



**106th Meeting of the Scientific and Statistical Committee  
February 22-24, 2011  
Council Office  
1164 Bishop Street, Suite 1400, Honolulu  
Hawaii 96813**

**4. Report from the Pacific Islands Fisheries Science Center Director**

The SSC heard from Dr Samuel Pooley, Director of the Pacific Islands Fisheries Science Center and the SSC appreciated his informative presentation.

**5. Program Planning**

The SSC heard presentations by Jarad Makiau, Sustainable Fisheries Division of PIRO, on ACL specification and regulatory status, and by Council staff on three workshops (Workshop on ACLs for Coral Reef Fisheries, the National ACL Science Needs Workshop, and the NOAA Catch Shares and Communities Workshop).

**A. ACL Specifications and Regulatory Status**

The Council has submitted an omnibus FEP amendment for Secretarial review and approval that would establish a mechanism for specifying annual catch limits (ACL) and accountability measures (AM) for all western Pacific fisheries. If the amendment is approved, the Council may begin specifying ACLs at its June 2011 meeting. An overview of the Council's ACL specification process was presented to the SSC, including the roles and responsibilities of NMFS, the Council, and its SSC in determining relevant limits and reference points, such as the overfishing limit (OFL), acceptable biological catch (ABC), ACL, AMs, and annual catch target (ACT), if ACTs are to be used.

**B. Workshop on ACLs for Coral Reef Fisheries**

In February 2011, Western Pacific Council hosted a meeting of the Fishery Management Councils (FMCs) which have management plans for coral reef fish. Participants included staff and SSC members from the Gulf of Mexico FMC, Caribbean FMC, plus researchers and scientists working on coral reef fish and fisheries from NMFS and academia. The South Atlantic FMC was unable to participate due to other commitments. The meeting reviewed the coral reef fisheries in the Southeast and Caribbean and the Western Pacific.

It was noted that in the Southeast and Caribbean, the term "reef fish" refers primarily to snappers and groupers, which while containing many species do not include the large number of other reef fish families managed under the Western Pacific Council's Coral Reef Fisheries Ecosystem Plan (CREFMP). Given the large number of species in the Western Pacific, for which only catch information is available, any ACL process for coral reef fish is likely to have to be conducted in an incremental process, dealing initially with those species comprising the majority of the catch.

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### **C. National ACL Science Needs Workshop**

Staff from the regional Science Centers and Councils, as well as individuals from some SSCs, met in Washington, D.C. from February 15-17 to discuss science needs pertaining to the development of ACLs. This included a discussion of how cooperative research could aid ACL development.

### **D. NOAA Catch Shares & Communities Workshop**

The NMFS Policy Office convened a workshop to explore issues and experiences associated with commercial fishing communities and catch shares from January 11-13, to coincide with the Council Coordination Committee also being held in Washington DC. The goal of this workshop was to bring together managers and technical experts to share and exchange information about past, present, and future experiences with fishing communities and catch share programs.

The workshop participants included the Councils, regional and HQ NMFS staff, NOAA General Counsel as well as external experts with experience in organizing and managing community- and fishery-based associations. Selected participants prepared brief white papers in advance of the workshop on the discussion topics. A salon/small group discussion format was used to share information and experiences, whereby participants broke up into different small groups whose composition changed between sessions. A proceedings of the workshop will be prepared and distributed.



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**6. Insular Fisheries**

**A. Mariana Islands**

**1. Plan Team Meetings**

Council staff reported on the January 2011 Mariana Islands Plan Team Meeting. Concerns were expressed over the local FAD program. The Plan Team requested an external review of the creel census program.

**The SSC notes the various recommendations in the Plan Team report and specifically recommends that the Marianas/CNMI Plan Teams develop clear terms of reference for the proposed creel census data review.**

**2. AP Meetings**

Council staff reported on the January 2011 Marianas Archipelago FEP Advisory Panel Meeting.

**The SSC notes and has no objection to the various recommendations in the Advisory Panel report.**

**3. REAC meetings**

Council staff reported on the January 2011 Guam and CNMI Regional Ecosystem Advisory Committee Meetings.

**The SSC notes and has no objection to the various recommendations in the REAC meeting reports**

**4. Biosampling in the Mariana Islands**

David Hamm (PIFSC) reported on the PIFSC non-pelagics biosampling program in the Marianas Islands and a biosampling workshop convened in Guam in October 2010. The SSC thanked Dr Hamm for an informative presentation.

**B. Hawaii**

**1. Bottomfish Stock Assessment**

Jon Brodziak (PIFSC) reported on the February 2011 bottomfish stock assessment for the main Hawaiian Islands "Deep 7" bottomfish complex that would be used to determine total allowable catches (TACs) and TAC-specific risk of overfishing. This stock assessment was undertaken in

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response to a 2009 WPSAR review that identified a number of shortcomings in the original Hawaiian Archipelago bottomfish (BMUS) stock assessment. The SSC thanked Dr Brodziak for his informative and comprehensive presentation. The SSC formed a working group composed of five members with stock assessment expertise to evaluate the technical aspects of the stock assessment and the Center for Independent Experts reviews thereof.

**The SSC acknowledges that the revised stock assessment is an improvement over the 2008 assessment and takes into account some of the concerns raised in the 2009 WPSAR review. In its deliberations, the SSC also considered the Center for Independent Experts reviews of the 2011 stock assessment.**

**The SSC considers that the revised assessment is adequate for management use for the 2011/2012 MHI bottomfish season using a probability-of-overfishing of 50%. The SSC notes that this is the first formal bottomfish stock assessment used to set the Total Allowable Catch (TAC). Based on this assessment, the SSC recommends setting the TAC for 2011/2012 at 383,000 lbs for MHI Deep-7 bottomfish (see page 78 of the document: Stock Assessment of the MAIN Hawaiian Islands Deep 7 bottomfish complex through 2010).**

**The SSC recommends that by its June 2011 SSC meeting, NMFS PIFSC provides the following:**

- **the prior and corresponding posterior distributions be overlaid on the same plot as a visual aid for model assessment**
- **the impact of the priors for  $R_{max}$ ,  $K$  and  $P(initial)$  on model performance be evaluated (including the validity of using inverse gamma priors)**
- **the documentation be expanded to better explain the Bayesian state-space surplus production stock assessment model and justification of all the priors used**
- **the various catch and CPUE scenarios be more succinctly described to aid management decision-making**

**For future bottomfish assessments the SSC recommends that:**

- **the CPUE data standardization include assessment of relevant environmental variables such as Sea Surface Temperature (SST)**
- **the CPUE data standardization consider GLMM approaches with year and island as random effects (perhaps random slope and intercept such as "random= $\sim(1+year|island)$ ")**
- **the sensitivity of the posteriors to the priors be thoroughly evaluated**
- **alternative model performance measures such as DIC be used in place of AIC and BIC**
- **a more comprehensive re-assessment be undertaken of the use of multilevel priors to address the stock complex and the changing catch composition problems that were identified in the 2009 WPSAR review (adoption of a more robust model performance measure such as DIC would support this re-assessment)**

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- **separate assessments be considered for faster and slower growing species groups in the Deep 7 complex**

**The SSC further recommends that the Council form two committees with membership from the Council, SSC, advisory groups and other individuals with expertise in Western Pacific fisheries for developing recommendations for P\* and SEEM (Social, Economic Ecological and Management uncertainty) analyses. The initial products of these committees should be reviewed at the 107th SSC and 151st Council meetings from which Acceptable Biological Catches (ABC) and Annual Catch Limits (ACL) may be established, as appropriate for the 2012/2013 fishing year.**

**The SSC also advises that it expects bottomfish assessments to evolve as new data accumulate and as new ideas are incorporated in the assessment. Such changes will undoubtedly alter estimates of OFL, ABC and ACL over time. In addition, the SSC expects that the format of the stock assessment reports will also evolve to include additional model diagnostic information and more succinct summaries of model inputs, including data standardization and Bayesian priors.**

## **2. Bottomfish EFH/HAPC**

Dr Chris Kelley (University of Hawaii) reported on a recent assessment for designating Essential Fish Habitat and Habitat of Particular Concern for the Hawaiian bottomfish management unit species (BMUS). This Hawaiian bottomfish EFH/HAPC assessment will undergo a WPSAR review that the SSC will then be able to comment on in the near future.

The SSC thanks Dr Kelley for an informative and comprehensive presentation.

## **3. Puwalu Recommendations**

Council staff reported on the Hawaii puwalu conference series to engage the indigenous Hawaiian community began in 2006 and culminated in the Statewide Puwalu on November 19 – 20, 2010. At first the project engaged the indigenous community to advise the Council on traditional marine practices. Through this process the tenets of traditional natural resource management were identified and discussed. This last Puwalu vetted the traditional natural resource management system through the general public, as well as examine issues that arose in previous island outreach initiatives. This project is part of the FEP implementation process to increase the participation of native Hawaiian community in the Council ecosystem-based management process.

## **C. American Samoa**

Dr Domingo Ochavillo reported for two projects in American Samoa supported by funding from the Council's Coral Reef Conservation Program Grant: Mapping and assessing critical habitats for the Pacific humphead wrasse, and determining larval pathways in American Samoa. Both of these projects were determined by American Samoa Department of Marine and Wildlife Resources to be important in managing their coral reef fisheries.

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**7. Pelagic Fisheries**

**A. Proposed Changes to American Samoa Large Pelagic Fishing Vessel (>50 ft) Area Closure (Action)**

The SSC heard a presentation on proposed changes to the American Samoa Large Pelagic Fishing Vessel Area Closure. The Pelagics FMP's fishing closure around Rose Atoll is incongruent with Marine National Monument boundary by about 1800 sq nautical miles. Alternatives were presented at the last SSC for dealing with this incongruence. The Council recommended alternative 2c to address this, plus alternative 3a, temporary reduction of the closed area to 25 nm around Swain's. The SSC noted that the alia fleet is currently down to one active vessel.

**The SSC supports the Council's preferred alternatives 2C and 3A**

**B. American Samoa Longline Limited Entry Program (Action)**

Council staff described the trends in longline vessels and the characteristics and management objectives of the limited entry program, in which up to 138 initial permits were initially available but far fewer (60) were issued in 2005. The limited entry program utilizes four permit classes based on vessel size. The greatest interest was in class D permits (largest vessel size). Based on the number of permits issued initially, the number of permits is now capped at 60. The permits are subject to eligibility requirements, minimum landing requirements, and transfer provisions.

After the 2006-2008 permit period, 22 permits were available and there were 26 applications, assigned based on priorities. In 2010 there were still 10 permits available. These included 4 Class A permits, for which there were no applicants. However, there were 13 applications for one Class D permit, reflecting higher demand for larger vessel permits, due in part to increasing interest in dual-permit benefits.

The general complexity of the limited entry program and specifically some of its provisions have been viewed as barriers to more participation in the fishery. The need for documented history of participation is a barrier, especially if new markets for pelagics become a reality in American Samoa with the opening of the second cannery – Tri Marine. In addition minimum landing requirements also present potential barriers.

In its previous recommendations, the SSC believed that this was too small a fishery to affect the

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southern albacore stock, but expressed some concern about localized depletion. The SSC also had favored measures that would facilitate development of the small vessel fleet and Samoan participation in fishery.

The Council will be considering alternatives for vessel size classes, permit eligibility and landing requirements at its 150<sup>th</sup> Meeting. The SSC was informed that the Pelagic Plan Team was concerned about increasing hook density so recommended modifying the Class A and B criteria but leaving C and D classes intact, as well as retaining the minimum landings requirement. The SSC noted that lumping Class C and D would open the potential for 39 large size vessels compared to the current cap of 26 Class D vessels and that this could increase hook density. However, hook density was not approaching critical levels and some of the effort would likely be expended on bigeye tuna by dual-permitted vessels.

### **Topic 1. Vessel Size Class**

**The SSC concurs with Council's preliminary preferred alternative 1C, which would replace the four vessel classes with two, where Class A and B vessels would be considered "small" and Class C and D vessels would be considered "large."**

### **Topic 2. Permit Eligibility**

**The SSC concurs with the Council's preliminary preferred alternative 2B, which would limit permit ownership to U.S. citizens and nationals and require no history of participation eligibility, but would maintain the priority ranking system based on earliest documented history of fishing participation in vessel class size. Similarly, the SSC recommends 2Bii whereby transfers of permits would require U.S. citizenship/national status but no American Samoa participation history.**

### **Topic 3. Minimum landing requirements**

**The SSC concurs with the Council's preliminary preferred alternative 3B, which would lower the Class A/B minimum landing requirement to 500 lbs within a 3-year period but would maintain the existing 5000 lbs landing requirement for Class C/D.**

### **C. American Samoa and Hawaii Longline Quarterly Reports**

Dave Hamm reviewed American Samoa longline catch for 2010 and procedures for monitoring the WCPO bigeye tuna quota and associated actions for closing the fishery. The 122 mt of uncaught quota in 2010 was attributed to a change in fishermen's behavior once the closure was announced. It was believed that more current or timely data would not have made a difference in the date of closure predicted by the model used. Russell Ito reviewed the longline catch and effort data for Hawaii-based vessels.

### **D. Impacts to Hawaii Longline Fleet from WCPO Bigeye Tuna Closure**

Dawn Kotowicz and Laurie Richmond, PIFSC Human Dimensions Research Program, described their study of the socioeconomic effects of the WCPO bigeye tuna closure. Further investigation will focus on the small boat fleet including shortliners, the effect on imports, and stakeholders'



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reflections on the closure once business returns as usual.

**The SSC appreciated the study and encouraged its continuation.**

## **E. International Fisheries Meetings**

### **1. WCPFC7**

Paul Dalzell briefly presented the highlights of the WCPFC7 meeting in Honolulu, December 2010. This Commission meeting was hosted by the Council and the US delegation.



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**8. Protected Species**

**A. Updates on False Killer Whale Issues**

Lance Smith and Krista Graham presented the SSC with an update on the false killer whale take reduction plan and potential ESA listing of the Hawaiian insular False Killer Whale populations.

**B. Updates Endangered Species Act Issues (Monk Seal Critical Habitat Sea Turtles, Corals, and Bumphead Parrotfish)**

Lance Smith updated the status and projected timelines for listing decisions on several reviews of species under petition for protection (loggerhead turtles, monk seal critical habitat, Hawaiian insular false killer whale, corals, and bumphead parrotfish). Smith noted that a challenge in the review of bumphead parrotfish has been identifying how meaningful and effective conservation and management measures in other countries may be, and asked the SSC for assistance in identify people or organizations that could be consulted in these countries.

**C. American Samoa Longline Fishery Circle Hook Study**

Keith Bigelow reviewed the results of a study comparing the effectiveness of larger (16/0) circle hooks to the 14/0 circle hooks commonly used in the American Samoa longline fishery. No significant difference was found in mean CPUE for albacore, bigeye, and yellowfin tuna with larger bigeye and yellowfin tuna caught with the larger circle hooks. The conclusion was that the use of larger circle hooks would not impact the economic viability of the AS longline fishery. The SSC notes that there were no interactions with sea turtles and other protected species during this study.

The SSC suggests that it might be worthwhile exploring the use of quantile or extreme value regression approaches to assessing any difference in hook size catch rates, especially in relation to the larger sized fish. A useful introductory reference on this approach would be: Koenker R (2005) Quantile Regression Cambridge University Press, New York

**D. Mariana Archipelago Green Turtle Workshop Report**

Asuka Ishizaki presented the SSC with a preliminary summary of results from the recent workshop on green sea turtles in Saipan. This workshop was highly productive and brought together cultural practitioners and resource managers to discuss green sea turtle issues in the region. A report is being developed that will summarize the outcomes of the workshop.

**E. Better science needed for ecosystem restoration and health assessment**

The SSC heard a synopsis of a recent paper in *Science* (Bjorndal et al. 2011)<sup>1</sup> by one of its co-authors, Milani Chaloupka. The article focused on a seven-point plan for the management of sea turtles in the United States, including the need to (1) integrate demography with abundance trends for multiple life stages and to determine the environmental effects on those parameters, and to (2) critically revise the U.S. permitting process that currently appears to be seriously hindering legitimate research and management of protected species.

**The SSC is concerned that the permitting process for scientific work on protected species often involves bureaucratic barriers, including lengthy delays, that hinder scientific investigation in support of management programs. The SSC recommends that the Council write a letter to the Secretaries of Commerce and Interior, as well as the Science Advisor in the White House expressing these concerns and the need for streamlining the process to minimize the time between permit application and issuance.**

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<sup>1</sup> Bjorndal K, Bowen B, Chaloupka M, Crowder L, Heppell S, Jones C, Lutcavage M, Policansky D, Solow A, and Witherington B. (2011) Better science needed for restoration in the Gulf of Mexico. *Science* 331: 537-538