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**Update on the Common Oceans (ABNJ) Tuna Project's Shark and Bycatch Components,
2017-2018**

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Abstract

This paper presents a brief overview of the Common Oceans (ABNJ) Tuna Project activities being led by the WCPFC Secretariat with scientific support from SPC. These activities are comprised of shark data improvement and harmonization, shark stock status assessment, and bycatch information and management. In 2017-2018 the Pacific shark post-release mortality tagging study has continued with completion of the tagging in New Zealand and work underway in Fiji, New Caledonia and the Marshall Islands. Final stock status assessments have been completed for Pacific-wide bigeye thresher shark and Southern Hemisphere porbeagle shark, and new assessments are being presented to SC14 for Pacific-wide silky shark and Pacific-wide whale shark. A Bycatch Mitigation Problem-Solving Workshop using BMIS was held in Nouméa in May which was attended by 11 WCPFC CCMs and 7 IGOs/NGOs. A number of other products that have been delivered or are in preparation are described. Under a recently agreed no-cost extension all project work must be completed by August 2019, at the latest, in order to close out the project and consider a second phase.

1 Background

The WCPFC, along with the four other tuna Regional Fisheries Management Organizations (t-RFMOs), is a partner in the Areas Beyond National Jurisdiction (ABNJ) – often referred to as Common Oceans – Tuna Project (www.commonoceans.org). The objective of this project is to achieve efficient and sustainable management of fisheries resources and biodiversity conservation in marine areas that do not fall under the responsibility of any one country. Within this set of activities WCPFC has committed to leading three components:

- Shark Data Improvement and Harmonization
- Shark Assessment and Management
- Bycatch Information and Management

The first two components involve working in partnership with the Inter-American Tropical Tuna Commission (IATTC) to improve shark monitoring and management across the Pacific. The third component is global in scope and focuses on developing a database of bycatch mitigation and management information and conducting workshops to analyse mitigation data.

An Execution Agreement between the implementing agency, the Food and Agriculture Organization of the United Nations (FAO), and the WCPFC was signed on 25 October 2014. A Memorandum of Understanding between WCPFC and the Pacific Community (SPC) for activities under the ABNJ Tuna Project was signed on 20 January 2015 and was updated in June 2017 and February 2018. A Technical Coordinator-Sharks and Bycatch (TCSB), Dr. Shelley Clarke, was hired in June 2014 and was based at the WCPFC Secretariat in Pohnpei, Micronesia until December 2017. At that time, based on a recommendation from the Common Oceans (ABNJ) Tuna Project's mid-term review, the TCSB's Micronesia-based contract was terminated and she was employed directly by FAO on 12 February 2018. Under an amendment to the WCPFC-FAO Execution Agreement, the TCSB continues to perform the same duties from her new duty station in Rome.

Under the existing agreements the project runs through 14 January 2019. However, at the most recent global Project Steering Committee meeting in July 2018, it was confirmed that the Global Environmental Facility would grant a no-cost extension to allow the project more time to complete its work within its original budget. For the WCPFC-based work to extend beyond mid-January 2019 a further amendment to the FAO-WCPFC Execution Agreement, as well as a 2019 MOU between

WCPFC and SPC, will be required. FAO is calling for all project work to be completed by August 2019, at the latest, so that the Common Oceans (ABNJ) Tuna Project's entire programme of work can be closed out by the end of 2019. It will be necessary for the global project to terminate before a proposal for a second phase, i.e. ABNJ2, can be considered.

2 Status of Work

2.1 Shark Data Improvement and Harmonization

The objective of this component is to work toward developing a practical and consistent approach to monitoring the status of sharks caught by ABNJ tuna fisheries. It focuses on identifying the data deficiencies which inhibit assessment, and thus management, and proposes strategies to obtain more data through field studies and better information return from fisheries.

Highlights for the fourth year of the project (July 2017-June 2018) include:

- Shark post-release mortality tagging studies for longline fisheries continued with funding from both the ABNJ Tuna Project and the European Union. As of 30 June 2018, shark post-release mortality tagging has been completed in New Zealand and continues in Fiji with a total of 47 shortfin mako and silky sharks now tagged. New tagger training has been conducted in New Caledonia in June to support tagging of shortfin mako sharks (Lyon et al., 2018).
- The Technical Coordinator Sharks and Bycatch (TCSB) prepared a paper for WCPFC13 regarding harmonization of data collection for manta and mobulid rays versus other key shark species. This supported a Commission decision to consider manta and mobulid rays as Species of Special Interest (SSI) under the WCPFC Regional Observer Programme Minimum Standard Data Fields (Clarke et al. 2017)
- Travel support was provided for a south Pacific shortfin mako ageing expert to attend the ISC workshop on this subject in Japan in October 2017 (ISC 2018).
- In accordance with the SC13-approved Shark Research Plan for 2018, WCPFC issued a request for proposals on operational planning for the collection of shark biological samples (WCPFC Circular 2017/91) on 15 November 2017. Unfortunately, no proposals were received.
- SPC produced the 2017 bycatch data exchange (compilation) protocol (BDEP) for WCPFC (Williams et al. 2017). Work is underway at IOTC to produce its own BDEP (IOTC 2017a).

The shark data improvement and harmonization component was awarded a project progress rating of "Highly Satisfactory" at the annual Common Oceans (ABNJ) Tuna Project Steering Committee in July 2018.

In the fifth year of the project (July 2018-) the following activities are planned:

- The shark post-release mortality tagging project will be completed through further tagging of silky and shortfin mako sharks in Fiji and the initiation of tagging activities in New Caledonia and the Marshall Islands. The project is maximizing its efforts to have the tagging completed by the end of 2018 if possible, but this depends on fishery conditions.
- SPC will deliver new identification materials and training to observers to support recent designation of manta and mobula rays as WCPFC key species. In addition, SPC will provide enhanced training focused on separating silky sharks from other Carcharhinids, and distinguishing between the three thresher shark species, particularly when fishers cut sharks off the line. Finally, SPC will expand the existing Pacific Island Regional Fishery

Observer shark species guides to include a greater range of species, multiple illustrations per species, and tips for distinguishing between similar species (Park et al., 2018).

- SPC will update the Global t-RFMO Shark Browser prototype for loading into the Bycatch Management Information System.
- SPC will continue with the Bycatch Data Exchange Protocol (BDEP) work for WCPFC, as well as prepare for options to incorporate summaries from other t-RFMOs including integration with IATTC's newly available public shark data holdings.
- Funding remains available for a study on operational planning for the collection of shark biological samples.

2.2 Shark Assessment and Management

The objective of this component is to identify risks and priorities for shark conservation through assessment, using new data generated by the Shark Data Improvement and Harmonization component (see Section 2.1) and improved tools developed under this component as appropriate. It will evaluate the existing management framework and develop measures to strengthen shark management by t-RFMOs.

Highlights for the fourth year of the project (July 2017-June 2018) include:

- The first of four stock status assessments, for Pacific-wide bigeye thresher shark, was presented to WCPFC's Scientific Committee (SC13) in August 2017. SC13 recommended that the WCPFC consider management options. The assessment was revised in accordance with comments received at SC13 and re-posted on the SC13 website as a final product (Common Oceans (ABNJ) Tuna Project 2018a).
- The second assessment on the southern hemisphere porbeagle shark, undertaken in cooperation with CCSBT, was presented to SC13 in August 2017 and was accepted. No management action is required. The results were also presented to the IOTC in September 2017. The assessment was revised in accordance with comments received at SC13 and re-posted on the SC13 website as a final product (Common Oceans (ABNJ) Tuna Project 2017a).
- The third assessment, on Pacific-wide silky shark, undertaken in cooperation with IATTC, was initiated in early 2017. A paper on data preparation was submitted to the WCPFC's SC in August 2017 (Clarke 2017a) and an estimate of silky shark catches for the WCPO and EPO based on shark fin trade data will be submitted to SC14 (Clarke 2018). A stock assessment (Clarke et al. 2018) will also be presented to SC14.
- The fourth assessment, for Pacific-wide whale shark, commenced by consultant Dragonfly Data Science in January 2018. Two progress reports and a Delphi survey were produced and the assessment report will be presented to SC14 (Neubauer et al. 2018). IATTC produced a paper on whale shark interactions in the EPO which provides useful background to the assessment (Román et al. 2018).
- The TCSB participated in the IOTC blue shark assessment in September 2017 (IOTC 2017b) and the ISC shortfin mako assessment data preparation in November 2017 (ISC 2018).
- An IATTC-WCPFC collaborative paper entitled "*The importance of environment and life stage on interpretation of silky shark relative abundance indices for the equatorial Pacific Ocean*" was accepted for publication by Fisheries Oceanography (Lennert-Cody et al. in press).
- The TCSB is supporting the work of WCPFC's first Inter-sessional Working Group on sharks (chaired by Japan) which is attempting to draft a single, comprehensive shark management measure including resolving ongoing debates about how to regulate shark finning. This work included preparation of three papers on a comprehensive shark CMM for WCPFC's SC

(Clarke 2017b), TCC (Clarke 2017c) and Commission meetings (WCPFC 2017) and assistance with drafting the recommendations adopted by each of the three meetings. The TCSB has also contributed to three draft CMM texts produced so far in 2018. The fourth draft will be discussed at SC14 in August 2018.

- Consultant funding (\$30,000) saved by the TCSB's work on the four shark assessments has been reprogrammed to supplement funding allocated by the WCPFC to support the development of shark limit reference points. CSIRO is currently undertaking the study and will report the results to SC14 (Zhou et al. 2018). The TCSB has contributed background information and comments.

In the fifth year of the project (July 2018-) the following activities are planned:

- Final edits to the silky shark and whale shark assessments, if required on the basis of SC14 comments, will be made and the final documents posted on the WCPFC website.
- Follow-up to support management actions, if required, from any of the four shark assessments will be provided.
- Assistance with finalization of the shark limit reference point study will be provided, if required.
- Input to and assistance for the effort to develop a comprehensive shark CMM for consideration at WCPFC15 in December 2018 will be provided upon request.
- The preparation of a peer-reviewed manuscript(s) on new methods for shark assessment will be considered.

The shark assessment and management component was awarded a project progress rating of "Highly Satisfactory" at the annual Common Oceans (ABNJ) Tuna Project Steering Committee in July 2018.

2.3 Bycatch Information and Management

The objective of this component, which is co-led by SPC, is to collate, catalyze and disseminate new information that will direct effective management to mitigate impacts on bycatch species including sharks, seabirds, sea turtles and cetaceans. This is expected to help reduce technical uncertainties across a range of stakeholders, allowing t-RFMO discussions to focus on management issues such as cost and feasibility.

Highlights for the fourth year of the project (July 2017-June 2018) include:

- Information papers on the Bycatch Management Information System (BMIS) were presented to SC13 and SC14 (Fitzsimmons et al. 2017, 2018). Work has continued on the BMIS mainly in the areas of updating with new references and improving search capabilities. User reviews have provided some general feedback which has been incorporated into the system from March-May 2018.
- The results of the joint analysis of sea turtle mitigation effectiveness were presented to SC13 (Common Oceans (ABNJ) Tuna Project 2017b).
- A workshop on bycatch problem-solving using BMIS was held in Nouméa on 28-30 May 2018 and attended by representatives of 11 WCPFC CCMs and 7 IGOs/NGOs. The three-day workshop's content was developed and delivered by Common Oceans (ABNJ) Tuna Project staff and the report of the workshop is being presented to SC14 (Common Oceans (ABNJ) Tuna Project 2018b)

In the fifth year of the project (July 2018-) the following activities are planned:

- A large amount of work outlined in the Fitzsimmons et al. (2017) remains to be delivered by the end of the project:
 - the peer review exercise for shark, sea turtle and seabird subject areas;
 - substantial further work on management and population-level assessment modules;
 - development of mapping capabilities;
 - updating of the shark tagging information system (STAGIS);
 - integration of BDEP summaries.
- A second expert workshop on shark mitigation is planned for Auckland, New Zealand once all of the shark post-release mortality tags have reported. The workshop will review, synthesize and interpret the tagging results in conjunction with similar studies in different fisheries.

The bycatch information and management component was awarded a project progress rating of “Satisfactory” at the annual Common Oceans (ABNJ) Tuna Project Steering Committee in July 2018.

3 Consultation

WCPFC and IATTC cooperated to hold the fourth Sharks and Bycatch Consultative Committee meeting in the margins of WCPFC14 in Manila, Philippines in December 2017. Topics discussed included the coordination of observer data collection standards, the transfer of the TCSB to Rome, and the opportunities for consultation when designing the second phase of the project (ABNJ2).

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