



## **Report to the Council from the 91<sup>st</sup> Meeting of the Scientific and Statistical Committee**

Council Office Conference Room  
1164 Bishop Street, Suite 1400  
Honolulu, HI 96813

February 28 – March 2, 2006

### **Insular Fisheries**

#### **5.A Bottomfish Fisheries**

Bob Moffitt presented the PIFSC Draft Administrative report on the status of the Hawaiian Bottomfish Stocks, 2004. SSC discussion centered around the issue of advantages and disadvantages of analyzing the changes in archipelago-wide stock status or by zone since the MSY control rules work on an archipelagic basis and the overfishing is happening only in the Main Hawaiian Islands.

Mark Mitsuyasu reported that NOAA Fisheries notified the Council in May 2005 that overfishing is occurring in the bottomfish fishery and has required the Council to develop a management plan of action by May 2006. A presentation was provided on the main Hawaiian Islands bottomfish management alternatives developed by the Council, its advisory bodies and through public scoping and hearings.

Alton Miyasaka and Kimberley Lowe presented an update on the States revised proposed area closure regime that had been modified after the recent round of state public hearings. There was extended and animated discussion over the relative merits of seasonal closures and area closures. This focused on the rationale and calculations for the projected reduction in mortality and effort for the seven bottomfish species as well as issues of compliance, enforcement, reporting, monitoring and assessment. The discussion carried over into a working group format with clarification of the state's proposals and consideration of a cooperative and phased approach that could include seasonal closures on the federal side and area closures on the state side. The Council's proposed May through August seasonal closure would meet the immediate need to have a plan begin reducing mortality and this could be phased out if the state plan is implemented and found to be effective.

The SSC heard the Plan Team report and recommendations and notes that it generally meshes with the SSC's recommendations. The SSC chose not to modify any of the Plan Team report's recommendations.

## **5.B Precious Coral Fisheries**

The SSC heard with interest the plans for a workshop on the black coral fishery that would involve fishermen, scientist and managers and looks forward to the results

## **5.C. Public Comment**

Public comments taken after each presentation and during SSC discussions.

## **5.D. Recommendations**

The SSC recommends that both the Council and the State of Hawaii support an adaptive management approach to address the excess fishing mortality in the Main Hawaiian Islands (MHI) bottomfish fishery.

The SSC continues to support the State of Hawaii's system of area closures for management of this fishery, and endorses the State's proposed refinements to this system based on improved understanding of essential fish habitat and distribution of individual bottomfish species. The State has estimated that the proposed refinements would result in at least a 15 % reduction in bottomfish catch. However, the SSC notes that the effectiveness of the closed area system needs to be evaluated as recommended below.

The SSC recognizes that the absence of recreational bottomfish catch data is a significant gap, and therefore the SSC continues to recommend mandatory permit and catch reporting for all bottomfishers in the MHI.

In order to ensure sufficient effort and catch reductions to meet NOAA requirements in this fishery during the period of transition from the State's current network of area closures to its proposed network of revised area closures, the SSC recommends that the Council adopt an interim implementation of Alternative 3, which closes the MHI bottomfish fishery from May through August. The SSC believes that such an interim seasonal closure will provide a near term solution to reduce bottomfish fishing mortality in the MHI, but recognizes that in order for such a seasonal closure to work, the State must promulgate parallel seasonal closure regulations. The SSC recognizes that seasonal closures are currently the most enforceable of the alternatives.

The SSC further recognizes that an immediate transition between current and revised area closure regimes could generate a temporary increase in catch in the bottom fishery, as previously closed areas are reopened, and that this could be at odds with federally mandated catch reductions in this fishery. Therefore, the SSC supports a phased implementation of the State's new closed areas, coupled with a phased reopening of certain formerly closed areas. As the State makes the transition to its new bottomfish area closure regime, the seasonal closure period will be shortened and eventually terminated, provided that an annual SSC review indicates that the closed area system is proving to be

effective and that a 15 percent reduction in fishing mortality is being maintained in the fishery as a whole.

The SSC notes that the current enforcement arrangements for the MHI bottomfish fishery are inadequate. Therefore, the SSC recommends that a comprehensive and properly resourced enforcement plan, including a Joint Enforcement Agreement between state and federal enforcement agencies, be developed to adequately enforce the seasonal and area closures.

Since it is essential to monitor the effectiveness of the State's closed area approach, the SSC recommends that the Council and NMFS support the State in developing a comprehensive research and monitoring program that should include:

- An improved catch reporting program specific to the bottom fishery (such as revising catch reports to include latitude and longitude of catch and requiring that fishermen utilize GPS units to accomplish this);
- Fishery-independent monitoring methods, such as drop cameras or robotic cameras, to provide indices of relative abundance. Such a monitoring program should include both former bottomfish restricted fishing areas that are being reopened to fishing, and new restricted areas that are being closed to fishing.
- Fishery-dependent monitoring of former bottomfish restricted fishing areas that are being reopened to fishing, including experimental fishing in existing closed areas that contain both large and small amounts of essential fish habitat. Such experimental fishing could occur during the seasonal closure through a cooperative agreement with fishermen.
- Collection of baseline data including oceanographic (e.g. currents, water temperature, ocean conditions) and biological information (e.g. otoliths, gut samples; gonads; length, weight).



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### **Ecosystems and Habitat**

#### **A. NWHI Fishing Regulations (INITIAL ACTION)**

Jarad Makaiau presented the basis for revisiting NWHI fishing regulations. He stated that on January 18, 2006, the Council was informed through a letter from the Under Secretary of Commerce for Oceans and Atmosphere, that NOAA is developing alternatives in the Draft Environmental Impact Statement for the proposed Northwestern Hawaiian Islands (NWHI) National Marine Sanctuary that would enable the Council to continue to recommend management measures for fisheries through regulations under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), consistent with the goals and objectives of the proposed sanctuary.

The Council was also informed that if, by May 1, 2006, it transmits for Secretarial review, amendments to its FMPs and corresponding proposed regulations implementing limits to bottomfish and pelagic fishing, NOAA may review those Magnuson-Stevens Act regulations as potential mechanisms to implement NOAA's preferred alternative for the proposed sanctuary, rather than implementing the alternative via the National Marine Sanctuaries Act.

He said the letter also explained that the alternatives being considered in NOAA's DEIS for the proposed NWHI Sanctuary are: (1) allow limited fishing indefinitely; (2) allow limited fishing until 2025; and (3) allow limited fishing for five years with a ban thereafter.

Makaiau said that for this reason, staff prepared several options for the SSC and Council to consider if they choose to amend the FMPs. He added that the measures were primarily developed using the Executive Orders and the goals and objectives of the proposed sanctuary as a basis but were also guided by "sideboards" that NOAA staff indicated would be acceptable to NOAA.

Makaiau then presented the proposed measures which include establishing federal permit and reporting requirements, permit caps and catch limits for commercial fishing for bottomfish and pelagic fishing, no-take marine protected areas and moratoriums for crustacean, precious coral and coral reef ecosystem fisheries.

Several members noted that there is no scientific reason for the proposed permit caps and catch limits for commercial or recreational fishing for bottomfish and pelagic species in the NWHI as all available scientific information indicates these fisheries do not negatively impact or threaten stock sustainability, protected species, fish habitat or any other ecosystem parameter of the NWHI identified by NOAA.

Some members also expressed concern about how and why the proposed alternative MPAs options were developed as Council staff could not provide any information on how fishing activities currently impact the resources or what anticipated benefits are to be expected by closing these areas to fishing.

One SSC member noted that the NWHI ecosystems are characterized as healthy. He then questioned whether any scientific study would be able to measure any ecological benefit to the area by further restricting or even closing these clean fisheries altogether.

SSC members suggested that clear objectives of these MPAs should be articulated by those proposing them.

Council staff stated that the proposed limits and MPAs are based on NOAA's "sideboards"

SSC members asked what were these "sideboards."

Council staff said that the "sideboards" were never officially communicated to Council staff and deferred to Bill Robinson.

Bill Robinson stated that the National Marine Sanctuaries Act (NMSA) is guided by a protection and preservation principle, while the Magnuson-Stevens Act, while guided by a conservation and protection principle, is also guided by sustainable use principle. Therefore, even though the best available scientific information indicates these fisheries cause no ecological impact, the sanctuary goals and objectives require additional restrictions measures on fishing to further prevent the likelihood of any ecological impact from occurring.

Mike Tosatto stated that the Magnuson-Stevens Act, clearly gives NOAA and the Councils the authority to conserve and manage fisheries in the EEZ however, the NMSA also give NOAA the authority to protect important biological, historical and cultural resources.

He added that NOAA is confident these two acts can co-exist and is committed to providing the Council every opportunity to continue managing NWHI fisheries that are consistent with the sanctuary designation.

One SSC member noted that the six pelagic commercial fishing options included permit caps ranging from  $\leq 3$  to 22 permits and catch limits ranging from 50,000 lbs to 350,000 lbs. He said that knowing what the specific "sideboards" were or how wide NOAA's "sideboards" are would help the SSC greatly.

No specific information on NOAA's "sideboards" was provided by PIRO.

Council staff re-iterated that these proposed limits are based on NOAA's "sideboards." The letter also seemed to indicate that if the Council does not transmit for Secretarial review, amendments to the FMPs that are acceptable to NOAA and conform to these "sideboards" by May 1, 2006, fishing would be regulated under the NMSA and not the Magnuson-Stevens Act.

The majority of SSC members had no objections to the proposed permits caps and catch limits for bottomfish and pelagic fishing if they are needed to meet political agendas.

One member expressed concern that the "sideboards" and the push for increasing restrictions or closure of scientifically proven sustainable fisheries under the guise of a precautionary principle are intended to simply override and circumvent the scientific standards of the Magnuson-Stevens Act.

Gary Dill, a NWHI bottomfish fisherman expressed concern with the proposal to establish a catch limit for commercial bottomfish fishing as it essentially would create a "quota" fishery.

Bill Robinson stated that idea of catch limit being presented is somewhat misleading. He stated that NOAA intended catch limit to be used more like "checkpoint" rather than a hard limit or quota.

Robinson added that NOAA's offer for these limits to be done under Magnuson-Stevens Act was not intended to require the Council to create a quota program which traditionally results in an immediate closure of the fishery if the catch limit is exceeded.

He clarified that NOAA would consider the catch limit to be a trigger or checkpoint upon which Council and NOAA would re-examine the fishery to determine reasons why the limit was exceeded and then take appropriate management action.

SSC members discussed historical participation of the fishery before and after the establishment of the Coral Reef Ecosystem Reserve.

Dan Polhemus stated that there are currently 8-9 active bottomfish permit holders.

Mike Tosatto stated that at the time the Executive Orders were issued, there were 16 permits "in effect."

Linda Paul said that the hulls of all vessels should be inspected and cleaned before entering the NWHI.

## **B. The Ocean Conservancy Hawaii Bottomfish Assessment**

Paul Dalzell presented a brief summary of The Ocean Conservancy report entitled, "*Bottomfishing in the Northwestern Hawaiian Islands: Is it Ecologically Sustainable?*" He said that the author was invited to present to the SSC however, did not respond to Council staff's invitation.

Dalzell said that the conclusion of the report claims that bottomfishing in the NWHI is “ecologically unsustainable.” He expressed concerns on the authors’ selective use of available data in order to support a preconceived agenda to end all fishing in the NWHI.

One SSC members noted the document also contains contradictory statements. For example, the introduction of the report states the NWHI ecosystem is in good health. Yet, the conclusion is at odds with this.

Some members of the SSC also noted that the terms such as “ecological integrity” and “ecologically sustainable” are not defined. They questioned how the author’s arrived at their conclusion unless these terms are defined and a quantitative threshold for the level of harm is established.

Some SSC members felt that the report was simply advocacy disguise as science.

### **C. HIMB Report on NWHI Research**

Brian Bowen briefly summarized a number of ongoing projects being conducted by HIMB and other state and federal agencies pertaining to the NWHI. These studies include:

- Stock structure in deepwater snappers (*Etelis* spp.) (WESTPAC, NMFS & Hawaii Sea Grant)
- Global phylogeography and conservation of sharks (multiple funding sources)
- Connectivity and stock structure in opihi (Sea Grant & NPS)
- Comparative phylogeography of coral reef fishes and invertebrates of the IWP and Hawaiian Archipelago (NSF, NWHI)
- Conservation genetics of endangered Hawaiian monk seals (MMC)
- Stock structure of Hawaiian spinner dolphin (various sources)
- Population dynamics and stock structure of Hawaiian spiny lobster (NMFS)
- Molecular evolution of bonefishes (International Game Fish Association)

### **D. Report on Bottomfish Remote Camera Studies**

Danny Merritt presented a summary of the automated camera bait station technology. He noted that the purpose of developing such technology was to produce a cost-effective and non-extractive means to obtain abundance data on demersal fishery resources such as bottomfish and coral reef fish. He added that previous fishery independent studies were gathered by ROV or submersible which are expensive to do.

Merritt showed images that were collected from tests conducted in Hawaii and the Northern Mariana Islands and demonstrated how the images could be analyzed to identify various species and estimate fork length.

Gerard DiNardo noted that the technology is great, but question how the information can be used for the purposes of a stock assessment.

Merritt responded that currently, that has not yet been determined but a mechanism must be developed with input from the SSC and other marine resource management agencies.

#### **E. Hawaii Ta 'ape Feeding Study**

Brett Schumacher reported on the Analysis of diets of the Introduced snapper *Lutjanus kasmira* and Native Fishery Species, particularly goatfish. The purpose of this study is to investigate the dietary interactions between the blue-line snapper (known locally as ta'ape), and native shallow-water fish species, including how their diets relate to their spatial requirements, habitat use patterns, and to the benthic prey community.

He noted that the blue-line snapper *Lutjanus kasmira* or ta'ape was first introduced into Hawaiian waters in 1955 and has successfully established itself throughout the 1,500 mile archipelago from the island of Hawaii in the southeast to Midway Atoll in the northwest. Its abundance and prevalence has led to the suggestion that ta'ape may be depressing populations and catches of important native benthic/demersal fishery resources.

In 2000, the State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources and the Hawaii Cooperative Fishery Research Unit of the University of Hawaii completed a study on habitat, diet and fishery relationship of ta'ape and native deep-water snappers. The study did not demonstrate negative interactions between ta'ape and these species, although such interactions cannot be entirely ruled out.

Schumacher presented the methodologies including sample design, number of species collected, number of prey identified and correlation indices between ta'ape and several species of native goatfish. He stated that the results of this study do not indicate dietary interactions between ta'ape and native goatfishes. He stated that the greatest dietary similarity with ta'ape is the moano (*Parupeneus multifasciatus*) and that satial overlap during feeding may account for this pattern. There was no dietary similarities between ta'ape and other goatfishes, particularly weke (*Mulloidichthys spp*).

#### **F. Hawaii Parrotfish Study**

Ling On provided a status update on the Hawaii Parrotfish Population Biology study funded by the Council. She stated that purpose of the project was to obtain basic biological information on parrotfish species of Hawaii and to characterize the scarid community of Hawaii. The project is a 3 year study.

She said that underwater visual censuses are being conducted and data on densities, size structure and biomass of parrotfish are being obtained. She also noted that otoliths were being collected so that age at length estimates can be obtained.

On then presented preliminary data including length/weight regressions for four species, size at first reproduction estimates and identified potential seasonal spawning months by species.



## **G. Ecosystem Social Science Workshop Report**

Ed Glazier presented a report on the Ecosystem Social Science Workshop. He said the overall goal of the workshop was to facilitate discussion of social science requirements for ecosystem-based (EB) management in the Western Pacific. The objectives of the workshop were:

- Objective 1: Convene social scientists & regional experts to review EB management requirements, issues, and social science applications;
- Objective 2: Explore social science data & models needed to advance ecosystem-based management in the region;
- Objective 3: Identify indicators for assessing the human and institutional ecology of marine ecosystems in the region;
- Objective 4: Explore policy or social & policy science administration needs associated with ecosystem-based approaches in the region.

He noted that he is preparing a report of the workshop which will document key findings of the workshop and which can be used as a draft planning tool for incorporating social science into EB fisheries management in the region(s). The key discussion points/issues of the workshop included the following:

- Ecosystem social science should parallel biophysical science in terms of its importance for EB management
- A commonly-understood vocabulary of EB social science should be used (e.g., Institutional Ecology, Applied Economics)
- Ecosystem concepts in the social sciences are not new (lessons)
- Contemporary EB social science should be exploratory and adaptive
- EB social science may contribute to EB biophysical science & vice-versa
- Ecosystem social science indicators should be specific & measurable, and derive from Council needs and objectives
- EB social science planning must address variable social and cultural conditions in the respective archipelagos
- EB social science should reach beyond minimal/general requirements under existing mandates to address local and regional issues & information needs as effectively as possible
- EB social science planning should address ethical dimensions of conducting the research and use of findings (e.g., burdens on informants, intellectual property rights issues, representation, etc.)
- EB social science should involve monitoring of rapid and cumulative social change and its implications for effective fisheries management in the region and archipelagic sub-regions
- EB social science should be subject to evaluation in terms of its effectiveness for gauging the effects of environmental, regulatory, and other sources of change in the region and sub-regions in question
- EB social science can and should address critically important compliance and enforcement issues in the region and sub-regions

## **H. Public Comment**

Opportunities for public Comments were provided and recorded during each agenda item.

## **I. Discussion and Recommendations**

The SSC considered proposed regulations for fishing in the NWHI presented by Council staff and makes the following observations and recommendations.

- 1. The SSC recommends the Council require federal MSA permit and logbook reporting for all commercial and recreational bottomfish and pelagic fishing in the NWHI, except at Midway Islands where the USFWS would continue to monitor the fishery through their catch report (MSA permits would be required).**
- 2. The SSC perceives that the proposed ban on harvest of crustaceans, precious coral, and reef fish, is designed primarily to satisfy a philosophical agenda and not a scientific one. The SSC therefore takes no position on it.**
- 3. The SSC recommends that a regulated recreational fishery in the NWHI be allowed but this fishery should be promulgated under the aegis of NMFS and not the Sanctuary to ensure that catch and effort statistics are collected and incorporated into the NMFS data system. The SSC also suggests that the two-year duration proposed by Council staff is too short and should be extended for enough time to collect sufficient data to credibly evaluate this fishery.**
- 4. The SSC recommends that the proposed limit of 14 commercial bottom fish permits, 7 in the Hoomalu and 7 in the Mau (the two CDP permits included in the latter) be accepted.**
- 5. The SSC understands that the proposed commercial bottom fish catch limit of 85% of estimated MSY in the NWHI (381,500 lb/yr) is a checkpoint that would trigger consideration of further regulation and not a cap that would necessitate closure of the fishery. The SSC recommends that this checkpoint apply to the sum of commercial and recreational bottomfish catch in the NWHI.**
- 6. The SSC notes that the catch of pelagic species by the bottomfish fishery at the present time is small relative to the pelagic catch in the region and thus takes no position regarding pelagic catch limits for NWHI bottomfish boats.**
- 7. The SSC likewise takes no position on the proposed MPA alternatives because no data or analyses have been presented to allow an evaluation of these alternatives. The SSC suggests that clear objectives of these MPAs be articulated by those proposing them.**

- 8. The SSC also reviewed The Ocean Conservancy report entitled, “*Bottomfishing in the Northwestern Hawaiian Islands: Is it Ecologically Sustainable?*” and did not find the document to be a scientifically credible assessment of sustainability of the bottomfish stocks in the NWHI. The SSC recommends that the author of this report be re-invited to present this work to the SSC and respond to SSC comments.**
  
- 9. The SSC re-affirms its conclusion that based on current evidence, bottomfish stocks are not overfished or subject to overfishing in the NWHI. However, the SSC recommends an archipelagic-wide stock assessment for bottomfish with spatially specific sub-assessments for the MHI and NWHI be conducted as soon as possible.**



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### **Pelagic Fisheries**

#### **A. International Fisheries Management**

##### **WCPFC2 Resolutions**

- a. Bigeye and Yellowfin Tuna Conservation**
- b. Northern and Southern Albacore Conservation**
- c. Bycatch Measures**

Paul Dalzell reviewed several resolutions, and conservation and management decisions arising from the December 2006 second meeting of the Western & Central Pacific Fishery Commission (WCPFC). The most important were the conservation and management decisions for bigeye (BET) and yellowfin tuna (YFT) in the Western and Central Pacific Ocean, since these included caps on longline BET catch, and limitations on purse seine effort.

**The SSC believes that the WCPFC measures did not adequately respond to scientific advice that overfishing of BET and YFT is currently occurring. The SSC therefore urges future US delegations to the WCPFC to promote conservation and management measures that eliminate overfishing, consistent with scientific advice.**

Paul Dalzell explained that the Council, NMFS, Department of State and the Hawaii and American Samoa longline industries had formed the Tuna Conservation Working Group (TCWG) to look at issues relating to the implementation of both the WCPFC and IATTC BET quotas. Dalzell summarized the key elements arising from recent TCWG as follows:

- US longline vessels are now operating under bigeye tuna (BET) quotas in IATTC and WCPFC.
- Council may want to manage these quotas under the MSA, and MSA reauthorization may require Councils to set Total Allowable Catches (TACs).
- Implementation of BET quota, especially from WCPFC has raised concerns about loss of markets if BET quota is reached before end of year.
- A possible solution may be to develop ITQs to promote continuity of market supply.

- Council staff have proposed that a contractor be engaged to explore the potential for ITQs and other management tools for US longliners in WPR.

**SSC endorses the Council staff initiative to engage a consultant to analyze alternative management measures for Council-regulated longline fisheries.**

Dalzell also presented the two WCPFC conservation and management decisions in respect of North Pacific and South Pacific albacore. Both decisions called for effort limitations at recent levels and catch reporting to WCPFC. The decision for South Pacific albacore limits effort south of 20 deg. and thus was unlikely to have a direct impact on the American Samoa longline fishery which fished at lower latitudes.

Dalzell also reviewed three non-binding resolutions on non-target fish, seabird and sea turtle bycatch, which called for parties and cooperating non members of the WCPFC convention to adopt conservation measures with respect to these bycatch species. The most comprehensive was the resolution on sea turtles, which asked parties and cooperating non members to implement the recommendations of the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations.

**B. Annual Report Restructuring**

Paul Dalzell stated that the Council had engaged a contractor to improve the format of the Pelagic Fisheries Annual Report. This was a work in progress, which would be reviewed in detail by the Pelagics Plan Team at its main meeting in April-May 2006.

**C. Update on Hawaii Offshore Handline Fishery Issues**

Ed Glazier presented a preliminary report on a PFRP project which is an in-depth sociological study of the offshore mixed gear pelagic fishing, based primarily on the Big Island. The study is focusing on the various components of the offshore fishery such as ika-shibi fishing, fishing around privately deployed FADs, and the use of short longlines on the Cross Seamount.

**SSC notes with interest an ongoing study of the Hawaii offshore pelagic handline fishery and looks forward to reviewing the final report.**

**D. American Samoa and Hawaii Longline 2005 Reports**

Paul Dalzell and Russell Ito presented the American Samoa and Hawaii Longline 2005 reports respectively. Dalzell presented the third quarter 2005 report and showed that fishing activity in the American Samoa EEZ was at an all time low since the peak of the fishery in the between 2000 and 2002. Dalzell noted that albacore longline fisheries across the islands of the South Pacific were depressed. SSC member, John Hampton noted that while the stock assessment for South Pacific albacore indicated that biomass was well above  $B_{MSY}$ , older larger fish, typically caught by longline gear set in the tropics, may have been depleted by fishing.

Ito's presentation included the fourth quarter and annual report for 2005. The data showed that effort, in terms of hooks set, continued to rise. Rising trends were also noted in the landings of mahimahi, opah, wahoo and monchong. The SSC reviewed the catch data and discussed the potential for investigating stock trends of incidental target species such as mahimahi and monchong with respect to hypotheses developed from ecological models of the Pacific Ocean.

**Once again the SSC reiterated its concern about the continued increase in fishing effort in the Hawaii limited entry longline fishery, as expressed by the total number of hooks deployed annually. In future reports, the SSC would like to see fishing effort in total hooks split between swordfish and tuna segments of the fishery.**

**SSC encourages an examination of catch per unit of effort (CPUE) trends of species such as mahimahi and monchong as indicators of ecosystem effects of fishing.**

**The SSC would also like to commend Russell Ito for the quality and diligence of his presentations to the SSC over the past 15 years.**

#### **E. Preliminary Report on Shallow-Setting Regulations**

Ted Groves presented a summary of an investigation of the impact of effort limitation and hard caps for leatherback and loggerhead turtles. Groves showed preliminary information about the way set certificates had been traded in 2005 among and within the various ethnic groups in the fishery. He also indicated that if the turtle cap was close to being reached, the data could be used to estimate the marginal value of a turtle to longline fishermen.

**The SSC heard with interest a presentation on the economic implications of the Hawaii shallow set swordfish longline fishery regulations particularly the subject of swordfish shallow set certificate market. The SSC looks forward to hearing further reports on developments in the certificate market.**



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### **Protected Species**

Sam Pooley presented a summary description of the PIRO observer data collection program, including how it is managed and funded, the nature of the data collected, and some of the applications of the data. He noted that the data collected by observers is valuable in the management of endangered species, seabird bycatch, and various fisheries resources. Bill Robinson also noted that current funding for the observer program is inadequate to maintain both the mandated 100 percent coverage in the swordfish longline fishery and the 20 percent coverage of the tuna longline fishery. In addition, observer programs are not currently funded for either the American Samoa longline or the NWHI bottomfish fisheries.

**The SSC recognizes the scientific value of the data collected by the PIRO observer program in conjunction with support from PIFSC for data management and analysis. To meet this critical need, the SSC recommends that the program be provided with adequate funding to meet its obligations.**