JIMAR – PFRP ANNUAL REPORT FOR FY 2005

P.I./Sponsor Name: Minling Pan, Ph.D. (Replacing Keiichi Nemoto) and Co-P.I. Michael Parke Ph.D., Pacific Islands Fisheries Science Center. John Sibert, UH, JIMAR, Pelagic Fisheries Research Program

Project Proposal Title:

Spatial Modeling of the Tradeoff between Sea Turtle Take Reduction and Economic Returns to the Hawaii Longline Fishery

| Fun | ding Agency: NOAA |
|-----|---|
| NO. | AA Goal (Check those that apply): |
| | To protect, restore, and manage the use of coastal and ocean resources through ecosystem-base 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 |

1. Purpose of the Project (one paragraph)

The objective of this project is to incorporate a time/area closure model previously developed to estimate sea turtle takes (Kobayshi-Polovina, 2001a, 2001b) into a multilevel and multiobjective programming model developed in previous PFRP projects (Pan et al. 2001, and Nemoto, 2005). This updated model will then be used to estimate economic returns and incidental takes of sea turtles over space and time under existing and potential regulatory policies. Ideally, this model should enable regulators and fishers to develop policies that would direct fishing effort to areas and times that will maximize economic return and minimize protected species interactions.

- 2. Progress during FY 2005 (One-two paragraphs, including a comparison of the actual accomplishments to the objectives established for the period, and the reasons for slippage if established objectives were not met):
- This project started in September 2004. The project made limited progress due to the resignation of the original PI (Keiichi Nemoto) in January 2005. Minling Pan, NMFS economist, took over the project and currently serves as the project PI. A recruitment for a full-time research associate for this project is under process. A selection for a qualified applicant has been made and the new staff member is expected on board

soon. The project is expected to speed up after the full-time research associate comes on-board.

3. Plans for the next fiscal year (one paragraph):

Develops a comprehensive model and a user-friendly framework on the application of economic optimization-theory to natural resource management. This involves evaluating the existing multi-objective and multi-level programming model (MMPM), identifying means for modification to improve the model to better reflect the reality of fisheries industry, including interaction between fisheries and protected species, and to construct the model in a user friendly and short time turn-around framework for regulatory analysis such as trade-off between protected species (sea turtles) reduction and economic returns to the fisheries.

Develops data processors to generate updated parameters from various databases, including the longline logbook data, the data collected by the Hawaii Longline Observer Program, and auction data from United Fishing Agency (UFA) and the State of Hawaii Division of Aquatic Resources (HDAR). Links data processors to the MMPM model, which allows for prompt updating of model parameters and applications.

- 4. List of papers published in refereed journals during FY 2005. N/A
- 5. Other papers, technical reports, meeting presentations, etc. N/A
- 6. Graduates (Names of students graduating with MS or PhD degrees during FY 2005. Provide titles of their thesis or dissertation):

N/A

- 7. Awards (List awards given to JIMAR employees or to the project itself during the period): N/A
- 8. Publication Count (Total count of publications for the reporting period and previous periods categorized by NOAA lead author and Institute (or subgrantee) lead author and whether it was peer-reviewed or non peer-reviewed (not including presentations):

| | JL Lead Author | | | NOAA Lead Author | | | Other Lead Author | | |
|----------|----------------|------|------|------------------|------|------|-------------------|------|------|
| | FY03 | FY04 | FY05 | FY03 | FY04 | FY05 | FY03 | FY04 | FY05 |
| Peer- | | | | | | | | | |
| reviewed | | | | | | | | | |
| Non-peer | | | | | | | | | |
| reviewed | | | | | | | | | |

9. Students and Post-docs (Number of students and post-docs that were associated with NOAA funded research. Please indicate if they received any NOAA funding. For institutes that award subcontracts, please include information from your subgrantees): N/A

10. Personnel:

- (i) Number of employees by job title and terminal degree that received more than 50% support from NOAA, including visiting scientists (this information is not required from subgrantees): 0
- (ii) Number of employees/students that received 100% of their funding from an OAR laboratory and/or are located within that laboratory. 0
- (iii) Number of employees/students that were hired by NOAA during the past year:
- 11. Images and Captions (JIMAR will be including images in the annual report. Please send two of your best high-resolution, color images (photo, graphic, schematic) as a JPEG of TIFF with a caption for each image. Hardcopies of images can be dropped off at the JIMAR office if no electronic versions are available.

• Caption 1: N/A

• Caption 2: N/A