WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

126th Meeting of the Scientific and Statistical Committee

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Council Office

4. Report from the Pacific Islands Fisheries Science Center

Michael Seki, Director of the Pacific Islands Fisheries Science Center (PIFSC), provided an update on their activities, programs, and other noteworthy activities. The field season since the March SSC included NOAA ship deployments to waters off the Leeward coast of Oahu to research plankton and micronekton communities; to West Hawaii to conduct studies on oceanic surface slicks and midwater forage communities in conjunction with the Integrated Ecosystem Assessment (IEA), and establishment of the Northwestern Hawaiian Islands field camps for studies regarding the Hawaiian monk seal and green sea turtle. The cruise also returned rehabilitated monk seals to their natural habitats and translocated two seals from French Frigate Shoals for rehabilitation at Ke Kai Ola.

PIFSC has a number of completed and ongoing research activities. The Cetacean Research Program (CPR) concluded a series of small-boat surveys for whales and dolphins off Saipan, CNMI. There were 13 encounters with a total of 25 individual humpback whales, more than twice the number of individuals identified in two previous field seasons. PIFSC scientists also concluded a series of Bottomfish Commercial Fishery Data Workshops to improve the datastream principally used for the Main Hawaiian Islands Deep-7 bottomfish stock assessment. A report on workshop discussions and decisions is being drafted. Also, the Hawaii Bottomfish Heritage Project is ongoing, collecting stories from fishermen who are highliner fishermen. Satellite observations of sea surface temperature (SST) for the Niño 4 index shows that the 2015-2016 El Niño was the strongest in magnitude and longest on record since 1957. SST was anomalously warm for extended durations at Jarvis Island, while SST anomalies were substantially smaller at Howland and Baker Islands. The ensuing coral reef surveys at Jarvis Island in April 2017 found only limited early signs of recovery. At Howland and Baker Islands, there was a modest 5-20% reduction in coral cover from pre-El Niño surveys in 2015 to post-El Niño surveys in 2017.

To improve fisheries science, a Memorandum of Understanding between the United States and Japan was formally signed in an April ceremony in Yokohama, Japan. Current projected collaborations include stock assessments, the science of Bluefin tuna, and shared data.

Other noteworthy activities include new PIFSC staff, the development of a US and Philippines peer-to-peer exchange program, the ISC Plenary, the Pacific Islands coral reefs regional summit, and an upcoming socioeconomics external review.

The SSC thanked Michael Seki for the informative presentation.

6. Program Planning and Research
A. 2016 SAFE report highlights and recommendations

1. Archipelagic Report overview and highlights

Council staff summarized the highlights of the 2016 Archipelagic SAFE Reports for the SSC. The archipelagic SAFE report now includes the framework for the Socio-economic Section and the Data Integration Chapter with preliminary information from the Data Integration Workshop

2. Pelagic Report overview and highlights

Council staff reviewed the 2016 Pelagic SAFE Report for the SSC.

The estimated non-commercial catch of pelagics in Hawaii from HMRFS indicates that catch decreased from 13 million lbs in 2015 to 6.5 million lbs in 2016. This large variation suggests that the HMRFS sampling frame is flawed and misses non-commercial anglers within all waters.

This year, the SAFE report included 3 new pelagic ecosystem indicators: temperature at 300 m depth, bigeye tuna weight per unit effort, and a bigeye recruitment index.

3. Precious corals EFH review

Michael Parke (NMFS and WPRFMC Plan Team) updated the SSC on the Council's 5-year review of precious corals EFH. The EFH review indicates that enough information is available to revise essential fish habitat for the precious corals, given updated distribution and habitat data. Additionally, Parke noted that precious coral management measures may be based on outdated scientific information, including those based on growth rates and classification of coral beds. The SSC acknowledges and thanks Michael Parke the informative presentation.

4. Non-fishing impacts to EFH review

Michael Parke (NMFS and WPRFMC Plan Team) presented the SSC with the final report on non-fishing impacts to EFH in the Western Pacific as part of the five-year review of EFH by NMFS and the Council. Non-fishing impacts to EFH have not been reviewed since their initial implementation in 1998. The final report includes information on ecosystems that occur within EFH; activities that may adversely affect EFH; ecological stressors associated with those activities and their effects on EFH; and associated conservation and enhancement recommendations.

The SSC formed a working group comprised of Frank Camacho, Domingo Ochavillo, Ryan Okano, and Michael Tenorio to support Council staff regarding EFH issues.

B. Evaluation of 2016 catch relative to the 2016 ACLs (Action Item)

Council staff presented the evaluation of 2016 catch relative to 2016 ACLs. There were five ACLs that were exceeded in 2016: rabbitfish (American Samoa), jacks (Guam), slipper lobsters

(CNMI), and crustaceans and mollusks (Hawaii).

The Council's accountability measures require an adjustment to the ACLs by the amount that was exceeded in the previous year. The following options were presented for consideration by the SSC to address the overages:

1. Not to apply the overage adjustment based on catch levels corresponding to low risk of overfishing
2. Apply the overage adjustment to the original ACL; and
3. Apply the overage adjustment to the current year ACL.

SSC members noted that the ACLs for rabbitfish (163lb) and CNMI slipper lobsters (60lb) were extremely low in absolute terms. For the rabbitfish overage, SSC members expressed concern that the catch estimate may not be reliable due to sampling errors (i.e., an artifact of the expansion algorithm used to determine total catch of each species).

For Guam jacks, and Hawaii crustaceans and mollusks, there may be a need to develop species specific ACLs.

The SSC recommends Option 1 (no overage adjustment) for rabbitfish in American Samoa and slipper lobster in the CNMI. The SSC also recommends improving the data collection for those species and re-evaluating the expansion algorithms used to determine the catch levels.

The SSC recommends Option 2 (apply the overage adjustment to the original ACL) for jacks in Guam, and crustaceans and mollusks in Hawaii. The SSC also recommends the Council work with PIFSC and the local fishery management agencies to improve data collection and management.

The SSC recommends the Council and local fishery management agencies work on developing licensing and reporting requirements for fishers who harvest ACL species.

C. Updates on the Ecosystem Component analysis in American Samoa and Marianas

Council staff updated the SSC on ongoing efforts to identify ecosystem component species following previous SSC and PIFSC recommendations.

D. Options for fishing regulations in the NWHI Monument Expansion Area (Action Item)

Council staff presented the SSC with options to develop fishing regulations in the recently designated NWHI Monument Expansion Area. SSC members discussed the idea of customary exchange with cost recovery and its relationship to non-commercial fishing.

The SSC recommends deferring the establishment of fishing regulations in the NWHI Monument Expansion Area (MEA) pending the Administration's review of the National Monuments.

E. Updates to the Council's research priorities

1. Five-Year research priorities

Council staff presented updates to the Council's five-year research priorities proposed by the Protected Species Advisory Committee.

The SSC supports these updates to the Council's research priorities.

2. Cooperative Research priorities

Council staff provided the SSC with the 2017-2018 Cooperative Research priorities of the Council. The SSC was also informed the proportion of NMFS-funded Cooperative Research projects has improved to 50% following transition to a regional competition in 2016.

F. Working group report on the Stock Assessment Improvement Plan updates

The SSC reviewed the SSC Stock Assessment Improvement Plan working group report and endorses the comments for transmission to NMFS prior to the June 15, 2017 deadline.

G. Discussion on the Best Scientific Information Available policy guidance

Patrick Lynch, NMFS National Stock Assessment Program Leader, presented a framework for determining best scientific information available (BSIA). This includes the identification of the roles and responsibilities of cooperating agencies (Regional Office, Science Center, and Council). NMFS Office of Science and Technology requested each regional SSC to review and comment on the draft framework. SSC members will provide Council staff with their additional review comments on or before June 22, 2017.

The SSC recommends that it be involved in the development of the Terms of Reference for any peer-review process. In addition, the SSC should review draft stock assessments prior to any peer-review. The SSC further recommends that it review other scientific information including ESA consultation documents before any final agency decision.

H. Public Comment

No public comment was provided.

7. Insular Fisheries

A. Re-specification of acceptable biological catch for the main Hawaiian Islands Kona crab fishery (Action item)

Five alternatives for the Hawaii Kona crab ACL re-specification were presented by Kate Taylor from PIRO. The SSC was concerned that the CPUE data was not informative about the initial biomass in 1970 and therefore, the authors chose an initial value of 0.7 or 70% of the carrying capacity. The authors further show that the data equally support initial values ranging from 0.1 to 1.4.

The SSC acknowledges that this is an adequate assessment for Kona crab but noted that the assessment was out of date, utilizing data only through 2006. The SSC discussed the potential for existing state management measures to have negatively impacted the stock due to the mortality of undersized and female crabs that fishermen release due to regulations.

It was noted that the Council is sponsoring an experiment at the Waikiki Aquarium to evaluate post-release mortality of Kona crab. **The SSC endorses the continuation of this important project to help improve the information that can be used in future stock assessments.**

The SSC considered a range of management alternatives for Kona crab and recommends the Council consider Alternative 4 (ACL = 3,500 pounds) which would most likely prevent overfishing.

The SSC recommends that the PIFSC update the Kona crab CPUE data up to the most recent years and explore other standardization methods for the assessment update.

The SSC further recommends an evaluation of alternative management options for Kona crab include mesh size and retention of female Kona crab.

The SSC reiterates the need for reporting and collection of non-commercial catch, effort and size data to better evaluate the Kona crab fishery.

B. Public Comment

There was no public comment

8. Pelagics and International Fisheries

A. Potential actions for the American Samoa Large Vessel Prohibited Areas (Action Item)

Council staff presented an update based on recent events related to the LVPA exemption regulations applicable to the American Samoa longline fishery, including the Federal court's determination that the Deeds of Cession constitute "other applicable law" in regards to the Magnuson Stevens Act. The court also found that the Council and NMFS, in developing and implementing regulations, require protection of Samoan fishing cultural practices. The LVPA exemption was vacated by the court and if the Council wants to recommend new LVPA regulations, American Samoa cultural fishing should be defined. The SSC was also updated on the current difficult economic conditions faced by the American Samoa Longline fleet.

There was extensive discussion of the role of social science under MSA and of previous anthropological work in American Samoa that focused on Samoan values and practices within the central concept of Fa'a Samoa. That work developed survey data on the importance of named cultural categories for post-harvest distribution of fish (Severance, Franco, Hamnett, Anderson and Aitaoto, 2013). There was general consensus that any definition of cultural fishing for American Samoa should be developed in collaboration with Samoan Council members, the Office of Samoan Affairs and others. "Cultural fishing" is a relatively new term and it is not well defined generally. Models from other places are unlikely to fit American Samoa, and any cultural fishing definition could be general enough to be modified to fit other cultures in the Council region. The SSC suggests that "Cultural Fishing" could be defined in such a way that it captures Samoan values as they are embodied in Fa'a Samoa and Samoan practices such as Tautua "service", especially to chiefs. It could include the Samoan practice of a broad collective sharing of resources within the Aiga managed by the Matai, and of customary practices of sharing of labor, resources, income, and social and political support to strengthen the Aiga, the village and the role of chiefs in perpetuating Fa'a Samoa. "Customary Exchange" continues in American Samoa, and the practice also contributes to the solidarity and continuity of Fa'a Samoa. A Samoan High Chief once said "Fish is Culture" and it is clear that fishing and the sharing of fish is central to Samoan cultural practice. These values and practices endure in spite of significant technological change, and Fa'a Samoa is adaptive, while it supports the continuity of core values and identity.

The SSC recognizes that with regard to any definition of cultural fishing the type of gear used is less important than the cultural distribution of the catch and the participation of the fishers in the fishing community.

The SSC agreed that the recommendations below should be considered by the Council in consultation with the American Samoa government and American Samoa fishing community.

The SSC recommends the Council consider that cultural fishing can involve any gear type employed, including new technologies and materials.

The SSC recommends that the community based option include residents of American Samoa who participate in cultural fishing.

The SSC recommends that cultural fishing can include both non-commercial and commercial fishing activities.

B. 2017 Hawaii longline bigeye tuna projections

Chris Boggs (PIFSC) presented on Hawaii longline bigeye tuna catch projections for 2017. **The SSC recommends that future forecasts should include effort and CPUE.** The SSC thanked Chris Boggs for his informative presentation.

C1. Report on Am Samoa Large Vessel Protected Area (LVPA) and fisheries statistics

Keith Bigelow (PIFSC) presented 2016 American Samoa longline fishery statistics including data on fishing within the LVPA exemption area. It was noted that the number of longline vessels operating has declined from 20 boats in 2016 to 11 in 2017. This could be due to the albacore season which generally begins in June, but also could be due to continued poor economic conditions facing the fleet. Based on 2016 data, the catch rates within the Swains LVPA were higher compared to other areas of the US EEZ around AS. Data on troll vessel catch rates around Tutuila were also presented and the catch rates appeared to increase over the last two years. The SSC thanked Keith Bigelow for his informative presentation.

C2. Updates on the development of the spatial maps

Keith Bigelow (PIFSC) informed SSC that the development of spatial maps of the Hawaii longline fishery operations will be presented to the first SSC meeting in 2018.

8E1. IATTC 2016 Stock Assessment

SSC member Kurt Schaefer presented on the IATTC 2017 stock assessments. The latest assessments indicate that bigeye and skipjack tuna are not overfished, nor experiencing overfishing while yellowfin tuna spawning biomass is below levels relative to MSY, but not experiencing overfishing. North Pacific albacore is likely not overfished and is not experiencing overfishing. The assessment for skipjack was based on eight different data and model-based indicators because stock assessments and reference points for skipjack in the EPO are highly uncertain. It was also noted that for skipjack, high catches followed the El Nino events in 1998 and 2015-16. The IATTC, in collaboration with WCPFC are considering developing reference points and harvest control rules for the long-term management of Pacific bluefin tuna. Japanese purse seine and coast troll fisheries targeting small fish exhibit the greatest impact on the Pacific bluefin tuna spawning stock biomass. Schaefer also covered some of the uncertainties of the assessment and emphasized the IATTC staff recommendation for a large-scale regional tuna tagging program in the EPO.

8E2. WCPFC Pre-assessment Workshop Summary

Keith Bigelow (PIFSC) presented on the stock assessment model updates in the WCPFC pre-assessment workshop, convened by the SPC in April. Assessments to be conducted this year

cover south Pacific swordfish, and WCPO bigeye and yellowfin tuna. For bigeye and yellowfin, it is likely that the southern boundaries for spatial regions 1 to 2 may be adjusted from 20°N to 10°N to take into account tagging information. New growth curves for bigeye tuna and the southwest Pacific swordfish have been incorporated into the new assessments. A recent $L_{infinity}$ estimate from CSIRO for bigeye is considerably smaller than earlier estimates suggesting higher productivity and faster growth for the resource. These assessments are ongoing and will be presented at WCPFC SC13.

8E3. IATTC GAC & SAS

Council staff presented on updates on the recent IATTC GAC and SAS meetings. The latest GAC recommendations covered issues related to FADs, longline observer coverage, sea turtle bycatch, observer safety at sea, bluefin tuna stock rebuilding, and topical tuna issues. Catch limits were recommended to cover all sizes of longline vessels and set types of purse seines. Of direct interest to the Hawaii Longline fishery, the recommendation called for accommodating the catch requirements of all U.S. vessels which refers to vessels < 24 m and > 24 m. Concern over FADs as marine debris was also noted. In relation to tropical tunas, it was recommended to improve methods for accurate and timely species composition data on purse seine vessels.

8E4. ISC Blue Marlin stock assessment

Council staff presented information related to the 2016 Pacific blue marlin stock assessment. This latest stock assessment, covers the Pacific-wide blue marlin stock and indicates that blue marlin is not overfished nor experiencing overfishing. There has been a long term decline and recent slow recovery in spawning biomass but recruitment has been stable. Fishing mortality increased until 2000 when the Japanese longline fishery contracted and has since stabilized. A new aging method confirmed previous estimates of longevity for this fast growing species.

The SSC noted that 30% (6 out of 18) of the models used in the assessment indicated that the stock was overfished and experiencing overfishing. The SSC recommends that all these results need to be reflected in the assessment findings and explained in terms of management advice.

9. Protected Species

A. MHI insular false killer whale abundance estimate

Amanda Bradford, PIFSC, provided a presentation on the updated main Hawaiian Islands (MHI) insular false killer whale abundance estimates. The study estimated annual abundance of MHI insular false killer whales from 2000-2015 using available mark-recapture methods, explored sensitivities of resulting estimates to possible biases, and provided current abundance estimates to support MHI insular false killer whale management needs. The insular stock is structured as three social groups or clusters and has been sampled since 2000 using vessel-based photo-identification of individual FKWs. The windward sides of islands in the MHI have not been sampled due to logistic challenges. The analysis used is an open model framework, specifically a POPAN generalization of classic Jolly-Seber model that parameterizes a super-population. The analysis resulted in annual abundance estimates ranging from 144-185 for the years 2000-2015, with 167 individuals in 2015. The annual estimates only apply to the sampled area and are underestimates of the true population size in each year. This is due to the sampled area focusing on the leeward areas of the MHIs.

The SSC acknowledges the improvements made to the abundance estimation method. The SSC noted that the models fitted do not account for the effect of transient behavior (those FKWs seen once and only once) on the survival probability estimate and should be assessed to ensure a robust survival probability estimate.

The SSC recommends that PIFSC review the peculiar saw-tooth pattern in the annual abundance estimates to support more confidence in the annual population size estimates, and looks forward to PIFSC's response.

The SSC thanked Amanda Bradford for an informative presentation.

B. Seabird Workshop Plan

Council staff provided a presentation on plan to convene an albatross workshop in November 2017 to review recent albatross interaction trends in the Hawaii longline fishery, explore possible factors influencing the trends, and evaluate albatross population impacts from the Hawaii longline fishery interactions. In the past decade since the implementation of seabird measures, the fishery has seen a gradual increasing trend in Laysan and black-footed albatross interactions. Recent analysis using data from October 2004 to May 2014 indicated that seabird interaction rates significantly increased as annual mean multivariate ENSO index (MEI) values increased, suggesting that decreasing ocean productivity may have contributed to the increasing trend in seabird catch rates. The Council, at its 166th Meeting in June 2016, recommended that research be conducted on at-sea foraging behavior of albatross species to improve understanding of interaction rates in the Hawaii longline fisheries. Additionally, the relationship between seabird interaction trends, fishing operation characteristics and oceanographic factors is discussed in the data integration chapter for the Pelagic FEP Stock Assessment and Fishery Evaluation (SAFE) report.

The SSC thanked Council staff for an informative presentation.

C. Report of the Protected Species Advisory Committee Meeting

Council staff provided a report on the Protected Species Advisory Committee (PSAC) meeting held March 30-31, 2017. PSAC reviewed the new protected species section of the draft FEP Annual Reports as well as other protected species topics of relevance to fishery management.

The SSC thanked Council staff for an informative presentation.

D. Updates on ESA Consultations

Council staff provided a brief update on the shallow-set longline fishery ESA consultation. The draft consultation documents are currently in review at NMFS SFD.

The SSC thanked Council staff for the update.

E. Updates on ESA and Marine Mammal Protection Act Actions

Lance Smith, PIRO, presented updates on ESA and MMPA actions of relevance to fishery management actions, including recovery planning for loggerhead turtles, false killer whales and corals; ESA critical habitat for green turtles, false killer whales and corals; responses to ESA listing petitions on manta rays, oceanic whitetip shark, bluefin tuna, chambered nautilus and giant clams; MMPA approach rules on humpback whales and spinner dolphins; and False Killer Whale Take Reduction Plan (FKWTRP) implementation. Limited new information was available for most of the actions. The giant clam 90-day finding is scheduled for publication next week. There have been 4 FKW-fishery interactions reported for the current year to date.

The SSC recommends the Council send a letter to NMFS requesting that it reevaluate the need for the Southern Exclusion Zone closure.

The SSC thanked Lance Smith for the update.

F. Public Comment

There was no public comment.

10. Other business

A. 127th SSC meeting

The next SSC meeting will be on October 10-12, 2017 in Kauai. **The SSC recognizes the important contributions of Dr. Paul Callaghan and years of service to the Scientific and Statistical Committee. The SSC wishes Dr. Callaghan all the best on his retirement.**

B. Updates on the status of the SSC Plan

Council staff updated the SSC on the three year research plan, noting that the inclusion of NMFS PIRO and PIFSC had yet to be accomplished. Staff also noted that the plan would be updated to reflect research which was conducted in 2016, and that suggestions for additional research topics would be welcome from the SSC.

C. WPSAR Terms of Reference for the main Hawaiian island deep 7 bottomfish stock assessment

Council staff informed the SSC about the Terms of Reference (TOR) for the WPSAR review of the main Hawaiian island deep 7 bottomfish benchmark assessment that will be released next week. The SSC was requested to review the TOR and provide comments by June 27, 2017 prior to NMFS PIFSC submitting the TOR to the Center for Independent Experts on June 30, 2017. **The SSC appoints Steve Martell to be the WPSAR Chair.**