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Development of protocols and guidelines for fishing gear to mitigate the ongoing impact of SIOFA fisheries on vulnerable deepwater sharks

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Abstract

This document describes the Fishing trips in 2024 where it was not possible to implement the trial comparing the two types of lines with different traces. The trial, it is therefore scheduled to be carried out in the trip starting at the end of February 2025.

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[2] Documents available only to members invited to closed sessions.

Development of protocols and guidelines for fishing gear to mitigate the ongoing impact of SIOFA fisheries on vulnerable deepwater sharks

Introduction

Following discussion at SIOFA SC meetings on measures to mitigate the bycatch of deepwater sharks and identifying efficient strategies, the SC9 recommended (SC9 Report, Para 260) further research be conducted during 2024 on trace type in the SIOFA Area.

The trial should be a well-designed experiment that will provide a statistically robust test on the impact of using alternative trace types on the bycatch rate of sharks and target species. The results of this trial together with the final results of the DWS-2023-01 project had to be presented during a focused topic at SC10. To apply that, a project advisory group was set up to review the experimental design and then the preliminary outcomes to help ensure the project's success.

A first draft of the proposal "Project on the impact of using alternative trace types on the bycatch rate of sharks and target species" was circulated to the advisory group (Australia, Chinese Taipei and the Cook Islands) on 25/03/2004. After several constructive exchanges, the final experimental design (Appendix 1) was agreed on 06/06/2024 and sent to the shipowner on the same day.

Methods

As seen in Table 1, fishing trip Number 1 took place before SC9, so the agreed experimental design was not ready to be implemented. Similarly, it was impossible for the vessel to apply it during trip Number 2 (that it was about to finish at that time). It was therefore proposed that the experimental design should be applied on the 3rd trip of the year. Fishing trip Number 3 was made entirely between subareas 3a targeting grouper and 3b targeting Patagonian toothfish.

Table 1 Fishing Vessel IBSA QUINTO schedule in 2024

Trip Number	Start date	End date	Target species/fisheries	SIOFA Area
1	11/09/2023	03/03/2024	Patagonian toothfish and Common mora	Subareas 3a, 3b and 2
2	18/03/2024	07/07/2024	Common mora	Subareas 4 and 5
3	05/09/2024	01/02/2025	Snapper and Patagonian toothfish	Subareas 3a, 3b

Results

Data presented in the SC-10-04-(REP)-2025-Annual-National-Report-European-Union shows that the bycatch of Portuguese dogfish (CYO) in Subarea 2 in 2024 has been 317t, in Subarea 4 (393 t) and Subarea 5 (373 t). Therefore, in Subareas 3a and 3b, the only ones covered by trial Fishing trip Number 3, the number of sharks bycatches were almost negligible, and the trial did not take place.

Conclusions

It has not been possible to implement the action of comparing the two types of lines with different traces in 2024, and it is therefore scheduled to be carried out in the trip starting at the end of February 2025.

Appendix 1

Project on the impact of using alternative trace types on the bycatch rate of sharks and target species

1. Background from the SC9 report

Para 260. The SC recommended further research be conducted during 2024 on trace type in the SIOFA Area. The trial should be a well-designed experiment that will provide a statistically robust test on the impact of using alternative trace types on the bycatch rate of sharks and target species. The results of this trial together with the final results of the DWS-2023-01 project should be presented during a focused topic at SC10.

Para 261. The SC recommended that a project advisory group be set up to review the experimental design and then the preliminary outcomes to help ensure the project's success.

Para 262. The SC recommended that the MoP note the upcoming trial on the impact of using alternative trace types on the bycatch rate of sharks and target species.

2. Discussion on experimental design

Description of the gear and fishing operation

The vessel uses a Mustad system (Norwegian) automatic baiting deep longline, model SP 2000. The vessel has 76 magazines ready to be deployed with approximately 950 hooks each and as many unassembled hooks stored in the containers. Each branch line was made of blue nylon, with a piece of aluminium wire and the hook. It had a diameter of 2.2 mm thick, with a length of 0.47 m and a distance of 1.4 m between each branch line.

The total length of a line varies between 15000–25000 hooks, which is equivalent to 16 to 27 magazines.

The usual fishing strategy is having 4 or 5 lines at the same time at sea, hauling consecutively the lines while setting new lines in the meantime.

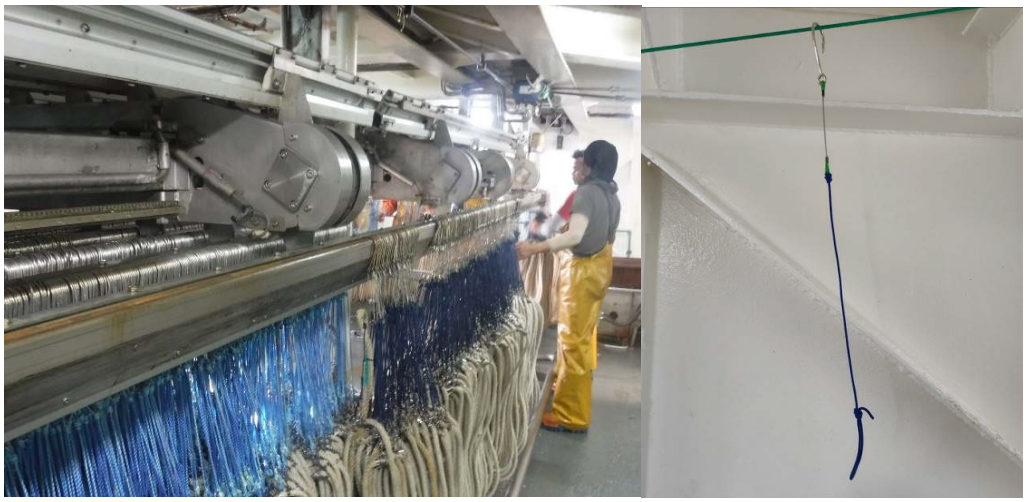

Fig 1. To the left, autoline system. To the right, traces with wire fragment with hook.

Input from the fishing master´s

The fishing masters of the F/V Ibsa Quinto having been consulted. They mentioned that it would be best (for the operability of the vessel) to cast one full set of nylon and one full set of wire. The shipowner also indicates that it is difficult for them to have all lines with a mixed configuration (due to the potential changes in fishing operations, expenses of the material as well as the foreseeable breakages and losses).

Discussion on experimental design

a) Considering that statistically speaking the option of one full set of nylon and one full set of wire is not the most appropriate for a comparative analysis, we suggest to intersperse one nylon and one wire trace over the entire length of the line.

b) To implement the trial without compromising the operativity of the vessel, we suggest letting the vessel set the mixed lines at their convenience according to fishing conditions but establishing a minimum number of lines for this first trial[3].

   We believe that 20 entire lines with 20 magazines on average each, would be equivalent to having 400 magazines of data, in which the two types of wires are interspersed one by one. This number of lines and hooks should allow to collect sufficient data for implement a robust statistical analysis.

c) To fully implement the pilot study, we suggest including in the scientific observer tasks, the full sampling (100%) of each experimental set.

3. The project advisory group recommends

a) That the vessel should set during the trials of the whole trip at least 20 entire lines with an average of 20 magazines (total approx. 25000 m length). Each entire line must intersperse one magazine with wire traces with one of nylon traces.

b) That the observer shall sample 100% of the trial hauls, noting the arrival condition of every shark, identifying the species at arrival to the lowest taxonomic level possible, and compiling the number of hooks lost.

[3] This trial will take place in the fishing trip starting around September 2024.