

**PROGRESS OF THE ICCAT ENHANCED RESEARCH PROGRAM
FOR BILLFISH IN THE WESTERN ATLANTIC OCEAN DURING 2008**

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SUMMARY

Research activities of the ICCAT Enhanced Research Program for Billfish in the Western Atlantic Ocean during 2006 are summarized by location and research objective. At-sea sampling with observers on Venezuelan industrial longline vessels accomplished 11 trips from August 2007 through July 2008, and more trips are targeted before the end of the year. Significant biological sampling was also accomplished in Bermuda and the US, where gonads from several large blue marlin were obtained, including two specimens well over 1,000 pounds. Shore-based sampling of billfish landings for size frequency data, as well as tournament sampling was accomplished in Grenada, Bermuda, and Barbados. Program participants in Venezuela, Grenada, and Barbados continued to assist in obtaining information on tag-recaptured billfish, as well as numerous sharks, in the Western Atlantic Ocean during the last quarter of 2007 and first 3 quarters of 2008, a total of 59 tag recovered billfish, 22 blue marlin, 23 white marlin, 12 sailfish and 2 sharks..

KEY WORDS: *Billfish, Western Atlantic Ocean, Research coordination*

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INTRODUCTION

The following summarizes research progress according to location and/or type of research activity.

Research activities during 2008 began immediately after the SCRS meeting in October, 2007. The objectives in the initial program plan in 1986 (Appendix to Annex 12 of Report of Biennial Period, 1986-87 part 1) have not changed, and include: (1) Provide more detailed catch and effort statistics; (2) Initiate and expand the ICCAT billfish tagging program; and (3) Assist in collecting data for age and growth studies.

The two locations for intensive scientific study given in the original plan remain the Caribbean Sea and the west coast of Africa. The overall program coordinator during 2008 was Dr. David Die (U.S.A.); Dr. Eric D. Prince (U.S.A.) was coordinator for the western Atlantic Ocean, and Mr. Paul Bannerman (Ghana) coordinated activities for the eastern Atlantic Ocean.

Starting in October, 1998, there were changes in the financial structure of the Program and these changes are detailed in the financial report for the 1998 SCRS. In terms of affecting research activities, scientists collaborating in the ICCAT Enhanced Research Program for Billfish (IERPB) were asked to make requests for release of funds directly from the ICCAT Secretariat and these requests were then verified by area coordinators. Reductions in contributions to IERPB were again a problem in 2006, as they had been the previous year. Due to a reduction in available funding, the research activities for 2008 operated at about 50% compared to previous fully funded years. The lack of funding for the program over the last two years is now becoming a factor relative to the amount of work that can be carried out. The following coordination activities were realized by this program during 2008 the western Atlantic Ocean.

OBJECTIVE 1 -- LANDING STATISTICS

The following summarizes research progress according to location and/or type of research activity:

Barbados. The shore-base sampling in Barbados was not conducted due to low fishing effort but data from several recreational billfish tournament were obtained in 2008. Summaries of catch and effort data from these recreational billfish tournaments are normally submitted to the western Atlantic Coordinator at the end of the year. Dr. Hazel Oxenford, billfish coordinator for Barbados, has initiated tagging activities from several of the recreational billfish tournaments during the last few years.

Bermuda. Dr. Brain Luckhurst of the Bermuda Division of Fisheries continued to collect catch and effort statistics from billfish tournaments at this location. However, Dr. Luckhurst retired in June, 2008, and it is uncertain who will take over his responsibilities at this time. Bermuda continued to collaborate in collecting biological material from its billfish tournaments during 2008.

Brazil. Dr. Alberto Amorim of Institute de Pesca continued his billfish conventional tagging activities in 2008. With funding from the National Marine Fisheries Service (USA) and the Special Secretariat of Fisheries and Aquaculture (Secretaria Especial de Aqüicultura e Pesca- SEAP/ PR; Brazil), Dr. Fabio Hazin and Dr. Paulos Travassos of the Federal Rural University in Pernambuco continued a joint billfish research program in 2008 with Dr. David Die (UM/ RSMAS), Dr. Mahmood Shivji and Dr. David Kerstetter (NSU), and Dr. John Graves of the Virginia Institute of Marine Science. Work in 2006 and 2007 under this program focused on billfish interactions with pelagic fishing gears, including circle and J-style hook comparisons in the equatorial pelagic longline fishery; tagging of blue marlin, white marlin, and sailfish with popup satellite tags; age and growth and reproductive biology of blue and white marlins. A graduate student from Brazil visited the Southeast Fisheries Science Center for 3 months during 2007 and worked with Dr. Kerstetter and SEFSC staff in order to analyze data from popup satellite archival tags; while a PhD student spent a similar time in UM/ RSMAS, to adjust the methodology used in the age and growth study in 2008. Biological samples for genetic analyses from Brazil were also obtained in 2008. Additional details on this program, including future research plans, can be found in 2008 SCRS working documents.

Grenada. The Ministry of Industrial Development and Fisheries (MIDF) continued limited shore-based sampling activities of the artisanal fisheries during the 2008 season. The MIDF also notified the western Atlantic

Coordinator that a transportation problem exists that currently is preventing shore based sampling at some of the more remote landings sites. Data from the 2008 Spice Island Billfish Tournament were also collected, including CPUE, size and sex information of billfish landings.

Jamaica. A new ICCAT billfish coordinator for this location has not been determined. Most of the billfishing activity in Jamaica takes place in the fall to coincide with the billfish tournament schedule. We normally gain access to these data at the end of the fishing season.

St. Maarten, N.A. The billfish tournament normally held on St Martin was not sampled during 2005 due to constraints imposed by the limited budget. This also prevented our normal sampling of size frequency data from the Nichirei Carib Corporation at St. Maarten (Dutch side).

St. Vincent. Members of CARICOM continue their efforts in tagging small pelagic species throughout the Caribbean. Research cruises aboard the St. Vincent Department of Fisheries longline vessel were not made during 2008. This activity will be re-evaluated to determine if it is appropriate to continue this research next year.

Venezuela. At-sea sampling activities of INIA continued at the port of Cumana, where the fleet of industrialized longline vessels target yellowfin tuna and swordfish, but also catch billfish. In addition, the fleet of smaller artisanal vessels often target billfish. There were a total of 11 at-sea observer trips accomplished since the last SCRS meeting (Aug. 2007 to Jun. 2008). Most trips were on industrialized small to mid size longline vessels out of the port of Cumana. Shore-based sampling of size frequency data in Venezuela continued at about the same rate as 2006 (over 1200 billfish were sampled), with harbor samplings in Playa Verde and Cumaná, but was reduced at Margarita Island since most of the catch in northeastern Venezuela is being sold at sea to vessels which carry fish to other Caribbean Islands. Recoding of information on catch and effort from daily recreational trips as well as sport

fishing tournaments continued during 2007-2008. The number of tournaments organized annually continues at a decreased level in the central Venezuelan coast. Since all animals are released by law in the tournaments made in the central Venezuelan coast, no sampling was made from the recreational tournaments held in Playa Grande Marina in 2007-2008. A major effort to obtain reports of tag recaptured billfish continued during 2007-2008. These results are including in the tagging section (below).

U.S. Virgin Islands. Several billfish tournaments held during 2008 (normally at least 3 tournaments are held each year) and these results are reported to the Southeast Fisheries Science Center.

OBJECTIVE 2 -- BILLFISH TAGGING PROGRAM

About 59 conventional tag recaptured billfish have been reported to the western Atlantic Coordinator through September, 2008. Most of these were from Venezuela (59 tag returns between August 2007 and April 2008). These recaptures represent both NMFS and The Billfish Foundation tags and continues to indicate increased tag recapture reporting rates in the southeast Caribbean Sea as a result of the ICCAT Enhanced Research Program for Billfish. In addition, most of the recaptured fish were blue and white marlin. A number of Atlantic-wide tagging programs have engaged in tagging billfish using popup satellite tag (PSAT) technology. Efforts in the western Atlantic have focused on sailfish of south Florida, as well as off Senegal, West Africa. Swordfish have also been tagged with PSATs off south Florida.

OBJECTIVE 3 -- AGE AND GROWTH

Even though the Program had a reduction in budget allocations for 2008 activities, the current sampling year resulted in a general increase in age and growth and reproductive studies. Venezuela continued to accelerate its biological sampling for age and growth and reproductive studies in 2008. Several sets of hard parts were obtained from very large blue marlin over 1,000 lbs during the 2008 sampling season. Ms Kate Drew, working under the

direction of Dr. David Die at the University of Miami's Rosenstiel School of Marine and Atmospheric Science, is completing her analysis of the age and growth of white marlin. Primary sources of hard parts for this study have been obtained from Venezuela, Brazil, and the US.