WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

Pelagics Plan Team Meeting

2-4th May 2000
Hale Halawai Room
Western Pacific Regional Fishery
Management Council
1164 Bishop St.
Honolulu, Hawaii

1. Introductions and assignment of rapporteurs

PT Chairman Chris Boggs opened the meeting at 8.45 am.

2. 1999 Annual report modules

A. American Samoa

Status of Fishery

Although the new PPT member from American Samoa, Mr. Elliott Lutali, was unable to attend the meeting because of an Army Reserves scheduling conflict, he did prepare and submit a draft annual report module and a draft report for the first quarter of 2000 from the federal longline logbook system which DMWR now operates. In Elliott's absence, David Hamm reviewed the reports and provided the Team with summary comments. The DMWR Data Management and WPacFIN staff are still reprocessing and editing the historical data as part of the conversion to the new and significantly improved Visual FoxPro data processing system being developed by WPacFIN. The draft report was compiled using the old methods, but it is hoped and expected that this year's final report will contain revised data from the new processing system.

The number of boats and level of fishing effort in the troll and longline pelagic fisheries in American Samoa all increased in 1999, but total catch and revenues decreased overall. Although catch rates of some species showed increases in 1999, the catch rate of the principal target species of the longline fishery, albacore tuna, continued to decline and was the lowest since the longline fishery began in late 1995. The average size of individual fish also decreased for almost all pelagic species. Curiously interesting is the fact that the landings of albacore at the canneries increased for the sixth year in a row to a new record high, which was a 66% increase over 1998 landings. It is unknown if these opposite trends are inter-related, but it does seem fairly apparent that the local Samoan fleet is experiencing local decreased abundance of albacore tuna.

Substantial progress was made on the three recommendations in last year's report, which all concerned various aspects of improving the fisheries monitoring and data processing systems at DMWR. Reprogramming of software and reprocessing of the historical data are nearly complete for the major systems.

1999 Recommendations:

1. **Local based fishing activity has increased substantially on Aunu'u, the small island about 1 mile off Tutuila's coast. Direct monitoring of this growing fishery needs to be addressed and, if appropriate, a sampler hired on Aunu'u to collect data on an on-going basis.**

2. **Develop and implement algorithms to include the Faivaimoana I, one of the local longline boats not included in the longline creel survey total landings. The catch, effort, and landings revenues from this vessel, and any future vessels which may begin landing directly at the cannery, should be integrated with the creel survey expansion data to better estimate the total local longline fishery.**

3. **During the last half of 1999, many of the longline boats began landing their catches gilled and gutted to obtain higher prices at the canneries. The new data systems need to be modified to implement size/weight conversion algorithms to calculate appropriate round weights for all species.**

B. Guam

Status of Fishery

Jay Gutierrez presented the Guam module. The Guam DAWR staff have been reprocessing and editing their offshore creel survey data for the past two years that will assist in meeting new SFA reporting requirements for fishing sectors and bycatch with the assistance of WPacFIN. The reprocessing and editing have been completed back to 1985 and those data are presented in this years report. Also, for the first time in any pelagic plan team meeting, Guam was able to divide fisheries parameters into the charter and non-charter sectors. This is significant because charters account for a high percentage of certain species although they only make up approximately 20% of the trolling trips.

Landings of all pelagics amounted to approximately 645,000 pounds (-23%), of which about 38% were sold for a revenue of $459,000. Tuna landings amounted to approximately 239,000 pounds (-21%) with the sold portion of $122,000. Other PPMUS landings amounted to approximately 371,000 pounds (-29%) with the sold portion of $320,447. The overall landings have declined from a peak high since 1996. Landings in 1999 followed the 1998 trend toward's targeting other PPMUS, principally blue marlin and mahimahi, rather than tuna. Non-charters accounted for approximately 62,700 pounds (-125%) of the total marlin catch while charters accounted for approximately 19,100 pounds (-23%). In the middle 1990's, charters accounted

for the bulk of the total marlin catch but this percentage has decreased over the past two years due to a decrease in charter activity.

Non-charters accounted for approximately (-31%) of the total mahimahi catch while charters accounted for approximately 23,900 (-58%). Prior to 1988, non-charters accounted for over 90% of the catch. Beginning in 1988, this percentage decreased due to an increase in charter boat activity. Non-charters accounted for approximately 67,100 pounds (-54%) of the total wahoo catch while charters accounted for approximately 9,700 pounds (21%). Non-charter landings decreased 54% and charter landings decreased 21% from 1998. In 1996, charter landings for wahoo reached a high accounting for 35% of the total catch and has steadily decreased from then. Non-charters accounted for approximately 106,100 pounds (-35%) of the total skipjack catch while charters accounted for approximately 13,900 pounds (-48%). Non-charter accounted for approximately 121,100 (-8%) of the total yellowfin catch while charters accounted for 5,460 (+9%). Charter activity has not had an affect on the landings of skipjack and yellowfin tuna over the years.

Compared with 1998, charter trolling trips decreased 10%, non-charter trips increased 3%, charter trolling hours decreased 17%, non-charter trolling hours decreased 6%, charter trolling effort decreased 9%, and non-charter trolling effort decreased 9%. The adjusted price for tuna decreased to $1.62 while the adjusted price for other PPMUS increased to $1.94. The estimated number of trolling boats that participated in the troll fishing in 1999 decreased by approximately 5%.

The team reviewed the 33 new charts, which document the split of charters and non charters, and selected 24 to be included into the final report.

1999 Recommendations

1. Continue with the reprocessing and editing of data back to 1980.

2. Report bycatch, and obtain software to deal with summarization of bycatch data.

C. Hawaii

Status of Fishery

Only the second part of the Hawaii draft was completed at the time of the Plan Team meeting. Walter Ikehara presented this section which deals with the non-longline pelagic catch, i.e. aku bait boats, and troll and handline vessels. Overall trips by non-longline vessels rose slightly in 1999, due mainly to aku vessel trips. However, the fleet continued to age and loose vessels anf trip volume was way below the long term average. Troll and handline trips remained at about the same level as 1998 or declined slightly. Troll CPUEs for mahi, wahoo and blue marlin were very similar to 1998 catch rates, as indeed were those for yellowfin and skipjack tuna.

Handline CPUEs for swordfish and wahoo remained within their long term averages, but blue marlin catch rates were low. Mahi catch rates declined substantially in 1997 and have been on the rise since then. Handline CPUEs for tunas were very variable. Yellowfin has been in decline since 1993, after peak catch rates in the fishery. Bigeye catch rates hit a peak in 1998 but dropped in 1999 to more typical levels. Albacore CPUE continued an increasing trend beginning in 1991, and reaching record levels in 1999. The offshore handline fishery, based on the Cross Seamount and NOAA weather buoys, showed declines in both CPUE and overall volume produced in 1999.

Sam Pooley gave an overview of the longline fishery in 1999. Catches in total changed very little, remaining in the region of 35 million pounds, with a revenue of $ 57.8 million. Swordfish, bigeye and blue fin catches were slightly lower than 1998, while those of mahi, ono, moonfish, albacore and skipjack were higher.

1999 Recommendations

1. **HDAR should continue to improve the collection of Hawaii fisheies data so that the data provide useful data on fishing effort.**

2. **The plan Team recommends that resources be provided to WPacFIN for processing 1999 auction data to assess how well dealer data can be used to replace the fish sales portion of the fishery catch reports.**

3. **NMFS should supply log book data to the State of Hawaii for uses as a substitute for state longline catch reports in the interest of reducing duplication of effort in reporting by fishermen.**

4. **Council should seek funding to conduct the RFDTF proposed survey of Hawaii's small scale fisheries.**

D. Northern Mariana Islands

Status of Fishery

Floyd Masga presented the NMI module. Trolling is the only fishing method utilized in the pelagic fishery. The pelagic fishing fleet, other than charter boats, consists primarily of vessels less than 24 ft in length which usually have a limited 20-mile travel radius from Saipan. In 1999, about 82% of all registered boats participated in some form of fishing activity. Six-three vessels were identified as being involved in full-time commercial fishing and 58 vessels were classified as part-time. Subsistence fishing and/or recreational usage included 142 vessels.

Twenty-seven vessels were registered with the Boating Safety Office as charter vessels for 1999. Charter vessels generally retain their catches, selling half or more to local markets. While the general magnitude of charter boat sales is unknown, it is questionable whether the local market can absorb these catches without impacting commercial fishermen. No logbook system is currently in effect.

The primary marketable target species for the pelagic fleet is skipjack tuna. Yellowfin and mahimahi are also marketable species. During their seasonal runs, these fish are usually found close to shore and provide easy targets for the local fishermen. In addition to the economic advantages of being near shore and their relative ease of capture, these species are widely accepted by all ethnic groups. This has kept market demand fairly high due to the continuing immigrant population growth on Saipan (over half of the population on Saipan is non-native).

Three commercial fishing licenses were issued in 1999, three in 1998, and four in 1997. In 1999 one licensed vessel fished during the full 12-month calendar year. The vessel primarily targeted bottom fish, landing pelagics incidentally.

1999 Recommendations

1. **To request from WPRFMC through NMFS for continuous assistance in providing the CNMI with some expertise (training) in the area of offshore creel survey, both on data collection and analyzing. Note that the creel survey has now been extended to Rota and Tinian.**

E. International module

Keith Bigelow presented the international module, which was compiled by him and fellow PT member John Sibert. The areas administered by the Council are surrounded by large and diverse fisheries targeting pelagic species. This report contains a summary of the status of tuna stocks in the western and central Pacific Ocean and reported catches of pelagic species in the entire Pacific Ocean by fleets of various nations. The spatial distribution of catch is illustrated for 1998 for the purse seine and pole-and-line fisheries, 1999 for the US purse seine fishery and 1997 for the longline fishery. It is intended that the final version of the International module will include an interpretation of the fishery trends.

Skipjack tuna contribute two thirds of the western and central Pacific Ocean (WCPO) catch of the four main tuna species. The best available estimates indicate that the 1998 skipjack catch in the WCPO was the highest on record (1.17 million tonnes, just exceeding the 1991 catch), with purse seine fleets providing both the majority of this catch (76%) and the catch increase observed during 1998. Available indicators (purse seine, pole-and-line) show variable catch rates over time in the fishery, but with no suggestion of a downward trend. Recent studies have begun to provide some understanding of environmental influences on fluctuations seen in skipjack

availability and productivity of the stock in the WCPO. Tag-based assessments from the early 1990s found regional exploitation levels to be low to moderate at catch levels similar to those in recent years; combined with the absence of clear trends in fishery indicators, this would suggest that the current catches are certainly sustainable.

The yellowfin tuna catch for the WCPO has increased since the 1980's, when purse seine fishing began its significant expansion in the WCPO. Although expansion has slowed in recent years, the catch has reached record high levels. The best estimate of the 1998 catch is about 407,000 mt, which is among the highest on record. This is an increase for the purse seine and other gear catches, and a decrease for the longline and pole-and-line gear catches over 1997 catches. This level of catch appears to be sustainable and is not adversely impacting the stock. Evidence for this conclusion is based on the time series of purse-seine CPUE, which is variable but with no particular trend, and the time series of standardized longline CPUE which is flat, or with a downward trend, depending on fishing area and type of analysis. Other indicators (the MULTIFAN CL length-based age-structure model and tagging data) show exploitation at low to high levels depending on the yellowfin tuna statistical area, but on a whole and at the stock level, exploitation is at a low to moderate level. In short, the WCPO yellowfin tuna stock appears to be in good condition and able to safely sustain the current level of catch.

Although the catch of bigeye tuna for the total Pacific Ocean accounts for a relatively small portion (8 % of total tuna catch in the Pacific Ocean), its economic value is substantial (approximately 1 billion US $ annually). In 1998, the catch was 100,000 mt and 70,000 mt for the WCPO and EPO, respectively. The catch increased gradually in the WCPO reflecting increases in longline and purse-seine catches. On the other hand, the surface fishery catch in the EPO increased markedly beginning in 1994 with decline in the longline fishery catch, and the total catch has stabilized between 70,000 and 90,000 mt. The longline catch of bigeye in the EPO declined from 83,000 mt to about 35,000 mt in 1998, and has been replaced with large purse-seine catch since 1993. The purse-seine catch in the EPO increased from about 8,000 mt in 1993 to over 50,000 mt in 1996 and 1997. It declined to 34,000 mt in 1998. Because a comprehensive assessment for this species is hindered by the scarcity of data and the absence or poor estimates for some key biological parameters, the current stock status is uncertain.

To overcome this situation, the application of the integrated model (MULTIFAN CL model), which utilizes all available data and estimates all parameters simultaneously, is planned for the coming year. It was noted that preliminary estimates of relative stock abundance from standardized longline CPUE indicate a decline in abundance since the late 1970s in the WCPO and since 1990 in the EPO. Although the estimates require further developments, the preliminary results raise concern of overfishing and decline in adult biomass. Cohort analysis performed by the IATTC for the stock in the EPO also indicated a similar decline in the adult biomass. It was strongly recommended that directed research efforts supporting the appropriate stock assessment be urgently undertaken, for example, (i) determine better estimates of the bigeye catch by surface fisheries, (ii) determine estimates of mixing rates and movements of fish across the range of the stock, and (iii) determine estimates of biological parameters (growth and size-specific natural mortality rates).

Albacore occurring in the south Pacific constitute a single stock. The best fishery estimates indicate that the 1998 albacore catch (41,000 tonnes) was the highest annual catch this decade. South Pacific albacore were mainly harvested by the longline fleet (88%) with a lesser amount contributed by the troll fleet (12%). Longline catches have escalated in several domestic longline fisheries, especially Samoa, American Samoa and French Polynesia. In these three countries, the 1998 catch totaled 10,000+ mt or nearly 25% of the entire south Pacific catch. The Taiwanese distant-water longline CPUE provides the best long-term indicator for the fishery, and catch rates in 1998 were high (>4 albacore per 100 hooks) compared to fishery performance earlier in the decade. Trolling catch rates of the USA and New Zealand fleets are more variable than those of the longline fishery, possibly due to factors affecting availability rather than changes in stock abundance. A length-based age-structured stock assessment (MULTIFAN CL) applied from 1962 to 1993 suggested that current levels of south Pacific albacore catch are sustainable given moderate exploitation rates and recent increases in catch rates of domestic and distant-water longline fisheries. In addition, there was some evidence of ENSO impacts on both catchability and recruitment. A recent production model analysis is also consistent with the good stock condition interpretation. The MULTIFAN CL assessment needs updating, and could be improved by updating Taiwanese longline statistics, re-structuring the analysis to better incorporate recent fishery developments, consideration given to the likelihood of localizing the model to smaller scales, incorporating assessment of precautionary reference points and better understanding how fleet behavior or albacore targeting may be related to economic factors.

3. 1999 Annual report region-wide recommendations

Region wide recomendations

1. **The Council should support an analysis of trends in mahimahi and ono landings and catch rates, and other incidental catches (i.e. opah, pomfret, rainbow-runner etc), throughout the western Pacific region, including data from EEZ and distant water fisheries**

2. **Because the longline fishing is expanding in terms of ports of landings the Council should authorize NMFS to use VMS information to monitor logbook compliance. The Plan Team believes this information to be vitally important for other fishery monitoring and assessment purposes. At a minimum VMS data on noon positions should be provided to allow some approximate validation of logbook reported positions**

3. **All of the annual report modules should attempt to address bycatch reporting requirements of the SFA.**

4. Council should seek similar provisions excluding tagged and/or released fish from being counted as bycatch as are given for Atlantic HMS.

4. SPC-OFP overview

Keith Bigelow gave an overview of the research and monitoring work of the Oceanic Fisheries Program of the Secretariat of the Pacific Community. Bigelow noted that the mission statement of the OFP was to provide advice to member countries on management of tuna, billfish and related fisheries. The OFP has a number of different programs including, statistics and monitoring, port sampling, observer program, regional database, biology and stock assessment. The biological research includes age and growth of tunas, environmental aspects of tuna distribution and aggregation, conventional tagging, archival tagging and bycatch. The statistics program has an 80% coverage of all tuna fishing activity in the CW Pacific. Funding support comes from the EU, France, Australia, NZ, Taiwan, US (PFRP & NMFS).

5. 1st quarter 2000 Hawaii and American Samoa longline fishery report

As the 1st quarter reports for 2000 were not yet available, Russell Ito and Paul Dalzell presented the year in review for 1999, based on the quarterly log book reports.

During 1999, 119 vessels had been active in the fishery, making 1700 trips and setting 19.1 million hooks (a new record) and with a catch valued at around $47 million. In general, vessels were making longer trips and traveling further to maintain high CPUEs. As usual, about 30% of the Hawaii fleet fished initially in the year from California, moving further west and south as the year progressed, and returning to Hawaii in the second half of the year when it became more feasible to fish from Hawaii. These boats were targeting mainly swordfish and as a consequence CPUE did not vary much throughout the year as fishermen follow the swordfish migration.

Striped and blue marlin catch rates were significantly lower than the long term averages, while bigeye and albacore catches were similar to or even higher than the long term averages in 1999.Yellowfin CPUE was also depressed in 1999, while blue shark was similar to the long term average. Ito also showed the time series of shark catches which followed more or less the same trajectory as that of swordfish. In response to a question on the drop in shark catch after 1993, Ito noted this relationship between swordfish fishing and shark catch. In essence, a drop in swordfish targeting results in a drop in shark catch.

The increase in trip length was thought to be due to the entry into the fishery of larger vessels with greater capacity. The new closed area to protect turtles had affected the swordfish fleet which had to fish on the eastern and western margins of the closed area. Swordfish prices had recovered from the 1998 low when the NGO boycott was in effect. In response to questions concerning El Niño and swordfish catches, Ito noted that the 1992-93 ENSO event had brought an extension of the Kuroshio current close to Hawaii and this was thought responsible for high swordfish catch rates.

During the 1990s, there was an increasing trend from swordfish targeting to tuna targeting. However, the volume of swordfish trips may be artificially low since the California based longliners fill out Cal Fish & Game logbooks as opposed to NMFS Hon Lab logbooks. It was noted also that swordfish fishing techniques had changed with fewer light sticks being employed than used previously. There was also discussion about the designation of a trip being a swordfish, tuna or mixed trip, and how much of this was due to the captain's discretion. It was also noted that the average size of swordfish in 1999 was very large, 188 lb on average.

Paul Dalzell then reviewed the year in fishing for the smaller longline fleet in American Samoa. This fishery was comprised principally of small 28-40ft alia catamarans, with hand deployed and retrieved longline gear. The canneries in Pago Pago provided a ready market for the tuna catch, particularly for albacore. Dalzell showed that the longline fishery in American Samoa had recovered during the latter half of 1999, with record high catches in the 3rd and 4th quarters. However, Dalzell showed that there was decline in albacore catch per unit of effort (CPUE) during the four year life of the fishery and that other species were now making up more than 30% of the catch. Overall annual tuna CPUE had declined steadily since 1996. In addition, there was a similar decline in annual longline CPUE in neighboring Western Samoa over the past six years as fleet size had expanded exponentially.

6. Status of bigeye and yellowfin tuna tagging around the Hawaiian Islands

Dave Itano explained that the objectives of the Hawaii tuna tagging project (HTTP) were to investigate interactions between longline and troll/handline fisheries, obtain information on age growth, mortality and exploitation rates, movements and vulnerability to fishing around aggregations.

Tag releases for the HTTP and the previous seamount tagging efforts stand at 17433 (9391 bigeye, 8042 yellowfin). Recapture rates are very close for both species with an overall recapture rate of 11.44%, driven mostly by short term recaptures from seamounts and FADs. Tagged tuna have ranged from 20 to 143 cm (yellowfin) and 29 to 133 cm (bigeye), but the mean size of tag releases has been 58 and 61 cm respectively. Many of these fish were tagged over a year ago and are now appearing in the catches of longline and inshore handline vessels that target large tuna. Bigeye recaptures by longline during the past two months have been reported relatively close to the areas where the fish were tagged, well within the Hawaii EEZ. The only recapture reported from the international fishing community came from a yellowfin tuna, tagged near Midway Atoll on September 17, 1998 and caught by a Japanese longliner on January 2, 2000. The fish was caught 1100 nautical miles to the southeast of Midway, just outside the western EEZ surrounding Johnston Atoll.

During a tagging cruise in March, a 100 lb yellowfin tuna was tagged with a new style "pop off" archival tag that is designed to transmit depth, temperature and position data to the ARGOS satellite array at a later, pre-determined date. The HTTP assisted the National Marine Fisheries Service in Honolulu to deploy the tag, which was loaned to NMFS by Australian researchers

(CSIRO Hobart). Hopefully, the tag will offer another view of yellowfin behavior around Hawaii.

The main field work of the HTTP is winding down and the March effort will likely be the last offshore tagging cruise planned. The proposed two year tagging period has been accomplished. However, one last tag release trip to Midway Atoll, at the far western end of the Hawaiian archipelago will be conducted in April. In addition, small scale tagging of FAD associated tuna close to the main islands will continue under funding from the Hawaii State FAD Program.

Locally, the Hawaii State Division of Aquatic Resources will be assisting the program by conducting monthly tagging trips off the Big Island of Hawaii in their new research vessel. The project coordinator visited Kona DAR personnel during March and trained them in the tagging technique while supplying them with data forms and tagging equipment. The Hawaii State FAD program is administered jointly by the DAR and the University of Hawaii.

7. Recreational fisheries data task force

Richard Shiroma summarized the foundation and progress to date of the RDTF. There had been four full Task Force meetings and two special working groups to tackle various technical issues. There were four recommendations. The initial mission of the RFDTF was to recommend an acceptable method of collecting fish catch and effort data from recreational fishermen. The data collected would directly support the establishment of a recreational fishery associated with highly migratory species under the management commission emerging from the MHLC series. Recommendations to the Council so far included the following:

1. **The Council should conduct a 'quick fix' mail and phone survey to estimate the total pelagic catch for Hawaii.**

2. **The Council and TF need to organize an education outreach program to encourage voluntary reporting of recreational fishery data.**

3. **The potential of the Div. of Boating & Ocean Recreation and the US Coast Guard data bases for assisting in generating recreational catch data should be investigated.**

4. **Beyond the recreational data issues the TF should continue to represent the interests of recreational fishermen in Hawaii.**

8. Sharks

Shark amendment

Paul Dalzell summarized the recent amendment to the Pelagics FMP concerning shark catches in the WPR. The Council had recommended that an amendment to the Pelagics FMP be sent to the NMFS SWR Administrator which implements a precautionary harvest guideline of 50,000 blue sharks in the Hawaii longline fishery. In addition, a limit of 1 non-blue shark per trip, which must be landed dressed or whole, shall be applied as an additional precautionary measure. Further, a framework process will be established to allow future adjustments to the annual quota.

The Council recommends that the use of demersal or bottom longlines to fish for pelagic MUS in the NWHI Protected Species Zones and within the main Hawaiian Islands longline 25-75-nm closed area be prohibited. Demersal or bottom longline gear means a type of fishing gear consisting of a main line that exceeds 1 nautical mile in length, lays on the bottom or is suspended no more than 1 fathom from any sea bottom 100 fathoms or less in depth for the majority of its length, is anchored to the bottom, and from which branch or dropper lines with hooks are attached.

Shark meetings

Pelagic shark workshop- Monterey, 14-17 February 2000

Paul Dalzell spoke about the background to the Ocean Wildlife Campaign's recent Pelagic Shark Workshop in Monterey and about concerns in general for sharks and shark populations. Dalzell noted that there were over 20 countries represented at the meeting with over 70 papers, presentations and posters. There was a great deal of discussion concerning catch rate trends, especially for the blue shark. Dalzell noted that in general the Pacific-based scientists were more optimistic about the exploitation of blue sharks, even in the Atlantic.

There was a great deal of information presented on the biology and life histories and demography of pelagic sharks but only one example of a stock assessment, for a porbeagle stock of the northeast coast of the US and Canada. Other various presentations of note, including a genetics study which found no differentiation between blue shark populations in different ocean basins, and a study on artificial bait as a means to reduce shark bycatch.

Shark workshop 2000- Honolulu, 21-23 February

Kevin Kelly presented a concise overview of Shark-workshop 2000, held in Honolulu the week immediately following the OWC meeting in Monterey. Kelly noted that the organizers of the workshop 2000 were focused mainly on shark finning while other scientists and conservationists saw it as only one of many issues, although the publicity it generated was sometimes a convenient vehicle to publicize other shark conservation concerns. From a global perspective, finning of blue sharks in the Pacific is of relatively minor importance compared to management of other conservation issue such as whale, basking and white shark issues, which have been very badly depleted. Interestingly, the representative from FAO, Ross Shotton, was not very complimentary about the International Plan of Action for sharks.

9. Pelagic stock assessments

Blue shark

Pierre Kleiber outlined the data sources and approaches being adopted to generate an up to date stock assessment of the blue shark in the North Pacific. Kleiber described how the longline data for Japanese and Hawaii based longline fisheries were partitioned spatially and with respect to mean target depth. A MULTIFAN CL model was fitted to quarterly CPUE data over several decades using a constrained maximum likelihood estimator. The model permits investigation of fishing where catchability improves over time. The model outputs are fishing mortality (F), natural mortality (M), recruitment, and relative and absolute biomass.

Having made some preliminary runs with the data, Kleiber was aware of the data limitations due to under-reporting of sharks by longline vessels. There was also a need to incorporate drift net data up to 1994, as this fishery took a large volume of blue sharks also. The size data also used in the MULTIFAN model had generated growth parameters which were similar to published values for Pacific blue shark.

Swordfish

Marc Labelle explained how he had generated an operational or simulation model for swordfish which allowed a variety of harvesting scenarios to be examined. This "virtual" fishery was established using a variety of data inputs including fishery related data, published data in the literature and filling in any gaps using available data for ecological analogs of the swordfish. Labelle explained how his model had divided the Pacific into 10 regions to account for the spread of the longline fishery over time and the maintenance of high catch rates.

Labelle stated that simulation data was fed into a model based on the actual swordfish fishery, generated by Pierre Kleiber and under ideal conditions this had shown good correspondence between the two model outputs. He noted, however, that the Kleiber model had a difficult time coping with the spatial expansion of the fishery, which was best addressed by eliminating the first 12 years of the data set. It appeared that the Japanese and Hawaii fisheries only exerted a moderate level of fishing mortality on the population, leading to low levels of contrast in the CPUE data. This meant that the confidence estimates around the data outputs were likely to be large. The MSY estimated by this approach was 57,000 mt/yr, and the peak catch in the fishery was 38,000 mt, with current catches at about 14,000 mt. This suggested that the fishery had never overfished the swordfish stock and was currently well below the level of effort needed to generate MSY.

There was some discussion about extending the model to the Atlantic but it would need to be re-parameterized. The truncation of the Pacific data before the 1960s by both models eliminated the period with the greatest CPUE drop, after which CPUE only changed in small increments.

10. Outstanding SFA requirements

Paul Dalzell explained that the re-authorization of the Magnuson Act in 1996 had obligated the Council's to develop amendments to their FMPs to make them consistent with the new provisions of the Act. The amendments to all the Council's plans were generated as a single volume, and submitted to NMFS in 1997. These amendments had been partially disapproved with respect to overfishing for pelagics, bottomfish and pelagic bycatch and fishing communities in Hawaii.

Overfishing/SAFE report

Chris Boggs explained how the Honolulu Laboratory had addressed the need to have overfishing definitions and control rules for pelagic species managed by the Council. Recommended definitions and control rules were provided as a NMFS Honolulu Laboratory Administrative report. As instructed by NMFS senior administrative staff, Andy Rosenberg, Garry Matlock, and George Darcy, at a meeting in April last year, the recommended control rules follow National Standard Guidelines that base stock status determinations on MSY-related reference points. As instructed, the status determinations refer to basin-wide stocks rather than locally-exploited stock fractions, although the Council is encouraged to continue to limit entry to the Hawaii-based longline fishery to promote local optimal yield. The report contains estimates of recent stockwide fishing mortality in relation to fishing mortality at MSY and recent stockwide biomass in relation to biomass at MSY for those species that have been recently assessed.

The fisheries and stocks for Western Pacific skipjack, yellowfin tuna, North & South Pacific albacore, swordfish and blue marlin are in good condition. For stocks of bigeye tuna and eastern Pacific yellowfin tuna, fishing mortality appears to be marginally above levels that would support MSY on a continuing basis. Overfishing must be reported for these stocks, and international management arrangements are needed to reduce fishing mortality. The biomass of these stocks is nearly at the level which supports MSY, but well above the level at which the stocks would be defined as overfished.

Fishing communities

Paul Dalzell explained that the only provision on fishing communities in the comprehensive amendment not approved by NMFS was that Hawaii collectively was a fishing community. NMFS had indicated that each of the Hawaiian Islands being individual fishing communities may be acceptable.

Bycatch

Paul Dalzell explained why the pelagic bycatch section of the comprehensive amendment was disapproved. Besides shortfalls in describing pelagic bycatch in some fisheries, there had not been sufficient consideration of reduction of bycatch beyond existing levels. Further, discussion of turtle bycatch and mitigation was also insufficient, and seabird bycatch had been omitted

entirely. Although under MSFCMA birds were not classed as "fish" current government policy was to reduce seabird bycatch in longline fisheries and so should be considered. Dalzell stated that he and Marcia Hamilton of the PIAO would complete this section of the revised amendment.

Bycatch data needs

David Hamm reviewed a list of questions that need to be answered regarding how data on bycatch should be collected, processed and reported, and a list of possible categories that could be used to classify types of bycatch. After some discussion, the Team agreed that bycatch should be: a) classified only into two categories, released live or injured/dead; b) quantified by number of individuals first, with estimated weights if possible; c) identified to the lowest taxonomic category possible; d) excluded from expansion and CPUE calculations to preserve the comparability of the time series; and d) reported in a descriptive manner relative to sampled or documented catch (e.g. percentage). The Team also agreed to develop a regional recommendation to have the Council pursue obtaining a redefinition of bycatch to exclude sport released fish from the bycatch category.

10. Seabird amendment

Paul Dalzell reported that the framework measure under the Pelagics FMP to implement a management regime for albatross/longline interactions. The regime would mandate three different measures:

1. Obligatory protected species workshops for longline vessel operators and owners.
2. Release of hooked albatross in a manner to maximize long term survival.

3. All vessels fishing above 25 deg N to use 2 out of 6 prescribed technical or operational mitigation measurers.

Dalzell stated that the document was under review by NMFS and he expected them to publish a proposed rule in the near future.

Protected species workshop

Kathy Cousins showed the PT the Powerpoint presentation that will be used in the NMFS protected species workshop, which under the new FMP regulatory framework measure all skippers and vessel owners will be obliged to attend. Attendance will be certificated annually and will be conducted in English, Vietnamese and Korean.

11. Turtle/longline closed area

Paul Dalzell reviewed the law suit brought against the Department of Commerce by the Center of Marine Conservation and Turtle Island Restoration Network and which had resulted in a large

area closure of international water to the north of the Hawaiian Islands for a period of 180 days. The suit was brought by a group of environmental NGOs which claimed that the recent biological opinion was inadequate and that NMFS had not completed a Environmental Impact Statement (EIS). NMFS capitulated on the matter of the EIS and promised to do a thorough job. The judge agreed that the biological opinion was sufficient but still went ahead and closed a large area of ocean between 150E and 168E W and above 28E N.

The judge's order was dated 23rd of November, which meant that by the 23rd of December 1999 NMFS had to have a regulation to close that area to longline fishing for vessels that where operating with Hawaii longline permits. That action was gazetted in the Federal Register closing the fishery, starting December 23rd as an emergency rule under the Magnuson-Stevens Act. Magnuson-Stevens emergency regulation remain in effect for no more than 180 days and they can be renewed once. In conjunction with that, NMFS had to prepare an environmental assessment. The judge had also required NMFS to publish new rules requiring the longline vessels to carry line cutters so if turtles were captured the vessel crew could cut the line as closest to the turtle as possible to maximize the turtle's chance of survival. This rule was published towards the end of February. NMFS also had to prepare an environmental assessment in conjunction with that action.

In addition, the judge asked NMFS to prepare an analysis of the temporal and spatial interactions between the fishery and sea turtles and develop primary closures that would be of maximum benefit for the sea turtle. The judge also stated that a panel would be appointed and members of that panel will consist of persons appointed by each party to the lawsuit. The plaintiffs would appoint one person, the government would appoint one person and NMFS would appoint one person. That panel had been appointed. The people who were on that panel were Dr. Michael Sissenwine, who is the NMFS Northeast Science Center Director, Dr. John Hampton, who works for the Oceanic Fishery Program and the SPC and who is a member of the SSC and Dr. Larry Crowder, who is a university professor affiliated with Duke in N. Carolina. The panel met at the end of March.

NMFS had made the results of the analysis of prime area closures for sea turtles available to this panel. The panel had two weeks in which to look at this information over and have their meeting and discussions and then provide to the NMFS their individual recommendations on the best time and/or area closures to reduce the take of sea turtles. The National Marine Fisheries Service had selected a conservative option for time area closures for the longline fishery. NMFS intended to prohibit fishing between 30 deg N and 44 deg N lat. between longitudes 137 deg W and 173 deg E through out the year. Fishing would also be constrained during April and May between the same longitudes and latitudes 23 deg N and 44 deg N, and between 6 deg N and 16 deg N. This decision had been filed with the court on 21 April. It was now up to the judge to decide wether to agree with the NMFS closure, maintain the closure he had imposed or choose another option.

12. American Samoa closed area

Paul Dalzell presented the revised framework measure for the large vessel area closure in the American Samoa pelagic fishery, drafted by Council contractor, Paul Bartram. The preferred alternative was for a 50 nautical mile around the main archipelago (Tutuila to Rose Atoll) and a 30 nm closure around Swains Atoll. He noted the larger and safer vessels in the 30 to 45 ft range were being built in Samoa and purchased by Samoan fishermen. Safety concerns were now less of an issue. He noted that good catch rates continue further away from Tutuila within and outside the 50 nm proposed closure.

The role of fish in the maintenance of Fa'a Samoa, Samoan culture and practice is well documented. Fishing effort by small boat Alia fishermen is often stimulated by pending cultural and ceremonial obligations and fishermen who are able to contribute maintain their status and support their chiefs and villages. A measure which supports the local growth of the small boat fishery in ways that spread the benefits to a larger number of small boat fishermen in their respective communities will have broader benefits to the territory.

Dalzell noted that in Bartram's document the 100 nautical mile option was rated more highly than the 50/30 nm. This simply reflected what the fishermen wanted. Bigger boats were entering the fishery and more would follow. Tokelau now had three 45 ft alias that had voyaged to the three islands in the archipelago from Apia. It was thought that a mothership freezer boat could call at Toleklau's three atolls and Swains Island to collect fish for the Pago canneries, thus expanding the range of the fishery in American Samoa and adjacent EEZ.

13. International

MHLC6

Paul Dalzell summarized the outcome of the sixth and possibly penultimate Multi-lateral High Level Conference to establish a management commission for highly migratory species in the West-Central Pacific. Dalzell used the Chairman's closing statement to comment on progress and outstanding issues including; area of application, scientific advice, decision-making, financial arrangements, observer program, transhipment, compliance and enforcement (including vessel monitoring system), boarding and inspection, final clauses and entry into force

The meeting had also discussed a formula for assessing a country's financial obligations to the new management commission. This included:

$ an equal basic fee which should be kept as low as possible.

$ a wealth payment which would reflect the development status of the member and the ability to pay.

$ a variable fee based upon catch from the convention area (excluding archipelagic waters for the purpose of budget issues) with a weighting factor to be applied to the catch taken by developing States by their own flag vessels in their own EEZ.

Consideration as to the value of the catch may also be appropriate.

Other outstanding issues included the omission of Philippine and Indonesian archipelagic waters from the MHLC area, with wording in the draft articles specifically excluding the South China Sea. The China-Taiwan question was also dealt with given China's objection to Taiwan having full membership status and voting rights. There were also concerns about the ability of French territories to join the full convention and vote, given that France remained in charge of enforcement in their EEZs.

Japan and Korea stated that they can not accept the United Nations Implementing Agreement on the Law of the Sea as the legal foundation of the MHLC convention as both governments have not ratified that UNIA. Japan and Korea and cannot accept the boarding and inspection on the high seas requirements stipulated in the MHLC convention articles nor can Japan and Korea accept the current proposed decision making process that calls for both consensus and 4/5 majority vote process.

Small developing countries in the region, e.g. atoll micro-states such as Kiribati and Tuvalu are concerned about how much it will cost for them to join the MHLC convention. They don't have the funds to join up and want a subsidy from the developed nations to participate.

Philippines is concerned that it will be unable to install VMS on their high seas fleet of bancas or canoes. The Philippines also want to eliminate the provision limiting high seas transshipment due their current reliance on at-sea transhipment for their purse seine fishery.

Kiribati-Spain fishing agreement

Paul Dalzell explained that until recently, the only vessels exploiting tunas and associated species in the Central and Western Pacific were from the Pacific Rim metropolitan countries, and the island coastal states and territories. Late in 1999, 14 vessels flying flags of Spain, Panama and Guatemala have recently been licensed by the Government of Kiribati to fish presumably within the Kiribati EEZ and on the high seas beyond. The vessels will be fishing for a Spanish company.

The Spanish deal lies outside the provisions of the 1994 Palau agreement which limited purse seine fleet sizes and set an overall cap of 205 vessel. The Spanish fleet does not exceed the 205 vessel cap but there is no provision for Spanish boats among the fleets from Philippines, Japan, Taiwan, Korea, USA and Pacific Islands. No details of fees or licensing conditions have been disclosed to FFA since licensing fishing vessels is a sovereign right of each coastal state and details do not have to be shared with FFA.

Most countries tend to apply the minimum terms and conditions established originally by the Parties to the Nauru Agreement (Fed. States of Micronesia, Kiribati, Marshall Is., Nauru, Palau, PNG, Solomon Is.) It is known that these vessels currently fish in the Eastern Tropical

Pacific(ETPO) and occasionally fish far to the west of the ETPO. They may also want an alternative fishing ground if annual yellowfin and bigeye quotas are reached in the ETPO.

Part of the deal is believed to be the construction of some sort of facility in Kiribati, probably on Kiritimati (Christmas Is.) in the Line archipelago. The Spanish vessels are large, ranging from1000-3000 gt from their applications to be placed on the FFA Regional Register. Now on the Regional Register these vessels could be licensed by other coastal states. They are believed to be supported by tender vessels that deploy large numbers of untethered FADs, and the fleet fishes in a coordinated manner making each vessel more efficient than individual seiners fishing on free swimming schools.

The entry of Spain into this region was of concern to the AP due to the extensive use of tethered FADs, which tend to have a much higher bycatch than sets on free swimming schools, and the catch of large volumes of juvenile bigeye. Trends in bigeye tuna CPUE in the Pacific longline fisheries are creating cause for concern. Other discussion by the AP concerned the management of FADs. Dalzell noted that this Council did not manage the US Purse Seine fleet, so we can not dictate the numbers of FADs used. Would the Spanish vessels carry observers? Possibly, but only observers from Kiribati, while they fished in the Kiribati EEZ and the high seas. There was also discussion about whether Spain should be asked to join MHLC since their presence in the region was a reality now.

Tonga

Paul Dalzell explained that the Tongan Government had recently published a draft pelagic fisheries management plan, which limited entry to 25 longline vessels. Dalzell explained that while there were less than 25 Tongan vessel based in Tonga, the Tongan Government was willing to entertain the possibility for joint-venture fishing with foreign companies. Fishing companies from Taiwan and Korea were believed to be interested in fishing in the Tonga EEZ. Previously, all foreign longline fishing had been banned from the Tongan EEZ. Foreign vessels would be displaced, however, as more Tongan vessels enter the fishery.

14. Pelagics Advisory Panel Recommendations

The Plan Team reviewed the recommendations arising from the recent Pelagics Advisory Panel meeting held between 5-6 April 2000.

A. Recommendations arising from AP Agenda in 1999. Carried forward or modified for 2000 AP report

1. The AP recommends that HDAR improve the collection of Hawaii's offshore recreational fisheries catch and effort data.

2. The AP strongly urges the Council to convince NMFS to approve the framework adjustment to the Pelagics FMP which would implement a 100 n.mi. area closed to pelagic vessels > 50ft in length, and which would include Swains Island.

3. The AP asks the Council to direct council staff to draft letters for council members to their federal representatives to defend, protect and preserve fisheries resources as they are the only major resources in the small islands of the Western Pacific.

4. The AP requests that the council continue to support a synthesis of economic studies on recreational fisheries in Hawaii with the goal to identify appropriate economic multipliers, and to ensure that this analysis include a thorough review of similar studies undertaken in Texas, Florida, California, Costa Rica, Puerto Rico, Mexico and Panama, and their management implications.

5. The AP recommends that in studying the effects of blue dyed bait on CPUE, the experimental methods include alternating on a one to one ratio dyed and undyed bait on longlines. Continue to evaluate mitigation methods.

B Non agenda Recommendations arising from AP 1999. Carried forward or modified for 2000 AP report

1. The AP recommends that for any seafood product to be labeled as Hawaii seafood they must be landed in the State of Hawaii by fishermen holding a valid State of Hawaii commercial fishing license.

2. The AP requests that the Council recommend to DLNR to explore a minimum size of aku for commercial sale because of fishermen's concern about the exploitation of juvenile fish.

C New recommendations arising from 2000 AP

1. The AP asks the Council to investigate current or future federal or state vessel buy out programs for the possible vessel relocation to the Pacific insular areas in order to assist in the emerging island fisheries industries.

2. The AP asks the Council to investigate the impact and legal issues concerning untethered FADs in the Central-West Pacific.

3. The AP expresses strong concern about the recent entry of the Spanish purse seine fleet to the West-Central Pacific, and request the State Department to convey these concerns to the MHLC, with respect to the impact of the Spanish fleet and other possible new entries.

4. The AP requests the Council to continue to improve the various information and communication services on its website (meeting notices, agendas, calendar, meeting minutes, summaries)

5. The AP requests the Council to investigate a longline closed area for Tutuila and Manu'a of 12 n.mi offshore to protect nearshore recreational and subsistence pelagic fisheries in American Samoa.

6. The AP requests the Council to consider the creation of a recreation advisory panel, and the panel to include charter vessel fisheries.

7. The AP recognizes the value of observer programs and supports the NMFS PIAO efforts to secure additional funding to maintain or increase coverage for pelagic fisheries.

8. The AP requests the Council to ensure that the US MHLC representation understands that the value of skipjack tuna goes beyond its use for consumption, but is essential for the success of sport fishing targeting blue marlin.

9. The AP requests the Council to continue its efforts to obtain funding to investigate the increased utilization of blue sharks.

10. The AP requests the Council to recommend that the boundary above which longline-albatross mitigation measures be used remain at 25 deg N, and not as recommended in the USFWS BO at 23 deg N.

11. The AP requests the Council to ask NMFS to quantify what effect the turtle area closure to the Hawaii longliners has had on reducing turtle mortality rates from longline fishing within the closed area.

12. The AP requests the Council to request the Dept of Defense to examine alternatives to practice bombing the island of Farallon di Medinilla in CNMI.

The Plan Team agreed to endorse the following AP recommendations: A4, A5, C2, C4, C7, C9 and C10.

The meeting ended at 5.00 pm on the 3 May