NOAA OFFICE (*Of the primary technical contact*): PIFSC

NOAA SPONSOR NAME: Sam Pooley

PROJECT PROPOSAL TITLE: Ocean Acidification Impacts on Tropical Tuna Populations

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.
- ☐ Mission Support

PURPOSE OF THE PROJECT (*One paragraph*):

The unaccounted impacts of ocean acidification (and warming) upon tuna stocks in the Pacific (and globally) represent a serious risk to the achievement of sustainability based management objectives for both Regional Fisheries Management Organisations and for the policies of sovereign states responsible for tuna fisheries management in the Pacific region. Research has demonstrated that the early life history stages of some fish species (and numerous other marine organisms) are sensitive to ocean acidification levels that are projected to occur by the end of this century. Those findings have significant implications for future recruitment success and population levels for those species. This project aims to elucidate the impacts of projected ocean acidification levels upon processes and life history stages of yellowfin tuna (*Thunnus albacores*) that are considered critical to recruitment success: sperm motility, fertilisation rates, embryonic development, hatching rates, condition, development, growth and survival in pre- and post-feeding larvae. The outputs from this project will reduce uncertainty regarding future stock trends as provided to tuna Regional Fisheries Management Organisations in the Pacific, increasing the likelihood that these organisations can make decisions that ultimately achieve sustainability based management objectives

PROGRESS DURING FY 2011 (*One-two paragraphs*):

Include a comparison of the actual accomplishments to the objectives established for the period, along with reasons for the slippage if established objectives were not met

The finalization of contracts between the University of Hawaii and the Secretariat of the Pacific Community were finalized in February 2011. Since finalization the project Principal Investigators have undertaken the necessary project planning and are preparing for laboratory trials to commence in the Achotines Laboratory of the Inter American Tropical Tuna Commission in September 2011. All equipment necessary for these trials has been purchased.

PLANS FOR THE NEXT FISCAL YEAR (*One paragraph*):

The laboratory trials to elucidate the impacts of projected ocean acidification levels upon sperm motility, fertilisation rates, embryonic development, hatching rates, condition, development, growth and survival in pre- and post-feeding larvae are planned for September 2011. Preliminary analyses are expected to be available in December 2011 and completion of analyses and submission of reports and journal publications expected to be completed by June 2012.

**LIST OF PAPERS PUBLISHED IN REFERRED JOURNALS DURING FY 2011
OTHER PAPERS, TECHNICAL REPORTS, ETC.
PUBLICATION COUNT**

**complete excel attachment (JIMAR publications request)*

None

GRADUATES:

Names of students graduating with MS or PhD degrees during FY 2011; Titles of their Thesis or Dissertation

None

AWARDS:

Name of JIMAR employees or project receiving award during the period, and Name of award

None

PERSONNEL (*on Subcontracts*):

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

None

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:

ACRONYMS: (none)