

PROGRESS OF THE ICCAT ENHANCED PROGRAM FOR BILLFISH RESEARCH IN THE ATLANTIC OCEAN DURING 2016

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SUMMARY

Research activities of the ICCAT Enhanced Program for Billfish Research in the Atlantic Ocean during 2016 are summarized by location and research objectives. Programs designed to improve data collection and reporting include sampling for catch and effort, size frequency, age/growth, diet, reproduction, and genetic analyses. Activities are described for participating CPCs.

RÉSUMÉ

Les activités de recherche menées en 2016 dans l'océan Atlantique dans le cadre du Programme ICCAT de recherche intensive sur les istiophoridés sont résumées par zone et objectifs de recherche. Les programmes conçus pour améliorer la collecte et la déclaration des données comprennent l'échantillonnage pour la prise et l'effort, la fréquence des tailles, l'âge / la croissance, l'alimentation, la reproduction et les analyses génétiques. Les activités sont décrites pour les CPC participantes.

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 durante 2016. Los programas diseñados para mejorar la recopilación y comunicación de datos incluyen el muestreo para captura y esfuerzo, frecuencias de tallas, edad/crecimiento, dieta, reproducción y análisis genéticos. Se describen las actividades de las CPC que participan.

KEYWORDS

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 Program for Billfish Research (EPBR).

Research activities during 2016 began immediately after the SCRS meeting in October 2015. 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. An additional objective to determine the distribution and ratios of white marlin and roundscale spearfish using genetic analyses was undertaken.

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 and western Atlantic coordinator during 2016 was Dr. John P. Hoolihan (USA) and eastern Atlantic coordinator was Dr. Fambaye Ngom Sow (Sénégal).

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 IERP were asked to make requests for release of funds directly from the ICCAT Secretariat and these requests were then verified by area coordinators. The following coordination activities were realized by this program during 2016 (and last three months of 2015) in the Atlantic Ocean.

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1.1 Objective 1, Landing statistics

Brazil: No allocated funds from EPBR were requested from Brazil in 2015-16.

Ghana: Billfish catch and effort data derived from artisanal fleets operating along the Ghanaian coast is ongoing. Data from 2015 has been submitting to the Secretariat.

Côte d'Ivoire: Improved data collection methods and reporting of Task I and II data to ICCAT have been achieved for the artisanal fleets. Rigorous biological sampling on a monthly basis is being carried out. Started in 2015, this project seeks to determine the stages of sexual maturity, the periods of reproduction, the fertility and the dietary habits of sailfish.

Sao Tomé and Príncipe: Collection of billfish landing data from artisanal fisheries has continued in Sao Tome and Principe, the collection of fishery statistics continued in 2015. Efforts were made to improve data collection by purchasing field recording supplies and conducting a two-day training seminar for field assistants. A total 145 t catch of billfish was reported for 2015.

Senegal: Field surveys of billfish catches by the artisanal fleet are carried out by the Oceanographic Research Centre of Dakar / Thiaroye under the supervision of Dr. Ngom Fambaye Sow. Catch and effort, and size frequency data were collected during 2015-16. In total 53 t of sailfish and 7 t of blue marlin were reported. All data has been updated with the Secretariat.

Venezuela: At-sea sampling activities of INIA/IOV-UDO were discontinued in 2015 due to inadequate funding. This important historical data source was based on observer data out of the port of Cumaná, where the fleet of industrialized longline vessels target yellowfin tuna and swordfish, but also catch billfish. The loss of this data is a major concern for the EPBR. A reinstatement of this historical program is needed to ensure the long-term continuity of billfish data collection in the Caribbean.

United States: Dr. Mahmood Shivji, Nova Southeastern University, continued his research collaborations involving genetic analyses of white marlin and spearfishes. NOAA Southeast Fisheries Science Center (US), Venezuela (Dr. Freddy Arocha, Instituto Oceanográfico, 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). This work contributed to the publication of Bernard et al. 2014, Comparative population genetics and evolutionary history of two commonly misidentified billfishes of management and conservation concern. BMC Genetics, 15:141.

1.2 Objective 2, Billfish Tagging Program

1.3 Objective 3, Age and growth

High resolution photomicrographs of anal fin spines from Venezuelan and U.S. samples are in the process of being analyzed to determine age/growth and maximum longevity for Atlantic blue marlin.

Collection of additional biological samples for age and growth is needed, particularly from the East Atlantic. New research funding allocations are needed for sampling billfish caught off Senegal, São Tomé, and Côte d'Ivoire.

1.4 Objective 4, Genetic analyses of white marlin, longbill spearfish, and roundscale spearfish

Genetic sampling of surface mucus was undertaken to determine the spatial and temporal ratios of white marlin, longbill spearfish and roundscale spearfish that occur in landings. During 2014-15, 500 hundred genetic sampling kits were distributed in allotments of 50 kits each to longline fleets based in Mexico, Venezuela, Morocco, Senegal, Portugal, and Spain; and, to purse fleets based in Spain and Ghana. The return rate of sample has been lower than anticipated. It was decided to procure and distribute additional sampling kits. Supplies were ordered in June 2016. Due to a market shortages of these items, the order has not been fully received. Thus, no additional sampling kits have been distributed to fishermen yet. Once samples are collected from these fleets they will be provided to Nova Southeastern University in Florida USA for processing. To-date, samples have been received from Portugal (n = 39) and Spain (n = 1) longline fleets fishing in the eastern central Atlantic. Genetic analyses confirmed the samples were from white marlin (n = 36), and sailfish (n = 1). DNA could not be extracted from the three remaining samples due to mold contamination. This project is ongoing.