



WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

Pelagics Fishery Ecosystem Plan Team Meeting

November 19, 2020

1:00 p.m. – 5:00 p.m.

Web Conference

Honolulu, Hawaii

Inter-Sessional Meeting Report

1. Welcome and Introductions

Donald Kobayashi, chair, opened the meeting and welcomed members and the public. Plan team members in attendance were Keith Bigelow, Felipe Carvalho, Emily Crigler, Stefanie Dukes, William Dunn, Michael Fujimoto, Melanie Hutchinson, Russell Ito, T. Todd Jones, Michael Kinney, Joshua Lee, Kirsten Leong, Minling Pan, Michael Quach, Brent Tibbatts, Ashley Tomita, Phoebe Woodworth-Jefcoats. Sean Felise was excused and Reginald Kokubun retired. Council staff present were Mark Fitchett, Asuka Ishizaki, and Joshua DeMello.

2. Approval of Agenda

The agenda was approved without changes.

3. Oceanic Whitetip Working Group Report

A. Monte Carlo Analyses of Mitigation Measures

Keith Bigelow, PIFSC, discussed the use of a Monte Carlo Simulation analytical approach to analyze and quantify the impact of mitigation measures on all Pacific longline fisheries, including the US. These measures could include the removal of ‘shallowest’ hooks, exchanging of wire tracers/leaders to monofilament, and the use of circle hooks in place of traditional tuna J-hooks. This is an update to a study conducted in 2015 (Harley et al., 2015¹) with data up to 2012. PIFSC will update the 2015 study with five more years of data through 2018. PIFSC has the international longline data and R code to conduct the analyses, but data is in the quality control stage. The study will be completed by February 2021 and presented to the Oceanic Whitetip Working Group, the SSC, and Council before March 2021.

¹ Harley S, Caneco B, Donovan C, et al (2015) Monte Carlo simulation modelling of possible measures to reduce impacts of longlining on oceanic whitetip and silky sharks. WCPFC Science Committee, Pohnpei, FSM

B. Post Release Mortality, Handling, and Trailing Gear

Melanie Hutchinson, PIFSC, presented updates to prior work quantifying post-release mortality of oceanic whitetip sharks using pop-off satellite archival tags (PSATs). This work was partnered with University of Florida scientists who estimated mortality through time using a Bayesian approach to survival analyses and proportional hazard models. Hutchinson also presented on community tagging efforts in Hawaii to glean interaction rates, shark population demographics, habitat use and movement.

Plan Team members discussed the capabilities of pop-off archival tags (PAT) and any technical aspects of the tags that could be of issue. The tags used in Hutchinson's study are sufficient for the hypotheses they are testing. The survivorship PATs (SPAT), transmit binned data with daily summaries of temperature, depth and light levels after a 30 or 60- day deployment period. In addition, the SPATs transmit data to help with interpretation of the fate of the tag. If the SPAT sank beyond a critical depth threshold or sat at a consistent depth for more than one day the fate of the animal is deemed a mortality, if the tag was shed early due to attachment failure or similar the tag is considered to be a 'floater' and we know that the animal was still swimming when the tag came off. If the tag initiates release at the completion of the programmed deployment period the fate of the animal is considered to be a 'survivor'. These tagging parameters can determine mortality. There have been some manufacturer issues in the past with nose cones and batteries which drew severe problems in some batches of tags. MiniPAT tags are more expensive, but transmit time series data (as opposed to daily minimum and maximum for depth and temperature) for usage in habitat models and to determine post release fate. Hutchinson used a subset of the miniPATs programmed for 180 and 360 days to assess the effects of trailing gear on blue and oceanic whitetip sharks.

Plan Team members noted that the mortality rates estimated from longer time horizons on the PSAT tags should be interpreted with caution due to the difficulty of differentiating interaction-related mortality from natural mortality or predation.

A Plan Team member also inquired if a tool may be developed to allow calculation of post-hooking mortality based on release/injury conditions (similar to turtle & marine mammals). Hutchinson confirmed and referred to a table in her presentation.

C. Vessel Specific Impact Analyses

Mark Fitchett, Council staff, presented an update on oceanic whitetip shark catch-per-unit-effort (CPUE) analyses. Previous analyses of catch information from the Pacific Islands Observer Program database identified drivers impacting CPUE of oceanic white tip sharks. Factors influencing CPUE are mostly due to spatial stratifications of catch and effort that shift through time due to fishery effects and spatial closures. However, this update accounts for variability due to time and spatial effects and identifies fishers with higher than normal probabilities of interacting with oceanic whitetip sharks, regardless of time fished or where they fished. These results can help strategize targeted outreach for the Hawaii longline fishery. Vessel and captain effects are very small relative to spatial effects. Strong patterns in hook position were exhibited in records with oceanic whitetip shark catch, particularly hooks closest to the floatline.

D. EBFM Project Updates

Rob Ahrens, PIFSC, provided an overview and status of the EBFM Project, which aims to quantify fishery and resource responses to dynamic ecosystem and oceanographic features. In the case of oceanic whitetip sharks, the aim is to define environmental features that explain the probability of interactions. Preliminary results include: distance of oceanic whitetips to sea surface temperature (SST) front, proximity to seamount, and distance to other fronts have been found to be main drivers to the spatial interaction patterns. Current modeling outputs show the highest probabilities of encounters south of the Main Hawaiian Islands. The project will next develop predictive products on a weekly basis to correspond with ecosystem dynamics. Ahrens also provided an update on Turtle Watch validation, which is another major component of the EBFM project to provide adaptive management tools for fisheries.

Plan Team discussed the benefit of having so many oceanographic and ecosystem variables examined, noting that it offers a starting point for other hypotheses that warrant evaluation or exploring.

A Plan Team member commented on the quarterly spatial distribution of interactions, noting that there appears to be a hotspot to the southwest of the Hawaiian Islands when the fleet tends to fish toward the northeast. Ahrens responded that some of the patterns may come from false positives from the model fitting procedure and it would be useful to review model output with those who have greater understanding of the fishery.

E. Working Group Report Summary

Keith Bigelow, PIFSC, reported on the Oceanic Whitetip Shark Working Group which has been formed to prioritize analyses and develop a roadmap for analyses needed for anticipated management actions to satisfy ESA requirements and those under the MSA Sec 304(i). These MSA obligations include considering the relative impacts of US-vessels on international overfishing to 1) develop recommendations to the Department of Commerce to address domestic impacts and 2) recommendations to the State Department to address international needs to end overfishing. The Working Group identified research projects of priority, which were presented and summarized above.

Stock projections under future catch scenarios (up to year 2032) analyses quantifying US fishery impacts were conducted by Council contractor Joel Rice and presented by Felipe Carvalho and Mark Fitchett. Future catch scenarios corresponding to 10% and 20% reductions from 2016 catch levels showed stock recovery and correspond to independent estimates of catches for 2017 and 2018 (Peatman and Nicol, 2020²). US longline impacts on spawning potential in projections in the future to 2031 were about 1.2% with 0.8% attributed to the Hawaii Deep-Set fishery. Assuming no oceanic whitetip removals from the US fisheries for 17 years may lead to a 4% increase in stock biomass by 2031.

² Peatman T and S Nicol (2020). Updated Longline Bycatch Estimates in the WCPO. WCPFC 16th Science Committee, SC16-ST-IP-11, Electronic Meeting.

The Working Group report also identified international issues such as perceived weaknesses in the existing WCPFC conservation and management measure (CMM), international observer coverage deficiencies, and possibilities of catch or F-based stock targets. The Working Group noted the adoption of the current shark CMM, was not a trivial matter and additional revisions to the CMM (e.g., regarding options to fins naturally attached) is unlikely at this time. However, observer reporting levels remained a focal need for monitoring species of non-retention. The Working Group also emphasized the need for reducing longline trailing gear.

The Plan Team asked if the current CMM includes oceanic whitetip and silky shark retention prohibitions. It was clarified the new CMM 2019-04 replaces other shark CMMs and does not change them.

The Plan team also discussed handling of sharks, including issues with ‘side haul’ handling and any compliance issues. It was noted that survivorship increased when the shark was hauled to side of the vessel, but sharks are usually cut free before they can be identified, often resulting in substantial trailing gear. Plan Team members also noted that regarding identification, electronic monitoring (EM) is a useful tool, but shark identification is a problem to date.

The Plan Team noted that improving handling, at-sea identification of sharks, removing trailing gear, and use of circle hooks would be beneficial for the recovery of species of concern, such as oceanic whitetip sharks. Estimates of longline trailing gear remaining after a shark is released is 9.2 m in the Hawaii deep-set fishery and 3.0 m in the American Samoa fishery. The data from Hawaii shows that reducing trailing gear to shorter than 1 body length (1.5 meters average) improves post-release survival probability, and current WCPFC shark handling guidelines include advice to cut the line as close to the hook as possible leaving less than 0.5 meters of line attached to the animal. Some version of these options for reducing trailing gear is advisable for implementation in Pacific Island Region longline fisheries. The Plan Team emphasized that changing the approach to handling sharks in the same manner a marine mammal or turtle would be handled could, especially with removal of trailing gear, have a positive impact.

Council staff inquired to Plan Team Members whether an F-based target or catch level could inform an international recommendation for stock recovery, noting the stock projections under certain future catch levels demonstrate recovery. Plan Team noted that catch and interaction rates are highly uncertain for species with non-retention measures and noted catch is difficult to estimate or monitor because ‘catch’ is often reported for retained species only; therefore an F-based rebuilding target and accounting for discards is ideal but highly unlikely. Managers could alternatively move toward a more appropriate adaptive management measure.

The Plan Team also noted the importance of a linecutter device and the reduction of trailing gear. Protected species interactions are already rare in the Hawaii longline fishery, given measures already implemented, Further resources toward handling practices and removal of extraneous line/gear from released animals is a last notable issue remaining to further reduce and mitigate impacts.

The Plan Team noted the need for reliable and representable catch information for assessments and noted that the ability to conduct full stock assessments will be difficult because of non-

retention of oceanic whitetip sharks. Moving forward, well-monitored fisheries will provide indicators from interaction rates will track population trajectories and health of stocks, because knowledge on fishery-dependent removals through time from catch reporting (usually reported as retentions) will not be available. Council staff commented that with respect to indicators based on catch rates in well-monitored fisheries, a positive trend can be an indicator of an increasing population, whereas increases in interactions are often interpreted negatively for protected species.

A Plan Team member mentioned that the US could propose another stock assessment in research priorities for the future, also noting that international fishery managers will also likely lose a year's worth of data due to COVID-19 removing observer requirements – with exception of the US.

4. Possible North Pacific Striped Marlin Rebuilding Measure(s)

Fitchett presented on possible options for future US catch/effort limits for North Pacific striped marlin to satisfy requirements under MSA Section 304(i). The Council had previously recommended a US catch limit of 457 mt, in response to overfishing condition of the stock. This recommendation was incorporated into draft Pelagic FEP Amendment 8, which provided a framework to wrap-in CMMs by regional fishery management organizations (RFMOs) such as the WCPFC, into the Pelagic FEP with any subsequent catch/effort limits as internationally agreed upon. The previous catch limit recommendation for striped marlin was based on CMM-2010-01. In 2019, a rebuilding plan was adopted for the stock, but with no specific terms to reach the objectives. The target for the stock is to reach 20% spawning biomass in absence of fishing 20% $SSB_{F=0}$ within a 15 year horizon (by 2034), with at least 60% probability of reaching the target. The Council FEP and MSA require that the Council implement regulations to end overfishing immediately and rebuild affected stocks within 10 years, except in certain cases, including when management measures exist under international agreements. For stocks that are overfished due to international fishing pressure, the Council must develop recommendations in order to address the relative impacts of the US vessels on the stock, which may include catch limits in some cases. Fitchett presented on stock projections implementing phased catch limits that could demonstrably satisfy WCPFC rebuilding targets with at least 60% probability. Fitchett also provided options for US catch limits corresponding to 21.8% of a projected total allowable catch (US catches were 21.8% of total catch in the last five years in the stock assessment) or catch limits from past Council action. Pros and cons were discussed for either approach or any other alternative.

The Plan Team discussed inconsistencies between data provided by the ISC (who conducts the stock assessments) and data held by the WCPFC, which would likely render problems for allocating a total allowable catch for all WCPFC fisheries. The Plan Team also noted that Japan catches have decreased, US catches and associated impact are more significant today than in previous decades, and Council staff pointed out that other Asian distant water nations catch (Korea and China) are pooled into a 'WCPFC Other' category with non-ISC members. Council staff noted China has not participated in the ISC Billfish Working Group since 2012 and catch uncertainty for many fisheries remains problematic, which indicates a need to improve catch reporting.

The Plan Team acknowledged that data inconsistencies between ISC and WCPFC-held data could potentially affect international catch limits to be proposed. It was noted that it may be unrealistic to expect WCPFC to reach agreement on a new striped marlin measure in 2020.

The Plan Team noted that recommendations of US catches from past Council action, such as 457 mt would be difficult to justify in an international measure, noting a further catch reduction would be likely needed. Therefore, any recommendation should consider possibilities at the international level. Council staff agreed and noted that the Council must act within one year of its overfishing notification (June 4, 2021), even if international measures are not enacted.

5. Stock Status Determination of Western and Central Pacific Silky Shark

David O'Brien, PIRO, delivered a presentation summarizing the overfishing status (not overfished) of Western and Central Pacific silky shark. The US longline impact less than 1% of catches. However, the Council is required to take action one year from notification of the stock status, by October 20, 2021. The Council is obligated to act pursuant to MSA Section 304(i).

6. Tori Line Options for Hawaii Longline Fisheries

Asuka Ishizaki, Council staff, presented the options paper for including tori lines in the Hawaii Longline fishery seabird mitigation measures. The Council at the December 2020 meeting will consider options for inclusion of tori lines in the seabird mitigation measures in the Hawaii deep-set longline fishery, including specific considerations for allowing the use of tori lines without blue-dyed bait. Additionally, the Council will consider options to define the scope of the Council action, such as the applicability of the action to the shallow-set sector, modification of strategic offal discard requirement, conversion of requirements to mirror RFMO measures, and addressing cross-taxa impacts associated with weighted branchlines. Plan Team was asked to provide input on the scope of the Council action.

A Plan Team member commented that a requirement to withhold offal during hauling operations could result in discharge of offal after the conclusion of hauling operations, which may be problematic when the start of setting operations occurs shortly after the end of the last hauling operation. Another member asked about the cost of tori lines compared to blue-dyed bait, and whether tori lines would be provided to vessels if required. Ishizaki responded that the line constructed for the cooperative research project cost less than \$200 per line and the tori pole may range between \$300 and \$800 depending on materials and height. Purchasing required bycatch mitigation tools is generally a cost incurred by the vessel owner, but free tori line distribution could be considered to encourage uptake as done in the Alaska fisheries.

The Plan Team discussed the importance of considering results from the planned Experimental Fishing Permit study to test tori lines without the use of blue-dyed bait in the development of management options.

7. DSLL/ASLL RPM Development

Ishizaki provided an update on the development of reasonable and prudent measures (RPMs) for the ongoing Endangered Species Act (ESA) consultation for the Hawaii deep-set and American Samoa longline fisheries. The Council at its June 2020 meeting developed a list of considerations for potential RPMs, which included a focus on improving handling practices to reduce post-hooking mortality. No new information on the consultations have been provided to the Council to inform development of potential RPMs. Further input from the Pelagic Plan Team will be sought at a future meeting.

8. Hawaii Non-Longline Fishery Management

Joshua DeMello, Council staff, delivered a summary of small-boat fishery management options for permitting and reporting to the Plan Team meeting in April. A virtual Fishers Forum was held in August to review the options prior to the Council meeting in September. The Council, at its 183rd meeting discussed the options and decided to hold a meeting with the State of Hawaii and NMFS PIRO and PIFSC to address Hawaii fishery management. That meeting was held on October 27, 2020 where DAR, PIRO, PIFSC and the Council agreed to work together to address Hawaii fishery management issues, including the lack of non-commercial data. DeMello reported that Council staff is continuing to work with all of those agencies to determine next steps and addressing issues.

9. Public Comment

Dave Gershman, Ocean Foundation, provided comment on oceanic whitetip sharks and the associated Working Group. Gershman urged the Plan Team to consider the use of management tools and gear modifications such as removing wire leaders and to look into spatial management tools for avoiding fishing interactions in known nursery areas. He emphasized that the US can be a leader in the Pacific on recovering the species and found it encouraging to hear update on work of Working Group. He noted the need to increase observer coverage, reminding the Plan Team that the current requirement wasn't supposed to the final coverage goal. He said 10% observer coverage is not enough and the next target should be up to 20%. The use of EM to record oceanic whitetip shark interactions and occurrences is needed, with improvements to detect and identify species of sharks. The WCPFC Science Committee did not address ecosystem and bycatch issues in 2020 and the US should take the lead at the WCPFC Science Committee next year to push for better science and management for the species.

10. Pelagic Plan Team Recommendations

The Pelagic Plan Team:

1. Recommends the Council to work with NMFS to advise Pacific Island Region longline fisheries to improve the handling and reduce the amount of trailing gear (e.g., <1 body length, or 0.5 meters) left on sharks; furthermore improve shark handling practices in all longline fisheries, as described in RFMO Conservation and Management Measures, to be similar to the level of consideration for marine mammals and sea turtles.

2. Recommends the Council work with NMFS and industry to expedite development of guidance on reducing trailing gear in Pacific Islands Region fisheries and an economically feasible and effective linecutter device.
3. Recommends the Council work with NMFS, the US State Department, and RFMOs to encourage increased monitoring of all non-US Pacific longline fisheries, such as increased observer coverage and electronic monitoring capabilities. This recognizes the need of well-monitored fisheries to develop status indicators and inform management of species with non-retention measures, such as oceanic whitetip sharks.
4. Recommends that the Council proceed with developing US catch limit options for North Pacific striped marlin using projections provided by PIFSC for rebuilding measures, taking into account relative impacts of US vessels on international overfishing. Catch limit options should also take into account adopted WCPFC rebuilding plan terms and possible future rebuilding terms.
5. Regarding the options paper, the Pelagic Plan Team recommends the Council consider development of alternatives to existing seabird mitigation measure requirements to allow use of tori lines in the Hawaii deep-set longline fishery based on existing scientific findings as well as results of the additional at-sea study in Hawaii.

11. Other Business

A Plan Team member commented that COVID-19 had an incredible impact on the fisheries of Hawaii, especially pelagics. Larger boats may not ‘make it’ through the year and effort is going to be down next year from impacts felt in 2020. The CARES Act has helped the fleet, but a lot of it is subsidies from the government and when those monies are used up, it may be problematic.

Kitty Simonds, Council Executive Director, provided an update on the American Samoa Large Vessel Prohibited Area, which will be reopening to the American Samoa longline fleet (for waters 12 nm to 50 nm from shore) as the outcome of the litigation once PIRO completes the rulemaking to reinstate the previous exemption.