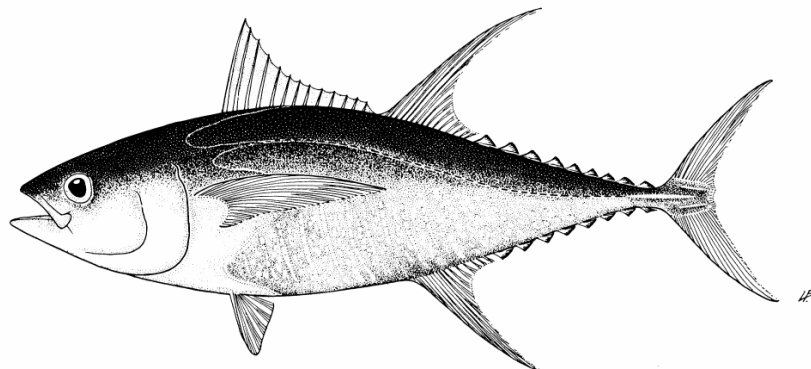




**Report of the Plenary Session of the Fifth Meeting of the Interim
Scientific Committee for Tuna and Tuna-like Species in the North
Pacific**



Tokyo, Japan.
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1. Opening

Mr. Takashi Koya, Assistant Director of the Fisheries Agency of Japan, opened the fifth meeting of the ISC Plenary and welcomed all the participants. The heads of national delegation introduced themselves and others in their delegations. Participating observers were also invited to introduce themselves.

2. Opening Statement

Mr. Akira Nakamae, Director General for Resource Enhancement Promotion Department, the Fisheries Agency of Japan, welcomed participants on behalf of the host country and gave an opening statement. He briefly described that the WCPFC was established last December and the ISC has now more clear and important responsibility in assessing and providing scientific advice regarding the status of stock of tuna and tuna-like species in the North Pacific. He also wished the significant and fruitful outcomes of the 5th ISC meeting.

3. Selection of Chairman and Rapporteurs

By acclamation of Members, Dr. Z. Suzuki was selected as Chairman of this meeting of the ISC. Japan nominated Takashi Koya and Naozumi Miyabe as rapporteurs, and the U.S. did similarly Robert Skillman to serve. They were also accepted by acclamations.

4. Adoption of Agenda (Appendix 1)

It was confirmed that the paper (ISC5/Plenary/07) will be dealt with in Agenda 6.a. The modification was proposed for Agenda Item 6 and accepted as “Review of Stock Status”.

The list of the working papers from the 5th ISC Plenary is given in Appendix 2, and the list of participants is attached as Appendix 3.

5. Delegation Reports of Fisheries Regarding Tuna and Tuna-like Species

Canada (ISC/05/Plenary/01)

The Canadian fishery for albacore tuna (*Thunnus alalunga*) in the North Pacific is a troll fishery using tuna jigs. Canadian fishermen have been fishing albacore since the mid-1930s. The fishery started in the coastal waters off British Columbia, and has now developed into four fleet types, BC coastal, BC/US coastal, highseas north Pacific and highseas south Pacific. The coastal fleets contain the majority of the vessels. Many of the smaller Canadian vessels have been following the tuna concentrations offshore, thus extending their traditional fishing range to include the

highseas.

Starting in 1945, sales slip records were the source for Canadian catches of albacore. In 1995 Canada implemented a comprehensive database for collecting albacore fishery statistics. All Canadian vessels must carry logbooks while fishing for highly migratory species in any waters. Detailed analysis of a combination of sales slips, logbooks, phone-in and transshipment records are undertaken to report fisheries statistics for the Canadian albacore fishery.

The total estimated Canadian catch of albacore for 2004 was 7,796 metric tons (t), higher than in 2003 (6,735 t). Most of the catch in 2004, as in previous years, was taken in FAO Area 67 (7,621 t). The total estimated effort of the Canadian albacore fleet in the North Pacific in 2004 was 9,728 fishing vessel days. Catch per unit effort (CPUE) in 2004 for the Canadian fleet was 801 kg/vessel-day.

The pattern of distribution of catch and effort in 2004 was similar to previous years, with higher catches occurring near the North American coast.

Discussion: Dr. Uozumi asked whether the trend upward in the number of boats was likely to continue in the future and whether this was related to the salmon fishery. Dr. Stocker replied that changes in the number of boats was related to dynamics in the salmon fishery and to the treaty for access of Canadian boats to U.S. waters to fish for albacore. He thought in the future there would be fewer boats fishing on the high seas and that the fleet size would decline.

China (ISC/05/Plenary/10)

Mainland China began to develop the distant water longline fishery in the late 1980's. In 1988, seven longliners, reconstructed from China's inshore trawlers, arrived in WCPO waters. This fleet rapidly increased to a peak of 457 vessels in 1994 that caught a nominal 12,885 metric tons. The fleet then steadily reduced, until in 1998 it bottomed out at 66 vessels that caught 1,024 tons. Since 1999 the fleet has been more stable at around 110-120 vessels and in the year 2001 there were 117 vessels. In 2002 (2003), 125 (183) tuna fishing vessels including 2 (4) purse seiners were in active in WCPO.

In 1999(2000), the bigeye tuna , yellowfin tuna , albacore and the total catch (north of 20°N) was 79.6 (38.2) t, 30.5 (44.7) t, 1,196.9 (700.9) t, 1,309 (783.8) t, respectively. In 2001 (2002), the bigeye tuna , yellowfin tuna , swordfish, albacore and the total catch (north of equator, except the PS catch) was 2,002.5 (1573.1) t, 1,079.2 (862.2) t, 118.9(173.5) t, 485.1 (210) t, 4,113.2 (3,120.1) t, respectively. In 2003, the bigeye tuna, yellowfin tuna, swordfish, albacore and the total catch (north of equator, including the PS catch, except the skipjack) was 2,367 t, 4,022 t, 272 t, 396 t, 7,466 t, respectively.

Mainland China began to develop North Pacific albacore fishery in 1999. In 1999, there were 12 fishing vessels involved in this fishery. Those fishing vessels are mainly large scale normal freezer (-36°C) tuna longliners and seasonal shifting the fishing ground targeting albacore from the North Pacific Ocean to the South Pacific Ocean.

The Bureau of Fisheries of China issues the fishing permit to the fishing vessel and reviews the fishing activities of fishing company every year, including the quality of catch data submitted. “Tuna Working Group” is constructing tuna fishery database. All the fishing companies report by month the catch data to Tuna Working Group office for analysis.

Discussion: Dr. Uozumi thanked Dr. Liming for his presentation and noted that this was the report of a Chinese longline albacore fishery. In response to a question from Dr. Uozumi, Dr. Liming indicated that changes in targeting caused the decline of catches. He also indicated that the non-albacore longline fishery operates in tropical waters. Dr. Liming replied to Dr. Robin Allen that the change in ratio of bigeye/yellowfin, from twice as much bigeye tuna as yellowfin tuna and the nearly the reverse in 2003 was attributed to an increase in number of vessels and because no purse seine catches were included for 2001 and 2002, but were included for 2003. In response to several questions by Mr. Miyabe, Dr. Liming indicated there is no logbook program and catch statistics are provided by the industry.

Chinese-Taipei (ISC/05/Plenary/08)

Distant water longline (DWLL) and offshore longline (OSLL) were the two major tuna fisheries in the North Pacific Ocean. Total number of DWLL vessels in the entire Ocean was 142 in 2003 but reduced to 134 in 2004. Albacore is the major catch of DWLL in the North region. The catch has been increased significantly since 1995, but the amount is still less than 10% of the albacore catch by all the fleets in the region. Catches of 2003 is estimated as 6,454 t, a continuous decrease since 2000. The proportion of northern catch to the entire ocean has been declined from 44% in 2000 to 31% in 2003. The size of albacore caught in DWLL for 2000-2002 ranged from 50 to 120 cm with two joint modes: roughly 80-90 cm and 90-105 cm. Albacore size from the OSLL was one mode and within the range of the second mode of DWLL. North Pacific swordfish and bluefin tuna were mainly caught by OSLL. The 2003 catch estimates were 3,196 t and 1,863 t, with preliminary 2004 estimations of 3,200 t and 1,700 t, respectively.

To fulfill the responsibility of fishing nation and to respond to the anticipation of international fishery societies, a program to improve the quality of fishery statistics has been launched this year. This program includes proposals to review the historical data such as catch and size data. It also includes the initiation or expansion of some programs to collect more fishery-independent data.

Discussion: Dr. Uozumi, Dr. John Sibert, and Dr. Suzuki asked questions about the quality of swordfish catch estimates in tropical areas where bigeye tuna are targeted, in the North Pacific transition zone where albacore are targeted, and in the coastal longline fishery. In the case of the OSLL fishery, swordfish landings are accurately estimated from port landings. Dr. Langley asked about the magnitude of changes being made for catches in the North Pacific and South Pacific, and Dr. Chang reported that the average change in North Pacific was about 10%. Mr. Miyahara noted that the level of albacore catches from 2000-2003 are maintained but the large decline of fishing effort in 2002 in the North Pacific appeared not to match with this change. In response to a question, Dr. Chang indicated that the 2002 data is still preliminary due to low logbook coverage and have not been raised. In general, the logbooks in the North Pacific come

later than those in the tropical area. Dr. Chang also indicated the data will be updated shortly. Mr. Miyahara also noted that some boats might be targeting sharks, but Dr. Chang indicated he has not examined the data for shark catches. Dr. Sakagawa noted that the albacore catches reported here are higher than received previously by the NPALBW.

Japan (ISC/05/Plenary/03)

Japanese tuna fisheries consist of three major fisheries, i.e., longline, pure seine, pole-and-line, and other miscellaneous fisheries like troll, drift-net, set-net fisheries. Total landing of tunas, skipjack, swordfish and billfishes in the Pacific Ocean in 2001 was 539,080 t. Three major fisheries occupy more than 94 % of catch in the recent years. Total catch of longline vessels smaller than 20 GRT is nearly 35,000 t in 2002. Total catch of longline vessels larger than 20 GRT was 88,486 t in 2003. There are two different types of purse seiners that target tunas in Japan, the group seiner (100-300 GRT seiner and others) and the single purse seiner (349-500 GRT). The single purse seiner is fishing mainly in the tropical waters, seasonally moving into the temperate water fishing ground. Total catch of purse seine fishery was 227,000 t of fish in 2003. Skipjack dominates in the catch followed by yellowfin and bluefin. The pole and line fishery is composed of three different categories, i.e., coastal (less than 20 GRT), offshore and distant water boats. Catch by the coastal pole and line fishery is 10,000 t or less annually. Total catch of offshore and distant water pole and line was 154,000 t in 2003. Skipjack and albacore catches dominate in the total catch.

Korea (ISC/05/Plenary/04)

Korean fisheries in the North Pacific Ocean divided as domestic purse seiner that fished Pacific bluefin tuna (PBF) as by-catch species in the coastal waters of Korea and distant water longline fisheries.

Average PBF catch of offshore purse seiner in Korean from 33 purse seiners and 4 trawlers amounted to 941 t, but the catch varies between 636 and 1,591 t during year 2000-2004. The decreased 2004 catch by 60% compared with 2003 catch was mainly due to the decrease in purse seine catch. PBF catch distribution depends on the distribution of target species and the degree of association between PBF and mackerels. Fishing area for PBF were mainly scattered in the southern waters of Korea near the Cheju and Tsushima Islands, and also occasional catch was taken in the Yellow Sea.

Monthly distribution of PBF catch demonstrates that major catch were taken during February-October in 2003 and most of the catches were recorded in the southern waters and some catch were also reported from coastal areas near Busan during October. In contrast, in the year 2004 during April-July catches were made in the South Sea and Cheju Island and during September-November in the Yellow Sea.

Longline catches in the North Pacific Ocean ranged from 11,000 to 27,000 t, averaging 18,000 t during the years of 1995-2004. Major species are bigeye and yellowfin, which comprised 74% of the total catch in this area. In 2004 bigeye catches increased by 42%, while albacore and billfishes catches decreased by 53% and 19%, respectively compared with those in the previous year.

Discussion: Mr. Humphreys asked about the location of the longline fishery, and it was said to operate mostly south of 20 N latitude and west of the dateline in the North Pacific. Mr. Hanafusa asked why the catch of other species varies so much, and Dr. Koh did not know but pointed out that most of this catch consisted mostly of shark. Dr. Sakagawa observed that when Korean purse seine CPUE of bluefin is up, Japanese CPUE is down, and vice versa. Discussion among participants pointed out that it is very hard to standardize any purse seine data and this is true of the mackerel purse seine fisheries of both Korea and Japan. The delegate of Japan asked whether or not the purse seiners use different net (or mesh size) when they make a set on bluefin tuna. Based on the knowledge by the Korean scientists, fishermen do not change the net (mesh size is mostly 42 mm).

Mexico (ISC/05/Plenary/02)

The Mexican tuna fishing grounds are located within the Mexican Economic zone as well as in international waters. It is a purse seine fishery composed of about 60 active fishing vessels, and only 2 baitboats operated in year 2004. The fishing effort in terms of carrying capacity has been stable over the past 20 years. The main target species of tuna is yellowfin tuna (around 80% of the catch), mainly from sets made on tuna associated with dolphins with predominantly adult yellowfin tuna (60% to 80% of total sets each year), the second in volume is skipjack tuna. In year 2003 a record high for Mexican catch was achieved (183,199 t). However in year 2004 catches decreased to 128,914 t.

The third target tuna specie is at the present time bluefin which is hold in pens for fattening in northern Baja California and exported to the Japanese market. In year 2004 a record high of 8,973 t catch was attained. Albacore, by contrast, is an incidental catch; average catch for 1980-2004 is 20.4 t. In case of the swordfish fishery, it is located mainly on the western and southern part of the Baja California peninsula, vessels use longline and gillnet and the fleet is composed of 22 vessels. Fishing operations are forbidden for this commercial fishery within a 50 miles strip from the coast, reserved for sport fishing. A record catch high was obtained in 1998 (3,603 t) and average catch is 950 t that represent 3.8% of total Pacific catch.

The National Institute of Fisheries of Mexico (Instituto Nacional de la Pesca) conducts systematic scientific work on those stocks, and since 1992 the National Tuna-Dolphin Program (Programa Nacional para el Aprovechamiento del Atun y Proteccion de los Delfines) monitors with IATTC 100% of the fishing trips of vessels above 363 t carrying capacity. Both programs do size composition of the catch. The rest of the vessels in the tuna fishery and swordfish fishery data come from log books.

Discussion: In response to a question from Mr. Yamada, the size of the purse seine vessels targeting bluefin were said to be mostly in the 1,000 GRT class. Observers are placed on the purse seine vessels both by IATTC and Mexican observer programs. Dr. Uozumi noted that the capacity for fattening for bluefin has increased to 5,000 t. He further asked if there is any restriction or control by the Government on the fattening capacity. Mr. Dreyfus indicated that Mexico is currently evaluating the suitable number of permits that should be issued, and is also considering the possibility of bluefin catch to be used only for fattening. Dr. Sakagawa asked

whether the bluefin caught for ranching are measured by observers; apparently only those remaining after the ranching operations have taken all they can handle are measured by samplers. Most of the length measures collected by observers are of yellowfin tuna.

U.S.A. (ISC/05/Plenary/05)

United States ((ISC/05/Plenary/5). Dr. Samuel Pooley indicated that the national report was prepared jointly by the Pacific Islands Fisheries Science Center and the Southwest Fisheries Science Center. The decline in the total USA catches is the result primarily of a decline in purse seine catches but also in the swordfish, which is due to regulatory actions. Numerically, albacore troll vessels make up the largest proportion of the USA fleet, followed by the longline fleet. The two distant water USA fisheries fish from the eastern Pacific to the western Pacific, with the effort of the purse seine fishery being concentrated along the equator while the effort for the albacore troll fishery is concentrated along 40°N latitude. The Hawaii-based longline fishery fishes in waters around Hawaii and eastward into the eastern Pacific Ocean, while the California-based longline fishery fishes from the west coast of the USA to waters north of Hawaii. Thus, there is considerable overlap of the two longline fisheries. The drift net fishery for shark and swordfish takes place primarily in coastal waters off California.

Mr. Russell Ito presented a more detailed description of the swordfish fishery. The swordfish fishery is made up of three distinct fleets, namely harpoon, gill net, and longline. The harpoon fishery is the oldest dating to the early 1900's, reached its highest levels in the 1970s, and continues now at a low level. The California drift net fishery began in 1980, expanded rapidly, and maintained high catches through the mid 1990, and has since declined. The Hawaii-based longline fishery began in 1988, grew rapidly to a peak in 1993, and remained as the largest USA swordfish fishery through 2000. The California-based fishery dominated from 2001 to 2003. The number of boats participating in each of these fisheries varied similarly to the catch trends. The harpoon and drift gill net fisheries take place in coastal eastern Pacific waters. The Hawaii-based swordfish fishery generally fished in central Pacific waters north of Hawaii but seasonally fished close to California. The California-based fishery fishes from the coastal waters to grounds north of Hawaii in the central Pacific. CPUE for each of these fisheries was quite variable but generally showed little indication of trend.

Discussion: Mr. Miyabe inquired about the length of a drift net set; it is generally less than 1 nautical mile.

6. Review of Stock Status

a. Albacore tuna (M. Stocker presenting on behalf of NPALBW, ISC/05/Plenary/13)

The Nineteenth North Pacific Albacore Workshop (NPALBW) was held at the Pacific Biological Station, DFO, in Nanaimo, Canada from November 25-December 2, 2004. A total of 19 scientists from Canada, Chinese Taipei, Japan, Mexico, USA, IATTC and SPC attended the Workshop. A total of 17 working documents and 1 information document were tabled. A draft report is being circulated for comments by the participants.

Albacore are a valuable species with a long history of exploitation in the eastern and western NPO. The total catch of albacore in the NPO for all nations combined peaked at a

record high of 125,400 t in 1976 and then declined to a low of 37,600 t in 1991. In the early 1990s, catches increased again, peaking in 1999 at 121,500 t, and averaging 92,600 t between 2000-03. During the past five years, fisheries based in Japan accounted for 70.6% of the total harvest, followed by fisheries in the United States (15.5%), Chinese Taipei (5.6%) and Canada (4.8%). Other countries targeting the NPO stock contributed 3.6% to the catch and included Korea, Mexico, Tonga, Belize, Cook Islands, and Ecuador. While various fishing gears have been employed over the years to harvest albacore in the NPO, the main gears used over the last five years were longline (40.4%), pole-and-line (37.8%), and troll (17.0 %). Other gears used since the mid-1990s included purse seine, gill net, and recreational fishing gears, which combined accounted for roughly 4.9% of the total catch of albacore from the NPO. Historically, pole-and-line gear was the major gear employed but since 1987, longline fishing produced most of the albacore landings each year. The highest recorded catch from the pole-and-line fisheries occurred in 1976 (88,000 t), and the highest catches from the longline fisheries were in 1997-98 (48,000 t).

Participants to the NPALBW have agreed to maintain a Data Base Catalog for data needs applicable to North Pacific albacore research and assessments. Data (Category I, II, and III) are submitted according to a protocol and a schedule developed at the Seventeenth North Pacific Albacore Workshop. The Southwest Fisheries Science Center (SWFSC) in La Jolla, CA, U.S.A, maintains the Data Catalog and associated database files.

A primary focus of the 2004 Workshop was assessing the albacore stock using the age-structured model, VPA-2BOX. Stock assessment results indicated that the point estimate of the 2004 stock biomass is roughly 429,000 t with 80% confidence limits ranging from roughly 329,000 to 563,000 t. The 2004 level of spawning stock biomass of 165,000 t (24% less than SSB_{MSY} relative to $F_{30\%}$) is largely reflective of a very strong 1999 year-class that eventually became a major contributor in 2004 as part of 'mature' (spawning) biomass. However, subsequent recruitment (R) declined to levels more typical of the extended historical time series, which translated to reduced levels of forecasted SSB, particularly, assuming 'high F' scenarios within the overall uncertainty analysis. This coupled with a current fishing mortality rate (F_{2003}) that is high relative to commonly used reference points, may be cause for concern regarding the stock status of North Pacific albacore. Future conditions are less well-known, but if F continues at assumed levels, it is unlikely that SSB will rebuild to SSB_{MSY} levels within 5-year time horizon.

ISC request for advice on albacore

Dr. Fox provided background on the origin of the study done to provide the basis for defining biological reference points and Dr. Ray Conser described results of the study. During a bilateral talk between Japan and the USA in February regarding albacore, it was noted that biological reference points would need to be defined if the ISC was to provide management advice regarding overfishing and being overfished. It was observed that despite changes in spawning stock biomass over a number of years, the stock has supported a fishery and resulted in recruitment that maintained the stock. Therefore, in a joint letter to the ISC Chair (dated 3 March 2005, Appendix 4), the governments of Japan and the USA requested scientific advice from the 5th ISC related to North Pacific albacore. More

specifically, the letter posed the following question:

“What is the level (or dynamic range) of fishing mortality (F) that will maintain the stock within the range of spawning stock biomass (SSB) that we have experienced over the assessment period (1975-2003)?”

Prior to the 5th ISC meeting, Japan and the United States undertook analysis to generate information that would assist the Committee in developing such scientific advice during the 5th ISC Plenary meeting. A team of Japanese and USA scientists, all of whom were involved in the stock assessment conducted at the Nineteenth North Pacific Albacore Workshop, carried out the analysis. The results were presented in working paper ISC/05/Plenary/7.

ISC/05/Plenary/7 introduced a straightforward, fishing mortality-based, reference point designed to ensure that SSB in future years remains within the range of the historically ‘observed’ SSB. Potential utilization of this new reference point (F_{SSB}) for albacore requires full accounting for the uncertainty in the stock assessment results and the likely uncertainty regarding future condition of the stock. The approach can be used by fishery managers to associate a probability of success to any selected F_{SSB} level – allowing full use of the precautionary principle in the face of uncertainty.

The Committee discussed the analysis and the question posed by the Japanese and USA governments, and offers the following scientific advice:

Future SSB can be maintained at or above the minimum ‘observed’ SSB (43,000 t in 1977) with F’s slightly higher than the current F range. However, the lowest ‘observed’ SSB estimates all occurred in late 1970’s and may be the least reliable estimates of SSB. A more robust SSB threshold could be based on the lower 10th or 25th percentile of ‘observed’ SSB. If so done, current F should maintain SSB at or above the 10th percentile threshold but a modest reduction from current F may be needed to maintain SSB at or above the 25th percentile threshold.

Discussion: Dr. Fox asked which SSB would fall out at 10th percentile. Dr. Conser replied that the years 1976, 1977 and 1978, maybe 1975 would apparently fall out. At the 25th percentile, a few more years would drop out (2001, 2002), but the lows in the early 1990s would remain. Based on how much data goes into observing cohorts, and confidence in estimates of SSB, it would appear that the lows in early 1990’s might be better minimum spawning stock biomass to use. Dr. Allen asked about the basis for choosing F_{high} and F_{low} as estimates of fishing mortality and whether assessment based on these took account of selectivity. He thought that F_{high} seemed to be an estimate of current F. The IATTC is also interested in this scientific study and will continue to collaborate with NPALBW. Dr. Uozumi asked if there were any apparent reasons for the 2002 and 2004 assessments to differ. He also indicated that the 2004 assessment is more pessimistic than the 2002 one. Dr. Stocker pointed out that the 2002 assessment was conducted using the ADAPT model while the VPA-2BOX model (enhanced version of the original ADAPT) as was used for 2004 assessment. Dr. Conser pointed out that in the ADAPT model, F on the oldest ages is a function of the F’s estimated for a few younger ages in the same year; while the

VPA-2BOX model can be structured to estimate F on the oldest age directly. By doing so, a better fit was obtained using the VPA-2BOX model than the ADAPT model. Concern was raised that the current SSB is extremely high, and such levels have not been observed since 1975. This is not a conflict, given that the selectivity in the early and late periods is different. In summary, Dr. Suzuki stated that the SSB simulation analysis provided 5 important answers to the question posed and that these answers would be important to managers. In addition, issues raised in the analysis and subsequent discussions, suggest the need for intersessional work to be conducted.

b. Bigeye tuna

(Western-central Pacific assessment taken from the Executive Summary of SCTB17 and the report of the 3rd Meeting of the SCG at the WCPFC PrepCon/41, presented by Y. Uozumi, ISC/05/Plenary/BP/03)

Scientists from Chinese-Taipei, Japan, the IATTC, the U.S., and the SPC's Oceanic Fisheries Program collaborated on assessing western and central Pacific bigeye tuna. The longline fishery dominated until early 1990. In the EPO, the surface fishery dominates in some years thereafter while in western and central Pacific; the surface fishery has become more important but still secondary to the longline fishery. The total catch in 2003 was estimated to be 96,000 t which is 21,000 t lower than the highest catch (117,000 t) in 1999. MULTIFAN-CL was used as the assessment tool. This year, three different standardized CPUE series were developed, namely, GLM, HBS (deterministic habitat-based model) and StatHBS (statistical habitat-based model), but the HBS indices were not used due to the poor performance. Runs with StatHBS indices and M was estimated were considered to be the base case runs because the model fitting was much better than the other runs. Results of this year's analyses reaffirmed the last year's assessment results, particularly the general increasing trend of recruitment in recent years. Biomass exhibits a generally declining trend especially in regions 2 and 3 where the stock is most heavily exploited. The yield production curve estimated in the analysis indicates that the current (1999-2001) F is close to the MSY level but the current biomass is above the MSY level. Probability distributions estimated through the likelihood profile method indicated that the current level of F carried high risks of overfishing but the probability that the stock was in an overfished state was close to zero. Future stock status of WCPO bigeye will depend both on future fishing mortality and future recruitment. If the future recruitment falls to the long term averages or lower, current catch levels would result in stock reductions to near and possible below MSY-based reference points.

(IATTC Eastern Pacific assessment, presented by R. Allen, ISC/05/Plenary/BP/02)

Robin Allen reviewed the IATTC's 2004 stock assessment for bigeye tuna in the eastern Pacific, contained in ISC/05/Plenary/BP/02. Before 1993 longline fisheries took almost all of the bigeye catch in the eastern Pacific, but purse-seine fishing using FADs now takes about one half of the catch. Recruitment has been variable over the past 30 years and the recent history of the stock has been dominated by relatively strong recruitment over 1995 to 1997 and below average recruitment after 1998. The recent weak recruitment and the impact of the combined effect of the longline and purse-seine fisheries is causing a rapid decline in the stock size; which by 2004 was forecast to be at its lowest observed level. The base case assessment shows fishing mortality should be reduced by 38% to reach the

level that would produce the MSY. Various sensitivity analyses were performed showing both more pessimistic and more optimistic alternatives, all of which indicated the need for reduced fishing mortality.

Discussion: Chair Suzuki asked the recent trend of purse seine catch in WCPO since the current situation in the analysis implied the average condition for 1999-2001. Dr. Langley replied that USA fleet used more drifting FADs in 2004 suggesting that juvenile mortality will go up.

c. Yellowfin tuna

(Western-central Pacific assessment taken from the Executive Summary of SCTB17 and the report of the 3rd Meeting of the SCG at the WCPFC PrepCon/41, presented by Y. Uozumi, ISC/05/Plenary/BP/03)

Purse seine accounts for the largest catch, with longline at 100,000 t, followed by mixed fisheries in the Philippines and elsewhere. The Philippine and Indonesian fisheries harvest small fish, the purse seine fishery middle sized fish, and mid-sized by the longline fishery. The fishery occurs mostly in the tropics. The total catch in 2003 was 457,000 t, 9,000 t less than the historic high in 1998. Similar to the bigeye tuna, three different standardized CPUE series were developed, GLM, HBS and StatHBS, but the HBS indices were not used due to the poor performance. Runs with StatHBS indices and M was estimated were considered to be the base case runs as well. Five sub-areas were employed. The GLM CPUE time series resulted in more pessimistic than the Stat-HBS assessment. Runs with M estimated were more optimistic than the runs with fixed M. Period covered by the analysis was 1950-2003 with the projected years for 2004-2007. Recruitment was higher at the beginning and lower during 1960s and 1970s but it remained relatively higher thereafter. The reason of this increasing recruitment remains unclear and need to be investigated further. The model indicated declining biomass trends in most areas and increasing fishing mortality, especially that of juvenile. The fishery has the greatest impact on biomass in the two tropical areas. Generally speaking, this year's analyses reaffirmed the previous assessment that the yellowfin stock in the WCPO is probably not being overfished ($F/F_{MSY} < 1$) and that it is not in an overfished state ($B/B_{MSY} > 1$). However, the stock is likely to be nearing full exploitation and any future increases in fishing mortality would not result in any long-term increase in yield and may move the stock to an overfished site.

(IATTC Eastern Pacific assessment, presented by R. Allen, ISC/05/Plenary/BP/02)

Robin Allen reviewed the IATTC's 2004 stock assessment for yellowfin tuna in the eastern Pacific, contained in ISC/05/Plenary/BP/02. In the eastern Pacific, yellowfin tuna are taken mainly by purse-seine sets on tuna associated with dolphins. Two levels of recruitment have been observed, a lower level up to 1983 and a higher level after that. Record catches of yellowfin tuna were taken during 2001-2003 following very strong recruitment during 1998-2000. The impact of catches of unassociated schools and schools associated with FADs is proportionately greater than that of sets on yellowfin associated with dolphins and longline catches. The base case estimate shows the fishing mortality is lower than that would produce the MSY, but a sensitivity analysis using a stock recruit relation with steepness of 0.75 provided a plausible alternative in which estimated fishing mortality was greater than the MSY level.

d. Summary of Stock Status and Recommendations

The ISC was presented with stock assessments reviewed by the SCTB as well as the SCG and conducted by the IATTC for yellowfin and bigeye tunas. In reviewing these assessments, the ISC noted that the IATTC has instituted management measures to reduce the fishing mortality on bigeye tuna as well as yellowfin tuna in the EPO (annual bigeye quota for major longline fishing nations and 42 days no fishing for purse seiners). The SCTB assessments recommend that there be no increase in fishing mortality for yellowfin and bigeye tunas in the western and central Pacific.

Albacore tuna in the North Pacific. Stock assessment results indicated that the current level of spawning stock biomass (i.e., $SSB_{2004} = 165,000$ t) is largely reflective of a very strong 1999 year-class that eventually became a major contributor in 2004 as part of 'mature' (spawning) biomass. However, the assessment also indicated that more recent recruitment declined to levels more typical of the extended historical time series. These lower recruitments result in reduced levels of forecasted SSB, particularly, when assuming high F scenarios within the overall uncertainty analysis. Lower recruitment coupled with a current fishing mortality rate (F_{2003}) that is high relative to commonly used reference points, may be a cause for concern regarding the future stock status of North Pacific albacore. Thus, the ISC noted the critical need to closely monitor the population over the coming years, and recommends that the Albacore Working Group carry out another stock assessment in 2006.

Based on the preliminary SSB simulation analysis, the ISC advises as follows.

Future SSB can be maintained at or above the minimum 'observed' SSB (43,000 t in 1977) with F's slightly higher than the current F range. However, the lowest 'observed' SSB estimates all occurred in late 1970's and may be the least reliable estimates of SSB. A more robust SSB threshold could be based on the lower 10th or 25th percentile of 'observed' SSB. If so done, current F should maintain SSB at or above the 10th percentile threshold but a modest reduction from current F may be needed to maintain SSB at or above the 25th percentile threshold.

Yellowfin tuna in the western and central Pacific (WCPO) and eastern Pacific Ocean (EPO). The ISC was provided with stock assessments reviewed by the SCTB and conducted by the IATTC for yellowfin tuna. The ISC noted the concern of full exploitation of the WCPO yellowfin stock in equatorial areas and concurs with the SCTB in regard to no further increases in fishing mortality, especially for juvenile yellowfin. The stock in the EPO is also estimated to be nearly or beyond the full exploitation and there is uncertainty about recent recruitment and biomass levels.

Pacific bigeye tuna in the western and central Pacific (WCPO) and eastern Pacific Ocean (EPO). The ISC was presented with the 2004 assessment that reaffirmed the 2003 assessment reviewed by the SCTB. The SCTB recommends that there should be no further increase in fishing mortality rate for bigeye tuna, considering the situation that the current catch is probably larger than the level of MSY. The ISC also notes that bigeye stock is not

yet overfished ($B/B_{MSY} > 1.0$). For the EPO stock, spawning biomass is less than the MSY level and it is expected to go down further. Future projection also indicated that, under the current fishing effort, the longline catch would decline substantially while the surface catch would be more or less maintained at the current level.

Furthermore, the ISC is aware of the global concern for excess fishing capacity and that there is an FAO International Plan of Action for Overcapacity, and the resolutions of the IATTC limiting the capacity of vessels fishing for tunas in the EPO. Taking into account the assessments for all major tuna species within the north Pacific Ocean, except skipjack tuna, the ISC noted that any increases in tuna fishing capacity for any and all of those species would make worse the condition of those stocks and significantly complicate future management efforts.

7. Report of Statistics Working Group (ISC/05/Plenary/14)

Dr. Sakagawa reviewed the final report of the Statistics Working Group. He noted progress on the clarification of the roles and responsibilities of: 1) the national data correspondents regarding submission of statistics, 2) the species Working Group Chairs in relation to national data correspondents regarding the quality of Category II and III statistics, and 3) the ISC database and Web site administrators. The Working Group also requested that the species Working Group Chairs attend meetings of the Statistics Working Group. Also recommended was including on the ISC Web site metadata describing the data maintained in the ISC database as well as links to Adobe “pdf” versions of all ISC documents and reports. Content of public data and graphics to be included on the Web site was elucidated. The proposed joint meeting of the swordfish, marlin, and Statistics Working Group was discussed and advice provided to Chair of Swordfish Working Group. The adoption of the albacore database was addressed. For the next meeting of the Statistical Working Group proposed for January 2006 in Shimizu, one important topic would be to prepare a single catalog of information after pulling together the existing data and the albacore database. An updated working plan was prepared.

Discussion: Dr. Fox, noting that Japan offered at ISC 3 to establish an ISC database, asked if it would be productive to have representatives of the nations providing data for the database to come to Shimizu and participate in a workshop to collaboratively design and implement the database. Dr. Uozumi noted that the proposal would lead to a more smooth and rapid development of the database and because of this supported the proposal.

8. Work plan for each Working Group

Bluefin Tuna Work Plan (ISC/05/Plenary/09)

Mr. Yamada presented Bluefin Tuna Work Plan for 2005. Meeting was originally scheduled for this year. Therefore, the next meeting will assess the stock status of this species. To make this successful, many tasks should be prepared in advance including the accumulation of new catch and size, standardization of CPUE, preparation of catch-at-age, application of VPA as well as integrated model and so on. He also indicated that Japan would like to offer the next meeting in Shimizu.

Discussion: Mr. Yamada for presenting the work plan and Dr. Fox supported a January 2006 meeting date. However, he recommended that in addition to bring the data together, the group should complete a stock assessment. Dr. Allen announced that the IATTC is planning on completing an assessment by May 2006; hence, this work plan would fit in nicely with their plans. He offered to have one of their scientists participate in the January 2006 meeting, noting that there would be need for preparatory work on data so that an assessment could be completed during the meeting.

Swordfish Work Plan (ISC/05/Plenary/12)

Mr. Robert Humphreys called for the holding of an intersessional meeting to bridge the information gap between those with knowledgeable of the strengths and weaknesses of the data and potential data users. Given the success of the NPALBW in doing such work, he suggested that it would be a good idea for the Swordfish Working Group to use this as a guide for future work. He listed six objectives for the meeting: 1) identify data limitations, 2) identify additional biological data that might be available, 3) obtain access to other non-ISC data, 4) evaluate stock assessment models in terms of data available and management needs, 5) re-examine the existing work plan and revise as necessary, 6) start developing a formal review process for a stock assessment conducted by the Working Group. Mr. Humphreys proposed early September 2005 as a time for the intersessional meeting, proposed that it be a non-hosted meeting, and suggested Vancouver, Canada as a possible site. Specific work plan topics identified during ISC 4 were reviewed, for example age and growth and stock structure.

Discussion: Several participants noted that it would be difficult for them to obtain funding to attend a non-hosted meeting, and it was noted that it would be beneficial for the hosting state to be directly involved in the issues being addressed. In that case, Japan offered to host the meeting, and Chinese Taipei also indicated their willingness to discuss the possibility of hosting the meeting. Mr. Humphreys asked the participants to suggest the names of other, non-Working Group scientists who might contribute to the success of the meeting. In that regard, Chairman Suzuki noted that the Philippines had voiced an interest in joining the ISC and that the ISC at some future date might invite them to do so. Dr. Allen recommended Dr. Michael Hinton, an IATTC scientist involved with stock assessment and other work on billfish, and he noted that a collaborative arrangement for swordfish research was developing in the southeast Pacific. Dr. Langley indicated that a plan for assessing the status of swordfish in the southwest Pacific involving Australia, probably New Zealand, and the SPC Oceanic Fisheries Programme was in the development stage as well. Mr. Yokawa then suggested that discussing the possibility of conducting a pan-Pacific assessment would be a good topic for the intersessional meeting. The recommendation was also made for the intersessional meeting to set a date for conducting the stock assessment. Chair Suzuki suggests that Mr. Humphreys should continue a dialog with Mr. Yokawa and Mr. Chang on selecting the venue for the meeting.

Marlin Work Plan (ISC/05/Plenary/11)

Since many of the marlin work plan items were similar to those for swordfish discussed

earlier, Mr. Humphreys only briefly described the marlin work plan. He projected that a striped marlin stock assessment might begin to be conducted toward the end of 2005, that it might be pan-Pacific in scope, and that a blue marlin assessment might follow at a later date. Other work plan topics included stock structure, age and growth, and length-weight conversions.

Discussion: The work plan was accepted by participants.

Bycatch Work Plan

Dr. Fox noted that the USA had suggested at ISC 4 the formation of this Working Group to address turtle and other bycatch issues. In order to get the Working Group started, the USA offers the services of Dr. Christofer Boggs from the Pacific Islands Fisheries Science Center, who has considerable experience in this area.

Discussion: Participants supported Chairman Suzuki’s recommendation that Dr. Boggs take the lead in getting the Working Group up and running.

The schedule of the Working Group meetings is given below. Please contact the Chairman of each Working Group; Dr. Sakagawa (Statistics Working Group), Dr. Stocker (Albacore Working Group), Mr. Yamada (Pacific Bluefin Tuna Working Group), Mr. Humphreys (Swordfish Working Group), Dr. DiNardo (Marlin Working Group).

Working Group	Objects	Time and Place
Swordfish and Marlin WGs	Data Preparatory	September 2005 in Japan or in Chinese Taipei
Statistics WG	Reviews of data inventory update and Website	January 2006 in Shimizu
Pacific Bluefin Tuna WG	Stock Assessment	January 2006 in Shimizu
Albacore WG	Biological reference points	2005 late Nov.- Dec. in La Jolla
Albacore WG	Stock Assessment	2006 Nov.-Dec. in Japan
Swordfish and Marlins WGs	Stock Assessment	to be decided in the intersessional meeting in September 2005
By-catch WG	to be decided	to be decided

9. ISC Assumption of North Pacific Albacore Workshop

Members welcomed that the North Pacific Albacore Workshop joined the ISC and it continues the function as the Albacore Working Group in the ISC. Concerns were expressed how to handle the archives of all of the past meeting, back ground information, and other accumulated data. This issue will be discussed further in the Statistics Working Group.

At previous Workshops members recommended that various life history-related research studies be undertaken to 1) generally improve understanding of albacore biology and ecology, and 2) to provide information to strengthen assumptions made in stock assessment models. Studies were reviewed that addressed: Age and growth (Chinese Taipei); sex ratio and maturity (Chinese Taipei); ongoing archival tagging projects (Japan, USA); analysis of

historical dart tag data (Japan).

Biological reference points will be needed to guide future fishery management discussions about North Pacific albacore. Accordingly, along with research to improve the accuracy and reliability of stock assessments, a high priority should be given to scientific studies of appropriate reference points for the stock, both with respect to fishing mortality and stock abundance. It is recommended that the Albacore Working Group meet in late-2005 to consider this and other issues needed to prepare for the next assessment. Further in this context, it is recommended that Albacore Working Group carry out its next assessment in 2006.

Coupled with the growing concern about current and future stock condition, uncertainty in the stock. Key biological parameters used in the overall stock analysis, particularly growth and maturity rates, were based on the studies conducted in the 1950-60s. These remain the best available studies on which to base the analysis, it is not known to what extent vital rates of this species may have changed from those measures obtained over 40 years ago. These biological studies should be brought up-to-date as soon as possible.

10. Relationship between ISC and the WCPFC

The US delegation presented a draft MOU between the WCPFC and the ISC that it had voluntarily developed and described the background for why such a MOU is necessary. Many delegates expressed appreciation to the US for its draft and generally supported its contents and scope. Some delegates raised a few questions regarding aspects of the draft, such as including bycatch species in its Annex 1. Based on the discussion, the US prepared a revised draft of the MOU, which incorporates the comments made by delegates. It was decided that each delegation should take the draft to its home government for review by the appropriate officials. Delegations were encouraged to provide comments to the new ISC Chair as soon as possible. The new ISC Chair will prepare a final draft after receiving comments from ISC delegations and begin consultations with the appropriate WCPFC entity by correspondence. The latest version of draft MOU is included as Appendix 5.

11. Discussion on an ISC Secretariat

Consensus was reached that, while establishment of an ISC Secretariat is an eventual goal, effort should be made to clear several matters before starting discussion on an ISC Secretariat. Such matters include:

- relationship between ISC and WCPFC;
- degree of workload ISC would undertake; and
- nature of ISC which would enable it to function as legal entity.

12. Other Matters

There was a consensus to change the name of this Committee from “Interim Scientific Committee” to “International Scientific Committee”. This means the acronym “ISC” remains as it is.

Whether the ISC should have an MOU with IATTC was raised. It was noted that an arrangement with the IATTC would be different than the one proposed for the WCPFC and that the issue should be further elaborated with IATTC by correspondence.

13. Selection of Chairman and vice-chairman for 3 years

Under the Paragraph 2 of the Rules of Procedure, Dr. Gary Sakagawa was elected as the Chairman of the ISC for next three years. Dr. Jeong-rack Koh was selected as the Vice-Chairman under the Paragraph 3 of the Rules.

14. Next Meeting

The US delegation offered to host the next meeting of the ISC plenary in La Jolla, California around March 2006. Participants welcomed the proposal. General consensus was reached that, considering the set up of the Northern Committee, ISC plenary should be held every year at least next few years.

15. Adoption of the Report

The draft report of the fifth meeting of the ISC plenary was adopted.

16. Closing

The meeting was adjourned at 15:50 on 30 March 2005. The chairman thanked all of the participants for their efforts in making ISC5 a successful meeting.

Appendix 1

Fifth Meeting of the Interim Scientific Committee for Tuna and Tuna-like Species in the North Pacific

**Plenary Session
March 28-30, 2005
Tokyo, Japan**

Agenda

1. Opening
2. Opening Statement
3. Selection of Chairman and Rapporteurs
4. Adoption of Agenda
5. Delegation Reports of Fisheries Regarding Tuna and Tuna-like Species
6. Review of Stock Status
 - a. Albacore tuna
 - b. Bigeye tuna
 - c. Yellowfin tuna
 - d. Summary of Stock Status and Recommendations
7. Report of Statistics Working Group
8. Work plan for each Working Group
9. ISC Assumption of North Pacific Albacore Working Group
10. Relationship between ISC and the WCPFC
11. Discussion on an ISC Secretariat
12. Other Matters
13. Selection of Chairman and vice-chairman for 3 years
14. Next Meeting
15. Adoption of Report
16. Closing

Appendix 2

List of the Working Papers

ISC/05/Plenary/01	The 2004 Canadian North Pacific Albacore Troll Fishery Max Stocker and William Shaw (Canada)
ISC/05/Plenary/02	Mexican Progress Report to the 5 th ISC Michel Dreyfus, Luis Fleischer, Humberto Robles and Pedro Ulloa. (Mexico)
ISC/05/Plenary/03	National Report of Japan Miki Ogura (Japan)
ISC/05/Plenary/04	Korean National Report to 5 th ISC, By-catch of Pacific Bluefin Tuna in the Waters off Korea Jeongrack Koh, Kwang-ho Choi and Dae-Yeon Moon (NFRDI)
ISC/05/Plenary/05	U.S. National Report to the 5 th ISC on Fisheries and Research for Tuna and Tuna-like Species in the North Pacific Pacific Islands Fisheries Science Center (PIFSC) and Southwest Fisheries Science Center SWFSC (United States)
ISC/05/Plenary/06	U.S. Swordfish fisheries in the North Pacific Ocean Russell Ito (PIFSC) and Atilio L. Coan, Jr. (SWFSC)
ISC/05/Plenary/07	Preliminary Research Concerning Biological Reference Points Associated With North Pacific Albacore Population Dynamics and Fisheries R. J. Conser, P. Crone and S. Kohin (SWFSC) and K. Uosaki, M. Ogura and Y. Takeuchi (NRIFSF)
ISC/05/Plenary/08	Recent Status of Taiwanese Tuna Fisheries in the North Pacific Region for 2003 Shui-Kai Chang and Sheng-Ping Wang (Chinese Taipei)
ISC/05/Plenary/09	Work Plan for the Pacific Bluefin Working Group H. Yamada (NRIFSF, Chairman of PBF Working Group)
ISC/05/Plenary/10	China National Report for the 5 th Meeting of the ISC for Tuna and Tuna-Like Species in the North Pacific Ocean Song Liming (China)
ISC/05/Plenary/11	2005 Work Plan for ISC Marlin Working Group – Discussion Paper Gerald Dinardo (PIFSC, Chairman of Marlin Working Group)
ISC/05/Plenary/12	2005 Work Plan for ISC Swordfish Working Group – Discussion Paper Robert Humphreys (PIFSC, Chairman of Swordfish Working Group)
ISC/05/Plenary/13	19 th North Pacific Albacore Workshop: Stock Assessment Conclusions
ISC/05/Plenary/14	Report of the Statistics Working Group of the 5 th ISC
ISC/05/Plenary/BP/01	Rules and Procedures for conduct of the ISC Committee and Subsidiary bodies (Appendix 4 of the Report of the Plenary Session of the 4 th ISC)
ISC/05/Plenary/BP/02	Bigeye and Yellowfin Tunas in the Eastern Pacific Ocean in 2003 (Extracted from Fishery Status Report No.2, IATTC 2004)

- ISC/05/Plenary/BP/03 Bigeye and Yellowfin Tunas in the Western and Central Pacific Ocean in 2003 (Executive Summary of 17th SCTB, Majuro, 9-18 August 2004 and the Report of the 3rd Meeting of the Scientific Coordinating Group at the WCPFC/PrepCon/41, 6-7 December 2004)
- ISC/05/Plenary/BP/04 Final Report of Working Group II (from WCPFC/PrepCon/45, 7 December 2004)
- ISC/05/Plenary/INF/01 Information Paper for Agenda Item 9: ISC Assumption of North Pacific Albacore Workshop

Appendix 3

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Appendix 4

Letter to The Chairman of the ISC

Dr. Jeffrey Polovina
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Dear Dr. Polovina:

We are writing to you as chair of the ISC in asking for scientific advice from the upcoming 5th ISC related to North Pacific albacore.

After review in the report of the 4th meeting of the ISC and the draft results of the 2004 North Pacific Albacore Workshop, the governments of Japan and the United States have some concerns for the status of the North Pacific albacore stock and the future of their fisheries. It is clear to both governments that, at a bare minimum, fishing mortality should not be increased and, perhaps, it should be decreased. Part of our concern stems from the lack of an agreed reference point upon which to determine the appropriate target for managing fishing mortality over the long term.

While the North Pacific albacore stock has gone through long-term cycles in productivity during the past three decades, the stock has persisted and supported a valuable international fishery. It is with this experience in mind that we pose to the 5th ISC the follow question:

“What is the level (or dynamic range) of fishing mortality (F) that will maintain the stock within the range of spawning stock biomass (SSB) that we have experienced over the assessment period (1975-2003) ?”

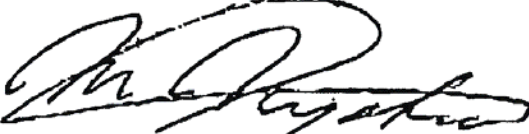
We realize that some assumptions will have to be made and new analyses completed in order to provide the requested advice. For consistency, any analyses should be based on identical conditions and scenarios used by the 2004 Workshop in its analysis of stock condition.

To that end, Japan and the United States are undertaking analyses by the same analytical team that was involved with the 2004 Workshop (M. Ogura, K. Uosaki, Y. Takeuchi, S. Kohin, R. Conser, and P. Crone) to generate information that would assist the Committee in developing scientific advice at the upcoming ISC meeting.

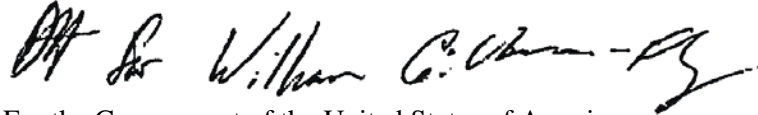
We anticipate that the team will complete its work in the weeks ahead and that the results will be shared with the 2004 Workshop Chair, participants of the 2004 Workshop, and members of the ISC in advance of the March meeting.

We look forward to the 5th ISC addressing our request for advice.

Sincerely yours



For the Government of Japan



For the Government of the United States of America

Appendix 5

Revised 3.29.05 (16:00 hrs)

Draft Memorandum of Understanding between
The Commission for the Conservation and Management of Highly Migratory
Fish Stocks in the Western and Central Pacific Ocean

and

The International Scientific Committee for Tuna and Tuna-like Species

in the North Pacific Ocean

Recognizing that, inter alia, the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (hereinafter referred to as “the WCPF Commission”):

- Adopts measures to ensure long-term sustainability of highly migratory fish stocks in the Convention Area and promote the objective of their optimum utilization;
- Ensures that such measures are based on the best scientific evidence available and are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing States in the Convention Area, particularly small island developing States, and taking into account fishing patterns, the interdependence of stocks and any generally recommended international minimum standards, whether subregional, regional, or global;
- Assesses the impacts of fishing, other human activities and environmental factors on target stocks, non-target species, and species belonging to the same ecosystem or dependent upon or associated with the target stocks;
- Collects and shares, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programs;
- Shall establish a committee, which shall be called the Northern Committee, to make recommendations on the implementation of such conservation and management measures as may be adopted by the Commission for the area north of the 20 parallel of north latitude and on the formulation of such measures in respect of stocks which occur mostly in this area;
- May enter into administrative and financial arrangements to utilize scientific services for the purpose of providing information and advice on the fishery resources covered by its Convention and related matters that may be relevant to the conservation and management of those resources and, in order to carry out its functions in a cost-effective manner, shall, to the greatest extent possible, utilize the services of existing regional organizations and shall consult, as appropriate,

with any other fisheries management, technical or scientific organization with expertise in matters related to the work of the Commission; and

- Adopted the FINAL REPORT OF THE PREPARATORY CONFERENCE FOR THE ESTABLISHMENT OF THE COMMISSION FOR THE CONSERVATION OF HIGHLY MIGRATORY FISH STOCKS IN THE WESTERN AND CENTRAL PACIFIC OCEAN ON ALL MATTERS WITHIN MANDATE PURSUANT TO PARAGRAPH 9 OF RESOLUTION I in which the need to develop a Memorandum of Understanding to clarify the relationship between the ISC and the Commission was addressed.

Recognizing that the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific (hereinafter referred to as “the ISC”):

- Was established to enhance scientific research and cooperation for conservation and rational utilization of the species of tuna and tuna-like fishes which inhabit the North Pacific Ocean during a part or all of their life cycle;
- Was established to create the scientific groundwork, if at some point in the future, it is decided to create a multilateral regime for the conservation and rational utilization of these species in this region;
- Is establishing a central database to support the scientific research of the Committee and continues to consider establishing a permanent Secretariat;

The WCPFC Commission and the ISC, the Parties to this Memorandum of Understanding (“MOU”), have therefore reached the following understanding.

Part I: Provision of scientific advice

- The WCPFC Northern Committee may adopt a request to the ISC for scientific information and advice regarding fish stocks (generally those stocks occurring mostly north of the 20° parallel of north latitude; see Annex 1) for response prior to the next meeting of the Northern Committee. This formal request will be transmitted expeditiously to the ISC. The WCPFC Commission will, if requested, provide data necessary for the scientific analysis to be conducted by the ISC.
- The ISC will provide its normal reports prepared under the Rules and Procedures for the Conduct of the ISC Committee and Subsidiary Bodies directly to the WCPFC Northern Committee, the WCPFC Commission and the WCPFC Scientific Committee.
- The ISC will, in addition to the normal reports, provide requested scientific information and advice in accordance with this MOU one (1) month before the annual meetings of the WCPFC Northern Committee. ISC will also provide the requested scientific information and advice to the WCPFC Commission and the WCPFC Scientific Committee. This scientific information and advice will follow the standard presented in Annex 2 for standard (recurring) requests or as mutually agreed upon for special requests.
- The ISC will provide its Working Group reports, prepared under the Rules and Procedures for the Conduct of the ISC Committee and Subsidiary Bodies, including relevant background reports,

directly to the WCPFC Northern Committee, the WCPF Commission, and the WCPFC Scientific Committee.

- Scientific information and advice may be presented at the annual meeting of the WCPFC Northern Committee and Commission by the chair of the ISC, or a designate, and advisors from the ISC Working Groups, as appropriate. The participation costs of the ISC Chair, or designate, and advisors from the ISC Working Groups will be borne by the Member Government of the ISC Chair and Working Group advisors.

Part II: Framework for Mutual cooperation

Parties to this MOU will:

- Encourage reciprocal consultations and regular contacts on matters of common interest regarding scientific research on highly migratory tuna and tuna-like fish resources;
- Regularly exchange relevant meeting reports, information, project plans, documents, and publications regarding matters of mutual interest;
- Routinely exchange fishery data, in accordance with the rules and procedures for data confidentiality adopted by each organization, to minimize duplicative data collection efforts and enhance fishery monitoring and stock assessment; and
- Strive to develop compatible data codes and data standards to facilitate data exchange, to the extent practicable.

The WCPF Commission, including the WCPFC Northern Committee and Scientific Committee, will be invited to observe the plenary meetings of the ISC and its Working Groups. The ISC will be invited to observe the annual meetings of the WCPF Commission and meetings of the WCPFC Northern Committee and Scientific Committee, as well as other subsidiary bodies, as appropriate.

Part III: Finance

- ISC agrees to provide its normal reports and the reports of its Working Groups, as well as standard (recurring) scientific information and advice, without cost to the WCPF Commission.
- WCPF Commission agrees to pay, as mutually agreed, costs for special scientific advice, particularly those requests requiring the fielding of special data collection or research programs.

Part IV: General Administrative Arrangements

- This MOU becomes effective upon the date of signature of the responsible representatives in both the WCPF Commission and ISC.
- This MOU may be modified by written agreement of both WCPF Commission and ISC and signed by the responsible representative in each organization. The modified MOU becomes effective upon the date of signature of both the responsible representatives of the WCPF Commission and ISC.

- If any dispute should arise between the WCPF Commission and ISC on the operation of this MOU, both will make every effort to resolve the dispute themselves, or if necessary, by utilizing a mutually agreeable arbiter.
- Either WCPF Commission or ISC may terminate this MOU by providing 30 days written notice to the other of its intention to withdraw from this MOU. Upon termination of the MOU, any funds provided for special, typically non-recurring, scientific advice shall be refunded to the WCPF Commission (see Part III above).
- A full review of the terms and operation of the MOU and its Annexes will be conducted as soon as practicable after the first full 12 months of operation following its signature by the WCPF Commission and the ISC and subsequently every three years.

Part V: Signature

Signed on behalf of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean and the Interim Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean:

Signed: _____

Signed: _____

Executive Director
Commission for the Conservation and
Management of Highly Migratory Fish
Stocks in the Western and Central Pacific

Chair
International Scientific Committee for
Tuna and Tuna-like Species
in the North Pacific

Annex 1

Provisional list of species stocks in the North Pacific for which WCPFC may request standard (recurring) advice from the ISC

- Albacore
- Pacific bluefin tuna
- Swordfish
- By-catch species

Other species may be added to the list with the mutual concurrence of the Parties to this MOU.

Annex 2

Standard (recurring) advice required from ISC by WCPFC