WESTERN PACIFIC REGIONAL FISHERY MANAGEMENT COUNCIL

97th Meeting of the Scientific and Statistical Committee

Honolulu, Hawaii
March 3-6, 2008

Science Directors Report, Pelagic Fisheries, Ecological Risk Assessment Workshop, Protected Species and MSY Proxies Workshop Reports

4. Report from the Pacific Fisheries Science Center Director

The SSC heard with interest the report Dr Sam Pooley delivered on the Pacific Islands Fisheries Science Center's current programs and the NOAA Fisheries budget. The SSC noted with concern his report that the PFRP budget had been slashed by 50% and recommends that these funds be restored.

6. Pelagic Fisheries
A. Longline Management

1. Hawaii Swordfish Fishery Effort (Action Item)

The need for this action stems from a proposal from the Hawaii Longline Association (HLA) to eliminate the shallow-set fishery's effort limitation at the Council's 138th meeting in June 2007. The Council requested that staff proceed with National Environmental Policy Act (NEPA) analyses of various options associated with the HLA proposal. At its 139th meeting (October 2007), the Council considered an option paper and endorsed a range of options to be analyzed in the Supplemental Environmental Impact Statement (SEIS) to prepared by Council staff for the 140th meeting in March 2008. Categories of alternatives include: shallow-set effort, administration of fishery participation, and time/area closures.

The SSC heard a summary of the recent Draft Amendment 18 to the Pelagics Fisheries Management Plan (PFMP) pertaining to proposed modifications in the HI-based shallow-set longline swordfish fishery containing details of three topics: Set Effort Levels, Set Certificates, Time-Area Closures, along with their alternatives. This presentation also elaborated upon the calculations and assumptions used in the analyses for potential effects of each alternative on turtle interactions. It was pointed out that once SSC makes its recommendation to Council and then Council makes its decision on their preferred alternatives or actions, this would then trigger a NMFS Biological Opinion to determine whether that particular chosen action would constitute a jeopardy condition.

Topic 1. For shallow-set effort levels, **the SSC recommends that the set limit be removed as a fishing effort constraint. Effort limits, if necessary, should be set with respect to the status of the target stock and these effort limitations should be expressed in terms of hooks, not sets.** The fishery would still be regulated by incidental turtle takes (hard caps) as established through ESA consultation, but these cap figures must take into consideration post-hooking mortality estimates, and meet the 100% observer coverage (by physical person or eventually by remote video observation). **The SSC also recommends that turtle interactions be expressed on a per 1000 hooks basis rather than on the current per set basis.**

Topic 2. Given that the SSC has recommended elimination of the set limit in this fishery, the Set Certificate Program may no longer be necessary.

Topic 3. The SSC had already stated at its 96th Meeting that the issue of possible time-area closures is beyond the scope of the proposed action. **Therefore the SSC recommends no action on time-area closures. However, the SSC recommends the continuation of the NMFS TurtleWatch Program.**

2. Mariana Archipelago Longline and Purse-Seine Closed Areas (Action Item)

In 2006 the Guam Fishermen's Cooperative began operating a 57 ft longline vessel in EEZ waters around Guam to train local fishermen on longline fishing techniques with the objective of increasing locally-based longline operations. In 2007, a new longline company began fishing in CNMI with two longline vessels that deliver to port every two days. Allowing unregulated expansion of longline fishing around the Mariana Archipelago would likely result in adverse impacts, such as gear conflicts and localized stock depletion, to locally-based fishing participants and communities which are dependent on these waters and catches.

The Council has also recognized the potential for purse seine vessels to begin fishing in waters of the Mariana Archipelago and therefore the possibility of gear interactions and potential catch competition due to localized stock depletion between purse seiners and the small, locally-based CNMI and Guam fleets.

The SSC heard a presentation regarding the objectives and management effects of three topics for consideration in Draft Amendment 17 of the PFMP for the Mariana Archipelago Longline and Purse Seine Closed Areas.

The SSC recognizes that impacts on local target and bycatch/discard fish populations from expanding purse seine fisheries outside of EEZs can be far-ranging (up to an 800 nm radius), and that with advances in technology and FAD deployment, these issues must be addressed on an international Pacific-wide basis. The SSC also recognizes the adverse impacts of purse seine fishing for tunas generally may have on availability of locally important fish species in island areas. Scientific analyses presented to regional fisheries management organizations clearly show that purse seine operations in association with drifting objects cause depletion of bigeye and yellowfin stocks. In addition FAD associated fishing causes a substantial bycatch of culturally and economically important non-tuna species. RFMOs have been unable to control the growth of

FAD fishing in both the EPO and WCPO. In previous meetings the SSC has also recommended that FADs be registered as fishing gear. **Therefore the SSC recommends that purse seine fishing on both drifting and anchored FADs be prohibited in the EEZs of Hawaii, American Samoa, CNMI and Guam.**

Topic 1. The SSC recommends the preferred stakeholder Alternative 1C which would establish a 30 nm longline fishing exclusion zone for the CNMI EEZ.

Topics 2 & 3. The SSC reiterates that impacts on local target and bycatch/discard fish populations from expanding purse seine fisheries outside of EEZs can be far-ranging (up to an 800 nm radius), and that with advances in technology and FAD deployment, these issues must be addressed on an international Pacific-wide basis.

3. American Samoa Longline Program Modifications (Action Item)

In developing the American Samoa longline limited entry program, the Council identified 138 individuals who owned a longline vessel at any time prior to March 21, 2002 with 93 individuals owning Class A size vessels, nine owning Class B size vessels, 15 owning Class C size vessels and 21 owning Class D size vessels (WPRFMC, 2003). However, upon initiation of the initial permit application and issuance process, only sixty initial permits were approved and issued by NMFS with less than 30 percent of potential Class A size vessels applying for and receiving permits in comparison to 56 percent of Class B, 75 percent of Class C, and 100 percent of Class D size vessels.

In 2006, NMFS reported that nine applications (three in Class A, one in Class C and five in Class D) were denied). Eight of the nine denied applicants failed to qualify because they could not document that they owned a vessel that fished with longline gear in the EEZ around American Samoa or landed longline caught fish in American Samoa before March 22, 2002, or landed before June 28, 2002 with notification to NMFS or the Council before March 22, 2002. However, one applicant with documented vessel ownership and participation in the American Samoa pelagic longline fishery prior to March 22, 2002 filed an application with NMFS a few days after the close of the application due date and would have been eligible for an initial permit had the application been sent on time.

At the 138 Council Meeting the Council directed staff to draft a regulatory amendment that would provide a framework to adjust the American Samoa longline limited entry program, including reopening the permit application process, large (>50ft) pelagic vessel 50 nm closed areas, elimination of the minimum landing requirements for all vessel size classes in the American Samoa longline limited entry program.

Therefore this amendment also considers removing the minimum landing requirements for all vessel size classes. Initial review of the 2006 and 2007 American Samoa pelagic landing indicates that only 36 of the 60 permitted vessels were engaged in longline fishing during 2006 dropping to just 28 vessels in the first and second quarters of 2007. Of the 28 vessels engaged in longline fishing in 2007, two vessels were in the Class A category, zero vessels in Class B category, eight vessels in Class C category and 19 vessels in Class D category. Should such

trends continue through 2008, a substantial number of permit holders, particularly those in Class A and Class B may not meet the minimum landing requirements needed to retain their limited entry permits.

These actions are necessary to maintain sustained participation in the domestic longline fishery and to ensure opportunities for substantial participation by indigenous American Samoans in this fishery while minimizing adverse impacts on American Samoa communities.

Finally, as few Class A and Class B vessels are actively participating in the American Samoa longline fishery at this time, owners of vessels > 50 ft. in length have requested access to the large pelagic vessel (>50 ft. in length) area closures.

Although not an action considered in this amendment, this document also evaluates range of alternatives the Council for modifying the large pelagic vessel area closure should the Council consider making future boundary adjustments in response to changing conditions in the fishery or resource base.

The SSC received a summary of the draft regulatory amendment to modify the American Samoa pelagic longline fishery management plan pertaining to permit applications and minimum landing requirements. **The SSC reiterates its previous recommendations from the 96th SSC that no action be taken to change present minimum landing provisions for any Class permit. In addition, a status report should be prepared by NMFS PIRO to determine the number of vessels within each permit Class that have not made the requisite annual minimum landings.**

The SSC had previously supported Alternative 2, reducing the large vessel exclusion zone to 25 nm. **The SSC sees no valid scientific justification for altering its previous recommendation for a 25 nm large longline vessel exclusion zone.**

B. Non-Longline Management

1. American Samoa Purse-Seine Closed Area (Action Item)

Despite the existing 50 nm closed area for large (>50ft) pelagic fishing vessels around the islands of American Samoa implemented in 2002, concerns persist regarding potential localized stock depletion, gear conflicts and catch competition between American-Samoa based troll and longline vessels, and much larger purse seine vessels. As such, at its 139th meeting, the Council directed staff to draft an amendment to consider a purse seine closure in EEZ waters around American Samoa that contains a no action alternative (continuation of the current 50 nm closure for vessels > 50 ft), as well as a 75 nm closure alternative.

The SSC heard a summary of Amendment 19 to the PFMP pertaining to the establishment of a Purse Seine Fishing Exclusion Zone in the EEZ of American Samoa. This fishery has a brief 10-year history of limited catches and activity outside the 50 nm large vessel exclusion zone but within the EEZ. It was noted that the American Samoa stakeholders have a preferred alternative of a 75 nm exclusion zone, with a no-FAD set provision. However, given the caution already

expressed under our recommendations for Guam and CNMI regarding expanding purse seine activity, **the SSC recommends that no purse seine fishing on FADs be conducted within the US EEZ surrounding American Samoa.**

2. Non-Longline Pelagic Fishery Management (Action Item)

At its 138th Meeting, the Council considered the implementation of management programs for all boat-based non-longline pelagic fisheries (NLPF) in the Western Pacific Region (troll, handline, short-line, pole-and-line etc). There were two principal reasons for considering this action. The first was the implementation of annual catch limits through the Magnuson-Stevens Reauthorization Act (MSRA) which requires that the Council establish annual catch limits (ACLs) and accountability measures (AMs) for overfished stocks by 2010 and for all stocks by 2011. Establishing a Federal permit and reporting program would be a key element of establishing successful ACLs and associated AMs for NLPF fisheries.

Following their deliberations, the Council recognized the need for management programs for NLPF and directed Council staff to prepare an options paper to consider Federal reporting, permitting and limited entry programs for fisheries targeting species of concern especially bigeye tuna and yellowfin tuna. At the 139th Council Meeting, the Council considered this issue once more and directed staff to draft an amendment to consider a limited entry program for the Hawaii offshore commercial pelagic fishery employing handlines and related hook and line gear (shortlines, vertical longline) off or around seamounts, NOAA weather buoys, and private fish aggregating devices.

The SSC heard a summary of Draft Amendment 17 to the PFMP which contains management measures for Hawaii's non-longline fisheries. Since the Council has already made its decision to go forward with its preferred Alternative 4, a limited entry program (including its attached conditions), the SSC chose to make no further recommendations at this time, although there continues to be concern among SSC members about limiting entry into a fishery that is already in decline. It was noted that a new tagging project should be considered in order to assess trends in this fishery using new available models.

C. American Samoa and Hawaii Longline Quarterly Reports

Not presented

D. Bycatch reduction strategies in the Hawaii LL fleet

A report was given on the preliminary findings from the development of case studies of successful adoption of bycatch reduction strategies in the Hawaii longline fleet, funded through the federal disaster relief program.

D1. Shark Bycatch Reduction

A report was given on ongoing research using rare-earth metals as shark deterrents that may have promise as a means to minimize shark bycatch in longline fisheries.

E. International Fisheries/Meetings

1. CLIOTOP (http://web.pml.ac.uk/globec/structure/regional/cliotop/cliotop.htm)
2. WCPFC (www.wcpfc.int)
3. IATTC (www.iattc.int) (not presented)
4. NP RFMO
5. SP RFMO (www.southpacificrfmo.org/) (not presented)
6. ISC Billfish Working Group (not presented)

A round up will be given of reports from various international meetings concerning fishery research management in the Western and Central Pacific. Further details can be found at the websites listed above in parentheses.

The 1st CLIOTOP Symposium met in La Paz, Mexico in early December 2007. One of the interesting topics covered at this meeting was projections of climate change on bigeye stocks during the 21st Century.

IATTC conservation measures for tunas expired on December 31st 2007 and will be the main topic of discussion at the March 2008 meeting. The WCPFC failed to reach a consensus on tuna conservation measures to supersede those implemented for 2006-2008 (Longline bigeye catch limit of average of 2001-2004 or 2004 (US & China). PICTs limited to 2000 mt of bigeye. Introduction of FFA vessel day scheme for purse seiners). A 90 day closure on purse seining around FADs and a 25% reduction of LL bigeye from 2001-2004 average or 2004 catch was proposed by FFA but failed to gain meeting support. The next WCPFC meeting in December 2008 in Pusan. Tuna conservation will be the prime issue.

The NP RFMO is an ongoing dialog between Japan, the US, Korea and Russia on the formation of an RFMO comparable to the South Pacific RFMO. A gap exists in the international conservation and management of non-highly migratory fisheries and protection of biodiversity in the marine environment in high seas areas of the South and North Pacific Ocean. Non-highly migratory fisheries in this area are mainly discrete high seas stocks, although some stocks straddle the high seas and the EEZs of coastal states. While several states have already targeted these species on the high seas and continue to do so, the area is not covered by organizations with the competence to establish appropriate conservation and management measures. Stocks around seamounts and the impacts of fishing on the demersal habitat of seamounts continues to be concerns and have catalyzed the development of the SP RFMO and the ongoing forum for the NP RFMO.

The Intercessional Workshop of the Billfish Working Group (BILLWG) of the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) was convened in Honolulu, Hawaii from January 8-15, 2008. Nineteen scientists, representing the

United States, Japan, Chinese Taipei, Western Pacific Regional Fishery Management Council and Inter-American Tropical Tuna Commission, participated in the workshop (Figure1). The goals of the workshop were 1) to review "new" striped marlin CPUE data from the EPO, and assess the utility of updating the previous striped marlin assessment, 2) review research to determine if striped marlin in the North Pacific can be designated a northern stock, 3) compile swordfish and blue marlin fishery statistics in preparation for their future use in stock assessments, and 4) review comparative analyses assessing the impacts of gear configurations and fishing characteristics on catch by hook, depth, and habitat, as well as on CPUE standardization. In addition, the Blue Marlin Steering Committee met to discuss logistical requirements and necessary collaborations for completing a pacific-wide blue marlin stock assessment in 2010. Blue marlin is a pan-pacific stock, and completion of the assessment requires a collaborative approach. The BILLWG recognizes this and is willing to provide a leadership role in this endeavor. A full report of the workshop is being compiled and reviewed, and should be available shortly.

F. Public Comment

There was no public comment.

7. Ecological Risk Assessment (ERA) Workshop Report

A report was presented on an ecological risk assessment (ERA) workshop orchestrated by Council staff in the week prior to the SSC. The workshop was convened to consider use of ERA to prioritize species for the purpose of establishing management control rules and the reference point parameters incorporated in those control rules. The workshop formulated a series of recommendations focused mostly on Productivity Susceptibility Analysis (PSA), as subset of ERA. Recommendations made by SSC at its 96th meeting concerning PSA were included in presentations to the workshop. In subsequent discussion concern was expressed by SSC members on various issues including whether socio-economic issues are adequately considered in the proposed ERA.

The risk assessment workshop participants were informed of a parallel effort within NMFS to conduct PSAs. Christofer Boggs presented an account of that parallel effort, giving the SSC the opportunity to compare and contrast features of the Council's ERA initiative with those of the NMFS initiative. **The SSC looks forward to receiving further reports on the progress of the NMFS initiative regarding ERA and ERA guidelines.**

8. Protected Species

A. Loggerhead Petition

The SSC heard the Council Executive Director's response to a petition to (1) reclassify the North Pacific loggerhead turtle populations as a distinct population segment (DPS), (2) change their status from threatened to endangered, and (3) designate Hawaiian waters as critical habitat for loggerhead turtles. Specifically, the Executive Director's response was not to take a position on

a DPS designation for loggerheads and that a change of status from threatened to endangered is unwarranted as North Pacific loggerhead populations are increasing. Furthermore, extensive evidence indicated that major anthropogenic impacts to loggerhead populations are coastal fisheries in Japan and Mexico.

Thus, the Executive Director's response asserted that Hawaiian waters are not critical habitat for the North Pacific loggerhead, but serve as a migratory pathway. **SSC members agreed with the Executive Director's response.**

B. Loggerhead Workshop report

The SSC heard, with great interest, a report regarding the Loggerhead Workshop held in December 2007. This workshop was convened to provide the most up to date information on North Pacific loggerhead turtles, including their biology and ecology as well as bycatch and risk assessment studies. Among the recommendations from the group were to focus research efforts onto coastal fishery bycatch, risk evaluations, Japanese nesting beach threats, genetic research, recruitment, mitigation trade-offs, and an evaluation of the success of the Turtle Watch program. The workshop chairperson recommended that information from this workshop should be incorporated into future Biological Opinions on North Pacific loggerhead populations.

Discussion among SSC members and Council staff centered on loggerhead turtle mortality in Japanese pound nets since this is the main nesting area for North Pacific loggerheads. SSC members stated that information on the location of these nets is critically needed and that open pound nets should be encouraged instead of closed pound nets because they impart lower mortality rates on sea turtles and may be used to assist in tagging efforts.

C. PFRP Albatross Population Dynamics Workshop Report

The SSC heard a report from John Sibert on two PFRP projects initiated in 2002 to study black-footed albatross (BFAL) population dynamics. A major goal of these studies was to explore the feasibility of applying fisheries type models to protected species, such as BFAL. However, these projects were severely hampered by issues related to data quality, availability, and legal constraints. Similarly, institutions serving as BFAL data repositories generally lacked stable means to store, update, and organize albatross band-resighting data.

In light of the impediments to black-footed albatross data, **the SSC recommends Council staff encourage the US Fish and Wildlife Service to prioritize data improvement efforts for black-footed albatross in the Northwestern Hawaiian Islands and to consolidate and organize existing data (especially banding data residing at Patuxent Wildlife Refuge Center).**

D. Potential Listing of Blackfooted Albatross under ESA

The SSC was presented with the Executive Director's response regarding a decision by the US Fish and Wildlife Service to grant a 90-day finding on a petition to federally list black-footed

albatross (BFAL) as 'Threatened' or 'Endangered' under the Endangered Species Act. The response asserted that BFAL should not be listed as either threatened or endangered because the available record indicates that the NWHI populations have been stable at 60,000 nesting pairs/yr for the last decade, despite an increase in longline fleet size over that same period. Furthermore, Council measures have reduced incidental BFAL interactions by nearly two-orders of magnitude (83%) in the Hawaii longline fishery since 2001. These measures were not considered in the petition or in the USFWS' 90-day finding. **SSC members agreed that efforts to minimize bycatch are already extremely stringent and the BFAL nesting sites in the NWHI are already protected, and the SSC concurred with the Executive Director's response.**

E Update on ESA consultations

NMFS PIRO Office of Protected Resources presented a round-up of ESA Section 7 consultations ongoing for federally managed fisheries in the Western Pacific Region.

10. MSY Proxies Workshop

A one day workshop on MSY proxies was convened on Wednesday March 5th. See separate agenda. The workshop stems from comments received from NMFS those management regulations can only be developed for Management Unit Species for which there are MSY estimates or acceptable proxies. While these problems have largely been resolved, the implementation of annual catch limits as required in the Magnuson-Steven Reauthorization Act (MSRA) will require the Council to have suitable MSY-based reference points for the establishment of catch limits. The workshop therefore addressed a critical Council need arising from the MSRA 2006 reauthorization.

The SSC reiterates its lack of support for the two bin (OY vs Ecosystem Component Stocks) approach suggested by NMFS for annual catch limits. The SSC encourages the Council to engage in a risk assessment approach for prioritizing species for ACLs.

The SSC requests the PFRP to investigate MSY proxies based on an ecosystem approach to determine sustainable yields from different trophic levels.

The SSC notes that regular stock assessments which estimate MSY are conducted on the following pelagic species (SKJ, NPALB, SPALB, BET, YFT, BUM, SPM, BLSHK). Stock assessments are also available for bottomfish in the Main Hawaiian Islands, American Samoa, Guam and NMI. Further discussion of MSY proxies should therefore focus on species for which data are either limited or unavailable.

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Insular Fisheries Report

5. Insular Fisheries

A. Update on status of MHI bottomfish management and monitoring

Reggie Kokubun and Jessica Phelps reviewed DLNR-DAR processing of monthly summaries of commercial bottomfish catch and effort around the MHI. This "fast tracking" effort to provide data on a real time basis is supported by WPacFIN. Around 65% of the "deep seven" TAC has been reached by the end of February 2008. Ongoing federal support (mainly staff funding) is needed to maintain this MHI bottomfish fishery reporting system. Kokubun also reported trends in landings by month for the "Deep Seven" and noted a general decline in effort.

Walter Ikehara summarized status of implementing regulations for boat-based bottomfishing in the MHI. This included congruence with state regulations, procedures for possible 14 day advance notice of closure based on projection of reaching the TAC, and procedures for permit fee collection. Dan Polhemus noted that the two house bills giving the state authority to collect catch reports on a per trip basis and authority to make regulations such as closures to complement federal regulations were still alive and expressed hope that they would be enacted.

Justin Hospital summarized a recent study to evaluate the economic performance of the fishery from 2002-2007 and noted a general decline in the deep 7 revenues and some substitution of uku (which is not one of the deep 7). Retail market supply and prices were also described. He noted that local catch has been decreasing and imports increasing. Increasing imports might be distorting the previous supply and demand relationships that existed before the closure was implemented.

B. MHI Bottomfish Risk Assessment Model

Jon Brodziak presented on a revised MHI bottomfish risk assessment model for determining annual catch limits and for estimating the risk (probability) of overfishing. The revised model uses catch data for 2005-2007 for the "deep seven" species. The risk model is most sensitive to parameters of biomass in 2004 (B_{2004}), its coefficient of variation, and the population growth rate (r_m). The risk model is most sensitive to parameters of biomass in 2004 (B_{2004}), its coefficient of variation, and the population growth rate (r_m). The model is not particularly sensitive to the coefficient of variation of the population growth rate, the parameter for carrying

capacity (K), or its coefficient of variation. Brodziak noted a probable downward trend in biomass projected by this model. PIFSC staff noted that this model is limited and that a comprehensive stock assessment was desirable. The SSC thanked Jon Brodziak for his important presentation.

The SSC also enquired as to the CPUE standardization workshop that was scheduled for November 2007. This workshop was held but fishermen stakeholders did not participate due to concerns by fishers as to the format of the workshop. PIFSC is following up with individual interviews of fishermen who were active in the fishery's earlier years.

Bob Moffitt presented an overview of progress towards reducing commercial bottomfish fishing mortality in the Main Hawaiian Islands by at least 24%, as compared to fishing mortality in 2004. He reported that available information indicates that the 2007 reduction in the Deep 7 fishing mortality was approximately 37%. For all bottomfish MUS, the 2007 reduction was approximately 29%.

The SSC made several suggestions to improve proposed interview protocols with fishermen to better refine historic bottomfish CPUE data that will be used in the revised stock assessment model.

The SSC looks forward to reviewing the new stock assessment model that Moffitt indicated would be available by the end of 2008.

The SSC recommends that:

1. Council decision-making be based, for the moment, on the current revised bottomfish risk assessment model.

2. Fishery-independent surveys of the "Deep 7" species be undertaken for stock assessment purposes.

3. Comprehensive species-specific stock assessments be a priority undertaking for at least (but not necessarily limited to) the three main "Deep 7" species (onaga, opakapaka, and ehu) or for a complex of those three species. Tagging analyses for these species, where available, should be included in the stock assessments. A high priority be given to an analysis of historic catch and effort data (going back to the late 1940s) to support any comprehensive species-specific stock assessments.

Whitlow Au described the use of microprocessor-based ecological acoustic recorders (EARs) deployed on seamounts — which are acoustically dynamic habitats with a strong diurnal pattern with mesopelagic species migrating closer to the surface after sunset. This may become a cost-effective way to monitor secondary productivity around seamounts and deep reef slopes. The SSC thanks Whitlow Au for an interesting presentation and looks forward to further application of this emerging technology.

Katie Howard presented research on the life history and population biology of parrotfish in

Hawaiian waters and especially around Oahu. Parrotfish are sequential hermaphrodites with complex socio-sexual development with sex change socially mediated, which might make them more susceptible to overfishing. The SSC thanks Katie Howard for a most interesting presentation and looks forward to hearing about future research.

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Program Planning Report

11. Program Planning

Regarding Experimental Fishing Permits:

The SSC noted that the process described in the EFP proposed rule dated December 21, 2007 (FR 72657), seems reasonable and designed to achieve research objectives with the participation of fishermen.

A. 5 year research priorities

The SSC reviewed and refined the proposed research needs presented by staff. SSC members then ranked the topics as shown below in Tables 1-4.

Rank	Table 1. Research Needs – Stocks
1	Stock assessments and MSY estimates for major species/stocks in risk order ranking
1	Fishery data via logbooks, observers and port sampling
1	Tagging research to provide (semi) fishery independent information
2	Genetic structuring, esp. for bottomfish populations
3	Life history and population parameters in risk order ranking
4	Species interactions and ecosystem functions
5	Definition of a “stock” esp. for ACLs
6	Impacts of global climate change, ocean acidification and sea level rises on marine stocks

Rank	Table 2. Research Needs – Human Communities
1	Transferred effects (including markets) resulting from domestic regulations, as well as from MPAs within archipelagos
1	Patterns of resource utilization and dependence, including sources, uses and distribution of fish in fishing communities
1	Improve predictions (forecasts) of the likely responses of fishery participants and the impacts of management alternatives, and measure (monitor) new management regimes for their actual impacts on stocks, fisheries and human communities
2	Fishery cost-earnings data
3	Direct and indirect impacts of population/military/coastal buildups on marine resources, beach and fishing access, ports and transportation
4	Community structures, connections and resiliency
4	Community perceptions regarding marine ecosystem status, and the reasons for those perceptions
5	Socio-cultural-economic impacts of ACLs on island communities
6	Understand and balance the cultural needs and long-term aspirations of indigenous populations, with those of the larger and often very diverse island communities
6	Indigenous fishing rights, beach access, human safety and MPAs
7	Impacts of global climate change, ocean acidification and sea level rises on island communities
7	Basic information/community profiles: demographics, ethnicities, unemployment, income sources, employment opportunities etc. including information from household surveys
8	Valuation of key species, including blue marlin
9	Seafood safety and benefits
10	Potential impacts on marine ecosystems from economic downturns and increased fishing, esp. cannery closures
10	Potential for fishery development projects for indigenous communities
11	Traditional fishing methods (including for sea turtles) and related cultural practices, fish names
11	Role and impact of aquaculture

Rank	Table 3. Research Needs – Ecosystems
1	Trophic interactions and food webs , including impacts of large predator removals, and expand and update ECOSIM
2	Impacts of forcings, humans, and natural biological cycles on nearshore habitat
3	Functions and tradeoffs of MPAs
4	Status and factors of marine ecosystem resiliency

Rank	Table 3. Research Needs – Ecosystems
5	Impacts of societies on ecosystems
6	Connectivity within and between island/archipelago ecosystems
7	Impacts of global climate change, ocean acidification and sea level rises on marine ecosystems
8	Condition factor (energy stores) of top predators
9	Tourism/non-use impacts (jet skis etc.)
9	Impacts of alien and invasive species
9	Carrying capacity
10	Develop and support decision tools for ecosystem management (e.g. CAMEO)
11	Aqua/mariculture impacts

Rank	Table 4. Research Needs – Protected Species
1	Evaluate fishery interactions and post-hooking mortality rates
2	Population and status assessments and evaluation of risk factors affecting stock recovery
3	Genetic structuring of key species to allow a scientific definition of a “discrete population segment”
4	Examine conservation banking and offsets (credits)
5	Impacts of global climate change, ocean acidification and sea level rises on protected species
6	Shark population, status and effects on Mariana Archipelago fisheries
6	Potential for cultural takes of sea turtles
7	Interaction reduction and mitigation methods
8	Evaluation/improvement of turtle conservation projects

B. Cooperative research program

The SSC reviewed the preliminary list of the Council’s critical needs and cooperative research opportunities. SSC members suggested a number of changes and additions, which resulted in a modified list shown in Tables 5-10.

C. PFRP

The SSC heard a presentation by John Sibert on the PFRP. In summary, the program suffered budget cuts in 2007 and was able to support only one new project in 2007 (compared to 14 in 2006). Funding in 2008 is only about 50% of that in 2007. Possible projects in 2008 include residency of yellowfin and bigeye tuna in Hawaiian water, work on the next generation of stock assessment model, effort prediction (how do fleets respond to management), and models of aggregated behavior (dynamics of fish behavior around FADs). PFRP is planning on funding two of these new projects with the $300k available.

D. Annual catch limits

Regarding the alternatives for ACL mechanisms:

The SSC recommends adopting a modified alternative that includes using ACLs for those stocks having MSYs and using the likelihood and consequences of overfishing to prioritize the remaining species for ACL development and implementation.

Regarding alternatives for ACLs for longline bigeye and MHI bottomfish (stocks where overfishing is occurring):

The SSC recommends adoption of a new Alternative 2D as follows: Set ACLs based on the latest stock assessments with consideration of regional differences in fishing impacts, including those identified in bigeye MULTIFAN stock assessments.

The SSC also recommends that RFMOs make better use of spatially structured stock assessments to consider regional differences in fishing impacts (which may bear on domestic ACL requirements).

The SSC recommends that NMFS hold an expert workshop to identify the 5-10 species in each FMP most at risk of overfishing. The expert ranking process should include a ranking of both the likelihood and the consequences of overfishing for different species.

E. MSRA Ecosystem-based Management Workshop

No presentation.

Tables 5-10 with SSC changes and additions in bold italics:

Table 5. Projects to collect data to improve, supplement, or enhance stock assessments, including the use of fishing vessels or acoustic or other marine technology.

Need	Projects and Cooperative Research Role
Stock Assessments	Gather bottomfish life history data in island areas (age-growth, size frequency, etc.) using local fishermen.
	Gather life history data on species of importance as identified by Council risk ranking.
	Conduct tagging studies of bottomfish MUS to assist in stock assessments
	Conduct tagging studies of pelagic MUS to assist in stock assessments
	Use fishing vessels (FVs) to conduct fishery-independent study on bottomfish in MHI.
Improve Fishery Monitoring	Use FVs to test new technology-based systems (e-logs, Automated Information Systems)
	Use recreational fishers to test out a log book program for determination of rec catch and effort for bottomfish and PMUS such as ono, mahi, striped marlin, etc.

Table 6. Projects to assess the amount and type of bycatch or post-release mortality occurring in a fishery.

Need	Projects and Cooperative Research Role
Bycatch Reduction	Test methods of longline fishing to avoid catch of epipelagic species using FVs
	Continue to conduct post-release mortality studies on loggerheads in the Hawaii-based longline fleet
	Conduct assessment studies on Japanese pound net fisheries to quantify sea turtle bycatch and determine reduction strategies

Table 7. Conservation engineering projects designed to reduce bycatch, including avoidance of post-release mortality, reduction of bycatch in high seas fisheries, and transfer of such fishing technologies to other nations.

Need	Projects and Cooperative Research Role
Aid in Reduction of Bycatch in High Seas Fisheries and Technology Transfer	Develop and distribute outreach material (translated) to export protected species mitigation measures to foreign longline fleets.
	Conduct fishery related marine mammal bycatch research using FVs.

Table 8. Projects for the identification of habitat areas of particular concern and for habitat conservation.

Need	Projects and Cooperative Research Role
Monitor Habitat Conservation Effectiveness	Conduct effectiveness studies of marine protected areas (MPA) ***and marine managed areas (MMA) that cooperatively engage fishermen in the design and monitoring of such areas***
	Study larval distribution of BMUS in NWHI and MHI and determine degree of connectivity using bottomfish fishermen
Identify Habitat	Study seasonal movement patterns and residence times of PMUS around American Samoa via tagging
	Use tagging studies to examine residency of yellowfin and bigeye tunas in Hawaiian waters

Table 9. Projects designed to collect and compile economic and social data

Need	Projects and Cooperative Research Role
Address Non-commercial Fishery Issues	Develop community-based non-commercial monitoring ***and assessment*** including ***involvement of*** community members
Compile Economic Data	Conduct baseline economic research in American Samoa and the Marianas Archipelago such as cost-earnings study.
Fishery Development in Island Areas	Investigate potential avenues for fishery development in American Samoa and the Marianas Archipelago

Table 10. Other Council needs

Need	Projects and Cooperative Research Role
Improve Fisheries	Quantify shark depredation in island area fisheries using local fishermen.
Increase Understanding of our Fishing Communities	Document historic use patterns ***and associated cultural values*** of marine and terrestrial environments
	Document historical changes to shoreline environments and develop references for changes over time.