



WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

125th Meeting of the Scientific and Statistical Committee

1164 Bishop Street, Suite 1400, Honolulu HI 96813

March 7 – 9, 2017

5. Program Planning

A. Analysis of the Fishery Ecosystem Plan Management Unit Species for Ecosystem Component Designation.

Council staff presented on the preliminary Multi-variate Data Analysis of the Guam coral reef and bottomfish management unit species (MUS) for Ecosystem Component (EC) designation. A multi-dimensional scaling approach was used to plot similar species based on the following variables: 1) total catch; 2) mean catch; 3) total number (pieces of fish); 4) total occurrence; 5) maximum depth; 6) proportion of habitat in federal waters; and 7) expanded species biomass.

The analysis used 4 of the 10 criteria described in the National Standard 1 (NS1) guidelines because suitable data existed to allow the Council to evaluate each MUS as to whether it needs federal conservation and management measures. The four criteria used were (1) the stock must be significantly present in federal waters, (2) the stock is caught by the fishery, (3) the stock is a target of the fishery and (4) the stock is important to commercial, recreational or subsistence fisheries. Each of these criteria was assigned a data proxy. A decision tree was developed to filter species to the ecosystem component bin using quartile cut-off points.

The SSC supports the overall analytical framework and the assumptions used for data proxies and linkages with the four NS1 criteria. The analysis is appropriate for screening species for EC designation. The SSC recommends the following further actions be implemented for the final analysis:

- 1. Staff explore the species catch trend over time and catch:biomass ratio to identify species that are no longer targeted by the fishery but the population is still available to the fishery, or whether species have declined over time due to exploitation and should be investigated in more detail;**
- 2. Staff explore the use of the BioSampling data (e.g. market sampling, species composition) and relevant life history information as input variables and/or information for post-hoc analysis of the species that had been selected for federal management to consider if any should be removed in consideration of productivity and life history traits;**
- 3. Staff consider conducting the analysis on a fishery or gear level to minimize the bias towards large fish and as a way to examine the spatial distribution of effort in relation to state/territorial vs federal waters;**
- 4. Staff explore different cut-off levels based on the actual distribution of the input variables;**
- 5. Staff test the fidelity of the groupings using other statistical tests such as PERMANOVA;**

6. **Staff convene an expert working group to examine the species that are filtered out to ensure that the final listing requiring Federal management includes species of social, cultural, economic, biological, and ecological importance.**

B. Report on the Data Integration Workshop

Christopher Hawkins, Council contractor, provided a report on the workshop held to assist the Council in developing the data integration chapter of its Annual Reports. The workshop outcomes for the insular fisheries resulted in a list of fishery dependent variables combined with fishery independent and environmental variables. The SSC noted that the list for the insular fisheries lacks socio-economic information. **The SSC recommends adding socio-economic relationships and variables to future pelagic fishery and insular fisheries sections – specifically including ex-vessel prices of fresh, frozen, and cannery species to the list of fishery independent variables.**

C. Report on the Final National Standard 1, 3, and 7 Guidelines

Erin Schnettler, NMFS Office Sustainable Fisheries, presented the details on the final National Standard 1, 3, and 7 Guideline (NS1) revisions. This final action revised the guidelines for National Standards (NS) 1, 3, and 7 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA or The Act) and to the General section of the NS guidelines. This action was necessary to improve and clarify the guidance within the NS guidelines. The purpose of this action is to facilitate compliance with requirements of the MSA to end and prevent overfishing, rebuild overfished stocks, and achieve optimum yield (OY).

The SSC thanked Erin Schnettler for the very informative presentation.

D. National SSC 6 Workshop Updates

Council staff provided an update on the planning for the sixth National SSC Workshop (NSSC6). The NSSC6 will be held in San Diego on January 17-19, 2018. The theme for this workshop is “Management Strategy Evaluations as Tools to Provide Management Advice in the Face of Uncertainty and Environmental Change”. There are subthemes:

- Subtheme 1: Evaluating and modifying HCRs
- Subtheme 2: Dealing explicitly with model uncertainty
- Subtheme 3: Estimating and accommodating uncertainty in OFLs, stock biomass, and fishing mortality
- Subtheme 4: Adjusting HCRs in changing environments/non-static MSY

The SSC reviewed the focus questions from the Western Pacific region. The SSC assigned the following members to represent the WPRFMC SSC at the workshop:

1. **Steve Martell;**
2. **Graham Pilling;**
3. **Shelton Harley;**
4. **David Itano;**
5. **Justin Hospital (Craig Severance as alternate);**
6. **Debra Cabrera;**

E. Report on the scheduled stock assessments by PIFSC

Annie Yau, NMFS PIFSC, provided a report on the five-year stock assessment schedule and review. The SSC can expect the peer-reviewed stock assessment for the Main Hawaiian Island Deep 7 Bottomfish in 2018. The coral reef fish assessment for Guam, CNMI, and American Samoa will depend on the outcomes of the Ecosystem Component amendment.

The SSC thanked Annie Yau for the informative presentation.

F. Marine Recreational Fishing Update

Council staff provided an update on the regional and national programs for the non-commercial fisheries. Nationally, there was a review of MRIP in 2016 that looked at what has happened in the last 10 years since the first 2006 review by the NRC. Results showed that things are moving along but there are still parts of the MRIP that can be improved. Staff noted that the main surveys that reviewed were those surveys being done on the East Coast and Gulf, though some lessons learned may be applicable to HMRFS. Also on the larger national scale, MRIP developed a strategic plan following recommendation by a GAO review in 2015. Staff participated in the development of the plan. Regionally, HMRFS, as presented at the 124th meeting, is continuing to work on its pilot projects for its boat-based survey with a report being completed. In Guam, staff is working with the local spearfishing club to better capture the non-commercial spearfishing data, which is anecdotally known to have significant catches.

G. Report on the Stock Assessment Improvement Plan and Best Scientific Information Available Policy Guidance

Patrick Lynch, NMFS Office of Science and Technology, reported on the updates to the Stock Assessment Improvement Plan. NMFS-OST presented the updates to the CCC and requests the SSC to provide comments on the draft plan updates. Lynch provided some of the highlights of the draft plan. An SSC member asked whether there are guidelines in terms of accounting for changes in mortality, productivity, and growth in the assessments. NMFS-OST is working with NMFS-OSF in drafting the technical guidance for NS1 to deal with those described changes. NMFS is planning on conducting studies to address the issue. The draft plan update also contains guidance for areas that have an ensemble of assessment models and how to deal with model selection.

The SSC recommends NMFS-OST add mention of the Fisheries and the Environment Program in the SAIP given that the program's goal is to integrate environmental and oceanographic data into stock assessments.

The SSC formed a working group to review and provide comments to the Stock Assessment Improvement Plan. Council staff, Paul Dalzell, will coordinate with the following working group members to generate the comment letter:

- 1. Frank Camacho;**
- 2. Domingo Ochavillo;**
- 3. Ray Hilborn;**
- 4. Shelton Harley;**

5. Don Kobayashi;

H. Public Comment

There were no public comments



125th Meeting of the Scientific and Statistical Committee

1164 Bishop Street, Suite 1400, Honolulu HI 96813

March 7 – 9, 2017

6. Insular Fisheries

A. Report on the WPSAR Review of the 2016 Hawaii Coral Reef Fish Stock Assessment

SSC Member Erik Franklin, UH/HIMB, presented the results of the WPSAR Panel Review of the 2016 main Hawaiian island coral reef fish stock assessments. The WPSAR Panel Review was conducted from August 29 to September 2, 2016. The WPSAR Panel included Erik Franklin (chair), Kevin Stokes and John Choat. The assessment was initially subject to an in-person panel Center for Independent Expert review in September 2015. The WPSAR review concluded:

1. Approach is generally appropriate to assess “data poor” Hawaiian coral reef stocks, but should be applied carefully on a species-by-species basis;
2. Approach is likely to provide scientifically sound results for management purposes but only after further methodological improvements;
3. Draft stock assessments in the report were not yet sufficient for advisory or management needs without refinement.

The SSC working group that reviewed the final stock assessments document and the WPSAR reports concluded that the final assessments addressed most of the short/immediate-term WPSAR panel recommendations. However, the sensitivity analysis for the L_{50} parameter has yet to be conducted.

B. Final 2016 Stock Assessments of 27 Coral Reef Fish Species in Main Hawaiian Islands

Marc Nadon, NMFS PIFSC, presented the final stock assessments for the 27 coral reef fish species in the main Hawaiian Islands. There were 27 assessments, not 28, since one species (kahala, *Seriola dumerili*) was removed from the final report version due to uncertainty in species identification in the datasets. The assessments were published as a NOAA Tech Memo after addressing the recommendations of the WPSAR panel. The 27 assessments used fishery-independent size composition and abundance data from diver surveys combined with fishery-dependent catch estimates to calculate current fishing mortality rates, spawning potential ratios (SPR), SPR-based sustainable fishing rates, and catches corresponding to these sustainable rates. A length-based model was used to obtain mortality rates and an age-structured model with age-independent natural mortality rates was used to obtain various stock status metrics assuming steady-state fishing mortality rates (Nadon et al. 2015). Catches corresponding to SPR30% and resulting overfishing limits corresponding to a 50% risk of overfishing (OFLs) were estimated using current population biomass estimates derived directly from diver surveys or indirectly from estimates of total catch. Examples of the approach used to determine stock status were given for three of the fish species (kumu *Parupeneus porphyreus*, kala *Naso lituratus*, and uku *Aprion virescens*). Although the 27 assessments generate OFL values required for ACL based management, the assessment also

generates reference points that are SPR-based that are not consistent with the Hawaii FEP required MSY-based reference points for determination of the stock status.

The SSC acknowledged the great amount of work done to generate 27 individual species-level assessments for data limited stocks and to finalize the assessment after two levels of review. The SSC discussed at length the assumptions and potential weaknesses of an approach that is based on depth limited diver survey data and self-reported interpolated length data from the reported commercial catch database. Potential weaknesses included variations in mean length and catch resulting from diver selectivity, catch selectivity, recruitment events, fishing effects, lack of reliable non-commercial data, minimum size regulations etc. It is critical to determine a realistic mean length because it drives the calculation of fishing mortality. Some SSC members also indicated concerns about spatial discrepancy in estimating population abundance from catch and from the surveys, since the estimates of population abundance from surveys only extends to 30m, whereas catch derived population estimates extend into deeper waters.

The SSC recognized that there are limitations in both the survey and the catch data used in many of the 27 assessments. For some species, there is depth bias in the diver survey data due to the limited depth where the surveys are conducted relative to the depth distribution of the species. For many species, there is also a (negative) bias in the estimation of catch data from the commercial catch reports. There may be additional bias in the estimation of non-commercial catch data from HMRFS. While the assessment method does integrate parameter uncertainties, it does not address the aforementioned biases as well as potential bias from use of non-local life history parameters and estimations from the step-wise procedure. Additionally, the characteristics of the length composition data from the diver surveys were not transparently presented and may not represent the full distribution of stocks.

The SSC expressed concern that some of these data biases likely impact the reliability of the assessments for some species. The SSC also express concern that the potential impact of biases in key data inputs had not been examined through comprehensive simulation studies of each assessment as recommended in the CIE review.

The SSC discussed extensively the equilibrium assumption, natural mortality, species-specific density dependence, age/size-dependent natural mortality, implications of the asymptotic growth patterns in some species in the mortality estimation, sensitivity to L_{inf} values from multiple sources, potential effects of sexual dimorphism and hermaphroditism in the SPR estimation, and effects of regulations in the mean size estimation. **The SSC recommends that in addition to the length data, the assessments incorporate the use of the abundance data from surveys comparing the low fishing pressure areas and high fishing pressure areas to validate the mean length information.**

The SSC thanked Marc Nadon for the thorough presentation and informative discussions..

C. Process for Acceptable Biological Catch Re-specification for 2017 and 2018

Jarad Makaiau, NMFS SFD, presented the process, timeline, and information requirements needed for the re-specification of ABCs and ACLs given that new information was available

with the release of the stock assessments report on 27 coral reef fish species in Hawaii. National Standard 2 requires the SSC to consider the best scientific information available when providing scientific advice to the Council. The SSC previously has made a multi-year recommendation (2015-2018) for reef fish ABCs based on the biomass augmented catch-MSY approach. Given that these 27 assessments provide new scientific information, the acceptable biological catches (ABCs) for MHI reef fishes needs to be re-specified for fishing years 2017 and 2018.

The SSC working group concurred with the CIE and the WPSAR panel review findings that the modeling approach used in the assessment is scientifically sound as long as the data meets appropriate standards. The SSC acknowledged the great amount of work done on the final assessment in light of two rounds of peer-review. However, the terms of reference for the two previous reviews categorically exclude the evaluation of data applied to the model. Concern regarding this exclusion was noted in the WPSAR Panel Report. The SSC is therefore now faced with a need to review the reliability of the input data along with the model and its outputs. This task requires a high level of scrutiny because the quality and quantity of the catch (both from commercial and non-commercial) and survey data will likely vary by species.

The SSC expressed concerns that the assessment of some species may not meet the NS2 criteria for BSIA. While the SSC recognizes the NS2 requirement of timeliness, in that management action should not be delayed due to limitations in the scientific information, the SSC also believes that sufficient time should be allotted to audit and analyze recently acquired information to ensure its reliability. NS2 also states that data collection methods are expected to be subjected to appropriate review before the resulting data is to inform management decisions. Since the reliability of data was not part of the previous two peer-reviews, the SSC will have to take this into consideration when it makes its BSIA determination.

The SSC also expressed concern as to whether all the 27 assessments met the validation requirement of NS2. The final assessment reports do not adequately describe whether all parts of the model were tested using simulated data from a population with known properties in order to evaluate how well the model estimates those properties and corrects for known bias to achieve accuracy. The SSC acknowledges that simulation testing of the step-wise approach for life history information was performed. **However, there is a large-body of literature on simulation testing of data-poor stock assessment methods. The SSC recommends that this assessment method undergo similar simulation testing using an independent operating model to fully understand the potential biases related to the assessment model assumptions and input data.**

The SSC requires more time to evaluate whether the 27 assessments presented constitute best scientific information available for the Council to consider in re-specifying the ACLs. The SSC formed a working group comprised of David Itano, Erik Franklin, Shelton Harley, Graham Pilling, Steve Martell and Kurt Schaefer to evaluate the 27 individual assessments. **For the purpose of meeting the requirements of respecifying OFL, ABC, and ACLs for fishing year 2017, the SSC endorses further evaluation of two species caught**

predominantly in federal waters, *Carangoides orthogrammus* and *Aprion virescens*, which can be completed in an expedited manner. For the remaining 25 species, the SSC does not recommend further evaluation at this time because the SSC notes that these species are caught predominantly in State waters. Establishing new ACLs for these species will not provide significant conservation benefit from federal management.

Concurrently, the SSC will examine each of the 27 assessed species and determine which species meet the criteria of NS2 on a schedule to be further determined by the SSC in consultation with Council staff.

D. Developing Fishing Regulations for the Monument Expansion Area in the NWHI

Council staff presented on the status of the development of regulations for the NWHI Monument Expansion Area. Staff provided an overview of the President's Proclamation as well as progress on data discovery and information gathering from the public scoping sessions. **The SSC recommends staff explore the utility of existing data (from the Midway Sportfishing and the Hawaii Tuna Tagging Project). The SSC recommends an analysis be undertaken of the potential impacts on protected species from effort redistribution related to the Monument closure.**

E. Method for the Delineation of Essential Fish Habitat for Coral Reef Ecosystem Management Unit Species in the Hawaii Archipelago Fishery Ecosystem Plan

SSC Member Erik Franklin, UH HIMB, gave an overview of ongoing habitat projects which share the goal of comparing the importance of particular reef areas for coral reef fishes in Hawaiian waters. While current EFH definitions imply that the entire EFH area is more or less equivalent, boosting regression tree analysis can be used to create visualizations of the ecological and biological heterogeneity within the currently defined EFH areas. Franklin showed preliminary seascape and watershed scale visualizations. Marine data projected on to the watershed show the relative abundance of fishes observed in underwater visual census surveys, allowing regulatory agencies to better estimate their impact on EFH for activities proposed upstream. Seascape visualizations show the relative abundance of fishes in particular reef areas. Biophysical ocean circulation modelling can help tease out how EFH is linked between and within islands.

The SSC thanked Erik Franklin for an informative presentation.

F. Public Comment

Annie Yau, PIFSC, provided public comment.



WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

125th Meeting of the Scientific and Statistical Committee
1164 Bishop Street, Suite 1400, Honolulu HI 96813
March 7 – 9, 2017

Executive Director Kitty Simonds opened the day with recognition of International Women's Day, acknowledging all women in attendance.

Guest Speakers: Phoebe Woodworth-Jefcoats and Johanna Wren, PIFSC: 20 years of spatial and temporal changes in Hawaii longline fishery catch and their potential for forecasting future fishery performance

Phoebe Woodworth-Jefcoats and Johanna Wren, PIFSC, presented an analysis of the Hawaii longline fishery that incorporated logbook, observer, and dealer data as well as information on longline effort from international fleets and oceanographic information. The presentation indicated that over the last 20 years, the fishery has shifted its core area of operation from southwest of the Hawaii archipelago to increased reliance on fishing grounds to the northwest and northeast. Northeastern fishing grounds, which extend into the EPO, east of 150 degrees West, have produced higher catch rates for bigeye and less discards. Oceanographic information indicates that the northeastern fishing grounds experience preferred bigeye thermal habitat that aligns with the depth of longline fishing gear. The northeastern fishing grounds were also demonstrated to have less competition with foreign fishing fleets. Information was presented that indicates increased catch rates of lancetfish, which now exceed bigeye catch rates. SSC members suggested that the increase in lancetfish CPUE may be a reflection of improved oceanographic imaging and the targeting of the deep-scattering layer, which is preferred habitat of lancetfish.

The size of bigeye landed by the fishery in recent years was also reviewed. The increased CPUE of small bigeye in 2013 was considered to be indicative of a strong year class, which by 2015 translated to increased CPUE of large BET in the fishery, with similar lagged pulses observed in previous years. Monitoring the size-based CPUE of landed fish using a merge of dealer data and logbook/observer data can therefore be a valuable tool for predicting catches in future years. There was considerable SSC discussion about the fishery economics, particularly with regard to the importance of considering the influence of economic factors on fleet dynamics such as higher trip costs due to distance to the fishing grounds, and the impacts of catch quotas being reached.

The SSC suggested that the researchers work with PIFSC Socioeconomics Program to evaluate how management actions such as WCPO limits or economic factors may have influenced fleet reliance on fishing grounds in the northeast Pacific.

The SSC thanked Phoebe Woodworth-Jefcoats and Johanna Wren for the informative presentation.

7. Pelagic Fisheries

A. Hawaii & American Samoa Annual Longline Fisheries Reports

Russell Ito, PIFSC, provided the annual Hawaii longline fishery report based on logbook data. The number of vessels in the fleet that operated in 2016 was 142, one less than the previous year. There were 13 that conducted shallow-set operations targeting swordfish in 2016, but no vessel solely targeted swordfish throughout the year. The vessels that fish for swordfish typically switch to targeting bigeye after the second quarter. Hawaii longline vessel trips declined by about 100 deep-set trips and 29 shallow-set trips, however, the number of hooks set in 2016 was the highest on record. Lower fishing effort has been observed in the EEZ around the NWHI and almost no effort in EEZ around the PRIAs. Fishing grounds between 20 to 30 degrees north from 130 to 150 degrees west are of increased importance to the fishery, but the El Nino oceanographic conditions may have contributed to that shift. While overall tuna catch by the fishery was lower in 2016 than 2015, the catch of yellowfin increased. SSC members noted the increase in the catch of thresher sharks. It was clarified that only very small percentage of thresher sharks are landed, with around 80% released alive.

Ito presented spatial effort maps that were requested by the SSC at its 124th meeting. The SSC greatly appreciates the effort that went into producing the spatial effort maps.

In regards to future logbook data summaries, the SSC requested that PIFSC provide the following: a) percentage of total effort captured on the non-confidential data visualization maps, b) spatial fishing effort, catch, and CPUE maps by quarter for bigeye taken in the deep-set fishery, and c) delineation of the 150 degree W line on the maps.

The SSC recommends the development of web-based applications for query and visualization of non-confidential longline data.

Keith Bigelow, PIFSC, provided the American Samoa longline annual logbook report summary. It was noted that due to time lags in receiving the data from American Samoa, only 70% of the 2016 logbook data is available, which made many of the data displays difficult to interpret. The number of active vessels fishing out of Pago Pago dropped from 20 in 2015 to 17 in 2016. Fishing effort in terms of hooks deployed was also below 2015 levels, as was the catch of albacore tuna, which is the main target of the fishery. Albacore CPUE was similar to 2015 levels, but well below highest historical levels observed in the early 2000s.

The SSC thanked Russell Ito and Keith Bigelow for the informative presentations.

B. Report on American Samoa LVPA and fisheries statistics

Keith Bigelow, PIFSC, provided a report on the catch and effort of American Samoa longline vessels operating within the Large Vessel Prohibited Area (LVPA). In 2016, six vessels fished in the LVPA around Swains Island and 14 vessels fished in the LVPA around Tutuila and Manua Islands. Longline fishing around Swains saw a higher CPUE for albacore, skipjack, lower for blue shark and mahimahi, whereas Tutuila had a higher CPUE for yellowfin tuna. With regards to troll vessel catch trends, the CPUE of troll vessels in 2016

was the highest on record, suggesting that longline fishing within the LVPA by large vessels is not having an impact on the catch of small scale troll vessels.

The SSC recommends that PIFSC provide an updated report for the Am Samoa LL fishery for the June SSC meeting.

The SSC thanked Keith Bigelow for the informative presentation.

C. How PIFSC handles Data Confidentiality, Laws and Policy

Chris Boggs, PIFSC, presented the law and policy associated with the handling of confidential fisheries data, which under the MSA, includes logbook and observer information. It was noted that if federal employees improperly disseminate confidential data they could be subject to criminal penalties including fines and employment termination under the Trade Secrets Act of 1905. The MSA instructs that NMFS may release or make public any such information in any aggregate or summary form which does not directly or indirectly disclose the identity or business of any person who submits such information. It was reported that PIFSC strives to maintain a strict practice whereby aggregations of fisheries operations data shall include information from three or more individual vessels.

Aggregation involves more than just stripping identifiers. The rule of “three or more” is based upon the reasoning that if it were two, and you were one of the two, then you would then have knowledge of another individual. The challenge is presenting information to SSC in a non-confidential manner since it is required to be a public setting, yet be successful at making recommendations based upon meaningful data visualizations. It was noted during SSC discussion that individuals can waive their right to confidentiality.

Under the MSA, Councils can be provided confidential data. SSC members, as extension of the Council, could be allowed access to confidential data, but NMFS would have to evaluate the use of confidential information and whether or not there could be any potential conflicts of interest. During SSC discussion on the issue, it was further noted that protected species data might be held to different confidentiality standards. For example, information on non-ESA listed marine mammals may be publicly disseminated; whereas ESA listed marine mammal interaction information would be held to confidentiality standards.

The SSC thanked Chris Boggs for the informative presentation.

D. International Fisheries

1. WCPFC 13

Valerie Chan, PIRO, provided an overview of the 13th Regular Session of the WCPFC, held in Fiji in December. The Commission adopted five conservation and management measures related to tropical tunas, Eastern High Seas Special Management Area, observer safety, Pacific bluefin tuna, and charter notification scheme. The Commission also furthered the Harvest Strategy management approach including agreeing to bigeye rebuilding timeframe (up to 10 years) and recording management objectives for the tropical purse seine fishery.

The SSC thanked Valerie Chan for the informative presentation.

2. 2017 Bigeye Tuna Stock Assessment

Graham Pilling, SPC (SSC member), presented on the development of the new WCPO bigeye stock assessment schedule for completion by mid-2017. Some areas of focus for the new assessment will be on bigeye growth, fisheries spatial structure, and CPUE standardization. New bigeye growth information derived from otolith analysis suggests L_2 may be lower, indicating a faster growing and more productive stock. Shifting the southern boundary of Region 2 to 10 degrees north was presented as an option for consideration by the SPC's pre-assessment workshop. With regards to CPUE standardization, a new approach is being considered which includes geo-statistical information and oceanographic covariates that accounts for ENSO cycles.

During discussion, the SSC noted its appreciation for consideration of shifting the southern boundary of Region 2, which has been a long-standing SSC recommendation. There was considerable discussion regarding the bigeye growth estimates which may result in a more optimistic outlook for the stock, but appeared inconsistent with recent length frequency data from longline fisheries. There was SSC discussion about USA handline fishery data, with acknowledgement that SPC and PIFSC are communicating on this issue.

The SSC thanked Graham Pilling for the informative presentation.

3. Preparation for New Tropical Tuna Measure

Council staff presented the process to develop a new WCPFC measure for bigeye, yellowfin, and skipjack tuna. The WCPFC adopted its first tropical tuna measure in 2005, but the current framework that includes a seasonal purse seine FAD closure and flag-based longline bigeye limits has been in place since 2008. The existing measure expires at the end of 2017. The chair of the WCPFC has developed a draft bridging measure, which at an initial stage incorporates concepts associated with a harvest strategy management approach. Complicating the development of a new measure are entrenched positions held by WCPFC members, which include issues related high sea management, zone-based limits vs flag-based limits, and avoiding disproportionate conservation burden on small island developing states and territories.

4. 91st IATTC Extraordinary Meeting

Council staff presented the outcomes of the 91st meeting of the IATTC that was held in February 2017. The meeting was considered an extraordinary meeting of the IATTC, because earlier meetings held in 2016 were unable to reach consensus on a new resolution on tropical tunas. The IATTC did reach agreement on a new resolution, which includes a total catch limit for purse seine vessels (class 4 and above) fishing on FADS for bigeye and yellowfin and a total catch limit for purse seine vessels fishing in association with dolphins. The measure that was agreed to only applies to 2017; thus, the IATTC will need to negotiate a new resolution for 2018 and beyond at its June meeting. There was discussion about the prevalence of

small yellowfin tuna in the catch and that relationship to fishing on FADs and dolphins.

E. Public Comment

There was no public comment for this section.

F. SSC Discussion and Recommendations

There was no additional SSC discussion or recommendation aside from what is presented above.



WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

125th Meeting of the Scientific and Statistical Committee

March 7–9, 2017

Council Office

8. Protected Species

A. WCPFC Joint Analysis of Sea Turtle Mitigation Effectiveness

Keith Bigelow, PIFSC, provided a report on the Workshop on Joint Analysis of Sea Turtle Mitigation Effectiveness convened by the Western and Central Pacific Fisheries Commission (WCPFC) and held at the Council office in February and November 2016. Simulation results showed that deep-set mitigation measures (i.e., removal of shallowest hooks, finfish bait and large circle hooks) would result in greater reduction in overall interactions than shallow-set measures due to the greater effort in deep-set fisheries and existing measures for shallow-set fisheries.

Council staff mentioned that the workshop developed distribution maps of interactions by turtle size and revealed the presence of turtles where they were predicted to be absent by the Delphi method. The SSC observed that the present analysis focused on turtle mitigation measures, and a previous analysis focused on sharks, but neither analysis considered the impact of individual mitigation measures for one species or group on all others.

B. Tri-National Loggerhead Turtle Recovery Team Progress

Dawn Golden, PIRO PRD, reported on the progress of the Tri-National Loggerhead Turtle Recovery Team. In October 2016, NMFS announced a notice of intent to draft a recovery plan for the North Pacific Ocean loggerhead sea turtle. NMFS also convened a tri-national recovery team consisting of representatives from U.S., Japan and Mexico, which held its first meeting in Honolulu in November 2016 and will be reconvening in La Jolla in March 2017.

C. Pacific Scientific Review Group Meeting Report

Erin Oleson, PIFSC, provided a report on the Pacific Scientific Review Group (PSRG) meeting held in Honolulu on February 13-15, 2017. This year's PSRG agenda included a new analysis on the insular false killer whale abundance estimates, False Killer Whale Take Reduction Team updates, and stock structure for Hawaii short-finned pilot whale and rough-toothed dolphin. Changes to the 2016 FKW stock assessments included the stock definition, geographic range, PBR, human-caused mortality, and serious injury. Other highlights include plans for rotational surveys and jointly-funded Pacific surveys for cetaceans and seabirds among partners (PacMAPPS).

D. Updates on ESA Consultations

1. Deep-set Longline Fishery Consultation

Dawn Golden provided a presentation on the reconsultation of the Hawaii deep-set longline fishery under the Endangered Species Act (ESA). The incidental take statements (ITS) for three sea turtle species from the 2014 biological opinion (BiOp) were exceeded,

triggering the reconsultation. The consultation resulted in a supplemental BiOp to the 2014 consultation and concluded that the continued operation of the fishery is not likely to jeopardize the ESA-listed species. The supplemental BiOp will include new incidental take statements for the species included in the consultation.

2. Other Consultations

Council staff provided a presentation on the analysis considered for the Biological Evaluation to reinitiate consultation on the shallow-set longline fishery. The consultation will include Guadalupe fur seals (new observed interaction in 2016) and the green turtle DPSs (revised listing in 2016). Council staff explained the consultation process, especially the new role of the Council and SSC under the ESA-MSA Integration Agreement. Council staff explained that the green turtle DPS proration will be based on genetic proportions from a direct assignment method and Bayesian mixed stock analysis, which produced similar proportions for the two DPSs under evaluation. Abundance estimate ratio for west coast pinnipeds are being considered as an approach for accounting for proportion of Guadalupe fur seals out of the unidentified pinnipeds.

The SSC asked for an explanation of how uncertainties were accounted for when assigning takes to particular DPSs, such as when genetic information is delayed or lacking. Council staff responded that the genetic proportions are typically used when monitoring interactions given the delay in genetic analyses. **The SSC noted that simple proportions may not account for uncertainties in DPS identification for spatially mixed stocks. The SSC recommends that a Bayesian analysis be done that uses existing data on pinniped incidental take as an alternative to using abundance estimate ratios.**

E. Report on the Rare Events Bycatch Workshop

Council staff presented a report on the Rare Events Bycatch Workshop convened on October 18-20, 2016. The workshop explored alternative approaches to estimating anticipated levels of incidental take and their consideration in Endangered Species Act (ESA) Section 7 consultations.

Options for improvement included looking at interactions over periods longer than 1-3 years. The SSC Chair noted that the workshop presented cutting edge approaches to predicting take that may be of relevance to the SSC.

F. Updates on ESA and Marine Mammal Protection Act Actions

Dawn Golden and Kevin Brindock, PIRO PRD, presented updates on ESA and MMPA actions of relevance to fishery management. These included updates to critical habitat designations for the ESA-listed corals and green turtles, bluefin tuna petition, humpback whale approach rule, spinner dolphin proposed rule, and List of Fisheries.

NMFS held a recovery planning threats workshop on October 25-28, 2016 to update the threats analysis for MHI insular false killer whales. NMFS plans to publish a draft peer-reviewed recovery plan for public review later in 2017. NMFS also convened a False Killer Whale Take Reduction Team (FKWTRT) teleconference meeting on December 15, 2016, to review the details of an observed false killer whale interaction that occurred inside the EEZ

in October. PIRO Staff also gave updates on time series of interaction data, the types of interactions and interaction outcomes.

On December 29, 2016, NMFS issued a proposed rule to list the oceanic whitetip shark as a threatened species under the ESA. NMFS determined that the proposal is for a global listing and no DPS was warranted. The species had undergone significant historical declines throughout its range and likely continues to experience declines. NMFS identified the most significant threat to this species as the high rates of fishing mortality. Council staff presented on information being considered for the Council's response to the proposed rule, including the observed oceanic whitetip CPUE for the Hawaii longline fishery and American Samoa longline fishery (ASLL). The SSC cautioned against interpreting the recent increase in nominal CPUE for the ASLL fishery as an indication of increasing abundance of oceanic whitetip sharks. **The SSC recommends that PIFSC conduct a CPUE standardization analysis for oceanic whitetip takes in the ASLL fishery. In addition, SSC also requested additional information on within-year variability in observer data to supplement the analyses.**

NMFS issued a proposed rule on January 12, 2016 to list the giant manta ray as a globally threatened species under the ESA. NMFS determined that the species has experienced population declines throughout a Significant Portion of its Range, especially in the Indo-Pacific and eastern Pacific. However, observer data indicate low levels of interaction in the Hawaiian and American Samoa longline fisheries. Furthermore, the range-wide decline is based on estimates only from a limited number of areas (i.e., Kiribati, Southeast Asia and Papua New Guinea). The Council intends to submit a comment letter on the proposed rule and is seeking SSC input.

G. Public Comment

There were no public comments.



125th Meeting of the Scientific and Statistical Committee
1164 Bishop Street, Suite 1400, Honolulu HI 96813
March 7 – 9, 2017

9. Other Business

A. 126th SSC Meeting

The SSC chair suggested the next SSC include an overview of National Standard 2, and other agencies and policies and how this directs the work of the SSC.

B. Three Year Action Plan

Council staff presented on the Three Year Action Plan for the SSC. The origin of this document was the reorganization of the SSC. The document is designed to set out a program of work that the SSC may accomplish over the next three years, and will be updated every year. The work program includes setting ABCs, social and economic aspects of management, international fisheries, ecosystem based management, and 5-year research priorities. Dalzell solicited input and comment on the plan from new SSC members with a deadline for the end of March. There were no questions for the presenter.

C. Fish Flow Workshop

Danika Kleiber (NMFS PIFSC) presented on the fish flow workshop, organized by the Council and facilitated by the PIFSC Socioeconomic Program. The workshop goal was to discover how pelagic products move through Hawaii, identify new markets, and forge relationships with the seafood retailers. As reported by workshop participants, thirty-six percent of locally landed product is shipped to the mainland. Twenty-six percent of total pelagic product of workshop participants is imported to Oahu for potential distribution to other islands. Mahimahi, yellowfin, and bigeye were the top imported products. The participants shared that local products are sourced for their quality whereas imports were sourced to fill gaps in local demand. Seasonality, oil prices, and regulatory issues affect sourcing. Cargo space, limited processing facilities affect shipping fish; the top quality fish is sent to the mainland to recoup the shipping costs.

It was noted during SSC discussions that this first workshop focused on pelagic fish only. Also, Maui dealers were not represented in the workshop. There was discussion about fish traceability and ongoing work to improve labelling, including that for some markets high quality fish are labeled with very detailed information such as vessel name. Other discussion included the decline in exports from Hawaii to Japan and increased exports to the US mainland. Fish destined for the mainland needs to have a shelf life of about five days. The Japanese market has declined because most of the tuna in this market is flash frozen and Hawaii lacks the vessels and facilities to compete in this market.

It was noted that the Hawaii exports to the mainland are an example of the connection of ocean resources to Middle America. Also, this workshop looked at formal fish flow networks, but SSC members noted the importance of informal fish flow, especially in the Territories. SSC comments included the need to seek SSC input in developing specific questions so that any future work could be designed to provide answers to Council needs. Council staff responded that this was the first time that this type of meeting had been attempted, and that having established relationships with the dealers and businesses will facilitate future meetings of this type, which would seek to focus on specifics as noted by the SSC.

The SSC thanked Danika Kleiber for her informative presentation.