

INTER-AMERICAN TROPICAL TUNA COMMISSION  
Scripps Institution of Oceanography  
8604 La Jolla Shores Drive  
La Jolla, California, 92037-1508, U.S.A.

## SUMMARY MINUTES OF THE 50TH MEETING

June 16-18, 1992

La Jolla, California, U.S.A.

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Chairman: Mr. Herbert Nanne Echandi

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### Agenda item 1 - Opening of the meeting

The 50th meeting of the Inter-American Tropical Tuna Commission (IATTC) was called to order on June 16, 1992, at 10:30 a.m., at the La Jolla Village Inn, La Jolla, California, USA, by the Chairman, Mr. Herbert Nanne Echandi, of Costa Rica. After welcoming the attendees, he stated that the matters to be covered were of utmost importance, for they could well determine the future of the surface fishery for tunas in the eastern Pacific Ocean (EPO) for many years to come. He then called upon the heads of the various delegations to introduce themselves and the members of their delegations. These are listed in Appendix 1 of these minutes.

Mr. Katsuma Hanafusa of Japan pointed out the existence of rules for attendance and participation in IATTC meetings by representatives of non-governmental organizations, and requested that someone from the IATTC staff introduce the rules to them so that they could follow these for the next IATTC meeting. Dr. James Joseph, Director of the IATTC, said that representatives of non-governmental organizations could attend the IATTC meetings and participate in them, provided they notified the Director 120 days before the meeting and there were no written objections from any member government.

### Agenda item 2. Adoption of agenda

Chairman Nanne called for comments on adoption of the agenda. Mr. Henry Beasley of the United States said that he was pleased to note that Venezuela had recently become a member of the IATTC. He said that he hoped that there would be a brief discussion of the matter of making it easier for new members to adhere to the IATTC Convention. After discussing several alternatives, it was decided that the matter would be considered under Agenda item 11, Other business.

Mr. Francisco Herrera Teran of Venezuela said that he was pleased that Venezuela had become a member of the IATTC, as that organization had done excellent work in maintaining the catches of tunas at high levels while reducing the mortalities of dolphins toward levels approaching zero. He said, however, that unilateral action by the United States was threatening to undo the good work that the IATTC had done. If so, there would be no reason for Venezuela to continue as a member of the IATTC, in which case it would probably have to withdraw.

Chairman Nanne suggested that the meetings be conducted from 9:00 a.m. till 12:00 noon and from 2:00 p.m. till 5:30 p.m., except when it was necessary to hold meetings of informal working groups. Everyone agreed, so this schedule was adopted.

### Agenda item 3 - Review of current tuna research

Chairman Nanne called upon Dr. Joseph to describe the tuna research carried out by the IATTC staff. Dr. Joseph said that the IATTC meetings are usually held at the capitals of the member nations, but sometimes they are held in La Jolla to give the Commissioners a chance to get to know more members of the IATTC staff and familiarize themselves with their work. The IATTC staff began its research in 1950. The staff members are internationally recruited, and selected on the basis of their competence. Initially, the principal duties of the IATTC under its Convention were (1) to study the

biology of the tunas and related species of the eastern Pacific Ocean with a view to determining the effects that fishing and natural factors have on their abundance and (2) to recommend appropriate conservation measures so that the stocks of fish can be maintained at levels which will afford maximum sustainable catches. In 1976 the IATTC's duties were broadened to include problems arising from the tuna-dolphin relationship in the eastern Pacific Ocean. As its objectives it was agreed that the Commission should strive (1) to maintain a high level of tuna production and also (2) to maintain the dolphin stocks at or above levels that assure their survival in perpetuity, (3) with every reasonable effort being made to avoid needless or careless killing of dolphins. To carry out its duties the IATTC has offices or laboratories in Terminal Island, California, and Mayaguez, Puerto Rico, USA; Ensenada, Baja California, and Mazatlan, Sinaloa, Mexico; Panama and Achotines, Republic of Panama; Manta, Ecuador; Trujillo, Peru; and Cumana, Venezuela, in addition to its headquarters in La Jolla, California, USA. He stressed that the IATTC employees in Ecuador, Mexico, Panama, Peru, and Venezuela are guests in those countries, and he thanked the representatives of those countries for permitting the IATTC employees to work there and for extending many courtesies to them.

Dr. Joseph then called upon Dr. Richard B. Deriso, head of the IATTC's Tuna and Billfish Program, to discuss some aspects of the IATTC staff's research on tunas and billfishes. Dr. Deriso said that one of the IATTC staff's goals is to find ways of catching large yellowfin not associated with dolphins. In an attempt to identify the locations and seasons where such fish are found, a staff member has been exploring the relationships between vertical temperature profiles and the abundance and vulnerability to capture of yellowfin. The two most important factors examined so far are the temperature at the bottom of the net and the depth of the 14-degree (57.2°F) isotherm. It was found (1) that the catch per set is highly negatively correlated with the temperature at the bottom of the net, (2) that the searching time between sets is highly positively correlated with the depth for of the 14-degree isotherm, and (3) that the catch per set of fish associated with dolphins is highly positively correlated with the sea-surface temperature.

Dr. Deriso then introduced Dr. Robert J. Olson, who is in charge of the IATTC's Achotines Laboratory in Panama, and also of a study of the food habits of tunas and dolphins which will soon begin.

Dr. Olson said that the principal purpose of the work at the IATTC's early life history program is to achieve an understanding of the factors which influence the growth and survival of larval and juvenile tunas. The location of the laboratory makes it possible to carry out field and laboratory studies simultaneously. Larvae of five scombrids, *Thunnus* spp. (yellowfin and/or bigeye tuna), *Euthynnus lineatus* (black skipjack), *Auxis* spp. (bullet and/or frigate tuna), *Scomberomorus sierra* (sierra), and *Sarda orientalis* (striped bonito) have been caught by nightlighting and in zooplankton nets. The data show that black skipjack and bullet and/or frigate tuna spawn throughout the year in the vicinity of the laboratory, but that the reproductive effort of the adults and/or the survival of the larvae may increase during the upwelling season. Black skipjack and bullet and/or frigate tuna apparently spawn more in the Gulf of Panama and sierra more near the coast to the west of the Gulf of Panama. Yellowfin and/or bigeye are believed to spawn further offshore, in

which case the larvae which are caught are ones which have been carried inshore by the currents.

Dr. Olson then briefly described the food habits studies, for which the IATTC staff has received funding from the U.S. government. Some studies of the food habits of tunas have been carried out by the IATTC and other organizations in the past, but only one study of the food habits of tunas and dolphins caught in the same purse-seine sets has been conducted, and that study was based upon only a few samples. The present study will also include analysis of the stomach contents of tunas and other large predators not caught in association with dolphins. Analyses of the isotopes of some elements will be included in the study, so that the positions of the tunas, dolphins, and other large predators in the food web can be determined. The results of this study should be useful for obtaining a better understanding of the tuna-dolphin bond which, in turn, should be useful in attempts to find ways to catch tunas without encircling dolphins.

Dr. Deriso then called upon Mr. Alejandro A. Anganuzzi to describe some computer simulation studies which are being carried out the IATTC staff members. Mr. Anganuzzi said that the results of these studies should make it possible to predict more accurately the effects of ceasing to fish on schools of tunas associated with dolphins. The model includes skipjack, as well as yellowfin, and fish associated only with other fish and fish associated with floating objects, as well as fish associated with dolphins. Other factors which affect the ways that fishing is carried out are being added to the model to make it as realistic as possible.

Dr. Deriso then briefly described a study of billfishes which is being carried out by scientists of the National Research Institute of Far Seas Fisheries of Japan and the IATTC, with assistance from scientists in Mexico and Hawaii.

Dr. Joseph thanked Dr. Deriso, and said that anyone wishing to obtain more information about these studies could speak with the IATTC scientists attending the meeting or read the Annual Reports and other publications of the IATTC.

Dr. Joseph then turned the floor back to Chairman Nanne, who asked if anyone had any comments or questions regarding the information that had been presented. No one had any questions, so Chairman Nanne declared a recess at 11:40 a.m.

Chairman Nanne called the meeting to order at 2:05 p.m. He called upon Mr. Beasley, who introduced Ms. Mary Walker, a U.S. Commissioner who had not been in attendance at the morning session. Ms. Walker invited the attendees to a reception to be held at the downtown offices of the law firm of Luce, Forward, Hamilton & Scripps on the evening of June 17. Chairman Nanne then announced that there would be a reception, courtesy of the La Jolla Village Inn, on the evening of June 16.

#### Agenda item 4 - The 1991 fishing year

Chairman Nanne then turned the floor over to Dr. Joseph to discuss the 1991 fishing year, and the 1992 fishing year to mid-June. Dr. Joseph said that he would take less time than usual for Agenda items 4 and 5, so that

there would be sufficient time to discuss the tuna-dolphin situation, as there were some important decisions which needed to be made immediately. The total catch of all species of tunas by the surface fishery of the EPO during 1991 was well above the average for the 1961-1991 period, but less than the catches of 1989 (the record year) and 1990. The same is true for the catches of yellowfin and skipjack, the two principal species caught by the surface fishery. The main reason for the decreased total catch in 1991 is a decrease in the number of vessels participating in the fishery, as the catches per unit of effort (CPUEs) of yellowfin, the principal species, were the greatest since 1986. He said that the catches of yellowfin to mid-June of 1992 were less than those for the same period of 1991, but those of skipjack were considerably greater than those for that period of 1991. The yellowfin stock of the EPO is currently under-fished, and could sustain greater catches, provided the age composition of the fish in the catches is about the same as it has been during the 1984-1991 period. Juvenile skipjack migrate to the EPO from the central Pacific Ocean, stay a few months, and then return to the central Pacific. As they are lightly exploited in the central Pacific, not much is known of their population dynamics, though it is virtually certain that they are not over-exploited by the fishery.

#### Agenda item 5 - Status of tuna stocks

Dr. Joseph said that, due to time constraints, he would speak only about the status of yellowfin; comparable information on skipjack, bluefin, bigeye, and black skipjack is given in Background Papers 4 and 5. Regulations on the catches of yellowfin were in effect from 1966 through 1979, but since then there have been no regulations, due to the fact that the nations involved in the fishery have been unable to agree on allocation of the catches. The catches and CPUEs were much lower during 1980-1983 than during most years of the 1970s due to overfishing and the strong El Niño event of 1982-1983. Many vessels changed their operations from the EPO to the western Pacific at that time, which allowed the stock to recover. The CPUE increased in 1984, and the catches were greater during 1985-1991 than during any previous year other than 1976. He described three approaches to assessment of the yellowfin stock.

Production models are based on information on catch, effort, and CPUE. Effort that is less than optimum produces high CPUEs, but catches less than the average maximum sustainable yield (AMSY). Effort that is greater than optimum produces low CPUEs and catches less than the AMSY. Recent estimates of the AMSY are greater than earlier ones because the area of the fishery has expanded and the recruitment of young fish to the fishery has increased.

The yield-per-recruit model is based on integration of information on growth and mortality of the fish. When a group (cohort) of fish enters the fishery the number of fish is large, but, because they are small, their total weight (biomass) is relatively low. As time passes the numbers of fish decrease, but, due to growth of the individual fish, the biomass increases. Eventually, as the growth of the fish slows and the natural mortalities increase, the biomass decreases, and finally the cohort disappears. The size of the individual fish at which the loss to the biomass by natural mortality exactly balances the gain to it by growth is called the critical size. In yellowfin the critical size is about 75 pounds (34 kg). If the fish are harvested at sizes near the critical size the catches will be greater than they would be if they were harvested at smaller or larger sizes.

The principles upon which the cohort model is based are similar to those on which the yield-per-recruit model is based, but the analyses are more complicated, mostly because age-structured fishing and natural mortality data are included in the analyses. Cohort analyses produced a predicted CPUE of 14 tons per day for 1991 which, if the effort and size composition of the fish in the catch were the same as in 1990, would produce a catch of about 315 thousand tons in the EPO. The catch was only about 270 thousand tons, but this was due to decreased effort in 1991, rather than to decreased CPUE. If the fishing effort were shifted from dolphin-associated fish to free-swimming fish and fish associated with floating objects the catch of yellowfin would decrease by about 30 to 50 percent. Jumping ahead, momentarily, to Agenda item 7, Dr. Joseph said that the IATTC staff's recommendation for yellowfin conservation for 1993 was the same as for 1992.

Chairman Nanne thanked Dr. Joseph for his clear exposition, and asked if there were any comments or questions on that material. There were none, so he called upon Dr. Joseph to begin the presentation for the next agenda item.

#### Agenda item 6 - Review of Tuna-Dolphin Program

Dr. Joseph said that a decision was made at an IATTC meeting in 1976 that the IATTC would become involved in studies of the effect of the fishery for tunas on the principal species of dolphins encircled by tuna purse seines, and efforts to reduce the mortalities incidental to the fishery through research and education. The U.S. National Marine Fisheries Service (NMFS) had begun a similar program earlier, but this program involved only U.S.-flag vessels. As the fleets of other nations increased, it became obvious that an international program was needed. The additional duties that were assigned to the IATTC are given in the first paragraph under Agenda item 3. The IATTC Tuna-Dolphin Program did not get under way until 1979, and it did not achieve adequate coverage of the non-U.S. fleet until 1986.

Dr. Joseph then called upon Dr. Martin A. Hall, head of the IATTC's Tuna-Dolphin Program, to begin a description of that program. Dr. Hall first announced that a new book, *Dolphins and the Tuna Fishery*, had recently been published by the prestigious National Research Council of the United States. The conclusions in this book are in agreement with the IATTC staff's views that (1) there is at present no way to obtain the AMSY of yellowfin tuna without encircling dolphins and that (2) none of the principal stocks of dolphins involved in the fishery is endangered or threatened. The recommendations in the book for reducing dolphin mortality are (1) continued efforts, by research and education, to reduce the mortality caused by purse seining for tunas associated with dolphins and (2) attempts to find methods of fishing which harvest large yellowfin without harming dolphins. Dr. Hall said that the IATTC observer program, and the national observer programs of Mexico and the United States, had achieved greater coverage of the fleet in 1991 than in any previous year, and that the coverage would be even greater in 1992. He pointed out that the proportion of the catch of yellowfin in 1991 taken in schools of fish associated with dolphins was about the same as in previous years, which is somewhat surprising in view of the fact that fish caught in association with dolphins are not accepted by canneries in the United States and some other countries.

Dr. Hall then called upon Ms. Cleridy E. Lennert to discuss the IATTC staff's estimates of mortalities of dolphins due to purse-seine fishing for

tunas. Ms. Lennert noted that the estimated mortalities of dolphins had declined from about 54 thousand in 1990 to about 28 thousand in 1991. The decreased mortality in 1991 was due mostly to lesser mortalities of dolphins per set, but the lesser number of sets made on dolphin-associated fish also contributed to the improvement. She showed a slide of the mortalities of dolphins of the various stocks and estimates of the populations of those stocks. The population estimates were obtained from a manuscript recently submitted to the International Whaling Commission by the U.S. National Marine Fisheries Service. She pointed out that the estimates of mortality given in Table 7 of Background Paper 6 are preliminary; those given on page 6 of Background Paper 7 were the most up-to-date at the time of the 50th meeting of the IATTC. The mortalities were less than 1 percent of the population numbers for all stocks of dolphins.

Dr. Hall then called upon Mr. Anganuzzi to discuss the staff's estimates of indices of abundance of dolphins. Mr. Anganuzzi began by pointing out that the indices of abundance are not the same as population estimates. The ratios of these indices to the population sizes for each stock in different years are assumed to be constant on the average, however, so the trends in population size can be monitored by studying the indices of abundance. He then discussed the trends for various stocks of spotted, spinner, and common dolphins. The northern and southern stocks of spotted dolphin seem to have been stable for the last few years. The structure of these stocks are currently being re-evaluated, so the trend for all stocks combined was also examined; again there seems to be no upward or downward trend during recent years. There also seem to be no trends for the eastern and whitebelly stocks of spinner dolphins. The data indicate a downward trend for the northern stock of common dolphin, but it is believed that this is due to a northward shift of the distribution of this stock, with a greater part of it recently inhabiting waters north of the area where fishing for tunas in association with dolphins occurs. No trends in the abundance of the central and southern stocks of common dolphins are evident.

Dr. Hall then introduced Mr. David A. Bratten, who is in charge of the IATTC's gear education and research. Mr. Bratten said that the education activities include workshops for fishermen, distribution of literature and video tapes to fishermen, analysis of trip reports submitted by observers, and dolphin safety panel alignments. These activities are likely to increase greatly during the next few years. The research activities have included testing the effects of high-power lighting for use during sets completed at night, development of a jet-powered boat for use in the net after the fish and dolphins are encircled, development of a subsurface current profiler, modification of the dolphin safety panel, and experiments with fish-aggregating devices (FADs). The FAD project is being conducted jointly by the U.S. NMFS and the IATTC. FADs were deployed in the EPO north of the equator during January and July 1991. As they were placed in an area where large yellowfin are frequently caught in association with floating objects, it was hoped that they would attract large yellowfin, rather than small ones similar in size to those caught by the fishery for tunas associated with floating objects. The positions of the FADs were monitored by radio, and information on their locations was furnished to the vessels of the fleet at frequent intervals. This work was funded mostly by Bumble Bee Seafoods, Inc., and support was also obtained from the Mexican navy and the Universidad Autónoma de México. It was expected that the FADs would drift westward, but some of them drifted eastward, before eventually reversing their direction and



drifting westward beyond the range of the fishery. A total of 53 tons of marketable tunas were caught in association with these FADs, of which 36 tons were yellowfin and 17 tons were skipjack. Unfortunately, the yellowfin were similar in size to those caught by the fishery for tunas associated with floating objects. It was planned to deploy FADs south of the equator as well, but this was delayed due to the El Niño condition which was in effect during late 1991 and early 1992. An adequate FAD program would require the use of a tuna purse-seine vessel which would deploy the FADs, monitor them, and replace or repair them as necessary. Such a program, unfortunately, would be very expensive. Dr. Hall said that he thinks that there is a good potential for placement of FADs off Peru and northern Chile.

Dr. Hall then talked briefly about some other aspects of the Tuna-Dolphin Program. An International Workshop on the Ecology and Fisheries for Tunas Associated with Floating Objects was held at Scripps Institution of Oceanography, La Jolla, California, USA, in February 1992. It was organized by the IATTC staff and sponsored by Bumble Bee Seafoods, Inc., of San Diego. The objectives of the meeting were to: (1) review the information from the world's oceans about fisheries for tunas associated with floating objects ("logs"); (2) compare these fisheries in light of differences in the physical and biological oceanography, coastal topography and vegetation, precipitation patterns, and river outflows in different areas; and (3) identify research needed to better understand the association between tunas and logs. Scientists and other experts with knowledge of tuna biology, marine ecology, fish and mammal behavior, forestry, terrestrial and coastal ecology, oceanography, and fishing practices were invited. A total of 65 people from France, Japan, the Philippines, Russia, Senegal, the Seychelles, Spain, the United States, Venezuela, the South Pacific Commission, and the IATTC attended. Dr. Hall then described a project, funded by the U.S. government, which will involve tagging of dolphins and yellowfin tuna associated with them with sonic tags to learn more about the tuna-dolphin bond. This could lead to finding out ways to catch the tunas when the bond is weakest or temporarily non-existent. He also mentioned the "dolphin-safe" certificates which the IATTC staff issues to vessel owners when vessels have completed trips during which no sets were made on dolphin-associated fish.

Chairman Nanne asked if there were comments or questions on any of the material presented by Dr. Joseph and his staff.

Mr. Felipe Charat of Mexico asked about the growth and maturity of yellowfin tuna. Dr. Joseph said that yellowfin reach maturity, on the average, at about 40 pounds (18 kg), although some reach maturity at much smaller sizes. Most yellowfin associated with floating objects are immature. It is not known whether there is a relationship between the numbers of spawners and the numbers of recruits, except that, of course, extremely low numbers of spawners would produce reduced recruitment. He said that the spawning biomass has never been less than 100,000 tons during the period during which estimates have been made, and that he thought that it would be prudent to keep the spawning biomass at that level or greater. He mentioned a comprehensive study of the reproductive biology of yellowfin which is currently in progress.

Mr. Gabriel Sarró Iparraguire of Spain asked if the yield of yellowfin could be increased by catching even larger fish, weighing perhaps 50 to 100 kg (110 to 220 pounds). Dr. Joseph said that the critical size of yellowfin is

about 75 pounds (34 kg) and that the best yields are obtainable when the fish are harvested at about that size. When the fish reach 50 to 100 kg there are relatively few of them left, and their increased size cannot make up for their decreased abundance.

Mr. Franklin G. Alverson of the United States asked Mr. Bratten whether the amounts of yellowfin and skipjack he had given were the amounts caught or the amounts which were brought aboard the vessels and eventually sold. Mr. Bratten said that these were the amounts brought aboard the vessels and sold. Mr. Alverson called to the attendees' attention the fact that black skipjack and bullet or frigate tuna were caught near the FADs and discarded, which is wasteful.

Mr. Alverson also noted that, according to Mr. Anganuzzi's presentation, nearly all stocks of dolphins appeared to have declined from the mid-1970s to the early 1980s, and after that appeared to have stabilized or slightly increased. The abundance of yellowfin tuna, as measured by CPUE data, declined from the mid-1970s to the early 1980s, and then increased. He asked Dr. Joseph if he thought there was any relationship between the abundance of dolphins and that of yellowfin tuna. Dr. Joseph said that the increased abundance of yellowfin during the 1980s was due to greater recruitment and to harvesting the fish at about the optimum size. He said that the abundance of dolphins is likely to increase, due to the continuing decreases in mortalities due to fishing.

Mr. Alverson asked what percentage of floating objects were man-made, e.g. buoys, boards, sheets of plywood, etc. Dr. Hall said about 15 to 20 percent.

Chairman Nanne then asked Dr. Joseph to discuss the results of the special meeting of the IATTC held in La Jolla on April 21-23, 1992. Dr. Joseph quickly reviewed the IATTC's duties, given in the first paragraph under Agenda item 3. He emphasized that he and the rest of the staff only furnish advice to the Commissioners and representatives of the non-member nations attending the meeting; the Commissioners and, when appropriate, the representatives of the non-member nations make the decisions. The mortality of dolphins incidental to the fishery had been reduced by 80 percent during the 1986-1991 period, and the attendees at the IATTC special meeting of April 21-23, 1992, resolved (Appendix 2 of these minutes) to further reduce those mortalities from 19,500 in 1993 to less than 5,000 in 1999. It was further resolved at the April meeting: (1) that a mechanism for ensuring that the schedule for 1993-1999 was adhered to would be agreed upon at the present meeting; (2) that a Review Panel would be established to monitor the performance of the vessels and make recommendations consistent with the functions and responsibilities of the panel to be elaborated at the present meeting; (3) that the gear research and education program would be expanded; (4) that efforts to find methods of catching large yellowfin which do not involve the encircling of dolphins would be increased; (5) that research into methods to decrease the mortality caused by purse seining would be increased; (6) that a Scientific Advisory Board would be established to make recommendations for research. Suggestions as to how these goals might be achieved are given in Background Papers 7, 8, and 9, but he emphasized that these are only suggestions, and that the decisions would be made by the Commissioners and representatives of the non-member nations which participate

in the fishery. Chairman Nanne suggested that the discussion of this matter begin the next day.

Mr. Herrera said that he wished to clarify Venezuela's position on the matter of reduction of dolphin mortality. An English translation of his verbatim remarks is printed as Appendix 3 of these minutes.

A recess was declared at 5:45 p.m.

The meeting was reconvened by Chairman Nanne on June 17, 1992, at 9:15 a.m. He said that the discussion of Agenda item 6 would continue, and called for comments and questions concerning this matter.

Mr. Richard Carpenter of Vanuatu said that he wished to clarify Vanuatu's position on the matter of reduction of dolphin mortality. His remarks are printed verbatim as Appendix 4 of these minutes.

Mr. Carlos Camacho Gaos of Mexico stated that he wished to add some comments to those of Venezuela and Vanuatu. An English translation of his verbatim remarks is printed as Appendix 5 of these minutes.

Mr. Herrera of Venezuela repeated what he had said the previous day, that the article in the New York Times had misstated Venezuela's position.

Mr. Jesús L. Miranda of Spain said that vessels of his country catch greater amounts of tuna than any other member of the European Economic Community (EEC) and that Spanish vessels participate in the purse-seine fishery for tunas in the EPO. He wished to know about the eligibility of representatives of non-member nations to participate in the meeting. Chairman Nanne said that representatives of non-member nations were invited to participate fully in the meeting.

Mr. Hanafusa of Japan said that opposition to fishing for tunas associated with dolphins has caused a shift of vessels from the EPO to the western Pacific, and if this continues the EPO will become a sanctuary for tunas and overfishing of tunas may occur in the western Pacific. He noted that the mortalities were less than 1 percent of the population numbers for all stocks of dolphins, and stated that it was his opinion that a balance between protecting dolphins and achieving the AMSYs of tunas should be sought.

Mr. Sarró of Spain read a statement in which he declared that he believed strongly that a practical solution for the tuna-dolphin problem could be arrived at only through multilateral action.

Chairman Nanne then called upon Dr. Joseph to talk about Background Paper 7, which discussed mechanisms for implementation of overall mortality limits for dolphins. Dr. Joseph first called the attendees' attention to the schedule of mortality limits agreed to at the IATTC special meeting of April 21-23, 1992, which was reproduced on page 1 of Background Paper 7, and then to three possibilities for adhering to those limits, individual vessel limits, national limits, and a global limit. Individual vessel limits would encourage the captains of individual vessels to try to minimize the mortalities inflicted by their vessels, as the vessels which caused the greatest mortalities would have to cease fishing for tunas associated with dolphins relatively early in the season, while those which caused fewer mortalities

would be permitted to fish longer. National limits would also encourage the vessel captains to try to minimize the mortalities inflicted by their vessels, but probably not as much as would individual vessel limits. The national limits could be based upon numbers of vessels which fished during a previous year, numbers of vessels expected to fish during the next year, adjacency to the resource, etc. It would be difficult for the nations participating in the fishery to agree on a formula for allocation of mortality limits by January 1, 1993. A global limit would be easy to administrate, but the individual vessel captains would have little incentive to try to minimize the mortalities inflicted by their vessels, as the period during which fishing for tunas associated with dolphins was permitted would end at the same time for all vessels. Chairman Nanne called for comments or questions regarding Dr. Joseph's presentation. There were none, so he announced that there would be a short recess, after which the meeting would reconvene, but in a closed session, i.e. only Commissioners, representatives of other nations involved in the fishery, and IATTC staff members would be admitted.

Before the recess Mr. Brian Hallman of the United States said that he wished to clarify the U.S. position on the relationship between the IATTC multilateral program and pending U.S. legislation. Mr. Hallman stated that legislation would probably be introduced into the U.S. House of Representatives that day which would require commitment to a 5-year moratorium, beginning in 1994, on fishing for tunas associated with dolphins in the EPO, as a condition for lifting the U.S. tuna embargoes. The embargoes which were currently imposed due to failure to meet U.S. standards in regard to dolphin mortalities would be lifted for all nations agreeing to the moratorium. This is completely separate from the IATTC multilateral program under consideration. He said that multilateral action is commendable, but that it did not appear to contain the ingredients necessary for the United States to lift the embargoes. A recess was then declared at 10:00 a.m.

The closed session was called to order at 10:35 a.m. by Chairman Nanne. He called for comments and questions on Background Paper 7. A lengthy discussion involving delegates from nearly all the nations ensued. Much of it concerned provisions for vessels entering or leaving the fishery during a fishing season and vessels changing flags during a fishing season. Early in the discussion it was suggested that a scheme with elements of both individual and national limits be adopted. Limits would first be set for individual vessels. Each nation would have the authority, within certain limits, to increase or decrease the limits of the vessels under its jurisdiction, provided that the sum of the revised limits did not exceed the sum of the original limits for its vessels. The vessel limits and national limits would be recalculated each year. Most or all of the delegates were in agreement with this suggestion. Noting that it was nearly time for lunch, Chairman Nanne suggested that the delegates clarify their positions and discuss any remaining differences that they might have during the lunch period, and then declared a recess at 11:55 a.m.

The closed session was reconvened by Chairman Nanne at 2:25 p.m. After some discussion, it was suggested that a drafting committee be formed to draft a scheme that would be acceptable to everyone. All the delegates were in agreement, so a drafting committee was formed. This committee would meet after a recess was declared for the closed session.

Chairman Nanne then called upon Dr. Hall to review the contents of Background Paper 8, dealing with the Review Panel. Dr. Hall said that the paper suggested that the Panel would consist of 5 to 10 voting members, of which 2 could be environmentalists, plus 1 non-voting IATTC staff member who would serve as the secretariat. The members would serve terms of about 3 or 4 years, and, for the sake of continuity, not all of them would be replaced at the same time. The Panel would meet about 3 or 4 times each year. The observers who were aboard the fishing vessels would report the dolphin mortalities to the IATTC staff, which would, in turn, prepare reports for meetings of the Panel. He emphasized the fact that the members of the Panel would not know, at that time, the names of the vessels they were discussing, nor the nations which had jurisdiction over them. The Panel would determine which vessels and/or nations had violated the agreement and how serious the violations were, and recommend appropriate action. The IATTC staff would then identify the vessels and/or nations which had violated the terms of the agreement, and the infractions would be reported to the governments having jurisdiction over the vessels. The governments would report to the Panel on the actions which were taken against the owners of the vessels which had violated the agreements. The actions taken by the governments of the various nations would be as nearly equal as feasible, taking into account the fact that the laws for the different nations might not be the same. If necessary, the nations party to the agreement could take joint action against nations which did not take appropriate action against vessels which violated the agreements. The Panel would prepare annual reports summarizing the performance of the fleet. The meetings of the Panel would be closed, but its annual reports would be available to the public.

Representatives of several of the delegations thanked Drs. Joseph and Hall for preparing Background Paper 8. They urged caution regarding Point 8 of the Background Paper, which states that one of the functions and responsibilities of the Review Panel is to "recommend to all participating governments joint actions which would be taken against (a) nations which are not party to the Resolution of April 1992, and whose fleets fish in the EPO outside the provisions of the agreement, and (b) participating nations which are not complying with the provisions of the agreement." It also suggested that representatives of environmental groups who were members of the Review Panel not be permitted to vote.

The question as to which article of the IATTC Convention authorized the formation of such a panel was posed. Dr. Joseph said that he didn't have a copy of the IATTC Convention with him, but he wasn't sure that the Review Panel would have to be a part of the IATTC, even though its secretariat would be an IATTC employee.

The discussion continued for some time. Eventually it was decided that representatives of Colombia, Mexico, the United States, Vanuatu, and Venezuela, and two environmentalists and two industry representatives, to be designated later, would be the initial members of the Review Panel.

Chairman Nanne announced that Dr. Joseph would review the contents of Background Paper 9, which dealt with the Scientific Advisory Board. Dr. Joseph said that the Board would consist of a number of experts who would advise the Director of the IATTC regarding the following objectives in the resolution passed at the IATTC special meeting of April 21-23, 1992: "(1) progressively reducing dolphin mortality in the EPO fishery to levels

approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year." Chairman Nanne thanked Dr. Joseph, and asked if there were any comments or questions regarding the Board.

It was pointed out that the resolution of April 21-23, 1992, includes the word "industry," but Background Paper 9 does not. It suggested also that the phrase, "and subject to approval by the High Contracting Parties," in the next-to-last paragraph of Background Paper 9 not be included in the intergovernmental agreement or IATTC resolution. Dr. Joseph said that the words "gear experts" had been substituted for "industry" in Background Paper 9, but he had no objection to using "industry" instead of "gear experts," nor deletion of the phrase "and subject ... Parties."

A brief discussion followed, during which it was clarified that the members of the Scientific Advisory Board would be chosen on the basis of technical expertise. It was decided that an appendix to the resolution concerning the Board would be drafted by a small group of interested persons. No funding was available for meetings of the Board, but Dr. Joseph said that, since it was important that the Board begin to function as soon as possible, he would seek outside funding.

Chairman Nanne announced at 5:30 p.m. that the IATTC meeting was adjourned, and that after a short recess an Intergovernmental Meeting would be convened.

On June 18, 1992, at 4:10 p.m., Chairman Nanne reconvened the IATTC meeting, in closed session.

Agenda item 9 - Place and date of next meeting.

Ms. Doresthy Kenneth of Vanuatu invited the IATTC to have its next regular meeting in Port Vila, Vanuatu. The representatives of the other nations said that that was agreeable with them, so a motion to that effect was made, seconded, and passed unanimously. After a short discussion, it was agreed that the meeting would be held in mid-June. Dr. Joseph reminded everyone that the rules of the Commission state that non-governmental organizations wishing to send representatives to the meeting must make their intentions known 120 days prior to its beginning.

Agenda item 10 - Election of officers

Mr. Varela of Panama nominated Mr. Carpenter as Chairman for the next regular meeting. The nomination was seconded and passed unanimously. Chairman Nanne then called for nominations for Secretary. Mr. Beasley of the United States nominated Mr. Herrera of Venezuela, and this nomination was also seconded and passed unanimously.

Agenda item 8 - Recommended research program and budget for FY 1993-1994

Mr. Herrera of Venezuela introduced Mr. Carlos Rubio Gomez of his delegation, and Mr. Rubio made a statement. A summary of this statement appears as Appendix 6 of these minutes.

Chairman Nanne called upon Dr. Joseph to review Agenda item 8. Dr. Joseph said that the proposed budget is customarily distributed to the Commissioners at least 60 days prior to the next regular meeting. An exception was made in 1992, however, as the proposed budget depended upon decisions made at the special meeting of the IATTC held on April 21-23, 1992. The proposed budget is in two parts, the regular budget and the supplemental budget. The regular budget, covering the period of October 1, 1993-September 30, 1994, is similar to proposed budgets for previous fiscal years, except that it includes additional funds for payment of the expenses of the Scientific Advisory Board, for adjustments for inflation, and for merit increases in the salaries of some employees. The supplemental budget includes an additional \$4,520,000 for activities relating to the tuna-dolphin problem which would be spent during the 1993-1994 and 1994-1995 fiscal years. It includes \$2,700,000 for vessel charter, \$1,100,000 for the augmented observer program, \$470,000 for the FAD program, and \$250,000 for research to reduce the mortalities of dolphins in purse seines. He explained that the "IATTC contribution" in that part of the budget referred to funds committed at the April meeting of the IATTC by the United States, Venezuela, and the Associazione Nazionale Conserviere Ittiche e delle Tonnare (ANCIT) of Italy. To date, funding has been received only from ANCIT. At the Intergovernmental Meeting of January 16-18, 1991, it had been agreed that the 100-percent observer coverage would be funded by an annual assessment of \$10 per vessel ton of carrying capacity by the governments having jurisdiction over the vessels. These funds are mostly in arrears, so Dr. Joseph suggested that some other method for obtaining the funds might be investigated.

Chairman Nanne asked if there were any comments or questions. Mr. Beasley of the United States asked how much of the supplemental budget would be spent in each of the two fiscal years. Dr. Joseph said that the \$2,385,000 and \$2,135,000 would be spent during the 1994 and 1995 fiscal years, respectively. After a brief discussion, the budget was approved.

Agenda item 7 - Recommendations for 1992

Chairman Nanne called the attention of the attendees to the draft copies of the agreement for the Intergovernmental Meeting and the resolution for the IATTC meeting. Mr. Carpenter of Vanuatu noted that the resolution did not include some changes which were to be made at the request of the delegation from Japan and that there were some minor inconsistencies in the two documents. It was agreed that the two documents would be changed as suggested by Mr. Carpenter. The final version of the resolution appears at Appendix 7 of these minutes. Mr. Hanafusa of Japan read a short statement, which appears as Appendix 8 of these minutes.

Chairman Nanne then called upon Dr. Joseph to make a brief statement regarding a resolution for yellowfin tuna. Dr. Joseph said that the condition of the yellowfin stock of the EPO at the end of 1991 was similar to what it had been at the end of 1990, so he was recommending that the resolution for

1992 be the same as that for 1991. This was unanimously approved. The final version of the resolution appears at Appendix 9 of these minutes.

#### Agenda item 11 - Other business

Mr. Camacho of Mexico commended Mr. Carpenter of Vanuatu for his fine work in preparation of the agreement and the resolution so that they were acceptable to all concerned. He said that the agreements reached during the meeting were very important for Mexico and that they reflected Mexican concerns. He added that Mexico was studying the possibility of applying for re-admission to the IATTC. He pointed out that the scientific work done by the IATTC staff was commendable, but that the Commission would have to undergo an evolution to strengthen its position. Accordingly, he invited the representatives of all the nations present to attend another Intergovernmental Meeting in Mexico in October 1992 to analyze the current organization and the long-term objectives of the IATTC.

Ms. Carmen Paz Martí of Spain indicated that Spain was supporting the agreement and the resolution, but it was not clear that these agreements would receive enough support to maintain a normal economic situation.

Mr. Herrera of Venezuela suggested that there be a discussion of amendment of the IATTC protocol to facilitate the adherence of additional members. Mr. Beasley of the United States said that he supported Mr. Herrera's contention that the procedures needed to be changed. Mr. Hallman of the United States said that it was not clear that the United States, as the depositary government, was in a position to circulate an agreed amendment for consideration by the member governments. It appeared that these matters could best be settled in a plenipotentiary meeting. He asked for opinions from the other delegates. Chairman Nanne said he thought that it would be difficult to arrange a plenipotentiary meeting for that purpose, and suggested that the changes could be arranged through diplomatic channels. Mr. Hallman said that the United States could not circulate the necessary documents as the depositary government until there was an agreed text for amending the Convention.

After a short discussion, Chairman Nanne asked if the meeting could be opened for observers. Everyone agreed, so the doors were opened and the observers entered the room.

At Chairman Nanne's request, Dr. Joseph reviewed what had transpired in the closed sessions and the Intergovernmental Meeting. He stated that the agreement of the Intergovernmental Meeting and the resolution of the IATTC meeting were essentially the same, and he briefly reviewed the salient points of the agreement which had been reached for reducing dolphin mortality. He also described the structure and functions of the Review Panel and the Scientific Advisory Board. The agreement reached at the Intergovernmental Meeting appears as Appendix 10 of these minutes.

Chairman Nanne then asked if any of the observers had any comments.

Mr. Londoño of Colombia read a short statement which appears as Appendix 11 of these minutes.



Mr. Juan Carlos Cardenas Nuñez of Greenpeace read a brief statement in which he said that that organization had been working for more than 2 years on a multilateral agreement which would result in a realistic and fair solution to the tuna-dolphin problem. He recognized the pioneer role that the IATTC staff had had in monitoring and managing the fishery of the EPO. He emphasized that there must be assurance that there is compliance with the agreements and more participation of non-governmental organizations in the process. He said that Greenpeace would continue to support multilateral solutions to the problem.

Ms. Kathleen O'Connell of the Whale and Dolphin Conservation Society said that development of ways of catching large yellowfin without encircling dolphins was preferable to improvement of purse-seining gear and techniques which minimize the mortality of dolphins. She said that was glad to hear that the IATTC staff was collecting data on incidental catches of unmarketable fish in purse-seine sets made on schools of tuna associated with floating objects.

Mr. Alejandro Villamar of the Red Mexicana de Acción frente al Libre Comercio said that the agreement, although not perfect, was a good one, and that he hoped that all concerned would work together to ensure that the desired results were obtained.

Ms. Minette Johnson of the Center for Marine Conservation read a short statement which appears as Appendix 12 of these minutes.

Mr. Felipe Charat of Mexico stated that fishermen were losing their livelihoods to satisfy the desire of environmentalists to reduce the mortalities of dolphins, even though they were not threatened or endangered. He said that the fishing industry could probably live with the schedule of mortality limits agreed upon at the IATTC special meeting of April 21-23, 1992, but not with the U.S. government's proposed unilateral 5-year moratorium on fishing for tunas associated with dolphins. He said that this moratorium is not in accord with the agreements reached at recent meetings at Cancun, Mexico, and Rio de Janeiro, Brazil.

Chairman Nanne announced, with regret, for the benefit of those who had not attended the Intergovernmental Meeting, that someone had taken confidential documents of the Venezuelan delegation from one of the meeting rooms. He said that he hoped that nothing like that would occur again. Mr. Herrera of Venezuela made a short declaration on the same subject.

Agenda item 12 - Adjournment

There being no further business, Chairman Nanne declared meeting adjourned at 6:15 p.m.

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APPENDIX 2, RESOLUTION PASSED AT THE IATTC  
SPECIAL MEETING OF APRIL 21-23, 1992

*The Inter-American Tropical Tuna Commission (IATTC) and the participating observer governments listed in Appendix I:*

*Recalling the agreement of governments expressed in resolutions of the intergovernmental meetings held in San José, Costa Rica, in September 1990, and La Jolla, California, in January 1991, to establish an international program for the reduction of incidental mortality of dolphins caught in association with tuna in the purse-seine fishery in the eastern Pacific Ocean (EPO);*

*Further recalling and affirming the objectives of the international program, which include achieving, in the short term, a significant reduction in dolphin mortalities incidental to this fishery and, in the longer term, a reduction in such mortalities to insignificant levels approaching zero and, if possible, the complete elimination of such mortality;*

*Noting that, in accordance with the objectives of the above-mentioned resolutions, a significant reduction in dolphin mortality has already been achieved;*

*Resolve to:*

- Adopt a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the EPO fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year;

*Further resolve to:*

- Continue the current international program and, where appropriate, the individual national programs, of placing an observer on each trip made by purse-seine vessels of capacity greater than 400 tons operating in the EPO and, beginning in 1993, ensure that at least one-half of the observers deployed each year by each nation are IATTC observers;
- Set annual limits on total dolphin mortality in the EPO, as follows:

Year	Limit	Percentage of best estimate of current populations of spotted, spinner, and common dolphins
1993	19,500	0.30
1994	15,500	0.24
1995	12,000	0.19
1996	9,000	0.14
1997	7,500	0.11
1998	6,500	0.10
1999	<5,000	<0.08

- Ensure compliance with these limits by a mechanism to be agreed upon by July 1, 1992;
- Monitor trends in abundance of specific dolphin stocks and take protective measures for these stocks, as necessary;
- Establish a panel to review and report on the compliance of the international fleet with the mortality limits set forth above, and make recommendations as appropriate; the functions and responsibilities of the panel will be elaborated at the 50th meeting of the IATTC;
- Provide to the IATTC, in a timely manner, summary data collected through national observer programs; similarly, the IATTC will provide information, within their constraints of confidentiality, to governments;
- Expand current IATTC training and gear inspection programs to ensure the use of the best current fishing methods and gear technology available;
- In light of the research currently being undertaken, as set forth in Appendix II, initiate research to adapt current technology to ensure that reduction targets can be achieved, and seek alternative methods for capturing large yellowfin tunas in the EPO which do not involve encircling dolphins, with particular emphasis on the use of fish-aggregating devices (FADs) to attract large tunas, taking special note of such methods employed in other oceans, and study the impact on the ecosystem of achieving these reductions in the mortality of dolphins.
- Strive to attain funds for research at a level sufficient to achieve the objectives of this resolution, as presented in Appendix II;
- Establish within the IATTC an Advisory Board of technical specialists from the international communities of scientists, government agencies, environmental groups, and the fishing industry, to assist the Director of the IATTC in efforts to coordinate, facilitate, and guide research. The functions and responsibilities of the Advisory Board will be elaborated at the 50th Meeting of the IATTC.

APPENDIX I.

Mexico, Spain, Venezuela.

APPENDIX II.

I. RESEARCH PROJECTS CURRENTLY BEING CONDUCTED

(In US\$)

Methods that would not entail chase nor encirclement of dolphins

Fish-Aggregating Device (FAD) feasibility study	212,000
Light detecting and ranging (LIDAR) device (Execution to June 1992)	80,000
Oceanography (Execution to September 1993)	135,000
Food habits study (Execution to January 1994)	200,000
Tuna-Dolphin association	
(Execution to November 1992)	175,000
(additional funding for boat charter)	600,000
 TOTAL	 1,402,000

## II. RESEARCH PROJECTS PROPOSED

### A. Improvements in current purse-seining technology

	YEAR 1	YEAR 2
Current profiler	190,000	
Freitas panel	100,000	100,000
Net-lifting devices	100,000	100,000
Dolphin Rescue Boats	50,000	
	(Budgeted)	
Engineering workshop	100,000	
Purse-seine consultant from FAO	(Budgeted)	
Remotely-operated vehicle (ROV) system	75,000	
Modification of purse-seine net	(Budgeted)	
 TOTAL (both years)		 865,000

### B. Methods involving dolphins, but not encirclement

Pair trawling	(Not planned)
Separation by acoustic methods	(Not planned)
Separation by other methods	(Not planned)
Food habit studies (see below)	

### C. Methods that would not entail chase nor encirclement of dolphins

Expanded FAD program	4,070,000
Longliner and baitboat studies	(Budgeted)
1) Baitfishing studies	
2) Economic studies	

Several other projects concerning the association between tunas and logs that would be relevant to the FAD project are listed in the Report of the Workshop on the Ecology and Fisheries for Tunas Associated With Floating Objects (available upon request); however, plans and budgets have not yet been prepared.

### D. Other studies

Establish Scientific Advisory Board of international specialists - US\$ 50,000 per annum (see above).

APPENDIX 3, STATEMENT OF MR. FRANCISCO HERRERA TERAN,  
COMMISSIONER OF VENEZUELA

Messrs. Commissioners, I have the honor of addressing you with the intention of expressing my country's disquiet with regard to the recent declarations by the press, published today in the *New York Times*, presented as news by a representative of the U.S. administration, with regard to the supposed commitment made by my country through a letter of intent supporting a moratorium. In March of 1992 the government of my country did indeed present such a letter of intent to the government of the United States, manifesting our support for a proposal that would create a five-year moratorium in March, 1994, allowing sets on dolphins for another two years while an intergovernmental program for the development of the technology was worked out. On March 18 of that same year a U.S. Congressional Committee met to analyze the proposed amendments to the Marine Mammal Protection Act; on that occasion the proposal was assailed by congressmen, fishermen, and environmentalists as unacceptable and absurd. This took us back to the IATTC in April, as Dr. Joseph mentioned, in order to seek the solution to this problem. During that meeting there arose two new elements not present in the decision taken months before: first, the U.S. National Academy of Sciences, as Dr. Hall mentioned, recommended a 5- to 7-year period of research before declaring the 5-year moratorium, in order to have the technology available necessary for changing that system of fishing. And second, without the appropriate technology, the IATTC warned that intensive effort on juvenile tuna would cause the resource to be overfished in two to three years. For your information, Venezuela, like other nations present at this meeting, inclined towards an international agreement, within the framework of the IATTC, involving the gradual reduction of the current mortality of 20,000 dolphins to 5,000, out of a population of 8 million, for all nations currently operating in the eastern tropical Pacific Ocean, in a period of six years, in order to reach a statistical zero. In parallel, during those same six years a multinational research program will be carried out, with the aim of reaching absolute zero by 1999, if that is possible. We therefore note, obviously with some concern, that the letter previously discarded has been taken out of some trash basket and appended to a proposal without consultation and presented to the U.S. Congress and to public opinion as an extension of the previous letter, which appears wrong to me. I therefore wish to declare publicly that Venezuela will go ahead with the IATTC multilateral program, and deny the truth of the news published today in the press.

**APPENDIX 4, STATEMENT OF MR. RICHARD CARPENTER,  
COMMISSIONER OF VANUATU**

Thank you, Mr. Chairman. Following the report in Tuesday's edition of the *New York Times* that Vanuatu has agreed with the United States to ban setting of nets on dolphins and thus to support the so-called compromise bill, I have been instructed by my government, Mr. Chairman, to make a public statement clarifying Vanuatu's position, and I would like to do that. There should be no doubt, the Vanuatu government and the Vanuatu fleet are committed to reducing dolphin mortality to the lowest possible level. We believe that the performance of the Vanuatu fleet bears testimony to that. In achieving such reductions in dolphin mortality, however, it must be recognized that, given the current state of the technology, the most efficient method of catching large tuna is to set on dolphins. Any solution to the problem of dolphin mortality that does not recognize this risks causing as yet unknown and unquantifiable ecological damage. Vanuatu believes that the correct approach is a structured, planned, multilateral program that takes account of the current state of the technology. Vanuatu fully supports the program being implemented through the auspices of the IATTC as the most rational approach to the problem. We note the words of the reporter in the article: he states "the dolphin dispute has been a public-relations problem for the Bush administration." Our fear is that this so-called compromise bill is no more than a public-relations solution to a public-relations problem, and that the real solution is the one that we are following. Lest there should be any doubt, Vanuatu does not support the compromise bill, has not agreed with the U.S. or any other government to ban the setting of nets around schools of tuna that could include dolphins and, if we were in a position to do so, would oppose such a bill. Thank you, Mr. Chairman.

**APPENDIX 5, STATEMENT OF MR. CARLOS CAMACHO GAOS  
ON BEHALF OF MEXICO**

Thank you, Mr. Chairman. I would like to add to the comments made by the delegates of Venezuela and Vanuatu regarding the article published in the U.S. newspapers, and state, in the name of my country, that Mexico has been, firstly, as was pointed out in the meeting yesterday, the first nation to promote caring for biodiversity, and especially the protection of dolphins; that Mexico has for a long time now had a program for the best utilization of the tuna resource while protecting dolphins; that, albeit as observers in this forum, we have always enjoyed excellent relations with the Commission proper; that we already have great experience in cooperation; and certainly that Mexico is the promoter of the idea of multilateral solutions. This is what Mexico is seeking in this and in all other fora, like the recent meeting in Cancun on responsible fishing, organized by our country, like our participation in the meeting in Rio de Janeiro, a promoter of multilateral solutions. To that end Mexico declares its intentions and certainly wishes to find a solution. Thank you.

APPENDIX 6, ABSTRACT OF STATEMENT BY MR. EMILIO RUBIO,  
PRESIDENT OF FENAPESCA (VENEZUELA)

I represent an organization of Venezuelan boatowners. Each day we feel more worried about the complex world tuna situation. We have attended all the meetings of the IATTC and the U.S. National Marine Fisheries Service pertaining to the tuna-dolphin problem since 1988. The conclusions reached at these meetings have been essentially the same, but the recommendations made have not always been followed by all the nations involved. There is no doubt that the IATTC staff is technically qualified to make recommendations regarding the conservation of tunas and dolphins. Our country has only recently become a member of the IATTC, but previous to that we were cooperating with the IATTC in every way possible. All the other countries participating in the fishery have done the same, as demonstrated by the decline in dolphin mortalities caused by the fishery. In spite of this, some governments have responded to demands from pressure groups, rather than following the recommendations of the IATTC staff. Radical environmental groups have even become quasi-governmental organizations, making agreements with industry groups for very narrow purposes, using capricious arguments, and threatening to act against those canneries not party to such agreements. This is lamentable, illegal, and unacceptable. The observer programs, the studies of the abundance of dolphins, the gear technology programs, etc., financed by the governments of IATTC members and other participants in the fishery, will come to nothing if the radical environmental groups have their way. It is clear to the members of our organization that no other group has the competence to perform work of the type conducted by the IATTC staff. Nevertheless, we are concerned about the radical groups which are trying to discredit the work of the IATTC. For example, at a meeting of the European Economic Community (EEC) they presented figures indicating that the incidental mortality of dolphins in the fishery of the eastern Pacific Ocean (EPO) was between 300,000 and 1,000,000 animals, indicating that the IATTC estimates are unreliable, and these claims have been widely publicized in Europe. Accordingly, our organization considers it to be imperative that the IATTC make the facts known to the EEC and to the member governments of the EEC. For example, it should emphasize the fact that the maximum sustainable yield of yellowfin tuna can be obtained only by harvesting adult fish, which associate with dolphins. Nevertheless, the "dolphin-safe" policies of the United States and Panama are contrary to the recommendations of the IATTC, and the boycott of the United States encourages the capture of juvenile tunas. In addition, it has been demonstrated that tunas associate with dolphins in areas other than the EPO, so the boycott of tuna caught in the EPO is discriminatory. It is clear that the members of the IATTC and other nations participating in the fishery should adopt the recommendations of the IATTC staff, rather than those of groups which are not qualified to make recommendations based upon science.



## APPENDIX 7, RESOLUTION FOR THE CONSERVATION OF DOLPHINS

The Inter-American Tropical Tuna Commission (IATTC) recalls and reaffirms the resolution adopted during its Special Meeting held in La Jolla, California, on April 21-23, 1992, to adopt a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the eastern Pacific Ocean (EPO) fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year, and to limit and, if possible, eliminate the mortality of dolphins in the fishery of the EPO as follows:

Year	Limit	Percentage of best estimate of current populations of spotted, spinner, and common dolphins
1993	19,500	0.30
1994	15,500	0.24
1995	12,000	0.19
1996	9,000	0.14
1997	7,500	0.11
1998	6,500	0.10
1999	<5,000	<0.08

It further resolved to establish a Review Panel to review and report on the compliance of the international fleet with the mortality limits set forth above, and make recommendations as appropriate, and to establish within the IATTC an Advisory Board of technical specialists from the international communities of scientists, government agencies, environmental groups, and the fishing industry, to assist the Director of the IATTC in efforts to coordinate, facilitate, and guide research.

Therefore:

The IATTC resolves that:

1. Each party to this Resolution shall, on or before October 1, 1992, provide to the Director of the IATTC a list of purse-seine vessels of carrying capacity greater than 400 short tons under its jurisdiction which such party has reasonable cause to believe will set on tunas associated with dolphins in the EPO in 1993 and for each of which the party wishes to have a Dolphin Mortality Limit (DML) assigned for that year.
2. The Review Panel to be established in accordance with the Resolution of April 1992, whose duties, functions, and responsibilities are defined in Appendix I, shall, by November 1, 1992, assign a DML to each vessel that it determines to be "qualified" for a DML in accordance with Paragraph 1 ("qualified vessels"). For 1993, each DML shall be equivalent to 19,500 divided by the total number of qualified vessels.
3. Each party may thereafter adjust the DMLs of its qualified vessels either upward or downward, provided that no vessel is assigned an

adjusted DML in excess of 15 percent above the original DML and that the collective DMLs for that nation's fleet do not exceed that nation's collective DMLs prior to adjustment. Any such adjustment shall be made prior to December 1, 1992. Each party shall notify the IATTC of any such adjustments on or before December 15, 1992. DMLs that are assigned as of December 1, 1992, shall be applied during 1993.

4. Any vessel assigned a DML for 1993 which does not utilize any of its DML by June 1, 1993, or which leaves the fishery, shall lose its right to utilize its DML for the remainder of the year. The IATTC shall maintain records of all such unutilized DMLs.
5. Each party to the Resolution shall, on or before April 1, 1993, provide to the Director of the IATTC the names of purse-seine vessels and to which it wishes to have a DML assigned for the last six months of 1993. All such vessels which are qualified shall be assigned DMLs by the Director of the IATTC, after consultation with the voting members of the Review Panel, as soon as possible after June 1, 1993. The DML shall be calculated by dividing the sum of the unutilized DMLs by the total number of such applications, provided that the DML for any such vessel shall not exceed one-half of the DML calculated in accordance with Paragraph 2.
6. For any vessel exceeding its DML during 1993, the amount of its excess shall be deducted from the DML assigned to that vessel during 1994 and, if the excess in 1993 exceeds the 1994 DML, then such excess shall be deducted from the DMLs subsequent to 1994, as appropriate.
7. Only vessels operating under the jurisdiction of IATTC member governments or under the jurisdiction of governments that are party to an agreement reached at an Intergovernmental Meeting held in La Jolla, California, on June 18, 1992, are eligible for DMLs.
8. Compliance with the total EPO dolphin mortality limits for the years 1994 through 1999 shall be ensured through the mechanisms set forth above for 1993, with any necessary modifications.
9. The IATTC shall review and assess the 1993 compliance mechanisms prior to July 1, 1993.
10. Measures shall be taken with respect to management of individual stocks of dolphins in accordance with Appendix II.
11. The Scientific Advisory Board of technical experts to coordinate, facilitate, and guide research in accordance with the Resolution of April 1992 shall be established and operate as outlined in Appendix III.
12. Each party shall require purse-seine vessels of carrying capacity greater than 400 short tons under their jurisdiction which operate in the EPO to carry an observer during each fishing trip in 1993. At least 50 percent of the observers shall be from the observer program of the IATTC.
13. Each party shall permit observers to collect all pertinent information necessary to achieve the objectives of this Resolution.

14. Each party shall require observers to inform the fishing captain of the vessel upon which he is observing when the DML is reached and when fishing by that vessel for yellowfin tuna in association with dolphins should cease.
15. Each party to this Resolution shall require that a vessel shall cease fishing on dolphins in the EPO when its DML has been reached.
16. The Director of the IATTC is instructed to disseminate and otherwise make known the contents of this Resolution to the international community.

*The IATTC finally recommends that all member countries work diligently to achieve the objectives of this Resolution.*

## APPENDICES

### Appendix I.

#### THE REVIEW PANEL

##### I. OBJECTIVES

This Review Panel is established as recommended by the Resolution approved at the Special Meeting of the IATTC held on April 21-23, 1992, to review and report on the compliance of the international fleet with the mortality limits set forth and to make recommendations as appropriate.

##### II. FUNCTIONS AND RESPONSIBILITIES

The Review Panel shall:

1. Compile each year a list of vessels qualified for Dolphin Mortality Limits (DML) and assign DMLs for each year from 1993 through 1999.
2. Review all trips made in the eastern Pacific Ocean by purse-seine vessels of fish-carrying capacity greater than 400 short tons.
3. Identify all infractions of agreements concerning dolphin mortality, including this resolution, and, in particular, of the Agreement reached at an Intergovernmental Meeting held in La Jolla, California, on June 18, 1992.
4. Inform parties to the above Agreement or this Resolution of infractions by vessels under their jurisdiction.
5. Receive from governments party to the above-mentioned Agreement or Resolutions and whose vessels fish for tunas in association with dolphins in the eastern Pacific Ocean information concerning their actions in response to reported infractions for the purposes of monitoring compliance.
6. Recommend to all such governments a standardized certification system for fishing captains and maintain a list of those who have received adequate training and who are abiding by the goals of the above Agreement or this Resolution.
7. Recommend to all such governments a set of sanctions for individual fishing captains, vessel owners, and observers which are consistent with the goals of the above Agreement or this Resolution, appropriate for the infractions, and standardized among countries.

8. Recommend to all such governments minimum standards for fishing gear, update these following technological advances, and maintain a list of vessels which carry all the equipment needed to reduce dolphin mortality and which have performed the required procedures to maintain the vessel and the gear in good working condition.
9. Recommend to all such governments actions to be taken in order to ensure compliance with the above Agreement and this Resolution by any nation not a party to either that is conducting fishing operations in a manner inconsistent with the above Agreement or this Resolution.
10. Publish an Annual Report which would:
  - a) Review the operation of the program and recommend actions to such governments for modifications and updates in enforcement consistent with the goals of the above Agreement or this Resolution.
  - b) Summarize all the identified infractions and the action taken.

### III. COMPOSITION OF THE PANEL

The Review Panel will be composed of nine members, five of whom shall be representatives of participating governments with vessels participating in the fishery. The remaining members of the Panel shall consist of two representatives of environmental organizations and two representatives of the tuna-fishing industry, to be selected by government representatives on the Panel. The five government representatives shall be voting members; the four non-governmental representatives shall be non-voting members. The IATTC will provide a non-voting Secretariat for the Panel.

### IV. OPERATION OF THE PANEL

The Panel shall adopt rules of procedure for its operations at its first meeting. After each meeting a report of infractions and related matters shall be made available to the public. The Panel will prepare an annual report on its activities. The proceedings of the Panel will not be public, and its members shall not divulge any information concerning individual vessels and operators derived from review forms or from the proceedings of the Panel. Information concerning compliance with the terms of the Agreement will be made public by means of the Panel's Reports.

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### Appendix II.

Protective measures for each individual stock of dolphins should be taken as follows:

- i) If the incidental mortality of any stock exceeds 2% of the most current estimate of absolute abundance (CEAA), but is less than 4% of the CEAA of that stock, a warning will be issued to all fleets;
- ii) If the incidental mortality of any stock exceeds 2% of the CEAA but is less than 4% in two consecutive years, all sets on that stock, whether in herds which contain only individuals of that stock or in mixed herds, would be banned for a year.
- iii) If the incidental mortality of any stock reaches or exceeds 4% of the CEAA in a given year, a complete ban on setting on that stock would be imposed for the following year.

- iv) If the incidental mortality of any stock exceeds 6% of the CEAA, the ban on sets would remain in force for three years; for 8%, four years; and for 10%, five years.

It is proposed that the CEAA for the dolphin stocks of the EPO presented by Wade and Gerrodette to the IWC in 1992, based on NMFS research vessel data for the period 1986-1990, be used for all these calculations until the IATTC agrees on an updated set of figures. Such updates could result from the analysis of data from future research cruises, from calibration of indices of relative abundance with estimates of absolute abundance, or from improvements in the analytical methodology applied to currently available data. The 2% value for maximum net annual recruitment should also be changed if better estimates become available.

#### BACKGROUND

In recent years, incidental mortality for all stocks of dolphins involved in the fishery has been decreasing, and as of 1991 the mortality rates of all stocks are less than 1% of the most recent estimates of their average absolute abundances for 1986-1990. The most conservative estimate of the maximum net annual recruitment rate for dolphins is 2%, so incidental mortality rates below this level should not jeopardize the recovery of the stocks.

The incidental mortalities of the various stocks of dolphins in the EPO in 1991 (based on mortality per set) were as follows:

Stock	Population abundance <sup>1</sup>	Incidental mortality	Percent mortality
Northeastern spotted	738,100		
Western and/or southern spotted	1,299,300		
All spotted (except coastal)	2,037,400	13,991	0.69
Eastern spinner	632,700	5,879	0.93
Whitebelly spinner	1,020,100	2,974	0.29
Northern common	477,000	161	0.03
Central common	415,600	3,182	0.77
Southern common	2,211,500	115	0.01
Other dolphins	2,729,100	990	0.04
All	9,523,400	27,292	0.29

<sup>1</sup> Wade and Gerrodette (submitted to the International Whaling Commission, 1992)

Appendix III.

THE SCIENTIFIC ADVISORY BOARD

The Inter-American Tropical Tuna Commission, at its Special Meeting held in La Jolla, California, on April 21-23, 1992, reached agreement on a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the EPO fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year.

Based on a recommendation from the IATTC scientific staff, the participating governments approve the establishment of a Scientific Advisory Board of technical specialists to assist the Director in matters regarding research to (a) modify current purse-seine technology to make it less likely to cause dolphin mortality and (b) seek alternative means of capturing large yellowfin tuna.

The functions and responsibilities of the Board shall be to:

- 1) Meet at least once each year.
- 2) Review plans, proposals, and programs of the Commission to seek to meet objectives (1) and (2), as noted in paragraph 1 of this document.
- 3) Provide advice to the Director concerning the design, facilitation, and guidance of research to achieve objectives (1) and (2) noted in Paragraph 1 of this document.
- 4) Assist the Director in locating sources of funding to conduct such research.
- 5) Recommend to the Director any other measures and actions that could be taken to facilitate achieving the objectives of the dolphin conservation program defined in the Resolution of the Special Meeting of the IATTC held in La Jolla on April 21-23, 1992.

The Board will consist of no more than 10 members, selected from the international community of scientists, fishing gear experts, the fishing industry, and environmentalists. The members will be selected by the Director on the basis of their technical expertise, and subject to approval by the Commission and the participating governments.

The secretariat for the Board will be provided by the IATTC.

**APPENDIX 8, STATEMENT BY MR. KATSUMA HANAFUSA ON BEHALF OF JAPAN**

Japan would like to support the multilateral efforts, and is willing to join in the adoption of the proposed resolution. On this occasion, Japan would like to make the following statement for the record.

1. Japan is of the view that, with regard to the protective measures for each individual stock of dolphin in Appendix II, the percentage thresholds, duration of prohibition of fisheries, etc., are rather arbitrary, and that therefore the scientific studies should be continued so that better understanding of the conditions of the stocks can be made available and decisions on the measures can be made based upon sound scientific evidence in the future. Japan is further of the view that the estimates of population abundance, referred to as the basis for the protective measures in Appendix V, come from the assessment made by one country, are not agreed upon by the Commission, though we fully admit that these estimates are the best scientific data available at present.

2. Since Japan is not a fishing country using tuna/dolphin purse seiners, Japan will not participate in the Review Panel.

## APPENDIX 9, RESOLUTION FOR THE CONSERVATION OF YELLOWFIN TUNA

*The Inter-American Tropical Tuna Commission*, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendation to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,

*Notes* that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and

*Recognizes*, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and

*Recalls* that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and

*Notes* that from 1980 through 1991, excepting 1987, although no conservation programs were implemented, conservation measures were nevertheless recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

*Observes* that, at current levels of abundance and at current fleet capacity, the stock of yellowfin can be over-exploited,

*Concludes* that a limitation on the catch of yellowfin tuna should be implemented during 1992.

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties* that an quota of 210,000 short tons be established for the 1992 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than four successive increments of 20,000 short tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and

*Finally recommends* that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1992.



## APPENDIX 10, AGREEMENT FOR THE CONSERVATION OF DOLPHINS

The governments listed in Appendix I recall and reaffirm the resolution adopted during a Special Meeting of the Inter-American Tropical Tuna Commission (IATTC) held in La Jolla, California, on April 21-23, 1992, to adopt a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the eastern Pacific Ocean (EPO) fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year, and to limit and, if possible, eliminate the mortality of dolphins in the fishery of the EPO as follows:

Year	Limit	Percentage of best estimate of current populations of spotted, spinner, and common dolphins
1993	19,500	0.30
1994	15,500	0.24
1995	12,000	0.19
1996	9,000	0.14
1997	7,500	0.11
1998	6,500	0.10
1999	<5,000	<0.08

The IATTC further resolved to establish a Review Panel to review and report on the compliance of the international fleet with the mortality limits set forth above, and make recommendations as appropriate, and to establish within the IATTC an Advisory Board of technical specialists from the international communities of scientists, government agencies, environmental groups, and the fishing industry, to assist the Director of the IATTC in efforts to coordinate, facilitate, and guide research.

Therefore:

The governments listed in Appendix I agree that:

1. Each government that is a party to this Agreement ("the participating governments") shall, on or before October 1, 1992, provide to the Director of the IATTC a list of purse-seine vessels of carrying capacity greater than 400 short tons under its jurisdiction which such government has reasonable cause to believe will set on tunas associated with dolphins in the EPO in 1993 and for each of which the government wishes to have a Dolphin Mortality Limit (DML) assigned for that year.
2. The Review Panel to be established in accordance with the Resolution of April 1992, whose duties, functions, and responsibilities are defined in Appendix II, shall, by November 1, 1992, assign a DML to each vessel that it determines to be "qualified" for a DML in accordance with Paragraph 1 ("qualified vessels"). For 1993, each DML shall be equivalent to 19,500 divided by the total number of qualified vessels.

3. A participating government may thereafter adjust the DMLs of its qualified vessels either upward or downward, provided that no vessel is assigned an adjusted DML in excess of 15 percent above the original DML and that the collective DMLs for that nation's fleet do not exceed that nation's collective DMLs prior to adjustment. Any such adjustment shall be made prior to December 1, 1992. Each government shall notify the IATTC of any such adjustments on or before December 15, 1992. DMLs that are assigned as of December 1, 1992, shall be applied during 1993.
4. Any vessel assigned a DML for 1993 which does not utilize any of its DML by June 1, 1993, or which leaves the fishery, shall lose its right to utilize its DML for the remainder of the year. The IATTC shall maintain records of all such unutilized DMLs.
5. Each participating government shall, on or before April 1, 1993, provide to the Director of the IATTC the names of purse-seine vessels which were not assigned a DML under Paragraph 2 and to which it wishes to have a DML assigned for the last six months of 1993. All such vessels which are qualified shall be assigned DMLs by the Director of the IATTC, after consultation with the voting members of the Review Panel, as soon as possible after June 1, 1993. The DML shall be calculated by dividing the sum of the unutilized DMLs by the total number of such applications, provided that the DML for any such vessel shall not exceed one-half of the DML calculated in accordance with Paragraph 2.
6. For any vessel exceeding its DML during 1993, the amount of its excess shall be deducted from the DML assigned to that vessel during 1994 and, if the excess in 1993 exceeds the 1994 DML, then such excess shall be deducted from the DMLs subsequent to 1994, as appropriate.
7. Only vessels operating under the jurisdiction of participating governments or under the jurisdiction of the governments of IATTC member countries are eligible for DMLs.
8. Compliance with the total EPO dolphin mortality limits for the years 1994 through 1999 shall be ensured through the mechanisms set forth above for 1993, with any necessary modifications.
9. The participating governments shall review and assess the 1993 compliance mechanisms prior to July 1, 1993.
10. Measures shall be taken with respect to management of individual stocks of dolphins in accordance with Appendix III.
11. The Scientific Advisory Board of technical experts to coordinate, facilitate, and guide research in accordance with the Resolution of April 1992 shall be established and operate as outlined in Appendix IV.
12. The participating governments shall require purse-seine vessels of carrying capacity greater than 400 short tons under their jurisdiction which operate in the EPO to carry an observer during each fishing trip in 1993. At least 50 percent of the observers shall be from the observer program of the IATTC.

13. The participating governments shall permit observers to collect all pertinent information necessary to achieve the objectives of this Agreement.
14. The participating governments shall require observers to inform the fishing captain of the vessel upon which he is observing when the DML is reached and when fishing by that vessel for yellowfin tuna in association with dolphins should cease.
15. The participating governments shall require that a vessel shall cease fishing on dolphins in the EPO when its DML has been reached.

*The participating governments recommend that all IATTC member countries and other states party to this Agreement work diligently to achieve the objectives of this Agreement and particularly strive to undertake measures to insure that states not currently party to this Agreement, but which have vessels capable of and intending to fish for tunas in association with dolphins in the eastern Pacific Ocean subscribe to the Agreement.*

#### APPENDICES

##### Appendix I.

Colombia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama, Spain, the United States of America, Vanuatu, Venezuela.

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##### Appendix II.

#### THE REVIEW PANEL

##### I. OBJECTIVES

This Review Panel is established as recommended by the Resolution approved at the Special Meeting of the IATTC held on April 21-23, 1992, to review and report on the compliance of the international fleet with the mortality limits set forth and to make recommendations as appropriate.

##### II. FUNCTIONS AND RESPONSIBILITIES

The Review Panel shall:

1. Compile each year a list of vessels qualified for Dolphin Mortality Limits (DML) and assign DMLs for each year from 1993 through 1999.
2. Review all trips made in the eastern Pacific Ocean by purse-seine vessels of fish-carrying capacity greater than 400 short tons.
3. Identify all infractions of agreements concerning dolphin mortality, including this Agreement, and a Resolution passed at the 50th Meeting of the IATTC.
4. Inform the governments which are parties to such agreements or the Resolution of the 50th Meeting of infractions by vessels under their jurisdiction.
5. Receive from governments party to the Resolution of the 50th Meeting or this Agreement and whose vessels fish for tunas in association with

dolphins in the eastern Pacific Ocean information concerning their actions in response to reported infractions for the purposes of monitoring compliance.

6. Recommend to all such governments a standardized certification system for fishing captains and maintain a list of those who have received adequate training and who are abiding by the goals of the Resolution of the 50th Meeting or this Agreement.
7. Recommend to all such governments a set of sanctions for individual fishing captains, vessel owners, and observers which are consistent with the goals of the Resolution of the 50th Meeting or this Agreement, appropriate for the infractions, and standardized among countries.
8. Recommend to all such governments minimum standards for fishing gear, update these following technological advances, and maintain a list of vessels which carry all the equipment needed to reduce dolphin mortality and which have performed the required procedures to maintain the vessel and the gear in good working condition.
9. Recommend to all such governments actions to be taken in order to ensure compliance with the Resolution of the 50th Meeting or this Agreement by any nation not a party to either that is conducting fishing operations in a manner inconsistent with the Resolution of the 50th Meeting or this Agreement.
10. Publish an Annual Report which would:
  - a) Review the operation of the program and recommend actions to the such governments for modifications and updates in enforcement consistent with the goals of the Resolution of the 50th Meeting or this Agreement.
  - b) Summarize all the identified infractions and the action taken.

### III. COMPOSITION OF THE PANEL

The Review Panel will be composed of nine members, five of whom shall be representatives of resolving governments with vessels participating in the fishery. The remaining members of the Panel shall consist of two representatives of environmental organizations and two representatives of the tuna-fishing industry, to be selected by government representatives on the Panel. The five government representatives shall be voting members; the four non-governmental representatives shall be non-voting members. The IATTC will provide a non-voting Secretariat for the Panel.

### IV. OPERATION OF THE PANEL

The Panel shall adopt rules of procedure for its operations at its first meeting. After each meeting a report of infractions and related matters shall be made available to the public. The Panel will prepare an annual report on its activities. The proceedings of the Panel will not be public, and its members shall not divulge any information concerning individual vessels and operators derived from review forms or from the proceedings of the Panel. Information concerning compliance with the terms of the Agreement will be made public by means of the Panel's Reports.

### Appendix III.

Protective measures for each individual stock of dolphins should be taken as follows:

- i) If the incidental mortality of any stock exceeds 2% of the most current estimate of absolute abundance (CEAA), but is less than 4% of the CEAA of that stock, a warning will be issued to all fleets;
- ii) If the incidental mortality of any stock exceeds 2% of the CEAA but is less than 4% in two consecutive years, all sets on that stock, whether in herds which contain only individuals of that stock or in mixed herds, would be banned for a year.
- iii) If the incidental mortality of any stock reaches or exceeds 4% of the CEAA in a given year, a complete ban on setting on that stock would be imposed for the following year.
- iv) If the incidental mortality of any stock exceeds 6% of the CEAA, the ban on sets would remain in force for three years; for 8%, four years; and for 10%, five years.

It is proposed that the CEAA for the dolphin stocks of the EPO presented by Wade and Gerrodette to the IWC in 1992, based on NMFS research vessel data for the period 1986-1990, be used for all these calculations until the signatory nations agree on an updated set of figures. Such updates could result from the analysis of data from future research cruises, from calibration of indices of relative abundance with estimates of absolute abundance, or from improvements in the analytical methodology applied to currently available data. The 2% value for maximum net annual recruitment should also be changed if better estimates become available.

#### BACKGROUND

In recent years, incidental mortality for all stocks of dolphins involved in the fishery has been decreasing, and as of 1991 the mortality rates of all stocks are less than 1% of the most recent estimates of their average absolute abundances for 1986-1990. The most conservative estimate of the maximum net annual recruitment rate for dolphins is 2%, so incidental mortality rates below this level should not jeopardize the recovery of the stocks.

The incidental mortalities of the various stocks of dolphins in the EPO in 1991 (based on mortality per set) were as follows:

Stock	Population abundance <sup>1</sup>	Incidental mortality	Percent mortality
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All spotted (except coastal)	2,037,400	13,991	0.69
Eastern spinner	632,700	5,879	0.93
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Northern common	477,000	161	0.03
Central common	415,600	3,182	0.77
Southern common	2,211,500	115	0.01
Other dolphins	2,729,100	990	0.04
All	9,523,400	27,292	0.29

<sup>1</sup> Wade and Gerrodette (submitted to the International Whaling Commission, 1992)

#### Appendix IV.

#### THE SCIENTIFIC ADVISORY BOARD

The Inter-American Tropical Tuna Commission, at its Special Meeting held in La Jolla, California, on April 21-23, 1992, reached agreement on a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the EPO fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year.

Based on a recommendation from the IATTC scientific staff, the participating governments approve the establishment of a Scientific Advisory Board of technical specialists to assist the Director in matters regarding research to (a) modify current purse-seine technology to make it less likely to cause dolphin mortality and (b) seek alternative means of capturing large yellowfin tuna.

The functions and responsibilities of the Board shall be to:

- 1) Meet at least once each year.
- 2) Review plans, proposals, and programs of the Commission to seek to meet objectives (1) and (2), as noted in paragraph 1 of this document.
- 3) Provide advice to the Director concerning the design, facilitation, and guidance of research to achieve objectives (1) and (2) noted in Paragraph 1 of this document.
- 4) Assist the Director in locating sources of funding to conduct such research.

- 5) Recommend to the Director any other measures and actions that could be taken to facilitate achieving the objectives of the dolphin conservation program defined in the Resolution of the Special Meeting of the IATTC held in La Jolla on April 21-23, 1992.

The Board will consist of no more than 10 members, selected from the international community of scientists, fishing gear experts, the fishing industry, and environmentalists. The members will be selected by the Director on the basis of their technical expertise, and subject to approval by the Commission and the participating governments.

The secretariat for the Board will be provided by the IATTC.

**APPENDIX 11, STATEMENT OF MR. ALEJANDRO LONDOÑO  
OF BEHALF OF COLOMBIA**

The delegation of Colombia expresses its thanks to the Inter-American Tropical Tuna Commission for the invitation to participate in the IATTC meeting.

We take this opportunity to recognize that the IATTC's research over the last 40 years establishes the fact that it is the organization best able to carry out research on yellowfin tuna and related species in the eastern Pacific Ocean and to make recommendations to maintain these at levels which will produce the maximum sustainable yields.

By the same token, we identify the IATTC as the most appropriate organization for determining the measures necessary for the protection of the marine mammals associated with the fishery for tunas in the eastern Pacific Ocean.

**APPENDIX 12, STATEMENT OF MS. MINETTE JOHNSON ON BEHALF  
OF THE CENTER FOR MARINE CONSERVATION**

I shall make this short as we are all anxious to finish. My name is Minette Johnson and I am speaking for the Center for Marine Conservation (CMC), an environmental organization with 100,000 members in the United States.

On behalf of the Center for Marine Conservation we applaud the efforts of the delegates and the IATTC for their hard work on this resolution. We feel that the advisory boards that have been created form an integral component of any scientific management plan, and we look forward to participating in them. Also, the research programs proposed first in the April resolution, specifically those aimed at finding alternatives to setting on dolphins and the efforts to attain 100% observer coverage, are commendable. However, based on current reduction trends, we firmly believe that the proposed mortality reduction is not aggressive enough. And it is for this reason that we are supporting the bill introduced yesterday, with bipartisan backing, by Congressman Gerry Studds (D-MA). In addition to creating a shorter time frame for reducing dolphin mortality, this bill provides an opportunity for comprehensive management of the ecosystem. It takes into account not only the status of the dolphin populations but also the impacts of the moratorium on the tuna fishery and tuna stocks and ecosystem damage due to unsustainable bycatch. Consequently, CMC endorses the Studds bill and encourages other nations here to join us in supporting its provisions and time frame.



MINUTES OF THE 51st MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

Port Vila, Vanuatu  
June 8-10, 1993

Agenda Item 1 - Opening of the Meeting

The 51st Meeting of the Inter-American Tropical Tuna Commission (IATTC) was called to order by the Chairman, Commissioner Richard Carpenter of Vanuatu, at 10:15 a.m. on Tuesday, June 8, 1993, at the Le Lagon Hotel in Port Vila, Vanuatu. In attendance were all member governments of the IATTC, with the exception of Nicaragua, and observers from six nations, four international organizations, and four non-governmental organizations (NGOs). The attendees are listed in Appendix I.

A keynote address was given by the Minister of Finance of Vanuatu, Mr. Willie Jimmy. The text of his speech is attached as Appendix II.

Agenda Item 2 - Adoption of Agenda

The Chairman called for modifications to the Agenda (Appendix III). None were proposed, and it was adopted unanimously as presented.

The Chairman suggested a work schedule for the meeting of 8 a.m. to 5:30 p.m., with a lunch break from 12 to 1:30 p.m. This was agreed to by all members.

The Vanuatu delegation announced that the Minister of Finance would host a cocktail party the next day, Wednesday, June 9, from 6:30 to 8:30 p.m.

Agenda Item 3 - Review of Current Tuna Research

The Chairman asked Dr. James Joseph, Director of the IATTC, to make this presentation.

Dr. Joseph explained that this agenda item is customarily presented to the Commissioners in order to keep them apprised of the research being undertaken by the IATTC staff and to seek their advice and comments. He explained that, due to the heavy work load scheduled for the meeting and the limited time available, only a brief review of some of the topics would be given.

In 1992 the IATTC research program was in its 42nd year. The studies necessary to provide scientific advice to the governments concerning the conservation and management of the tuna and tuna-like species of the eastern Pacific Ocean require a broad range of research and expertise in a wide variety of disciplines. To this end the scientific staff of the Commission is recruited internationally, and currently about 10 nations are represented.

The Commission maintains offices and laboratories in Ecuador, Mexico, Panama, Puerto Rico, the United States, and Venezuela, where basic data on the biology of the tunas and tuna-like fishes and the effects of exploiting them are collected and analyzed.

In 1976 the Commission's responsibilities were expanded to include the scientific study and management of the dolphin stocks taken incidentally in the fishery for tunas.

Dr. Joseph described briefly some of the research on billfishes in which staff members have been involved, and in particular a cooperative study with Japanese colleagues from the National Research Institute of Far Seas Fisheries (NRIFSF). This study, in which a Pacific-wide analysis of the ecology of marlins, sailfish and spearfish will be carried out, is in the early stages of development, and effort is being concentrated in organizing the fishery and oceanographic data bases. He also discussed a second billfish study, in which striped marlin were sampled from four sites within the Pacific Ocean and the distribution of mitochondrial DNA (mtDNA) genotypes was examined. Preliminary results indicated differences in the genotypes among the four sample sites, particularly between those in the eastern and western Pacific.

Turning to tuna research, Dr. Joseph discussed research aimed at describing the relationship between spawning biomass and recruits and understanding the underlying mechanisms that control it, and presented the results to date of a long-term study to understand the size-specific reproductive characteristics of the yellowfin population in the eastern Pacific. These results show that reproductively-active yellowfin are found during all months of the year between 20°N and the equator, and that spawning is seasonal north and south of these limits. It was also shown that most yellowfin less than about 20 pounds in weight are sexually immature, and that by the time they grow to 50 pounds half of them are mature. Once complete, this information will be used to estimate the spawning biomass and, together with estimates of recruitment, to look for relationships between the two variables.

Dr. Joseph next reviewed studies being conducted at the IATTC's Achotines Laboratory in Panama to understand the mechanisms controlling the growth and survival of post-larval tunas. He also mentioned that the Commission staff has been collaborating with scientists from the Japan Sea Farming Association and the Japanese Overseas Fisheries Cooperation Foundation on early life history studies of tunas both in Japan and at Achotines.

Dr. Joseph said that Dr. Martín Hall, Chief Scientist of the IATTC Tuna-Dolphin Program, would be presenting an extensive review of dolphin research under Agenda Item 6, but briefly mentioned two projects which might prove useful in finding alternative ways of catching large yellowfin tuna without encircling dolphins. These were a study of the food habits of tunas and dolphins, and a study of the oceanographic features associated with the capture of large yellowfin tuna not associated with either dolphins or floating objects. The former study investigates a possible reason for the bond that exists between the tunas and the dolphins: if the nature of the bond can be identified, then it may be possible to use this information to separate the tunas from the dolphins before they are captured. The latter study has the objective of locating schools of large yellowfin tuna that are not associated with dolphins by identifying certain oceanographic features that may be associated with such schools.

Dr. Joseph concluded his presentation by apologizing for the brevity of the review, but recalled once again the time constraints.

The Chairman called for questions or remarks from the governments.

Dr. Suda of Japan asked if Commission scientists had included blue marlin in their mtDNA studies. Dr. Joseph replied that studies of blue marlin had been conducted in which samples from both the

Atlantic and the Pacific Oceans were examined. The results showed no differences between samples of blue marlin from within the Pacific Ocean but a high degree of difference between samples from the two oceans, which suggests limited gene flow between the two oceans.

Commissioner Saito of Japan, referring to the figure which showed that 50 percent of yellowfin tuna were sexually mature at a length of 103 cm, wanted to know the weight and age of the 103-cm fish. Dr. Joseph replied about 25 kg, or 50 pounds, and 2.5 to 3 years of age.

#### Agenda Items 4 and 5 - The 1992 Fishing Year and Status of Tuna Stocks

The Chairman, noting the similarity of the two agenda items, asked Dr. Joseph to present them together.

Dr. Joseph began his presentation by noting that Background Papers 1 and 2, distributed to the attendees at the meeting, dealt with these subjects in detail, and that he would therefore only touch on some of the principal points presented in these documents.

During 1992 and so far in 1993 the total capacity of the international fleet operating in the eastern Pacific Ocean had changed very little: it stood at about 110 thousand short tons, of which about 65 thousand tons, on average, was at sea at any given time. Current information indicated that the 1992 catch of 261 thousand tons of yellowfin and 94 thousand tons of skipjack would probably be approximately the same in 1993. In both years Mexico was the leading producer of both yellowfin and skipjack, accounting for about 40 percent of the total catch, followed by Venezuela, Vanuatu, Ecuador, and the U.S.A., in that order.

In both 1992 and 1993, about 65 percent of the total catch of yellowfin was taken in association with dolphins; the remainder was caught in schools associated with floating objects or in unassociated schools.

Dr. Joseph next discussed the status of the yellowfin stock, recalling that from 1966 through 1979 annual limits on the total harvest of yellowfin were implemented. These limits were conservative, due to the constant seaward expansion of the fishery, and were precautionary in the sense that they were usually set at a level lower than the stock could probably support, since the expanding fishery was harvesting an ever-larger portion of the stock. Provisions were made to allow the staff a degree of discretion in adjusting the limits in response to current events in the fishery.

In the late 1970s, due to changing political circumstances, the nations of the region could no longer agree on implementing the recommended catch limits, and the resulting unrestricted fishing led to a sharp decline in the abundance and catches of yellowfin. As a result vessels began to leave the fishery, and a strong El Niño event in 1982 and 1983, which made the already reduced stock of yellowfin less available to the fishery, resulted in many more vessels either leaving to fish in other areas or being idled. From 1981 through 1985 fishing effort was very low, allowing the stock to recover. In 1983, as the El Niño subsided and the stock grew, the Commission staff predicted that yellowfin fishing would improve, which it duly did. By 1986 many vessels had returned to the fishery, and the fishing was even better than expected: annual catches of yellowfin exceeded 300 thousand tons.

The staff's analyses offer two explanations for this better-than-expected fishing. The first was that the fishery concentrated on larger yellowfin. During the period of overfishing in the late 1970s the

average size of the fish in the catch fell from about 25 pounds to about 11 pounds, but with the greater abundance of large fish in 1984-1985 it rose again to about 30 pounds. This increased the yield per recruit by about 30 percent, thus resulting in a 30 percent higher yield from the same number of fish. The larger yellowfin were mostly caught in association with dolphins, since they are seldom found associated with floating objects or in unassociated schools.

The second reason for the increased yield was a substantial increase in the recruitment of young fish into the fishable population. Although the reason for this increase is not clearly understood, it accounted for an additional 25 to 30 percent increase in the catch.

Analyses of both production models and age-structured models indicate that if recruitment stays constant at current levels and the average size of the fish in the catch does not change, the population of yellowfin in the eastern Pacific Ocean can on the average sustain maximum catches of about 315 to 325 thousand tons. At present the fleet in the eastern Pacific is capable of taking about 250 to 300 thousand tons of yellowfin.

If the average size of the fish in the catch decreases or recruitment is reduced, the potential catch will also fall. Recruitment appears to be independent of the fishery, and is currently impossible to predict, but the average size of the fish in the catch can be altered by changing the focus of the fishery. Large fish associate with dolphins, small fish do not. As long as the proportion of fish caught in association with dolphins (currently 60-70%) does not change, yield per recruit will stay high. If this mode of fishing is curtailed and effort is switched to unassociated schools or fish associated with floating objects, the average size of the fish will decrease to about 10 pounds and yield per recruit will fall substantially. This will result in a 30- to 60-percent decrease in the total yield of yellowfin.

Because of the uncertainties, the staff recommended a conservative catch limit of 250 thousand short tons, but with the possibility of increasing this limit by 100 thousand tons in four increments of 25 thousand tons each.

Upon completion of Dr. Joseph's presentation on yellowfin, Commissioner Nanne of Costa Rica referred to recent reports that the modes of fishing in the eastern Pacific which did not involve dolphins resulted in a large bycatch of small tunas and other species of fish, amounting in some cases to as much as 50 percent of the total catch, and that this bycatch was returned to the sea dead. He wanted to know if this was true and, if so, what the ecological consequences would be.

Dr. Joseph replied that Dr. Hall would be covering the matter in detail, but that he would provide a brief reply. He said that IATTC scientists have estimated that in sets on tunas associated with floating objects the bycatch of tuna species amounts to between about 18 and 30 percent of the total catch. If fishing for tunas associated with dolphins were prohibited and the fleet turned to fishing on floating objects, the total catch of yellowfin might be as much as 100 to 200 thousand tons, which would generate a tuna bycatch of about 20 to 50 thousand tons. If half of this amount were small yellowfin, each weighing approximately 1 to 3 pounds, this would represent some 20 to 50 million small fish that would not be recruited to the population. Since total recruitment is estimated to be about 90 million fish, this could have a serious effect on the yellowfin population. Dr. Joseph further mentioned that this bycatch would include many other species in the ecosystem, but he could not predict what effect this would have on either the yellowfin or the dolphins.

Dr. Joseph then explained that normally a review of the other species of tunas taken in the eastern Pacific, skipjack, bigeye, and bluefin, would be presented, but that because of time constraints he would make only a few brief comments on skipjack and bluefin. He referred the attendees to Background Papers 4 and 5, which covered these species in detail and which had been distributed at the meeting.

Dr. Joseph noted that the 1990 world catch of skipjack, 1.6 million tons, accounted for about 50 percent of the catch of all species of tunas. The Pacific Ocean produces 1.1 million tons of skipjack, most of it from western Pacific; less than 10 percent of that amount is caught in the eastern Pacific. It is likely that catches of this species can be increased, but how much is uncertain.

The stock of skipjack which supports the fishery in the eastern Pacific is not resident in the area. Very little spawning of skipjack occurs in the eastern Pacific; most of the fish migrate from the west and spend only a few months in the region. Scientific evidence suggests that the stock is not fully exploited and that, on the average, catches in the eastern Pacific can be increased.

Turning to bluefin tuna, Dr. Joseph explained that the stock fished in the eastern Pacific is part of the same stock fished in the western Pacific. He noted that during the last decade catches had decreased substantially in both areas, particularly the former. He mentioned three important points: (1) the low catches in the eastern Pacific were due in a large part to reduced effort; (2) recruitment of young fish to the Japanese fishery did not appear to be decreasing; and (3) catches of small fish were high and fishing mortality of fish of the smaller sizes was perhaps increasing.

He mentioned that scientists from the IATTC and the NRIFSF in Japan had convened three working groups over the past several years to study the fishery for bluefin tuna and were planning a fourth meeting in 1994. Preliminary analyses of the results of these meetings indicate that if small bluefin could be protected, the yield of this species Pacific-wide would be more than doubled. The staff would probably have recommendations to make concerning this matter at the 1994 meeting of the Commission.

#### Agenda Item 6 - Review of International Dolphin Program and Extension Programs

Dr. Joseph introduced this subject by outlining the background to the IATTC's dolphin program. He noted that during the 1960s and early 1970s most of the vessels which fished in the eastern Pacific Ocean for tunas associated with dolphins flew the U.S. flag, but that during the mid-1970s more nations became involved in the fishery, and the problem of dolphin mortality in the fishery, and the solution to it, thus became international. In 1976 the Commission decided to undertake a program to study the problem and to seek to reduce the mortality. This program, which involved placing observers on tuna vessels to gather data and identifying, developing and transferring to the international fleet equipment and techniques effective in reducing dolphin mortality, did not begin until 1980, and did not include all national fleets involved in the fishery until 1986.

He then introduced Dr. Martin Hall, Chief Scientist of the IATTC Tuna-Dolphin Program, to review the program.

Dr. Hall began by describing the activities of the Commission's tuna-dolphin program. These include the international observer program, estimating the incidental mortality of dolphins in the fishery, analyses of the causes of mortality, extension work with the international fleet on procedures to reduce

mortality, the study of trends in dolphin abundance, and other research on the biology and ecology of dolphins.

In 1992 IATTC observers covered approximately 70 percent of all trips by purse-seine vessels capable of fishing for tunas associated with dolphins in the eastern Pacific Ocean, and the U.S. and Mexican national programs covered the remainder. Coverage was very close to 100 percent; the exceptions were two trips which started early in 1992 and which were not accompanied by observers.

Dr. Hall pointed out that the incidental mortality of dolphins in the fishery in 1992 was about 45 percent lower than in 1991. The estimated mortality (15,470 dolphins using mortality per set, and 15,922 using mortality per ton) was almost 90 percent lower than the level of 133,000 dolphins estimated for 1986, the first year of the full IATTC program. In both 1986 and 1992 the number of sets on dolphins was around 10,000, so the reduction was the result of improvements in the performance of the fishermen.

Dr. Hall said that it appeared that another substantial reduction could be expected in 1993, judging by the first five months of the year; the average mortality per set in 1993 was about one-third of the 1992 level, and apparently effort was not increasing. He said it was too early to make a reliable forecast, but mortality could be as low as 4,000 to 8,000 dolphins.

Turning to the factors affecting dolphin mortality, Dr. Hall said that the program's analyses focused on the problems that bring about sets with high mortality, which include strong currents, equipment malfunctions, and net malformations. The fishermen are overcoming these problems by reducing their incidence (for example, net canopies occurred in 24.9 percent of sets in 1986, 9.7 percent in 1992, and in only 8.3 percent of the sets observed to date in 1993) and/or by improving their response to them when they occurred (major malfunctions occurred in 9.5 percent of sets in 1986 and 9.6 percent in 1993, but the mortality per set in those sets has fallen from 24.7 dolphins to 1.0). They are also abiding by new regulations which contribute to reducing mortality; for example, mortality due to sacking-up of dolphins had practically disappeared in recent years.

In summary, Dr. Hall noted that the level of motivation of the fishermen continued at a high level, and their performance had improved steadily in 1992 and to date in 1993. The individual vessel limits set by the International Dolphin Conservation Program (IDCP) had had a considerable impact, and had reinforced the trend towards increasing awareness of and responsiveness to the problem. The U.S. and Mexican national programs and the industry programs of Mexico, the United States, and Venezuela had all contributed towards the achievement of the common goals.

With regard to trends in dolphin abundance, Dr. Hall said that the data for 1992 showed either stability or hints of increasing trends compared to 1991. The only stock that had shown a decline in recent years was the northern stock of the common dolphin. This was perplexing in view of very low mortality levels for the stock in recent years, but could probably be explained by an increase in migration by the dolphins towards areas north of their normal habitat, an increase that had also been detected for the same period in studies conducted by the U.S. National Marine Fisheries Service (NMFS) for the California area. The stocks that receive the greatest portion of the fishing effort, northeastern spotted and eastern spinner dolphins, showed very little change.

Dr. Hall stated that, in order to evaluate the impact of the incidental mortality in the fishery, it was necessary to relate this mortality to the abundance of the dolphin populations. Using the estimates of

total abundance produced by the NMFS for 1986-1990 and the most recent estimates of mortality, the stock with the highest level of incidental mortality was the northeastern spotted dolphin, with 0.63 percent. The levels for the other stocks ranged from 0.003 percent to 0.44 percent. As a conservative estimate of the net recruitment rate for dolphins is about 2 percent, it was clear from these figures that the reductions in incidental mortality should lead to increases or faster rates of increase for all stocks.

Dr. Hall went on to talk about the development of research projects aimed at improving the efficiency of the purse-seining operation or finding alternative ways of fishing that would catch large yellowfin tuna without involving dolphins. Many projects along these two lines were discussed at a recent meeting of gear experts, fishing captains, and dolphin and tuna biologists, held in preparation for the organization of the Scientific Advisory Board of the IDCP. Dr. Hall explained that these projects were being evaluated or developed in conjunction with the NMFS, with whom the IATTC staff were cooperating very closely, and that the Mexican national dolphin program would be joining in the development of some projects later in the year. Fishing captains from all the national fleets were also contributing their knowledge and experience to the assessment of these projects, and in fact many of the research initiatives had been suggested by them. Dr. Hall said that this cooperation should help accelerate the research process, and briefly described several proposals for gear modifications, detection systems capable of locating tunas not associated with dolphins, and fish-aggregating devices.

Dr. Hall discussed the results of a recent research cruise, organized jointly by the NMFS and the IATTC and with the participation of the University of Hawaii, in which attempts were made to follow simultaneously individual tunas and dolphins marked with acoustic or radio tags. Even though the main objective was not achieved, the project helped solve many methodological problems and also provided valuable information on several aspects of dolphin behavior, which could contribute to the understanding of the basis for the association of tunas and dolphins and perhaps to the development of new ways of fishing. Of particular interest were the dolphins' dive patterns, which showed that dolphins spend a significant amount of time swimming just above the thermocline, that they dive deeply at night, perhaps to feed on prey associated with the deep scattering layer, and that they remain within one or two fathoms of the surface while being chased prior to a set. Dr. Hall said that further analyses were under way, and a second attempt at the experiment was being planned.

Finally, Dr. Hall discussed some ecological aspects of the different methods for fishing tunas currently used. He said that of those methods which produce large volumes of catch, gillnets were likely to have bycatch problems and trawls had never been used in the eastern Pacific. He compared the three main modes of fishing with purse-seines in use today (on dolphins, on floating objects, and on unassociated schools of tunas) from the point of view of the rational utilization of the target resource, in this case yellowfin tuna, and of the impact on other components of the ecosystem. With regard to the first point, Dr. Hall stated that fishing on dolphins catches yellowfin at sizes close to the optimum from the point of view of the yield per recruit obtainable from the fishery, and at sizes usually larger than the average length at sexual maturity. Because the fish tend to be large, only 1 percent of the catch is discarded, compared to between 18 and 30 percent for sets on floating objects, and 6 to 9 percent for sets on unassociated schools. Fishing on dolphins was therefore clearly the best way of utilizing the yellowfin resource. With regard to the second point, Dr. Hall pointed out that fishing on dolphins caused a bycatch of dolphins, but that fishing on floating objects usually resulted in high bycatches of other species such as mahi-mahi, sharks, rays, wahoos, and other fish. If the fishery were to switch from fishing on dolphins to fishing on floating objects, the easiest alternative available, the bycatch of dolphins would be almost eliminated, but at the expense of a significant rise in the incidental mortality of all these other species. Dr.

Hall showed a table illustrating the comparative costs of replacing sets on dolphins with sets on floating objects, and explained that the values were obtained by computing the average mortality per set for the different species and subtracting one from the other. The values for sets on floating objects were based on more than 750 observed sets, whereas those for sets on dolphins were derived from a much smaller database, which Dr. Hall said would be expanded considerably in the near future. He noted that the table simply highlighted the choices that would have to be made and the difficulties in trying to arrive at an ecologically sound solution.

In conclusion, Dr. Hall stressed that the complexity of the problem required a much better understanding of the functioning of the ecosystem before the consequences of policy changes could be reliably evaluated. There were clearly two problems to be addressed, and the solution to one should not be at the expense of the other.

At the conclusion of Dr. Hall's presentation the Chairman opened the floor to questions.

Commissioner Herrera of Venezuela asked if there were any data available on the mortality of dolphins in other fisheries. In reply, Dr. Hall quoted recent reports of mortalities of one dolphin per 2.2 tons of tuna captured in the purse-seine fishery for tunas near the Philippines, about 1 dolphin per 2.8 tons of tuna captured in the gillnet fishery near the Bay of Biscay, and about one dolphin per 4.4 tons of tunas and other fishes of various types captured in the Sri Lanka area, and compared these figures to the mortality of one dolphin per 50 tons of yellowfin tuna captured in the eastern Pacific.

Commissioner Nanne of Costa Rica asked if this information on incidental mortality could be distributed to the Commissioners. Mr. Damaso Luna of Mexico asked if there was information available on dolphin mortality in any of the major high-seas purse-seine fisheries for tunas in other areas such as the western Pacific, eastern Atlantic, or western Indian Ocean. Dr. Hall replied that there was some, but that the data were limited because there is very little observer coverage of these fisheries, and added that some reports reviewing this information were available.

Mr. Luna also asked about the situation concerning harbor porpoise in the Gulf of Maine in the United States. Dr. Hall replied that he did not have the exact numbers to hand, but he was certain that the mortality as a proportion of population size was much higher than that of the dolphins in the tuna fishery in the eastern Pacific.

In response to a suggestion that dolphins may be taken by purse-seine vessels in the Atlantic Ocean, Ms. Isabel Revenga of Spain noted that EEC vessels are prohibited from setting their nets around schools of tuna associated with dolphins.

#### Agenda Item 7 - Review of International Dolphin Conservation Program

At the end of Dr. Hall's presentation the Chairman asked Dr. Joseph to review the progress of the International Dolphin Conservation Program (IDCP) established by the resolution of the 50th IATTC Meeting, held in June 1992 in La Jolla, California, and by the Agreement of the Intergovernmental Meeting (IGM) held at the same time.

Dr. Joseph pointed out that the International Review Panel (IRP), established by the Agreement to develop means of implementing the IDCP and monitor compliance, operated under the authority of that



Agreement, but since he served as technical secretary to the Panel he would make its report to the IATTC rather than the IGM. Dr. Joseph noted that the IRP had met four times: an *ad hoc* meeting on June 19, 1992, chaired by Richard Carpenter of Vanuatu; on October 15 and 16, 1992, chaired by Traci Romine, Greenpeace International; on January 27-29, 1993, chaired by Dr. Hector López, FUDENA; and from May 31 to June 2, 1993, chaired by Dr. Francisco Herrera of Venezuela. He also noted that the Scientific Advisory Board had held its first meeting in April, 1993.

Dr. Joseph explained that the schedule of dolphin mortality limits (DMLs) set up by the Agreement was now in operation, and that so far the vessels fishing under those limits had kept mortalities to low levels and were doing much better than expected in that respect. In fact, total mortality in the fishery in 1992, 15,470 dolphins, had been lower than the overall DML of 19,500 allowed for 1993 by the schedule.

At the October 1992 meeting of the IRP the overall DML of 19,500 for 1993 was divided among 106 qualified vessels, each of which received an individual DML of 183. At the June 1993 IRP meeting these limits were reviewed, and it was reported by the Secretariat that 58 vessels had fished in the eastern Pacific for tunas in association with dolphins during the first five months of 1993. Of the remaining 48 vessels assigned DMLs, 20 were inactive, 17 had fished but not on dolphins, and 11 which were fishing in the western Pacific when they were assigned DMLs in 1992 had not entered the eastern Pacific during 1993. The IRP granted DMLs of 91 dolphins each to 8 Ecuadorean vessels and 1 Mexican vessel that had requested them for the remainder of the year, and developed criteria for assigning DMLs for 1994.

Dr. Joseph reported that the IRP had also developed a set of infractions and sanctions (Appendix IV), intended to standardize and harmonize efforts to ensure compliance with the objectives of the Agreement, which they recommended to governments for consideration.

He next described the efforts of the IRP to develop multinational measures to ensure compliance with the Agreement by all nations involved in the fishery, whether party to the Agreement or not. Possible measures included diplomatic actions, public opinion actions, operational restrictions, and economic sanctions. He also mentioned that the IRP urged nations to take action to prevent vessels from changing flags in order to avoid the restrictions imposed by the Agreement.

Dr. Joseph explained that a major share of the IRP's work had consisted of reviewing the activities of individual vessels in order to monitor their compliance with the Agreement. This involved examining reports on the vessels' activities prepared by the IATTC and the Mexican national program from the data collected by observers aboard the vessels. Any potential infraction is reported to the flag nation, along with supplemental explanatory information, and the flag nation is invited to comment to the Panel on what action they might take or have taken. This procedure touches on the matter of confidentiality of data, and Dr. Joseph pointed out that the IATTC cannot provide data on the activities of individual vessels on a particular fishing trip to anyone, including the IRP, without the written consent of the owner and captain of the vessel. Currently, such consent has been obtained for nearly all trips.

Next, Dr. Joseph reported that the IRP discussed the fact that total dolphin mortality in 1992 was lower than the 1993 DML, and that information to date indicated that the mortality in 1993 would be substantially lower than that of 1992. Some members of the IRP believed that the annual DMLs for 1994-1999 should be adjusted to reflect the better-than-expected performance of the fleet, but no agreement was reached on this issue and it was referred to the present meetings for consideration and appropriate

action. Also referred to the IGM was the proposal to alter the IRP's Rules of Procedure to allow alternate representatives of NGOs and industry on the Panel.

Dr. Joseph noted there was general agreement among the members of the IRP on the desirability of a supplemental instrument on compliance, to add greater credibility and force to the Agreement. The Plenary was requested by the IRP to pursue this possibility, and an early date should be set to treat this matter.

Finally, Dr. Joseph mentioned two further points discussed by the IRP, that the Agreement and the progress of the IDCP should be given wide publicity by the governments, and that some environmental organizations had been spreading false information about the IDCP's achievements, and in particular casting doubt on the reliability of information provided by the IATTC staff concerning the program.

Commissioner Herrera of Venezuela mentioned that one of these groups had been encouraged to attend IATTC meetings to evaluate the program for themselves, but that no reply had been received.

At the conclusion of these discussions the Chairman suggested recessing the IATTC meeting and convening an intergovernmental meeting, to start the following day, in order to discuss the various issues raised by Dr. Joseph concerning the IDCP and the matters resulting from the work of the IRP. After some discussion it was agreed to continue the IATTC meeting the next day.

The meeting was recessed at 6:15 p.m.

The meeting reconvened at 8:30 a.m. on Wednesday, June 9. The Chairman indicated that one of the delegations wished to discuss Agenda Item 9 before going into an intergovernmental meeting, a request which was unanimously approved.

#### Agenda Item 9 - Recommended Research Program and Budget for FY 1994-1995

The Chairman asked Dr. Joseph to present the budget for FY 1994-1995.

Dr. Joseph started by noting that there were two parts to the budget, the regular IATTC budget and the supplemental budget for an expanded dolphin research program. He explained that the supplemental budget had been approved at the 1992 IATTC meeting in the amount of US\$ 4,520,000, but that virtually none of these funds had been received, and that he was attaching a copy of this budget to the regular budget as a reminder.

Turning to the regular budget, he noted that it was the same as the budget approved the previous year but with an increase of US\$ 122,250 (2.5%) to allow for inflation. He called attention to the fact that in recent years the approved budget had never been completely funded by the governments, and that only about 78 percent of what was approved was received. This was illustrated by the following table:

FY	Approved	Received	Percentage of approved budget received
1988-89	3,525,000	2,846,000	80
1989-90	3,525,000	3,049,000	86
1990-91	3,706,020	3,204,882	86
1991-92	4,403,307	3,243,263	74
1992-93	4,423,824	3,016,731	68
1993-94	4,743,000		
1994-95	4,865,250		

Dr. Joseph expressed concern over the fact that the amount of money the IATTC was receiving through the budget was decreasing while its responsibilities, particularly with respect to dolphins, were increasing. He noted that it might very soon be impossible for the staff to carry out all of their assigned tasks.

The Chairman asked for comments.

Commissioner Beasley of the United States moved to approve the budget as presented, but said that Mr. Brian Hallman, of the U.S. Department of State, wished to comment on this matter.

Mr. Hallman noted that his government had regularly paid 80 to 90 percent of the Commission's budget, and had been happy to do so as it ensured the viability of the tuna stocks, which were of great importance to the United States. He pointed out, however, that the IATTC Convention defines the formula for calculating contributions, and that these are proportional to the member's utilization of the tuna from the eastern Pacific. Since the U.S. market for tuna is *de facto* "dolphin-safe," U.S. utilization, as defined by the IATTC, is eroding, and therefore the U.S. contribution to the budget will necessarily likewise diminish, in accordance with the Convention. So far this had not been a crisis, as the statistics on utilization usually lag several years behind the budget year, but U.S. legal obligations had nonetheless changed. The United States might want to continue as in the past, but the legal framework was no longer there. Mr. Hallman stated that a way must be found to maintain the IATTC program, as it is extremely important, and that those nations that fish in the eastern Pacific and enjoy the benefits of the Commission's work should join the IATTC and contribute financially to its work, or if they chose not to join they should consider contributing financially. He added that this matter should be dealt with as a separate item on the agenda of a future Commission meeting, and noted further that his statement did not represent a shift in U.S. policy regarding support for the IATTC and its programs, but was rather the result of technical and legal matters concerning the Convention.

As there were no other comments, the Chairman called for approval of the budget, which was unanimously approved.

The Chairman then asked for any further comments on Agenda Item 7, which remained open.

## Agenda Item 7 - Review of International Dolphin Conservation Program

Commissioner Saito of Japan referred to the recommendations from the IRP discussed by Dr. Joseph, noting that certain elements in the IDCP caused his government great concern. He recalled that the Japanese representatives at the meeting in La Jolla the previous year had expressed their concern over the initiative within the Commission to expand the dolphin program, particularly since Japan had no purse-seine fleet fishing in the area. They had requested then that this issue be kept separate from the IATTC and be dealt with in the IGM, but in the spirit of cooperation had agreed to approve the IATTC resolution establishing the IDCP.

Looking now at the work of the IRP and its recommendations, it was easy to understand why Japan had difficulty in approving the IATTC resolution. Many elements exceed the objectives of the IATTC as defined in the Convention, and indeed some elements in the IDCP go beyond the functions of the IATTC, notably the matter of infractions and sanctions and the proposed measures against nations which failed to comply with the IDCP.

Commissioner Saito pointed out that the purpose of the Convention was clearly stated in the preamble: it deals with yellowfin and skipjack tuna and other species of fish taken in the eastern Pacific. Matters such as penalties, infractions, and sanctions go beyond the Convention, and should be dealt with by sovereign states in their national legislation. These issues are quite foreign to international fisheries conventions, and therefore Japan could not accept these recommendations.

Commissioner Saito suggested that perhaps the appropriate approach might be to establish another legal instrument outside the IATTC that requires legislative ratification. He went on to comment on a part of Dr. Hall's presentation from which the ecological cost of saving one dolphin could be deduced, and asked that the table be distributed (Appendix V).

Commissioner Beasley of the United States called attention to the fact that in 1976 the Commission agreed to broaden its responsibilities to include dolphins, and in June of 1992 approved a resolution putting into effect the IDCP, establishing DMLs, the IRP, and a Scientific Advisory Board. In the view of the U.S. government, the Panel is carrying out the duties assigned to it by the Resolution of the IATTC and the Agreement of the IGM.

After some discussion of whether to recess the IATTC meeting, it was agreed to do so and to convene an intergovernmental meeting.

At this point Dr. Joseph asked the Chairman if he could discuss the matter of confidentiality and present a draft resolution to the Commissioners on this subject. He went on to explain that the IATTC Convention requires that the Commission maintain data on individual vessels confidential. The Commission's policy has always been to make such confidential data available to governments and institutions if authorized to do so in writing by both the owner of the vessel and the captain during the fishing trip in question. Under the IDCP data on the fishing activity of vessels carrying an observer are required by governments in order to monitor compliance with the program. In nearly all cases releases are obtained from owners and captains, thereby allowing the data to be supplied to governments and the IRP so they can carry out their responsibilities; however, it is occasionally difficult to obtain a release, usually because a captain is either at sea or unavailable. In order to facilitate obtaining the releases, it had been suggested that, since under the IDCP no vessel of capacity greater than 400 tons can sail without an

observer, an observer should not be assigned to a vessel until all necessary releases were obtained, thus solving any logistical problems. Dr. Joseph distributed a draft resolution on the subject, which was unanimously approved (Appendix VI).

The meeting was recessed at 10:30 a.m. It was reconvened the following day, Thursday, June 10, at 4:00 p.m.

#### Agenda Item 8 - Recommendations for 1993

The Chairman introduced this item, noting the need for action on the Director's recommendation for a yellowfin catch limit of 250,000 tons for 1993, with four increments of 25 thousand tons each. After a short discussion, a resolution on this matter was approved (Appendix VII).

Mr. Hallman of the United States indicated that he wished to make a recommendation concerning the IATTC budget before leaving this agenda item. He noted that the question of the future budget of the IATTC was a very serious matter that would have to be dealt with soon. He stated that a working group should be convened, perhaps at the same time as a meeting to deliberate some of the other matters that had arisen, to deal with the issue of the budget, whose seriousness he again stressed.

Mr. Luna of Mexico responded that his government would be willing to participate as an observer in the consultations on the IATTC budget and to work with other governments to find a solution to the problem. He noted that Mexico might wish to deal with other matters at the same time, particularly the issue of marine mammals.

Dr. Guerly Avila of Colombia also expressed the willingness of her government to work on this matter.

Commissioner Saito requested clarification on the timing of such a meeting; the U.S. delegation responded that it had no clear idea yet, but emphasized the importance of holding it soon.

#### Agenda Item 10 - Place and Date of Next Meeting

Commissioner Herrera of Venezuela expressed the willingness of his government to host the next meeting of the IATTC, and his offer was unanimously accepted. Agreement was reached on June 7-9, 1994, as the dates for the meeting; the exact location would be communicated at a later date to the Director, who would in turn notify the member governments.

#### Agenda Item 11 - Election of Officers

Ms. Doresthy Kenneth of Vanuatu proposed Commissioner Herrera as Chairman of the IATTC, and this was unanimously approved.

Commissioner Herrera thanked the other Commissioners for this honor, indicating that he would use all the resources available to him to assist the IATTC in achieving its objectives.

Commissioner Juan Varela of Panama was proposed as Secretary by Commissioner Saito of Japan, and this proposal was approved unanimously.

### Agenda Item 12 - Other Business

After the Chairman opened this agenda item for discussion, Commissioner Saito asked for the floor, indicating that he would like to bring an important issue concerning fisheries management to the attention of the Commissioners. He noted that at the present time the Standing Committee of the Convention on International Trade in Endangered Species is studying modifications to the criteria for the listing of marine species in Appendix I and II of that Convention. He noted that the criteria being discussed could potentially have a great impact on the IATTC, as well as on fisheries organizations and administrations in general, since they might result in the closure of every fishery in which an endangered or threatened species is caught or could be caught, or in which one of the components in the ecosystem from which a species is being exploited is endangered. He asked that the Director distribute information on this matter to the members of the IATTC as well as to the observer governments.

The Chairman then offered the NGOs and other observers present the opportunity to address the meeting. Statements were made by Congressman Miguel Sotelo Burgos of Mexico (Appendix VIII), Traci Romine of Greenpeace International (Appendix IX), Dr. Hector López of FUDENA (Appendix X), Alejandro Villamar of Red Mexicana de Acción frente al Libre Comercio (Appendix XI), and Marlène Kanas of Robin des Bois (Appendix XII).

Commissioner Nanne of Costa Rica took the floor to say that he had not known what to expect on this, his first trip to Vanuatu, but that he had met nothing but warm hospitality and friendliness from the people of Vanuatu. He said that on behalf of all the Commissioners and attendees at the meeting he wished to express most heartfelt appreciation and thanks to the government and people of Vanuatu, whose graciousness and hospitality had far exceeded anyone's expectations. He also expressed everyone's appreciation to the Chairman, Richard Carpenter, and his staff for leading them through a difficult but successful meeting. All present showed their agreement with loud applause.

### Agenda Item 13 - Adjournment

The Chairman adjourned the 51st Meeting of the IATTC at 6:30 p.m.

LIST OF ATTENDEES

Member Governments

**COSTA RICA**

Herbert Nanne Echandi - Commissioner

**FRANCE**

Patrice Corler

**JAPAN**

Tatsuo Saito - Commissioner (Acting)

Akima Umezawa

Shingo Ota

Akira Suda

**PANAMA**

Juan Antonio Varela - Commissioner

**UNITED STATES OF AMERICA**

Henry Beasley - Commissioner

George Boehlert

Brian Hallman

Robert C. Macdonald - Commissioner

Paul E. Niemeier

Ed Stockwell

Mary Walker - Commissioner

Julius Zolezzi

**VANUATU**

Antoine Pikeoune

Richard Carpenter - Commissioner

Wycliff Bakeo

Paul Sami

Doresthy Kenneth

Moses Amos

Wesley Obed

**VENEZUELA**

Francisco Herrera Terán - Commissioner

Observer Governments

**COLOMBIA**

Guerly Avila de Tabares

**MEXICO**

Dámaso Luna Corona

Martha Lara Fernández

Miguel Sotelo Burgos

Horacio Vega Soto

Guillermo Compeán Jiménez

Alfonso Rosinol Llitas

**REPUBLIC OF CHINA**

Chung-Hai Kwoh

**RUSSIAN FEDERATION**

Viktor Albrandt

Irina Shestakova

**SEYCHELLES**

Rose-Marie Jacques

Georges Maniuri

**SPAIN**

Isabel Revenga Arangüena

Javier Ariz Tellería

Luis Benavides

International Organizations

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

Jacek Majkowski

**FORUM FISHERIES AGENCY**

Andrew Wright

**INTERNATIONAL COMMISSION FOR THE CONSERVATION OF ATLANTIC TUNAS**

Javier Ariz

**SOUTH PACIFIC COMMISSION**

Antony D. Lewis

Non-governmental Organizations

**GREENPEACE INTERNATIONAL**

Traci Romine

Juan Carlos Cárdenas

Marta Banuelos

**RED MEXICANA DE ACCION FRENTE AL LIBRE COMERCIO**

Alejandro Villamar

**FUDENA**

Héctor López Rojas

**ASSOCIATION ROBIN DES BOIS**

Marlène Kanas

IATTC Staff

James Joseph

Martín Hall

Berta Juarez

Interpreters

Carlos Diez

Cynthia Diez

Alvaro Sanabria

## Appendix II.

### Address by the Rt. Hon. WILLIE JIMMY, Minister of Finance

The Director of the Inter-American Tropical Tuna Commission, Dr. James Joseph, Commissioners, distinguished delegates of member countries and of observer countries, representatives of international organizations and of non-governmental organizations, representatives of the tuna fishing industry, ladies and gentlemen:

It gives me great pleasure to welcome you all to Vanuatu and especially to our capital city, Port Vila, for the 51st Annual Meeting of the Inter-American Tropical Tuna Commission. We are honoured to be hosting what we believe will be an extremely important meeting, and we are grateful to you for having, in many cases, suffered long and tiring journeys to be here.

I know that some of you arrived in Vila a few days ago, and I hope that you have had the chance to leave this hotel and to discover for yourselves some of what Port Vila and Vanuatu has to offer. We believe that our country really is paradise, and I hope that after your stay here you will agree.

Although Vanuatu is a relatively recent member of the Commission, we are well aware of the valuable work that it has undertaken over many years in studying the stock of yellowfin tuna and, through its recommendations, in ensuring its conservation as a sustainable fishery resource.

The Commission has more recently become involved in the conservation of other species, notably dolphin. Vanuatu shares the world's concern over the dolphin mortality incidental to tuna purse-seining in the eastern Pacific Ocean and fully supports the international efforts to reduce incidental dolphin mortality to insignificant levels.

Before we commence the meeting, it is worth reflecting on the progress that has been made.

In 1986, when Vanuatu first became involved, the tuna fishery in the eastern Pacific killed 133,000 dolphins, which was an average mortality of 13 dolphins per set. By 1992 this had been reduced to 15,470 animals, an average of 1.5 dolphins per set. To achieve a reduction in mortality of nearly 90% in just 6 years is a major achievement, and we look forward to hearing the results for 1993, which we confidently expect will be even better.

We are pleased that Vanuatu has been at the forefront of these reductions and that the dolphin mortality occasioned by the Vanuatu fleet is one of the lowest in the international fleet. But no country can by itself lay claim to the credit for the outstanding successes to date. These successes have been brought about by cooperation between the countries fishing in the region and by international goodwill.

The agreements reached in Costa Rica in September 1990 and in La Jolla in January 1991 to develop an international program to reduce the incidental mortality of dolphins have been given practical meaning and effect by the detailed international agreements made in La Jolla in April and July of last year, and it is these agreements and not the actions of any one country or organization that have contributed so directly to the dramatic reductions in dolphin mortality.

We must not, however, be complacent. Dolphins are still being killed, and there remains much work to be done. Just as no country or organization can claim credit for the past, neither should any country or organization think that it alone holds the key to the future. Let us build upon the successes to date. We should all realize that without continued international cooperation there will be no program, and that without an international program dolphin mortality will not be kept at its present levels, let alone be reduced further.

Finally, I would like to record the appreciation of the Vanuatu Government to the work that that has been done through the Commission and reiterate our support of the Commission. Although the international effort has extended beyond the Commission, the international agreement has recognized the important role of the Commission in coordinating research and in providing the secretariat for the International Review Panel. Let us not allow our



support for the Commission to waver at this crucial point. To do so would risk losing not only a wealth of expertise and experience in the tuna-dolphin issue but also the one body through which all countries have been able to work effectively, whether members or not.

This is a vital meeting. It is up to all of us to find a solution. I am sorry that due to the present session of Parliament I will not be able to be with you, but I give you all my best wishes in your deliberations and urge you not to leave Port Vila until you are confident that a sustainable framework is in place for the further international reduction of incidental dolphin mortality.

I hereby declare the 51st Annual Meeting of the Inter-American Tropical Tuna Commission open.

AGENDA

**51st MEETING OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION**

June 8-10, 1993

**Port Vila, Vanuatu**

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna research
4. The 1992 fishing year
5. Status of tuna stocks
6. Review of tuna-dolphin research and extension programs
7. Review of International Dolphin Conservation Program
8. Recommendations for 1993
9. Recommended research program and budget for FY 1994-1995
10. Place and date of next meeting
11. Election of officers
12. Other business
13. Adjournment

## INFRACTIONS AND SANCTIONS

## MAJOR INFRACTIONS FOR INDIVIDUAL OPERATORS, OWNERS, AND OBSERVERS

	<u>Fines in US\$</u>	<u>Suspension of license</u>	<u>Loss of DML</u>
1) Fishing without an observer: captain responsible	100,000	3 years	
owner responsible	100,000		3 years
2) Fishing on dolphins without a DML assigned (regardless of boat capacity, e.g. Class 5): (captain)	250,000	5 years	
3) Making intentional sets after reaching DML 1st set (captain)	50,000	2 years	
each additional set (captain)	30,000	6 months	
4) Making intentional sets on banned stock or school types prohibited under Agreement or current regulations: (captain)	50,000	2 years	
5) Serious interference with observer duties (bribe offers, threats): by captain	50,000	2 years	
by owner	50,000		2 years
6) False reporting by observer: additional sanctions by nations (felony, misdemeanor)	no pay	dismissal	
7) Hiring a captain without a national license, or whose license has been suspended, for a vessel with a DML: (fine for owner)	100,000		
captain additional suspension		2 years	
8) Departing or fishing on dolphins without a dolphin safety panel: captain	100,000	2 years	
owner	100,000		2 years
9) No backdown (each occurrence):	100,000		
10) Intentional sack up or brailing of live dolphins:	50,000		

OTHER INFRACTIONS<sup>1</sup>:

1) Night set (each occurrence):	20,000		
2) Use of explosives for dolphin sets (e.o):	20,000		
3) Minor interference with observer duties (e.o):	5,000		
4) Failure to deploy crew as hand rescuers (e.o):	10,000		
5) Departing or fishing without the required equipment (DML vessels):			
Raft in operable condition	10,000		
All speedboats with towing bridles	10,000		
Floodlight in operable condition	10,000		
Two diving masks and snorkels	20,000		

1. Captain's responsibility in all cases; number 5) is also owner's responsibility.  
Minutes, IATTC 1993 - Appendices

If we replace dolphin sets with sets on logs, the incidental mortality of dolphins is almost eliminated, but at the expense of other species, as shown in the following equality:

1 dolphin	=	8756.0 tunas
	+	60.0 mahi mahi
	+	18.8 sharks
	+	12.6 wahoo
	+	8.4 yellowtail
	+	5.4 rainbow runner
	+	1.2 billfishes
	+	0.014 sea turtles

RESOLUTION

*The Inter-American Tropical Tuna Commission, at its 51st Meeting, held in Port Vila, Vanuatu, on June 8-10, 1993:*

*Recognizing that data concerning the individual activities of a fishing vessel collected by observers of national and international programs aboard purse-seine vessels of greater than 400 short tons carrying capacity operating in the eastern Pacific Ocean must be available to governments and national and international programs in order to achieve the objectives of the International Dolphin Conservation Program, and*

*Noting that such data cannot be released without the written consent of the owner and captain of the vessel in question,*

*Therefore recommends that observers not be placed aboard the vessels mentioned above without first receiving a signed release from the owner and fishing captain of said vessels.*

RESOLUTION

*The Inter-American Tropical Tuna Commission*, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,

*Notes* that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and

*Recognizes*, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and

*Recalls* that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and

*Notes* that from 1980 through 1992, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

*Observes* that, although the stock of yellowfin is currently at a level of abundance greater than the optimum, nevertheless it can be over-exploited,

*Concludes* that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1993.

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties* that a quota of 250,000 short tons be established for the 1993 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than four successive increments of 25,000 short tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and

*Finally recommends* that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1993.

Statement of Congressman MIGUEL SOTELO BURGOS, Mexico

Thank you, Mr. Chairman, for allowing me the opportunity to speak. I bring you warm greetings and best wishes from the Congress of Mexico and especially from the Congressional Commission on Mexican Fisheries. We in the Commission and in Congress generally wish to express our utmost concern about the mortality of dolphins taking place in the eastern Pacific Ocean, and we recognize the great efforts by the governments and fishing sectors of all countries to reduce this mortality to the lowest possible levels. This problem is of special interest to me, since I have been involved in matters related to the sea, particularly fishing, from a very young age, and therefore know how matters such as these affect not only the animals of the sea but also the fishermen who depend on the sea for their sustenance and livelihood. All of us in the Mexican legislature share these concerns, and that is why, in the case of the dolphins in the eastern Pacific, we have passed legislation for their protection.

It is our belief in the Mexican Congress that because of the international nature of the resources, the industry, and the markets, a real solution to this problem lies in a multinational approach and not through unilateral action, which can ultimately never achieve all of our objectives concerning the conservation of dolphins and tunas. We urge the IATTC to continue their efforts in this direction. It is only in this way that we human creatures can continue in the future to enjoy the goodness that the sea offers us.

We support the efforts of the IATTC, and when the issue of the IATTC budget comes up in the Mexican Congress, we will support it.

Finally, Mr. Chairman, we would like to express to you, the delegation of Vanuatu, and all of the citizens of this beautiful country our most sincere and warm thanks for the gracious hospitality shown us during the course of our deliberations.

Appendix IX.

CONTRIBUTIONS AND CREDIBILITY --  
TWO MAJOR CHALLENGES OF THE GLOBAL TUNA FISHERIES MANAGEMENT

Before the Inter-American Tropical Tuna Commission and Inter-Governmental Meeting; Vanuatu, 10 June 1993

Presented by Greenpeace International, Greenpeace Latin America, and Greenpeace Mexico

Thank you, Mr. Chairman and distinguished delegates. My name is Traci Romine, and I represent Greenpeace International, one of the major environmental groups, with 30 offices around the world and five million citizen supporters. Our international and multicultural organization is privileged to have the opportunity for the first time to visit Vanuatu and learn about the social and environmental characteristics of this region. We look forward to future opportunities to build bridges with the diverse communities here.

In 1992 and 1993, I have served with my colleague from FUDENA as a member of the International Review Panel of the Inter-American Tropical Tuna Commission. In this capacity, I thank you for the opportunity to present our perspectives. Through our diligent and enthusiastic work in the Review Panel and our active presence in these meetings, Greenpeace indicates its clear support for a multilateral solution to the fisheries issue.

Greenpeace was in the forefront in calling for a multilateral solution, and we have worked consistently in this direction for many years. Clearly, this work is paying off. This systematic and inclusive approach is not only saving dolphins but also discouraging the introduction of other destructive commercial fishing practices that result in diverse bycatch and discards.

The activities of the fishing captains and crews and the long history of independent scientific work have played a major role in providing consistent credibility and in proving an international approach can work as a model for solving international high seas fisheries problems. The active participation and commitment of the fishermen have resulted in significant trends toward eliminating dolphin mortality, which may well be 8,000 dolphins this year. We have come a long way since the years when mortality was 100,000 marine mammals in the eastern Pacific Ocean alone. Because of the fishermen at sea and environmentalists working on coherent international solutions, 92,000 dolphins may live in the eastern Pacific ecosystems this year.

However, there are many threats and challenges to the success and credibility of this multilateral and multisectorial effort, not the least of which is governmental irresponsibility. This program and its progress must not be killed by financial inaction or paralyzing political calculations. Real steps are needed from governments to solve the lack of political and legal definition of this program and to ensure its financial security.

In addition, Greenpeace calls on all parties to reinforce the role of the International Review Panel. In a short time, this Panel has proved its effectiveness and capacity to contribute concrete and positive proposals that enhance the program and its international credibility.

Very clear and immediate action is required to bring the dolphin mortality reduction schedule into reality. This is necessary to reflect the goals of this Agreement, which are "progressively reducing" and "eliminating mortality in this fishery" (IATTC, Inter-Governmental Agreement, 1992). Anything less than an immediate reduction in the overall schedule will undermine the credibility of our goals.

Compliance and enforcement mechanisms are of urgent necessity to ensure the long-term viability and credibility of this program. Finally, more action is needed to establish international research efforts for new technologies. This effort must be international in character to assure all nations have access to technological advances. We should guard against becoming mired in political and commercial battles between nations.

In summary, Greenpeace as a multicultural environmental organization is working very hard to draw attention to and solve the problems plaguing highly-migratory species. We are participating with many other environmental,



citizen, and fishworkers organizations in the United Nations Conference on Highly Migratory and Straddling Stocks, where the need for global coordination of tuna fisheries management is a key concern for future environmental and social security.

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Appendix X.

**Statement of HECTOR LOPEZ ROJAS, Fundación para la Defensa de la Naturaleza, Venezuela**

The Fundación para la Defensa de la Naturaleza (FUDENA) is a national organization which constitutes one of the ways in which Venezuelan society participates in the various aspects of national and international affairs.

Like most organizations of this type, generally but perhaps erroneously called ecological, FUDENA is rooted in the need to find answers to the problems of the world immediately about us (social, environmental, etc.) through the organization and coordination of various initiatives, with the ultimate aim of benefitting the community and its environment.

One of FUDENA's objectives is to establish strategies for communication between the members of the national and international community and the various associations they represent.

It is in this role of mouthpiece for society that FUDENA has been working in the IRP since its creation, because we consider that any approach to environmental problems must be (1) multilateral and (2) interdisciplinary, and be based on a sound scientific foundation.

We think that the expectations which led us to participate in the IRP have been to a great extent fulfilled, thanks to the determination of the members of the Panel, the Commission, and the fishermen involved.

We hope that the efforts of all those involved will be further intensified, so that the dolphin mortality reduction program may achieve a greater success and in a shorter time than originally established.

We sincerely hope to be able to tell the interested community that, thanks to the efforts of the parties involved, we are on the way to solving the problem of incidental mortality of dolphins in a very short time.

Thank you.

Statement of ALEJANDRO VILLAMAR, Red Mexicana de Acción frente al Libre Comercio

I am Alejandro Villamar, and I represent the Red Mexicana de Acción frente al Libre Comercio (RMALC). We have attended this meeting with the same positive attitude we have shown since the inception of the intergovernmental agreement, and we congratulate the participants for the agreements reached.

The RMALC is made up of trade unions and environmental and social groups in Mexico, and we maintain links with our counterparts in the United States and Canada. We wish to reiterate and stress that for us the existence of the Agreement and especially the successes achieved in the reduction of dolphin mortality are key elements for showing the world that it really is possible to find or to create modern control mechanisms for fisheries in which governments, industry, and society can play a part.

The Red Mexicana, together with other environmental organizations and organizations of fishermen from the Mexican tuna fleet, submitted to the members of the intergovernmental agreement three proposals, which were in some form or other adopted by both the International Review Panel and this meeting, and we accept that progress has been made, but we feel bound to point out that this progress is really very small and falls far short of what the citizens of our countries want. This demonstrates the need for greater efforts by each and every one of the participants in the agreement.

During the discussions at the meeting reference was made to the need for a greater recognition of the efforts made by vessel crews to reduce the levels of dolphin mortality, and an agreement on implementing a program of public education has already been reached. In this regard we wish to urge governments and industry to remember and to practice the essential element of cooperation with environmental organizations. Such an open cooperation, far from the rhetoric of bureaucracy, is, we think, one of the cornerstones of the credibility of this agreement, and one of the fundamental steps in that cooperation is the availability of information on the performance of the national fleets and the concrete actions of the various national programs. There has been in the past a marked difference in the attitude of the IATTC and of certain governments, including that of Mexico, towards supplying information. We wish to express our appreciation to Dr. J. Joseph and Dr. M. Hall for their attitude, but we repeat our exhortation to the governments that they put into practice their undertaking to furnish timely information. This would be the first step towards the public education that would be carried out jointly by environmental organizations, governments, and industry, an action which costs us little but which implies changing ancient inertias of underdevelopment.

Another point which we would like to comment on briefly is that of commitments to investment in the development of alternative technologies. We feel that this should be given greater attention by both governments and industry. We know, because they tell us so, that some countries are making real efforts, but we also know that others are caught in a contradiction: on the one hand they are committed to making this investment as parties to the intergovernmental agreement, but on the other hand their domestic legislation prohibits them from doing it. A positive solution to this contradiction would be desirable.

Finally, we would reiterate our readiness to continue cooperating in a positive fashion in the work of the Intergovernmental Agreement.

Thank you.

Appendix XII.

**Statement of MARLENE KANAS, Association Robin des Bois, France**

Robin de Bois, which with 20,000 members is one of the smallest and most generalist groups, wants to protect dolphins and fishermen. We think that oceans without fishermen would be helpless to face industrial pollution, and we think that fishing harbours are more useful to humanity than leisure and sports-fishing harbours.

We are of course aware of the diminution of dolphin mortality in the purse-seine tuna fishery in the eastern tropical Pacific.

We would like this mortality reduced further, and even eliminated as fast as possible, as was said during the 1990 intergovernmental meeting in San Jose, Costa Rica. This means that there should not be any pause in this progression, and that the IATTC should not refuse to be more efficient than was planned, as in practice good will at sea is doing better than theoretical promises in air-conditioned rooms.

Robin de Bois therefore asks for the limit of 5,000 dolphins in 1999 be reduced, as well as the limits for 1998, 1997, 1996, and 1995. This would show optimism and good will, and would reduce the distance between intermediate ecologists and ecologists refusing every compromise.

The dolphin-safe campaign not only reduces useless losses of marine mammals but also brings diversity in methods and areas for fishing tuna. Robin des Bois is happy about that because purse seining, assisted by helicopters, has never produced a lot of employment for fishermen and seamen, except of course for Campbell Industries in San Diego.

To conclude, we would like to suggest that financial participation from Vanuatu, Venezuela, Costa Rica, Mexico, Panama and Ecuador to the IATTC should be proportional to the economical and political interests of each of these countries in the tuna.

MINUTES OF THE 52ND MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

La Jolla, California, USA,  
October 26-27, 1993

The 52nd meeting of the Inter-American Tropical Tuna Commission (IATTC) took place in La Jolla, California, USA, on October 26-27, 1993. Commissioners from Costa Rica, Panama, the United States, Vanuatu, and Venezuela, a representative from Japan, and observers from Colombia, Mexico, Spain, the European Economic Community, the Fishermen's Coalition, and the Fundación para la Defensa de la Naturaleza (FUDENA) attended the meeting.

Agenda Item 1 - Opening of the meeting

The meeting was called to order by the Chairman, Dr. Francisco Herrera Terán of Venezuela, at 9:55 a.m. Dr. Herrera introduced himself, and called upon representatives of the various nations and the European Economic Community to do the same. The names and affiliations of the attendees are listed in Appendix 1.

Agenda Item 2 - Adoption of agenda

Dr. Herrera called the attendees' attention to the provisional agenda prepared by the IATTC staff, and asked if anyone had suggestions or comments regarding the agenda. No one had any, so the agenda was adopted.

Agenda Item 3 - A review of the 1993 fishing year to date

Dr. Herrera called upon Dr. James Joseph, Director of the IATTC, for a review of the fishery for tunas in the eastern Pacific Ocean (EPO) during 1993 to date.

Dr. Joseph said that the catches of yellowfin in the EPO were less during 1991 and 1992 than during 1986-1990, when they averaged more than 300,000 tons. The total catch for 1993 will probably be less than 250,000 tons. The lesser catches of 1991, 1992, and 1993 are due to decreased fishing effort, rather than to decreased abundance of yellowfin, as the catches per unit of effort have remained high. The average sizes of the fish in 1993 have been about the same as during the 1984-1992 period, which is good from the standpoint of harvesting the average maximum sustainable yield (AMSY) of yellowfin. Yellowfin are taken by purse-seine vessels in the EPO by three types of sets, those directed at fish associated with dolphins, those directed at fish associated with floating objects, and those directed at free-swimming schools of fish. Most of the yellowfin caught in association with dolphins are larger than those caught in the other two types of sets. Since 1984, more than half the yellowfin have been caught each year in schools associated with dolphins. The size of the fleet, which has decreased in recent years, is near the optimum size required for taking the AMSY. Mexico, which has the largest fleet, has taken the greatest amounts of yellowfin during 1993. The next-greatest catches have been taken by vessels of Venezuela, Vanuatu, and the United States, in that order. The total catch of skipjack in the EPO in 1993 will probably be about 95,000 tons. Only small amounts of skipjack are taken in schools associated with dolphins. The greatest catches of skipjack in the EPO during 1993 have been taken by vessels of Ecuador, the United States, Mexico, and Vanuatu, in that order. Large amounts of bigeye are taken in the

EPO by longline vessels of Japan and other nations. Much smaller amounts of bigeye, bluefin, and albacore are taken by surface gear in the EPO.

Dr. Herrera thanked Dr. Joseph, and asked if there were any questions. There were none, so he turned the floor over to Dr. Joseph for a review of the recent developments regarding the International Dolphin Conservation Program.

#### Agenda Item 4 - Review of International Dolphin Conservation Program

Dr. Joseph said that the Marine Mammal Protection Act was passed by the United States in 1972. At that time, the fleet consisted mostly of U.S. vessels, so the mortality of dolphins in the tuna fishery was mostly a U.S. problem. By the mid-1970s, however, many non-U.S. vessels had entered the fishery, so the problem became international. At the IATTC's 33rd meeting, held in Managua, Nicaragua, in October 1976, it was agreed that the IATTC would become involved in assessment of the condition of the stocks of dolphins which frequently associate with yellowfin tuna and attempts to reduce the mortalities due to fishing. Specifically, it was agreed that the IATTC "should strive to maintain a high level of tuna production and also to maintain [dolphin] stocks at or above levels that assure their survival in perpetuity, with every reasonable effort being made to avoid needless or careless killing of [dolphins]." The IATTC first received funding for its tuna-dolphin program in 1980, and almost immediately began to place observers on vessels of the international fleet. By 1986, vessels of all nations participating in the fishery were carrying IATTC observers. Originally, observers were placed on one third of the trips, as it had been determined that that coverage was adequate for estimation of the mortalities of dolphins due to fishing. Later the coverage was increased to 100 percent.

In 1986, the first year of complete coverage by the IATTC's observer program, the mortality of dolphins due to fishing was approximately 133,000 animals. By 1992, the mortality had decreased to about 15,500 animals, and in 1993 the mortality is expected to be between 3,000 and 4,000 animals.

At a workshop on tuna-dolphin interactions, sponsored by the IATTC and the U.S. National Marine Fisheries Service, held in San Jose, Costa Rica, in March 1989, and at subsequent IATTC meetings, "dolphin mortality limits" (DMLs) were discussed. An overall dolphin mortality limit (DML) for a calendar year would be set before the beginning of that year, and the tuna fleet would be controlled by whatever means necessary to ensure that that limit was not exceeded. At a special meeting of the IATTC in April 1992, the members of the IATTC and the non-member nations participating in the fishery agreed to "adopt a multilateral program with the objectives of (1) progressively reducing dolphin mortality in the EPO fishery to levels approaching zero through the setting of annual limits and (2), with a goal of eliminating dolphin mortality in this fishery, seeking ecologically sound means of capturing large yellowfin tunas not in association with dolphins while maintaining the populations of yellowfin tuna in the EPO at a level which will permit maximum sustained catches year after year." The program is referred to as the International Dolphin Conservation Program (IDCP). The following schedule of overall DMLs was agreed upon: 1993, 19,500; 1994, 15,500; 1995, 12,000; 1996, 9,000; 1997, 7,500; 1998, 6,500; 1999, <5,000. At the 50th meeting of the IATTC in June 1992, agreement was reached on means to ensure that the limits were not exceeded. As the 1993 overall DML was 19,500 animals, and 106 vessels had applied to participate in the program, DMLs for individual vessels were set at 183 animals (19,500 animals divided by 106 boats). Only 60 of the 106 vessels which applied for individual DMLs for 1993

actually participated in the program; 17 were inactive, 17 fished only on schools of tunas not associated with dolphins, and 12 fished in areas other than the EPO. It is estimated that there will be only about 7,000 to 8,000 sets on tunas associated with dolphins in 1993, as compared to more than 10,000 such sets in most years of the 1986-1992 period. The decreased mortality of 1993 is due mostly to improved performance by the fishermen, however, rather than to decreased effort, as the number of dolphins killed per set decreased from 1.5 animals in 1992 to an estimated 0.5 animals in 1993.

Dr. Joseph then called upon Dr. Martín Hall of the IATTC staff, who gave further information on the mortalities of dolphins in the purse-seine fishery for tunas. Dr. Hall presented some slides which showed that (1) the total mortality of dolphins caused by the fishery decreased by nearly 90 percent from 1986 to 1992, (2) the numbers of sets on yellowfin tuna associated with dolphins stayed nearly constant during this period, and (3) the dolphin mortalities per set and per ton of yellowfin caught decreased by nearly 90 percent during the 1986-1992 period. He pointed out that the average mortality will be less than 70 animals per boat for the 60 boats which participated in the IDCP in 1993.

Dr. Herrera thanked Drs. Joseph and Hall, and asked if there were any questions. There were none, so Dr. Herrera said that he would move on to the next agenda item.

#### Agenda Item 5 - Other business

Dr. Herrera asked if there was any other business which should be discussed. Dr. Joseph said that he had received a letter from the Organización Latinoamericana de Desarrollo Pesquero (OLDEPESCA), stating that it wished to cooperate with the IATTC in matters of mutual concern, and a draft of an agreement to that effect. Dr. Joseph said that the agreement was written in very general terms, and would not compromise the authority of the IATTC or its member nations. He recommended that he be permitted to sign it. Dr. Herrera, who had seen the document, agreed with Dr. Joseph. It was agreed that copies of the document would be made available to the other Commissioners during the ensuing lunch period. The draft agreement is reproduced as Appendix 2 of these minutes.

The meeting was temporarily adjourned at 11:50 a.m.

The meeting was reconvened on October 27, 1993, at 9:35 p.m., and discussion of the draft agreement between the IATTC and OLDEPESCA was resumed. Everyone agreed with the contents of the document, but the representative from Japan said that his government would have to study the contents of the draft agreement, especially from a legal point of view, before permission to sign it could be granted. Also, it was pointed out that France and Nicaragua were not represented at the meeting, so unanimous consent could not be obtained during the current meeting anyway. It was agreed that consent to sign the document would be sought by mail from the governments of France, Japan, and Nicaragua.

#### Agenda Item 6 - Adjournment

Dr. Herrera, after asking if anyone had anything else to discuss and receiving no response, adjourned the meeting at 9:40 p.m.

APPENDIX 1

52nd (SPECIAL) MEETING OF THE IATTC--52<sup>a</sup> REUNION (ESPECIAL) DE LA CIAT  
October 26-27, 1993--26 y 27 de octubre de 1993  
La Jolla, California

ATTENDEES--ASISTENTES

MEMBER COUNTRIES--PAISES MIEMBROS

**COSTA RICA**

Herbert Nanne Echandi  
Comisionado  
Armando Rodríguez Gutiérrez  
Cámara de Comercio, Puntarenas

**JAPAN--JAPON**

Shingo Ota  
Fisheries Agency of Japan  
Sally Campen  
Japan Tuna Association

**PANAMA**

Juan Antonio Varela  
Comisionado

**UNITED STATES OF AMERICA--  
ESTADOS UNIDOS DE AMERICA**

Henry Beasley  
Commissioner  
Robert Macdonald  
Commissioner  
Mary Walker  
Commissioner  
Brian Hallman  
Department of State  
Robert C. Brownell, Jr.  
Elizabeth Edwards  
Martin Hochman  
Paul Niemeier  
Steve Thompson  
Michael Tillman  
National Marine Fisheries Service  
David Burney  
U.S. Tuna Foundation  
Michael Dunn  
Kate O'Connell  
Tony Trutanich  
Julius Zolezzi

**VANUATU**

Doresthy Kenneth  
Ministry of Fisheries

**VENEZUELA**

Francisco Herrera Terán  
Comisionado  
Jean-François Pulvenis  
Santos Valero  
Ministerio de Relaciones Exteriores  
Whitney Debevoise  
Nancy Perkins  
Arnold & Porter

OBSERVERS--OBSERVADORES

**COLOMBIA**

Alejandro Londoño  
Guerly Avila de Tabarés  
Instituto Nacional de Pesca y Acuicultura

**MEXICO**

Dámaso Luna  
Secretaría de Relaciones Exteriores  
Carlos Camacho Gaos  
Jerónimo Ramos  
Secretaría de Pesca  
Guillermo Compeán  
Programa Atún-Delfín

**SPAIN--ESPAÑA**

Javier Ariz Tellería  
Instituto Español de Oceanografía  
Isabel Revenga Arangüena  
Secretaría General de Pesca Marítima

**EUROPEAN ECONOMIC COMMUNITY--  
COMUNIDAD ECONOMICA EUROPEA**

Peter A. Curran  
Directorate-General of Fisheries

OTHER ATTENDEES--OTROS ASISTENTES

Felipe Charat

**CANAINPES**

Héctor López Rojas

**FUDENA**

Teresa Platt  
The Fishermen's Coalition



GENERAL FRAMEWORK OF AGREEMENT BETWEEN THE LATIN AMERICAN  
ORGANIZATION FOR FISHERIES DEVELOPMENT (OLDEPESCA)  
AND THE INTER-AMERICAN TROPICAL TUNA  
COMMISSION (IATTC)

The LATIN AMERICAN ORGANIZATION FOR FISHERIES DEVELOPMENT (OLDEPESCA) and the INTER-AMERICAN TROPICAL TUNA COMMISSION (IATTC):

CONSIDERING:

That is highly desirable for the purposes of the development of the Latin American and Caribbean countries to harmonize efforts with Regional and Subregional Organizations, with a view to maximizing benefits from the utilization of the available resources and to avoid duplication;

That, given the existence of a set of common aims contributing to the sustainable development of the Latin American and Caribbean fisheries, action is needed that will make viable and formalize plans for inter-institutional cooperation;

That any formal links established should be in keeping with the precepts laid down by the Constitutional Convention of OLDEPESCA and the Convention of the IATTC.

RESOLVE THAT:

FIRST: OLDEPESCA and the IATTC will, as far as they are able, cooperate mutually within the limits of their general objectives and their programs of work through the implementation of specific actions which will be agreed through working agreements.

SECOND: OLDEPESCA and the IATTC shall exchange information and documentation deemed necessary for mutual understanding of the activities which both organizations are developing or plan to develop, in order to facilitate the identification of opportunities for cooperation.

THIRD: When the forms of cooperation agreed within the framework of the present Agreement so require, OLDEPESCA shall be able to appoint missions to the IATTC, and vice versa, in order to facilitate the implementation of the specific cooperative programs or the coordination of their activities.

*FOURTH: OLDEPESCA and the IATTC shall invite each other to meetings organized by each of them, on matters of common interest. To this end, both organizations shall exchange, in good time, the respective agendas and schedules for these meetings.*

*FIFTH: When one of the parties requires technical assistance from the other party, under the terms of the present Agreement they should hold consultations with the aim of determining the most practicable manner of supporting such assistance.*

*SIXTH: It is understood that no activity carried out within the framework of the present Agreement shall imply any change in the respective competence of each organization.*


*SEVENTH: Both organizations shall examine periodically the application of the present Agreement and shall adopt the measures necessary to facilitate or expand their cooperation.*

*In witness whereof this Agreement is signed in duplicate.*

*September 30, 1993*

*FOR OLDEPESCA*

*FOR THE IATTC*

  
\_\_\_\_\_  
*Dr. CARLOS MAZAL  
EXECUTIVE DIRECTOR*

\_\_\_\_\_  
*Dr. JAMES JOSEPH  
DIRECTOR*

MINUTES OF THE 53RD MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

Cumaná, Venezuela  
June 7-8, 1994

Agenda Item 1 - Opening of the meeting

The 53rd Meeting of the Inter-American Tropical Tuna Commission (IATTC) was called to order by the Chairman, Commissioner Carlos Giménez of Venezuela, at 10:15 a.m. on Tuesday, June 7, 1994, at the Hotel Los Bordones in Cumaná, Venezuela. In attendance were representatives of member governments of the IATTC, with the exception of Nicaragua and Vanuatu, and observers from five nations, three international organizations, and four non-governmental organizations (NGOs). The attendees are listed in Appendix I.

A welcoming address was given by the Chairman; the text of his speech is attached as Appendix II.

Agenda Item 2 - Adoption of agenda

The Chairman called for modifications to the Agenda (Appendix III). None were proposed, so it was adopted unanimously as presented.

The Chairman suggested a work schedule of 9:00 a.m. to 5:30 p.m., with a lunch break from 12:00 to 2:30 p.m. This was agreed to by all members.

Agenda Item 3 - Review of current tuna research

The Chairman asked Dr. James Joseph, Director of the IATTC, to make this presentation.

Dr. Joseph explained that this review is customarily included in the agenda in order to keep the Commissioners apprised of the research being undertaken by the IATTC staff and to seek their advice and comments. He explained that at this time only a brief review of some of the topics would be given, but that much of the research would be discussed under other agenda items.

In 1993 the IATTC research program was in its 43rd year. The studies necessary to provide scientific advice to the governments concerning the conservation and management of the tuna and tuna-like species of the eastern Pacific Ocean require broad-based research and expertise in a wide variety of disciplines. To this end the scientific staff of the Commission is recruited internationally, and currently about 10 nations are represented.

In 1976 the Commission's responsibilities were expanded to include the scientific study and management of the dolphin stocks taken incidentally in the fishery for tunas.

The Commission maintains offices and laboratories in Ecuador, Mexico, Panama, the United States, and Venezuela, where basic data on the biology of the tunas and tuna-like fishes and the effects of exploiting them are collected and analyzed. Observers are trained and placed aboard fishing vessels at

some of the field offices, and the field personnel prepare the data collected by the observers for entry into the IATTC's data base.

Dr. Joseph spoke on the relationship between spawners and recruits in tunas, explaining that the ability to predict levels of recruitment, especially for yellowfin, would permit much more efficient management of the fishery, but that to date no link had been found between the number of spawning adults and the resulting levels of recruitment. He presented data confirming that, in the case of yellowfin in the eastern Pacific Ocean, the estimated number of recruits in each year class has been independent of the size of the spawning stock which produced those recruits. This makes it impossible to predict the strength of a given year class, which for yellowfin varies by a factor of about 3.

Dr. Joseph further explained that the IATTC staff is attempting to find ways of predicting recruitment, and that this research follows two different approaches. The first, aimed at improving the estimates of spawning stock size, involves a two-year program to collect information to define at what size and with what frequency spawning occurs in yellowfin. This information, coupled with better estimates of the fecundity of individual fish, would improve the estimates of the true annual fecundity of the species. Dr. Joseph showed slides illustrating the distribution of spawning adults and the sizes and temperatures at which they spawn, and explained that the analyses will probably be completed in the near future.

The second approach is a search for an understanding of the mechanisms that control growth and survival of post-larval tuna. He described the work being conducted at the IATTC's Achotines Laboratory in Panama, where a brood stock of black skipjack is being maintained. The fish, about 50 cm long, have been spawning for several months, and fertilized eggs have been collected and successfully hatched on a regular basis. The offspring have survived in the laboratory for up to 10 days, and Dr. Joseph described a number of important experiments which have been conducted.

Dr. Joseph also described a 5-year cooperative program involving the Government of Panama, the Overseas Fisheries Cooperation Foundation (OFCF) of Japan, and the IATTC, which will expand both the facilities and the research conducted at Achotines Laboratory. He spoke of the exchange of scientists among the three parties involved, and described the new facilities planned for the Achotines Laboratory, which the OFCF would be funding.

#### Agenda Items 4 and 5 - The 1993 fishing year and status of tuna stocks

The Chairman, noting the similarity of the two agenda items, asked Dr. Joseph to present them together.

Dr. Joseph began his presentation by noting that Background Papers 1 and 2, distributed to the attendees at the meeting, dealt with these subjects in detail, and that he would therefore only touch on a few of the principal points presented in these documents.

During 1993, and so far in 1994, the total capacity of the international fleet operating in the eastern Pacific Ocean had changed very little relative to 1991 and 1992: it has stood at about 112 thousand short tons during 1993 and 1994, of which about 65 thousand tons, on average, was at sea at any given time. The 1993 catches of yellowfin and skipjack were about 262 and 92 thousand tons, respectively, and current information indicates that the catches of both species will be approximately the same in 1994. In both 1993 and 1994 Mexico has been the leading producer of tuna, accounting for about 40 percent of the total catch, followed by Venezuela, Vanuatu, Ecuador, and the United States, in that order.

In 1993, about 53 percent of the total catch of yellowfin was taken in association with dolphins, a reduction of about 26 percent relative to 1992; the remainder was caught in schools associated with floating objects or in unassociated schools.

Dr. Joseph next discussed the status of yellowfin, recalling that from 1966 through 1979 annual limits on the total harvest of yellowfin were implemented. These limits were conservative, due to the constant seaward expansion of the fishery, and were precautionary in the sense that they were usually set at a level lower than the stock could probably support, since the expanding fishery was exploiting an ever-larger portion of the stock. Provisions were made to allow the staff a degree of discretion in adjusting the limits in response to current events in the fishery.

In the late 1970s, due to changing political and economic circumstances, the nations of the region could no longer agree on implementing the recommended catch limits, and the resulting unrestricted fishing led to a sharp decline in the abundance and catches of yellowfin. As a result, vessels began to leave the fishery, and a strong El Niño event in 1982 and 1983, which made the already reduced stock of yellowfin less available to the fishery, resulted in many more vessels either leaving to fish in other areas or being idled. From 1982 through 1985 fishing effort was less than during 1977-1980, allowing the stock to recover. In 1983, as the El Niño subsided and the stock grew, the Commission staff predicted that yellowfin fishing would improve, which it duly did. By 1986 many vessels had returned to the fishery, and the fishing was even better than expected: annual catches of yellowfin exceeded 300 thousand tons.

The staff's analyses offer two explanations for this better-than-expected fishing. The first was that the fishery concentrated on larger yellowfin. During the period of overfishing in the late 1970s the average size of the fish in the catch fell from about 25 pounds to about 11 pounds, but with the greater abundance of large fish in 1984-1985 it rose again to about 30 pounds. This increased the yield per recruit by about 30 percent, resulting in a 30-percent greater yield from the same number of fish. The larger yellowfin were mostly caught in association with dolphins, since they are infrequently found associated with floating objects or in unassociated schools.

The second reason for the increased yield was a substantial increase in the recruitment of young fish into the fishable population, which accounted for an additional 25 to 30 percent increase in the catch.

Analyses of both production models and age-structured models indicate that if recruitment stays constant at current levels and the average size of the fish in the catch does not change, the population of yellowfin in the eastern Pacific Ocean can, on the average, sustain maximum catches of about 315 to 325 thousand tons. At present the fleet in the eastern Pacific is capable of taking about 250 to 300 thousand tons of yellowfin.

If the average size of the fish in the catch decreases or recruitment is reduced, the potential catch will also fall. Recruitment appears to be independent of the fishery, and is currently impossible to predict, but the average size of the fish in the catch can be altered by changing the focus of the fishery. Large fish associate with dolphins, but small fish do not. As long as the proportion of fish caught in association with dolphins does not change, yield per recruit will stay high. If this mode of fishing is curtailed and effort is switched to unassociated schools or fish associated with floating objects, the average size of the fish will decrease to about 10 pounds and yield per recruit will fall substantially. This will result in a 25- to 50-percent decrease in the total yield of yellowfin.

Because of the uncertainties, the staff recommended a conservative catch limit of 250 thousand short tons, but with the possibility of increasing this limit by 100 thousand tons in four increments of 25 thousand tons each.

Dr. Joseph then explained that normally a review of the other principal species of tunas taken in the eastern Pacific--skipjack, bluefin, and bigeye--would be presented, but that because of time constraints he would review only bluefin and bigeye. He referred the attendees to Background Papers 4 and 5, which cover species other than yellowfin.

Turning first to bluefin tuna, Dr. Joseph explained that the bluefin fished in the eastern Pacific are part of the same stock fished in the western Pacific. He noted that during the last decade catches had decreased substantially in both areas, particularly the eastern Pacific. He mentioned three important points: (1) the low catches in the eastern Pacific are due in a large part to reduced effort; (2) recruitment of young fish to the Japanese fishery does not appear to be decreasing; and (3) catches of small fish are high in the western Pacific.

Dr. Joseph mentioned that scientists from the IATTC and the National Research Institute of Far Seas Fisheries of Japan had participated in three workshops over the past several years to study the biology and fisheries for bluefin, and a fourth workshop is planned for early 1995. Preliminary analyses of the data generated at these workshops indicate that if small bluefin could be protected, the Pacific-wide yield of this species could most likely be increased.

Dr. Joseph concluded his presentation with a brief review of the fishery for bigeye. He explained that the longline fishery is responsible for most of the catch, that the data indicate that the stock of bigeye is in good condition, and that increases in effort have resulted in corresponding increases in catch. In terms of yield per recruit, the longline fishery captures fish near the optimum size.

#### Agenda Item 6 - Review of tuna-dolphin research and extension programs

Dr. Joseph introduced this subject by outlining the background to the IATTC's Tuna-Dolphin Program. He noted that during the 1960s and early 1970s most of the vessels which fished in the eastern Pacific Ocean for tunas associated with dolphins flew the U.S. flag, but that during the mid-1970s more nations became involved in the fishery, and the problem of dolphin mortality in the fishery, and the solution to it, thus became international. In 1976 the Commission decided to undertake a program to study the problem and to seek to reduce the mortality. This program, which involved placing observers on tuna vessels to gather data and identifying, developing, and transferring to the international fleet equipment and techniques effective in reducing dolphin mortality, did not begin until 1980, and did not include all national fleets involved in the fishery until 1986.

He then introduced Dr. Martín Hall, Chief Scientist of the IATTC's Tuna-Dolphin Program, to review the program.

Dr. Hall outlined the history of the fishery in the eastern Pacific Ocean from the late 1950s to the present, and discussed briefly the different methods used by fishermen to detect tuna schools, with emphasis on the association between yellowfin tuna and dolphins. Information on the fishery is gathered by the IATTC's international observer program and the Mexican and U.S. national observer programs. In 1993, observer coverage of the fleet was virtually complete. The data collected by the observers are used to produce estimates of the incidental mortality of dolphins in the fishery and of their relative abundance, to

study various aspects of their biology, to identify situations that cause dolphin mortality in order to help fishermen in their efforts to reduce that mortality, to study the interactions between tunas and dolphins and tunas and floating objects, and to study the ecological impacts of fishing operations.

The incidental mortality in 1993 was 3,609 dolphins, the lowest level in the history of the fishery and 77 percent less than the 15,539 mortalities which occurred in 1992. During the 1986-1993 period, mortality has declined by 97 percent, mostly due to improvements in fishing gear and techniques, and the average mortality per set (MPS) by 96 percent, from about 13 to 0.5 animals. The number of sets on dolphins was about the same in 1992 as in 1986, but dropped in 1993 by 35 percent. The total number of sets of all types declined by 10 percent in 1993 due to low tuna prices, especially early in the year. In 1994, up to late May, both MPS and effort have fallen slightly, so the mortality may be even less in 1994 than it was in 1993.

Dr. Hall next reviewed trends in abundance for the major dolphin stocks involved in the fishery. The estimates of relative abundance for 1993 were not significantly different from those of preceding years. In general, most of the stocks have remained fairly stable since the early 1980s; the only exception is the northern stock of common dolphins which, after apparently stabilizing during the 1987-1990 period, declined in 1991 and has remained at a lower level since then. As the incidental mortality of this stock has been very low in recent years, there was no readily-apparent explanation for this decline. However, studies performed by the U.S. National Marine Fisheries Service (NMFS) have shown major increases in this stock in waters off the California coast, apparently the result of a massive migration to the north that was perhaps linked to some oceanographic process. The most recent analyses of the data, however, have shown a correlation between some of the indices of abundance and some measures of effort directed toward tunas associated with dolphins. This causes some concern, as it reveals a possible bias that was not present in previous analyses and that needs to be addressed.

The term "relative mortality" is used to describe the proportion of a population that dies in a period of time, and it is the only valid measure of the biological impact of any given level of mortality. For dolphins the net recruitment rate to a population has been conservatively assumed to be about 2 percent of the total number of animals. If mortality rates are below this level, a population can be expected to increase, and *vice versa*. The relative mortalities in 1993 for the stocks of dolphins involved in the fishery in the eastern Pacific were all below 0.16 percent, with an average of 0.04 percent (total incidental mortality of 3,609 dolphins divided by the estimated total population of 9,576,000 individuals). The fact that these levels are so far below the conservative estimate used is an assurance that even if the estimates of abundance and mortality are significantly in error due to methodological errors, poorly-understood mortality sources, reporting errors, *etc.*, the size of the dolphin populations will still be increasing.

Dr. Hall described current research aimed at reducing dolphin mortality further. Some modifications of the purse-seine gear proposed by fishermen are being considered for testing in the near future, and a search for alternative ways of catching large tunas not associated with dolphins is being carried out jointly with the U.S. NMFS and other organizations. In another experiment, dolphins and tunas were fitted with radio- or acoustic-tracking devices to study their behavior. Time-depth recorders were also fitted to some of the dolphins to monitor their diving patterns. The information obtained has confirmed some ideas (*e.g.* dolphin groups are flexible, with individuals (or groups) joining or leaving larger aggregations frequently) and shed new light on some activities (*e.g.* dolphins make deep dives at sunset and dawn, and shallower dives during the night, perhaps feeding on prey coming up with the deep-scattering layer). Both dolphins and tunas spend most of their time at or above the thermocline, and dolphins spend a large proportion of their time submerged. Also, it appears that the aggregating behavior of tunas and dolphins is quite flexible, with both species coming together or separating easily, but more data are needed before final

conclusions are reached. Current research by the IATTC staff and others on the diets of tunas, dolphins, and other associated species may help in gaining an understanding of the interactions of the dolphins and tunas with one another and with other components of the ecosystem.

#### Agenda Item 7 - Review of International Dolphin Conservation Program

At the end of Dr. Hall's presentation, the Chairman asked Dr. Joseph to review the progress of the International Dolphin Conservation Program (IDCP) established by a resolution of the 50th IATTC Meeting, held in June 1992 in La Jolla, California, USA, and by the Agreement for the Conservation of Dolphins reached at the Intergovernmental Meeting held at the same time.

Dr. Joseph pointed out that the International Review Panel (IRP), established by the Agreement to develop means of implementing the IDCP and monitor compliance, had met seven times since its creation: an *ad hoc* meeting and six regular meetings, the most recent having concluded the day before in Cumaná. He also explained that the schedule of dolphin mortality limits (DMLs) set up by the Agreement was now in operation.

At the first meeting of the IRP, held in October 1992, the overall DML for 1993 of 19,500 dolphins was divided among 106 qualified vessels, each of which received an individual DML of 183 animals. Dr. Joseph noted that the final mortality figure for 1993 was 3,609 animals, far below the limit set by the Agreement. Only 66 of the 106 vessels assigned DMLs actually fished for tunas associated with dolphins; the average mortality per vessel was about 50 dolphins, and no vessel reached or exceeded its individual DML. At the fifth meeting of the IRP, held in January 1994, the adjusted 1994 overall DML of 9,300 animals was divided among 73 vessels, for an individual DML of 127 dolphins for 1994.

Dr. Joseph reported that the IRP had also developed a set of infractions and sanctions, intended to standardize and harmonize efforts to ensure compliance with the objectives of the Agreement, which it recommended to governments for consideration.

He next described the efforts of the IRP to develop multinational measures to ensure compliance with the Agreement by all nations involved in the fishery, whether party to the Agreement or not. Possible measures included diplomatic actions, public opinion actions, operational restrictions, and economic sanctions. He also mentioned that the IRP urged nations to take action to prevent vessels from changing flags in order to avoid the restrictions imposed by the Agreement.

Dr. Joseph explained that a major share of the IRP's work had consisted of reviewing the activities of individual vessels in order to monitor their compliance with the Agreement. This involved examining reports on the vessels' activities prepared by the IATTC and the Mexican national program from the data collected by observers aboard the vessels. Any potential infraction is reported to the flag nation, along with supplemental explanatory information, and the flag nation is invited to comment to the IRP on what action it might take or had taken.

Dr. Joseph completed his review of the IDCP by noting that it so far had been extremely successful, in that mortality had already been reduced to below the level originally set for 1999. He added that, despite this achievement, efforts were still being made to prohibit fishing on dolphins altogether, and cautioned that such a ban would carry its own ecological costs. The principal problems are growth overfishing of yellowfin tuna and large bycatches of other components of the ecosystem to which tunas and dolphins belong. He described once again the reductions in the productivity of yellowfin that would result if fishing



effort were transferred to the small tunas caught in schools not associated with dolphins, and then called upon Dr. Hall to speak on the issue of bycatch.

Dr. Hall presented some of the information collected by the observers concerning the effects of different types of sets on various components of the offshore pelagic community. Two issues are relevant here: 1) discards of tunas (undersized individuals of the target species and species of no commercial value), and 2) bycatches of other species.

With respect to the former, Dr. Hall said that sets on floating objects result in average discard rates of 28.6 percent, while sets on unassociated tunas and on dolphins have discard rates of 3.5 and 0.9 percent, respectively.

As regards bycatches of other species, the information collected to date reveals that the bycatch rates for sets on floating objects are much greater than those for sets on dolphins: some examples are mahi-mahi (2,000 times higher), sharks and rays (12 times higher), wahoo (almost 3,000 times higher), billfish (11 times higher), yellowtail (130 times higher), and sea turtles (5 times higher). Bycatches in sets on unassociated tunas fall in between these values: compared with dolphin sets, the rates for mahi-mahi are 9 times higher, sharks and rays 4 times higher, wahoo 2.5 times higher, billfish 2.5 times higher, yellowtail 120 times higher, and sea turtles 2 times higher.

Dr. Hall explained that the IATTC staff had started looking at the spatiotemporal distributions of the bycatches, in an attempt to determine why the bycatches are sometimes aggregated and sometimes nearly uniformly distributed. Maps were shown expressing bycatch rates per 100 sets and per 1000 tons of tuna caught, by season, type of set, etc. Other studies include estimation of average group size of the species caught, size distributions, and species composition of the bycatches. Examples were shown of this work and of the resulting information on the ecology of the offshore pelagic community of the eastern Pacific Ocean.

At the conclusion of Dr. Hall's presentation the Chairman opened the floor to discussion of Agenda Items 3 through 7.

The United States asked how dolphin mortality in 1994 to date compared to that of 1993. Dr. Joseph answered that the mortality-per-set ratio in 1994 was just under 0.5, about the same as in 1993, and the number of sets being made on dolphins was also about the same. If both these factors remained steady for the rest of the year, dolphin mortality by the end of 1994 should be about the same as in 1993. However, conditions in both the fishery and the ocean could change, as could the level of fishing effort, and all this would probably be reflected in the final mortality for 1994.

Venezuela noted that the United States had classified two stocks of dolphins involved in the fishery as depleted, and asked Dr. Joseph to clarify whether this meant that the survival of these populations was in question or whether the definition was legalistic. Dr. Joseph explained that the U.S. Marine Mammal Protection Act defines a stock as "depleted" when its abundance is below the level of Optimum Sustainable Population (OSP), at which the annual net replacement to the stock is at a maximum. For spotted and spinner dolphins in the eastern Pacific, the OSP was defined as when the stock was at 60 percent of its abundance prior to exploitation; using this definition, the U.S. NMFS had classified the eastern spinner and northeastern spotted dolphins as depleted, and U.S. vessels were thereby prohibited from fishing on these stocks. Dr. Joseph added that, at current levels of stock abundance, the mortality generated by the fishery posed no threat to the survival of either stock of dolphins.

In answer to a question about whether the amount of bycatch and the variety of species it contained depended mostly on the mode of fishing, *i.e.* on schoolfish, floating objects, or dolphins, or on geographical location, Dr. Hall stated that the amount of bycatch is due almost entirely to the mode of fishing, but that the amounts and species compositions of the bycatches are somewhat different in different areas.

There being no further questions, the Chairman moved on to the next agenda item.

Agenda Item 8 - Recommendations for 1994

The Chairman introduced this item, noting the staff's recommendation for a yellowfin catch limit of 250 thousand tons for 1994, with four increments of 25 thousand tons each. After a short discussion, Panama proposed acceptance of the recommended limit, and it was approved by all members present.

The Chairman asked Dr. Joseph to draft a resolution to reflect this decision.

Agenda Item 9 - Recommended research program and budget for FY 1995-1996

The Chairman asked Dr. Joseph to present the budget for FY 1995-1996.

Dr. Joseph noted that the 1995-1996 budget was about the same as the budget approved the previous year. He called attention to the fact that in recent years the approved budget had not been completely funded by the governments, only about 78 percent of what was approved being received. This was illustrated by the following table:

FY	Approved	Received	Percentage of approved budget received
1988-89	3,525,000	2,846,000	80
1989-90	3,525,000	3,049,000	86
1990-91	3,706,020	3,204,882	86
1991-92	4,403,307	3,243,263	74
1992-93	4,423,824	3,016,731	68
1993-94	4,743,000	2,997,261	63
1994-95	4,865,250		
1995-96	4,866,767		

Dr. Joseph expressed concern over the fact that the amount of money the IATTC was receiving through the budget was decreasing while its responsibilities, particularly with respect to dolphins, were increasing.

At the conclusion of Dr. Joseph's presentation, the Chairman postponed action on the budget and recessed the IATTC meeting until after the Intergovernmental Meeting which would convene the following morning (June 8).

The IATTC meeting was reconvened on Wednesday, June 8, at 3:15 p.m. Chairman Giménez began by calling for approval of the draft resolution for yellowfin conservation, and it was duly approved (Appendix IV).

The United States moved that the budget be approved as presented; Japan seconded the motion, which was approved by all members present.

Dr. Joseph asked for the floor, and noted that Commission decisions required the consent of all members. He said he would therefore seek the approval of the two absent members, Nicaragua and Vanuatu, and would advise the other members only if such approval were withheld.

#### Agenda Item 10 - Place and date of next meeting

The Chairman noted that, in addition to the regular meeting, a special meeting would be held in La Jolla in October, in conjunction with the Intergovernmental Meeting, to discuss revisions of the overall DML for 1995.

Dr. Joseph recommended that the next regular meeting also be held in La Jolla. This would give the representatives of the member governments a chance to visit Commission headquarters, and also give the IATTC staff the opportunity to meet the Commissioners and other people affected by and interested in their work. He noted that meetings held in La Jolla were hosted by the IATTC and not by the United States, and would thus not affect the sequence of rotation among member governments.

It was unanimously agreed that the next regular meeting of the IATTC would be held in La Jolla in early June of 1995, and that Dr. Joseph would notify the members of the exact dates.

#### Agenda Item 11 - Election of officers

Costa Rica nominated the United States section to provide a Chairman for the meeting in June 1995, and this was approved by all members present. The nomination was accepted with thanks.

The United States proposed that the Chairman of the current meeting also serve as Chairman of the special meeting in October. This proposal was agreed to by all national sections, and accepted with thanks.

#### Agenda Item 12 - Other business

The Chairman reminded the meeting of the recent death of Ms. Marlène Kanas, who had attended several meetings on behalf of the Association Robin des Bois, a French environmental organization. He asked for approval of a joint resolution from both the IATTC and the Intergovernmental meeting recognizing her contribution to the Commission's work and, having obtained the members' approval, instructed Dr. Joseph to send copies of the resolution to Ms. Kanas' family and to the Association Robin des Bois.

The representative from the Food and Agriculture Organization (FAO) of the United Nations thanked the IATTC for the invitation to observe the meeting, and on behalf of the FAO congratulated the Commission on the rapid progress in reducing dolphin mortality in the tuna fishery in the eastern Pacific. He also thanked the Commission and its member countries for collaborating with FAO in studies of interactions of tuna fisheries of the Pacific Ocean.

In his closing remarks, the Chairman noted the Commission's many achievements in managing the tuna fishery of the eastern Pacific. He said that nobody had expected such outstanding success in reducing

dolphin mortality, and that the governments should be congratulated for their determination and their efforts. However, he stressed that special recognition should be given to the industry, because the success of the program and the protection of the resources depended ultimately on the fishermen.

On behalf of the Governor and people of the state of Sucre, he thanked the Commission for choosing Cumaná, the capital of the Venezuelan tuna industry, as the venue for its 53rd meeting.

Colombia noted that, although it was not yet a member of the IATTC, it expected to become one very soon, and expressed his appreciation to Venezuela for a splendid meeting and for the warm hospitality shown by the government of Venezuela and particularly by the people of Cumaná. All the attendees joined Colombia in applauding the government of Venezuela.

#### Agenda Item 13 - Adjournment

The Chairman closed the meeting at 4:05 p.m. on June 8, 1994.

Appendix I.

INTER-AMERICAN TROPICAL TUNA COMMISSION  
COMISION INTERAMERICANA DEL ATUN TROPICAL

53rd MEETING - 53rd REUNION

Cumaná, Venezuela  
June 7-8, 1994 - 7-8 junio, 1994

ATTENDEES -- ASISTENTES

MEMBER COUNTRIES -- PAISES MIEMBROS

COSTA RICA

LUIS PARIS CHAVERRI, Comisionado  
HERBERT NANNE ECHANDI, Comisionado  
Instituto Costarricense de Pesca y Acuicultura

ARTURO BEECHE  
Beeche Puntarenas, S.A.

JAIME BASADRE, Comisionado  
MANUEL FERNANDEZ  
Sardimar, S. A.

FRANCE

DANIEL GAERTNER  
ORSTOM

JAPAN

KATSUMA HANAFUSA  
International Affairs Division  
KIYOSHI KATSUYAMA  
Marine Resources Division  
Fisheries Agency

YASUO SATO  
SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries  
Cooperative Associations

PANAMA

JUAN DE OBARRIO, Comisionado

LUIS A. DORATI  
Caribbean Fishing Trading, S.A.

CIRIACO GAMECHO  
Atunbi S.A.

UNITED STATES

HENRY BEASLEY, Commissioner  
National Marine Fisheries Service

MARY L. WALKER, Commissioner

BRIAN HALLMAN  
Department of State

MARTIN HOCHMAN  
National Oceanic and Atmospheric  
Administration

MICHAEL DUNN  
Mitsubishi Foods (MC) Inc.

PAUL NIEMEYER  
MICHAEL TILLMAN  
National Marine Fisheries Service

ED STOCKWELL  
StarKist Foods Inc.

VENEZUELA

CARLOS GIMÉNEZ, Comisionado  
SARPA, Ministerio de Agricultura y Cría

JEAN-FRANCOIS PULVENIS, Comisionado  
SANTOS VALERO  
Ministerio de Relaciones Exteriores

ALFREDO ZULOAGA, Comisionado  
Instituto de Comercio Exterior

ROBERTO ORTISI, Comisionado  
Avatun

HUGO ALSINA  
CARLOS ATILANO  
ORLANDO FLORES  
WILLIAM MIJARES  
SARPA, Ministerio de Agricultura y Cría

LUIS MARCANO BARRIOS  
Senado de Venezuela

JOSE JAVIER ALIO  
JESUS MARCANO  
FONAIAP

HUGO ANCIETA  
Marmen C.A.

GERMAN ANDRADE  
Eveva-Propisca

JOSE MARIA BENGOA  
Albatún S.A./Inversiones Berloli S.A.

ELIO CANNAVO  
Cannavó C.A.

JON CELAYA  
Avatún

MANUEL ELDUAYEN  
Atunanca

GUIDO ESTEFANELLI  
LORENZO RAVAGO  
RAUL ROMERO  
Fenapesca

HANS-PETER KLEIN  
WOLFGANG YAÑEZ  
Trustuna C.A.

LUIS ENRIQUE NUÑEZ  
GERARDO SANTOS  
Pesquera Morro de Puerto Santo, C.A.

GIOVANNI OMBRA  
Fipaca C.A.

MAURICIO PAGAVINO  
Instituto Oceanográfico de Venezuela

DOMENICO PINTO  
JOSE PINTO  
SALVADOR SPINALI  
Pesquera Pezatún S.A.

MIGUEL ROBLES  
Alimentos Margarita

ROBERTO SAVELLI

JOSE RAFAEL ZERPA  
Colegio de Ingenieros de Venezuela

NON-MEMBER COUNTRIES -- PAISES NO MIEMBROS

COLOMBIA

ALEJANDRO LONDOÑO GARCÍA  
ALBERTO VILLANEDA JIMÉNEZ  
ADOLFO RINCON PRIETO  
Instituto Nacional de Pesca y Acuicultura

LUIS LOPEZ MARRUGA  
Frigopesca, S.A.

ALFONSO PAZ TENORIO  
Frigomarina Ltda.

ARMANDO HERNÁNDEZ RODRÍGUEZ  
Asociación Nacional de Industriales

ALVARO BUSTAMANTE STEER  
ALVARO NAVARRO COLEY  
ALVARO BUSTAMANTE CRUMP  
AMERICO RODRIGUEZ  
Atunes y Enlatados del Caribe, S.A.

HUGO DOMINGO MARINO VILLA  
GUILLERMO DAW ALVAREZ  
HORTENSIA HERNÁNDEZ MARTÍNEZ  
Frigogan

JHONNY ORDOSGOITIA OSORIO  
Aserbuques Ltda.

ESPAÑA

JESUS MIRANDA DE LARRA  
Ministerio de Agricultura, Pesca y Alimentación

MEXICO

DAMASO LUNA CORONA  
Secretaría de Relaciones Exteriores

RICARDO BELMONTES ACOSTA  
GUILLERMO COMPEAN JIMENEZ  
Secretaría de Pesca

DANIEL AVILA ARANDA  
RAMIRO ROJO LOPEZ  
RICARDO LOPEZ GOMEZ  
MIGUEL SOTELO BURGOS  
Cámara de Diputados, Comisión de Pesca

REPUBLIC OF CHINA

ANDREW WU  
Oficina Económica y Cultural de Taipei, Caracas, Venezuela

RUSSIAN FEDERATION

VALERY TSOUKALOV  
Fisheries Committee

SERGEI LEONTIEV  
Research Institute of Marine Fisheries and  
Oceanography

INTERNATIONAL ORGANIZATIONS -- ORGANIZACIONES INTERNACIONALES

DANIEL GAERTNER  
ICCAT

JACEK MAJKOWSKI  
FAO

CARLOS GIL  
Unión Europea

NON-GOVERNMENTAL ORGANIZATIONS -- ORGANIZACIONES NO GUBERNAMENTALES

GLENDIA MEDINA  
HECTOR LOPEZ ROJAS  
Fudena

JUAN CARLOS CARDENAS  
Greenpeace Latin America

TRACI ROMINE  
Greenpeace International

ALEJANDRO VILLAMAR  
Red Mexicana de Acción Frente al Libre Comercio

IATTC -- CIAT

JAMES JOSEPH  
MARTIN HALL  
BERTA JUAREZ  
NICOLAS WEBB

Director  
Tuna-Dolphin Program--Programa Atún-Delfín

## Appendix II.

### Address of Biólogo Carlos E. Giménez B., Director-General of SARPA

Welcome to our country, and an especially warm welcome to Cumana. This is the oldest city in Venezuela, the fishing capital of the nation, and the most important center of the tuna industry in South America. These are reasons enough for the choice of Cumana as the location for this important meeting, in the certainty that the people of the city will, freely and with dignity, show hospitality to all the esteemed delegates from our sister republics, with their common interests in matters regarding the exploitation and conservation of, and trade in, the tunas of the eastern Pacific Ocean.

This is an appropriate moment for reflection: first, I would emphasize the invaluable work of scientific research and multinational coordination carried out by the IATTC in the field of management of tuna fisheries since its creation in 1950 at the initiative of Costa Rica and the United States and, second, the slight effect that the Commission's recommendations have unfortunately had in recent years, despite their solid scientific basis; a situation which might possibly be explained by a lack of genuine identification with the efforts and actions taken to optimize the fishery. The tuna fishery in the eastern Pacific Ocean is one of the few which has a suitable management plan and a system of effective controls.

The Commission has the responsibility of managing the tuna and tuna-like resources of the eastern Pacific Ocean; its general objectives are, among others, to study the biology of the tunas and tuna-like species in the area and recommend appropriate conservation measures that will enable the stocks of fishes to be maintained at levels which will allow constant maximum catches.

In 1976 the Commission was assigned the additional responsibility of studying the dolphins and other marine mammals captured incidentally in the tuna fishery. It is explicitly stated that tuna production should be maintained at a high level, which implies a substantive change in the basic objective.

The international program designed to reduce the incidental mortality of dolphins captured in association with tunas in the fishery in the eastern Pacific arises from the agreements reached in San Jose, Costa Rica, in September 1990 and La Jolla, California, in January 1991, and in April of 1992 was formalized as an intergovernmental program among the IATTC and the governments of Mexico, Spain, and Venezuela. Upon Venezuela's entry into the Commission, this was reduced to the IATTC, Mexico, and Spain. The program's objective is the progressive reduction of dolphin mortality in the eastern Pacific, and its goal is to aim towards reducing it to close to zero in a time frame of seven years, at the end of which the mortality must be less than five thousand animals; it also establishes a series of mechanisms which ensure the implementation of the measures, in the form of Dolphin Mortality Limits, the International Review Panel, and other necessary mechanisms.

If Mexico joins the IATTC, the intergovernmental Agreement would be reduced to being between the IATTC and Spain, in which case it would be appropriate to review the Agreement, since Spain is not currently participating in the fishery. It would then be necessary to establish a program similar to the intergovernmental one within the Commission and, if this was not feasible due to limitations of the Convention, initiate such modifications of the Convention as will allow the implementation of such a program, including the participation of observer nations. Such an arrangement would simplify the current state of management agreements, with horizontal and hierarchical arrangements for obtaining permits for participation, Dolphin Mortality Limits, certificates required by governments and market structures,



Review Panel decisions, the Advisory Committee, *etc.*, which of course make the management of the matter very complex.

The IATTC's basic objective, as stated before, is to implement appropriate conservation measures so that the stocks of fish can be maintained at levels which will permit the maximum sustainable catch. When the IATTC in 1976 defined high level of catch as the objective, and initiated in 1990 the issuance of certificates of "dolphin-safe" fishing for those vessels which carried observers and statements of participation for those vessels which were included in the international observer program, it was, one way or another, allowing the fishery to direct itself towards a practice which the Commission itself should discourage on the basis of scientific evidence and agreed objectives.

Fishing aimed at smaller specimens certainly does not generate the sustained maximum catch. It is a fact that this practice becoming widespread, impelled by commercial considerations, and it is therefore advisable that the international fisheries body, in other words the Commission, direct the efforts necessary to establish the validity of the results of its research by implementing management measures and thus subordinate all other objectives to that of rational management. The term maximum sustained catch, or maximum sustained yield, is not necessarily the same as high level of catch. Tuna production in the eastern Pacific will be maintained at a maximum level if we catch a number of individuals of a size that guarantees the maximum catchable biomass. Given that tunas are at a high level in the food chain, this must, in order to guarantee maximum levels of exploitation, have consequences for those species which tunas eat as well as those which are their natural competitors. This is of course one of the Commission's firm objectives, and the possibilities for management of the resource could include the need to coordinate measures which will guarantee the rational exploitation of the small clupeiform or cephalopod species on which tunas feed, as well as the monitoring of competitor species, such as certain marine mammals.

The objective of maintaining dolphin populations in perpetuity can be achieved, either by the monitoring and maintenance of a population at a basic level or at a significantly higher level. However, if we decide to make the maintenance in perpetuity of the dolphin populations compatible with the maximum catch of tuna, we necessarily have to consider dolphins as competitors for tunas, and an excessive population of dolphins can jeopardize precisely the objective of maximum catch. Therefore, it is not the same thing to have as an imperative the maintenance of tuna production at maximum levels as at a high level. We would have to go back to the original objectives of the Convention and base ourselves on universal criteria for the management of natural resources. In this respect we have to define the extent of the term high level of catch in such a way that it will not allow, and much less induce, the fishery for juvenile tunas, given the effect that this could have on the populations of yellowfin tunas and the reduction of the tunas' contribution to feeding the world's population. We cannot dodge our responsibility of being the main source of direction for an activity which becomes every day more difficult to manage due to the unexpected variables which appear in a constantly changing situation which must be of concern to us all.

The phenomenon of the association of tunas with dolphins exists in several seas and has been especially studied and monitored in the eastern Pacific Ocean. Inexplicably, the only tuna in dispute commercially is that which comes from this area.

I believe that we should work towards the rational management of all animal and vegetable species, without singling any one out for special treatment, and admit that the main natural resource is man, is humankind. Making these objectives compatible should be our fundamental objective.

The 1984 Second World Fishing Congress, organized by FAO, is clear in this respect, and the framework of reference discussed within that organization on so-called responsible fishing lends weight to that type of definition.

The success evidenced by the program in the objective of reducing the incidental mortality of dolphins, and in the establishment of measures which guarantee that goal, could be a good framework for expanding the objectives of the Convention, and therefore brings up the need to initiate a process which will legalize in each of the nations the proposals, suggestions, recommendations and implementation in the light of the successful experience in the two years of the program. The expansion of objectives through the Convention would allow the countries affected to act on the basis of the results of the program. The Agreement showed on the one hand that success can be achieved in matters of conservation through multilateral approaches, and that there should therefore be no mechanisms which obstruct the flow of trade between producer and client nations other than those which can be implemented by sovereign right within the framework of the GATT for those countries signatory to it. However, the intergovernmental program should oblige the countries, if not juridically, which would be most preferable, then morally and ethically at least.

In conclusion, I would like to say that it has been the turn of Venezuela, in the person of Francisco Herrera Terán, to hold the office of President this year, sharing it in these last moments with me. It is not merely for politeness' sake that I wish to highlight the work done by Mr. Herrera Terán, since I know the effort and dedication which he brought to the role of President of the IATTC.

Ladies and gentlemen, it is a great pleasure for Venezuela to invite you to feel as if you were in your own home. Thank you very much.

AGENDA

53rd MEETING OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION

June 7-8, 1994

Cumaná, Venezuela

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna research
4. The 1993 fishing year
5. Status of tuna stocks
6. Review of tuna-dolphin research and extension programs
7. Review of International Dolphin Conservation Program
8. Recommendations for 1994
9. Recommended research program and budget for FY 1995-1996
10. Place and date of next meeting
11. Election of officers
12. Other business
13. Adjournment

June 1994

Appendix IV.

RESOLUTION

*The Inter-American Tropical Tuna Commission, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,*

*Notes that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and*

*Recognizes, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and*

*Recalls that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and*

*Notes that from 1980 through 1993, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and*

*Observes that, although the stock of yellowfin is currently at a level of abundance greater than the optimum, nevertheless it can be over-exploited,*

*Concludes that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1994.*

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties that a quota of 250,000 short tons be established for the 1994 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than four successive increments of 25,000 short tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and*

*Finally recommends that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1994.*

June 1994

MINUTES OF THE 54TH MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

La Jolla, California, USA  
October 20, 1994

Agenda Item 1 - Opening of the meeting

The 54th meeting of the IATTC was held at the Radisson Hotel, La Jolla, California, on October 20, 1994. The meeting was called to order by the Chairman, Dr. Jean-François Pulvenis of Venezuela, at 10:20 a.m. Representatives of all the member governments were in attendance, as were representatives of Colombia, Mexico, Spain, the Comisión Permanente del Pacífico Sur, the European Community, the International Whaling Commission, the American Cetacean Society, the Animal Welfare Institute, the Asociación Empresarial Pesquera de América Latina, the Center for Marine Conservation, the Defenders of Wildlife, the Earth Island Institute, the Fishermen's Cooperative Coalition, the Fundación para la Defensa de la Naturaleza, Greenpeace International, and the Humane Society International. These are listed in Appendix 1.

Agenda Item 2 - Adoption of agenda

The Chairman asked if there were any comments on the provisional agenda (Appendix 2). There were none, so it was adopted.

Agenda Item 3 - Review of the 1994 fishing year to date

The Chairman called upon Dr. James Joseph, Director of the IATTC, to review the 1994 fishery for tunas in the eastern Pacific Ocean.

Dr. Joseph said that the catch of yellowfin to date in 1994 has been slightly greater than the corresponding catch for 1993, whereas the opposite has been the case for skipjack. He next showed data on the catch of yellowfin per capacity ton (YC/C) at sea for 1992, 1993, and 1994, explaining that these numbers reflect fishing success, and are assumed to be proportional to yellowfin abundance. The YC/C for the international fleet during 1994 was less than during 1992 and 1993. When this YC/C was segregated into estimates for the Mexican fleet (the largest fleet in the eastern Pacific Ocean) and the non-Mexican fleet, the former showed a drop of more than 30 percent, whereas the latter showed a slight increase.

In discussing the possible causes for this reduction in fishing success, Dr. Joseph noted several things which might be happening:

1. Increased fishing on schools of small yellowfin not associated with dolphins could reduce the catch of yellowfin. He noted, however, that so far there had not been a pronounced shift to "dolphin-safe" fishing. Fishing for dolphin-associated fish accounted for about 60 to 70 percent of the yellowfin catch during 1982-1992, but only about 50 to 55 percent of that catch during 1993-1994. The average size of the fish in the catch has not changed, however. He stated that so far the data do not support the idea that dolphin-safe fishing has contributed substantially to the decline in fishing success, and noted that a more definitive statement cannot be made until complete data for 1994 have been compiled and analyzed.

2. Fishing success in the area between 10°N and 20°N, where most of the catches of the Mexican fleet are made, has declined sharply. Fishing success

in the area south of 5°N and in the area between 145°W and 160°W has increased, however. It is impossible at this time to determine whether the reduced catches in the central area of the fishery are due to reduced abundance or to reduced vulnerability to capture of the fish in that area.

Dr. Joseph spoke about the recent El Niño episode and its possible effects on the fishery for yellowfin tuna, and noted that currently the sea-surface temperatures and depth of the thermocline in the eastern Pacific Ocean are near normal.

After Dr. Joseph's talk, there was considerable discussion of the effects of switching to dolphin-safe fishing on the catches of yellowfin, the health of the yellowfin resource, and the catches of other species associated with yellowfin in free-swimming schools and schools associated with floating objects. The consensus was that reduced catches of yellowfin resulting from such a switch would cause considerable hardship to the industry. In response to queries, Dr. Joseph said that a switch to dolphin-safe fishing would change the age composition of the population of yellowfin tuna, causing a substantial reduction in the yield per recruit, but that it is not known whether that change would affect the recruitment of yellowfin. He reiterated that not enough is known to evaluate the effects of increased catches of other species which would result from a switch to dolphin-safe fishing.

Agenda Item 4 - Review of the International Dolphin Conservation Program to date

The Chairman called upon Dr. Joseph to discuss this subject. Dr. Joseph stated that during the 1960s and early 1970s most of the vessels which fished for tunas associated with dolphins in the eastern Pacific Ocean were registered in the United States, but that during the mid 1970s more nations became involved in the fishery, and the problem of dolphin mortality thus became an international one. In 1976 the Commission decided to undertake a program to study the problem and reduce the mortalities due to fishing. This program involved placing observers aboard tuna vessels to gather data on mortalities and abundance of dolphins and on conditions associated with mortalities of dolphins. The data on abundance and mortalities are used for assessments of the various stocks of dolphins, and the information on conditions associated with mortalities are used for identifying, developing, and transferring information on equipment and techniques effective for reducing the mortality of dolphins to the international fleet. This program was not begun until 1980, and did not include the fleets of all nations involved in the fishery until 1986. The annual mortalities of dolphins decreased precipitously during the 1986-1992 period. The decrease was due almost entirely to reduction in the mortality per set, rather than to reduction in the numbers of sets made on dolphin-associated tunas.

The International Dolphin Conservation Program (IDCP) was established at the IATTC and intergovernmental meetings held in La Jolla, California, USA, in June 1992. The following overall Dolphin Mortality Limits (DMLs) were established by the agreement which established the IDCP: 1993, 19,500; 1994, 15,500; 1995, 12,000; 1996, 9,000; 1997, 7,000; 1998, 6,500; 1999, >5,000. (The DML for 1994 was later reduced to 9,300 animals.) The mortality was only 3,609 animals in 1993, and the biological effects of these mortalities on the various stocks of dolphins involved in the fishery are insignificant. The International Review Panel (IRP) and the Scientific Advisory Board (SAB) are important components of the IDCP. The principal duties of the IRP are to

review the performances of vessels with individual DMLs, to identify infractions of agreements concerning mortality of dolphins, and to inform the governments in which vessels committing infractions are registered of those infractions. (The DML for individual vessels for a given year is calculated by dividing the overall DML for that year by the number of vessels which have announced their intention to fish for tunas associated with dolphins during that year.) In addition, it makes recommendations to the various governments for standardized sanctions for captains, vessel owners, and observers and for minimum standards for fishing gear. The principal duties of the SAB are to provide advice to the Director of the IATTC concerning research directed at reducing or eliminating the mortality of dolphins caused by the fishery for tunas in the eastern Pacific Ocean. The IRP has met several times each year since its establishment, the most recent meeting being held immediately prior to the present meeting. Due to lack of funds, the SAB has met only once since its establishment. In summary, efforts to reduce the mortality of dolphins have been more successful than expected, and the present level of mortality is insignificant from the standpoint of the health of these stocks.

Dr. Joseph then turned the floor over to Dr. Martín A. Hall, who is in charge of the IATTC's Tuna-Dolphin Program. Dr. Hall pointed out that the ecosystem to which tuna and dolphins belong is complex and poorly understood, so it is impossible to predict with confidence the effects of alterations in fishing methods. He said that bycatches are a fact of life in fisheries all over the world, and that the bycatches by the fisheries for tunas tend to be less than those by the fisheries for most other species. In the purse-seine fishery for tunas in the eastern Pacific Ocean, the bycatches are greatest in sets on fish associated with floating objects and least in sets on fish associated with dolphins (if the dolphins which are released unharmed are not counted as bycatch). Among the things to be considered with respect to the effects of the different modes of fishing on tunas are the yields per recruit, the amounts of unmarketable tunas caught and discarded at sea dead, and the possible effects on recruitment due to alteration of the age structure of the population. Among those to be considered with respect to the rest of the ecosystem are the bycatches of dolphins and other species, the impact of fishing operations on the animals which are not caught, the impact of lost gear, and the utilization of energy. He showed some slides of the geographical distributions of some of the animals caught incidentally during tuna-fishing operations. Marlins are nearly evenly distributed over much of the eastern Pacific Ocean, whereas the distributions of mahi-mahi and sea turtles are more patchy.

Dr. Hall said that research is needed to determine whether bycatch problems exist and, if they exist, the seriousness of the problems. If problems exist, they can be perhaps be alleviated by gear modification, modification of the behavior of the fishermen, or finding ways to utilize the bycatch. The first two approaches have reduced the mortality of dolphins in the purse-seine fishery for tunas in the eastern Pacific Ocean to insignificant levels. These mortalities can perhaps be reduced further by further modifying the nets and techniques of fishing.

The Chairman then called for comments and questions regarding Dr. Joseph's and Dr. Hall's presentations. In response to these, Dr. Joseph said that dolphins will increase in abundance due to the reduction in mortalities due to fishing, but that the increases will be slow due to their low reproductive rates. Some of the attendees criticized the U.S. Marine Mammal

Protection Act, which fails to take into account the tremendous strides made in reduction of dolphin mortalities during the last few years.

Agenda Item 5 - Other business

The Chairman announced that the IATTC had been selected as the recipient of the 1994 Carl L. Sullivan Fishery Conservation Award of the American Fisheries Society (AFS). The award is given to an individual or organization, professional or nonprofessional, for outstanding contributions to the conservation of fishery resources.

Agenda Item 6 - Adjournment

The meeting was adjourned at 1:55 p.m.



APPENDIX 1

INTER-AMERICAN TROPICAL TUNA COMMISSION  
COMISION INTERAMERICANA DEL ATUN TROPICAL

54th MEETING--54\* REUNION  
La Jolla, California, USA  
October 20, 1994--20 de octubre de 1994

ATTENDEES--ASISTENTES

MEMBER COUNTRIES--PAISES MIEMBROS

COSTA RICA

LUIS PARIS CHAVERRI Comisionado  
ALVARO MORENO GOMEZ  
Comisionado  
Instituto Costarricense de Pesca y Acuicultura

FRANCE

ALAIN FONTENEAU  
ORSTOM

JAPAN

KATSUMA HANAFUSA  
International Affairs Division

SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries  
Cooperative Associations

NICARAGUA

SERGIO MARTINEZ CASCO  
Commissioner  
CIRH

CARLOS ABAUNZA  
Ministerio de Economía y Desarrollo

ENRIQUE OLIVARES TORRES  
MEDEPESCA

PANAMA

RICARDO MARTANS G.  
Ministerio de Comercio e Industrias

UNITED STATES

HENRY BEASLEY, Commissioner  
PAUL NIEMEIER  
MICHAEL TILLMAN  
ELIZABETH EDWARDS  
DANA WILKES  
National Marine Fisheries Service

BRIAN HALLMAN  
WILLIAM GIBBONS-FLY  
Department of State

ROBERT MACDONALD  
Commisioner

MARTIN HOCHMAN  
NOAA

CARLOS ARBELAEZ  
Seatrading International

GORDON BROADHEAD

DAVE BURNEY  
U.S. Tuna Foundation

TOM CREHAN  
Fishermen's Cooperative Association of San Pedro

PETE DiLEVA  
JOE HORNE  
Caribbean Fishing, Inc.

MICHAEL DUNN  
Mitsubishi Foods (MC) Inc.

AUGUST FELANDO

PETER H. FLUORNOY

WILLIAM GILLIS  
American Tuna Sales Association

GUILLERMO GOMEZ  
Gomez-Hall Associates

TERRY HOINSKY  
Fishermen's Union of America, AFL-CIO

ROBERT INSINGER

PAUL KRAMPE  
Van Camp Seafood Company

MICHAEL McGOWAN  
Cabason, Inc.

ANTHONY NIZETICH  
Ocean-Fish Co.

OTTO OBRIST  
Ocean Ventures, Inc.

JOHN ROYAL  
Fishermen and Allied Workers' Union

ED STOCKWELL  
StarKist Foods Inc.

ANTHONY VUOSO  
Tri-Marine International

ED WEISSMAN

ROBERT B. YOUNG  
Fisheries Consultant

#### VANUATU

RICHARD CARPENTER  
Commissioner for Maritime Affairs

ANTHONY TILLET

#### VENEZUELA

JEAN-FRANÇOIS PULVENIS Comisionado  
Ministerio de Relaciones Exteriores

HUGO ALSINA LAGOS  
SARPA, Ministerio de Agricultura y Cría

#### NON-MEMBER COUNTRIES—PAISES NO MIEMBROS

#### COLOMBIA

SILVIA FORERO DE GUERRERO  
Ministerio de Agricultura

ALFONSO PAZ TENORIO  
Frigomarina Ltda.

ALEJANDRO LONDOÑO GARCÍA  
ADOLFO RINCON PRIETO  
Instituto Nacional de Pesca y Acuicultura

ALVARO BUSTAMANTE STEER  
AMERICO RODRIGUEZ  
Atunes y Enlatados del Caribe, S.A.

DARIO JARAMILLO  
Ministerio de Comercio Exterior

HUGO DOMINGO MARINO VILLA  
GUILLERMO DAW ALVAREZ  
JAIME SEDA  
Frigogan

AUGUSTO MAINERO ROMAN  
Frigopesca, S.A.

MEXICO

MA. TERESA BANDALA MEDINA  
Secretaría de Relaciones Exteriores

CARLOS CAMACHO GAOS  
Subsecretario

RICARDO BELMONTES ACOSTA  
GUILLERMO COMPEAN JIMENEZ  
Secretaría de Pesca

FELIPE CHARAT  
ALFONSO ROSIÑOL  
CARLOS DE ALBA  
CANAINPES

MARIO MONTANO BENSON  
Atunera Maya

RAUL PAEZ DELGADO  
CEPSECE S.C.

SPAIN

ANTONIO FERNANDEZ AGUIRRE  
Ministerio de Agricultura, Pesca y Alimentación

JOSE MANUEL SANCHEZ MORA  
Asconser

INTERNATIONAL ORGANIZATIONS--ORGANIZACIONES INTERNACIONALES

BERNARDO UCCELLETTI  
Comisión Permanente del Pacífico Sur

MICHAEL TILLMAN  
International Whaling Commission

MANUEL ARNAL MONREAL  
European Commission

NON-GOVERNMENTAL ORGANIZATIONS--ORGANIZACIONES NO GUBERNAMENTALS

BARBARA BRITTEN  
American Cetacean Society

DAVID C. PHILLIPS  
Earth Island Institute

CRISTOPHER K. CROFT  
Defenders of Wildlife

GEORGE PLATT  
THERESA PLATT  
The Fishermen's Coalition

FRANCISCO HERRERA TERAN  
Asociación Empresarial Pesquera de América  
Latina

TRACI ROMINE  
Greenpeace International

HECTOR LOPEZ ROJAS  
Fundación para la Defensa de la Naturaleza

RICK SPILL  
Animal Welfare Institute

KATHLEEN O'CONNELL-GUTIERREZ  
Humane Society International

NINA YOUNG  
Center for Marine Conservation

IATTC--CIAT

JAMES JOSEPH  
MARTIN HALL  
DAVID BRATTEN  
BERTA JUAREZ  
NICOLAS WEBB

Director  
Tuna-Dolphin Program--Programa Atún-Delfín

APPENDIX 2

54th MEETING (SPECIAL) OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION

October 20, 1994

La Jolla, California

PROVISIONAL AGENDA

1. Opening of the meeting
2. Adoption of agenda
3. Review of the 1994 fishing year to date
4. Review of the International Dolphin Conservation Program to date
5. Other business
6. Adjournment

MINUTES OF THE 55TH MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

La Jolla, California, USA  
June 13-15, 1995

Agenda Item 1 - Opening of the meeting

The 55th meeting of the Inter-American Tropical Tuna Commission (IATTC) was called to order by the Chairman, Mr. Brian Hallman of the United States, on June 13, 1995 at 10:20 a.m. Representatives of all the member governments of the IATTC except Nicaragua and Vanuatu were in attendance, as were representatives of Colombia, Ecuador, Mexico, the Seychelles, Spain, Taiwan, the International Commission for the Conservation of Atlantic Tunas, the International Whaling Commission, the Organización Latinoamericana de Desarrollo Pesquero (OLDEPESCA), the Asociación Empresarial Pesquera de América Latina (ALEP), the Center for Marine Conservation, the Earth Island Institute, the Fishermen's Coalition, the Fundación para la Defensa de la Naturaleza (FUDENA), Greenpeace International, the Humane Society International, the Red Mexicana de Acción frente al Libre Comercio, the Whale and Dolphin Conservation Society, and the World Wildlife Fund. These are listed in Appendix 1 of these minutes.

Agenda Item 2 - Adoption of agenda

The Chairman called for suggestions for modifications to the agenda (Appendix 2). There were none, so it was adopted without change.

Agenda Item 3 - Review of current tuna research

The Chairman called upon Dr. James Joseph, Director of the IATTC, to introduce this subject. Dr. Joseph said that the results of the staff's research are published in its Annual Reports and Bulletins and in outside scientific journals. He stated that the IATTC meetings are held from time to time in La Jolla to give the Commissioners and other attendees a chance to meet members of the IATTC staff and get a better understanding of the work that they are doing.

Dr. Joseph then called upon Dr. Richard B. Deriso, head of the IATTC's Tuna-Billfish Program. Dr. Deriso described the staff's current studies on the recruitment of yellowfin tuna in the eastern Pacific Ocean (EPO). Estimates of recruitment, abundance of spawners, sex ratio, fecundity, and spawning frequency are combined to estimate the survival rate from spawning to recruitment. The survival seems to be positively correlated with the area of the EPO in which the sea-surface temperatures are greater than 26°C (79°F). He described the IATTC's studies at its laboratory in Achotines, Panama. Most of the work to date has been conducted with black skipjack tuna, but an agreement has recently been reached by the Overseas Fishery Cooperation Foundation (OFCF) of Japan, the government of the Republic of Panama, and the IATTC to undertake a joint 5-year project, funded mostly by the OFCF, at the Achotines Laboratory. The facilities at the laboratory are currently being expanded, and it is anticipated that more work on yellowfin can be carried out when construction is completed. He also mentioned studies on the early life histories of yellowfin and bluefin carried out by staff members of the Japan Sea Farming Association (JASFA) and the IATTC at JASFA's Yaeyama Station on Ishigaki Island, Okinawa Prefecture.

Dr. Deriso then called upon Mr. Kurt M. Schaefer to describe his studies of the reproductive biology of yellowfin and skipjack tuna in the EPO. Mr. Schaefer showed that larvae of yellowfin occur in waters of the EPO with surface temperatures greater than 26°C throughout the year. About 50 percent of yellowfin females 100 cm long (equivalent to about 45 pounds or 20 kg) are sexually mature. Mature females spawn at intervals of about 1.43 days. A 100-cm fish spawns about 1 million eggs at each spawning, and a 150-cm fish (equivalent to about 150 pounds or 70 kg) produces about 5 million eggs at each spawning. The skipjack caught in the EPO are generally believed to be mostly the result of spawning in the central Pacific Ocean. Re-examination of all available data shows that skipjack larvae have rarely been caught east of 100°W, but that they occur far more frequently in the EPO west of 100°W. Skipjack gonads are currently being collected by observers so that more can be determined about the spawning of skipjack in the EPO.

Dr. Deriso then introduced Mr. Michael G. Hinton, who talked about his studies of billfish ecology. Mr. Hinton said that his research is being carried out in collaboration with scientists from the National Research Institute of Far Seas Fisheries (NRIFSF) in Shimizu, Japan, and the U.S. National Marine Fisheries Service (NMFS) in Miami, Florida. Currents, upwelling, eddies, and frontal zones are all known to influence the distribution of billfishes. Also, the distributions of spawning and non-spawning billfishes may differ. It is not possible, in most cases, to obtain unbiased estimates of the distributions of billfishes from unadjusted data on catches by longliners because the effort is directed at other species, particularly bigeye tuna. With appropriate adjustments, however, much better estimates can be obtained. He showed slides with unadjusted and adjusted distributions of blue marlin and swordfish; for both species the unadjusted and adjusted distributions were considerably different. The adjusted data indicate considerable seasonal movement of the fish. Dr. Deriso noted that there is a need for better catch and effort data for billfishes, and stated that Mr. Hinton will serve as chairman for a meeting on that subject which will take place in July 1995.

Dr. Deriso then called upon Mr. Alejandro A. Anganuzzi to describe his work on tuna fleet dynamics. A better understanding of how the captains of fishing vessels make decisions will lead to better evaluation of logbook data. The fundamental questions are: (1) what information is available? and (2) how do the captains respond to that information? Not all captains respond in the same way to the same information; for example, some of them fish primarily for dolphin-associated fish while others fish primarily for fish in free-swimming schools and/or fish associated with floating objects. The situation is complicated by the fact that most of the vessels belong to code groups of about 5 to 10 boats which exchange information on fishing success with one another, but not with other vessels. Dr. Deriso said that Mr. Anganuzzi's work will also be useful in evaluation of the interactions of among various fishing fleets, a subject which has gotten considerable attention during recent years.

Dr. Deriso then asked if there were any questions on the information that had been presented. Mr. Felipe Charat of ALEP remarked that fecundity was shown on a slide as a function of length, but that people in the fishing industry are more interested in the weights of the fish. Dr. Deriso replied that equations for converting lengths to weights have been calculated. He said that the relationship of fecundity to weight is linear, whereas that of fecundity to length is curvilinear.

#### Agenda Item 4 - The 1994 fishing year

After a break for lunch, the Chairman called upon Dr. Joseph to describe the fishery in 1994. Dr. Joseph showed some slides of catch and effort for 1993, 1994, and the first five months of 1995. The total catches of yellowfin and skipjack and the effort were roughly the same in 1993 and 1994, and it appears that the catches and effort in 1995 will be roughly equal to those of 1993 and 1994. He also showed slides with information on the catches and fleet size by flag and the areal distributions of the catches of yellowfin, skipjack, and bigeye tuna.

#### Agenda Item 5 - Status of tuna stocks

The Chairman called upon Dr. Joseph to discuss the status of the tuna stocks of the EPO. Dr. Joseph began his discussion with yellowfin. The IATTC staff first recommended regulations for yellowfin in the early 1960s, and regulations were implemented from 1966 through 1979. After that it was no longer possible to get the nations which participated in the fishery to agree on allocation of the quotas among nations. Three methods, based on catch per day of fishing, catch per hour of searching for fish, and cohort analysis, are used to estimate the relative abundance of yellowfin in the EPO; all three give similar results. During the mid- to late 1970s and early 1980s large portions of the fishing effort were directed at smaller yellowfin, which resulted in lower catches per unit of effort (CPUEs) during late 1970s and early 1980s. During 1982 and 1983 there was a strong El Niño event, which made the fish more difficult to catch. At this time many vessels transferred their operations to the western Pacific Ocean. The decrease in fishing effort proved beneficial to the condition of the stock, and the CPUEs increased during the mid-1980s. Since then the effort has been less than it was from the mid-1970s to the early 1980s, and the CPUEs have remained high. Dr. Joseph described production models and two types of age-structured models which are used to assess the condition of yellowfin in the EPO. Production models require only catch and effort data collected over a series of years during which there was considerable variation in the amount of effort exerted. Age-structured models require information on the catches of fish of the various ages and on the growth and mortality of the fish. The results obtained with these two approaches are compatible with one another. They indicate that yellowfin is slightly underfished in the EPO. If the recruitment in 1995 is about equal to the average recruitment of 1985-1994, a quota of about 260 thousand tons would be appropriate. If it is about equal to the average of 1992-1994, a quota of 240 thousand tons would be appropriate. Unfortunately, it is too early to estimate the recruitment for 1995.

Dr. Alain Fonteneau of France asked why the recruitment was apparently greater during 1976-1984 than during 1967-1975, and Dr. Joseph said that this was due largely to the fact that the area of the fishery had expanded. Dr. Fonteneau said that the data on fleet size are misleading because improvements in the vessels and gear are increasing their efficiency. He suggested that a table comparing fleet size and total fishing power of the fleet would be useful. Dr. Joseph replied that the IATTC staff does not use fleet size as an index of fishing effort in its stock assessments. For this purpose it uses indices derived mostly from logbook data. He said that calculation of factors to adjust for changes in vessel efficiency is extremely difficult. However, these changes are taken into account, particularly in the searching-time method for calculating CPUE. Mr. Charat asked if the increased time that was

being spent in removing dolphins from the net was making the vessels less efficient. Dr. Joseph replied that this time is not counted as fishing time in the searching-time method. Mr. Minoru Morimoto of Japan asked about the size composition of yellowfin in the catches, the schooling habits of yellowfin and skipjack, and the use of fish-aggregating devices (FADs) in the EPO. Dr. Joseph replied that tunas are caught in three types of schools, fish associated with dolphins, fish in free-swimming schools, and fish associated with floating objects. The yellowfin in dolphin-associated schools are larger than those in the other two types of schools. Skipjack are not often found in dolphin-associated schools, but yellowfin are frequently caught with skipjack in free-swimming and log-associated schools. FADs are used much less frequently in the EPO than in the western Pacific and Atlantic Oceans. Dr. Guillermo Compeán of Mexico asked about the effects of the capture of small fish on the recruitment of yellowfin. Dr. Joseph replied that approximately 3.5 to 7 million unmarketable yellowfin are caught each year in sets made on fish in free-swimming schools and fish associated with floating objects. Since the annual recruitment is about 70 to 90 million fish, about 3 to 5 percent of the recruitment is lost in this way. If fishing effort on dolphin-associated schools of yellowfin were shifted to schools associated with floating objects the discards would increase to about 13 to 25 million fish--a significant fraction of the total recruitment. He pointed out that he had previously said that such a shift would (1) reduce the yield per recruit of yellowfin by about 25 to 30 percent and (2) reduce the portion of the recruitment available to the fishery due to reduction of the area in which it takes place. Dr. Fonteneau and Dr. Compeán asked whether yellowfin which are discarded at sea are counted as catch for purposes of stock assessment. Dr. Joseph said that they are not, but that until recently the percentages have been fairly constant, so this would not make much difference in the estimates. Extensive information on discards is available only for the last few years; when more data are available, that information may be incorporated into the calculations. If the portion of the catch which is taken by vessels fishing for log-associated fish increases the amount of discards will increase. He also noted that if the mode of fishing is changed the effective recruitment will decrease because the fishery for log-associated fish takes place in a smaller portion of the EPO than does the fishery for dolphin-associated fish.

Dr. Joseph said that, on a world-wide or Pacific-wide basis, the catches of skipjack tuna are considerably greater than those of any other species of tuna. In the EPO, however, the catches of yellowfin exceed those of skipjack. The greatest catches of skipjack in the EPO are made off Central America and northern South America. The status of skipjack in the EPO cannot be determined with production models because they mingle with the skipjack of the central and western Pacific Ocean. Yield-per-recruit analyses indicate that it would be impossible, or nearly so, to overfish skipjack from a yield-per-recruit standpoint in this area.

On a world-wide and Pacific-wide basis, the tonnage of bigeye tuna caught ranks third, after skipjack and yellowfin. Whereas the catches of skipjack and yellowfin are greater in the western Pacific than in the EPO, the opposite is the case for bigeye. A large portion of the bigeye catch is used for high-priced sashimi, so its economic value is greater, per unit of weight, than those of skipjack or yellowfin. Bigeye are caught mostly by longlines. In the EPO bigeye are most abundant west of Baja California between 120°W and 140°W and off northern South America between the coast and 140°W. They occur at greater depths than do most other tunas and billfishes. During the mid-1970s most of the Japanese longliners modified their gear so that it fished



deeper (50 to 250 m (27 to 137 fathoms), as compared to 50 to 120 m (27 to 66 fathoms) for regular longline gear), thereby increasing their catches of bigeye and decreasing their catches of most other species. The catches of bigeye by surface gear in the EPO have been much less than those of yellowfin and skipjack. In 1994, however, it was discovered that bigeye associated with floating objects, but well below the surface, can be detected with sonar and caught with purse seines, and more than 31 thousand tons were caught during that year. The bigeye caught by surface gear in 1994 were considerably smaller, on an average, than those caught by surface gear during most prior years, and those caught by surface gear during most prior years were considerably smaller than those caught by longlining.

The CPUEs of bigeye remained at about the same level from 1964 through 1987, while the effort more than doubled. Ordinarily the CPUE decreases when the effort increases; perhaps the CPUE remained at the same level because the gear was modified so that it fished more in the depths that bigeye inhabit. Staff members of the NRIFSF and the IATTC have recently made some improvements to the methods for estimating relative abundance of bigeye (and yellowfin) from longline CPUE data. Yield-per-recruit analyses indicate that the greatest yields per recruit can be achieved when the size at entry is between about 60 and 120 cm (12 and 90 pounds or 5 and 40 kg). The IATTC staff performed cohort analyses for bigeye to estimate its recruitment in the EPO, and then used these estimates to estimate the effects of purse-seine catches of 30 thousand tons per year on the longline fishery. These analyses were based on the assumption that the surface and longline fisheries exploit the same stock or stocks of bigeye. It was estimated that the longline catches would be reduced from about 64 thousand tons per year to less than 1 thousand tons per year if the coefficient of natural mortality ( $M$ ) is 0.4, from about 64 to 32 thousand tons per year if  $M$  is 0.6, and from about 64 to 48 thousand tons per year if  $M$  is 0.8. Dr. Joseph emphasized that these estimates are extremely crude and may be severely biased, due to lack of data on bigeye. However, they provide a reference point for monitoring changes in the fishery.

Dr. Fonteneau said that the catch of bigeye by surface gear in the Atlantic Ocean, where the ratios of surface to longline catches have been greater than in the Pacific Ocean for many years, increased greatly in 1993. He said that the coefficient of natural mortality of bigeye in the Atlantic Ocean during its first two years in the fishery was estimated to be 0.8 and that this is believed to decrease to 0.4 for older fish. If such is the case for the Pacific Ocean, the effect of the surface fishery on the longline fishery would be less than estimated by the IATTC staff. Mr. Morimoto thanked Dr. Joseph for his discussion of the bigeye situation, and said that his government is greatly concerned about the increased catch of small bigeye in the EPO by the surface fishery. He said that it is important for the IATTC staff examine the impact of large purse-seine catches of small bigeye on the abundance of bigeye and on the catches of bigeye by the longline fishery, and Dr. Joseph agreed with him.

Finally, Dr. Joseph discussed swordfish. After increased catches of swordfish in the Atlantic Ocean in recent years, the resource appears to be overfished, and some vessels have shifted their operations to the Pacific Ocean. Swordfish do not appear to be overfished in the Pacific, but it is prudent to monitor the fisheries for swordfish carefully. The greatest catches of swordfish in the Pacific Ocean are made by vessels of Japan, the United States, Chile, and the Philippines, in that order. In the EPO the

greatest catches are made by vessels of the United States, Chile, Japan, and Mexico, in that order.

The representative from Mexico asked if estimates of the abundance of swordfish are available. Dr. Joseph said that only estimates of relative abundance have been calculated, and that these are based mostly on data for the Japanese longline fishery. Mr. Morimoto mentioned the need to improve the swordfish statistics and to determine the stock structure of swordfish. He also said that the IATTC should cooperate with the South Pacific Commission and the newly-organized Interim Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean in pursuit of more knowledge of swordfish, since there is thought to be only one stock of swordfish in the Pacific Ocean. The representative from Ecuador offered to make Ecuador's data base on swordfish available to the IATTC staff. Dr. Joseph thanked him for this kind offer, and said that IATTC staff members would be contacting their counterparts in Ecuador in this regard.

The meeting was adjourned for the day at 5:30 p.m.

#### Agenda Item 6 - Review of tuna-dolphin research and extension programs

The meeting was reconvened by the Chairman on June 14, 1995, at 9:30 a.m. He turned the floor over to Dr. Joseph, who introduced Dr. Martin A. Hall, head of the IATTC's Tuna-Dolphin Program. Dr. Hall said that the Tuna-Dolphin program includes gear studies, estimation of mortality and relative abundance of dolphins, other biological studies, and estimation of the incidental catches associated with purse-seining for tuna. Most of the data come from the observer programs, which cover all trips by vessels with carrying capacities greater than 400 short tons.

Dr. Hall then introduced Mr. David A. Bratten and Ms. Cleridy E. Lennert to discuss mortalities of dolphins due to the fishery. They listed the various factors which affect the mortalities. The natural factors include the species or stock of dolphins, the area, the size of the herd, the amount of tunas caught, the condition of the ocean, the weather, and the time of day. The factors under the captain's control include avoidance of high-risk situations, backing down, hand rescue of dolphins, use of floodlights during hours of darkness, maintenance of dolphin-safety equipment, crew selection and training, and crew motivation. The factors under the vessel owner's or manager's control include vessel maintenance, procurement of dolphin-safety equipment, procurement of a helicopter, selection and motivation of a captain, and crew selection. The factors which are correlated with higher mortalities of dolphins are, in approximate order of importance: (1) formation of canopies in the net, herd size, and amount of tunas caught; (2) duration of set, collapse of net, and species of dolphins encircled; (3) currents, area, and gear malfunctions. IATTC staff members inspect the dolphin-safety gear of the vessels and observe trial sets to determine if the dolphin-safety panels are correctly placed. Mr. Bratten described the Medina cloth panel which has been used, with some success, on two vessels and the Freitas panel, which has not been used but which is believed to offer considerable promise. He also described an acoustic Doppler current profiler which can be used to detect subsurface currents.

Dr. Hall then introduced Mr. Felipe Galván-Magaña of the Centro Interdisciplinario de Ciencias Marinas of La Paz, Mexico, who has been working with an IATTC staff member on the food and feeding habits of dolphins, tunas,

and other upper-level predators. Mr. Galván said that the objectives of the study are (1) to determine the trophic relationships of the various upper-level predators and (2) to determine the extent to which their diets overlap. Stomach contents were taken from fish and dolphins caught in 133 dolphin-associated sets, 106 sets on free-swimming schools of tuna, and 94 sets on schools of tuna associated with floating objects. Also, tissue samples were taken to determine the  $^{13}\text{C}/^{12}\text{C}$  and  $^{15}\text{N}/^{14}\text{N}$  ratios. A total of about 8,300 stomach and tissue samples have been taken. The analyses of the data include the amounts of the various prey categories consumed, fullness of the stomachs, times of day of feeding, and state of digestion of the food. During the daylight hours, the tunas had fresh food in their stomachs in both the morning and afternoon, whereas the dolphins rarely had fresh food in their stomachs except during the early morning. During the daytime, spinner dolphins had fed mostly on mesopelagic prey, whereas spotted dolphins and yellowfin tuna had fed mostly on epipelagic organisms. However, there were greater proportions of the hard parts of mesopelagic organisms in the stomachs of spotted and spinner dolphins than in those of the yellowfin. This could indicate that the dolphins feed at greater depths than the yellowfin and/or that they feed more at night than the yellowfin.

Dr. Hall then called upon Dr. Robert J. Olson to talk about tracking studies carried out on yellowfin tuna and spotted dolphins. Dr. Olson said that the funds for this project came from a special allocation from the U.S. Congress. The work was carried out aboard the U.S.-flag purse seiner *Nicole K.* in 1992 and the Mexican-flag purse seiner *Convemar* in 1993, and the U.S. National Oceanic and Atmospheric Administration research vessel *McArthur* in both years. The tunas and dolphins were tagged in the net by swimmers, and then released. Acoustic transmitters were used on the tunas, and radio transmitters and time-depth recorders (TDRs) were used on the dolphins. The tunas were tracked for up to 2 days and the dolphins for up to 4 days. Five of the seven TDRs attached to dolphins were later recovered, and the information on times and depths was transferred to a computer for analysis. At most times during the days the fish were at greater depths than the dolphins, but the dolphins often dove much deeper at night, presumably to feed on vertically-migrating mesopelagic organisms. Three explanations for the association between tunas and dolphins have been proposed: (1) the association is food based; (2) the association affords protection from predation; (3) the dolphins provide a rallying point for the tuna. The most recent data, which show that tunas feed all day, whereas dolphins feed primarily at night and perhaps early in the morning, do not offer much support for the first hypothesis.

Dr. Hall then called upon Mr. Anganuzzi to describe the latest studies on the relative abundance of dolphins. Mr. Anganuzzi said that the data used for these estimates are obtained from the observer programs. The data must be stratified because sampling is not uniformly distributed over the ranges of the various species and stocks of dolphins. This has been accomplished by what is called the post-stratification method because the strata are selected after the data are collected. Recent work by U.S. NMFS scientists shows strong correlations between certain oceanographic variables and the distributions of dolphins. Those correlations can be exploited to model the density of each species or stock as a continuous surface throughout the appropriate area. Such models provide an alternative means for extrapolating to the stock boundaries in areas of low searching effort. The IATTC staff is using generalized linear models to relate oceanographic and locational covariates to the observed encounter rates and herd sizes obtained from the

tuna vessel observer data for each year. He showed a slide comparing the trends estimated for the pooled stocks of spotted dolphin by the two methods. Work is currently underway to improve the procedures and to extend the estimation to the other stocks.

#### Agenda Item 7 - Review of International Dolphin Conservation Program

The Chairman called upon Dr. Joseph to initiate this topic. Dr. Joseph briefly reviewed the history of the International Dolphin Conservation Program (IDCP). During the 1960s and early 1970s nearly all the purse-seine vessels which fished for tunas were registered in the United States, so the mortality of dolphins due to fishing was perceived to be a U.S. problem. Later, when the vessels of other countries entered the fishery in increasing numbers, it became clear that the problem could not be solved by the United States alone. In 1975 it was agreed that the IATTC should become involved in dolphin studies, but it did not receive funds for this purpose until 1980, and the program was not fully funded until 1986. In 1986 the mortality of dolphins was about 133 thousand animals, and by 1992 this number had fallen to about 15 thousand animals. The Agreement for the Conservation of Dolphins, establishing the IDCP, was adopted in 1992. Among other things, it set annual limits on the overall mortalities of dolphins for 1993 through 1999 and established the International Review Panel (IRP) which would review, on a case-by-case basis, reports of violations of laws and regulations for fishing for tunas associated with dolphins. The overall dolphin mortality limits (DMLs) are divided equally among the vessels which announce their intention to fish for tunas associated with dolphins, and any vessel which exceeds its DML must cease fishing for tunas associated with dolphins for the rest of the year. Also, its DMLs for succeeding years can be reduced by the amount that it exceeded its DML in the first year. This provides incentives for the captains of the vessels to minimize the mortalities of dolphins due to fishing.

Dr. Joseph then called upon Dr. Hall, who said that he would discuss the causes of mortality and the ways to minimize it. He said that the mortality in 1994 was 4,095 animals, 542 of which occurred in one "disaster" set. In 1993 and 1994 the mortalities per set were 0.52 and 0.53 animals, respectively. Without the disaster set, the mortality per set in 1994 would have been 0.46 animals. The components of mortality are the number of sets and the mortality per set. The number of sets can be controlled by regulatory bans, regulatory limits, trade sanctions, or boycotts. The mortality per set can be controlled by regulations, technical advances, training and motivation of the fishermen, and marketing. He showed a slide listing the estimated mortalities, and the confidence intervals for those estimates, for each stock of spotted, spinner, and common dolphin for 1994. The mortalities for all of the stocks were well below the estimated reproduction rates.

Dr. Joseph said that the IDCP is working well, as the mortalities of dolphins have decreased, the populations of dolphins are stable or increasing, and the tuna stocks are in good condition. However, if there is a shift from fishing for tunas in schools associated with dolphins to fishing for tunas in free-swimming schools and/or schools associated with floating objects the yield per recruit and effective recruitment of yellowfin will decrease. Also, the incidental catches of small, unmarketable tunas and billfishes, sharks, turtles, etc. will increase. More research on ways to catch large tunas without harming dolphins would be highly desirable.

Dr. Hall reviewed, in general, the effects of fishing. Fishing can affect the environment in ways other than removing fish and other animals, e.g. disturbing the bottom. Animals which are caught may be killed or released alive. Of those which are killed, some may be retained for consumption and others may be discarded. Of those that are retained, some may be accepted and others rejected by the buyers. Of those that are accepted, parts (heads, entrails, etc.) are discarded or converted to low-priced commodities, such as fish meal. He then reviewed data on the incidental catches of various fisheries. The ratio of weight of animals killed and discarded to weight of animals landed is lower for yellowfin associated with dolphins than for the fisheries for tunas in free-swimming schools, tunas in schools associated with floating objects, and most other fisheries. The Potential Biological Removal (PBR) concept has been incorporated into the U.S. Marine Mammal Protection Act (MMPA) to set conservative limits on the fishery-caused mortalities of marine mammals in U.S. waters. The PBR is defined in Section 12(20) of the 1994 reauthorization of the MMPA as "the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population. The potential biological removal level is the product of the following factors: (A) the minimum population estimate of the stock; (B) one-half the maximum theoretical or estimated net productivity rate of the stock at a small population size; (C) a recovery factor of between 0.1 and 1.0." If a fishery caused mortalities in excess of the PBR a "Take Reduction Team" would be formed to seek ways to reduce the mortality to less than the PBR. In the long term, fisheries are expected to achieve a "Zero Mortality Rate Goal" (ZMRG), which has been provisionally defined as one-tenth of the PBR. This concept would not apply to the fishery for tunas associated with dolphins, as this does not take place in U.S. waters. Nevertheless, Dr. Hall showed a slide which compared the 1994 mortalities, PBRs, and ZMRGs for each stock of dolphins. The mortalities were less than the PBRs for all stocks, but slightly above the ZMRGs for both stocks of spotted dolphins and for eastern spinner dolphins.

Dr. Hall then introduced Mr. Marco A. Garcia, who talked about the data collected on incidental catches by the purse-seine fishery for tunas. The coverages for 1993 and 1994 were 56 percent for sets made on fish associated with dolphins, 62 percent for sets made on free-swimming schools, and 64 percent for sets made on schools associated with floating objects. The principal animals caught incidentally are "small fishes," "large fishes," sharks, and dolphins. More dolphins are caught in sets made on tunas associated with dolphins, but far more of the other types of animals are caught in sets made on free-swimming schools of tunas and sets made of tunas associated with floating objects. The catches of unmarketable yellowfin and skipjack, mahi-mahi, and wahoo per set are least for sets on dolphin-associated fish and greatest for sets on fish associated with floating objects.

Dr. Hall said that the basic questions include: (1) when is bycatch reduction needed? (2) is selectivity always desirable? (3) what should be the goals of bycatch reduction programs? (4) when is utilization a better solution? Many questions concerning bycatches will be discussed at a workshop which will be held in Seattle, Washington, USA, on September 25-27, 1995.

Dr. Michael Tillman of the United States briefly discussed the concept of "potential biological removal," and said that it was formulated for U.S. fisheries for which relatively few data on stock sizes, natural mortality

rates, and reproductive rates are available. He said that since good data for the stocks of dolphins involved in the tuna fishery are available, the IATTC estimates are quite good. Dr. Fonteneau pointed out the possibility that some of the discarded fish which were recorded as yellowfin could be bigeye, and Dr. Joseph replied that the IATTC staff was directing its attention to this possibility. Dr. Tillman said that it was encouraging that the mortality of dolphins had been under 5,000 in 1994, and asked if any preliminary data for 1995 were available. Dr. Hall said that the number of sets on dolphin-associated fish was up 25 percent, the catch in such sets was up 37 percent, and the mortality in such sets was up 2 percent. If there are no disaster sets in 1995, the mortality should be about same as in 1994. Mr. Morimoto said that the mortalities of dolphins due to fishing are approaching the zero level, and thus are biologically insignificant. Attempts to reduce or eliminate incidental mortalities of dolphins have created serious bycatch problems, however. He said that the IATTC should strive to relax the restrictions on dolphin mortality, but not to the extent that the abundance of any of the stocks of dolphins would be reduced. The representatives of several nations praised the IDCP and expressed concern about the effects of switching away from fishing for dolphin-associated fish.

The meeting was adjourned by the Chairman at 1:35 p.m.

#### Agenda Item 8 - Recommendations for 1995

After a break for the first part of the Intergovernmental Meeting, the Chairman reconvened the IATTC meeting on June 15, 1995, at 10:30 a.m., and turned the floor over to Dr. Joseph.

Dr. Joseph said that the IATTC staff was recommending a quota of 235,000 short tons for yellowfin in the Commission's Yellowfin Regulatory Area, with a provision for increasing it by up to 60,000 tons at the discretion of the Director. He said that the uncertainty was due to the fact that it is not possible to estimate the recruitment for 1995, and emphasized that if the recruitment is low this would not be the result of overfishing. The draft resolution was adopted (Appendix 3).

#### Agenda Item 9 - Recommended research program and budget for FY 1996-1997

The Chairman called upon Dr. Joseph to discuss this item. Dr. Joseph said that the budget for FY 1995-1996 was \$4,866,767, and that he was recommending that this be increased by 2.7 percent to \$4,998,170 for FY 1996-1997 to compensate for inflation. He said that the funds received are less than the budget because the Congress of the United States, which has been the principal contributor to the IATTC budget, does not approve the entire amounts requested. During the late 1980s it was cutting the proposed IATTC budgets by about 20 percent, but during the mid-1990s it has been cutting the proposed budgets by about 34 percent. The normal budgets are not the only source of funds, however. For example, the IATTC gets money from the vessel owners to help cover observer costs, and it also gets funds from various organizations for various purposes. The latter vary considerably from year to year.

Dr. Tillman said that he wished to follow up Mr. Morimoto's comments of the previous day regarding bigeye and swordfish. He said that it was clear that research on bigeye should receive adequate attention. He also stated that there are potential problems resulting from the fact that there are a number of organizations which are working on swordfish or intending to do so.

Such being the case, he said that he was pleased that the IATTC staff was seeking opportunities to collaborate with other organizations in such research.

Agenda Item 10 - Place and date of next meeting

The Chairman called for comments on a venue for the next meeting of the IATTC. The representative from Costa Rica offered Costa Rica as the site for the meeting of the IATTC which will take place in June 1996. The representatives of all the other nations agreed, so this generous offer was accepted. Mr. Morimoto asked whether there would be a meeting of the IATTC similar to the one which was held in October 1994. Dr. Joseph said that such a meeting would be desirable, and the representative of Panama generously offered his country as a site for that meeting. Everyone in attendance agreed with that choice. The Chairman said that Dr. Joseph would canvass the various attendees to find dates that were acceptable to everyone and then notify all concerned of those dates.

Agenda Item 11 - Election of officers

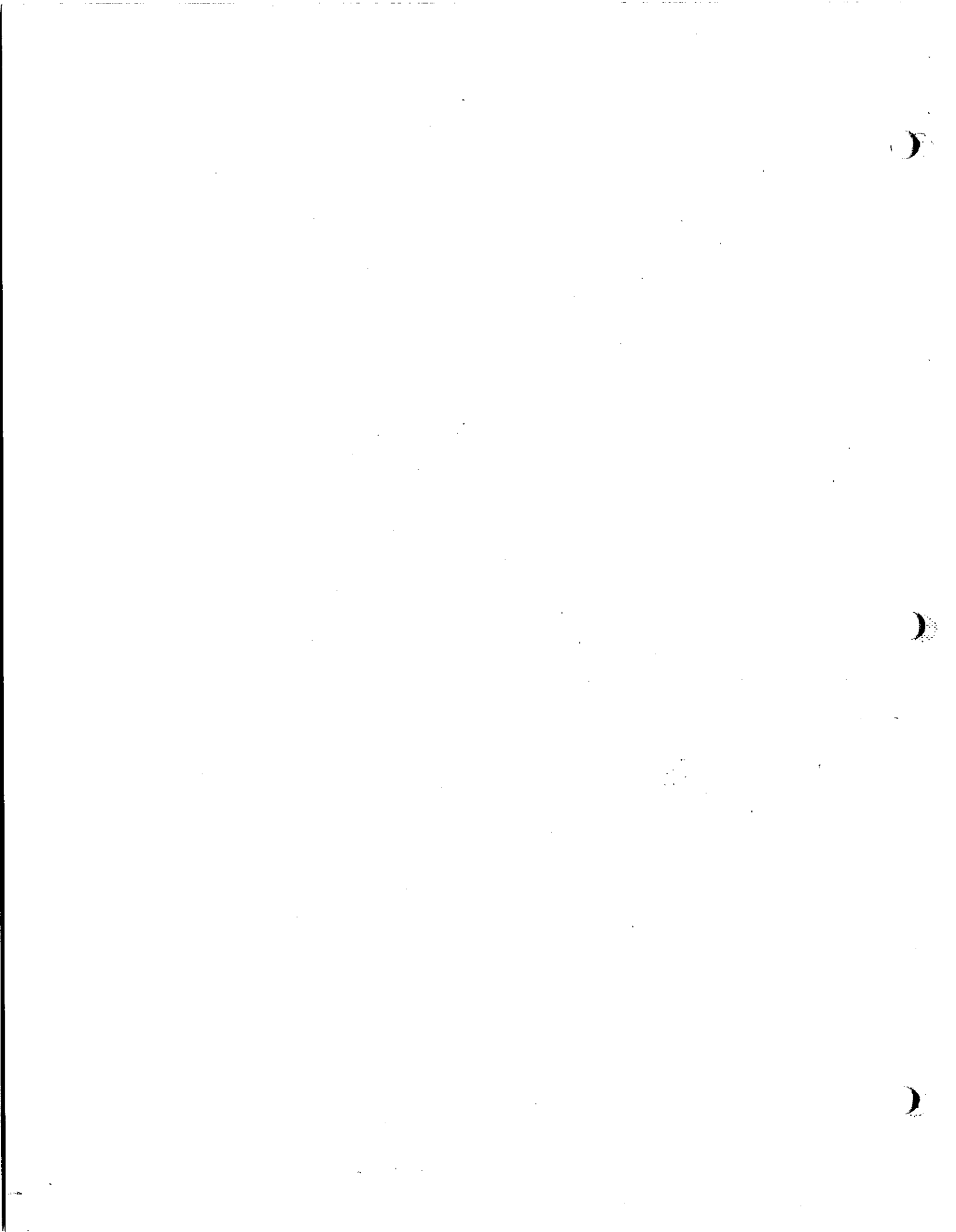
The Chairman said that the host country normally provides the Chairman for the meeting, and asked if there were any objections to continuing that policy. There were none, so Panama and Costa Rica will provide the Chairmen for the October 1995 and June 1996 meetings, respectively.

Agenda Item 12 - Other business

The Chairman asked if anyone had any other business to bring up. Dr. Joseph said that vessels sometimes change flags, but when they are registered with a new nation they do not always drop their registration with the old nation. According to the United Nations Law of the Sea Convention, a vessel which is registered with more than one nation is not registered with any nation. Regardless of the technicalities, this creates problems with infractions, sanctions, and assessments for observer costs. He urged the nations involved to communicate with one another in this regard. Lic. Camacho of Mexico said that this should not be a major problem.

Agenda Item 13 - Adjournment

There being no more business, the Chairman adjourned the meeting at 10:55 a.m.





## APPENDIX 1 -- ANEXO 1

### INTER-AMERICAN TROPICAL TUNA COMMISSION COMISION INTERAMERICANA DEL ATUN TROPICAL

55th MEETING -- 55ª REUNION  
La Jolla, California  
June 13-15, 1995 -- 13-15 de junio de 1995

#### ATTENDEES -- ASISTENTES

#### MEMBER COUNTRIES -- PAISES MIEMBROS

##### COSTA RICA

ALVARO MORENO GÓMEZ  
Comisionado

JAIME BASADRE  
Comisionado

JAIME BASADRE OREAMUNO  
Comisionado

HERBERT NANNE ECHANDI  
Colegio de Biólogos  
de Costa Rica

##### FRANCE

ALAIN FONTENEAU  
ORSTOM

##### JAPAN

MINORU MORIMOTO  
Commissioner

YUICHIRO HARADA  
Federation of Japan Tuna Fisheries Cooperative  
Association

KIYOSHI KATSUYAMA  
Marine Resources Division  
Research Department  
Fisheries Agency of Japan

SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries Cooperative  
Associations

TAKA AKI SAKAMOTO  
International Affairs Division  
Oceanic Fisheries Department  
Fisheries Agency of Japan

##### PANAMA

RICARDO MARTÍANS G.  
Comisionado  
Ministerio de Comercio e Industrias

##### UNITED STATES

BARBARA BRITTEN  
Commissioner

JAMES T. McCARTHY  
Commissioner

M. AUSTIN FORMAN  
Commissioner

MICHAEL TILLMAN  
Commissioner

UNITED STATES (CONTINUED -- CONTINUACIÓN)

HILDA DIAZ-SOLTERO  
ROBERT BROWNELL  
AL COAN  
NORM BARTOO  
PAUL NIEMEIER  
CHUCK OLIVER  
DANA WILKES  
National Marine Fisheries Service

BRIAN HALLMAN  
Department of State

MARTIN HOCHMAN  
TED BEUTTLER  
National Oceanic and Atmospheric Administration

DAVID BURNEY  
U.S. Tuna Foundation

PETE DILEVA  
Caribbean Fishing, Inc.

MICHAEL DUNN  
Mitsubishi Foods (MC) Inc.

TED DUNN  
Lopreste-Dunn Sportfishing

AUGUST FELANDO  
Consultant

PETER H. FLUORNOY  
International Law Offices

WILLIAM GILLIS  
American Tuna Sales Association

PAUL KRAMPE  
Van Camp Seafood Company

MARK McAULIFFE

MICHAEL McGOWAN  
Cabason, Inc.

OTTO OBRIST  
Ocean Ventures, Inc.

GEORGE SOUSA  
CS Fisheries

CHARLES PECKHAM  
LMR Fisheries Research

MARK ROBERTSON  
JESSICA BERK  
Gold & Liebengood

DOUGLAS SATO  
White Fuji, Inc.

ED STOCKWELL  
Star-Kist Foods, Inc.

ED VAN OS  
Van Os Oceanic International, Inc.

ED WEISMAN

VENEZUELA

MIRIAM R. de DE VENANZI  
Instituto de Comercio Exterior

HUGO ALSINA LAGOS  
SARPA, Ministerio de Agricultura y Cría

NON-MEMBER COUNTRIES -- PAISES NO MIEMBROS

COLOMBIA

SILVIA FORERO DE GUERRERO  
Ministerio de Agricultura

ARMANDO HERNÁNDEZ RODRÍGUEZ  
Cámara de la Industria Pesquera

CLARA GAVIRIA  
Ministerio de Comercio Exterior

ALVARO BUSTAMANTE STEER  
AMERICO RODRIGUEZ CHRISTENSEN  
Atunes y Enlatados del Caribe, S.A.

ALEJANDRO LONDOÑO GARCÍA  
Instituto Nacional de Pesca y Acuicultura

ECUADOR

GUSTAVO GONZALEZ CABAL  
LUIS TORRES NAVARRETE  
Ministerio de Industrias, Comercio, Integración y Pesca

MÉXICO

CARLOS CAMACHO GAOS  
ANTONIO DÍAZ DE LEÓN  
PABLO ARENAS FUENTES  
RICARDO BELMONTES ACOSTA  
GUILLERMO COMPEÁN JIMÉNEZ  
Secretaría de Medio Ambiente, Recursos Naturales y Pesca

SERGIO GÓMEZ LORA  
Secretaría de Comercio y Finanzas

A. AVILÉS ROCHA  
MANUEL CHABLÉ GUTIÉRREZ  
JORGE ANTONIO CATALÁN SOSA  
JOSÉ LUIS LEYSON CASTRO  
SERGIO MEZA LÓPEZ  
Cámara de Diputados  
Comisión de Pesca

RICARDO RAMÍREZ LEAL  
Consulado General de México

GUILLERMO GOMEZ  
Consultant  
Gomez-Hall Associates

FELIPE CHARAT  
ALFONSO ROSIÑOL  
CARLOS DE ALBA PÉREZ  
CANAINPES

JOSE CARRANZA  
ERNESTO ESCOBAR  
JESUS IBARRA  
JOHN AZEVEDO  
VITO CASTAGNOLA  
Pesca Azteca, S.A. de C.V.

GERARDO LOJERO WHEATLEY  
Compañía Mexicana de Tunidos, S.A. de C.V.

JOSÉ JUAN VELÁZQUEZ  
Supremos del Golfo

SEYCHELLES

J. NAGEON DE LESTANG  
Seychelles Fishing Authority

SPAIN

JESÚS MIRANDA  
Ministerio de Agricultura, Pesca y Alimentación

GABRIEL SARRÓ IPARRAGUIRRE  
O.P.A.G.A.C.

TAIWAN

JAMES SHA  
Council of Agriculture of the Executive Yuan  
Fisheries Department

INTERNATIONAL ORGANIZATIONS – ORGANIZACIONES INTERNACIONALES

ALAIN FONTENEAU  
International Commission for the  
Conservation of Atlantic Tunas

MICHAEL TILLMAN  
International Whaling Commission

CARLOS MAZAL  
OLDEPESCA

NON-GOVERNMENTAL ORGANIZATIONS -- ORGANIZACIONES NO GUBERNAMENTALES

HECTOR LOPEZ ROJAS  
Fundación para la Defensa de la Naturaleza

KATHLEEN O'CONNELL  
CHRISTOPHER STREND  
Whale & Dolphin Conservation Society

DAVID C. PHILLIPS  
Earth Island Institute

TERESA PLATT  
HAROLD MEDINA  
STEVE MEDINA  
The Fishermen's Coalition

TRACI ROMINE  
Greenpeace International

MARCI GLAZER  
Center for Marine Conservation

ALEJANDRO VILLAMAR  
Red Mexicana de Acción Frente al Libre Comercio

LEESTEFFFY JENKINS  
ALVARO POSADA-SALAZAR  
Humane Society International

DAVID SCHORR  
World Wildlife Fund

FRANCISCO HERRERA TERÁN  
Asociación Empresarial Pesquera de América Latina

IATTC -- CIAT

JAMES JOSEPH, Director  
ALEJANDRO A. ANGANUZZI  
DAVID A BRATTEN  
RICHARD B. DERISO  
MARCO A. GARCIA

MARTIN A. HALL  
MICHAEL G. HINTON  
CLERIDY E. LENNERT  
ROBERT J. OLSON  
KURT M. SCHAEFER

## APPENDIX 2

### AGENDA

#### 35th MEETING OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION

June 13-15, 1995

La Jolla, California

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna research
4. The 1994 fishing year
5. Status of tuna stocks
6. Review of tuna-dolphin research and extension programs
7. Review of International Dolphin Conservation Program
8. Recommendations for 1995
9. Recommended research program and budget for FY 1996-1997
10. Place and date of next meeting
11. Election of officers
12. Other business
13. Adjournment

## APPENDIX 3

### RESOLUTION

*The Inter-American Tropical Tuna Commission, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,*

*Notes that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and*

*Recognizes, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and*

*Recalls that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and*

*Notes that from 1980 through 1994, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and*

*Observes that, although the stock of yellowfin is currently at a level of abundance greater than the optimum, nevertheless it can be over-exploited,*

*Concludes that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1995.*

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties that a quota of 235,000 short tons be established for the 1995 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than three successive increments of 20,000 short tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and*

*Finally recommends that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1995.*

MINUTES OF THE 56th (SPECIAL) MEETING OF THE  
INTER-AMERICAN TROPICAL TUNA COMMISSION

Panama City, Panama  
October 3, 1995

Agenda Item 1 - Opening of the meeting

The 56th Meeting of the Inter-American Tropical Tuna Commission (IATTC) was called to order by the Chairman, Lic. Nitzia R. de Villarreal, Minister of Commerce and Industry of Panama. She asked the attendees (listed in Appendix 1) to introduce themselves. Representatives from all member governments of the IATTC except Nicaragua were present.

Agenda Item 2 - Adoption of agenda

The provisional agenda was adopted unchanged (Appendix 2).

Agenda Item 3 - Review of the 1995 fishing year to date

Dr. Joseph reviewed the fishery in 1995 to date. The total capacity of vessels at sea in 1995 has been slightly greater than in 1994 and markedly greater than in 1993. Water temperatures in the eastern Pacific Ocean have returned to normal after several years of elevated values, and as a result the fishery in 1995 was not dispersed as far away from the equator as in previous years. At last year's meeting some representatives had expressed concern about the decline in the catch per unit of effort, but in 1995 this was higher than in either 1993 or 1994.

Turning to bigeye tuna, Dr. Joseph noted that in 1994 the surface fishery had taken 31,000 tons, and that in 1995 to date the catch of this species was greater than that in the same period in 1994. Dr. Joseph noted the need to continue monitoring these catches closely because of the potential conflict of interest with the longline fishery.

Agenda Item 4 - Review of the International Dolphin Conservation Program to date

Dr. Joseph reviewed the history of dolphin mortality in the fishery, and the IATTC's work in relation to it. He noted that the 1999 goal of reducing the mortality to less than 5,000 animals had been achieved in the first year of the program. Dr. Hall compared the recent mortality rates to estimates of population size and reproductive rates, and described the IATTC staff's involvement in efforts to understand and resolve the issue of bycatch other than dolphins.

In response to a question, Dr. Hall noted that the mortality to date in 1995 was about 5% lower than in the corresponding period in 1994, but cautioned against projecting this improvement forward for the whole year.

Agenda Item 5 - Other Business

The representatives of Ecuador announced their nation's intention of rejoining the IATTC. The representative of Mexico said that his country was also interested in rejoining.

Dr. Joseph advised the meeting of the difficulties arising from vessels changing flag and being for a while simultaneously registered under both the old and the new flag. This raised problems of knowing which country to notify of questions concerning the vessels.

Agenda Item 6 - Adjournment

The meeting was adjourned at 12:30 p.m.





INTER-AMERICAN TROPICAL TUNA COMMISSION  
COMISION INTERAMERICANA DEL ATUN TROPICAL

56TH MEETING - 56ª REUNION

Panama City, Panama -- Ciudad de Panamá, Panamá  
October 3-4, 1995 --- 3 y 4 de octubre de 1995

ATTENDEES - ASISTENTES

MEMBER COUNTRIES - PAISES MIEMBROS

COSTA RICA

ALVARO MORENO GÓMEZ  
Comisionado

ODIN THAANUM  
SARDIMAR, S.A.

HERBERT NANNE  
Asesor, Industria Atunera

HERMES NAVARRO VARGAS  
JERRY TEN BRINK  
Borda Azul, S.A.

FRANCE-FRANCIA

ANDRÉ STELL  
Consejero Comercial  
Embajada de Francia

JAPAN-JAPON

TAKAAKI SAKAMOTO  
International Affairs Division  
Oceanic Fisheries Department  
Fisheries Agency of Japan

SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries Cooperative  
Associations

PANAMA

NITZIA R. de VILLARREAL  
Ministra  
Ministerio de Comercio e Industrias

RICARDO ENRIQUE ICAZA  
Comisionado

JOSE A. TROYANO, Comisionado  
Viceministro  
Ministerio de Comercio e Industrias

DALVA AROSEMENA  
NORAD

RICARDO MARTÁNS GARCÍA  
Comisionado

ANTONIO DA COSTA  
MARIO GONZÁLEZ RECINOS  
PRADPESCA

JUAN L. DE OBARRIO  
ORLANDO KIVERS

HISASHI HIRATSUKA  
JICA-JAPAN

DARIO LOPEZ  
Ministerio de Comercio e Industrias

CHEN CHEN-HUI  
Misión Técnica China de Pesca

ARMANDO MARTINEZ VALDES  
Comisionado

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Comisión Marítima Nacional

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Caribbean Fishing, Inc.

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Shipping Management Services

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ODIKA Financial Corp.

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Palangre Fishing Co., S.A.

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INTERTUNA, S.A.; COINASA, S.A.;  
ALBACORA CARIBE, S.A.

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PROVASA

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Desarrollo Agrícola y Pesquero  
Ministerio de Agricultura

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Plenipotenciario  
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ARMANDO HERNÁNDEZ RODRÍGUEZ  
Cámara de la Industria Pesquera

ALVARO BUSTAMANTE STEER  
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MARCO POLO MICHELETTI  
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MÉXICO

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Director General, Coordinación Gral. del Medio  
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FELIPE CHARAT  
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CANAINPES

JOSÉ VELÁZQUEZ CÁRDENAS  
CANAINPES  
Supremos del Golfo y del Pacífico, S.A. de C.V.

JOSE E. CARRANZA BELTRAN  
Pesca Azteca, S.A. de C.V.

ARMANDO GONZÁLEZ BACA  
Atunera del Pacífico, S.A

INTERNATIONAL ORGANIZATIONS -- ORGANIZACIONES INTERNACIONALES

CARLOS MAZAL  
OLDEPESCA

NON-GOVERNMENTAL ORGANIZATIONS -- ORGANIZACIONES NO GUBERNAMENTALES

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Whale & Dolphin Conservation Society

TRACI ROMINE  
Greenpeace International

NINA YOUNG  
Center for Marine Conservation

ANNIE PETSONK  
Environmental Defense Fund

ROBERT UKEILEY  
ALVARO POSADA-SALAZAR  
Humane Society International

WILLIAM SCOTT BURNS  
World Wildlife Fund

FRANCISCO HERRERA TERÁN  
Asociación Empresarial Pesquera de América Latina

IATTC -- CIAT

JAMES JOSEPH, Director  
ROBIN ALLEN  
MARTIN HALL  
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ERNESTO ALTAMIRANO  
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# INTER-AMERICAN TROPICAL TUNA COMMISSION COMISION INTERAMERICANA DEL ATUN TROPICAL

COSTA RICA - FRANCE - JAPAN - NICARAGUA - PANAMA - UNITED STATES OF AMERICA - VANUATU - VENEZUELA

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Appendix 2

## 56th MEETING (SPECIAL) OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION

October 3, 1995

Panamá City, Panamá

### AGENDA

1. Opening of the meeting
2. Adoption of agenda
3. Review of the 1995 fishing year to date
4. Review of the International Dolphin Conservation Program to date
5. Other business
6. Adjournment



# MINUTES OF THE 57TH MEETING OF THE INTER-AMERICAN TROPICAL TUNA COMMISSION

La Jolla, California, USA

October 21-23, 1996

## Agenda Item 1 - Opening of the meeting

The meeting was called to order on October 21, 1996, at 10:00 a.m., by Dr. James Joseph, Director of the Inter-American Tropical Tuna Commission (IATTC). He called for nominations for Chairman of the meeting. The representative of Costa Rica nominated the United States, and this was seconded by the representative from Venezuela. All were in agreement, and Dr. Michael Tillman of the United States offered that Mr. Brian Hallman of the U.S. Department of State serve as Chairman. Mr. Hallman welcomed everyone to the meeting, and called for introductions. Representatives of the governments of Costa Rica, France, Japan, Panama, the United States, Vanuatu, and Venezuela introduced themselves, as did observers from Canada, Colombia, Ecuador, El Salvador, Mexico, the Republic of China, the Russian Federation, Spain, the European Community, the Great Lakes Fishery Commission, the International Commission for the Conservation of Atlantic Tunas, the International Whaling Commission, the Organización Latinoamericana de Desarrollo Pesquero (OLDEPESCA), the American Cetacean Society, the Center for Marine Conservation, the Earth Island Institute, the Fishermen's Coalition, the Fundación para la Defensa de la Naturaleza, Greenpeace International, the Humane Society International, the Red Mexicana de Acción Frente al Libre Comercio, and the Whale and Dolphin Conservation Society. The attendees are listed in Appendix 1.

## Agenda Item 2 - Adoption of agenda

After a brief discussion, the provisional agenda was adopted without change (Appendix 2).

The representative of Costa Rica suggested that the IATTC meeting be temporarily adjourned and that the Intergovernmental Meeting be convened. All were in agreement, so the IATTC meeting was adjourned at 10:20 a.m.

The IATTC meeting was reconvened on October 22, 1996, at 10:55 a.m.

## Agenda Item 3 - Review of current tuna research

Mr. Hallman turned the floor over to Dr. Joseph, who made a few general remarks about the IATTC's Tuna-Billfish Program. He said that this program includes research on the ecosystem, so it should be of interest to those who are concerned principally with marine mammals, as well as to those who are interested primarily in tunas and billfishes. The IATTC staff includes representatives of many nations, and most of the observers on tuna boats are citizens of the nations in which the vessels they accompany are registered. The IATTC has offices and/or laboratories in Ecuador, Mexico, Panama, the United States, and Venezuela. Scientists from other countries frequently spend extended periods at the IATTC headquarters in La Jolla; currently Dr. Alain Fonteneau of the Institut Français de Recherche Scientifique pour le Développement en Coopération (ORSTOM) and Dr. Pilar Pallarés of the Instituto Español de Oceanografía are working in La Jolla. Several IATTC staff members are faculty members of various universities.

Dr. Joseph then introduced Dr. Richard B. Deriso, head of the IATTC's Tuna-Billfish Program.

Dr. Deriso first discussed the spawner-recruitment relationship for yellowfin tuna. Spawning occurs in virtually all areas of the eastern Pacific Ocean (EPO) in which the sea-surface temperatures exceed 25° to 26°C (77° to 79°F). There are two cohorts of yellowfin in the EPO, the May cohort, consisting of fish recruited to the fishery in May, and the November cohort, consisting of fish recruited to the fishery in November. There was less spawning in the EPO during the late 1970s and early 1980s than during the previous or subsequent periods, but the survival of the larvae and/or early juveniles was greater during the late 1970s and early 1980s, so the recruitment did not decrease during that period. Nevertheless, it would be prudent to maintain a relatively high biomass of spawners to ensure that recruitment is adequate. Yellowfin mature at about 2 years of age, when they weigh about 35 pounds (16 kg). The capture of fish less than 2 years of age should be minimized. (Even if there is no relationship between the biomass of spawners and subsequent recruitment at present levels of abundance of spawners, yield-per-recruit analyses show that greater catches can be realized if smaller fish are not caught.)

Dr. Deriso then said that it has long been believed that spawning of skipjack tuna in the EPO is minimal, but recent pilot studies by the IATTC staff indicate that significant spawning of skipjack 50 cm or greater in length takes place in many parts of the EPO in which the sea-surface temperatures are greater than 25°C. Accordingly, a full-scale program to assess the spawning of skipjack, similar to the program previously carried out for yellowfin tuna, has recently been initiated.

He next discussed some of the IATTC's billfish studies. Hook-rate data (catches per hundred or per thousand hooks) for the longline fishery are used as indices of the abundance of tunas and billfishes. After the mid-1970s there was a shift to deeper-fishing longlines. Since bigeye tuna are more abundant at greater depths and most other species are more abundant at lesser depths, this shift made it appear as if there had been changes in the abundance of the various species, whereas such was not necessarily the case. Mr. Michael G. Hinton is working on models which take into account depths of hooks and other variables in the calculation of indices of abundance of billfishes. He has found bands of greater abundance of blue marlin north and south of the equator in the entire Pacific Ocean and bands of greater abundance of swordfish north and south of the equator in the EPO.

Dr. Deriso then introduced Dr. Robert J. Olson, who is in charge of the IATTC's early life history studies.

Dr. Olson said that studies of the eggs, larvae, and early juveniles of tunas are made in La Jolla and at the IATTC's Achotines Laboratory in Panama. Because of their easy availability, work was first concentrated on black skipjack, and a great deal was learned about their early life history. Much of this information will be useful in studies of yellowfin tuna, the species of greatest interest. In December 1993 an agreement was reached by the Overseas Fishery Cooperation Foundation (OFCF) of Japan, the government of the Republic of Panama, and the IATTC to undertake a joint 5-year project, funded mostly by the OFCF, at the Achotines Laboratory. The objectives of the project are: (1) to culture adult yellowfin tuna to supply larvae for research on early life history; (2) to produce food organisms for larval and juvenile tunas; and (3) to culture broodstock snappers (Lutjanidae), corvina-like fishes (Sciaenidae), and food organisms for their larvae and juveniles. Yellowfin have been captured by hook and line and placed in tanks. Their survival rate has been high, and they have actively feeding and growing at rates exceeding those of wild fish. In October 1996 they commenced to spawn. Spawning occurred at about 7:30 p.m., and about 30 percent of the eggs hatched within about 24 hours. This is the first time that yellowfin have spawned in tanks, although they have spawned in floating pens in Japan. It is anticipated that the availability of yellowfin eggs and larvae will make it possible to learn considerably more about the early life history of this species in the near future.

Dr. Olson then said that Dr. Masato Iizawa of the Fisheries and Aquaculture International Co., Ltd., Tokyo, Japan, arrived at the Achotines Laboratory in mid-September 1996, and will remain there until early November. Dr. Iizawa is working with a biologist from Panama's Departamento de Recursos Marinos and staff members of the Achotines Laboratory on spawning of captive rose snappers and corvina. Both species have been induced to spawn. Larvae of rose snappers have survived for up to 1 week, and larvae of corvina have survived for up to 2 weeks and have been induced to feed.

Mr. Hallman asked if there were any questions on Agenda Item 3. There were none, so he turned the floor over to Dr. Joseph for discussion of the next two agenda items.



#### Agenda Item 4 - The 1995 fishing year

Dr. Joseph stated that the surface catches of all species of tunas combined in the EPO in 1995 totaled about 445 thousand short tons, making 1995 the best year on record. The EPO catches are a significant part of the world catches of tunas, which have totaled about 3.5 million short tons in recent years. The catches of skipjack in the EPO were the greatest since 1979 and the surface catches of bigeye in the EPO were the greatest on record. He displayed slides showing the weekly capacities of tuna boats at sea and the cumulative capacities at sea during 1994, 1995, and 1996 (to date), and also a slide showing the sizes of the fleets of the various nations involved in the fishery during 1995. He then displayed slides showing the catches of yellowfin and skipjack during 1994, 1995, and 1996 (to date), and commented about the increased catches of bigeye by purse seiners during 1994, 1995, and 1996. He next displayed slides showing the geographical distributions of the catches of yellowfin and skipjack during 1980-1994, 1995, and 1996 and a slide showing the annual catches of yellowfin, skipjack, bigeye, and bluefin from 1960 through 1995.

#### Agenda Item 5 - Status of tuna stocks

Dr. Joseph displayed a slide showing the annual catches of yellowfin from 1960 through 1995, and commented about the periods of greater-than-average and less-than-average catches. Regulations were in effect for the surface fishery for yellowfin tuna in the Commission's Yellowfin Regulatory Area (CYRA) from 1966 through 1979, but after that the regulations were not enacted because agreement could not be reached on allocation of the catches among nations and gear types. Since then catch limits have been agreed upon at IATTC meetings (except in 1987, when the staff did not recommend a catch limit). Fortunately, due to the fact that the fleet size is less than it was during the 1970s, the catches have not exceeded the limits in most years since 1979. The lesser fleet size is due primarily to the fact that many of the vessels of the U.S. fleet have switched their operations to the western Pacific Ocean (and most of the others have changed ownership, and are now registered in other nations).

Yellowfin, in contrast to albacore and bluefin, do not often move great distances in the Pacific Ocean, but nevertheless there is considerable exchange of fish among the Exclusive Economic Zones of various nations and between the high seas and waters within 200 miles of land.

Indices of abundance are calculated from catch-per-unit-of-effort (CPUE) data. It is difficult to get unbiased indices of abundance when the methods of fishing are changing, so the IATTC staff has devoted a considerable amount of study to this problem. Indices of abundance are used in production models, discussed below.

Production models, age-structured models, and spawner-recruit models can be used for stock assessment of yellowfin.

Production models make use of data on the population of fish as a whole, rather than on individual fish. They make use of data on total catch, total effort, and catch-per-unit of effort (CPUE) data. Analyses of these data produce estimates of the relative population size and the level of fishing effort which will produce the maximum sustainable yield (MSY). In practice, if restriction of a fishery is necessary, this can be accomplished with limits on either fishing effort or catch. The IATTC has used two types of production models, the symmetrical model, in which the relationship between CPUE and effort is linear, and the asymmetrical model in which the relationship between CPUE and effort is nonlinear. With the symmetrical model the maximum catch can be obtained when the biomass of fish is at half its maximum. With asymmetrical models the maximum catches are obtainable at more or less than half the maximum biomass, depending on the shape of the curve expressing the relationship between catch and effort. He displayed a slide showing the symmetrical curve and the observed and predicted catches obtained with this model. Both the symmetrical and asymmetrical models, in recent years, have produced estimates of about 300 thousand to 350 thousand short tons for the MSY of yellowfin in the EPO.

Age-structured models make use of data on recruitment, growth, and mortality to determine how best to exploit a population of fish. He displayed a slide showing the decrease in numbers of fish of a cohort with time, the increase in average weight of the fish with time, and the increase and then decrease of the total weight of the

fish with time. When the fish of a cohort are young the total weight increases because the growth in weight of the individual fish is rapid, while the losses to the cohort due to natural mortality are moderate. Later, as the fish grow older, their growth rate becomes slower, while the natural mortality continues to be about the same or increases. Thus the losses to the total weight due to natural mortality at that time are greater than the gains due to growth, and there is a net loss to the total weight. Eventually the cohort disappears. The ideal way to obtain the maximum yield per recruit (YPR) from a cohort of fish would be to harvest the fish at the size at which the loss to the total weight by natural mortality exactly balances the gain to it by growth (the "critical size"). For yellowfin the critical size is about 70 pounds (32 kg). He explained that the goal of harvesting each fish at the critical size is not possible for yellowfin tuna, but that it can be approximately achieved. He next displayed a slide showing the average weights of fish caught by the purse-seine fishery during the 1967-1995 period. The average weights were greater during the 1967-1977 and 1984-1995 periods than during the 1978-1983 period. Then he displayed slides showing the relationships among size at entry, fishing effort, and yield per recruit with patterns of age-specific fishing mortality corresponding to the 1978-1982 and 1991-1995 periods. He pointed out that greater yields per recruit are obtainable when the fishery directs its effort toward larger fish.

Dr. Joseph next displayed a slide showing the average biomasses of all yellowfin and of large yellowfin (ages equal to or greater than 3 years) in the EPO during 1967 through 1995. The average biomasses were least during the late 1970s and early 1980s when the purse-seine fleet was directing most of its effort toward smaller fish. He said that no relationship between biomass of spawners and production of recruits had been observed, but that, as a matter of precaution, the spawning biomass should not be allowed to drop below those of the late 1970s and early 1980s.

He next described the staff's findings regarding the spawner-recruit relationship. The amount of spawning that takes place is directly proportional to the relative abundance of mature fish, and the recruitment is directly proportional to the relative abundance of recruits, so if indices of abundance of mature fish and recruits are available the spawner-recruit relationship can be determined. At least some of the individuals of a cohort must be allowed to spawn at least once before they are harvested. If spawning occurs well before the fish reach the critical size there is probably no danger from this standpoint, but if spawning does not occur until after the fish have reached the critical size, and the fishing effort is high, there is a possibility that the number of spawners would be so reduced that the recruitment in subsequent years would be reduced. Therefore a fishing strategy designed to produce the maximum YPR will not necessarily produce the maximum yield. There is no evidence that reduction in the numbers of spawners has caused reductions in recruitment of yellowfin. The recruitment of yellowfin has varied over the 1968-1995 period, being least during 1968-1975, intermediate during 1976-1984, and greatest during 1985-1995. Also the age-specific fishing mortalities have varied, with the fish being smaller, on average, during the 1970s and early 1980s than during subsequent years. He displayed slides showing the catches obtainable with various combinations of recruitment and age-specific fishing mortality. If the recruitment were to decrease to the levels of earlier years the MSY would also decrease.

He said that the catches of yellowfin will be greatest if there is above-average recruitment and the average weight of the fish caught is relatively high. If fishing for yellowfin associated with dolphins is abandoned in favor of fishing for tunas associated with floating objects the catches will decrease because of (1) decreased recruitment (due to the fact that fishing for tunas associated with floating objects must be pursued in an area smaller than that in which dolphin fishing takes place and, possibly, to decreased production of eggs and larvae from a population which contains relatively few mature fish) and (2) decreased average weight of the fish caught. He then displayed slides showing that (1) the yield per recruit is positively correlated with the average weight of fish in the catch and (2) the average weight of fish in the catch is greatest for dolphin schools, intermediate for free-swimming schools, and least for schools associated with floating objects. He also displayed a slide showing that 50 percent of the fish reach maturity at a length of about 103 cm (equivalent to about 50 pounds or 22 kg). He said that the 1996 catch of yellowfin in the CYRA would be about 270,000 short tons, and that the 1997 catch would probably be about the same, provided the effort remains at about the same level and is directed at the same types of schools of fish as during 1996.

Dr. Joseph concluded by saying that the resolutions adopted for regulation of the surface fishery for yellowfin in the EPO apply only to the CYRA. He stated that it is good that this is the case, as the fish caught west

of the CYRA are mostly near the critical size, whereas much greater proportions of these caught in the CYRA are considerably less than the critical size.

Mr. Hallman asked if anyone had questions for Dr. Joseph. No one had, and the meeting was adjourned at 12:35 p.m.

The meeting was reconvened at 2:50 p.m. Mr. Hallman turned the floor over to Dr. Joseph to continue his discussion of this topic. Dr. Joseph stated that skipjack tuna make up about half of the world and Pacific Ocean catches of tunas. As stated previously, the world catches of tunas amount to about 3.5 million short tons. The areas of the EPO in which skipjack are most abundant vary considerably from year to year. Skipjack in the EPO have usually been thought to be immigrants from the central Pacific Ocean which will return there to spawn, but recent information indicates that there may be considerable spawning of skipjack in the EPO. Skipjack are underfished in the EPO. They grow rapidly, but have a high rate of natural mortality, so setting minimum size limits, even if there were a practical way to avoid catching smaller fish, would not increase the catches in the EPO. Likewise, it seems unlikely that setting upper limits on the catches would bring about changes, *e.g.* increasing the recruitment or altering the age composition of the population, which would make possible greater catches in subsequent years.

Northern bluefin tuna are not abundant anywhere, but they are still a valuable resource. They are caught in the EPO with purse seines, in the western Pacific with trolling gear, purse seines, traps, *etc.*, and on the high seas with longlines. There appears to be one stock of northern bluefin in the Pacific Ocean. Spawning takes place only in western Pacific. Variable numbers of the juveniles migrate to the EPO, where some of them are caught by the purse-seine fishery off Baja California and Southern California. Staff members of the IATTC and the National Research Institute of Far Seas Fisheries of Japan have cooperated in studies of this species. Large numbers of tagged fish released off Japan have been recaptured in the EPO, and lesser numbers of tagged fish released in the EPO have been recaptured in the western Pacific Ocean. Application of age-structured models indicates that the catches of bluefin could be increased if harvesting of age-0 or age-0 and age-1 fish could be reduced or eliminated. These are based on rough estimates of natural mortality and inadequate knowledge of age-specific distributions of catches by area and season, however.

Dr. Joseph then introduced Dr. Robin L. Allen, Assistant Director of the IATTC, for discussion of bigeye and swordfish.

Dr. Allen said that bigeye tuna are more abundant in the EPO than in most other areas. Longlines account for most of the catches of bigeye in the EPO, and nearly all of these are large fish. Because nearly all longline-caught fish are sold for high-grade *sashimi* and *sushi*, their value is extremely high. Longline catches are reported as numbers of fish, rather than as weights, and average weights estimated by different workers are not the same. A world bigeye workshop will take place in La Jolla in November 1996, and some of these differences may be resolved at that time. Purse-seine fishermen began fishing more for tunas associated with floating objects in offshore equatorial waters in late 1993, and this fishery increased the catches of bigeye by the surface fishery to record levels in 1994 and 1995. Most of these fish are smaller than those taken by the longline fishery; in fact some of them have had to be discarded at sea because they were unmarketable. Removal of small to medium fish by the surface fishery decreases the amount of larger fish available to the longline fishery, and it is important to ascertain the magnitude of this decrease.

He displayed slides showing the distributions of longline and surface catches of bigeye in the EPO in recent years, and noted that there are two areas of greater-than-average longline CPUEs, one south of 5°N and one north of 20°N and west of 125°W. He pointed out that almost nothing is known of the stock structure of bigeye in the Pacific Ocean, but that genetic analyses which may contribute to a solution to this problem are currently in progress in Australia.

Dr. Allen summarized production modeling and cohort analyses which had been carried out by the IATTC staff to attempt to ascertain the effect that fishing has had on the bigeye stock. Production modeling, based on data for the EPO, indicates that the effort has been less than that which corresponds to the MSY. These

estimates are not very reliable, however, because of lack of knowledge about the stock structure of bigeye and lack of data on catch and CPUE on the overfishing side of the curve. If the surface fishery continues at its 1994-1996 level, production models may no longer be applicable due to the difference in ages and sizes of the fish exploited by the two fisheries. Cohort analyses indicate that the surface fishery would have a considerable effect on the longline fishery if the coefficient of natural mortality is 0.4, but a much lesser effect if it is 0.6 and almost no effect if it is 0.8. Obviously, there is a need for more precise estimates of this parameter.

Dr. Allen then summarized recent work on assessment of swordfish in the EPO performed by the IATTC staff. He displayed a slide showing the distributions of CPUEs of swordfish in the EPO. Because almost nothing is known about the stock structure of this species in the Pacific Ocean, stock assessment is problematical. Production modeling, using data for 1962-1987, has recently been performed by the IATTC staff. This work will be redone in the near future, using data for 1962-1992. He acknowledged that the swordfish in the EPO may belong to the same stock as those west of 150°W, which could make the results of the production modeling invalid, or nearly so.

Mr. Hallman asked if there were any questions. The representative of the United States noted that there are two areas of greater-than-average CPUEs of bigeye in the EPO, and asked about the stock structure of bigeye. Dr. Joseph said that knowledge of the stock structure of bigeye is lacking, but that he hopes that the work currently being pursued in Australia will shed some light on this problem. He said that the IATTC staff was concerned about the effect of the surface fishery on the longline fishery. He stated that the IATTC convention specified that the staff was to attempt to find ways to maintain the populations of fish covered by the convention at levels which would permit the "maximum sustained catch," but that the greater value of longline-caught fish should nevertheless be kept in mind. The representative of the United States said that he agreed, and that he thought that the world workshop on bigeye which will be held in November is a good idea.

#### Agenda Item 6 - Review of tuna-dolphin research and extension programs

Mr. Hallman turned the floor over to Dr. Joseph, who introduced Dr. Martín A. Hall, head of the IATTC's Tuna-Dolphin Program.

Dr. Hall first acknowledged the contributions of the various governments, the fishing industry, the observers on the vessels, and many others to the success of the Tuna-Dolphin Program. He displayed slides showing indices of abundance of the eight stocks of dolphins which are most often encircled by purse seines. He emphasized that calculation of indices of abundance is difficult for various reasons, especially the fact that the distributions of the various stocks vary from year to year. For example, the abundance of northern common dolphins appears to have decreased precipitously since the early 1980s. Actually, however, surveys made by the U.S. National Marine Fisheries Service indicate that the center of abundance of this stock has moved northward, so that a much greater portion of the stock is north of the range of the purse-seine fishery for tunas than was previously the case. He said that, due to the long life spans and low reproductive rates of dolphins, the increases in dolphin abundance due to decreased mortalities caused by fishing would be slow and prolonged.

Dr. Hall said that the mortalities due to fishing would probably be less than 3,000 in 1996, and that credit for this was due to the conscientious efforts of the fishermen. He mentioned some of the factors, such as condition of the fishing gear, skill and motivation of the captain and crew, environmental conditions, and regulations, which affect the mortalities of dolphins.

Dr. Hall then introduced Mr. David A. Bratten, a scientist with the Tuna-Dolphin Program, who discussed the IATTC's gear program. Mr. Bratten said that one of the major features of the gear program is the extension program, which sponsors seminars at which fishermen and vessel managers discuss the latest safety gear and techniques, conducts trial sets, during which the alignment of the vessel's safety panel is checked and other safety gear is inspected, and monitors the testing of new types of safety gear. Most of the information about gear performance come from the observer programs of Mexico, the United States (discontinued in early 1995), and the IATTC. A large proportion of the mortalities of dolphins occurs in a relatively few sets during which the gear malfunctions or the net collapses. The annual percentages of sets with major gear malfunctions remained more-or-less constant between about 8 and 12 percent, from 1986 to 1995, but the mortalities per set in such sets had

decreased from about 25 to about 1 during that period. The percentages of sets during which the net collapsed decreased from about 30 to about 10 percent, while the mortalities per set decreased from about 23 to about 1 during the above-mentioned period. In summary, the first line of defense against mortalities is having the right safety gear, the second is avoiding risky situations, such as fishing in areas where the currents are strong, and the third is making proper use of all safety gear and techniques.

Mr. Hallman then announced, at 5:30 p.m., that the meeting was adjourned for the day.

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The meeting was reconvened by Mr. Hallman on October 23, 1996, at 9:35 a.m.

Mr. Hallman turned the floor over to Dr. Hall, who introduced Dr. Michael D. Scott, a scientist with the IATTC's Tuna-Dolphin Program. Dr. Scott said that yellowfin tuna and dolphins associate with one another much more frequently in the EPO than in other oceans. Most people think that the tunas are attracted to the dolphins, rather than *vice versa*. It has been hypothesized that the association facilitates feeding for one or both species, that the association provides protection from predation for one or both species, or that the dolphins provide a rallying point for large tunas, just as floating objects provide a rallying point for small tunas. Recent studies suggest some degree of niche separation between the spotted dolphins and yellowfin tuna. The data suggest that the two species often feed at different times, at different depths, and sometimes on different prey. The spotted dolphins appear to feed primarily at dusk, night, and during the early morning on epipelagic and mesopelagic fishes and cephalopods. The tuna appear to feed throughout the daylight hours in the mixed layer on epipelagic fishes, cephalopods, and crustaceans and, to a lesser degree, at night on epipelagic and mesopelagic cephalopods. It should be emphasized, however, that both species are thought to be generalist predators on a wide range of prey species. An earlier study by the IATTC staff showed that yellowfin tuna and spotted dolphins formed larger groups after midday, resulting in greater average catches of tuna per set. Nevertheless, the stomach contents of the dolphins indicated that the dolphins fed little, if at all, during the afternoon. This suggested that feeding on shared prey species may not be the primary cause for the association, and that other causes should be explored. The data also hinted, but did not prove, that the tuna-dolphin association weakened at night.

Mr. August Felando, an independent consultant, commented on some observations on dolphin feeding made by tuna fishermen, and Dr. Scott reiterated that the IATTC data indicate that dolphins feed mostly at night.

Dr. Joseph then turned the floor over to Dr. Hall to discuss the IATTC bycatch studies.

Dr. Hall first displayed a slide showing the effects of fishing on the ecosystem. Not all animals which are caught are marketable, not all marketable fish which are caught are purchased by fish processors, and not all parts of the fish which are purchased are edible. Fishing mortality, one of the basic parameters necessary for stock assessment, has traditionally been estimated from landings data. In many cases other mortalities, such as fish discarded at sea, mortalities of fish not retained by the gear, and unreported catches, are ignored. Also, fishing may affect the ecosystem in various ways, which can be harmful or beneficial to organisms which are not taken the fishery. For example, dragging a net over the bottom may damage the habitat of some bottom-dwelling species, or unmarketable fish discarded at sea by fishing vessels may provide food for birds which otherwise would not be able to catch the fish.

Dr. Hall said that the IATTC staff began collecting data on bycatches in purse-seine sets on a large scale in 1993. The coverage has ranged from 47 percent in 1993 to 77 percent in 1995. Discards of all species of tunas made up 0.5 to 1.7 percent of the catches in sets on schools associated with dolphins, 3.3 to 6.6 percent of the catch in sets on free-swimming schools, and 15.1 to 25.2 percent of the catch in sets on schools associated with floating objects. The bycatches of billfishes, sharks, and most other large fish were greatest in sets made on floating objects and least on sets made on dolphins. The greatest catches of manta rays and sting rays were made in sets on free-swimming schools, however. The discards of undersized yellowfin were greatest in sets made on floating objects and least in sets made on dolphins. The following "equation," comparing the bycatches in sets on dolphins to those in sets on floating objects, has been calculated by the IATTC staff; 1 dolphin + 0.1 sailfish + 0.1 manta ray =

15,620 small tunas + 328 mahi-mahi + 190 wahoo + 7.6 rainbow runners + 20.7 sharks and rays + 0.8 billfishes + 4.3 other large fish + 422 triggerfishes + 800 other small fish + 0.04 sea turtles. In other words, diversion of enough effort from dolphin fishing to fishing on floating objects to save 1 dolphin, *etc.*, would result in the loss of 15,620 small tunas, *etc.* He listed the following features of ecologically-sound fishing: (1) optimum distribution of ages, sizes, and sexes in the catches of the target species; (2) a harvest which allows adequate reproduction; (3) a harvest which minimizes the loss of genetic diversity; (4) minimum waste of the target species; (5) minimum physical disturbance of the habitat; (6) minimum pollution and production of debris; (7) minimum expenditure of energy; (8) minimum bycatches; (9) minimum "subsidies" to any species.

Mr. Hallman asked if there were any questions. The representative of the United States asked how habitat could be lost through fishing activities, and Dr. Hall said that bottom trawls could destroy shelter or nesting sites for various species. The representative of Costa Rica asked if there was anything available on bycatches that he could distribute to the members of the fishing association to which he belonged, and Dr. Hall said that he would provide him with reprints of his most recent paper on bycatches. The representative from Panama asked about the effects of bycatches of sharks in purse seines on the artisanal fisheries for sharks. Dr. Hall said that the effects could be severe, as sharks have long life spans and low rates of reproduction. He emphasized, however, that the effects cannot be properly evaluated without more knowledge of the biology of the various species of concern. He remarked that the fishery for tunas associated with dolphins has become one of the "cleanest" fisheries in the world. Mr. Hallman asked if the numbers of sets made on floating objects have been increasing in recent years, and Dr. Hall replied affirmatively.

#### Agenda Item 7 - Review of International Dolphin Conservation Program

Mr. Hallman said that he thought that this agenda item had already been covered in Agenda Item 4 of the Intergovernmental Meeting, but asked if anyone had any additional comments on this subject. Dr. Joseph emphasized that, in view of the statement made by the Mexican delegation during the Intergovernmental Meeting, caution should be exercised with regard to the preliminary estimate of 2,600 to 3,000 for the mortality of dolphins during fishing operations in 1996.

#### Agenda Item 8 - Recommendations and resolutions for 1996

Mr. Hallman asked Dr. Joseph if he had a recommendation for catch limits on yellowfin tuna in the CYRA for 1996. Dr. Joseph said that he recommended limits for 1996 which were the same as those for 1995 (235 thousand tons, with three additions of 20 thousand tons each to be added at the discretion of the Director). He stated that it was almost certain that the upper limit would not be exceeded. He said that the present fleet size is appropriate for the amount of yellowfin available, but if more vessels enter the fishery the catch limits could be exceeded. Mr. Hallman asked the participants if they were in agreement with Dr. Joseph's recommendation. After a brief discussion, the resolution (Appendix 3) was adopted.

#### Agenda Item 9 - Recommended research program and budget for FY 1997-1998

Mr. Hallman turned the floor over to Dr. Allen. Dr. Allen said that the budget for 1997-1998 was described in detail in Background Paper 3. Table 1 of that Background Paper shows, for the first time, the contributions for the International Dolphin Conservation Program (IDCP). The recommended 1997-1998 budget (not including the contributions for the IDCP) is about \$4.5 million, whereas that for 1996-1997 was about \$5.0 million. The reduction is due largely to the fact that the budget calls for fewer staff members. The reduction in staff size is made possible by more efficient methods of data processing. There will be some shifts within the budget. For example, more money will be required to keep the Ashotines Laboratory running efficiently, and some money should be spent on a bigeye tuna tagging program. In addition, money will be needed for in-grade salary increases and for salary increases to compensate for inflation. Mr. Hallman asked if there were any questions. Mr. Carlos Arbelaez of Seatrading International noted that the funds received were always substantially less than the funds recommended, and asked how the staff was able to adjust for this. Dr. Allen said that some staff positions had not been filled and some activities, such as meetings of the Scientific Advisory Board, had been cancelled. The representative of the United States asked about the status of changes in assessments on vessels to pay for the

IDCP. Dr. Allen said that this had been discussed at the 13th meeting of the International Review Panel, but that no changes had been made.

#### Agenda Item 10 - Place and date of next meeting

Mr. Hallman asked for suggestions concerning the place and date of the next meeting. The representative of Costa Rica said that the 57th meeting of the IATTC had originally been scheduled to take place in Costa Rica in June 1996, but that it was necessary to change the date and location of the meeting. He offered that Costa Rica serve as host for the 58th meeting. Representatives of all the other member nations supported this proposal. Mr. Hallman said that Dr. Joseph, after corresponding with the member nations, would announce dates which would be acceptable to all concerned.

#### Agenda Item 11 - Election of officers

Mr. Hallman said that it is customary for the host nation to provide the Chairman for the meeting, and that a decision as to whom that person would be could be made later.

#### Agenda Item 12 - Other business

Mr. Hallman asked if there was any other business.

The representative of Japan called attention to the Kyoto Declaration and Plan of Action on the Sustainable Contribution of Fisheries to Food Security (Appendix 4), and asked that the IATTC support this declaration. Mr. Hallman asked for comments. The representative of the United States said that his nation and three others had supported the Kyoto Declaration and Plan of Action, subject to the caveat that these would not affect the competency of, or change the current status in, other international organizations, including the International Whaling Commission. The representatives of the other nations stated that they supported the document, so Mr. Hallman announced that the consensus was that the IATTC endorsed it.

The representative of Panama said that William Marcelo Campoverde García, a member of the crew of the Vanuatu-flag purse seiner *Cabo de Hornos*, had lost his life while carrying out actions necessary for complying with the requirements of the IDCP. He suggested that it would be appropriate if Dr. Joseph sent a letter of condolence to his family. Everyone else agreed, and Mr. Hallman said that this should be considered to be a request that Dr. Joseph do this.

The representative of Costa Rica said that Mr. Carlos Díez, whose firm had performed the simultaneous interpretations at most of the IATTC meetings since the 1950s, had recently passed away. He expressed his condolences to his daughter, Cynthia, who was in attendance. Mr. Hallman said that he and many others had known Mr. Díez for many years, and that he was sure that everyone else held him in highest esteem and regretted his passing.

#### Agenda Item 13 - Adjournment

There being no further business under Agenda Item 12, Mr. Hallman declared the meeting closed at 11:25 a.m.

## APPENDIX 1

### LIST OF ATTENDEES

#### MEMBER COUNTRIES—PAISES MIEMBROS

##### COSTA RICA

**JAIME BASADRE OREAMUNO**  
Comisionado

**JAIME BASADRE ANDRACA**  
Asesor

**TANIA LOPEZ LEE**  
Ministerio de Comercio Exterior

**HERBERT NANNE ECHANDI**  
Colegio de Biólogos de Costa Rica

##### FRANCE

**PHILIPPE COSTE**  
Consulate of France in Los Angeles

##### JAPAN

**NAOKO HAMAGUCHI**  
Ministry of Foreign Affairs  
Fishery Division

**EIKO OZAKI**  
Federation of Japan Tuna Fisheries Cooperative  
Association

**TAKAAKI SAKAMOTO**  
Fisheries Agency of Japan  
Int'l Affairs Division

**SHINICHI SATO**  
Kaigata Suisan Co., Ltd.

**SALLY J. CAMPEN**  
Federation of Japan Tuna Fisheries Cooperative  
Associations

##### PANAMA

**RICARDO MARTÁNS G.**  
Comisionado  
Ministerio de Comercio e Industrias

**LUIS DORATI**  
Asesor, Dirección de Recursos Marinos

**FOTIS LYMBEROPOLUS**  
*Julie L*

##### UNITED STATES OF AMERICA

**BARBARA BRITTEN**  
Commissioner

**WANDA CAIN**  
**ELIZABETH EDWARDS**  
**GARY SAKAGAWA**  
National Marine Fisheries Service

**M. AUSTIN FORMAN**  
Commissioner

**JAMES T. McCARTHY**  
Commissioner

**BRIAN HALLMAN**  
**JOHN McGRUDER**  
Department of State

**MICHAEL TILLMAN**  
Commissioner

**MARTIN HOCHMAN**  
National Oceanic and Atmospheric Administration

**GORDON BROADHEAD**  
Consultant



**DAVID BURNEY**  
U.S. Tuna Foundation

**THOMAS CREHAN**  
Fishermen's Association of San Pedro

**PETE DILEVA**  
Caribbean Fishing, Inc.

**AUGUST FELANDO**  
Consultant

**PETER H. FLUORNOY**  
International Law Offices

**WILLIAM GILLIS**  
American Tuna Sales Association

**JOHN D. HALL**  
Coastal and Offshore Pacific Corporation

**WAYNE HEIKKILA**  
Western Fishboat Owners Association

**TERRY HOINSKY**  
Fishermen's Union of America

**ROBERT INSINGER**  
Consultant

**ANTHONY TILLET**  
Government of Vanuatu

**HUGO ALSINA LAGOS**  
Comisionado  
SARPA, Ministerio de Agricultura y Cría

**SANTOS VALERO**  
Ministerio de Relaciones Exteriores

**MARK McAULIFFE**  
Jorge Fishing

**ANTHONY V. NISETICH**  
Ocean Fish Company

**KEVIN McCLAIN**  
Van Camp Seafood Company

**OTTO OBRIST**  
Ocean Ventures, Inc.

**CHARLES PECKHAM**  
LMR Fisheries Research, Inc.

**MARK ROBERTSON**  
Janus Partners, L.L.C.

**JOHN ROYAL**  
Fishermen and Allied Workers Union (ILWU)

**MONTY SILVERMAN**  
Silversea International

**ED STOCKWELL**  
Star-Kist Foods, Inc.

**ED WEISMAN**  
P.S. Fishing

**VANUATU**

**VENEZUELA**

**EDUARDO PORCARELLI OSTOS**  
Instituto de Comercio Exterior

**LILLO MANISCALCHI**  
Avatun

**NON-MEMBER COUNTRIES--PAISES NO MIEMBROS**

**CANADA**

A.W. ARGUE  
Department of Fisheries and Oceans

**COLOMBIA**

JAIRO HERNANDO ARIAS PUERTA  
Viceministro  
Ministerio de Agricultura y Desarrollo Rural

FOCION ESCORCIA SIERRA  
Instituto Nacional de Pesca y Acuicultura

CLARA GAVIRIA AGUDELO  
Ministerio de Comercio Exterior

ARMANDO HERNÁNDEZ RODRÍGUEZ  
Cámara de la Industria Pesquera

OSVALDO PEREZ MOLINA  
Instituto Nacional de Pesca y Acuicultura

**ECUADOR**

LUIS TORRES NAVARRETE  
Min. de Industrias, Comercio, Integración y Pesca

JORGE VELEZ MENDEZ  
Instituto Nacional de Pesca

**EL SALVADOR**

JOSE E. M'SARAVIA  
MARLENE INTERIANO  
Consulado General de El Salvador en Los Angeles

**MEXICO**

CARLOS CAMACHO GAOS  
JERONIMO RAMOS SAENZ PARDO  
MARA MURILLO CORREA  
GUILLERMO COMPEÁN JIMÉNEZ  
SANTIAGO GOMEZ AGUILAR  
Sec. de Medio Ambiente, Recursos Naturales y Pesca

SERGIO GOMEZ LORA  
SECOFI

GUILLERMO GOMEZ SANCHEZ  
International Trade Group, LLC

MARIA TERESA BANDALA  
Secretaría de Relaciones Exteriores

FELIPE CHARAT  
ALFONSO ROSIÑOL  
CANAINPES

CLAUDIO COELLO HERRERA  
Comisión de Pesca

IGNACIO GAVALDON  
Grupo Nair

**RUSSIAN FEDERATION**

VLADIMIR FEDORENKO  
Embassy of the Russian Federation

**SPAIN**

ANTONIO NOVAS  
Ministerio de Agricultura, Pesca y Alimentación

PILAR PALLARES SOUBRIER  
Instituto Español de Oceanografía

TAIWAN—REPUBLIC OF CHINA

HONG-YEN HUANG  
Council of Agriculture of the Executive Yuan  
Fisheries Department

INTERNATIONAL ORGANIZATIONS—ORGANIZACIONES INTERNACIONALES

JOHN SPENCER  
European Community

MICHAEL TILLMAN  
International Whaling Commission

CHRIS GODDARD  
Great Lakes Fishery Commission

CARLOS MAZAL  
OLDEPESCA

HUGO ALSINA LAGOS  
International Commission for the Conservation of Atlantic  
Tunas

NON-GOVERNMENTAL ORGANIZATIONS—ORGANIZACIONES NO GUBERNAMENTALES

MARY MARKUS  
American Cetacean Society

LEESTEFFFY JENKINS  
ALVARO POSADA-SALAZAR  
Humane Society International

MEREDITH McLEAN  
Center for Marine Conservation

ALEJANDRO VILLAMAR  
Red Mexicana de Acción Frente al Libre Comercio

MARK PALMER  
Earth Island Institute

TERESA PLATT  
The Fishermen's Coalition

HECTOR LOPEZ ROJAS  
Fundación para la Defensa de la Naturaleza

KATHLEEN O'CONNELL  
Whale and Dolphin Conservation Society

GERALD LEAPE  
TRACI ROMINE  
Greenpeace International

IATTC—CIAT

JAMES JOSEPH, Director

## APPENDIX 2

### AGENDA

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna research
4. The 1995 fishing year
5. Status of tuna stocks
6. Review of tuna-dolphin research and extension programs
7. Review of International Dolphin Conservation Program
8. Recommendations and Resolutions for 1996
9. Recommended research program and budget for FY 1997-1998
10. Place and date of next meeting
11. Election of officers
12. Other business
  - a) The Kyoto Declaration and Plan of Action
  - b) Other issues
13. Adjournment

### APPENDIX 3

#### RESOLUTION

*The Inter-American Tropical Tuna Commission*, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,

*Notes* that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and

*Recognizes*, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and

*Recalls* that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and

*Notes* that from 1980 through 1995, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

*Observes* that, although the stock of yellowfin is currently at a level of abundance greater than the optimum, nevertheless it can be over-exploited,

*Concludes* that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1996.

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties* that a quota of 235,000 short tons be established for the 1996 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than three successive increments of 20,000 short tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and

*Finally recommends* that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1996.

## APPENDIX 4

### THE KYOTO DECLARATION AND PLAN OF ACTION ON THE SUSTAINABLE CONTRIBUTION OF FISHERIES TO FOOD SECURITY

We, the 95 States<sup>1</sup> which met in Kyoto from 4 to 9 December 1995 on the occasion of the International Conference on the Sustainable Contribution of Fisheries to Food Security,

Appreciating the initiative taken by the Government of Japan to host the Conference and the technical assistance provided by the Food and Agriculture Organization of the United Nations (FAO);

Recalling that this initiative was welcomed at the 27th Session of the FAO Conference held in November 1993;

Also recalling the Strategy for Fisheries Management and Development established by the FAO World Fisheries Conference in 1984;

Also recalling the relevant provisions of the United Nations Convention on the Law of the Sea (UNCLOS), the Declaration of Cancun, the Rio Declaration and Agenda 21 of the United Nations Conference on Environment and Development (UNCED), the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks<sup>2</sup> and the FAO Code of Conduct for Responsible Fisheries, including the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas;

Also recalling the decision on conservation and sustainable use of marine and coastal biological diversity adopted in November 1995 by the Conference of the Parties to the Convention on Biological Diversity;

Also recalling the Rome Consensus on World Fisheries adopted at the FAO Ministerial Conference on Fisheries in March 1995;

Noting a continuously growing world population and the need to secure enough food for the people in present and future generations, and the significant contribution of fisheries to income, wealth and food security for all people, and its critical importance in some low-income food-deficit countries (LIFDCs);

Recognizing the responsibility of the present generation regarding the needs of future generations;

Also recognizing the role of living aquatic resources as an important natural renewable source of food and the traditional and essential role played by fisheries in providing high quality protein required for human use;

Deeply concerned that 800 million people suffer from chronic malnutrition;

Mindful that, unless appropriate action is taken very soon, the combination, at the global level, of population increase and economic growth, in conjunction with continued over-fishing, excess fishing capacity and degradation of the aquatic environment, will place enormous strains upon the fishery sector's capability to sustain its necessary contribution to food security;

Affirming that effective and integrated fisheries management and conservation policies will result in long-term and significant gains in food supply, income and wealth, as well as in economic growth;

Also affirming that achieving an optimum long-term contribution of fisheries to economic and social well-being - a concept which includes nutritional and environmental values, as well as poverty alleviation - will contribute to achieving food security;

1 In this Declaration and Plan of Action the reference to States includes the European Community in matters within its competence.  
2 Agreement of 4 December 1995 for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (A/CONF.164/37, 8 September 1995).

Mindful that initiatives which respect the concept of sustainable use of resources will promote the objective of optimizing the availability of aquatic products, and thus support efforts to achieve food security;

Recognizing the importance of inland fisheries and fresh water aquaculture, in particular for land-locked countries, in many of which fresh water fish is important for food security ;

Mindful that environmentally sound and sustainable stock enhancement, combined with integrated management of fresh water catchment areas, could significantly increase supplies of fresh water fish, particularly in LIFDCs;

Aware that the world's aquaculture, while showing steady and rapid growth in production, needs appropriate institutional and legal frameworks to fulfill its potential in ways which are compatible with sustainable development;

Noting that responsible post-harvest use of fish and fishery products is necessary for the sustainable contribution of fisheries to food security;

Recognizing that trade in fish and fishery products is of great importance, in particular for a number of developing countries, and should be conducted in accordance with the principles, rights and obligations established in the World Trade Organization (WTO) Agreement;

Also recognizing that many developing countries, and in particular LIFDCs and small island developing States, face major challenges in ensuring a sustainable contribution from subsistence, artisanal and commercial fisheries to their food security, and recognizing that international cooperation and support will be important in ensuring capacity building, information exchange and the provision of technical and financial assistance;

**DECLARE** that we should, without prejudice to the rights and obligations of States under international law:

1. Recognize and appreciate the significant role which marine fisheries, inland fisheries and aquaculture play in providing food security for the world, both through food supplies and through economic and social well-being;
2. Recognize and appreciate the important economic and social role of subsistence, artisanal and commercial fishers and other fishers throughout the world, and seek to provide an environment in which they can make an optimum contribution to economic and social welfare;
3. Recognize that FAO projects a potential substantial shortfall by 2010 of the supply of fish and fishery products to meet demands from an increased human population, which in turn will adversely affect world food security;
4. Recognize that the projected shortfall of supply of fish and fishery products by 2010 can substantially be reduced and the marine and inland waters maintained as a sustainable source of renewable food resources, if a combination of measures, set forth below, are taken;
5. Take steps for effective application of the FAO Code of Conduct for Responsible Fisheries, and consider becoming parties to the United Nations Convention on the Law of the Sea, the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks and the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, and enact, correspondingly, appropriate domestic legislation and regulations in a timely manner;.
6. Call for an increase in the respect and understanding of social, economic and cultural differences among States and regions in the use of living aquatic resources, especially cultural diversity in dietary habits, consistent with management objectives;
7. Undertake in-depth studies to assess the social, economic and cultural importance of fisheries and fishery products;
8. Promote and strengthen scientific research as the fundamental basis for sustainable development of fisheries and aquaculture activities to ensure food security, as well as provide scientific and technical cooperation and support for those countries with lesser research capabilities;

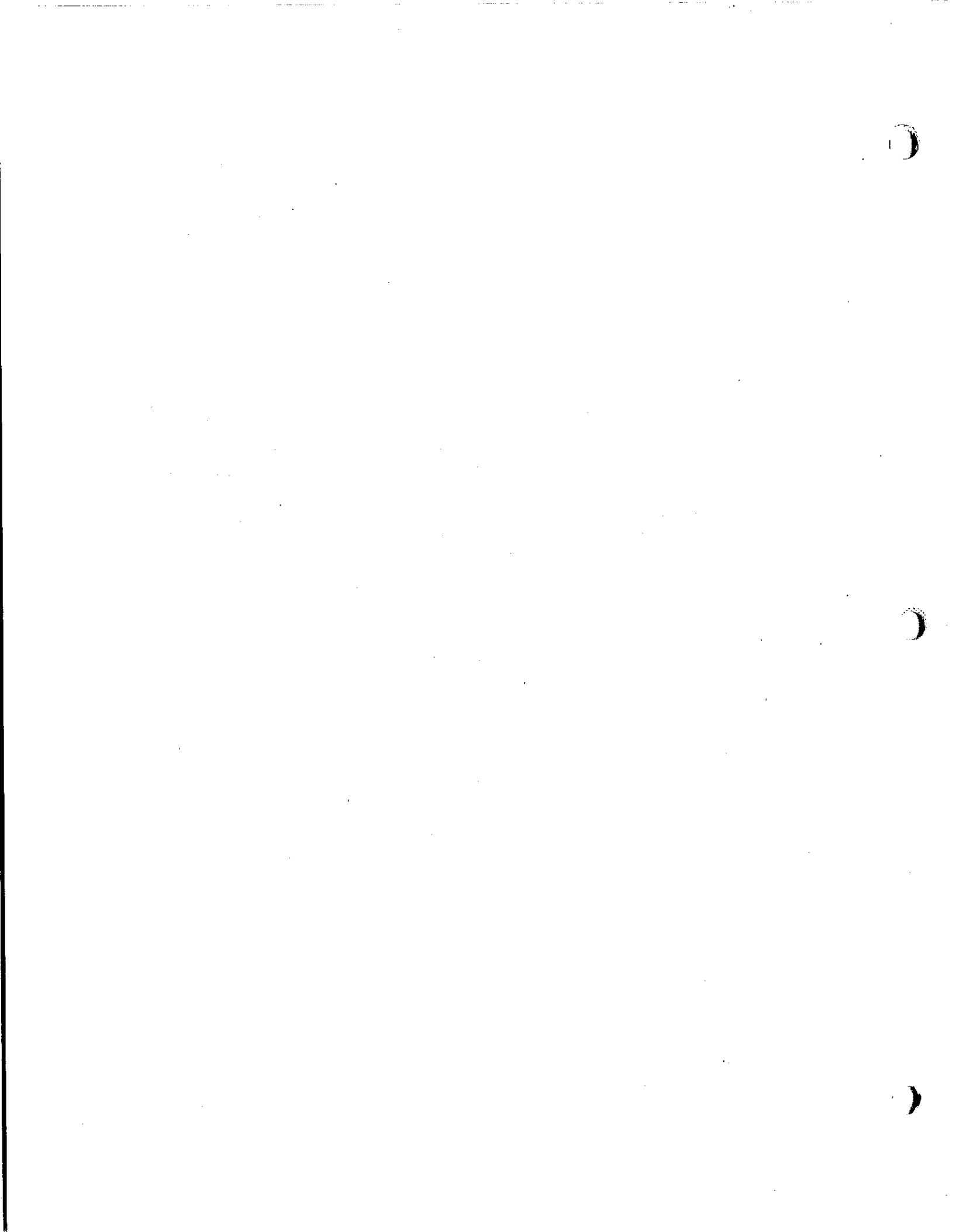
9. Base policies, strategies and resource management and utilization for sustainable development of the fisheries sector on the following : (i) maintenance of ecological systems; (ii) use of the best scientific evidence available; (iii) improvement in economic and social well-being; and (iv) inter- and intra-generational equity;
10. Apply the precautionary approach as referred to in the FAO Code of Conduct for Responsible Fisheries and the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks;
11. Assess the stock productivity in the waters under national jurisdiction, both inland and marine, adjust the fishing capacity in these waters to a level commensurate with long-term stock productivity and take appropriate measures as soon as possible to restore overexploited stocks to sustainable levels; and cooperate in accordance with international law to take similar measures regarding stocks occurring in the high seas;
12. Conserve and sustainably use biological diversity and its components in the aquatic environment and, in particular, prevent practices leading to irreversible changes, such as extinction of genes and species, genetic erosion and/or large-scale destruction of habitats;
13. Study the effectiveness of multispecies management;
14. When and where appropriate, consider harvesting at multiple trophic levels in a manner consistent with sustainable development of these resources;
15. Promote fisheries through research and development aiming at: (i) optimum use of unexploited or underexploited resources; (ii) identification of new, harvestable, aquatic resources; (iii) reduction of discard mortality; and (iv) development and use of selective, environmentally safe and cost-effective fishing gear and techniques;
16. Increase the available supply of fish and fishery products for human consumption, nationally and internationally, through: (i) making optimum use of harvests and reducing post-harvest losses; (ii) developing, improving and sharing appropriate storage, processing and distribution technology; and (iii) developing and promoting effective systems ensuring the safety of food of aquatic origin, including harmonization of international regulations;
17. Support enhancement of fisheries in coastal marine and inland waters, when and where appropriate, by: (i) assisting in stocking of resources and restocking of depleted resources through providing suitable organisms; (ii) assisting fishers to organize themselves; (iii) providing the use of integrated community based and/or co-management schemes; and (iv) subject to national priorities, establishing access or user rights in waters exploited under open access regimes;
18. Promote the use of sustainable and environmentally sound aquaculture and ranching in coastal marine and inland waters through, *inter alia*: (i) establishment of appropriate institutional and legal frameworks; (ii) coordination of the use of lands and waters with other activities; (iii) use of the best and most appropriate genetic material in conformity with the conservation and sustainable use of the environment and conservation of biological diversity; and (iv) application of social and environmental impact assessments;
19. Study the means for responsible post-harvest use of fish and fishery products, compatible with the policies for the sustainable development of fisheries and aquaculture;
20. Ensure that trade in fish and fishery products promotes food security, does not result in environmental degradation or adversely impact the nutritional rights and needs of people for whom fish and fishery products are critical to their health and well-being, does not undermine applicable global, regional and subregional conservation and management measures and is conducted in accordance with the principles, rights and obligations established in the World Trade Organization (WTO) Agreement;
21. Enhance public awareness of the nutritional and health values of fish and fishery products;
22. Provide, either directly or through regional, subregional or international organizations, technical and financial assistance to developing countries, in particular LIFDCs and small island developing States, in order to assist them to realize the sustainable contribution of fisheries to food security and social and economic development;



AND HAVE AGREED that a set of immediate actions should be taken, without prejudice to the rights and obligations of States under international law, either directly or in cooperation with other States, or through the Food and Agriculture Organization of the United Nations (FAO) in cooperation with other appropriate intergovernmental organizations and/or regional fishery management organizations or arrangements. These immediate action are:

1. To assess and monitor the present and future levels of global, regional and national production, supply and demand of fish and fishery products and their effects on food security, employment, consumption, income, trade and sustainability of production;
2. To enhance subregional and regional cooperation and establish, where it is considered appropriate, subregional and regional fishery conservation and management organizations or arrangements for straddling fish stocks and highly migratory fish stocks; and cooperate to strengthen, where necessary, existing subregional and regional fishery conservation and management organizations and arrangements in order to carry out their assigned tasks;
3. To conduct, within their competences and, where appropriate, in cooperation with regional and other intergovernmental organizations, integrated assessments of fisheries in order to evaluate opportunities and strengthen the scientific basis for multispecies and ecosystem management;
4. To identify and exchange information on potential mechanisms to reduce excess fishing capacity and implement action on programs to reduce excess capacity, where and when appropriate, as soon as possible;
5. To develop, promote and facilitate the exchange of information on the use of efficient and standardized methodologies for the study of social, cultural and economic characteristics of fishing and associated activities; and in particular, attempt to develop methods designed to permit verifiable indicators of the importance of such characteristics and their interaction and compatibility with management objectives;
6. To promote allocation of human and financial resources for an international program to investigate the effectiveness of multispecies management of commercial fishery resources;
7. To increase efforts to estimate the quantity of fish, marine mammals, sea birds, sea turtles and other sea-life which are incidentally caught and discarded in fishing operations; assess the effect on the populations or species; take action to minimize waste and discards through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques; and exchange information on methods and technologies to minimize waste and discards;
8. To promote the exchange of information amongst research institutes and other relevant entities aiming to: (i) increase opportunities for the sustainable use of unexploited or underexploited species as human food; and (ii) promote and support research activities in order to ensure improvement in scientific knowledge of existing fishery resources;
9. To strengthen coordination of national and international research programs aiming to stimulate environmentally sound aquaculture and stocking, giving emphasis to the development of international guidelines for the development and management of activities in particular on: (i) the impacts on the environment and biodiversity; (ii) the application of biotechnology; and (iii) the health of cultured stocks;
10. To provide and coordinate technical and financial assistance programs for developing countries, in particular low-income food-deficit countries (LIFDCs) and small island developing States, and encourage cooperation between these countries, in order to achieve the contribution of fisheries to food security through, *inter alia*: (i) a rapid transfer of technology and know-how in enhancement in inland and marine waters; (ii) an upgrade and increase of the capabilities needed to minimize post-harvest losses; and (iii) ensuring improved control of fishing activities within areas under national jurisdiction;

AND REQUEST the Government of Japan to convey this Declaration and Plan of Action to the Secretary-General of the United Nations, the Director-General of the Food and Agriculture Organization of the United Nations, the Chairman of the United Nations Commission on Sustainable Development, the 1996 FAO World Food Summit and relevant international organizations for their consideration and endorsement.



# INTER-AMERICAN TROPICAL TUNA COMMISSION

## MINUTES OF THE 58<sup>TH</sup> MEETING

June 3-4, 1997

San José, Costa Rica

The 58<sup>th</sup> meeting of the Inter-American Tropical Tuna Commission (IATTC) was held in San José, Costa Rica, on June 3 and 4, 1997.

### 1. Opening of the Meeting

Dr. Jorge Campos M., of Costa Rica, served as Chairman, and he introduced the Deputy Minister for Foreign Trade, Lic. Rodrigo Carreras, who made a speech welcoming the attendees to Costa Rica (Appendix 1). The Chairman then called for introductions. Representatives of the governments of Costa Rica, France, Japan, Panama, the United States, and Venezuela introduced themselves, as did observers from Colombia, Ecuador, El Salvador, Mexico, the Republic of China, Spain, the Commission for the Conservation of Southern Bluefin Tuna, the International Whaling Commission, the International Commission for the Conservation of Atlantic Tuna, the Fundación para la Defensa de la Naturaleza (FUDENA), Greenpeace International, and the Humane Society International. The attendees are listed in Appendix 2.

### 2. Adoption of agenda

The provisional agenda was adopted as presented (Appendix 3).

### 3. Review of current tuna research

The Chairman turned the floor over to Dr. James Joseph, Director of the IATTC, who introduced Dr. Robin Allen, Assistant Director of the Commission. Dr. Allen described the research carried out by the IATTC during its half-century of existence, and summarized the principal projects currently being undertaken. He pointed out that all the IATTC staff's studies depended on data from the fishery, and described how the Commission's seven field offices contributed to this end. He gave a brief overview of the work carried out at IATTC headquarters in La Jolla by IATTC staff, both alone and in collaboration with other entities in many nations. He emphasized that the main focus of research was population dynamics, essential for making management recommendations, and described the basic biological research into yellowfin, skipjack, and bigeye tunas, as well as swordfish. Information on the reproductive biology and early life history of tunas is necessary for studies of recruitment, and determining stock structure requires information on rates of mixing and interaction among stocks, obtained from tagging studies, analyses of catch and effort, and biochemical and genetic studies, as well as the crucial question of natural mortality rates. He described the ground-breaking research being undertaken at the IATTC's laboratory at Achotines, Panama, and the recent expansion of the facilities as a result of a cooperative research project with Japan and Panama, which had resulted in the first successful breeding of yellowfin tuna in captivity.

### 4. and 5. The 1996 fishing year and Status of tuna stocks

Dr. Joseph said that 1996 had been a very good year in the fishery, with record catches of all the principal market species, and a record total catch of 419 thousand tons. Dr. Joseph briefly summarized the history of the fishery, and the changes brought about by environmental factors such as the 1982-83 El Niño and the conservation programs for yellowfin tuna and dolphins. The fishery had changed in the last few years, with the development of a large offshore fishing area south of the equator and a dramatic increase in the catch of bigeye tuna by the surface fishery, from 5,000 tons in 1993 to over 50,000 tons in 1996.

Dr. Joseph explained and discussed the various indices of abundance calculated by the IATTC staff and used as the basis for conservation recommendations. He said that currently the yellowfin stock in the eastern Pa-

ctic was capable of supporting catches of some 260 to 300 thousand tons, but that this could change rapidly. He contrasted the possible results of "dolphin-safe" fishing and fishing on dolphins, and pointed out that the large quantities of small fish caught by the former mode of fishing could affect the future productivity of the fishery. The average size of the yellowfin in the catch had fallen in 1995, and this might possibly be linked to the expansion of the new southern fishing area.

The IATTC staff recommended a catch quota for yellowfin for 1997 similar to that of 1996, 220 thousand metric tons, with three increments of 15 thousand tons each. Dr. Joseph pointed out that it was unlikely that this level would be exceeded, since the fleet and the tuna populations were currently in balance. However, he said that the fleet was growing, a trend which was continuing in 1997, and warned that this should be monitored in order to avoid excessive effort. With the present level of about 100 boats and 20 thousand days of effort, and with the same size composition of the catch, the fishery should stay healthy, but that an increase to the 35 thousand days of effort seen in the late 1970s and early 1980s and/or a shift to catching smaller fish would in all likelihood lead to problems.

Dr. Joseph then turned to bigeye tuna. He noted that although the species accounts for only about 11% of world tuna catches, its economic importance is great, since its physical characteristics make it much sought after for the *sashimi* market. Traditionally bigeye was caught primarily with longlines, but in recent years the purse-seine catch in the EPO had increased tenfold, and was now greater than the longline catch, which had fallen considerably. The purse-seine catches consisted mainly of small fish, which in 1996 averaged about 9 kg, compared to 59 kg for longline-caught fish, and the effect of this on the stock had given rise to concern. The economic impact of this change was also considerable, since the longline-caught fish commanded prices 8 or 10 times higher than the surface-caught fish. Since much less is known about the biology and population structure of bigeye than of yellowfin or skipjack, the IATTC staff had been asked to study the situation and the species in greater detail than in the past.

Dr. Joseph then presented the results of staff's investigations. He stressed that these were preliminary, and that several assumptions had had to be made, most importantly about the natural mortality rate of bigeye. However, based on these results, extrapolations had been made for the 1997-2006 period about the potential effects of different combinations of catch levels in both the purse-seine and longline fisheries with three rates of natural mortality, 0.4, 0.6 and 0.8. All the analyses indicated that increasing the purse-seine catch reduced the longline catch, and the staff was concerned that the stock might be overfished. New instruments, such as the UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, the Rio Summit, and the FAO Code of Conduct on Responsible Fishing, all stressed the precautionary approach, based on the best available data, rather than waiting until more comprehensive and definitive information was available, by which time it might be too late to achieve the desired ends. Dr. Joseph said that in his opinion ways of limiting the expansion of the fishery should be considered, but that the issue was complicated because the fishery caught multiple species, and a way would have to be found of controlling the bigeye catch without constraining the catch of skipjack, which could support higher levels of catch. He said that the matter was urgent, and suggested that a working group of experts from various nations be formed within the following month or two to study this issue and present its report to the next IATTC meeting. It should meet as often as possible, and consider such management options as limiting fishing areas, seasons, or the use of certain gears, especially Fish-Aggregating Devices (FADs), and that in the meantime the staff would continue their studies and make the results available to the group.

The representative of Mexico, referring to the question of the multi-species fishery, noted that the fishery also discarded large quantities of small yellowfin, and asked about the natural mortality rate of that species and whether the potential threat of overfishing resulting from large catches of juvenile fish applied to yellowfin as well as to bigeye. Dr. Joseph said that there was also uncertainty about the rate for yellowfin, but 0.8 was generally used, and that with that rate and the current size composition of the catch the yield per recruit would indeed fall.

The representative of Japan agreed that further study of natural mortality rates was necessary, but noted that, whatever the rate, the current increase in catches of bigeye in sets on FADs was unwise, since it created the risk of reducing the total catch, not just the longline catch. He endorsed the suggestion of a working group, and

suggested that in order not to harm the fishermen who depended on the FAD fishery, the total surface bigeye catch should be limited to the level reached in 1996 and not be allowed to go higher.

The delegate from Costa Rica expressed his concern about the fragility of the resource, especially if vessels faced with falling catches in the Atlantic and Indian Oceans decided to transfer to the currently healthy fishery in the EPO.

The U.S. delegate cautioned against taking action on the basis of preliminary results, and noted that changes in yellowfin abundance sometimes reflected environmental changes, and that this might also be true for bigeye. He also pointed out that not all nations involved were members of the IATTC, and that any measures taken might have no effect on these countries' activities. He also noted that the fishery involved not only multiple species but also multiple markets, and that one fishery's discard was another's catch; the level of discards should be monitored, but the trade-offs should be analyzed before taking action. He supported the proposal for a working group, but said that any interim measures would be premature.

Mexico also supported the idea of a working group.

In response to the U.S. statement, the delegate of Japan said that action was not premature; he agreed that non-member countries could not be subject to any measures the IATTC took, but pointed out that the IATTC could and should take the lead, and by so doing encourage other nations, who might in turn become members. He also noted that the majority of the juveniles caught had no commercial value in any market, and were dumped for that reason. He repeated Japan's proposal for the FAD fishery, no reduction but no increase, which did not penalize the fishery, but accepted that if the consensus was against it Japan would not insist.

Dr. Joseph described the concerns about the question of access to the fishery, and mentioned rumors about other fleets transferring to the EPO. He commented that the fleet was currently close to its ideal size, and that if it grew this could be a matter for concern. He agreed with the United States that environmental changes did affect apparent abundance, and that the IATTC staff would examine this as best it could. He said that yellowfin recruitment was very variable, and was currently very high; bigeye recruitment had increased in 1981-82, but this had not been sustained. He said he was optimistic regarding non-member nations, that they would all want to do what was necessary to conserve the resource; the intergovernmental forum had been used in the 1970s for yellowfin conservation measures, and perhaps something similar could be done now for bigeye, although he hoped that eventually all the nations involved would become members of the IATTC.

The Chairman summarized the debate, and the meeting agreed to the U.S. proposal that the IATTC staff draft terms of reference for the working group on bigeye for consideration later in the meeting.

#### 6. Review of tuna-dolphin research and extension programs

Dr. Martín Hall, head of the IATTC Tuna-Dolphin Program, presented this agenda item. He said that in 1996 the dolphin mortality in the fishery had once again fallen, to 2,547 animals, and went on to describe the bycatches arising from the three different types of purse-seine sets, the mortality-per-set ratios, the staff's calculations of the relative abundance of the various dolphin stocks involved in the fishery, and the sources of the data used, mainly the IATTC observer program. He noted that the calculations of dolphin abundance were made difficult by the "disappearance" of juvenile dolphins from the time they left their parent herd to the time they rejoined another herd as adults five to ten years later. He said that current estimating procedures incorporated environmental information, but that this had not changed the overall picture. The stocks appeared healthy, and mortality levels caused by the fishery were not only below the Potential Biological Removal (PBR) rate, defined as 0.1% of a reduced estimate of the abundance of a stock, but for all but two stocks they were below the Zero Mortality Rate Goal (ZMRG), which is 10% of the PBR rate.

Next, Mr. Dave Bratten, also of the Tuna-Dolphin Program, described the causes of dolphin mortality and the techniques and approaches used to reduce it. The factors which most affected mortality level are the species of dolphin involved, the area, herd size, the amount of tuna caught, the oceanic conditions, the time of day, and the

weather. The factors which most helped to reduce the mortality were the backdown maneuver, hand rescue, use of a floodlight after dark, avoiding high-risk conditions, and maintaining the motivation of the crew. The boatowners' contribution was also important, by maintaining the vessel in good working order and ensuring that it had all the recommended dolphin safety gear. Currently 86% of sets resulted in no mortality. The IATTC program organized mortality reduction workshops for fishermen, in which they learnt the three main lines of defense against dolphin mortality: ensuring that all the equipment was present and working before leaving port, avoiding high-risk situations, and always performing the backdown maneuver. Mr. Bratten also described some research and development projects being undertaken to reduce dolphin mortality further.

Dr. Hall went into detail about bycatches in purse-seine sets, and specifically about bigeye. In 1996 total discards of all species of tunas was about 45 thousand tons, a 50% increase over 1995 and about double those of 1993 and 1994. Almost all discarded bigeye were caught in sets on floating objects, which were also responsible for the great majority of the bycatch of most species except dolphins. He described experiments in Norway with a sorting grid which would allow the smaller fish to escape while retaining the larger ones, and said that the ideal would be for the fishermen to be able to select what they caught and what they released, but that this was not currently possible.

The Chairman suggested that in future this agenda item should cover not just tuna-dolphin but concern itself with bycatch generally.

Mexico pointed out that the table shown by Dr. Hall showed the effect on dolphin mortality of the "dolphin-safe" policy, but not of the La Jolla Agreement, and asked how much food the 45 thousand discarded tons potentially represented. Dr. Hall answered that dolphin mortality had already fallen by 60% before the introduction of the "dolphin-safe" policy, and that in the future the table would reflect the impact of the Agreement. He said that the potential production from the discarded tuna would depend on how many of the fish survived and how large they grew before being caught; in the case of bigeye, the discards represented about one-eighth of the total catch of the species in weight, so the loss to both purse-seine and longline fisheries was almost certainly significant.

Ecuador expressed its interest in collaborative studies, especially in reference to marine turtles, and asked about the mortality levels of these species. Dr. Hall welcomed this offer, and said that the low numbers of turtles caught might only reflect low abundance, and that its significance could not be determined without an understanding of the ecosystem as a whole; once that was understood, the importance of individual components, and changes in their abundance, could be evaluated.

The United States expressed its pleasure at the low level of dolphin mortality, and endorsed the proposal to change the agenda item to the general issue of bycatch.

Panama pointed out that at every IATTC meeting in recent years the staff had presented information on the high discards of other species, particularly in sets on schoolfish and floating objects. Panama was especially concerned because of the potential detrimental impact of these bycatches on artisanal fisheries, and asked whether such impacts were in fact occurring. Dr. Hall said this was an important question, but hard to answer because very little was known about the population dynamics or biology of the many species affected. He pointed out that the fishermen had reduced dolphin mortality by 98% without major changes in the fishery or in fishing technology, and it might be possible to do the same for other bycatch species.

## 7. Review of International Dolphin Conservation Program

Dr. Joseph briefly summarized the history of dolphin mortality in the purse-seine fishery, which since its inception in the 1960s had changed from annual mortality levels of over 200,000 dolphins caused by a fleet in which over 90% of the vessels flew the U.S. flag to an annual mortality of 2,500 animals caused by a fleet made up of vessels of several nations. The International Dolphin Conservation Program was created by the La Jolla Agreement in 1992, and since its inception had proved highly successful in reducing mortality to levels which were biologically insignificant for the dolphin populations of the EPO. At current levels of mortality, the future growth of

the dolphin populations should be independent of the fishery. In 1996 the dolphin mortality limit (DML) for individual vessels was 96, but the actual average mortality per vessel was only 44, and the average mortality per set 0.35. Dr. Joseph compared this incidental mortality with that of other marine species, including juvenile tunas, in sets on floating objects and schoolfish, and commented on the potential ecological cost of these discarded bycatches. He described the yield per recruit as a function of size and average weight of the fish, and commented that the effect on recruitment to the population of catching large numbers of immature fish was unknown. Concern about this situation and about the ecological costs of not fishing on dolphins had led the nations involved in the fishery to formulate a management scheme which would avoid these problems. The result was the Declaration of Panama, signed by twelve nations in October 1995, which would, once implemented, formalize and strengthen the provisions of the La Jolla Agreement.

#### 8. Recommendations and resolutions for 1997

Dr. Joseph presented the draft resolutions on bigeye and yellowfin tunas prepared by the staff. The United States said that the resolution on bigeye met most of the concerns expressed by the delegations regarding overfishing, as well as his delegation's concerns about how to proceed, and enabled the IATTC to play an active role in conserving the species. The U.S. delegation endorsed the resolution and recommended its adoption. The delegate from Japan thanked the staff for its work in drafting the resolutions, and likewise expressed its support.

Both resolutions were approved as drafted (Appendices 4 and 5).

#### 9. Recommended research programs and budget for FY 1998-1999

Dr. Allen presented the proposed budget for the 1998-1999 fiscal year, which was approved as presented. It was suggested that in future simultaneous interpretation should be provided at meetings of the International Review Panel, and the staff agreed to look into the possibility of including this in future budgets.

#### 10. Place and date of next meeting

It was agreed that the next meeting of the IATTC would be held in La Jolla, USA, in June 1998.

#### 11. Election of officers

Panama proposed that the United States should provide the Chairman for the next meeting, and the proposal was approved unanimously.

#### 12. Other business

There was some discussion about a proposed working group on bycatch. It was decided that a working group should be established to examine the question of bycatches of all species in the purse-seine fishery in the EPO, and look for ways of reducing it. The staff was instructed to prepare a document outlining the group's terms of reference and some proposals for consideration, and distribute it among the governments. The staff would also designate members of the working group.

The observer from FUDENA expressed interest in taking part in the working group on bycatch.

The Japanese delegate said he was also acting as observer on behalf of the Commission for the Conservation of Southern Bluefin Tuna, and distributed a report on that Commission's objectives and work (Appendix 6).

#### 13. Adjournment

The Chairman thanked all the participants for their labors, and in particular Mr. Jaime Basadre Oreamuno, of Costa Rica, who had been responsible for organizing the meeting, and introduced Dr. Ricardo Garrón F., Minister of Agriculture, who, after thanking the attendees for all their hard work, congratulating them on their

achievements, and stressing the importance of implementing the Declaration of Panama (Appendix 7), declared the meeting closed.



## Appendix 1.

### Address by Lic. Rodrigo Carreras, Deputy Minister for Foreign Trade of Costa Rica

Mr. Chairman, ladies and gentlemen. It is a very special pleasure for me to welcome you to the Annual Meeting of the Inter-American Tropical Tuna Commission.

For my Government it is a source of pride that the meeting is held in our country. Please feel as if you were at home.

The issue of sustainable management of natural resources is nothing new. For years it has been discussed in national and international conferences and meetings. Additionally, it is no longer a purely scientific issue, and has become an important element for consideration when taking political and economic decisions. It is now a question of survival of our human species.

The Government of Ing. José Ma. Figueres understands this, and assigns a high priority to these matters, and especially the treatment, exploitation, conservation and management of marine biological resources. In this short address I do not intend to describe the work and achievements of the governmental institutions involved in fisheries. For that there are among us people with greater knowledge and experience of the field. However, I will discuss briefly the importance of the tuna sector for Costa Rica.

The benefits of the tuna industry for our nation are various. Our national exports of tuna (particularly industrial exports, that is, canning companies which operate in the country) contribute more than 32 million dollars to the national economy. In 1995, the amount was \$32,648,335.00. The industry creates employment for more than 1700 Costa Ricans, generates profits from exports, and raises funds through the issue of licenses for tuna-fishing in national waters by foreign vessels.

Costa Rica's national waters in the Pacific Ocean covers more than 500,000 square kilometers, and fortunately include one of the largest and most important tuna-fishing areas. Obviously, we are very interested in the proper development of the rational exploitation of this resource and the development of the tuna industry in the area, and particularly in our country.

We understand the importance for nations with fisheries resources of having a fleet of tuna-fishing vessels in order to be able to develop their industry. For this reason I will take this opportunity to invite vessel owners from fellow nations, whether members of the IATTC or not, to associate themselves for mutual benefit with the tuna industry in Costa Rica, within the framework of the IATTC provisions which govern the tuna fishery in our nation. Likewise, our country will do all it can to give a warm welcome to those vessel owners who wish to adopt our flag and work in our country.

The income raised by the system of levies (more than 90 million colones in 1995) administered by INCOPECA has contributed to the development of the fisheries and to scientific research. In addition to these benefits, almost a further 3 million dollars are raised from port fees, unloading and victualling vessels in local ports.

Costa Rica has maintained the volume of its tuna resources in the last decade and, according to IATTC statistics, the exploitation of these species is sound and has great potential.

In this context, Costa Rica has played an active role in the preservation of marine resources, and particularly tunas and dolphins. However, as a consequence of a world which is ever more interdependent, in political, economic, and even environmental matters, we have realized that our efforts and our governmental responses in the face of problems of preservation of natural resources are inadequate, or in some cases unproductive, if there is no commitment on the part of the other members of the international community to contribute to this work.

Nowadays a greater concentration at the international level is needed to confront a series of global challenges and threats, such as the preservation of the environment and marine resources. We now have to resort more frequently than in the past to international mechanisms which define clearly the rules of the game in this important issue. Experience has shown that we cannot protect our resources through unilateral measures, whether preventive or punitive.

The La Jolla Agreement represented a great step forward toward the construction of such multilateral mechanisms for solving problems, and to date, in an effort by all of the sectors involved - governments, industries, non-governmental organizations, fishermen, *etc.* - has contributed to reducing the incidental mortality of dolphins to unexpected levels. This has involved great efforts for all our nations, and is an example of cooperation for the conservation and sustainable management of marine natural resources, all of which merits recognition.

An integral part of this mechanism is the International Review Panel, which, with its recommendations and its monitoring of governmental actions related to tuna-fishing and dolphin protection, has been very useful for implementing plans for sustainable development in this field. Its recommendations will be studied in these coming days, and I have no doubt of their value for all sectors here present.

Another effort of cooperation and commitment is the adoption in 1995 of the Declaration of Panama, whose aim is to improve even further the status of the dolphins, by giving them greater protection, and expanding the protection to other species in the eastern Pacific Ocean.

This new step means that the member nations of the IATTC recognize that the voluntary commitments made through the La Jolla Agreement should be expanded and strengthened by means of obligatory and binding mechanisms for the parties involved, by means of a real legal framework which establishes the international responsibilities of those who fish in contravention of the provisions for the protection of dolphins and other marine species. In this way we advance from a scheme of voluntary compliance to one of compulsory compliance for the benefit of the preservation of the environment.

This new instrument creates a negotiating space among the fishing nations in which they can commit themselves to reducing the number of dolphins killed each year to zero. Another intention is to promote dolphin-free fishing in a transparent fashion. This mechanism, backed by internal regulations in the legislation of the signatory nations, will allow the long-term sustainability of the species and will ensure a much healthier and more lasting marine ecosystem, while allowing the nations to monitor compliance with the dispositions of the Declaration.

Thanks to this mechanism we have progressed in the implementation of proposed changes to the U.S. law governing the embargo. We heard last week with pleasure the news that the House of Representatives of the United States approved the dismantling of the embargo on tuna imported from the South Pacific and the redefinition of the rules for designating "dolphin-safe" tuna.

The work of the IATTC in all these efforts has been noteworthy and of great value, not only for the development of the scientific research necessary to evaluate the status of the marine species and the information it provides, but also to set up a program for the complete conservation and for the exploitation of the resources.

The work of the IATTC should in future be complemented by the implementation of the principles of international law which govern the use and exploitation of marine resources. In this context, the provisions of the 1982 UN Convention on the Law of the Sea, and subsequent related agreements, should be incorporated into international instruments and internal legislation.

There is no doubt at all about the IATTC's contributions to the development of the tuna fishery. It is an example for similar agreements for the protection, use, and sustainable exploitation of marine resources, not only tunas and dolphins but also other species which require a commitment from all sectors involved. - Thank you very much.

Appendix 2.

COMISION INTERAMERICANA DEL ATUN TROPICAL  
INTER-AMERICAN TROPICAL TUNA COMMISSION

58ª REUNION - 58<sup>TH</sup> MEETING

3 y 4 de junio de 1997 - June 3-4, 1997  
San José, Costa Rica

ASISTENTES - ATTENDEES

PAISES MIEMBROS--MEMBER COUNTRIES

COSTA RICA

RICARDO GARRÓN F.  
Ministro de Agricultura

JOSÉ M. SALAZAR X.  
Ministro de Comercio Exterior

TANIA LÓPEZ LEE  
ANGELA RAUFF CIESLAK  
Ministerio de Comercio Exterior

RODRIGO CARRERAS  
Vicecanciller - Cancillería

MARIO DUARTE JIMÉNEZ

ROLANDO MADRIGAL G.

JOSÉ RAFAEL CENTENO

ERICK CAMPOS BOLAÑOS  
Ministerio de Relaciones Exteriores

JAIME BASADRE OREAMUNO  
Commissioner

JORGE CAMPOS MONTERO

VICTORIA DOMINGO MORA

JORGE BARRANTES GAMBOA

ANTONIO PORRAS PORRAS

FERNANDO VÍQUEZ ALFARO

HEINER JORGE MÉNDEZ BARRIENTOS

LILIANA VILLALOBOS

INCOPECA

TATIANA LÁSCARIS

ANGEL HERRERA

JORGE A. RODRÍGUEZ

Universidad Nacional

JAIME BASADRE ANDRACA

TOMÁS GILMORE

JORGE HERRERA I.

Sardimar S.A.

HERMES NAVARRO VARGAS

HERMES NAVARRO DEL VALLE

JOSHUA TEN BRINK

JERRY TEN BRINK

ROMAN ROBAYNA PERDOMO

Borda Azul, Inc.

JOSÉ LUIS MENESES

Coopemontecillos, R.L.

ROBERT MILES

Industrias Martec, S.A.

JUAN MORA VARELA

H. Mora & Co. Ltd.

GEORGE HEIGOLD

Exportadora Ensenada

ODIN THAANUM

Silversea International, Inc.

HERNAN UMAÑA

PERCOFIS

JUAN BASTOS ESPINOZA

SUPAP

FRANCE

GOUJAND DISLIER

Embajada de Francia

JAPAN

ICHIRO NOMURA  
TAKA AKI SAKAMOTO  
Fisheries Agency of Japan

JIRO SUZUKI  
NRFSF

TSUTOMU WATANABE  
EIKO OZAKI  
SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries Cooperative  
Associations

PANAMA

RICARDO MARTÁNS G.  
Commissioner  
Ministerio de Comercio e Industrias

FRANCESCO FEOLI  
Autoridad Portuaria Nacional

LUIS DORATI  
Tri-Marine International, Inc.

RAFAEL FEOLI  
Feimar, S.A.

MARIA LOURDES GAMECHO  
IBON GAMECHO  
Atunbi, S.A.

FOTIS LYMBEROPULOS  
Provasa, S.A.

UNITED STATES OF AMERICA

JAMES MCCARTHY  
Commissioner

MICHAEL TILLMAN  
Commissioner

BRIAN HALLMAN  
Department of State

WILLIAM HOGARTH  
WANDA CAIN  
National Marine Fisheries Service

JUDSON FEDER  
National Oceanic and Atmospheric Administration

ED STOCKWELL  
Starkist Foods, Inc.

JOHN M. ZUANICH  
Ocean Ventures, Inc.

EDWARD WEISSMAN  
Jorge Fishing, Inc.

MAURICE SILVERMAN  
Silversea International, Inc.

MIKE SPENCER  
West Side Marine, Inc.

PETER TRUTANICH  
Tri-Marine International, Inc.

PETER DI LEVA  
Caribbean Fishing, Inc.

VINCENT J. GUARRASI  
GTR, Inc.

VENEZUELA

JEAN-FRANÇOIS PULVENIS  
Commissioner  
Ministerio de Relaciones Exteriores

HUGO ALSINA  
Commissioner  
SARPA, Ministerio de Agricultura y Cria

LUISA BERNAL  
Ministerio de Industria y Comercio

JOSÉ M<sup>a</sup> BENGEOA  
Inversiones Berloli

JON CELAYA LINAZA  
AVATUN

FRANCISCO ORTISI, JR.  
AVENCAISA

HANS PETER KLEIN  
TRUSTUNA

RAÚL ROMERO  
AVIPA

LORENZO RÁVAGO  
FENAPESCA

DOMENICO PINTO  
PEZATUN

PAISES NO MIEMBROS--NON-MEMBER COUNTRIES

COLOMBIA

JAIRO H. ARIAS PUERTA  
Ministerio de Agricultura y Desarrollo Rural

OSVALDO PÉREZ M.  
FOCION ESCORCIA  
INPA

CARLOS ARBELÁEZ  
Seatrading International

ALFONSO PAZ TENORIO  
CIMAR

ALVARO BUSTAMANTE  
ALVARO NAVARRO COLEY  
AMÉRICO RODRÍGUEZ  
ATUNEC

CARLOS RODRÍGUEZ GONZÁLEZ  
Aserbuques, Ltda.

ARMANDO HERNÁNDEZ  
Cámara de la Industria Pesquera - ANDI

ECUADOR

NANCY CELY ICAZA  
LUIS TORRES NAVARRETE  
GUSTAVO GONZÁLEZ CABAL  
Ministerio de Comercio, Industria, y Pesca

CÉSAR ROHÓN HERVAS  
JOFFRE CAMPAÑA MORA  
Cámara Nacional de Pesquería

BRUNO LEONE PIGNATARO  
Compañía Anilisa S.A.

AGUSTÍN JIMÉNEZ S.  
PESPACA

CARLOS E. CEVALLOS GÓMEZ  
Emproceánica S.A.

MIGUEL MOLINA SANTOS  
Empresa Pesquera Ecuatoriana, S.A.

EL SALVADOR

MILTON JOSE CALINDRES  
Embajada de El Salvador

RICARDO HERNÁNDEZ RIVAS  
REINA PACHECO  
CENDEPESCA

NAHUM AGUILAR  
CORSAIN

ANTONIO SUAZO  
Ecomarinas S.A.

MEXICO

CARLOS CAMACHO GAOS  
MARA MURILLO CORREA  
PABLO ARENAS FUENTES  
GUILLERMO COMPEAN J.  
SEMARNAP

HERIBERTO LIZARRAGA Z  
HUMBERTO ANDRADE Q.  
JORGE ANTONIO CATALÁN  
LEOBARDO AGUIRRE CORRAL  
RODIMIRO AMAYA TELLEZ  
SERGIO MEZA LÓPEZ  
Cámara de Diputados

MARISELA BONILLA FREER  
Embajada de México

MARK ROBERTSON  
Janus Partners

ALFONSO ROSIÑOL L.  
CANAINPES

SPAIN

CARLOS LARRAÑAGA GES  
Secretaría General de Pesca

TAIWAN-REPUBLIC OF CHINA

SAMUEL LIN SHIH-TUNG  
Embassy of the Republic of China

ORGANIZACIONES INTERNACIONALES-INTERNATIONAL ORGANIZATIONS

MICHAEL TILLMAN  
International Whaling Commission

ICHIRO NOMURA  
Commission for the Conservation of Southern Bluefin  
Tuna

JIRO SUZUKI  
International Commission for the Conservation of Atlantic  
Tuna

ORGANIZACIONES NO GUBERNAMENTALES-NON-GOVERNMENTAL ORGANIZATIONS

HÉCTOR LÓPEZ  
Fudena

GERALD LEAPE  
Greenpeace International

LEESTEFFFY JENKINS  
ALVARO POSADA SALAZAR  
Humane Society International

CIAT-IATTC

JAMES JOSEPH, Director  
ROBIN ALLEN  
MARTIN HALL

DAVID BRATTEN  
BERTA JUÁREZ  
NICOLAS WEBB

Appendix 3.

INTER-AMERICAN TROPICAL TUNA COMMISSION

58<sup>TH</sup> MEETING

June 3-4, 1997  
San José, Costa Rica

AGENDA

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna research
4. The 1996 fishing year
5. Status of tuna stocks
6. Review of tuna-dolphin research and extension programs
7. Review of International Dolphin Conservation Program
8. Recommendations and Resolutions for 1997
9. Recommended research program and budget for FY 1998-1999
10. Place and date of next meeting
11. Election of officers
12. Other business
13. Adjournment

## RESOLUTION

*The Inter-American Tropical Tuna Commission, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,*

*Notes that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and*

*Recognizes, based on past experience in the fishery, that the potential production from the resource can be reduced by excessive fishing effort, and*

*Recalls that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and*

*Notes that from 1980 through 1996, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and in turn such measures were approved by the Commissioners for recommendation to their respective governments, and*

*Observes that, although the stock of yellowfin is currently at a level of abundance greater than the optimum, nevertheless it can be over-exploited,*

*Concludes that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1997.*

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties that a quota of 220,000 metric tons be established for the 1997 calendar year on the total catch of yellowfin tuna from the CYRA (as defined in the resolution adopted by the Commission on May 17, 1962), and that the Director should be authorized to increase this limit by no more than three successive increments of 15,000 metric tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and*

*Finally recommends that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1997.*



Appendix 5.

RESOLUTION

*The Inter-American Tropical Tuna Commission (IATTC)*, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for recommending proposals, based on scientific evidence, for joint action by the High Contracting Parties designed to keep the populations of fishes covered by the Convention at levels of abundance that will permit the maximum sustained catches,

1. *Notes* that the annual catches of small bigeye tuna taken in the purse-seine fishery of the eastern Pacific Ocean have increased during the past few years from less than 5,000 metric tons to more than 50,000 metric tons;
2. *Recognizes* that such increases are likely to cause a reduction in the overall catches of bigeye tuna from the eastern Pacific;
3. *Notes* that a limitation of mortality generated by purse-seining for bigeye associated with floating objects to 1996 levels would prevent exacerbation of the problem;
4. *Expresses concern* that the fishery for bigeye associated with floating objects results in elevated catches of unmarketable bigeye as well as many other associated species being discarded to the sea dead;
5. *Recalling* that Article 5 of the United Nations Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks requires coastal states and fishing states to, *inter alia*, (1) adopt measures to ensure long-term sustainability of straddling fish stocks and highly migratory fish stocks and promote the objective of their optimum utilization, (2) ensure 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, (3) apply the precautionary approach in accordance with Article 6 of the Agreement, (4) minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species of both fish and non-fish species, (5) protect biodiversity in the marine environment and (6) take measures to prevent or eliminate overfishing and excess fishing capacity;
6. *Noting* that the FAO Code of Conduct for Responsible Fisheries calls on states, international organizations, and all those involved in fisheries to collaborate in fulfilling the objectives and principles of the Code, which include taking measures to prevent or eliminate excess fishing capacity and ensuring that levels of fishing effort are commensurate with the sustainable use of fishery resources; in the case of new or exploratory fisheries, adoption as soon as possible of cautious conservation and management measures, including, *inter alia*, catch limits and effort limits which should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks; and take appropriate measures to minimize waste, discards, and catch of non-target species, both fish and non-fish species;
7. *Recalling further* that the Declaration of Panama, concluded and adopted in October 1995 by twelve governments, and supported by five environmental groups, to formalize the La Jolla Agreement as a binding legal instrument which requires, *inter alia*, a commitment to adopt conservation and management measures that ensure the long-term sustainability of tuna stocks, and that such measures shall be designed to maintain or restore the biomass of harvested stocks at or above levels capable of producing maximum sustainable yields; and
8. *Noting* that the Declaration of Panama also calls on governments to take measures to avoid, reduce and minimize the bycatch of juvenile tuna and bycatch of non-target species, therefore:
9. *Concludes* that action should be taken to limit or reduce the fishing mortality of small bigeye tuna in the eastern Pacific Ocean to the levels observed in the fishery in recent years, the exact levels of such limitations and/or reductions to be considered at the 1998 Annual Meeting of the IATTC; and
10. *Requests* the staff of the IATTC to convene a Working Group of experts to evaluate possible management options which can be implemented to achieve the objectives detailed in Paragraph 9, including consideration of, *inter alia*, closed areas, closed seasons, prohibitions and/or limitations on the use of certain types of fishing gear, global catch quotas, and individual vessel quotas; and
11. *Finally recommends* that the Working Group shall meet as frequently as necessary to achieve its objectives, but shall report to the High Contracting Parties its recommendations for conservation and management measures to achieve the objectives defined in Paragraph 5 above no later than the next Annual Meeting of the IATTC.

**REPORT OF THE REPRESENTATIVE OF THE  
COMMISSION FOR THE CONSERVATION OF SOUTHERN BLUEFIN TUNA (CCSBT)**

**Background**

The objective of the Convention for the Conservation of Southern Bluefin Tuna is to ensure, through appropriate arrangements, the conservation and optimum utilisation of southern bluefin tuna (SBT). The Convention establishes the Commission for the Conservation of Southern Bluefin Tuna (CCSBT), with the current membership being Australia, Japan, and New Zealand.

The Commission has a responsibility for the conservation and management of SBT throughout its habitat range. In general terms this covers waters in the southern hemisphere between 30° and 50°S and the only known spawning ground in the Indian Ocean south of Java, Indonesia.

The Commission is required to decide upon the total allowable catch and its allocation among the Parties to the Convention, unless the Commission decides upon other appropriate measures. The Commission has decided that the total allowable catch for Parties to the Convention for 1996-97 will be 11,750 tonnes, of which 6065 tonnes has been allocated to Japan, 5265 tonnes to Australia, and 420 tonnes to New Zealand.

**Issues**

While recent assessments suggest that existing management actions have averted further stock decline, the Commission acknowledges that the SBT stock is at a level requiring rebuilding, and is actively working to develop a robust and comprehensive management strategy for stock recovery.

A high priority is also being given to the establishment of appropriate arrangements with Indonesia, Korea, and Taiwan, who are not currently members of the Commission but whose fleets take significant quantities of SBT.

While Commission members have limited catches to agreed quota levels, increased catches of SBT in recent years by non-members are reducing the effectiveness of the Commission's management efforts.

The following SBT matters may be relevant to the IATTC meeting:

**1. SBT Data**

- The CCSBT is seeking to refine its assessment of the state of the SBT stock and would welcome advice of any SBT catch and effort data collected by IATTC or its members who are not members of CCSBT.

**2. Cooperation with CCSBT management arrangements**

- Effective management of SBT requires the cooperation of all countries and entities in the implementation of the CCSBT management arrangements. To achieve this, the Commission invites any other State whose vessels engage in fishing for SBT or any other coastal State through whose exclusive economic or fishery zone SBT migrates, to join the Commission, and for entities to cooperate with those management arrangements.
- The CCSBT would also welcome the opportunity to enter into cooperative arrangements with other organisations or entities to achieve the objective of the Convention.

## Appendix 7.

### Address by Dr. Ricardo Garrón F., Minister of Agriculture

Ministers and Secretaries of State, Representatives of the legislature, Delegates of fellow nations, Observers, Ladies and Gentlemen:

These three days of meetings have proved that only the joint efforts of governments, scientific institutions, environmental groups and private enterprise can achieve advances of the magnitude achieved here.

At this time it is important to separate the issues discussed at these meetings, which in my opinion are two, each as important as the other.

In first place we have the scientific picture, which guides us toward the sustainable use of one of our most important resources and the protection of marine biodiversity.

In this day and age, when attending to the necessity of feeding mankind is one of the greatest problems challenging all nations, with no certain solution in sight, the proper management of sources of protein from the seas of our nations, and their rational exploitation to allow their permanent use in future, is the best legacy for the generation we represent and for tomorrow's generations.

When we talk of the rational use of renewable resources, we must look responsibly at the viability of the fragile ecosystem which surrounds us, since by so doing we make it sustainable.

The efforts made day after day to achieve the advances which we have made represent many sacrifices by our peoples and governments.

The magic formula used has been transparency in our actions to identify successes and mistakes, advantages and shortcomings, with the honest and courageous will to correct them. Acting in this fashion allows us to say with pride that we are on the right path toward the future, ratifying the responsibility which we took on when we signed the La Jolla Agreement.

The second issue on which I wish to comment is the commercial one. For the last few years the countries we represent have been the victims of a cruel and unjust embargo, imposed for reasons which, today more than ever, are known to be governed by the economic interests of large corporations, disguised behind the mask of pseudoenvironmentalism.

From the point of view of modern philosophies of trade, which demand the opening of markets for the development of complete economies, the imposition of trade embargoes is in opposition to the doctrines of liberal economies which these same industrialized countries preach to us.

The evidence is clear, and has shown that the reasons advanced by those who raise false environmental banners and who support the trade embargoes, putting forward specious arguments of unilateral convenience, have no validity in this day and age and, far from being altruistic, become flagrant acts of commercial terrorism against our peoples.

The scientific studies endorsed by the majority of reputable and renowned institutions in the international scientific community show that the systems used by the Latin American tuna fleet currently fishing in the eastern Pacific Ocean are appropriate for the conservation of the bycatch species and the protection of the ecosystem.

Likewise, it has been demonstrated that the methods suggested by the fleet's detractors go against the basic principles of rational exploitation of a resource and protection of marine biodiversity.

For this reason, it is urgent that the Declaration of Panama be implemented immediately, since the commitments

made by all the parties commit them wholly to a management which is ecologically and commercially healthy and logical.

We should recognize at this time the position of some people and institutions within the government and legislature of the United States who, in face of the adversity and manipulation, have fought valiantly for the changes in the U.S. legislation which will be the first step toward the complete implementation of the Declaration of Panama and which was recently repealed in Congress. Our sincere acknowledgment to them and to all those responsible environmental organizations which have been with us for a long time and marched shoulder to shoulder with us in search of real solutions to this problem.

I am certain that today we, and the nations we represent, have given an example of responsibility to the world, both in terms of respect for the resources of our planet and in the defense of our ideals, which are just.

On behalf of Costa Rica I wish to thank all those present who have allowed this historic meeting to take place in our beloved country.

This country, which has raised the banner of liberty, democracy, education and real equality, today takes up the banner of sustainable development, with its four pillars: social, economic, environmental, and ethical.

Thank you very much for your presence. This nation stands always ready to offer you its human warmth and its geographical wealth.

# INTER-AMERICAN TROPICAL TUNA COMMISSION

## MINUTES OF THE 61ST MEETING

La Jolla, California, USA

June 10-12, 1998

The 61st meeting of the Inter-American Tropical Tuna Commission (IATTC) was held in La Jolla, California, USA, on June 10-12, 1998.

### 1. Opening of the meeting

The meeting was called to order by the Chairman, Dr. Michael F. Tillman, on June 10 at 10:30 a.m. He then called on the heads of the delegations to introduce themselves and the other members of their delegations. These, and also observers and IATTC staff members who were not introduced, are listed in Appendix 1 of these minutes.

### 2. Adoption of agenda

The Chairman asked if there were any comments on the provisional agenda. There were none, so it was considered to be approved. The Agenda is attached as Appendix 2 of these minutes.

### 3. Review of current tuna and billfish research

The Chairman called upon Dr. James Joseph, Director of the IATTC, to present information on this subject. Dr. Joseph said that the IATTC staff conducts a wide variety of research to fulfill its mandate under the convention, but that, due to time constraints, it would be possible to describe only a few projects. He then turned the floor over to Dr. Richard B. Deriso, head of the IATTC's Tuna-Billfish Program, to present some highlights of this program.

Dr. Deriso said that it had been widely believed that skipjack seldom, if ever, spawn in the eastern Pacific Ocean (EPO). A preliminary study carried out by the IATTC staff, however, indicated that there is considerable spawning of skipjack in the EPO, so a 2-year sampling program, during which data from 4,000 females were collected, was conducted. The samples were gathered at sea on large tuna purse seiners by observers whose principal duties were to collect data for the IATTC's Tuna-Dolphin Program. Preliminary analyses of the data indicate that there is considerable spawning of skipjack from the coast of the Americas to about 130°W between about 15°N and 10°S.

He then discussed recent progress at the IATTC's Achotines Laboratory. In December 1993 an agreement was reached by the Overseas Fishery Cooperation Foundation (OFCF) of Japan, the government of the Republic of Panama, and the IATTC to undertake a joint five-year project, funded mostly by the OFCF, at the Achotines Laboratory. The objectives of the project are: (1) to culture adult yellowfin tuna to supply larvae and juveniles for research on its early life history; (2) to produce food organisms for the larval and juvenile tunas; and (3) to culture brood-stock snappers (Lutjanidae), corvina-like fishes (Sciaenidae), and food organisms for their larvae

and juveniles. Considerable success has been achieved with all of these objectives, and in 1997 it was agreed that the project would be extended for an additional two years.

Dr. Deriso then discussed some studies the staff was making on longline fishing. He talked about the longline fishing effort and the apparent abundance of bigeye tuna in the EPO, the area around Hawaii, and other parts of the central Pacific Ocean. The effort and catch per unit of effort (CPUE) vary seasonally around Hawaii. The effort decreased and the CPUE increased in the EPO during the 1985-1987 period. The staff's studies of swordfish and other billfishes in the EPO include collecting tissue samples and assembling data on catch, effort, CPUE, and length distributions of the catches by the longline fisheries of the Latin American nations.

He then spoke briefly about current attempts to model the purse-seine fishery for tunas in the EPO. The predicted results are close to the actual results, which indicates that the model is valid.

Dr. Deriso then introduced Mr. Forrest R. Miller, who talked about the El Niño episode of 1997-1998. Mr. Miller said that this episode was slightly stronger than that of 1982-1983, which, until now, had been the strongest episode of the 20th century. It brought abnormally high sea-surface temperatures and deeper thermoclines to the waters off northern South America and heavy rains to coastal areas of Ecuador and Peru. He showed four slides, one each of sea-surface temperatures (SSTs) for November 1996 (normal conditions), SSTs and SST anomalies for November 1997 (strong El Niño conditions), and SST anomalies for May 1998 (strong, but weakening, El Niño conditions). The surface isotherms off Peru were closer together during normal conditions than during El Niño conditions. Mr. Miller said that the El Niño was weakening at the time of IATTC meeting, but would not dissipate until after the third quarter of 1998.

Dr. Deriso then introduced Dr. Michael G. Hinton, who talked about his work on the ecology of billfishes. Dr. Hinton showed that blue marlin are more numerous in sets made on tunas associated with floating objects than in other types of sets. The incidence of blue marlin increases with the weight of fish of all species caught in floating-object sets and sets made on unassociated tunas, but such is not the case for sets made on tunas associated with dolphins. Blue marlin, bigeye, and whitetip shark are caught most often during the morning, whereas black skipjack are caught most often during the afternoon. He discussed a study of areas which are considered to be suitable striped marlin habitat and areas in which striped marlin are caught by purse seiners. These occur most often in the same 2° by 5° rectangles off northern South America from the coast to about 120°W.

Dr. Deriso next introduced Professor Felipe Galván-Magaña of the Centro Interdisciplinario de Ciencias Marinas, Instituto Politécnico Nacional, La Paz, Mexico, who is working with Dr. Robert J. Olson of the IATTC staff on the trophic interactions of yellowfin tuna, dolphins, and associated predators in the EPO. The purposes of this study are (1) to obtain an understanding of the trophic interactions of the various species, which will be useful for evaluation of natural fluctuations in abundance of tunas and billfishes, and (2) to determine whether the association between yellowfin tuna and dolphins is based on food. Professor Galván spoke about the feeding habits of yellowfin tuna, spotted and spinner dolphins, various species of billfishes, various species of sharks, wahoo, and mahi-mahi, with regard to areas, times of day, types of set, and types of food consumed.

Dr. Deriso then introduced Dr. Olson, who talked about activities at the IATTC's Achotines Laboratory. Dr. Olson talked mainly about the spawning of yellowfin in tanks at that laboratory and studies performed on larvae resulting from that spawning. Spawning has been continuous since October 1996, except for periods early in the year when the water temperatures are too low. Studies are currently in progress on (1) techniques for rearing the larvae and juveniles, (2) growth of the larvae and juveniles, (3) measurement of the advantages of early conversion to a fish diet, (4) effects of turbulence on the survival of the larvae, and (5) spawning behavior of the adult fish. The growth rate of the larvae increases when they switch from a diet of small crustaceans to a diet of small fish. (In general, rapid growth is an advantage because it reduces the chances becoming the victim of a predator.) The survival of the larvae is greatest when the turbulence of the water is moderate.

#### 4. The 1997 fishing year

The Chairman then asked Dr. Joseph to speak about this subject. Dr. Joseph said that the catches of tunas in the EPO during 1997 were the greatest on record, with surface catches of about 260 thousand metric tons of yellowfin, 160 thousand metric tons of skipjack, 50 thousand metric tons of bigeye, and smaller amounts of other species. In addition, about 12 to 15 thousand metric tons of yellowfin were caught by longliners in the EPO. The 1998 catches of yellowfin, skipjack, and bigeye have been less, so far, than those of 1997, even though the fleet is larger now than it was in 1997. The reduced catches during 1998 may be due to the El Niño event which began in mid-1997 and has persisted through the first half of 1998. (During El Niño events the thermocline is deeper in the affected areas, which makes the fish less vulnerable to capture by surface gear.) He discussed the areas where yellowfin, skipjack, and bigeye were caught by surface gear during 1997. Yellowfin were caught mostly north of 5°N from the coast to 140°W and south of 5°N from the coast to 95°W. Skipjack were caught mostly from the coast to 140°W between 20°N and 15°S, except for an area off southern Mexico and northern Central America which was nearly devoid of skipjack. Bigeye were caught mostly between 5°N and 10°S from the coast to 130°W. The annual catches of bigeye by surface gear increased greatly during the 1990s, from less than 5 thousand metric tons during 1985-1989 to more than 50 thousand metric tons during 1996 and 1997. This increase was due to the development of new techniques employing fish-aggregating devices (FADs).

#### 5. Status of tuna stocks

The Chairman asked Dr. Joseph to discuss the status of tuna stocks in the EPO.

Dr. Joseph said that two indices of abundance of yellowfin showed that the abundance had decreased from the late 1960s to the early 1980s, then increased until the mid-1980s, and had since leveled off or decreased slightly. The decrease during the 1970s was due to a switch from fishing for medium-sized tunas associated with dolphins to small tunas associated with floating objects which, in turn, was caused by an excess of fishing effort.

Two types of models, production models and age-structured models, are used to assess the condition of yellowfin in the EPO. Only catch, effort, and CPUE data for a series of years during which there was considerable variation in fishing effort and catches are required for production modeling. Production modeling indicates that the maximum sustainable yields of about

270 to 290 thousand metric tons of yellowfin per year are achievable in the EPO with effort of about 19 thousand Class-6 purse-seiner days per year. Data on the sizes and age structure of the fish in the catch are required for age-structured modeling. Age-structured modeling is based on the fact that initially a cohort of fish consists of enormous numbers of very small fish which increase in size, but decrease in numbers due to natural mortality, as time passes. Initially the gains due to growth exceed the losses due to natural mortality, so the total weight of the cohort increases. Later, however, the losses due to natural mortality exceed the gains due to growth, and the total weight decreases. Eventually the cohort disappears. The yield per recruit can be maximized by catching the fish at an intermediate size, when the total weight of the cohort is approaching its maximum size. During the 1970s, when a large portion of the fishing effort was directed at small tunas associated with floating objects, the yields per recruit were much less than they were from the mid-1980s to the present, when more of the effort has been directed at larger tunas associated with dolphins. The yellowfin stock is basically in good shape, although the average size of fish caught has decreased, which has reduced the productivity of the stock by about 9 percent. The staff is concerned about the increases in fleet capacity during recent years which could cause a return to the conditions of the 1970s. From 1970 to 1976 the fleet capacity increased from about 100 thousand to 167 thousand metric tons. Due to severe competition for fish, a large portion of the fleet concentrated on small yellowfin, and the CPUEs decreased to less than half the CPUEs of the 1960s or the mid-1980s to the present. From 1976 to 1982 the catch of yellowfin declined from 261 thousand to 138 thousand metric tons. Accordingly, the staff is recommending a quota for the Commission's Yellowfin Regulatory Area (CYRA) of 210,000 metric tons of yellowfin, with up to three increments of 15,000 metric tons each, to be added at the discretion of the Director. No regulations are recommended for the area west of the CYRA and east of 150°W because the size composition of the fish caught in this area is close to the size composition which would produce the maximum yields per recruit. Special attention should be directed to the area south of 5°N, however, as the catches of small yellowfin seem to be increasing in that area.

The world catches of skipjack exceed those of any other species of tuna. Skipjack of the EPO mingle freely with those of the central Pacific Ocean. Yield-per-recruit analyses indicate that increasing the minimum size at which skipjack are caught would not increase the catches of this species. There is a strong correlation between the numbers of sets made on tunas not associated with dolphins in the EPO and the catches of skipjack in that area, which may indicate that as skipjack are caught in the EPO they are replaced by immigrants from the central Pacific. The IATTC staff does not believe that there is any need for regulations to protect skipjack in the EPO.

Bluefin apparently spawn only in the western Pacific Ocean. Some of them migrate to the EPO as juveniles, where they are caught by purse seiners off California and Baja California. Those which survive eventually return to the western Pacific to spawn. The numbers of juvenile bluefin which migrate from the western Pacific to the EPO vary from year to year, which is at least partially responsible for the high interannual variability in the catches of bluefin in the EPO. If the catches of bluefin in their first year of life in the western Pacific could be reduced the total catches of bluefin would almost certainly increase.

The catches of bigeye in the EPO are less than those of yellowfin and skipjack, but still of considerable importance. Until the 1990s the catches of bigeye by longline gear, in both weight



and numbers of fish, far exceeded those by surface gear. However, the purse-seine catches of bigeye have exceeded the longline catches of that species in numbers of fish since 1994 and in weight since 1996. The average weight of the fish caught by longliners is about 50 kg, whereas the average weight of those caught by purse seiners dropped from about 12 kg in 1994 and 1995 to about 9 kg in 1996 and then to about 6 kg in 1997. Cohort analyses conducted with trial values of 0.4, 0.6, and 0.8 for the coefficient of annual natural mortality ( $M$ ) indicate that the biomass of bigeye has declined considerably since the mid-1980s. There is no indication, however, that the biomass has been reduced enough to affect the recruitment. Production modeling carried out for bigeye in the EPO indicates that catches of about the same magnitude can be obtained with a wide range of fishing effort. The IATTC staff, however, believes that the best assessment of this stock will eventually be obtained with cohort analyses. Dr. Joseph described computer simulations which produced estimates of the catches of bigeye by longliners and purse seiners for the 1997-2006 period obtainable with three values of  $M$ , 0.4, 0.6, and 0.8, and three patterns of fishing effort, obtained by combining the coefficient of annual fishing mortality for the 1995 longline fishery ( $F_{LL}$ ) with that for the 1996 surface fishery ( $F_{PS}$ ) multiplied by 0.1 (Pattern A), 1.0 (Pattern B), and 1.5 (Pattern C). Not surprisingly, the longline catches are greatest with Pattern A. With  $M = 0.4$ , Patterns B and C both produce reduced catches for the combined surface and longline fisheries.

## 6. Review of tuna-dolphin research and extension programs

Dr. Joseph turned the floor over to Dr. Martín A. Hall, head of the IATTC's Tuna-Dolphin Program. Dr. Hall said that the Tuna-Dolphin Program includes data collection, a gear program, research on dolphins, and analysis of bycatch data. He pointed out that since the early 1970s the numbers of sets on tunas associated with dolphins, tunas associated with floating objects, and unassociated tunas had varied considerably from year to year. The mortalities of dolphins caused by the fishery had decreased drastically, and now those mortalities are only a small fraction of the estimated numbers of dolphins. The reduced mortalities are the result of reduced mortalities per set, rather than reductions in the numbers of sets on tunas associated with dolphins. The mortalities of all stocks but one, northeastern spotted dolphin, have been less than the target of 0.1 percent of a minimum estimate of the population size of that stock specified in the Declaration of Panama and the Agreement on the International Dolphin Conservation Program. Mortalities most often occur in sets made in strong currents and in sets in which "canopies" are formed in the net. The mortalities per set in both of these types of sets declined precipitously from the mid-1980s to the mid-1990s, but still a large percentage of the mortality is associated with these problems.

Dr. Hall introduced Mr. Alejandro A. Anganuzzi, who described the IATTC staff's estimates of relative abundance of the various stocks of dolphins. The data, which are collected by observers, are biased because the vessel captains, of course, fish in areas where they think their success will be the greatest, rather than distributing their effort in such a way as to obtain the best possible estimates of the abundance of dolphins. This causes problems, especially for stocks whose ranges include areas where there is little or no fishing. Various mathematical techniques are used to minimize the effects of the biases in the original data. The levels of relative abundance of two of the stocks, eastern spinner dolphins and northern common dolphins, were lower in 1997 than in 1996, but this could be due to the strong El Niño event which began in 1997, as the lowest estimates of several of the stocks tend to coincide with El Niño events.

Dr. Hall then talked about studies in progress on bycatches. The principal bycatch species are billfishes, especially sailfish, blue marlin, and black marlin, sharks and rays, especially blacktip sharks, silky sharks, whitetip sharks, and manta rays, and other large fish, especially unmarketable yellowfin and bigeye, mahi-mahi, and wahoo. The percentages of yellowfin and bigeye caught which were discarded remained at about the same level from 1993 through 1997. The total amounts of yellowfin discarded were greater during 1996-1997 than during 1993-1995. The total amounts of bigeye discarded increased almost steadily from 1993 through 1997. The IATTC staff is currently planning experiments, to be carried out at the Achotines Laboratory, to determine the feasibility of using a device, attached to purse seines, through which smaller fish could escape.

Dr. Hall introduced Mr. Rafael Solana, a graduate student at the Universidad Autónoma de Baja California, Ensenada, Mexico, who has been analyzing data for his Ph.D. dissertation at the IATTC headquarters in La Jolla since September 1997. Mr. Solana described his studies on the species compositions of the catches of different types of purse-seine sets made in different areas of the EPO and a stratification scheme based on several characteristics of the floating objects upon which sets are made.

Dr. Hall then spoke of work being carried out by Mr. Marco A. García, an IATTC employee who is currently working on his Ph.D. degree at the University of North Carolina. He has examined the distributions of various species of large pelagic fish in El Niño and non-El Niño years and found that the centers of distribution differ greatly during El Niño and non-El Niño years for some species, such as wahoo and whitetip shark, and virtually not at all for others, such as blue marlin. Further refinements of the statistical methodology are needed to evaluate the significance of these differences.

#### **7. Review of the International Dolphin Conservation Program and progress on the creation of a binding international agreement for the conservation of dolphins in the eastern Pacific Ocean**

The Chairman called upon Dr. Joseph to discuss this item. Dr. Joseph pointed out that the IATTC's Tuna-Dolphin Program had just been reviewed by Dr. Hall, so he would talk only about the International Dolphin Conservation Program. He stated that that program, which had been strengthened by the Agreement for the Conservation of Dolphins, adopted at the 24th Intergovernmental Meeting in June 1992, has been an outstanding success, as the annual mortalities of dolphins due to fishing decreased from about 133 thousand animals in 1986 to about 3 thousand during recent years. The mortalities of all stocks but one, northeastern spotted dolphin, have been less than the U.S. National Marine Fisheries Service's target of 0.1 percent of a minimum estimate of the population size of that stock. He indicated that the levels of abundance of all the major stocks have been stable for the last few years. He mentioned that the ecological costs of switching from fishing for tunas associated with dolphins to fishing for unassociated tunas and for tunas associated with floating objects had played an important role in the decision to strengthen the International Dolphin Conservation Program. The Agreement on the International Dolphin Conservation Program, adopted at the 35th Intergovernmental Meeting in February 1998, was signed in Washington, D.C., USA, on May 21, 1998, by representatives of Colombia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama, the United States, and Venezuela. As soon as it is ratified by four states it will go into effect. He said that ratification will probably come

quickly. One of the features of the new agreement is dolphin mortality limits (DMLs) for each stock, in contrast to the present system, which specifies only one DML applying to all stocks combined.

#### **8. Report on activities related to the working group on bycatch**

The Chairman called upon Dr. Robin L. Allen, Assistant Director of the IATTC, to report on this subject. Dr. Allen pointed out that it was decided at the 58th meeting of the IATTC in June 1997 that a working group would be established to examine the question of bycatches of all species in the purse-seine fishery for tunas in the EPO, and look for ways to reduce it. The IATTC staff was instructed to prepare a document outlining the group's terms of reference and some proposals for consideration, and to distribute it among the governments. The staff would also select members of the working group. The IATTC staff is currently making preparations for the first meeting of the working group, which will take place on July 8 and 9, 1998. The representative of the United States asked for further information about the working group, for example its membership and whether observers could attend its meetings. Dr. Allen said that a list of its members would be prepared before the end of the current IATTC meeting and given to those interested in it. The membership includes a representative of a non-governmental organization. The working group's mode of operation will be discussed at its first meeting. Outsiders with expertise in subjects of interest to the working group will be called upon, as necessary, for assistance. Subgroups of the working group will be formed, when appropriate, to keep the numbers of people involved small.

#### **9. Capacity of the purse-seine fleet in the Pacific Ocean**

The Chairman asked Dr. Joseph to speak on this subject. Dr. Joseph said that, in general, the stocks of tunas in the EPO are healthy, but that there is concern that the increasing capacity of the surface fleet could result in overfishing in the near future, and therefore the staff has asked that consideration be given to limits on fishing capacity to protect yellowfin and bigeye. From 1970 to 1976 the fleet capacity increased from 100 thousand to 167 thousand metric tons. Due to severe competition for fish, most of the fleet concentrated on small fish associated with floating objects, which in turn reduced the catches and CPUEs of yellowfin during that period. The situation was alleviated when, due to poor catches in the EPO, large numbers of vessels transferred their operations to the western Pacific Ocean during the early 1980s, permitting the yellowfin stock to recover. During the last few years the capacity of the purse-seine fleet in the EPO has increased from about 100 thousand to about 130 thousand metric tons. He said that the representatives of the nations involved in the fishery might want to consider measures to limit the size of the fleet which fishes in the EPO to avoid events like those which took place during the late 1970s and early 1980s. He suggested that a working group to consider this matter be formed. One of the problems to be considered would be the effect of limitation of fleet size on the catches of skipjack, since this species is believed to be underfished in the EPO. An interim program for limitation of fleet size might be established to keep the situation under control until a permanent system was established. He said that he hoped that this matter could be given attention during the current IATTC meeting.

The Chairman pointed out that this matter would be considered again in Agenda Item 14, and then asked for comments and questions. The representative of Costa Rica asked whether the

staff had information of the numbers of vessels being built which might later be fishing in the EPO and about the extent to which the staff monitors the longline fishery. Dr. Joseph said that the staff does not maintain files on vessels being built which might later be fishing in the EPO, but that staff members had, by chance, obtained information indicating that the size of the fleet in the EPO will probably continue to increase during the next few years. He said that the staff monitors the longline fishery for tunas and billfishes in the EPO rather closely, and noted that the longline fishing effort in the EPO has dropped considerably during recent years. During the ensuing discussion the representative of Japan pointed out that the longline fishery catches only large fish, so it is not a problem with regard to overcapacity of the fleet. Dr. Joseph replied that the longline fishery is of little concern in the short term, but that it should continue to be monitored in case the situation changes. Some discussion on FAO's position on overcapacity ensued, and it was agreed that this should be taken into consideration. The Chairman said that there was agreement that fleet capacity is an important problem, and suggested that an interim working group be selected. He suggested that the working group consist of representatives of Colombia, Costa Rica, Ecuador, Japan, Mexico, Spain, the United States, and Venezuela, and the attendees agreed. After some discussion, it was also agreed that one or more staff members of the IATTC should participate in the working group, that the terms of reference of the permanent working group should be discussed by the interim working group, and that the interim working group would meet before the current IATTC meeting was resumed on the morning of June 11.

#### **10. 50th Anniversary of the IATTC (Year 2000)**

The Chairman asked Dr. Joseph to comment on this subject. Dr. Joseph suggested that representatives of Costa Rica and the United States, the two original members of the IATTC, discuss a suitable way of celebrating this anniversary, and all present agreed with this suggestion.

#### **11. Consideration of amendments to the IATTC Convention**

The Chairman called for comments on this subject. Not all the delegates agreed that it was necessary to change the IATTC's convention. Those who said that changes were necessary pointed out that: (1) two international instruments, the FAO Code of Conduct for Responsible Fisheries (CCRF), and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of December 10, 1982, relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNIA), have established global standards for the precautionary approach to conservation, management, and exploitation of fish resources, and the IATTC convention should incorporate those concepts; (2) the present convention does not permit the adherence of regional economic integration organizations such as the European Union (EU); and (3) there is a need to redefine how shares of the budget of the IATTC are to be allocated. It was agreed that a working group should be appointed at the IATTC meeting, but that it should report to the Intergovernmental Meeting. It was pointed out that it might take a long time to formulate and adopt a new convention, whereas some considered it important that the EU adhere to the IATTC as soon as possible. It was suggested that a short protocol be added to the present convention which would permit the adherence of the EU before the new convention was formulated and adopted. After considerable discussion, the Chairman announced that the heads of delegations, led by the representative of Venezuela, would consult with one another about this matter.

The Chairman pointed out that there were two possible resolutions regarding the IATTC convention, one which would initiate the process of drafting an entire new convention and one which would consist only of a protocol which would permit the EU to adhere to the IATTC. The participants agreed on resolutions regarding amendments to the IATTC convention and on adherence of the EU to the IATTC; these resolutions are reproduced as Appendices 3 and 4 of these minutes.

## 12. Recommendations for a catch quota on yellowfin tuna

The Chairman called upon Dr. Joseph to speak on this subject. Dr. Joseph said that the IATTC staff was recommending a catch limit of 210,000 metric tons for yellowfin tuna in the Commission's Yellowfin Regulatory Area (CYRA) during 1998, with the option of increasing this, at the discretion of the Director, by up to three increments of 15,000 metric tons each. The Chairman called for comments on this recommendation. There were none, so he asked the Director to prepare a resolution to this effect. This resolution (Appendix 5 of these minutes) was adopted.

## 13. Recommendations of the bigeye working group for possible action by the Commission

The Chairman called upon Dr. Allen to talk about this matter. Dr. Allen said that at the 58th meeting of the IATTC in June 1997 a resolution was adopted which called for the establishment of a "Working Group of experts to evaluate possible management options" for protection of bigeye, "including consideration of, *inter alia*, closed areas, closed seasons, prohibitions and/or limitations on the use of certain types of fishing gear, global catch quotas, and individual vessel quotas." Meetings of the working group were held in September 1997 and January 1998. Its recommendations are listed in the Introduction of Background Paper 9. He pointed out that the tables in that document were derived from the IATTC's observer data base, rather than its statistical data base. The catch of bigeye has increased greatly during the last few years. The catches in weight were about the same in 1996 and 1997, but the catch in numbers of fish in 1997 was nearly twice that in 1996 because the fish were much smaller in 1997. The IATTC staff does not have reliable estimates of  $M$  for bigeye, so it has used three trial values, 0.4, 0.6, and 0.8. Computer simulations indicate that the combined catches by surface and longline gear with different values of  $M$  differ greatly. If  $M$  is 0.8 the combined catches would be greater if the purse-seine fleet were allowed to fish without restriction, but if it is 0.4 the combined catches would be less than they would be if the smaller fish were protected from the purse-seine fishery. The precautionary approach established in the FAO Code of Conduct for Responsible Fisheries indicates that, in the absence of a reliable estimate, the value of 0.4 should be used. The working group on bigeye recommended that: (1) limits be placed on the catches of small bigeye; (2) the use of tender vessels in the fishery on fish-aggregating devices (FADs) be prohibited; and (3) the IATTC staff undertake research on methods to minimize the catches of small bigeye. He then discussed these three points in reverse order. The IATTC staff is currently planning experiments to determine the feasibility of using a device, attached to purse seines, through which smaller fish could escape. The proposal regarding tender vessels is a difficult one, as reducing fishing efficiency is always distasteful, but this should be balanced against the possible gains realized by reducing the catches of small bigeye. Schemes for limiting the catches of bigeye by purse-seine vessels are discussed in detail in Background Paper 9. The interim working group had recommended that whatever closures were adopted should pertain to the entire EPO, rather than to

parts of it, but the IATTC staff had divided the EPO into four areas and estimated the effects of closures in various areas and combinations of areas, in addition to overall closures. Dr. Allen pointed out that the effects of the various closures listed in the tables of Background Paper 9 would be less severe than indicated in the tables because if there were a closure in, say, Areas 1 and 2 the fishermen would transfer their operations to Areas 3 and 4, where the catches would be greater than they would have been otherwise.

The representative of Mexico asked about other possible adverse effects of increased catches of small bigeye. Dr. Allen said that in 1997 the surface and longline fisheries had harvested about 9 million and 1 million fish, respectively. It is possible, although there is no indication that this is the case, that reductions in the numbers of small fish could eventually reduce the numbers of spawners so much that the recruitment would be reduced. There was some discussion about the appropriateness of using the most conservative value of  $M$  and of the possible effects of reduced spawner biomass on recruitment. It was also pointed out that the nations whose vessels fish primarily for tunas associated with floating objects would be affected much more than those whose vessels fish primarily for tunas associated with dolphins. The delegate from Spain pointed out that bigeye and yellowfin are similar in appearance, and asked if mis-identification could have contributed to the high reported catches of bigeye. Dr. Joseph said that the IATTC staff members who work at locations where fish are unloaded and the observers have been trained in identification of tunas, and that their independent identifications of the same loads of fish are nearly always in agreement.

The Chairman said that there was agreement that something should be done, and the question was how that was to be accomplished. The representative from Ecuador suggested that there be a meeting of heads of delegations that afternoon to discuss the matter. It was agreed that advisors to the heads of delegations could be present at the meeting.

The Chairman announced that a draft resolution on bigeye management was being circulated, and that the floor was open for discussion on this matter. Since limitation of fleet size and protection of small bigeye are related, both subjects were included in the discussion. It was pointed out again that restriction of fishing for tunas associated with floating objects would have greater effects on the vessels of some nations than those of others. The representative of Japan favored restrictions on fishing for tunas associated with floating objects in all areas, but most of the other nations preferred such restrictions only in areas where small bigeye are most often caught. The delegate from Spain objected to the proposed ban on the use of tender vessels. There was considerable discussion concerning the amounts of small bigeye which could be caught before the fishery was restricted and whether these amounts were to include fish which were discarded at sea. Also, it was pointed out that restrictions on fishing for tunas associated with floating objects would increase the fishing effort on tunas associated with dolphins which, in turn, would increase the mortalities of dolphins.

The resolution on bigeye management, reproduced as Appendix 6 of these minutes, was approved.

#### 14. Possible recommendations concerning the capacity of the purse-seine fleet in the eastern Pacific Ocean

The Chairman opened the floor for discussion on fleet capacity. The ensuing discussion lasted for an extended period. It included comments on regulations to protect small bigeye, as it was agreed that limitation of fleet size and protection of small bigeye are strongly related. It was agreed that vessels of coastal states which do not presently participate in the fishery should have the right to do so in the future. In particular, the representative of Colombia stated that the relative development of fishing fleets and plans for the development of economically-depressed areas should be considered. The representative from Japan stated that the greatest yields of yellowfin and bigeye could be obtained if all purse-seining effort were directed at tunas associated with dolphins. He also stated that the use of FADs should be controlled to minimize the captures of small yellowfin and bigeye. It was pointed out that restriction of fishing for tunas associated with floating objects would have greater effects on the vessels of some nations than those of others. The matter of sovereignty within the Exclusive Economic Zones (EEZs) of coastal states was also discussed. The delegate from Spain said that if there is limitation of fleet size it should include longline vessels, as well as purse seiners, since longliners catch mature fish which would be prevented from spawning. The representative of the United States pointed out that (1) interim, rather than permanent, measures were under discussion and (2) there had been a drastic reduction in longline effort in the EPO during the last few years. The delegate from Japan stated that the use of flags of convenience could cause problems in the future, and suggested that a working group on this matter be established.

The Chairman said that the Mexican delegation had prepared schedules for fleet limitation which were being distributed to the attendees. He asked for comments on these schedules and on other aspects of this subject. All delegates thanked the Mexican delegation for its carefully-prepared and thought-provoking presentation. The discussion lasted for extended period. It included comments on regulations to protect small bigeye, as it was agreed that limitation of fleet size and protection of small bigeye are strongly related. It was agreed that vessels of coastal states which do not presently participate in the fishery should have the right to do so in the future. The principal objections to the schedules prepared by Mexico were (1) the total capacity tonnages were greater than those suggested by the IATTC staff and (2) no capacity tonnages were allocated to Costa Rica, even though it was expected that at least two Costa Rican vessels would soon be participating in the fishery. The representative of Costa Rica pointed out that its tuna industry, which employs 1,500 people, was suffering because of a shortage of fish. He said that, historically, about 20 thousand metric tons of yellowfin have been caught annually in Costa Rica's Exclusive Economic Zone (EEZ), and that Costa Rica would not give up its right to harvest fish at that level in the future. He said that whatever allocation system was adopted for the long term should be based on the amounts of tuna in the EEZs of the various nations.

A draft resolution on fleet size was circulated, and the delegates made comments on specific aspects of it. Many of these comments were incorporated into the resolution, which was approved and is reproduced as Appendix 7 of these minutes.

## 15. Recommended research program and budget for FY 1999-2000

The Chairman called on Dr. Allen to speak on this subject. In view of the hour and the fact that Background Paper 3 had been in the hands of all member governments well before the meeting, the delegates agreed that a presentation was unnecessary. The budget proposed in the background paper was adopted.

## 16. Place and date of next meeting

The Chairman asked Dr. Allen for comments on this item. Dr. Allen said that if an IATTC meeting were to be held in October 1998 in association with the next meeting of the International Review Panel and the next Intergovernmental Meeting, it would take place in La Jolla. He said that for the meeting in mid-1999 the participants might wish to follow past practice, in which meetings were held in countries which had recently joined the IATTC, and that there were two nations, Ecuador and El Salvador, now in this category. The representative of Ecuador offered to host the meeting to be held in the mid-1999. Representatives of all other member countries supported this proposal. The specific location and the time of the meeting will be announced by the Director after consultation with all member nations.

## 17. Election of officers

The Chairman noted that the next Chairman would serve for the next year, and called for nominations. The representative of Costa Rica nominated the representative from Ecuador. This was supported by Venezuela, and all other representatives agreed. The representative from Ecuador thanked the others, but said that, due to a change in the government of Ecuador which will take place in August 1998, she would have to accept on behalf of a person to be named later.

## 18. Other business

The representative of Taiwan made a statement thanking the Commission for inviting Taiwan to attend as an observer. He said that, to cooperate more fully, Taiwan wished to join the IATTC, and asked the parties to the convention to consider the possibility of Taiwan's membership.

The observer from the Commission for the Conservation of Southern Bluefin Tuna provided a written statement, which is attached as Appendix 8 of these minutes.

The representative of FAO thanked the Commission for the opportunity to participate in the meeting as an observer. He was grateful for the collaboration and cooperation of the IATTC with the work of FAO, and in particular referred to the forthcoming expert consultation on Implications of the Precautionary Approach: Tuna Biological and Technological Research and the global atlas of tuna and billfish catches which had recently been published. He informed the meeting that the Indian Ocean Tuna Commission is fully operational, with the secretariat established and the headquarters located in the Seychelles.



## 19. Adjournment

The Chairman thanked the delegates, IATTC staff members, and interpreters for their hard work, and adjourned the meeting on June 13 at 12:25 a.m.

APPENDIX 1

ATTENDEES--ASISTENTES

MEMBER COUNTRIES--PAISES MIEMBROS

COSTA RICA

HERBERT NANNE ECHANDI  
Comisionado

JERRY TEN BRINK  
Borda Azul, S.A

GEORGE HEIGOLD  
Cía. Enlatadora Nacional, S.A.

ECUADOR

NANCY CELY ICAZA  
LUIS TORRES NAVARRETE  
FERNANDO AGUILAR  
CESAR ROHON  
Ministerio de Comercio, Industria y Pesca

CARLOS CALERO  
Conservas Isabel Ecuatoriana

IYO CUKA  
ATUNEC & PESDEL S.A.

CARLOS CEVALLOS  
Emproceánica

ROBERTO AGUIRRE  
DIEGO MILETIC  
MIGUEL MOLINA  
JOFFRE CAMPAÑA MORA  
Cámara Nacional de Pesquería

JOE FINETE

EL SALVADOR

ERNESTO CAMPOS  
EAST-PAC TUNA

JAPAN - JAPON

JUN-ICHIRO OKAMOTO  
Commissioner

NAOKO HAMAGUCHI  
Ministry of Foreign Affairs

MIWAKO TAKASE  
Fisheries Agency of Japan

NAOZUMI MIYABE  
NRIFSF

TOSHIHISA TERAMOTO  
EIKO OZAKI  
SALLY J. CAMPEN  
Federation of Japan Tuna Fisheries Cooperative  
Associations

PANAMA

FOTIS LYMBEROPULOS  
PROVASA S.A.

UNITED STATES OF AMERICA - ESTADOS UNIDOS DE AMERICA

BARBARA BRITTEN  
Commissioner

JAMES MCCARTHY  
Commissioner

MICHAEL TILLMAN  
Commissioner

BRIAN HALLMAN  
WILLIAM GIBBONS-FLY  
U.S. Department of State

WILLIAM HOGARTH  
J. ALLISON ROUTH  
SVEIN FOUGNER  
PATRICIA DONLEY  
GARY SAKAGAWA  
ELIZABETH EDWARDS  
BARBARA CURRY  
JOYCE SISSON  
National Marine Fisheries Service

JUDSON FEDER  
National Oceanic and Atmospheric Administration

CARLOS ARBELÁEZ  
Seatrading International

DAVID BURNEY  
U.S. Tuna Foundation

STEVEN DAILY  
Law Offices

PETER DI LEVA  
Caribbean Fishing, Inc

GONZALO ESPINOSA-FRENCH  
Pasca International Ltd.

AUGUST FELANDO

ROBERT FLETCHER  
Pacific Fishery Management Council

PETER FLOURNOY  
Law Offices International

EDMUND GANN  
ARNOLD FREITAS  
ALAN PARKER  
Caribbean Marine Service Co., Inc.

JOSEPH GLIGO  
Tri-Marine International, Inc.

GUILLERMO GOMEZ  
International Trade Group

ANTHONY TILLET  
Commissioner

JEAN-FRANÇOIS PULVENIS  
Comisionado

HUGO ALSINA LAGOS  
Comisionado

SANTOS VALERO  
Ministerio de Relaciones Exteriores

CRAIG HEBERER  
Biomarine Fisheries

TERRY HOINSKY  
Fishermen's Union of America, AFL-CIO

ROBERT INSINGER

CHARLES JANISSE  
Federation of Independent Seafood Harvesters

ZEN KOMINSKI  
ZK Fishing

MARY MARCUS

KEVIN McCLAIN  
Chicken of the Sea International

MICHAEL MCGOWAN  
Bumble Bee Seafoods, Inc.

CHARLES PECKHAM  
LMR Fisheries Research, Inc.

LUIS PINEL  
Vance Luis, S.A. C.V.

MONTY SILVERMAN  
Silversea International, Inc.

JOE SOARES  
Hawthorne Power Systems

ED STOCKWELL  
Star-Kist Seafood

JOHN WILKIE  
Valley Detroit Diesel Allison

JOHN ZOLEZZI  
JULIUS ZOLEZZI  
Zolezzi Enterprises, Inc.

JOHN ZUANICH  
Ocean Ventures Inc.

#### VANUATU

ED WEISSMAN  
Special Agent

#### VENEZUELA

ROSA MARIA P. DE ARMAS  
CAVENPESCA

RAÚL ROMERO  
AVIPA

NON-MEMBER COUNTRIES PAISES NO MIEMBROS

CANADA

WILLIAM SHAW  
Department of Fisheries & Oceans

COLOMBIA

FERNANDO PEREIRA VELAZQUEZ  
Ministerio de Agricultura y Desarrollo Rural

ORLANDO MORA  
Instituto Nacional de Pesca y Acuicultura

CARLOS ACEVEDO  
Ministerio de Comercio Exterior, Washington, DC

ALVARO BUSTAMANTE STEER  
ATUNEC, S.A.

ARMANDO HERNÁNDEZ  
Cámara de la Industria Pesquera - ANDI

EUROPEAN UNION--UNION EUROPEA

ARONNE SPEZZANI  
Principal Administrator

MEXICO

CARLOS CAMACHO GAOS  
ANTONIO DIAZ DE LEON CORRAL  
MARA MURILLO CORREA  
JERONIMO RAMOS PARDO  
GUILLERMO COMPEAN JIMENEZ  
PEDRO ULLOA RAMIREZ  
RICARDO BELMONTES ACOSTA  
ERICK PARRA CORREA  
SANTIAGO GOMEZ AGUILAR  
MICHEL DREYFUS  
HUMBERTO ROBLES RUIZ  
Secretaría de Recursos Naturales y Medio Ambiente

MARIA TERESA BANDALA MEDINA  
HECTOR VANEGAS C.  
JUAN CARLOS RODRIGUEZ VELASCO  
Secretaría de Relaciones Exteriores

GUILLERMO PEREDO RIVERA  
SECOFI

MARK ROBERTSON

FELIPE CHARAT  
Maricultura del Norte S. de R.L. de C.V.

ALFONSO ROSIÑOL LLITERAS  
JOSÉ VELÁZQUEZ CARDENAS  
CANAINPES

JUAN VELÁZQUEZ MACOSSAY  
Supremos del Golfo y del Pacífico, S.A. de C.V.

JOSE MANUEL HERNANDEZ FUERTES  
COMEXTUN, S.A. de C.V.

BRUNO DUARTE JORDAN  
DUARPESCA S.A. de C.V.

JOSE CARRANZA BELTRAN  
ESNESTO ESCOBAR  
Pesca Azteca

CARLOS ALVAREZ

PERU

RENATO GUEVARA CARRASCO  
Instituto del Mar del Perú (IMARPE)

RUSSIAN FEDERATION--FEDERACION RUSA

VLADIMIR FEDORENKO  
Department of Fisheries  
Ministry of Agriculture and Food

SPAIN--ESPAÑA

LUIS ESTERUELAS  
Embajada de España

VICTOR ECHEVARRIA  
Embajada de España  
Consejero Comercial

CARLOS LARRAÑAGA GES  
Secretaría General de Pesca

JAVIER ARIZ  
Instituto Español de Oceanografía

GABRIEL SARRO IPARRAGUIRRE  
IGNACIO LACHAGA BENGOCHEA  
OPAGAC

ESTANISLAO GARAVILLA  
JUAN P. RODRIGUEZ-SAHAGUN  
ANABAC

TAIWAN

KENNY HU  
Ministry of Foreign Affairs

INTERNATIONAL ORGANIZATIONS--ORGANIZACIONES INTERNACIONALES

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International Commission for the Conservation of Atlantic  
Tunas (ICCAT)

CARLOS MAZAL  
Organización Latinoamericana de Desarrollo Pesquero  
(OLDEPESCA)

JUN-ICHIRO OKAMOTO  
Commission for the Conservation of Southern Bluefin  
Tuna (CCSBT)

RENNIE HOLT  
Commission for the Conservation of Antarctic Marine  
Living Resources (CCAMLR)

MICHAEL TILLMAN  
International Whaling Commission (IWC)

JACEK MAJKOWSKI  
Food and Agricultural Organization of the United Nations  
(FAO)

JOHN HAMPTON  
Secretariat of the Pacific Community (SPC)

FABIAN VALDIVIESO EGUIGUREN  
Comisión Permanente del Pacífico Sur (CPPS)

HERBERT NANNE  
Organización del Sector Pesquero y Acuicola del Istmo  
Centroamericano (OSPESCA)

NON-GOVERNMENTAL ORGANIZATIONS--ORGANIZACIONES NO GUBERNAMENTALES

NINA YOUNG  
Center for Marine Conservation

DAVID PHILLIPS  
MARK PALMER  
Earth Island Institute

HÉCTOR LÓPEZ  
Fundación para la Defensa de la Naturaleza (FUDENA)

KITTY BLOCK  
Humane Society of the United States

ALVARO POSADA SALAZAR  
Humane Society International

SCOTT BURNS  
World Wildlife Fund

KATHLEEN O'CONNELL  
Whale and Dolphin Conservation Society

IATTC--CIAT

JAMES JOSEPH, Director  
ROBIN ALLEN  
MARTIN HALL  
DAVID BRATTEN

BERTA JUÁREZ  
JOYDELEE MARROW  
NICOLÁS WEBB

## APPENDIX 2

### AGENDA

1. Opening of the meeting
2. Adoption of agenda
3. Review of current tuna and billfish research
4. The 1997 fishing year
5. Status of tuna stocks:
  - a) yellowfin
  - b) bigeye
  - c) others
6. Review of tuna-dolphin research and extension programs
7. Review of the International Dolphin Conservation Program, and progress on the creation of a binding international agreement for the conservation of dolphins in the eastern Pacific Ocean
8. Report on activities related to the working group on bycatch
9. Capacity of the purse-seine fleet in the eastern Pacific Ocean
10. 50th Anniversary of the IATTC (Year 2000)
11. Consideration of amendments to the IATTC Convention
12. Recommendations for a catch quota on yellowfin tuna
13. Recommendations of the bigeye working group for possible action by the Commission
14. Possible recommendations concerning the capacity of the purse-seine fleet in the eastern Pacific Ocean
15. Recommended research program and budget for FY 1999-2000
16. Place and date of next meeting
17. Election of officers
18. Other business
19. Adjournment

### APPENDIX 3

#### RESOLUTION

*The Inter-American Tropical Tuna Commission,*

*Noting* that the Convention under which it was established was signed in 1949,

*Taking into account* the relevant principles of international law related to the conservation and management of living marine resources, as reflected in the 1982 United Nations Convention on the Law of the Sea, as well as the provisions of, *inter alia*, the 1992 Agenda 21 and Rio Declaration, the 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, the 1995 FAO Code of Conduct for Responsible Fisheries, and the 1995 Agreement for the Implementation on the Provisions of the United Nations Convention of the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks,

*Convinced* that to promote sustainable development in the tuna fishery it is necessary to strengthen the IATTC as the competent regional fisheries organization for the management of these highly migratory species, and recognizing its important contribution in this field since its establishment,

*Referring* to the Declaration on Strengthening the Objectives and Operation of the Convention Establishing the Inter-American Tropical Tuna Commission, adopted at the 30th Intergovernmental Meeting in Panama, Republic of Panama, in 1995, and the resolution on Strengthening and Reform of the Inter-American Tropical Tuna Commission, adopted at the 35th Intergovernmental Meeting, held in La Jolla, California, USA, in 1998,

*Notes* the need to review the functions of the IATTC and its Convention and, if necessary, amend the Convention in order to bring it into harmony with the above-mentioned international instruments, and therefore

*Agrees* to establish immediately a working group of its member governments, open to other governments of coastal states and other States and regional economic integration organizations whose vessels are operating in the tuna fishery in the eastern Pacific Ocean, and which have the intention of adhering to the Convention, to review the functions of the IATTC and its Convention and, if necessary, formulate possible amendments to the Convention.

*Instructs* the working group to report the results of its work and progress towards these objectives to the Commission.

### APPENDIX 4

#### RESOLUTION ON THE MODIFICATION OF THE CONVENTION BETWEEN THE UNITED STATES OF AMERICA AND THE REPUBLIC OF COSTA RICA FOR THE ESTABLISHMENT OF AN INTER-AMERICAN TROPICAL TUNA COMMISSION BY MEANS OF A PROTOCOL SO THAT REGIONAL ECONOMIC INTEGRATION ORGANIZATIONS MAY ADHERE TO THE CONVENTION

The High Contracting Parties of the Convention establishing the Inter-American Tropical Tuna Commission (IATTC), meeting in La Jolla, California, on June 12, 1998, during the 61<sup>st</sup> ordinary meeting of the IATTC,

*Welcome* the declaration of the European Union for timely accession to the Convention of 1949, by which the Inter-American Tropical Tuna Commission was established,

*Note* that this adherence requires an amendment of the text of the Convention, and

*Invite* the High Contracting Parties of the Convention to state their position on this matter as soon as possible, by means of a note addressed to the Government of the United States in its capacity of Depository of the Convention, in order that the necessary amendment may be negotiated and adopted as soon as possible.

## APPENDIX 5

### RESOLUTION

*The Inter-American Tropical Tuna Commission*, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, which for the purpose of this Resolution is the area bounded by the coastline of the Americas, the 40°N parallel, the 150°W meridian, and the 40°S parallel, and for the formulation of recommendations to the High Contracting Parties with regard to these resources, and having maintained since 1950 a continuing scientific program directed toward the study of those resources,

*Notes* that the yellowfin tuna resource of the eastern Pacific supports one of the most important surface fisheries for tunas in the world, and

*Recognizes* that, based on past experience in the fishery, the potential production from the resource can be reduced by excessive fishing effort, and

*Recalls* that from 1966 through 1979 the implementation of a successful conservation program maintained the yellowfin stock at high levels of abundance, and

*Notes* that from 1980 through 1996, excepting 1987, although no conservation programs were implemented, conservation measures were recommended to the Commissioners by the scientific staff, and that in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

*Observes* that, although the stock of yellowfin is currently near a level of optimum abundance, nevertheless it can be over-exploited, and

*Understanding* that yellowfin tuna in the area west of the Commission's Yellowfin Regulatory Area (CYRA) (as defined in the resolution adopted by the Commission on May 17, 1962) and east of 150°W are of such a size that limiting the catches in that area is currently not necessary, and

*Concludes* that, if conditions warrant, a limitation on the catch of yellowfin tuna should be implemented during 1998.

*The Inter-American Tropical Tuna Commission therefore recommends to the High Contracting Parties* that a quota of 210,000 metric tons be established for the 1998 calendar year on the total catch of yellowfin tuna from the CYRA, and that the Director be authorized to increase this limit by up to three successive increments of 15,000 metric tons each if he concludes from examination of available data that such increases will pose no substantial danger to the stocks, and

*Finally recommends* that all member states and other interested states work diligently to achieve the implementation of such a yellowfin conservation program for 1998.



## APPENDIX 6

### RESOLUTION

The Inter-American Tropical Tuna Commission (IATTC), having responsibility for the scientific study of tunas and tuna-like fishes of the eastern Pacific Ocean (which for the purposes of this Resolution is the area bounded by the coastline of the Americas, the 40°N parallel, the 150°W meridian, and the 40°S parallel), and having maintained since 1950 a continuing scientific program directed toward the study of these resources,

1. *Recognizes* that the bigeye tuna in the eastern Pacific Ocean may be part of a larger Pacific-wide stock, but are treated as a separate stock for the purposes of management,
2. *Notes* that the annual catches of bigeye tuna taken in the purse-seine fishery of the eastern Pacific Ocean have increased during the past few years from less than 5,000 metric tons to more than 50,000 metric tons, and that most of the increase is made up of small and medium-sized fish;
3. *Recognizes* that catches of small fish of that magnitude are likely to cause a reduction in the overall catches of bigeye tuna from the eastern Pacific Ocean;
4. *Expresses concern* that the fishery for bigeye associated with floating objects results in elevated catches of unmarketable bigeye and other tunas, and also many other associated species which are discarded to the sea dead;
5. *Noting* that the FAO Code of Conduct for Responsible Fisheries calls on states, international organizations, and all those involved in fisheries to collaborate in fulfilling the objectives and principles of the Code, which include taking measures to prevent or eliminate excess fishing capacity and ensuring that levels of fishing effort are commensurate with the sustainable use of fishery resources; in the case of new or exploratory fisheries, adoption as soon as possible of cautious conservation and management measures, including, *inter alia*, catch limits and effort limits, which should remain in force until there are sufficient data available to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks; and take appropriate measures to minimize waste, discards, and catch of non-target species, both fish and non-fish species;
6. *Recalling* that Article 5 of the United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks requires coastal states and fishing states to, *inter alia*, (1) adopt measures to ensure long-term sustainability of straddling fish stocks and highly migratory fish stocks and promote the objective of their optimum utilization, (2) ensure 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, (3) apply the precautionary approach in accordance with Article 6 of the Agreement, (4) minimize pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species of both fish and non-fish species, (5) protect biodiversity in the marine environment, and (6) take measures to prevent or eliminate overfishing and excess fishing capacity;
7. *Recalling further* that the Agreement on the International Dolphin Conservation Program includes, *inter alia*, an obligation to take measures to ensure the long-term sustainability of tuna stocks and other stocks of living marine resources associated with the tuna purse-seine fishery in the Agreement Area, based on the best scientific evidence available, and apply the precautionary approach, consistent with the relevant provisions of the FAO Code of Conduct for Responsible Fisheries and the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks, and that such measures shall be designed to maintain or restore the biomass of harvested stocks at or above levels capable of producing maximum sustainable yield;
8. *Noting* the recommendations of the Working Group of experts convened pursuant to the resolution adopted by the IATTC at its 58<sup>th</sup> Meeting;
9. *Concludes* that action should be taken to reduce the catch of small bigeye tuna taken in the eastern Pacific Ocean to 45,000 metric tons in 1998, this limit is to be implemented by prohibiting sets on all types of floating objects at such time as the above limit is reached;

10. *Further concludes* that the status of the bigeye stock should be reviewed at the time of the 1999 Annual Meeting of the IATTC, and consideration should be given to further reductions of the catches of small bigeye tuna commensurate with the scientific advice of the IATTC;
11. *Recommends* that the High Contracting Parties implement the limit in paragraph 9;
12. *Recommends* that the High Contracting Parties prohibit the use of tender vessels which are not capable of purse seining and whose role is to place or service fish-aggregating devices at sea;
13. *Recommends* that the High Contracting Parties conducting purse-seine operations in the eastern Pacific Ocean prohibit the transshipment of tuna at sea;
14. *Directs* the IATTC staff to undertake research on other measures which might be beneficial in reducing catches of juvenile bigeye tuna in purse-seine fishing, including, *inter alia*, a requirement that all small tuna caught in the purse-seine fishery be landed, progressive reduction of discards of small bigeye tuna, net modifications, such as removing strips from the nets during the peak season, and the investigation of the feasibility of national and individual-vessel catch quotas; and
15. *Finally recommends* that all member states and other interested parties, including regional economic integration organizations, work diligently to implement such a bigeye tuna conservation program for 1998.

## APPENDIX 7

### RESOLUTION

*The Inter-American Tropical Tuna Commission (IATTC), having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean, and for recommending proposals, based on scientific evidence, for joint action by the High Contracting Parties designed to keep the populations of fishes covered by the Convention at levels of abundance that will permit the maximum sustainable catches;*

*Expresses concern that, if the carrying capacity of the fleet is allowed to increase without restriction beyond its current level, the tuna stocks in the eastern Pacific Ocean may be reduced to levels less than those capable of producing the maximum sustainable yields;*

*Concludes that measures should be taken to limit the growth in capacity of the international tuna purse-seine fleet operating in the eastern Pacific Ocean;*

*Agrees to establish, as soon as possible, a working group of its member governments, open to other governments of coastal states and other States and regional economic integration organizations whose vessels are operating in the tuna fishery in the eastern Pacific Ocean, to evaluate measures for achieving the objectives of this resolution, and to report on the results of its work to the IATTC as soon as possible. In formulating its recommendations for any such measures, both interim and long-term, the working group shall use as a basis the legitimate interests and rights of coastal states, the operational capacity of each fleet as of June 12, 1998, as well as appropriate consideration of historical participation in the fishery.*

## APPENDIX 8

### STATEMENT BY THE COMMISSION FOR THE CONSERVATION OF SOUTHERN BLUEFIN TUNA

#### BACKGROUND

The objective of the Convention for the Conservation of Southern Bluefin Tuna is to ensure, through appropriate management, the conservation and optimum utilisation of southern bluefin tuna. The Convention establishes the Commission for the Conservation of Southern Bluefin tuna, with the current membership being Australia, Japan and New Zealand.

The Commission has a responsibility for the conservation and management of southern bluefin tuna throughout its habitat range. In general terms this covers waters in the southern hemisphere between 30° and 50° south and the only known spawning ground in the Indian Ocean south of Java, Indonesia.

The Commission is required to decide upon the total allowable catch and its allocation among the Parties to the Convention unless the Commission decides upon other appropriate measures. In recent years, the total allowable catch (TAC) for Parties to the Convention has been 11,750 tonnes of which 6065 tonnes has been allocated to Japan, 5265 tonnes to Australia and 420 tonnes to New Zealand. Members are still considering the TAC for the current year.

#### ISSUES

While recent assessments suggest existing management actions have averted further stock decline, the Commission acknowledges that the SBT stock is at a level requiring rebuilding and is actively working to develop a robust and comprehensive management strategy for stock recovery.

There are a number of uncertainties relating to the assessment of the state of the SBT stock and recent meetings of the Scientific Committee have not been able to reach a consensus on the estimates of the probability of recovery of the SBT stock. Japan has programmed a pilot program of experimental fishing in 1998 with a view to obtaining data to assist in reducing some areas of uncertainty. The Commission has also agreed that an independent review of the scientific assessment process be undertaken in 1998 to establish whether improvements could be made to the scientific analysis and stock assessment processes.

While Commission members have limited catches to agreed quota levels, increased catches of SBT in recent years by non members are reducing the effectiveness of the Commission's management efforts. Non-member annual catches are now estimated to be over of 4,000 tonnes. A high priority is therefore being given to the establishment of appropriate arrangements with Indonesia, Korea and Taiwan who are not currently members of the Commission but whose fleets take significant quantities of SBT. Commission representatives held meetings with representatives from Korea and Taiwan in April 1998 to discuss possible arrangements.

The following SBT matters may be relevant to the IATTC meeting:

#### 1. SBT Data

- the CCSBT is seeking to refine its assessment of the state of the SBT stock and would welcome advice of any SBT catch and effort data collected by IATTC or its members who are not members of CCSBT.

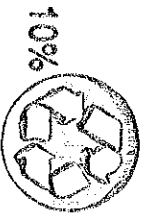
#### 2. Cooperation with CCSBT management arrangements

- effective management of SBT requires the cooperation of all countries and entities in the implementation of the CCSBT management arrangements. To achieve this, the Commission invites any other State whose vessels engage in fishing for SBT or any other coastal State through whose exclusive economic or fishery zone SBT migrates, to join the Commission and for entities to cooperate with those management arrangements.
- the CCSBT would also welcome the opportunity to enter into cooperative arrangements with other organisations or entities to achieve the objective of the Convention.

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