WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

138th Meeting of the Scientific and Statistical Committee
November 30 – December 1, 2020
Web Conference

FINAL REPORT

4. Report from PIFSC Director

Michael Seki, PIFSC Director, provided an update on the Science Center's activities since September 2020. The Fall 2020 Bottomfish Fishery-Independent Survey in Hawai'i (BFISH) survey that supports bottomfish stock assessment in the main Hawaiian islands was completed on November 15, 2020. This included the directed fishing and the underwater stereo camera MOUSS deployment. Seki noted that the MOUSS deployment was accomplished entirely by commercial fishing partners and for the first time, sampling was done independently without PIFSC technical staff on board. A line transect survey for spinner dolphins with a companion mark-recapture study of dolphin abundance, residency, and movement around Oahu and between the main Hawaiian islands was launched.
A number of activities resumed with COVID-19 restrictions. PIFSC, in collaboration with the Council and PIRO, convened the 4th Annual Collaborative Climate Science Workshop. The virtual workshop this year focused on identifying the gaps in the current projects identified from the previous workshop for application in fisheries management. In addition to the workshop, PIFSC resumed electronic monitoring and reporting research, BET fast tracking, Marine Field Turtle Research, marine mammal and sea turtle stranding and recovery (single person) activities, Coral Bleaching Recovery Surveys, life history age and growth studies, EFH MUS sample collection and processing, and on-site Guam data entry. PIFSC also resumed numerous structural and maintenance activities.

There were two new projects funded through the Fisheries Information System Program and the National Catch Shares Program and Nation Observer Program and are now underway. The first one is the efficacy and implementation of electronic monitoring to quantify the mortality and serious injury of marine mammals and post-interaction mortality of sea turtles in the Pacific Island longline fisheries. The second project is electronic reporting of the bottomfish fisheries in the territories. This project supports the implementation and evaluation of the Catchit Logit app developed by the Council. This data collection improvement project aims to support future stock assessments.

The PIFSC Life History Program recently completed a study on aspects of yellow tang reproductive biology. In addition, the Hawaiian Monk Seal Research Program researchers examined the specific causes-of-death for main Hawaiian Islands monk seals and assessed the impact of these causes of death on the monk seal population growth rate. Two anthropogenic causes of death (trauma and gear related drowning) had a larger effect on the population growth rate than disease or other natural causes of death. In partnership with the Animal Telemetry Network (ATN), the Hawaiian monk seal tracking data is available online through the ATN portal.

The SSC thanked Seki for his presentation.

5. Pelagic Fisheries

A. Southern Exclusion Zone and Deep-set Longline Catch Rates

Dan Ovando, University of Washington, presented on a project that investigated indirect impacts of fishery performance for the deep-set longline fishery after effort was precluded from the Southern Exclusion Zone (SEZ). The report assessed changes in various fishery performance metrics over time, including catch per trip, catch per kilometer (km) traveled, and mean length of catch (for bigeye and yellowfin tunas). The analyses considered competition and interactions with non-USA flagged fishing vessels for the Hawaii deep-set longline fleet due to effort redistribution into the high seas, which may have negative impacts on vessel fishery performance. Compared to fishing vessels that historically never used the waters encompassed by the SEZ, the report finds no evident changes in these measures for the average deep-set longline fishing vessel with any known history of SEZ use.

An SSC member inquired into alternative counterfactual analyses to improve consideration of individual effects (e.g. vessel characteristics, fisher experience). Ovando acknowledged this was feasible, but would require additional data and analyses.

An SSC member indicated that a reasonable next step would be to communicate these results with SEZ-active vessels to ensure the analysis is not missing something obvious.

Ovando and an SSC member noted that the analyses is a summary of impacts pooling all vessels together and does not account for or reflect any loss in fishery performance of individual vessels.

The SSC thanked Ovando for an informative presentation.

B. Oceanic Whitetip Shark Issues

1. Updated Post-release Mortality of Oceanic Whitetip Sharks

Melanie Hutchinson, PIFSC, presented on updates to prior work quantifying post-release mortality of oceanic whitetip sharks using pop-off satellite archival tags. This work was partnered with University of Florida scientists who estimated mortality through time using hazard models. Results suggest that survival rates are reduced when; sharks are injured, leader material is composed of wire, when there are handling impacts from gear removal, and when the length of trailing gear is greater than 1 meter. Leader material and handling had the greatest impact on survival probabilities. Hutchinson provided estimates of post-release mortality (and other mortality additively) from 30 days post-release to 300 days.

An SSC member asked about failure rates of the tags and instances of failure to transmit, mechanical failure, and attachment failure were noted (in total approximately 10% of deployed tags failed). Of the 5 recaptures, 3 were oceanic whitetip and 2 were identified as silky sharks.

An SSC member raised methodological questions related to data censoring techniques and

modeling framework assumptions. Hutchinson indicated that a technical report could be shared with the SSC when available.

An SSC member inquired about whether this study informed the Hawaii Longline Association (HLA) proposal to transition from wire to monofilament nylon leader. Hutchinson indicated that she has shared initial research results with industry.

The SSC thanked Hutchinson for an informative presentation.

2. Analyses of Fisher Effects on Oceanic Whitetip Catch Rates

Council staff provided an update on oceanic whitetip 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 were estimated by operational and spatial stratifications of catch and effort that shift through time due to fishery effects and spatial closures. These results indicate vessel-specific impacts were insignificant compared to spatial impacts.

An SSC member raised methodological questions related to the estimated marginal means approach presented in the presentation, specific to the establishment of weights to generate estimated impacts. Council staff will work with that SSC member to explore alternative weighting options.

3. Oceanic Whitetip Shark Working Group Report

Keith Bigelow, PIFSC, presented on the formation of an oceanic whitetip working group which was 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 priorities so far include Monte Carlo analyses of longline mitigation measures, EBFM project, analyses identifying fisher effects on oceanic whitetips, and post-release mortality reduction. The working group noted the need to address international impacts on the stock, such as increased observer coverage, mechanisms to reduce trailing gears, and impacts on the stock as gleaned from stock projections.

An SSC member provided an update on ongoing at-sea testing for a line cutting device supported with NMFS Bycatch Reduction Engineering Program funds. Initial field tests have been successful at reducing trailing gear on longline hooked pelagic sharks under a wire leader configuration.

The SSC thanked Bigelow for an informative presentation.

C. Reasonable and Prudent Measures and/or Reasonable and Prudent Alternatives for the Hawaii and American Samoa Longline Fisheries (Action Item)

Council staff reported that no new information has been provided from PRD on the ongoing DSLL and ASLL consultations, and that staff have been continuing discussions with SFD and

the Hawaii Longline Association (HLA) regarding potential measures. The Council has received a proposal from the HLA on an industry-led initiative to reduce impacts to various protected species.

Eric Kingma, HLA, presented the industry proposal comprising of gear measures, handling procedure improvements, crew training, development of a fleet communication framework, and research. The fleet has reached an agreement to change over terminal gear material from wire trace to monofilament by mid-2021 to improve post-hooking survivorship of oceanic whitetip shark, leatherback turtles, and other protected species. HLA will work with the fleet to address safety concerns associated with gear flyback.

The SSC commended the HLA for developing this proposal.

An SSC member inquired about catch rates for target species under the proposed switch to a monofilament nylon leader configuration. SSC discussion indicated that some research suggests catch rates could increase and operations that currently operate under this configuration are successful, but there is uncertainty in the outcome and HLA hopes to not see decreases in catch rates.

SSC members expressed questions about crew safety considerations and adherence to seabird regulations under this proposal. Kingma emphasized the flyback prevention device component of the proposal as crew safety is a priority and noted the need for branchline weighting design innovation to ensure safety and adherence to seabird regulations.

An SSC member inquired about the cost implications of this proposal. The industry does not expect a significant cost burden, but highlighted that there is a cost as time will be required to transition from wire leaders, and there is a potential need to change out gear more often if bite-offs increase.

The SSC recognized that the proposal outlines proactive steps that should have significant positive impacts on survival probabilities for protected species and demonstrates industry leadership to minimize impacts from protected species interactions. As an industry-driven proposal the likelihood of success is high. The SSC was overwhelmingly supportive of the HLA proposal.

The SSC recommends that Council consider measures in the HLA proposal for further development under the Pelagic FEP for Council action at a future meeting.

D. Regional Bigeye Tuna Research Plan

Johanna Wren, PIFSC, presented on updates to the Regional Bigeye Tuna Research Plan. PIFSC and Council staff have developed some priorities in the near and long-term future for incorporating science in management needs – such as, improved age and growth, and utilizing forecasting tools for pelagic management unit species in the longline and small boat fisheries.

An SSC member inquired about the scope of bigeye tuna sampling efforts outside of Hawaii to inform a study on global bigeye tuna stock structure. It was noted that the majority of effort will be in tropical areas and that local efforts are focusing on areas with less sample coverage, such as the bigeye tuna grounds northeast of Hawaii.

An SSC member applauded the ecosystem approach and advised the group that SPC conducts annual tagging missions and recently completed an effort south of Hawaii. It would be a good time to put the Hawaii longline fishery on alert for tags and encourage recovery.

The SSC thanked Wren for an informative presentation.

E. International Fisheries

1. Potential Catch Limits for North Pacific Striped Marlin (Action Item)

Council staff presented possible options for future US catch/effort limits for North Pacific striped marlin to satisfy requirements under MSA Section 304(i). The presentation included stock projections using phased catch limits that satisfy WCPFC rebuilding targets, end overfishing, and provide context for domestic catch limits. The presentation 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), catch limits from past Council action (457 mt), or take no action on catch limits. Pros and cons were discussed for possible catch limits and their rationale.

SSC members lended provisional support for Option 1 as it addresses overfishing internationally and domestically, is compatible with a proposed WCPFC rebuilding plan, is based on BSIA from the most recent stock assessment, and provides a phased and flexible strategy. However, an SSC member noted that assuming the 'short-term' recruitment scenario may lead to misspecification of rebuilding targets relative to unfished biomass. SSC members noted that catch limits until the next stock assessment would be more appropriate, given the stock's population dynamics will be re-evaluated.

Council staff addressed recruitment assumption questions. The SSC member indicated that such a situation renders a need to rebuild stocks relative to fishing mortality (such as F_{MSY}), per NRC guidelines. Phase 1 of the phased catch limits indicate a probability of overfishing relative to F_{MSY} to be just under 50% from 2021-2024.

The SSC recommends Council staff develop a preferred option for WCNPO striped marlin catch limits for US vessels consistent with the proportion of US catches from 2013-2017 catch biomass implemented in the 2019 stock assessment, consistent with BSIA, and 21.8% of a phased total catch biomass that could demonstrably rebuild the WCNPO striped marlin stock under a future WCPFC rebuilding plan.

The SSC recommends Council staff develop a catch limit through 2024 (Phase 1) whereas the probability of overfishing relative to F_{MSY} is below 50%. The SSC recognizes a new stock assessment in 2024 can evaluate total catch levels needed to rebuild the stock and recruitment assumptions for stock projections through 2034.

2. Proposed Tropical Tuna Measure for Western Central Pacific Fisheries Commission (WCPFC)

Council staff presented on proposed revisions to WCPFC measure that was developed to address allocation scheme for WCPO tropical tunas as the current conservation and management measure (CMM-2018-01) expires in 2020. These revisions were developed assuming increases in total allowable longline catch with some specified purse seine effort.

F. Public Comment

Dave Gershman, The Ocean Foundation, recognized HLA leadership for their *Conversion of Hawaii-Based Deep-Set Longline Fishery to Monofilament Leaders* proposal. Scientific research has demonstrated that the measures detailed in the proposal will significantly reduce deaths of oceanic whitetip sharks and could afford co-benefits for striped marlin. He urged the SSC to support this initiative, continue to support the Oceanic Whitetip Shark Working Group and pursue research to promote species recovery.

Molly Lutcavage expressed excitement to hear PIFSC focus on ecosystem studies for bigeye tuna. She noted it could fill a big gap left by the Pelagic Fisheries Research Program when it ended. She expressed interest in island-oriented work, including spawning and larval studies to better understand yellowfin and bigeye utilization of islands, and encouraged cooperative research opportunities. She highlighted the need to better understand tagging performance and evaluation of tagging technology, analyses, and results.

6. Island Fisheries

A. Territorial Bottomfish Fishery

1. Update on the American Samoa Interim Measure

Brett Schumacher, PIRO-SFD staff, provided an update on the status of the Interim Catch Limit (ICL) action NMFS developed at the request of the Council at its 180th meeting in October 2019. The purpose of the interim measure is to alleviate the economic impact of the sudden drop in the catch limit due to the change in stock status but still allow the biomass to increase. The proposed rule and draft Environmental Assessment was published in the federal register on September 11, 2020. The rule includes an ICL of 13,000 lb and an in-season accountability measure (AM). PIRO-SFD addressed the comments received with no substantial change from the proposed rule. The final rule with an ICL of 13,000 lb and in-season AM was published in November 16, 2020 effective for 180 days through May 17, 2021. Catch accounting will reset with the calendar year. As of June 2020, the estimated catch was about half of the ICL. The final rule included a potential extension for another 186 days through a separate rulemaking action. This could extend the ICL to November of 2021 as the Council is developing the ACLs for 2021-22 and the BMUS rebuilding plan.

The SSC thanked Schumacher for an informative presentation.

2. Options for the American Samoa Bottomfish Acceptable Biological Catch for Fishing Year 2021-2022 (Action Item)

Council staff presented the options for setting the Acceptable Biological Catch (ABC) for the American Samoa bottomfish fishery in Fishing Year 2021 and 2022. The P* analysis conducted on April 16, 2020 resulted in a maximum risk level of 30 percent accounting for the scientific uncertainty. This corresponds to a catch level of 2,000 pounds. Since the bottomfish fishery is subject to overfishing[1], the MSA requires the Council to end overfishing immediately. In developing the options, the Council must consider the impacts to the fishing community as well as the conservation and management of the stock. The SSC deliberated on the following options:

1. Do not set an ABC;
2. Utilize a phase in approach to reduce the impacts of a sudden drop in ABC. The ABC will be 5,000 pounds for FY 2021 and 2,000 pounds for FY 2022;
3. Set the ABC immediately to 2,000 pounds for FY 2021 and 2022
4. Implement a temporary prohibition on fishing for BMUS in federal waters around American Samoa;

An in-season accountability measure will be implemented to track the catch relative to the ACL. The federal waters will be closed to bottomfishing when the ACL is projected to be reached.

There is moderate conservation benefit from these options because only 15 percent of the fishery, using BMUS EFH as a proxy, occurs in federal waters. The federal waters can potentially close for 9-11 months under Option 2 and 3, and 12 months for option 4. The maximum action the SSC can consider is option 4 that would yield the greatest conservation benefit. Given that on average only 9 percent of the total BMUS is sold, the commercial economic impact will be small with an estimated annual revenue loss of $143 to $154 per participant. The economic and cultural impact to the non-commercial sector of the fishery is unknown.

SSC members discussed the practicality of enforcing fishing regulations between territorial and federal waters and the management implications for taking no action (i.e., Option 1). SSC members asked if there are data available to determine the catch in federal and territorial waters. Council staff looked into the expanded catch found in the area codes pertaining to the offshore banks and Taputapu (area codes 13-17 and 23) and the estimated ratio is 24 to 76.

The SSC recommends Option 2 (i.e., a phased-in ABC of 5,000 lb in FY 2021 and 2000 lb in FY 2022). This option provides a gradual reduction in the ABC over a two year period and allows limited access to the offshore banks for the culturally important deep water snappers.

[1] Langseth B, Syslo J, Yau A, Carvalho F. 2019. Stock assessments of the bottomfish management unit species of Guam, the Commonwealth of the Northern Mariana Islands, and American Samoa, 2019. NOAA Tech Memo. NMFS-PIFSC-86, 177 p. (+ supplement, 165 p.). doi:10.25923/bz8b-ng72.

3. Options for American Samoa Bottomfish Rebuilding Plan (Action Item)

Council staff presented the options for the American Samoa rebuilding plan. On February 6, 2020, NMFS notified the Council on the change in stock status for the bottomfish management unit species to overfished and subject to overfishing. MSA §304(e)(3)(A) requires the Council within 2 years after notification on the change in stock status to prepare and implement a plan amendment to end overfishing immediately and to rebuild affected stocks. The rebuilding plan should consider the rebuilding timeline the shortest time possible taking into account the biology of the species and the needs of fishing communities. The rebuilding period shall not exceed 10 years unless dictated by environmental conditions and biology of the species.

The options develop considers the action of ending overfishing through the setting of the ABC. In order for the stock to rebuild in 10 years, the ACL shall be lower than the outcome of the P* analysis. The ACL should be reduced from 2,000 to 1,500 pounds to rebuild the biomass to 292,670 pounds above the BMSY level of 272,800 pounds. The SSC deliberated the following options:

1. Do not implement a rebuilding plan;
2. Implement an Annual Catch Limit of 1,500 lb and an In-Season Accountability Measure over the next 10 years;
3. Establish a Temporary Moratorium on Bottomfish Fishing in Federal Waters around American Samoa
4. Implement an ACL with an In-Season AM, Federal Permitting and Reporting Requirements, and Bag Limits

Common to all of the options is that monitoring will be tracked through the Department of Marine and Wildlife Resources creel surveys. There is no regulation in territorial waters to control the catch. When the fishery closes in federal waters, it is expected that fishing effort will continue within territorial waters. Using Essential Fish Habitat as a proxy for BMUS distribution and catch, only 15 percent of the fishery occurs in federal waters. Therefore, the reduction of catch through this federal action only constitutes a minute portion of total catch but a significant proportion of the deepwater bottomfish species found on the offshore banks.

SSC members noted that deepwater bottomfish are culturally important in American Samoa and closing federal waters would have a significant cultural impact. SSC members also inquired about the ability to adjust the ACL once the stock is rebuilt. An SSC member indicated that in other regions, once a stock is declared overfished, it remains in the rebuilding plan even if it is rebuilt. Discussion also focused on whether additional data would be available for the next benchmark assessment scheduled for 2023, especially given the limited data collection efforts under the COVID-19 pandemic.

The SSC members deliberated on the use of the Tier 5 approach in setting the ACL. This option was explored by staff in the development of the options paper and the results of the Tier 5 approach will be above the OFL from the benchmark assessment which would not prevent overfishing.

The SSC expressed concern that this action will undermine the effort in collecting fisheries data through Catchit Logit. The restrictive limits will discourage fishermen from reporting because the information they submit is viewed as being used against them.

The SSC noted the minority opinion of one SSC member who preferred the no action alternative representing the view of the territorial fishery management agency. The SSC also noted that the decision on selecting the option should consider National Standard 4 on equitable allocation of resources to all stakeholders and National Standard 8 accounting the importance of fishery resources to fishing communities.

The SSC supports Option 2 (i.e., implement an Annual Catch Limit of 1,500 lb. and an In-Season Accountability Measure over the next 10 years). This option still allows access to the culturally important offshore deepwater snappers.

The SSC further reiterates its recommendation that the next benchmark assessment analyze the deep water complex separately from the shallow-water complex. The SSC recommends PIFSC to conduct a data workshop with the American Samoa bottomfish fishermen, local fishery agency, and other interested parties to discuss the data and model assumptions that will be used in the next benchmark assessment.

4. Options for Guam Bottomfish Rebuilding Plan (Action Item)

Compared to the stock status of the American Samoa bottomfish complex, Guam's status is overfished but not subject to overfishing. The Guam biomass projection, although reduced compared to the previous assessment, is much higher than the American Samoa bottomfish stock thus providing more flexibility in terms of viable options. Again the options for the Guam BMUS rebuilding plan is catch based and associated with the previous ACL specification recommended at the March 2020 meeting. The SSC deliberated on the following options:

1. Do not implement a rebuilding plan;
2. Implement an Annual Catch Limit of 27,000 lb and an In-Season Accountability Measure and rebuild in four years;
3. Implement an Annual Catch Limit of 16,299 lb and an In-Season Accountability Measure and rebuild in three years;
4. Implement an Annual Catch Limit of 31,000 lb and an In-Season Accountability Measure and rebuild in six years;
5. Establish a Temporary Moratorium on Bottomfish Fishing in Federal Waters around Guam;
6. Implement an ACL with an In-Season AM, Federal Permitting and Reporting Requirements, and Bag Limits

The options presented are tradeoffs between the annual catch levels, the duration of rebuilding, and the chances of exceeding the catch limit that would trigger extension of the rebuilding period. The catch level of 27,000 pounds was exceeded in four out of ten years while a catch level of 16,299 pounds was exceeded in seven out of ten years. Option 4 provided the least

number of times the catch limit was exceeded at two out ten years (2007-2017 from Langseth et al. 2019). Options 2 and 3 have greater chance of triggering an extension of the rebuilding period based on the historical catch data. Option 4 with a higher ACL has a lower chance of triggering an extension of the rebuilding period. The temporary moratorium of fishing will rebuild the stock in two years. However, the reality is the fishery will continue in territorial waters because there are no regulations that would control the catch in areas beyond federal jurisdiction. Option 5 is the most restrictive option the Council can take in ending overfishing within the shortest time possible but will not address the needs of the fishing community.

SSC members inquired about the number of participants in the Guam bottomfish fishery. Council staff mentioned that estimates of the number of fishers are wide ranging, but there is anecdotal evidence that the fishery is expanding. There was also discussion among the SSC regarding the tradeoffs of the different options, especially between Option 2 and 4, which would allow the stock to rebuild under moderate levels of take. The SSC did not support Option 5, which would establish a temporary moratorium, or Option 6, which would set individual bag limits and require federal permitting and reporting for fishers.

The SSC supports either Option 2 (ACL of 27,000 lb, rebuild in four years) or Option 4 (ACL of 31,000 lb, rebuild in six years). Both options mitigate short term impacts to the fishery by allowing moderate levels of take while still achieving the objective of rebuilding. the stock within Tmax.

B. Plans for Hawaii Fishery Management

Council staff provided a report of the Hawaii Fishery Management meeting held on October 27, 2020. The impetus for the meeting was the Council's review of Hawaii's small scale pelagic fisheries and the current non-commercial data gap in all fisheries in Hawaii. The Council had begun the review and public scoping in the early part of 2020 that resulted in an options paper for non-commercial data collection. The Council, at its 183rd meeting in September, discussed the options and noted the overall need for collaborative management with the State of Hawaii in order for any regulation to be successful. As a result, the Council directed staff to hold a meeting between NMFS PIRO, PIFSC, the Council and the State of Hawaii to discuss Hawaii fishery management issues. At that meeting, staff presented on data gaps and misaligned regulations and each of the agencies provided an overview of their challenges and needs. The result of the meeting was an agreement to work together to address these issues. Council staff is working on determining priorities to be addressed collaboratively with the other agencies.

C. Public Comment

The SSC heard comments from Clay Tam, Pacific Islands Fisheries Group, regarding the potential for higher bottomfish biomass than was estimated in the territorial stock assessments. Tam's opinion was based in part on his communications with members of the bottomfish community in the region, such as through social media. He also felt that the fishery was expanding and the participants were becoming highly skilled in their techniques.

Dr. T. Todd Jones provided comments in support of the PIFSC Stock Assessment and Life

History Programs and the process that was used to develop the bottomfish stock assessments for the territories. Dr. Jones discussed at length the ongoing efforts to improve the quality of future assessments (e.g., incorporating new sources of data, evaluating the feasibility of single species assessments, etc.) as well the need for the territorial agencies, FRMD, and the SSC to work as a team.

7. Protected Species

A. Seabird Mitigation Measures

1. Review of Experimental Fishing Permit

Sarah Ellgen, PIRO Sustainable Fisheries Division, provided an overview of the Experimental Fishing Permit (EFP) process and application submitted by the Hawaii Longline Association. The EFP application requests an exemption to the existing seabird mitigation measures under the Pelagic Fishery Ecosystem Plan (FEP) that requires the use of blue-dyed bait and strategic offal discharge when stern-setting north of 23N, for the purpose of conducting additional at-sea trials of tori lines without blue-dyed bait in the Hawaii deep-set longline fishery.

An SSC member inquired about the most recent Biological Opinion and if there is a need to reinitiate. Ellgen responded that there is unlikely a need to reinitiate consultation with regard to ESA concerns. An SSC member inquired about the statistical power of experimental protocol, and was told that ~200 sets will give adequate sample size based on a power analysis.

The SSC supports the EFP application and the proposed exemption to the existing mitigation measures so that the potential effects of blue-dyed bait and strategic offal discharge can be independently assessed.

The SSC thanked Ellgen for an informative presentation.

2. Options for Including Tori Lines in the Hawaii Longline Fishery Seabird Mitigation Measures

Council staff presented on the options paper to consider inclusion of tori lines in the seabird mitigation measures under the Pelagic FEP. The Council at its 183rd meeting recommended concurrent development of the management action and additional at-sea trials. The management options include addition of tori lines as a third suite of measures, replacement of blue-dyed bait with tori lines, and considerations for broadening the scope of action to include the shallow-set fishery, modification of strategic offal discharge requirement, conversion of requirements to mirror RFMO measures, and addressing cross-taxa impacts associated with weighted branchlines.

An SSC member inquired about bird acclimatization to tori lines but there is no scientific evidence for such an effect. An SSC member reiterated that ACAP guidance indicates that blue-dyed bait is not an effective bycatch mitigation measure and therefore there is scientific evidence to remove blue-dyed bait from the HILL suite of measures. An SSC member inquired about the increasing trend in albatross interactions in both sectors of HILL, which appears to be partially linked to spatial patterns of fishing effort. The SSC notes that population-level impacts are very different depending on when the interaction occurs, for example an interaction on haulback results in high survival probability, and therefore the suite of management measures should take this type of scientific information into account.

The SSC recommends the Council reconsider the inclusion of blue-dyed bait as an approved seabird bycatch mitigation measure in the shallow-set longline fishery.

The SSC thanked Council staff for an informative presentation.

B. Stories of Conservation Success: Results of Interviews with Hawaii Longline Fishers

Adam Ayers, PIFSC, presented the results of interviews conducted with Hawaii longline fishery participants to better understand protected species interactions from the fishermen's perspective and learn how solutions devised by industry can potentially further reduce bycatch. A total of 38 unstructured interviews were conducted with captains, owner-operators, and crew. Four key themes that emerged from the interviews were: vessels have major incentives to avoid protected species, vessels relocate to avoid protected species, captains communicate to avoid protected species, and fishers have innovative ideas to avoid protected species and improve release handling.

An SSC member discussed means to improve and maintain collaborative relationships with the fisher community. The study noted that fishers are generally very eager to learn more about the species they encounter. An SSC member reiterated the importance of good communication, and inquired about the ratio of crew members to captains in the interview pool. Ayers indicated that the study experienced "data saturation"; therefore, all sectors were satisfactorily sampled and the sample size was considered adequate.

The SSC thanked Ayers for an informative presentation.

C. Ecosystem-based Fishery Management Project TurtleWatch Validation

Rob Ahrens, PIFSC, and Zach Siders, University of Florida, presented on an effort to evaluate the TurtleWatch (TW) experimental oceanographic product that identifies the 17.5-18.5ºC sea surface temperature (SST) band as an area of higher loggerhead turtle interaction risk for the Hawaii shallow-set longline fishery (SSLL).

The maximal overlap between tagged turtles and SSLL set locations occurs in Q1 and Q4 with the majority of SSLL sets and loggerhead interactions occurring in the TW band in these quarters across years. The analysis suggests that a shift in fishing effort to the north of the TW band into cooler waters in Q1 would likely increase the number of interactions with smaller turtles, while shifts to the south could reduce interactions but interactions would likely be with larger turtles. Across SST bands, the median and interquartile range of SSLL Swordfish CPUE is consistent, indicating CPUE leveling, which suggests that redistributing effort out of the TW band will negatively impact the catch rate outside of the TW band. A noteworthy aspect of this study is the more detailed examination of turtle size with respect to oceanographic characterization of spatial and temporal occupancy patterns.

An SSC member inquired about the catch rate of target species and effort redistribution scenarios over space and time. An SSC member inquired about loggerhead species distribution modeling efforts in the Pacific using presence/absence data as opposed to using presence-only data.

The SSC thanked Ahrens and Siders for an informative presentation.

D. Endangered Species Act (ESA) and Marine Mammal Protection Act Updates

1. Status of ESA Consultations

Diana Kramer, PIRO Protected Resources Division (PRD), presented on the current status of ESA consultations for the pelagic longline fisheries, US purse seine and bottomfish fisheries in the MHI and territories. The purse seine, bottomfish and American Samoa longline fishery consultations are expected to be completed by late December 2020, and the Hawaii deep-set longline fishery consultation by February 2021.

Council Executive Director inquired about the availability of the draft consultations for review, and was advised that they should be available by late December 2020.

2. Coral Critical Habitat

Kramer reported that NMFS published a proposed rule on November 27, 2020, for designating critical habitat for ESA-listed coral species. The proposed critical habitat areas include hard substrate in shallow areas surrounding 17 islands and atolls in American Samoa, Guam, CNMI and PRIA — no critical habitat proposed for Hawaii. The public comment period is open until January 26, 2021.

An SSC member inquired about the distinction between coral habitat and the term "hard substrates" in the critical habitat designation, which is clarified in the proposed rule. An SSC member inquired about next steps after the recently received critical habitat designation maps in American Samoa. This will require a substantive examination of proposed activities with respect to maps of coral critical habitat, which appears to encompass all coral reefs in American Samoa. Numerous consultations are likely given the broad spatial coverage in the maps.

3. Insular FKW Draft Recovery Plan

Kramer provided an overview of the Draft Recovery Plan for the main Hawaiian Islands (MHI) insular false killer whale distinct population segment (DPS), listed as endangered under the ESA. The recovery plan provides a high-level recovery roadmap and identifies the recovery goal, objectives, criteria, and high-level recovery actions. The estimated time to recovery is at least 50 years, with a target of 2% annual population increase and delisting target population of 406 individuals. NMFS is proposing to address the fishery-related threats through recovery actions to analyze and manage non-longline commercial and recreational fishery interactions. A range of threat-based population recovery objectives were outlined. The public comment period is open until December 15, 2020.

An SSC member inquired about similarity/difference of this recovery plan to other NMFS recovery plans with respect to structure, timeline, costs, etc.. An SSC member inquired about the public availability of photo-ID data. An SSC member inquired about the challenges of obtaining interaction information from the varied, particularly non-longline, fishery sectors. An SSC member noted that there is an existing qualitative study by Leila Madge that addressed some of

the non-longline data gaps identified in this presentation. It is important to obtain informed consent and proceed with extreme sensitivity for this to be successful.

The SSC recommends that Council include in its response to the draft recovery plan: (1) request NMFS to coordinate with the Council in addressing non-longline fisheries interactions and (2) encourage working with social scientists to better characterize potential for interactions between non-longline fisheries and insular false killer whales.

4. False Killer Whale Take Reduction Plan

Kramer provided an update on the implementation of the False Killer Whale Take Reduction Plan (FKWTRP) and the associated Take Reduction Team (TRT). The TRT convened for a virtual meeting on October 7 and 9, 2020, and developed draft recommendations regarding crew training, depredation research, post-hooking mortality research, and data synthesis.

An SSC member inquired about updates to the FKWTRP. Kramer indicated that updates are not planned at the present time due to numerous challenges such as awaiting results from the post-hooking mortality study and COVID-19 impacts affecting FKWTRP team progress.

Council staff reported that recent changes in abundance and PBR were also discussed by the TRT, and noted that the weak-hook/strong branchline approach and the SEZ closures are not considered effective by Council and industry. An SSC member reiterated that there are serious crew safety concerns associated with the weak-hook approach, and noted the need for a shift in focus away from weak hooks to explore alternative means to reduce interaction impacts and promote safe release.

The SSC tasks a SSC working group composed of Itano, Chaloupka, Severance and Lynch to develop recommendations on alternative approaches to reducing false killer whale interactions in the Hawaii deep-set longline fishery for SSC consideration at the March 2021 meeting.

5. Other Updates

Kramer reported that NMFS published a proposed MMPA Section 101(a)(5)(E) permit to authorize the incidental taking of ESA-listed marine mammals pursuant to commercial fishing activities, including the Hawaii deep-set longline fishery. Several other ongoing ESA actions, such as recovery plan development for oceanic whitetip sharks and giant manta rays, did not have any substantive updates since the September 2020 SSC meeting.

The SSC thanked Kramer for an informative presentation.

E. Public Comment

There was no public comment.