

JIMAR ANNUAL REPORT FOR FY 1999

P.I. NAME: Barbara A. Block and Carol A. Reeb

PROJECT PROPOSAL TITLE: Using microsatellite loci to detect population subdivision in Pacific swordfish, *Xiphias gladius*.

FUNDING AGENCY: Joint Institute for Marine and Atmospheric Research

1. Purpose of Project: We developed eleven microsatellite loci and had used them to detect population subdivision in Pacific swordfish at the end of FY '98. For FY '99, we continued working on analyzing our large data set and writing two manuscripts entitled:

Reeb, CA, L Arcangeli, and B.A. Block. Population structure and migration corridors in the Pacific swordfish, *Xiphias gladius*, as inferred through analysis of mitochondrial DNA. *submitted. Marine Biology.*

Reeb, CA, L Arcangeli, and B.A. Block. The genetic structure of Swordfish (*Xiphias gladius*) populations as inferred through the analysis of eleven microsatellite loci. *in prep for submission to Molecular Ecology.*

In addition, we intended to collect and analyze additional swordfish along the eastern Pacific where an apparent migration corridor had been discovered with our data.

2. Progress during FY 1999: In November, 1998 we submitted one paper to Marine Biology describing the first evidence that Pacific swordfish are not composed of a single population. The paper was revised and resubmitted in early May. This data was from 281 individuals sequenced for 624 base pairs in the control region of mitochondrial DNA. Our analysis included a novel use of linear regressions to support a migration corridor amongst these populations that resembles a U-shape. That is, northern and southern populations are subdivided in the western Pacific but in the east they overlap. The second

