Non-tournament Highly Migratory Species Recreational Landings Reporting for Private Boats in Puerto Rico

Phase One: Fishery Characterization and Outreach

Prepared by:

MRIP Highly Migratory Species Work Group

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Puerto Rico Department of Natural and Environmental Resources

Marine Resources Division

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Executive Summary only

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Executive Summary

In response to an International Commission for the Conservation of Atlantic Tunas (ICCAT) recommendation, starting in 2001 the U.S. agreed to limit annual recreational landings of Atlantic blue and white marlin to 250 fish combined. In an effort to monitor Atlantic billfish landings, NOAA Fisheries has implemented a mandatory reporting program whereby anglers must report all non-tournament landed blue marlin, white marlin, sailfish, and swordfish via phone or internet. However, compliance with this mandatory requirement is thought to be extremely low, particularly in Puerto Rico. Non-tournament landings estimates and release estimates for billfish and other highly migratory species (HMS) in Puerto Rico based on NOAA Fisheries surveys are typically imprecise and may also be biased due to survey design issues. This project addresses the identified need to improve data collection approaches for estimating total catches and landings of billfish and other HMS in Puerto Rico. This report describes Phase One of the project: characterization of Puerto Rico's HMS recreational fishery. Phase Two of this project will entail actual development and implementation of a new HMS recreational data collection pilot in Puerto Rico.

A telephone questionnaire was developed with input from Puerto Rico Department of Natural and Environmental Resources (DNER) and NOAA Fisheries biologists, Puerto Rico Sport Fishing Association leaders, HMS charterboat captains, and Caribbean Fisheries Management Council staff. The questionnaire included questions related to HMS fishing avidity, angler characteristics, target species, access site types, fishing times, multiday fishing trips, seasonal trip distribution, and HMS catches. DNER outreach efforts aimed at increasing survey awareness and improving cooperation rates included meetings with fishing industry representatives, attending HMS tournaments, notification letters to HMS anglers, and notices published in sport fishing magazines. The initial goal was a complete census of all 2007-2008 Puerto Rico HMS Angling category permit holders. DNER attempted to contact 810 out of 1,011 permit holders from November 2008 through May 2009. Completed interviews were conducted with 405 permit holders for a 50% completion rate. Only about 1% of those contacted refused the survey.

Nearly half of those interviewed considered themselves "recreational anglers," 22% "sport fishermen" and 31% both "sport and recreational." Compared to "recreational anglers," "sport fishermen" 1) reported taking nearly twice as many HMS trips, on average, 2) were more likely to fish for a particular species on HMS trips, and 3) were more likely to fish in HMS tournaments. Respondents who self-identified as both "recreational and "sport" were more similar to "sport fisherman," in terms of HMS avidity, propensity to target a particular species, and tournament participation, than they were to "recreational anglers."

Two-thirds of interviewed permit holders indicated they fished for HMS outside of tournaments during the previous 12 month period. On average, respondents indicated having about 18 years of experience fishing for HMS. Respondents reported taking an average of 8.6 non-tournament HMS fishing trips in the past 12 months. The HMS recreational fishery occurs year round in Puerto Rico with peak effort from May through August. The majority (64.5%) of respondents indicated their primary access site for HMS fishing was a marina, about one-fourth used a boat ramp, and only 7.8% used a personal dock to fish for HMS.

Slightly over two-thirds (68.7%) of those who indicated fishing for HMS outside of tournaments in the past year said they plan their trip around a particular target species. Of the respondents who had fished for HMS outside of tournaments, 80.5% targeted billfish while 27.5% targeted tunas on at least one of those trips. Sharks and swordfish are considerably less important as recreationally target species in Puerto Rico. The large majority of respondents (85.7%) indicated they "always" target blue marlin when fishing for billfish. About one-half of respondents said they "never" target white marlin when fishing for billfish, and 42% said they "never" target sailfish. Interestingly, respondents who identified themselves as being both "sport and recreational" were more likely to target white marlin (only 37.3% said "never") than those who indicated they were one or the other ("sport" 60.4% "never"; "recreational" 60.8% "never"). Yellowfin tuna was the most targeted species on trips targeting tuna, followed by blackfin tuna.

Only 2.3% of the non-tournament HMS fishing trips reported were overnight trips consisting of more than one fishing day. Of those respondents who fished for HMS outside of tournaments, 10.7% indicated fishing for HMS in the Dominican Republic and 11.1% in the U.S. Virgin Islands. Nearly 80% percent of the interviewed permit holders said that they go to port when fishing for HMS in these more distant locations.

HMS Angling category permit holders were asked to recall the number of HMS fish harvested and released in the past 12 months. Of those respondents who fished for HMS outside of tournaments, 37.4% indicated they had landed at least one tuna and only 10.7% landed a shark. About half indicated they had caught and released at least one blue marlin in the past 12 months. Yellowfin tuna was the top HMS species harvested, while blue marlin was the most released HMS species. Over 98% of billfish reported as caught were released alive. About 14% of respondents indicated they had caught a previously tagged billfish. Only about half of those who caught a tagged fish said they report the tags they find. About half of all respondents indicated they had fished in at least one HMS tournament in the past 12 months.

Results suggest a very high rate of non-compliance in Puerto Rico for reporting billfish through the NOAA Fisheries Automated Landings Reporting System (ALRS). In this study, respondents reported landing a total of 18 blue marlin, 2 white marlin, 4 sailfish, and 3 swordfish in the previous 12 months. These should be considered minimum recreational landings estimates since they don't include landings from over 600 Angling category permit holders not interviewed, nor do they include HMS Charter/headboat category vessel landings. Although direct comparisons are difficult, since permit holders were interviewed over a 7 month period (November 2008 through May 2009), ALRS reported billfish landings for Puerto Rico from November 2007 through May 2009 are still considerably smaller (i.e., 6 blue marlin, 0 white marlin, 1 sailfish, and 0 swordfish). Comparisons with the DNER HMS tournament program, which covers all billfish tournaments on the island, suggest that, at least for 2008, far more billfish were landed outside of tournaments than during tournaments in Puerto Rico.

Summary of Data Collection and Management Recommendations

- NOAA Fisheries should consider piloting an HMS catch card program in Puerto Rico in an attempt to improve the accuracy and precision of billfish landings estimates.
    - NOAA Fisheries should work closely with the DNER, Puerto Rico Sport Fishing Association leaders, charterboat captains, marinas operators, and other affected stakeholders throughout all phases of this pilot. A widespread, bilingual outreach program targeting HMS anglers, captains, and fishing industry representatives should be launched prior to data collection implementation.

- NOAA Fisheries should explore options for improving the accuracy and precision of billfish release estimates and tuna landings estimates in Puerto Rico. Possible alternatives include:
    - Increase MRFSS dockside sample sizes, particularly in months when the majority of HMS are caught (e.g., wave 3 through 5). More investigation is needed to determine how much additional sample size, and at what cost, would be needed to obtain precision levels within an acceptable range for management and assessment purposes. Precision of MRFSS Puerto Rico HMS catch estimates will also likely be improved by switching to a list frame (or dual-frame) approach for estimating fishing effort, as part of the proposed MRIP redesign of MRFSS.
    - Conduct a specialized HMS survey with Angling and Charter/headboat category permit holders. A specialized HMS survey in Puerto Rico could also be used to obtain valuable information regarding 1) numbers of billfish hooked but lost, 2) post-release mortality variables (i.e., hook type and location, fight time, and fish condition), and 3) tagging.
        - NOAA Fisheries should consider using Internet and email surveys for HMS in Puerto Rico since three-fourths of those interviewed indicated a willingness to participate in online surveys, and two-thirds provided an email address.
- NOAA Fisheries should investigate ways to improve the accuracy and completeness of contact information provided by anglers when they apply for an HMS permit.
- NOAA Fisheries should develop an educational outreach message aimed at Puerto Rico HMS anglers and captains regarding voluntary tagging programs, how to report tags, and the scientific importance of such programs.