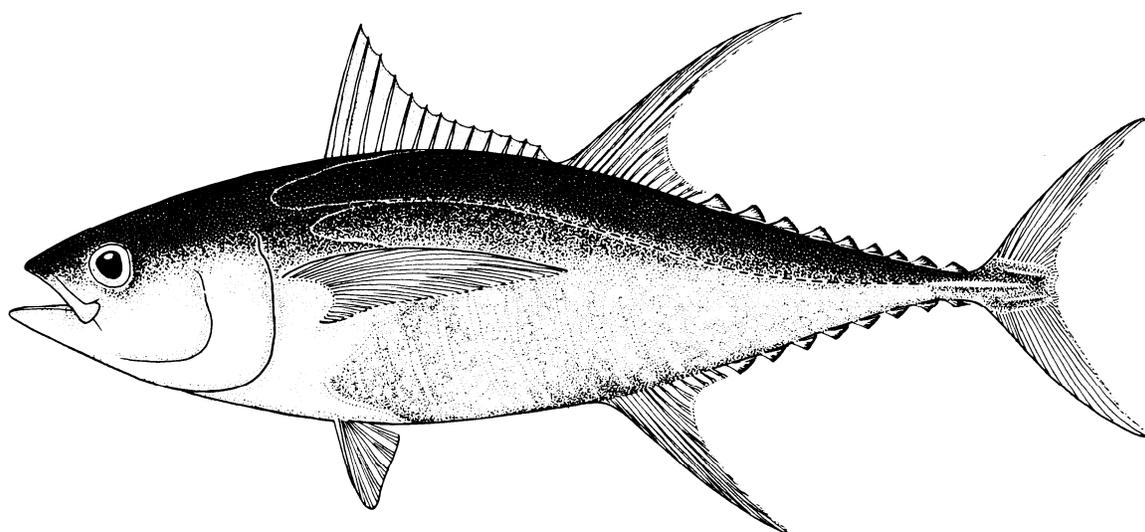


# **Characterization of Rod and Reel Highly Migratory Species Fisheries in the U.S. South Atlantic and Gulf of Mexico**



Prepared by:

MRIP Highly Migratory Species Work Group

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**Executive Summary Only**

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## Executive Summary

Recreational fisheries targeting highly migratory pelagics such as tunas, billfish, and sharks make up a relatively small proportion of all recreational saltwater fishing effort. Trips directed at highly migratory species (HMS) can differ from more typical near shore fishing trips in many attributes including fishing locations, access sites, return times, tournament participation, and perhaps most importantly species composition and catch rates. Such differences, combined with the “rare event” nature of HMS fishing trips can often present unique sampling challenges. Generalized saltwater angler surveys aimed at estimating catch and effort for all species often do not produce very precise or accurate estimates for many highly migratory species. The purpose of this project was to characterize the HMS fisheries in the Gulf of Mexico and South Atlantic as an initial step towards evaluating the need for alternative data collection methods to improve on the accuracy and precision of HMS data in these sub-regions. The survey population included all HMS Angling (6,239) and Atlantic Tunas General (867) category permit holders whose principal port state was in North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, or Texas. HMS Charter/headboat category (185) permit holders in Texas were also surveyed. A contractor was hired to implement a telephone survey of all permit holders on these lists (i.e., attempted census). The telephone questionnaire focused on basic characterization questions such as how often, where (access sites) and when (times, seasons) do anglers fish for HMS, what species do they target, and do they participate in tournaments. The questionnaire was pre-tested by five HMS permit holders in the study area. A pre-notification letter was sent to each permit holder several days before dialing began. The CATI telephone survey was conducted during a three week period in September 2008. A total of 5,098 completed interviews were conducted out of 7,291 permit holders attempted for a 70% completion rate.

Private boat (Angling and General categories) permit holders reported taking, on average, about 6 HMS trips per year in the Gulf of Mexico and South Atlantic. Recreational HMS fishing occurs year-round from North Carolina through Texas. Peak months are July/August in the Gulf of Mexico and May/June in the South Atlantic. Yellowfin tuna is the most frequently targeted and caught HMS managed species throughout the region. Although not managed by NMFS, blackfin tuna are also highly pursued, particularly in the Gulf. Sailfish, blue marlin, and white marlin are all important target species for billfish anglers in the Gulf and South Atlantic. Although caught and released in large numbers, the majority of blacktip sharks are caught incidentally by anglers targeting other (non-shark) species. About 1 out of every 10 HMS Angling category vessel trips in the region is associated with a fishing tournament. Results suggest that a lot of these HMS tournaments are not complying with the federal registration requirement.

The potential for bias associated with under-coverage of restricted access site HMS trips is relatively high and should be addressed in the design of future recreational HMS surveys in this region. One out of every four permit holders indicated using a personal dock as their primary access site for HMS fishing. Prevalence of private dock usage varied greatly by state (e.g., Alabama nearly 40% versus Louisiana only 13%). Both species targeted and HMS catch rates varied considerably by primary access site type. Billfish were far more likely to be targeted on trips returning to personal docks than on trips returning to public boat ramps. The opposite was true for trips targeting sharks. Angling category vessels returning to personal docks reported

catching fewer sharks but more billfish per trip than vessels returning to public boat ramps. Differences between personal dock trips and marina trips were also found for particular state/species combinations, although these differences were generally smaller and less consistent than comparisons between personal docks and public boat ramps. Considering the differences found between personal dock and public boat ramp HMS trip catch rates, the potential for bias associated with under-coverage of private access HMS trips should be positively correlated with both the relative prevalence of inaccessible personal dock trips, and the proportion of all intercepted HMS trip interviews conducted at public boat ramps.

Regional differences were found between the South Atlantic and Gulf in potential bias associated with under-coverage of trips returning during off-peak sampling times. Overnight fishing trips are an extremely important component of the Gulf of Mexico HMS fishery but considerably less common in the South Atlantic. Potential bias associated with under-coverage of trips returning during off-peak times (i.e., late night and early morning) is a bigger concern in the Gulf. Comparisons between MRFSS assignment end times and reported HMS trip return times also revealed a large mis-match in the Gulf of Mexico. Seventy percent of Gulf Angling category permit holders indicated their most common HMS trip return time was between 5:00 pm and 10:00 pm. By contrast, 94% of all MRFSS Gulf assignments (across the same cells as the characterization survey) ended at or before 5:00 pm. MRFSS data on interview assignment end times suggests that for the South Atlantic the “peak” return time window for HMS trips is more adequately being covered by the survey.

Characterization survey results suggest that, in addition to lacking the desired level of precision, MRFSS intercept survey catch rates are biased low for some of the most frequently targeted and caught HMS species in the Gulf of Mexico and South Atlantic. Biased MRFSS catch rates for highly migratory species may be due to a combination of under-coverage of overnight HMS trips, trips returning to private access sites, and trips associated with tournaments, as well as other factors. If the management and assessment of these species rely upon precise and accurate total catch and landings estimates for the recreational sector, NMFS should consider implementing alternative data collection approaches in the region. Characterization results from this study can be used to either implement a new data collection pilot for HMS in the Gulf of Mexico and South Atlantic or to assist in the redesign of the MRFSS to more adequately cover “rare event” highly migratory species.

In addition to yellowfin and blackfin tuna landings, other commonly reported caught (although mostly released rather than landed) HMS in this region include skipjack tuna, bull shark, sand tiger shark, blue marlin, white marlin, and sailfish. Prospective survey design changes associated with the replacement of MRFSS with MRIP will likely improve the quality of catch estimates for these species in both sub-regions. However, more significant survey design changes and sample size enhancements will likely be needed in the Gulf of Mexico to attain the same level of accuracy and precision. Therefore, a specialized survey focused on HMS fishing may be a more efficient and cost effective way to improve the accuracy and precision of catch estimates for these species in the Gulf of Mexico. For both sub-regions the relative advantages and disadvantages of modifying a generalized survey, such as the MRFSS, to accurately and precisely estimate rare event HMS catches must be weighed against those of implementing a specialized data collection program focused specifically on HMS. This decision should be based

on several factors including: 1) the specific management or stock assessment need for a specified level of data quality and timeliness for particular species or species groups, 2) what changes to the MRFSS are actually implemented in the coming years under MRIP, and if this re-design will accommodate the need for improved data on “rare event” species in general, and 3) the relative cost associated with each approach.

For species that are infrequently landed (e.g., billfish, swordfish, and most shark species), even on directed HMS trips, accurate and precise landings estimates will not be attainable through modifications of a generalized survey such as the MRFSS, and may not even be feasible or cost effective through a specialized survey approach. An attempted census of all landings that is widely publicized, requires mandatory reporting, has adequate enforcement, and can be independently validated may be the only way to achieve the desired level of data quality for these species. Results from this study could also inform decisions regarding where and for what species a catch card census type programs might work, and what special provisions would need to be put in place to increase motivation to comply. For example, characterization survey results suggest that a catch card program may be more effective in Louisiana, where personal dock use is relatively small (13%), than in Alabama where 39% of HMS permit holders use personal docks. Boats returning from HMS fishing “after hours” when landings tags and catch cards are not available is more of a problem in the Gulf than South Atlantic. A catch card program implemented in the Gulf would need to accommodate HMS trips returning “after hours” (i.e., after marina operated reporting stations have closed). Characterization survey results indicate that nearly one of every three HMS trips in North Carolina returns to a private dock and another 25% return to a public boat ramp. Follow-up validation studies are needed to determine whether HMS landings from trips returning to North Carolina sites that are not official catch card reporting stations are being reported.

### ***Summary of Data Collection and Management Recommendations***

- If important for HMS management and assessment, improvements in the accuracy and precision of recreational yellowfin tuna landings estimates and skipjack tuna, bull shark, sand tiger shark, blue marlin, white marlin, and sailfish release estimates could likely be achieved either through 1) an MRIP redesign of MRFSS that accommodates “rare event” HMS, or 2) implementation of a new data collection approach focused specifically on offshore fishing for large pelagics in the Gulf and South Atlantic.
  - Results suggest that more substantial changes may be needed to attain the desired level of accuracy and precision on HMS catch in Gulf of Mexico compared to the South Atlantic. A specialized data collection focused on large pelagics may be a more efficient and effective way to improve HMS estimates in this region.
- If implemented, an MRIP redesign of MRFSS to improve HMS data should 1) address potential under-coverage biases (private access, return times, tournaments), 2) increase sample sizes in cells with HMS catches, and 3) utilize a list frame (e.g., saltwater license, angler registry, HMS permit list, or some combination) approach for estimating effort.
- Private access trips are a significant component of the HMS recreational fishery in the South Atlantic and Gulf of Mexico. Differences in catch success and target species likely

exist between private access and public access trips for particular survey strata. Future HMS data collection programs should make every effort to address under-coverage of private access trips and include them in catch rate calculations. More emphasis should be placed on sampling boats at fuel docks and a question should be added to intercept interviews to determine where these boats are returning to.

- Overnight trips are a significant component of the HMS recreational fishery in the Gulf of Mexico. Potential bias associated with under-coverage of HMS trips returning during off-peak times should be addressed. Further studies are needed to compare HMS catch rates and target species across different return time blocks. Future surveys should address under-coverage due to return times by attempting to match sampling coverage times with the actual distribution of trip return times. Since return times for HMS trips are likely different from non-HMS trip return times this may require a unique HMS stratum for sampling or a specialized survey focused only on HMS.
- NMFS should explore the feasibility of implementing either HMS catch card or landings tag programs throughout the South Atlantic and Gulf to improve landings estimates of billfish and swordfish. Landings of certain shark species and rarely landed tunas in these regions (bluefin, bigeye, albacore, and skipjack) could also potentially be improved through an enforceable catch card or landings tag program.
- Results suggest there is either a considerable amount of confusion or blatant disregard concerning the differences between HMS rod and reel permit categories, and the rules and restrictions associated with each. NMFS should develop an outreach message aimed at informing and educating HMS captains about the different types of permits available, what each permit allows and doesn't allow, and the consequences of violating those rules.
- Results suggest that a large number of HMS tournaments are not complying with the mandatory registration requirement in the South Atlantic and Gulf. An educational outreach effort may also be needed to better inform HMS tournament directors and participants of the federal requirement to register their tournament and, for billfish tournaments, to report their catch and effort.
  - An attempt should be made to contact organizers of HMS tournaments mentioned by permit holders during the characterization interview that could not be matched to the registration list. Routine internet searches should be conducted to find HMS tournaments that have not registered.