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IATTC Bycatch Working Group Report

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INTER-AMERICAN TROPICAL TUNA COMMISSION

WORKING GROUP ON BYCATCH

9TH MEETING

San Diego, California (USA)
11 May 2019

CHAIR'S REPORT

AGENDA

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6. Monitoring	
a. Ecological risk assessment of Mobulid rays in the EPO (IATTC staff)	BYC-09-01
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c. Report on bycatch mitigation actions on tropical tuna purse seiners: Best practices program and bycatch releasing tools (AZTI)	
d. Update on fisheries bycatch of Mobulid rays in the EPO (IATTC staff)	
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8. Safe release and handling guidelines:	
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b. Sorting grids in purse seines (IATTC staff)	BYC-09 INF-A
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The 9th meeting of the Bycatch Working Group was held in San Diego, California, USA on May 11, 2019.

1. OPENING OF THE MEETING AND INTRODUCTIONS

Dr. Guillermo Compeán, IATTC Director, introduced the co-chairs of the meeting: Dr. Yonat Swimmer of the United States and Manuel Correia of Venezuela, who opened the meeting.

2. ADOPTION OF THE AGENDA

The Working Group (WG) adopted the agenda with no changes.

3. REVIEW OF RECOMMENDATIONS FROM 8TH IATTC BYCATCH WORKING GROUP

The Co-Chairs gave a brief review of the 2018 recommendations and made note of the modified recommendations that the SAC endorsed (posted on Basecamp).

4. SUMMARY REPORT ON BYCATCH IN THE EPO

Dr. Martin Hall (IATTC) presented on data quality and quantity concerns regarding purse seine observer coverage. In spite of the 100% coverage in large seiners (Class 6), there are issues that compromise the quality of the data. He discussed logistical and economic obstacles to increasing observer coverage. He noted that observers may misidentify species because of distance, direct unloading into the well (in boats not using a hopper), when numbers are very large, etc. He also explained that there are continuous efforts to improve observer training. He discussed the use of hoppers as a way to facilitate sorting bycatch and estimating amount. He showed tables with the main bycatches in different types of sets: elasmobranchs were the main taxa for dolphin and school sets; sets on floating objects had the highest bycatch, especially of silky sharks.

Dr. Hall also spoke about observer coverage in the longline fishery as being too low and inconsistent in the units used to estimate bycatch and that electronic monitoring could supplement observer coverage. Emphasis was placed on establishing standardized data forms to ensure high data quality. He also noted that artisanal longline and gillnet fleets also contribute to the impacts on bycatch.

5. PRESENTATIONS BY MEMBERS OF BYCATCH ACTIONS

The WG heard statements from the EU and USA regarding their bycatch activities. The EU referred to activities related to the development of biodegradable fish-aggregating devises (FADs). The USA mentioned workshops on seabirds and other bycatch activities specific to longline fisheries.

6. MONITORING

a. Ecological risk assessment of mobulid rays in the eastern Pacific Ocean

Dr. Shane Griffiths (IATTC) described the IATTC's progress towards monitoring and demonstrating the ecological sustainability of fishing activities in the eastern Pacific Ocean (EPO). He explained a new spatially-explicit ecological risk assessment (ERA) approach—Ecological Assessment for the Sustainable Impacts of Fisheries (EASI-Fish)—to quantify the cumulative impacts of multiple fisheries on data-limited bycatch species in the EPO. The method is generally applied to a suite of impacted bycatch species as a quantitative prioritization tool. It allows fisheries managers to identify the most vulnerable species to which resources can be directed to either (1) implement mitigation measures to remove the key risk(s) or (2) subject the species to data collection programs that gather sufficient data to facilitate more traditional population assessments. Dr. Griffiths described the use of EASI-Fish to explore changes in the vulnerability status of the spinetail devil ray (*Mobula mobular*) under 18 hypothetical conservation and management measure (CMM) scenarios simulated for EPO purse seine and longline tuna fisheries for 2016. CMMs involved various spatial and temporal closures of the EPO and 'hotspots', decreasing post release mortality (PRM), increasing the length at first capture and various combinations of these CMMs. Only three of the 18 scenarios resulted in the species being classified as "least vulnerable", which

primarily involved reductions in post-release mortality. Given the current lack of reliable information on post-release mortality for *M. mobular*—and other mobulids—there is an urgent need for a tagging study to quantify mortality from purse seine and longline fisheries in the EPO. Recommendations from this presentation included:

1. Encourage collaboration of CPCs to supply data for smaller fisheries, and
2. IATTC Staff undertake a large scale tagging study to quantify the post-release survival of Mobulids using different handling practices.

The WG, staff, and observers praised Dr. Griffiths for his work, but also raised considerations regarding potential confusion for managers about interpreting the findings like a stock assessment. Questions allowed for clarification that the model does not rely on fisheries catch data.

7. BYCATCH MITIGATION

a. East Pacific leatherback turtle update

Dr. Bryan Wallace (representing the Inter-American Convention [IAC] for the Protection and Conservation of Sea Turtles) described the steep decline of the Eastern Pacific (EP) leatherback population (>95% since the 1980s). Recent models on nesting populations in Mexico, Nicaragua, and Costa Rica indicate that without reducing mortality of adult turtles, the population is in critical danger of extinction within the coming decades. This means reducing mortality in bycatch, region-wide, and in all fishing gears where mortality occurs, including high-seas longlines and purse seines as well as smaller-scale fisheries closer to shore. The urgent conservation situation of the EP leatherback population is well-documented by published research. The IAC urged the IATTC to join with IAC and other regional partners by taking action immediately to reduce EP leatherback bycatch in the IATTC Convention Area.

The IAC presented the following recommendations:

1. Develop conservation measures to reduce bycatch (e.g., circle hooks, fish bait, spatial management) in leatherback high-use areas, as described in the MoU between IAC and IATTC;
2. Improve data quality and reporting of bycatch data for EP leatherbacks and all other endangered, threatened, and protected species by:
    a. Increasing observer coverage or electronic monitoring in longline operations from 5% (as required by Resolution C-11-08) to 20%, as recommended by IATTC Scientific staff, especially on vessels operating in leatherback high-use areas with possible fisheries interactions, and
    b. Ensuring that CPCs comply with data collection and reporting requirements and adopt improved data reporting form sufficient to inform and evaluate conservation (DOCUMENT SAC-10-19);
3. Verify and document that fishermen or vessel operators in the Convention Area follow sea turtle handling and release guidelines, including that fishermen or vessel operators:
    a. Carry safe-handling tools on-board and using them to ensure the prompt and safe release of incidentally-caught sea turtles, as described in Resolution C-07-03, and
    b. Where necessary, receive proper training in best practices for handling and release of sea turtles.

A lengthy discussion followed, including clarification on movement patterns as well as expressed interest in conducting an analysis with leatherback turtles using the EASI-Fish model.

Tina Fahy (Sea Turtle Recovery Coordinator for the United States' National Marine Fisheries Service [NMFS]), presented a U.S. effort regarding a leatherback Distinct Population Segment (DPS) consideration. The species has been globally listed since 1970, with seven subpopulations identified. She shared that major threats include fisheries bycatch (especially longline, coastal fleets), environmental changes, and human activity (development, poaching of eggs from unprotected beaches). She opined that the current IATTC turtle resolution is inadequate and suggested the WG support measures similar

to Western and Central Pacific Fisheries Commission (WCPFC) CMM 2018-04 (para 7 a,b,c), such as circle hooks, fish bait, or other mitigating measures.

b. Net illumination to reduce cetacean, sea turtle and seabird bycatch in Peru

Allessandra Bielli, a research associate with ProDelphinus and an invited speaker by the Co-Chairs, spoke about recent research using net illumination as a means to reduce fisheries bycatch in gillnet fisheries. Her results suggest that placing light emitting diodes (LEDs) on gillnets can reduce bycatch probability up to 80% for sea turtles and small cetaceans in comparison to control nets. The presence of LEDs did not negatively affect target species catch rates. This study highlights the efficacy of net illumination as a multi-taxa bycatch reduction technology for small-scale gillnet fisheries in Peru. Discussion that followed indicated interest by Members to conduct trials in a collaborative effort.

c. Bycatch mitigation actions on tropical tuna purse seiners: best practices program and bycatch releasing tools

Maitane Grande, a scientist at AZTI, Spain, presented on progress made on the implementation of the code of good practices in the Pacific Ocean in terms of FAD use and methods to release fauna during 2015 to 2017. She presented information on best practices for safe release of sharks, turtles and rays to enhance the survival while simultaneously prioritizing the safety of the fishing crew.

d. Mobulids update

Dr. Martin Hall (IATTC) presented an update on mobulid studies in the EPO. Average yearly mortality is ~ 1,500 individuals of the five species present. He indicated that ecological impacts need to be assessed on a stock basis, not on a species basis. Previous release techniques were considered very harmful and 100% post-release mortality was assumed. The bad practices were explained to fishermen during skipper seminars organized jointly with non-governmental organizations, and they started testing other alternatives including a “stretcher” and a cargo net.

AZTI, the University of California Santa Cruz, the Monterey Bay Aquarium and NMFS started a small pilot study, based on tagging by observers. The main objective is to evaluate release techniques and obtain better mortality estimates while reducing the mortality. Studies of habitat and the potential impacts of climate change are a major component of this study that could be useful for spatial management approaches. A research proposal to scale up this program was posted for the SAC meeting.

e. Seabirds

Dr. Trevor Joyce (NMFS) presented “best practice” recommendations on seabird bycatch mitigation based on a recent review of the literature by scientists associated with Agreement for the Conservation of Albatrosses and Petrels (ACAP; 2018 SAC-09 INF). Dr. Joyce highlighted places in Resolution C-11-02 that diverge from updated ACAP “best practices.” Some of the specific recommended changes include adding hook shielding devices to the approved mitigation measures and removing measures ineffective or unproven measures (e.g., blue dyed bait, line shooters, underwater setting chutes), as well as adjusting the specifications for branch-line weighting and bird scaring lines. Dr. Joyce also provides an update on seabird bycatch mitigation measures adopted in 2018 by the WCPFC and explained the opportunity to harmonize seabird mitigation between the IATTC and WCPFC to make compliance easier for fishing vessels operating across both jurisdictions.

8. SAFE RELEASE AND HANDLING GUIDELINES

a. Marine mammal safe handling and release guidelines

Laura McCue (NMFS) highlighted a lack of marine mammal bycatch mitigation measures in the IATTC and presented information on U.S. policies and procedures to improve survival rates for marine

mammals that interact with fishing gear. She presented a NMFS marine mammal species identification guide that is specific to species found in the North Pacific Ocean. She also briefly shared a list of general safe handling and release guidelines for marine mammals that could be incorporated in the IATTC. She recommended:

1. making the ID guide and safe handling techniques available online,
2. considering creating a resolution for marine mammal bycatch, and
3. developing more specific safe handling and release guidelines for individual fisheries covered by the IATTC.

During the discussion of recommendations on marine mammals, the Director noted that posting a marine mammal identification guide on the IATTC website could easily be done. The WG members also discussed a recommendation to request that the IATTC scientific staff review general marine mammal safe handling and release guidelines for effectiveness and potentially in the future develop safe handling and release guidelines specific to different gear types. One delegation raised concerns that the WG had not had time to fully review the guidelines that were presented at the meeting, and the Director raised concerns that the recommendation was requesting the IATTC staff to do work. Another delegation explained that there wasn't enough time to review guidelines because of time constraints and this could be addressed by having more than one day at future meetings. Ultimately, the Chairs decided there was no consensus for the recommendation. The delegations also discussed interactions with marine mammals in various fisheries and it was recognized that troll and longline entangle marine mammals and other purse seine vessels can also encircle marine mammals.

b. Sorting grids in purse seines

Dr. Martin Hall (IATTC) presented the outcomes of a workshop held in Manta, Ecuador, and organized by TUNACONS, with the attendance of IATTC staff to discuss the potential use of sorting grids. The objectives proposed initially were: a) release small specimen of all species of tunas without commercial value; b) release species other than tunas, associated with the FADs, c) release small yellowfin and bigeye tunas. Size distributions present in FAD sets usually show skipjack as the smaller individuals, so the grids, that are used to release the smaller components would not work for objective c) unless a major change of the fishing operation is proposed. As it stands, the grids could help achieve objectives a) and b). Attendees were presented with different alternatives to try to achieve c), including dynamic closures, use of acoustics, loading live tunas, etc., and subsequently discussed the different models of grids currently in use and alternative designs/materials. To properly assess the value of the grid, it would be necessary to perform an experiment in well-controlled conditions.

9. RECOMMENDATIONS TO THE SCIENTIFIC ADVISORY COMMITTEE

After a robust discussion, the WG decided to present the following recommendations to the Science Advisory Committee (see list below). Some items that were discussed included needing more information before recommending a change to current seabird regulations. Additionally, research was encouraged to better understand aspects of mobulid population dynamics, leatherback sea turtle population responses to various mitigation methods, biodegradable FADs, as well as other actions. It was noted that this meeting should have more time than one day given the interest in this group.

10. OTHER BUSINESS PROPOSED BY CHAIRS

No other business was raised.

11. MEETING ADJOURNMENT

Appendix 1.

RECOMMENDATIONS TO THE SCIENTIFIC ADVISORY COMMITTEE

GENERAL

1. Revise Resolution C-11-08 to increase longline observer coverage on vessels >20 m LOA to 20% and consider ways to supplement observer requirements with electronic monitoring.
2. Request the IATTC scientific staff to develop a list of minimum standards for electronic monitoring on purse-seine and longline vessels, for the consideration of the SAC
3. Request the IATTC scientific staff to analyze the available operational-level longline observer data for bycatch at the 2020 WG meeting, during the "Summary Report on Bycatch in the EPO" presentation.

BYCATCH MITIGATION

4. Encourage collaboration of CPCs to supply data for IATTC Class 1-5 purse-seine vessels and artisanal fisheries according to procedures currently being developed by IATTC scientific staff in collaboration with other organizations.
5. Encourage additional research on Mobulids, including post-release survival, genetics, and population studies.
6. The WG supports the request of the IAC in the development of IATTC conservation measures to reduce bycatches and mortality of leatherback turtles (*Dermochelys coriacea*), including circle hooks, fish bait, spatial management and safe handling and release.
7. The WG recommends that the IAC work with the IATTC staff to assess the vulnerability of leatherback turtles in the EPO using different management scenarios.
8. The WG encourages additional studies to determine impacts of net illumination on catch composition in additional locations.

PURSE-SEINE BEST PRACTICES

9. In the near future, move toward the use of non-entangling FADs without any netting and encourage research on biodegradable materials.
10. Promote the application of proven best practices of bycatch release on purse seiners and encourage research to develop safe-handling techniques to improve the post-release survival rates of sensitive fauna.
11. Additional electronic tagging experiments should be conducted in order to evaluate post-release survival rates.

SEABIRDS

12. The WG requests a review and update of the mitigation options in Resolution C-11-02, including potential harmonization with WCPFC seabird regulations and ACAP guidelines.

MARINE MAMMAL SAFE HANDLING AND RELEASE GUIDELINES

13. The WG requests that marine mammal identification guides and safe handling and release guidelines be posted on the IATTC website.