Tournaments as a Research and Data Collection Device

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INTRODUCTION

Big game fishing tournaments are valuable economic resources in many areas of the Caribbean. They attract tourists who bring their families, fill motel and hotel rooms, eat in local restaurants, shop in local establishments, and provide at least seasonal employment for many local residents. You have heard previous speakers deal with rules and regulations, release aspects, and other criteria for establishing and running a successful tournament. I would like to offer another side to this scenario, one that I believe is essential to the continued well being of the resource on which we are focusing all this attention this morning — the fish.

Big game fishing tournaments are valuable sources of data for marine scientists. The accumulation of biological and statistical data on billfishes is ordinarily a slow process, affected by the extremely broad geographic distribution of the species and by the "rare event" nature of the capture of marlins in particular. At tournaments, however, effort is centralized and then concentrated in a fairly restricted area for a given period of time. Sampling for statistical data is fairly easy and the availability of specimens for examination is usually fairly high.

Although the results of a single tournament cannot be considered as a valid indication of abundance trends, we believe that catch and effort data from a sufficient number of tournaments over a fairly broad area and time span can provide meaningful indications of changes in population abundance of billfishes. Under this premise, in 1972 the National Marine Fisheries Service established a program of sampling at billfish tournaments along the east coast of the U.S., in the Gulf of Mexico, as well as in the Bahamas and other areas of the Caribbean. In the past fifteen years, our coverage has steadily expanded from 23 tournaments and about 20,000 hours of fishing effort in 1972 to 100-120 tournaments and around 70,000 hours of effort annually over the past few years.

SPORADIC DATA

Although we have some coverage over much of the seasonal range of blue and white marlin in the western Atlantic, sampling in some areas is minimal and provides less meaningful data than other more heavily sampled areas. We have good continuous coverage along the U.S. gulf coast and in the Bahamas, for example, but our coverage in the Caribbean is weak and limited to a few

tournaments at a limited number of locations. For Blue Marlin, in particular, coverage throughout the Caribbean is critical to any comprehensive evaluation of catch and effort since this area constitutes the center of this species' distribution in the western North Atlantic.

An examination of CPUE (catch-per-unit-effort) from several areas in the Caribbean compared to the Bahamas clearly shows that wide fluctuations in CPUE are evident in most of the Caribbean tournaments because of our limited and isolated sampling.

In the Bahamas, however, we have fairly consistent coverage of a significant number of tournaments extending almost the full length of the fishing season. CPUE over the past fifteen years displays none of the large year to year fluctuations that are evident in other areas of the Caribbean.

Although many marlin tournaments are changing their format to emphasize release through minimum size restrictions, total release, or tag and release, important biological data are available at most tournaments. Size and sex data have been recorded from some areas along the U.S. coast and in the Caribbean but comprehensive data on seasonal and geographic distribution by size and sex are not available. These data are critical for any understanding of spawning areas and concentrations, areas and seasons of initial recruitment to the fishery, and seasonal separation by size and sex. We know, for example, that small Blue Marlin (less than 200 lbs) concentrate at certain times of the year off Jamaica and Puerto Rico. The Virgin Islands, however, generally produces much larger Blue Marlin on the average and most of these fish are females. We have no clear understanding of the seasonal or geographic location of concentrations of small juvenile Blue Marlin (less than 100 lbs.), for example. Are there areas in the Caribbean where large, female Blue Marlin are abundant? Where and when are the spawning locations? Where is the nursery area for very young Blue Marlin in the Caribbean?

IMPORTANT DATA & OBTAINING IT

Okay — you decide to set up a sampling system at a marlin tournament in your area. What kinds of data are important and how are they best obtained? The basic data requirements are minimal and very simply boil down to how much effort and what was the catch by species. Additional but valuable data consist of certain environmental and biological data.

We have for the most part in our sampling relied on direct intercept interviews to obtain data. Our samplers attend tournaments and are dockside at the end of the day to interview each returning fishing crew and record the catch results.

Most tournaments establish a committee boat, to which all fishing boats report their hook-ups and then the result; whether the fish was lost, boated, or released. The committee boat does not necessarily have to be a boat but can be a

shoreside radio. The complete days fishing activity can then be collected from the committee boat and direct sampling does not have to be conducted. This procedure is especially valuable if there are a large number of boats in the tournament or if they are scattered out over several different marinas.

We use the number of fish hooked as our catch portion of the catch-per-unit-of-effort equation, however, in reality it turns out to be hooked-per-unit-of-effort. At some tournaments this more detailed information might not be available. Total catch by species, however, is almost always available and can be retrieved at the end of the tournament from tournament officials along with a list of competing vessels and the number of fishing days and fishing hours per day.

DATA NETWORK

Last year in Bermuda, I suggested that it might be appropriate to form a cooperative statistical gathering system throughout the Caribbean for large pelagics with an emphasis on billfishes. Collecting catch and effort data from tournaments is an easy and efficient way to begin such a project with data from local recreational and artisinal fisheries just a step away. I sincerely believe that a widespread and comprehensive data collection network would provide valuable information on the status of stocks in the Caribbean and would contribute significantly to our overall knowledge of billfish populations in the western Atlantic.

CONCLUSION

In recent years a great deal of attention has been focused on billfish populations in the Caribbean. Part of this interest is due to reports of heavy longlining activity in the area by a number of different countries with large catches of blue and white marlin being recorded. Secondly, in many areas of the Caribbean, there is almost a total void of data on the catch of billfishes. Some countries, however, are collecting data from their pelagic fisheries and in some cases the landings of billfishes has been significant. Although catches may seem to be relatively small for any single country, the total overall catch throughout the Caribbean is believed to be substantial, and the lack of data on this harvest is seriously impacting efforts to conduct stock assessments for blue and white marlin in the Atlantic. In response to these problems, the International Commission for the Conservation of Atlantic Tunas (ICCAT) established an Enhanced Billfish Research Program with emphasis to be placed on obtaining data on the catch of billfishes by longliners operating in the Caribbean. To complement this effort, Caribbean nations are being asked to assist in any way possible to obtain billfish catch data from their area. Tournament sampling is an easy and productive way to begin to accumulate this information. The next time a tournament is organized in your area, remember that the acquisition of catch and effort data is equally as important as rules, fishing times, entertainment, etc.,