JIMAR ANNUAL REPORT FOR FY 2011

P.I. NAME: Kevin Weng

NOAA OFFICE (Of the primary technical contact): PIFSC

NOAA SPONSOR NAME: Sam Pooley

PROJECT PROPOSAL TITLE: Impacts of Fishing on Vulnerable Non-target Species at Seamounts

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):
Seamounts have extraordinary levels of endemism and exert a powerful aggregating effect on species, attracting fishes, cetaceans, seabirds and turtles. Only a few of the world’s 100,000 seamounts have been explored, leaving us with a minimal understanding of the biology of seamount organisms. Despite this, seamounts experience intensive fisheries, and interviews of commercial fishermen in Hawaii reveal frequent catches of benthic-pelagic sharks. As a result the Western Pacific Fishery Management Council and NOAA are responsible for the management of species that are potentially endemic, highly vulnerable to fishing, and so poorly understood that they cannot be assessed and for which no definitions of essential fish habitat (EFH) exist. While seamounts have been hypothesized as stepping-stones, we do not know if seamount sharks are isolated populations or if they move between seamounts and landmasses. Deep set longline fishing will be conducted at Cross Seamount to characterize the elasmobranch community. Detailed studies will be conducted for the three highest trophic level benthic-pelagic elasmobranchs, the Cooke shark (Echinorhinus cookei) the sixgill shark (Hexanchus griseus) and the sleeper shark (Somniosus pacificus). A combination of acoustic, satellite and accelerometry technologies will be used to characterize their behavior, habitat use and connectivity with other seamounts and islands. The resulting data will allow definitions of EFH and determination of appropriate management units. The proposal includes a low risk–high reward component, using established methods on new species; as well as a high risk–high reward component, that aims to develop a novel method to study these deep water animals.
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

Characterization of bentho-pelagic elasmobranchs: During our cruises to Cross Seamount we have been unable to capture bentho-pelagic sharks. We will conduct future cruises and increase our targeting of these animals. In order to refine our techniques we have been testing fishing, tagging and sampling methods in waters near Oahu. We have sampled tissues from a number of bluntnose sixgill sharks and deployed one popup satellite tag. This popup satellite tag did not report. We plan to continue this testing program and deploy miniPAT satellite tags.

Determination of fine-scale habitat use: During 2011 the acoustic monitoring array was downloaded. Since we had been unable to place acoustic transmitters in sharks on prior cruises the array did not contain data for these species, though it did collect data on other species in related research programs.

Determination of connectivity and long-range movements: VR2 listening arrays on the Main Hawaii Islands and North West Hawaiian Islands continue to be maintained by University of Hawaii researchers, such that inter-island movements might be detected. Satellite tagging is planned for upcoming cruises.

Studying foraging behavior to reduce by-catch: The Daily Diary accelerometer was to have been housed for use in deep water by the developers at Swansea University, UK. They have been unable to develop a deep water version of the daily diary tag. In the interim, we have begun to explore the possibility of developing an small accelerometer that could withstand the depths occupied by deep water elasmobranchs.

PLANS FOR THE NEXT FISCAL YEAR (One paragraph):


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.
One graduate student supported

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:
Please provide the complete descriptions for any acronyms used in any areas of the report. For example: UH (University of Hawaii)