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An update on the recent development of IOTC BTH PRM Project

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ABSTRACT

This note provides recent updates on IOTC bigeye thresher shark (*Alopias superciliosus*, BTH) post-release mortality study project (IOTC BTH PRM Project). The objective of the study is to evaluate the efficiency of the IOTC Conservation and Management Measure on non-retention of thresher sharks of the genus *Alopias* (Resolution 12/09). The summary of collective efforts since the 13th, 14th, 15th, 16th, and 17th IOTC WPEB are presented.

Introduction

The primary objective of this study is to assess the post-release mortality of bigeye thresher sharks caught and released (in accordance with IOTC CMMs[1]) by the major commercial longline fleets fishing in the IOTC Area of Competence. For details of project development and experimental design please see IOTC-2018-WPEB14-27 and IOTC-2019-WPEB15-16.

The project started in 2017 has represented collaborative efforts of IOTC Secretariat and several research institutions working with following fishing fleets (in alphabetic order): China, France, Japan, Portugal, South Africa, Taiwan. On 16 September 2020 Taiwan has withdrawn from the project (please contact IOTC Secretariat for further details). For this reason, report for WPEB (IOTC-2020-WPEB16-INF1) was also withdrawn from the list of documents presented at WPEB 16 in 2020.

Current IOTC BTH PRM Project collaborators (in alphabetic order): Pascal Bach[(1, 2)], Sylvain Bonhommeau[(3)], Rui Coelho[(4)], Paul DeBruyn[(5)], Sarah Martin[(5)], Hilario Murua[(6)], Stewart Norman[(7)], Evgeny V. Romanov[(8)] (Project co-ordinator), Philippe S. Sabarros[(1, 2)], Yasuko Semba[(9)], Charlene da Silva[(10)], Jiangfeng Zhu[(12)]

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Past collaborators: Wen-Pei Tsai, National Kaohsiung University of Science and Technology, Taiwan.

Experimental design

The complete experimental design document was presented during the 14th WPEB and is available as an appendix in working paper IOTC-2018-WPEB14-27.

COVID-19 Effect

The COVID-19 pandemic has heavily affected the project. Placing observers onboard fishing vessels was suspended for variable periods in China, Japan, France, Portugal and South Africa. However, in 2020 Japan arranged the tagging through direct contract with the industry: a person initially trained as observer was recruited by the industry and voluntary proposed collaborated with NRIFSF to carry out deployment within the IOTC BTH PRM Project.

[1] Indian Ocean Tuna Commission Conservation and Management Measure: Resolution 12/09 *On the conservation of thresher sharks (Family Alopiidae) caught in association with fisheries in the IOTC Area of Competence. http://www.iotc.org/cmm/resolution-1209-conservation-thresher-sharks-family-alopiidae-caught-association-fisheries-iotc*

In 2021-2022 no progress was reported by all partners, except France and South Africa: both were able to re-start observers' activity in 2020 and continue till now.

Training material

No progress since WPEB16.

Training

Training of scientific observers, scientists and students in Reunion Island has been performed routinely along 2021-2022.

Tagging efforts to date

In 2022 one bigeye thresher shark was tagged by France and other two by South Africa. The first one was tagged in June 2022 within EEZ of Reunion Island (survived for 41 days of tracking). Two others were tagged off Durban (South Africa) in August 2022. Both sharks apparently survived: tags are still in water; expected date of pop-up is February 2023. No tagging operations were performed by China, Japan, and Portugal (Table 1).

Table 1. Summary of PSATs deployment by partner

Fleet	Partner	Number of tags distributed		Year of distribution	Shark tagged									
					2018		2019		2020		2021	2022		Total
		sPAT	Mini-PAT		sPAT	mini-PAT	sPAT	mini-PAT	sPAT	mini-PAT		sPAT	mini-PAT	
Japan	NRIFSF	4	0	2019		N/A		N/A	1	N/A			N/A	1
Taiwan	KNU	8	5	2019			4	4	1	1	Withdrawn	Withdrawn	Withdrawn	10
France	IRD	8	4	2018				1					1	2
Portugal	IPMA	6	4	2018	1	2	4	3						10
South Africa	DAFF	4	2	2018									2	2
China	ShOU	4	5	2019										
Total		**34**	**20**		**1**	**2**	**8**	**8**	**2**	**1**	**0**	**0**	**3**	**25**

Preliminary results

A preliminary estimation of post-release survival rate for bigeye thresher shark caught and released by pelagic longline fleet in the Indian Ocean is 44.4% (8[1] out of 18[1] individuals considered in the analysis). However, this estimate should not be used in the evaluation of conservation measures efficiency since operations are still ongoing and several participating fleets are poorly covered or not represented at all. Compliance of each tagging operation to experimental design and protocols are also not evaluated yet.

Perspectives

In view of the delay in the project implementation, in particular COVID-19-related slowdown, it is expected that tagging operations will be extended through the entire year 2023. In this context it is highly desirable to extend the project duration until December 2024 (i.e., four years extension).

[1] South African tagging have not taken into consideration yet.

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