

PROGRESS OF THE ICCAT ENHANCED RESEARCH PROGRAM FOR BILLFISH IN THE WESTERN ATLANTIC OCEAN DURING 2014

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SUMMARY

Research activities of the ICCAT Enhanced Research Program for Billfish in the western Atlantic Ocean during 2013 are summarized by location and research objectives. At-sea sampling by observers on Venezuelan industrial longline vessels completed six trips and 81 sets by July 2014. Additional trips are planned before the end of the year. Most of the vessels are based out of Cumana, Venezuela. In the port of Playa Verde (La Guaira, central Venezuela) about 3300 fishing trips for billfish were monitored. Some limited biological sampling was also accomplished in Bermuda and the US, where gonads and hard parts for age determination from several large blue marlin were obtained, including two specimens exceeding 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 a few sharks, in the western Atlantic Ocean during 2014 (and the last 3 months of 2013). A total of 10 tagged billfish were recaptured during the latter part of 2013 and through August 2014.

RÉSUMÉ

Les activités de recherche menées en 2013 dans l'océan Atlantique Ouest dans le cadre du Programme ICCAT de recherche intensive sur les istiophoridés sont résumées par zone et objectifs de recherche. Un échantillonnage en mer a été réalisé par des observateurs se trouvant à bord de palangriers industriels vénézuéliens lors de six sorties et 81 opérations jusqu'en juillet 2014. D'autres sorties sont prévues avant la fin de l'année. La plupart des navires ont leur port d'attache à Cumana, Venezuela. Dans le port de Playa Verde (La Guaira, centre du Venezuela), près de 3.300 sorties de pêche ciblant les istiophoridés ont fait l'objet de suivi. Un échantillonnage biologique restreint a également été réalisé dans les Bermudes et aux États-Unis, dans le cadre duquel des gonades et des pièces dures aux fins de la détermination de l'âge provenant de plusieurs grands makaires bleus ont été obtenues, dont deux spécimens pesant plus de 1.000 livres (453,6 kg). Un échantillonnage à terre des débarquements d'istiophoridés a été réalisé pour obtenir les données de fréquence de taille, ainsi qu'un échantillonnage des tournois à la Grenade, dans les Bermudes et à la Barbade. Les participants au programme au Venezuela, à la Grenade et à la Barbade ont continué à aider à recueillir des informations sur le marquage et la récupération des marques apposées sur les istiophoridés, ainsi que sur quelques requins dans l'océan Atlantique Ouest pendant 2014 (et au cours des trois derniers mois de 2013). Au total, 10 istiophoridés porteurs de marques ont été récupérés de la fin 2013 jusqu'au mois d'août 2014 compris.

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RESUMEN

Se resumen, por localización y objetivo de investigación, las actividades de investigación del Programa ICCAT de Investigación Intensiva sobre Marlines en el océano Atlántico occidental durante 2013. Se realizaron actividades de muestreo en el mar con observadores embarcados en buques palangreros industriales venezolanos en seis mareas y 81 operaciones de pesca hasta julio de 2014. Están programadas nuevas mareas antes de que finalice el año. La mayoría de los buques tienen como base Cumaná, Venezuela. En el puerto de Playa Verde (La Guaira, Venezuela central) se hizo un seguimiento de 3.300 mareas de pesca de istiofóridos. También se realizó un muestreo biológico limitado en Bermudas y Estados Unidos, durante el cual se obtuvieron muestras de gónadas y partes duras para la determinación de la edad de varios ejemplares grandes de aguja azul, lo que incluye dos ejemplares muy por encima de 1.000 libras. Se llevó a cabo un muestreo en tierra de los desembarques de istiofóridos para obtener datos de frecuencias de tallas, así como un muestreo en torneos en Granada, Bermudas y Barbados. En 2014 (y durante los tres últimos meses de 2013), los participantes en el programa de Venezuela, Granada y Barbados continuaron colaborando en la obtención de información sobre istiofóridos marcados y recuperados, así como sobre unos pocos tiburones, en el océano Atlántico occidental. Se recuperaron en total 10 istiofóridos marcados durante la última parte de 2013 y durante agosto de 2014.

KEY WORDS

Billfish, Western Atlantic Ocean, Research coordination

1. Introduction

The following summarizes research progress according to location and/or type of research activity for the ICCAT Enhanced Research Program for Billfish (IERPB).

Research activities during 2013 began immediately after the SCRS meeting in October 2012. The objectives of the initial 1986 program plan (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 2013 was Dr. Freddy Arocha (Venezuela); 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 SCRS 1998 financial report for. In terms of affecting research activities, scientists collaborating in the 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 in 2012 were comparable to the previous year. The following coordination activities were realized by this program during 2013 (and last three months of 2012) in the western Atlantic Ocean.

1.1 Objective 1, Landing statistics

Barbados: The shore-based sampling in Barbados was not conducted due to low fishing effort.

Bermuda: Dr. Brian Luckhurst retired in 2007 and it is still unclear whether staff of the Bermuda Division of Fisheries will continue to collect catch and effort statistics from billfish tournaments at this location.

Brazil: Dr. Alberto Amorim of Fisheries Institute of São Paulo continued his billfish conventional tagging activities and collection of billfish larvae in 2013. Also, Dr. Fabio Hazin of the Federal Rural University in Pernambuco continued a billfish research program in 2013 focused on billfish interactions with pelagic fishing gears, including tagging blue marlin, white marlin, and sailfish with pop-up satellite tags, and age, growth, and reproductive biology of sailfish, blue and white marlins.

Cuba: Cuba has not provided catches of billfish, or any other ICCAT species since 2006. Dr. D. Die traveled to Cuba in Oct to advance the work of the IERP. He met with scientists from the Instituto de Ciencias Marinas de la Universidad de La Habana. He learned scientists from that group have for the last 4 years engaged on scientific monitoring of shark catches made by artisanal longliners with funds from Environmental Defense, a US NGO. During the project they have also collected information on billfish. Dr. Die got agreement from the Cuban scientist to prepare an SCRS paper presenting the billfish data collected, including also information on swordfish catches, one of the main targets of the longliners. Data collected includes catch rates, species identification and some individual weight data. The same scientists volunteer to collect genetic samples on spearfish and white marlin. In order to do that, however, we will need to find a way to getting sample kits to Cuba and to confirm that genetic samples collected in Cuban waters can be processed in the Florida laboratory of Nova Southeastern University. The IGFA is also attempting to bring satellite tags to be deployed in Cuba during the Hemingway invitational tournament in May 2015. Finally, David Die got support from the Hemingway museum in Cuba to access the fishing logbook that may contain information on catch rates and marlin sizes prior to 1950. Dr. Die will also seek access of other similar logbooks that are part of the collection of the JFK library in Boston to collate further information on marlin pre-1950 catch rates in the Florida straits. In the West D. Die distributed genetic sampling kits to Venezuela and Mexico.

Grenada: We have had no communication with the Ministry of Industrial Development and Fisheries (MIDF) about shore-based sampling in Grenada during 2014.

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.: Recreational billfish tournaments are normally held on St Martin but have not been sampled since 2005. Financial constraints have also prevented our normal sampling of size frequency data from the transshipment company, 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 2014. This activity will be re-evaluated to determine if it is appropriate to continue this research next year.

Uruguay: Dr. Andrés Domingo, Recuros Pelagicos, Direccion Nacional de Recuros Acuaticos, Montevideo, Uruguay, continued to participate in the genetic studies collaboration with Dr. Mahmood Shivji, Nova Southeastern University. Thirty tissue samples from spearfish and marlin are to be shipped to NOVA SE during the 2014 sampling season.

Venezuela: At-sea sampling activities of INIA/IOV-UDO continued at the port of Cumaná, where the fleet of industrialized longline vessels target yellowfin tuna and swordfish, but also catch billfish. In addition, the fleet of smaller artisanal drift-gillnet vessels target billfish. There were a total of three at-sea observer trips completed after July in 2013 (42 sets), and three trips until July 2014 (39 sets). Most trips were on industrialized small to mid-size longline vessels out of Cumaná port. Shore-based sampling of size frequency data in Venezuela continued in the last part of 2013 through August 2014, with port sampling in Playa Verde and Cumaná. In the port of Playa Verde (off La Guaira, central Venezuela) about 1613 daily trips targeting billfish were recorded in 2013. Recoding of information on catch and effort from sport fishing tournaments continued during 2013/2014. 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, only 1 tournament was monitored from the recreational tournaments held in Playa Grande Marina in 2013, and none in 2014. A major effort to obtain reports of tag recaptured billfish continued during 2013-2014 period, with the recovery of 10 tags from July 2013-August 2014. These results are including in the tagging section (below).

U.S. Virgin Islands: Several billfish tournaments held during 2012 (normally at least 3 tournaments are held each year) and these results are reported to the Southeast Fisheries Science Center.

United States (Domestic). Dr. Mahmood Shivji, Nova Southeastern University, continued his research collaborations involving genetic analyses of roundscale spearfish, white marlin, and other Atlantic istiophorids with the Southeast Fisheries Science Center (US), Venezuela (Dr. Freddy Arocha, Instituto Oceanografico, Universidad de Oriente), Uruguay (Dr. Andres Domingo, Recursos Pelagicos, Direccion Nacional de Recursos Acuaticos, Montevideo); and Brazil (Dr. Fabio Hazan (UFRPE), *Secretaria Especial de Aquicultura e Pesca, Monteiro Recife, Pernambuco*). Several shipments of biological tissue were received from each country from July 2013 through August 2014. A draft paper entitled “A Comparative Population Genetic View of Two Look-Alike and Commonly Misidentified Billfishes: the Recently Validated Roundscale Spearfish (*Tetrapturus georgii*) and the Overfished White marlin (*Kajikia albida*) is currently under review. During 2014, a major effort was made by Dr. David Die to distribute the newly received DNA kits so that the spearfish /white marlin ratio can be determined in the northeastern and north central Atlantic. More detailed information on the distribution of kits is available in the IERPBF report for the eastern Atlantic.

1.2 Objective 2, Billfish Tagging Program

Sixteen conventional tag recaptured billfish have been reported to the western Atlantic Coordinator from July 2013 through August, 2014. Most were blue marlin (6), although 3 white marlin, and 1 shorkfin mako shark were also reported. The majority of these were from Venezuela. 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. A number of Atlantic-wide tagging programs have engaged in tagging billfish using pop-up satellite archival tag (PSAT) technology in 2013, including off Aruba and US eastern Atlantic. In 2014, PSATs were deployed on 15 blue marlin off the coast of Costa Rica by Dr. John Hoolihan.

1.3 Objective 3, Age and growth

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 2012/13. In addition, several sets of hard parts were obtained from very large blue marlin (>1,000 lbs.) during the period July 2012-Aug 2013 seasons.