PFRP Annual Report for FY 2001

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

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Funding Agency: JIMAR, Pelagic Fisheries Research Program, University of Hawai'i – 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 2001:

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. In general, data from the Pacific were far more accessible than those from the Atlantic. Significant help was received in this process from NMFS-Honolulu Lab, NMFS-Science and Technology Office, and NMFS-HMS Division.

The framework for evaluating these closed areas includes the following areas: 1) What was the stated goal of the closure? What were the expected impacts to the affected fisheries as a result of closures? 2) Did these closures meet their stated goal in terms of both reducing catch of the target protected species and for the fleet itself? And 3) What can be gained from an analysis of pre- and post-closure data in terms of total catch and catch rates, number of participating vessels, and target species populations?

As previously presented, the following preliminary conclusions have been reached, although only representative of the 2000 data available at the time:

1) Gulf of Mexico Closure (Bluefin Tuna):

Certain measures remain in effect because of the ICCAT Recommendation of 1982. The 1999 HMS FMP public comment period generated significant comment that these regulations were only increasing bluefin tuna dead discards, although the United States reported an average of 147 metric tons of dead discards annually since 1988 (range: 85–216) (SCRS, 2000). The United States is under an ICCAT Recommendation to reduce these dead discards and has such dead discards counted against our national quota. However, the public comments on the waste of these dead discards in part prompted NMFS to begin a detailed analysis of catch rates by area for a more effective means to reduce total longline discards.

While largely replaced by other measures in the HMS FMP, the original regulations likely had a positive effect by preventing the development of a domestic bluefin tuna directed fishery in the GOM. With the associated support facilities, e.g., fuel stores, boatyards, and processing locations, the development of such a fishery only to have it closed after the ICCAT Recommendation of 1982 would have had serious adverse effects on local economies in the GOM region. Although the western Atlantic bluefin stock appears to be recovering, it remains highly unlikely that this fishery will be allowed to be reopened.

2) Mid-Atlantic (Bluefin Tuna):

The closed area described has only been effective since June 1999, with final data from these two years still being compiled. Actual analysis of these data will begin as the data become available from NMFS. However, the current allowance of landing one bluefin tuna when landing quantities of other targeted species still allows for the potential of "high-grading," in which the largest or most valuable fish is retained for later sale while discarding any previously caught of lesser value. Currently, the agreement by NMFS to allow a "one-time" shift of bluefin quota to fishermen in North Carolina has caused concern that a new fishery may develop. While unlikely to have impact upon this closed area, it will also be addressed in this analysis.

3) NWHI (Hawaiian Monk Seal):

Of all these closures, this is the one that clearly has succeeded its stated policy objectives. During the 1990 fishing year, three seals were hooked and 13 more had "unusual wounds." This increasing interaction rate prompted the promulgation of an emergency rule that subsequently was made permanent in 1991 as Amendment 3 to the Pelagics FMP.

Since its implementation, not a single monk seal has been observed or reported through NMFS fisheries logbooks and observers to have interacted with longline fishing gear in the Northwest or Main Hawaiian Islands. However, there has been one report in 1994 of a female seal near French Frigate Shoals with a hook in her mouth similar to those used by swordfish vessels (Dalzell, 1999). Even if this interaction was a result of longline gear, one hooked seal remains a substantial reduction from previous rates.

4) Central Pacific (Sea Turtles):

Court orders from 1999 have effectively shut down the Hawaiian longline fleet, with the recent exemption of a small, experimental fishery in 2001 to explore gear modification as a means to reduce turtle bycatch. Many of these vessels participate in an annual migration to fishing grounds closer to the mainland, and there are indications that some of these vessels may

not return to Hawaii given the current regulatory environment. This is causing concern in the environmental community, which has filed suit in Federal court to block the likely expansion of effort in the Pacific Regional Fishery Management Council jurisdiction. The new Highly Migratory Species FMP in the Pacific RFMC also must now take this expansion into account. More importantly, these court orders have not affected the foreign longline fleets, many of which continue to operate in the same fishing grounds that are now prohibited areas for the U.S. longline fleet. It is not surprising that many fishermen feel that these foreign fleets will expand effort to replace that lost from the removal of U.S. vessels.

This closure is still in the process of court-guided reconciliation, with a final outcome not likely for quite a while due to protracted litigation. A draft Environmental Impact Statement (DEIS) was circulated by NMFS in 2001 for public comment. The NMFS "preferred alternative" in the DEIS is one of the alternatives being evaluated in this analysis.

The longline fishery sector contributes a significant amount to the Hawaiian economy in terns of both inputs and outputs. A study by Sharma et al. (1999) found that this sector generated $98.2 million of output, $37.1 million in value added, and $33.2 million of labor income (in 1992 dollars). While the closures may temporarily reduce the pressure on the various turtle populations, expansion of foreign effort would negate any gains and likely reduce populations even further. The loss of this economic sector would adversely affect the Hawaiian economy as a whole, while these closures would have minor, if any, long-term gains for their intended purpose.

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 any, further actions will occur in the two Atlantic closed areas, although the sea turtle issue in the central Pacific is still potentially volatile.

Specifically, I will be examining the catch data by at least 5x5 degree grids, 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. However, these will not be histories of these fisheries per se, but only focusing on which events are relevant to the closed area management actions.

List of Papers Published in Refereed Journals During FY 2001:

No papers were published in refereed journals during 2001.

Other Papers, Technical Reports:

A 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.