

PFRP Annual Report for FY 2001/02

Evaluating Closed-Area Management Regimes in the Gulf of Mexico, Northwest Atlantic, and Central Pacific Highly Migratory Species Longline Fisheries

P.I. Name: David Kerstetter, Virginia Institute of Marine Science

Funding Agency: JIMAR, Pelagic Fisheries Research Program, University of Hawaii – Manoa

Purpose of the Project:

During the past twenty years, various fisheries management organizations have closed areas of the ocean to longline fishing operations to protect spawning grounds, depleted stocks, or threatened species. Very little analysis has been done about these closures post-implementation to determine if the pre-implementation goals were achieved by these regulatory measures.

The purpose of this study is to examine four areas with management measures that closed or severely restricted longline fishing, with the target protected species noted in parentheses: 1) the 1981 Gulf of Mexico closure (bluefin tuna), 2) the 1999 mid-Atlantic seasonal closure (bluefin tuna), 3) the 1991 Northwest Hawaiian Islands (NWHI) year-round closure (Hawaiian monk seal), and 4) the 2000-01 central Pacific “Judge Ezra” closures (sea turtles). All four closures are examined for effectiveness (i.e., was the expected biological protection actually afforded by the closure?), while future analyses will assess the effects of the closure on the respective fishery (i.e., where did the vessels shift effort and how did landings patterns change?). The results of these analyses will attempt to provide guidance for the protection, if deemed necessary, for species with pelagic fisheries interactions.

On-going research, further detailed below, will continue to evaluate the effects of these latter two closures, as well as assess the effects on the fisheries as a result of these regulations. However, preliminary analysis suggests that, of these four time-area closures, both the Hawaiian monk seal and Gulf of Mexico bluefin tuna closures met their stated goals. The mid-Atlantic bluefin tuna and Hawaiian sea turtle closures are still in the evaluation process.

Progress During 2002:

The majority of the work involved in FY 2001 involved gathering, and in many cases even gaining access, to the data necessary for the stated analyses. Several concessions were made during this process in order to protect confidentiality issues with NMFS, which limited to varying degrees the temporal and spatial coverage of the fisheries involved with the project. I am currently working on finding ways to use the available data within the general analytical framework. In general, broad-scale data from the Pacific are far more accessible than those from the Atlantic, as the Honolulu Lab has taken commendable steps to update summarized data on their website. Significant help was (and still is) received in this data-gathering process from NMFS-Honolulu Lab, NMFS-Science and Technology Office, and NMFS-HMS Division.

Descriptions of the research conducted to date were detailed in the Annual Report for 2001, and work continues along the same general lines. I am now working with Brent Miyamoto at the NMFS-Honolulu Lab to determine whether more detailed data will be available to me and will coincide my attendance at the PFRP PI's meeting this December with additional days for

research. Additionally, I will spend additional time in Silver Spring, Maryland, with the NMFS-Science and Technology Office working with data from the NMFS Southeast Region, which controls the Atlantic longline data records. Although aspects of the project have been delayed because of conflicting research requirements related to my degree program, I believe that the additional time between the start of the research and the conclusion of the project will be beneficial by providing additional data on vessel movements and their representative effects, especially regarding the Hawaii sea turtle-based closure of 2000.

Plans for Next Fiscal Year:

FY 2002 will focus on the actual analysis of these data within the stated formats, with additional data and regulatory actions accommodated as necessary. It is likely that few, if indeed any, further actions will occur in the two Atlantic closed areas, although the sea turtle issue in the central Pacific is still potentially volatile. Interestingly enough, the successes of other closed areas in the Atlantic for swordfish are now prompting calls, however warranted, for expansion of this management tool to other areas.

Specifically regarding this work, I will be examining the catch data on as small a spatial scale as possible (the mid-Atlantic closure is only 1x6 degrees), then using these to qualitatively evaluate – by comparison to the original Federal Register (and other) announcements of these actions – whether they met their stated goal of reducing interactions with the target protected species. This evaluation will also include a review of the management process itself, in the case of the central Pacific, discussing the court-ordered closure and in that of the Gulf of Mexico, the ICCAT management history of that fishery. (Note that these will not be histories of these fisheries per se, but rather focusing on which events were relevant to the closed area management actions.) Finally, I will synthesize all available data and literature and make general predictions of efficacy of closed areas as tools for U.S. pelagic fisheries management.

The project will be completed during the spring of 2003, with the final report distributed for review to the PFRP (via Dr. John Sibert) by April 1, 2003. Following review, the report will be adapted for submission and eventual publication in a refereed journal. Additionally, the project will be formally presented during a session of the 54th Tuna Conference, tentatively scheduled for May 2003, at Lake Arrowhead, California.

List of Papers Published in Refereed Journals During FY 2001/02:

No papers were published in refereed journals during 2001 or 2002.

Other Papers, Technical Reports:

A poster presentation of the preliminary work was given at the 52nd Tuna Conference, May 21-24, 2001, at Lake Arrowhead, California. A copy of the poster in electronic MS PowerPoint format is available from the author on request.