INTER-AMERICAN TROPICAL TUNA COMMISSION

MINUTES OF THE 69TH MEETING

Manzanillo (Mexico)
26-28 June 2002

Chairman: Dr. Jerónimo Ramos Sáenz Pardo (México)

AGENDA

1. Opening of the meeting
2. Adoption of the agenda
3. The fishery in 2001
4. Status of tuna and billfish stocks
5. Report of the Scientific Working Group
6. Report of the Working Group on the IATTC Convention
7. Report of the Permanent Working Group on Compliance
8. Report of the Joint Working Group on Fishing by Non-Parties
9. Report of the Permanent Working Group on Fleet Capacity
10. Report of the Working Group on Bycatch
11. Report of the Working Group on Finance
12. Review of Commission staff's research
13. Recommended research program and budget for FY 2004 (October 1, 2003-September 30, 2004)
14. Consideration of a catch documentation system
15. Recommendations and resolutions for 2002
    i. Yellowfin tuna
    ii. Bigeye tuna
    iii. Fleet capacity
    iv. Bycatch
    v. Data reporting obligations
    vi. Fishing by vessels of non-parties
    vii. Catch documentation
16. Place and date of next meeting
17. Election of officers
18. Other business
19. Adjournment

DOCUMENTS

(available at www.iattc.org)

A1	The fishery for tunas and billfishes in the EPO in 2001
A2	Status of yellowfin tuna in the eastern Pacific Ocean
A3	Status of skipjack tuna in the eastern Pacific Ocean
A4	Status of bigeye tuna in the eastern Pacific Ocean
A5	Fisheries for Pacific bluefin tuna, albacore tuna, swordfish, and blue marlin in the Pacific Ocean, and assessments of these species
A12	Status of striped marlin in the eastern Pacific Ocean
C1	Program and budget for FY 2004
IATTC-69-03	Consideration of the effects of the tuna fisheries of the EPO on the ecosystem
IATTC-69-09a	Draft Plan for the Regional Management of Fishing Capacity
IATTC-69-09b	Target capacity for the purse-seine tuna fleet in the EPO
IATTC-69-14	Consideration of a catch documentation system

APPENDICES

1. List of attendees
2. Report of the Scientific Working Group
3. Report of the Permanent Working Group on Compliance
4. Report of the Joint Working Group on Fishing by Non-Parties
5. Resolution on the capacity of the tuna fleet operating in the eastern Pacific Ocean (revised)
6. Resolution on bycatch
7. Resolution on finance
8. Resolution on compliance
9. Resolution on the conservation of yellowfin and bigeye tuna in the EPO

1. Opening of the meeting

Dr. Robin Allen, Director of the IATTC, opened the meeting. The attendees are listed in Appendix 1. Dr. Jerónimo Ramos of Mexico was elected Chairman of the meeting.

The delegation of Peru announced that its country had received the approval of all the Parties to become the newest member of the Commission. Peru was warmly welcomed by all delegations and invited to take its place at the table as a member of the Commission.

After the opening of the meeting, private consultations were held among the heads of delegations regarding the question of the terms and conditions under which Taiwan/Chinese Taipei would participate in the meeting as an observer. After a long debate, since no agreement was reached and despite the opposition of some delegations, the decision was taken that none of the observers would be identified by flags or nameplates during the meeting.

The European Union (EU) made a statement protesting this decision and expressing its disappointment that political issues are affecting the work of the organization. The EU, a cooperating party that is trying to join the Commission, finds it difficult to accept being placed on the same footing as other observers in addressing this problem.

France supported the EU statement.

Spain also supported the EU statement, and asked that the record reflect its disappointment that it has been unable to join the Commission, as a result of being blocked by one government, despite seeking membership since 1998. Spain reiterated its appeal for membership and stated that, despite its disappointment at being unable to join, it would continue to cooperate with the IATTC.

2. Adoption of the agenda

The Parties agreed that items 15(i) and 15(ii) of the agenda, dealing with management recommendations for yellowfin and bigeye tuna, would be addressed immediately after items 4 and 5.

The European Union asked that the depositary government for the Guayaquil Protocol report on the status of that Protocol under item 18, *Other business*.

The rest of the agenda was approved as proposed.

3. The fishery in 2001

Dr. Allen presented information on the fishery during 2002, which is elaborated in Document A1.

4. Status of tuna and billfish stocks

As part of the same presentation, Dr. Allen reviewed the status of the stocks of yellowfin, bigeye, and skipjack tuna in the EPO (Documents A2-A4), noting that, for the first time, the staff had assessed all three stocks using the A-SCALA method, and also summarized current evaluations of other species of interest to the Commission (Documents A5 and A12).

The best estimate of the current stock size of yellowfin in the EPO was greater than the size that will produce the average maximum sustainable yield (AMSY), and the fishing effort level is estimated to be less than the level that will support the AMSY. An alternative estimate made assuming a stock-recruitment relationship was more pessimistic. In that case, the current biomass was estimated to be below the level that would support AMSY for most of the time period examined, except for the last few years. The catches could be increased if the fishing effort were directed more toward longlining and purse-seine sets on yellowfin associated with dolphins.

The current stock assessment of skipjack tuna was considered preliminary. The recruitment of skipjack tuna to the fisheries in the EPO is highly variable. The fishing mortality is estimated to be about the same

or less than the natural mortality. Those estimates were supported by independent estimates from tagging data. The biomass fluctuated mainly in response to the variations in recruitment, except for the low biomass levels in the early 1980s that appear to be the consequence of high fishing mortality rates. A group of cohorts with very high biomass entered the fishery during 1998-1999 and these cohorts increased the catches during 1999 and 2000. Recent recruitment appeared to be lower, suggesting lower future biomasses and catches.

At the beginning of January 2002 the spawning biomass of bigeye tuna in the EPO was at a level less than that required to produce the AMSY. However, the spawning biomass appears to have been above this level throughout most of the July 1980-January 2001 period. Within the next three years the spawning biomass ratio (SBR) is likely to continue to decline to well below the level that would be expected if the population were producing the AMSY. This decline is likely to occur regardless of the environmental conditions and the amount of fishing that occur in the near future because the projected estimates of SBR are driven by the small cohorts that were produced during 1999-2001. The average weight of fish in the catch of all fisheries combined has been below the critical weight (about 35.5 kg) since 1993, suggesting that the recent age-specific pattern of fishing mortality is not satisfactory from a yield-per-recruit standpoint.

5. Report of the Scientific Working Group

Dr. Allen presented the report of the Scientific Working Group (Appendix 2)

6. Report of the Working Group on the IATTC Convention

In the absence of the Chairman of this Working Group, Ambassador Jean-François Pulvenis of Venezuela, Mr. Brian Hallman of the Commission staff gave a short summary of the progress of the negotiations on the amended IATTC Convention since the last Meeting of the IATTC in June 2001.

The meeting was also informed that Ambassador Pulvenis would no longer represent Venezuela, since he would be joining the Policy and Planning Division of FAO, but in view of his performance as Chairman of the Working Group on the Convention, it was agreed that he should continue in that capacity until the negotiations were finalized.

Several delegations stressed the importance of receiving a new Chairman's text of the draft Convention as soon as possible. Mr. Hallman reported that arrangements had been made for Ambassador Pulvenis to work with the staff in July to prepare a revised text, and that the document would be sent to all participants well in advance of the next meeting.

Several delegations also stressed the importance of ensuring that the foreign ministries of the participating governments receive invitations to the next meeting of the Working Group. Dr. Allen noted that this procedure had always been followed, and would be again for the next meeting.

After an extensive debate, it was agreed that the next meeting of the Working Group would be held in Managua, Nicaragua.

7. Report of the Permanent Working Group on Compliance

Mr. Bill Gibbons-Fly of the United States, Chairman of the Working Group, presented his report on the 3rd meeting of the Permanent Working Group on Compliance (Appendix 3). The Parties endorsed all the recommendations in the report.

8. Report of the Joint Working Group on Fishing by Non-Parties

Mr. Mario Aguilar of Mexico, Chairman of the Working Group, presented his report on the 1st meeting of the Joint Working Group on Fishing by Non-Parties(Appendix 4). The Parties accepted the recommendations that the staff would prepare new draft terms of reference for consideration at the next

meeting of the Working Group, and that the staff should, in fulfillment of the resolutions of June 2001 on fishing by vessels of non-parties, communicate with the governments of non-cooperating flag vessels, as appropriate, to seek their cooperation.

Mexico and the United States noted the difficulties for the staff in attempting to establish lists of non-cooperating vessels, as called for in the June 2001 resolutions, but expressed the view that it was necessary to proceed to implement those resolutions in the best way possible.

Japan expressed its appreciation to the staff for preparing a preliminary list of non-cooperating longline vessels, and stressed the importance of communicating with the relevant flag governments to inquire about the authorization of these vessels to fish in the EPO and their willingness to cooperate with the IATTC.

9. Report of the Permanent Working Group on Fleet Capacity

In the absence of the Chairman of the Working group, Mr. Mario González, Mr. José Saudi of El Salvador presented a report on the 6th meeting of the Working Group, held in March 2002. The minutes of that meeting were discussed and approved with some amendments.

Dr. Pablo Arenas of the Commission staff made a presentation on a draft regional plan to manage fleet capacity (Document IATTC-69-09a). The Parties agreed that a comprehensive resolution on fleet capacity should be agreed by the Commission before proceeding to finalize the regional plan.

It was agreed that the heads of delegation would meet to attempt to refine as much as possible the draft resolution that emerged from the 6th meeting of the Working Group, in an effort to reach agreement on a comprehensive resolution. These negotiations occupied a significant portion of the time allotted for the Commission's meeting. Several delegations expressed the opinion that this was the most important issue facing the governments at this meeting.

In the end, a resolution on fleet capacity was agreed, and adopted by the Parties (Appendix 5).

In adopting this resolution, it was agreed that six vessels (two from Ecuador, three from Vanuatu, and one from Venezuela) would be considered exceptions to the requirement in the Resolution that vessels must have fished in the EPO before June 28, 2002, in order to be included in the Regional Vessel Register. However, these vessels must fish in the EPO by January 31, 2003, in order to remain on the Register after that date. In addition, one vessel belonging to the Government of Ecuador shall also be exempted from the above requirement, and this vessel is not subject to a date when it must begin to fish.

10. Report of the Working Group on Bycatch

Ing. Luis Torres Navarrete of Ecuador, Chairman of the Working Group, presented his report on the 3rd meeting of the working group, held in March 2002. The Parties discussed the draft resolution prepared by the working group for consideration by the Commission, and adopted it with some minor amendments (Appendix 6).

The European Union stressed the importance of attempting to obtain bycatch information from all vessels of all types, including longline vessels.

11. Report of the Working Group on Finance

Mr. Svein Fougner of the United States, Chairman of the Working Group, presented his report of the 5th meeting of the group, held in August 2001. The working group had agreed a draft resolution which, *inter alia*, proposed a formula for calculating each Party's contribution to the IATTC budget.

The Parties decided to discuss this draft resolution under agenda item 13, when the Commission's budget was to be considered.

12. Review of Commission staff's research

It was decided not to address this agenda item due to the lack of time available. However, the staff reported that the information will be available in the IATTC web site.

13. Recommended research program and budget for FY 2004 (October 1, 2003-September 30, 2004)

Dr. Allen presented the proposed program and budget for fiscal year 2004 (Document C1).

After some discussion, and taking into account the report of the Working Group on Finance, the Parties agreed a resolution on financing which included a budget of US$ 4,540,718 for FY 2003, and agreed to a schedule of contributions by Parties to this budget and provisional payments for FY 2004 (Appendix 7).

Vanuatu advised the meeting that it would not block the agreement on this resolution, but could not commit its government to the payment of the amounts specified in the resolution. The delegate advised that he would consult with the Commissioners from Vanuatu and make his best efforts regarding the amount that could be paid, but asked that the record be clear that Vanuatu had not agreed to the figures attributed to it in the Resolution.

Peru asked that the minutes reflect that the amount due for FY 2003 from Peru, which became a member in June 2002, was US$16,000.

Venezuela noted that its government had accepted the figure in the resolution for FY 2003, but that he considered that the proposed budget table for FY 2004 was only provisional and did not imply any commitment for the Parties for FY 2004.

14. Consideration of a catch documentation system

Dr. Allen provided background information on this item, noting that catch documentation systems for certain species have been developed by other regional fishery management organizations and that FAO is exploring a process to harmonize these systems.

Japan presented a specific proposal, in the form of a Commission resolution, for the IATTC to establish a catch documentation system for bigeye tuna. In light of the lack of time to thoroughly discuss this proposal, it was agreed that approval would be sought through correspondence.

15. Recommendations and resolutions for 2002

Dr. Allen presented the recommendations of the staff regarding conservation and management measures for yellowfin and bigeye tuna for 2002. After a lengthy discussion on the appropriate measures for these species, a resolution on the conservation of yellowfin and bigeye was agreed. In total, the meeting adopted the following resolutions:

	Appendix
Resolution on the capacity of the tuna fleet operating in the eastern Pacific Ocean (revised)	5
Resolution on bycatch	6
Resolution on financing	7
Resolution on compliance	8
Resolution on the conservation of yellowfin and bigeye tuna in the EPO	9

As noted in these minutes in the discussion of agenda item 9, the resolution on the capacity of the tuna fleet operating in the eastern Pacific Ocean was agreed by the Parties, with the exemptions also recorded in that discussion regarding the date by which 6 vessels must fish in order to be included on the Regional Vessel Register. All other purse-seine vessels must be on the Register as of June 28, 2002, in order to be able to fish in accordance with the resolution.

The Parties agreed with the Secretariat's proposal to postpone the consideration of data reporting obligations until the next meeting of the Commission.

As noted in the discussion under agenda item 14, it was agreed to circulate for approval by correspondence a resolution establishing an IATTC catch documentation system for bigeye tuna.

16. Place and date of next meeting

It was agreed that the next regular meeting of the IATTC would be held in Antigua, Guatemala, in June 2003, probably between the 17th and 27th.

17. Election of officers

The following appointments were made:

	Chair
70th Meeting of the IATTC	Guatemala
Permanent Working Group on Fleet Capacity	Mario González (El Salvador)
Working Group on Finance	Svein Fougner (United States)
Working Group on the IATTC Convention	Jean-François Pulvenis (FAO, ex-Commissioner for Venezuela)
Working Group on Bycatch	Luis Torres (Ecuador)
Joint Working Group on Fishing by non-parties	Mario Aguilar (Mexico) (pending decision of AIDCP Parties)
Permanent Working Group on Compliance	Bill Gibbons-Fly (United States)

18. Other business

The United States, as depositary of the Guayaquil Protocol, presented an update on the signatories to that document, and reported that to date it has received instruments of ratification from France and Guatemala.

The European Union reiterated the importance of the entry into force of this Protocol, and urged all IATTC member countries to ratify it as soon as possible.

The United States also asked that the minutes reflect its understanding regarding the membership of Colombia in the IATTC, expressed at the beginning of the meeting, that Colombia now had all of the governmental approvals necessary to join the Commission. Apparently one party which had previously given its approval had since expressed a desire to rescind it, but in the view of the United States, as depositary for the Convention, once an approval is given in writing it cannot subsequently be withdrawn. Thus, there are no legal obstacles preventing Colombia from depositing its instrument of adherence to the Convention, and the United States urged Colombia to do so as soon as possible.

19. Adjournment

The meeting was adjourned at 2:10 a.m. on 29 June 2002.

Appendix 1.

COMISION INTERAMERICANA DEL ATUN TROPICAL
INTER-AMERICAN TROPICAL TUNA COMMISSION

69th MEETING – 69ª REUNION

June 26-28, 2002
Manzanillo, México

ATTENDEES - ASISTENTES

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Appendix 2.

INTER-AMERICAN TROPICAL TUNA COMMISSION

THIRD MEETING OF THE SCIENTIFIC WORKING GROUP REVIEW OF STOCK ASSESSMENTS

CHAIRMAN'S REPORT (REVISED)

La Jolla, California (USA)
May 6-8, 2002

Chairman: Robin Allen

AGENDA

1. Welcome, introductions, consideration of agenda
2. The fishery in 2001
3. Progress report on sampling of catches for species composition
4. Review of stock assessments
   - i. Yellowfin
   - ii. Skipjack
   - iii. Bigeye
   - iv. Striped marlin
   - v. Pacific bluefin, albacore, swordfish and blue marlin
5. Ecosystem modeling
6. Summary and recommendations
7. Other business
8. Adjournment

DOCUMENTS

A1 Draft: The fishery for tunas and tuna-like fishes in the eastern Pacific Ocean in 2001, and outlook for 2002

A2 Draft: Status of yellowfin tuna in the eastern Pacific Ocean in 2001 and outlook for 2002

A3 Draft: Status of skipjack tuna in the eastern Pacific Ocean in 2001 and outlook for 2002

A4 Draft: Status of bigeye tuna in the eastern Pacific Ocean in 2001 and outlook for 2002

A5 Draft: Fisheries for Pacific bluefin tuna, albacore tuna, swordfish, and blue marlin in the Pacific Ocean, and assessments of these species

A11 Draft: Status of striped marlin in the eastern Pacific Ocean in 2001 and outlook for 2002

A22 Draft: Ecosystem modeling of the pelagic eastern tropical Pacific Ocean

APPENDICES

A. List of attendees

B. Intermediate results and diagnostics commonly used in reviewing stock assessment modeling results

The 3rd Meeting of the IATTC Scientific Working Group was held in La Jolla, California (USA) on May 6-8, 2002. The attendees are listed in Appendix A.

1. Welcome, introductions, consideration of agenda

The meeting was called to order on May 6, 2002, by the Chairman, Dr. Robin Allen, Director of the IATTC, who thanked everyone for coming to the meeting, and then asked the attendees to introduce themselves. After a brief discussion, the provisional agenda was approved without change.

2. The fishery in 2001

Dr. Allen summarized the information in Document A1 on the surface fishery for tunas in the eastern Pacific Ocean (EPO).

3. Progress report on sampling of catches for species composition

A new system for sampling surface-caught tunas in the EPO was adopted by the IATTC staff in 2000. Briefly, the fish in a well of a purse seiner or pole-and-line vessel are selected for sampling only if all the fish in the well were caught during the same calendar month, in the same type of set (floating-object, unassociated school, or dolphin), and in the same sampling area. These data are then categorized by fishery.

4. Review of stock assessments

The assessments of yellowfin, skipjack, and bigeye were performed with A-SCALA (*Age-Structured Statistical Catch-at-Length Analysis*).

4.1. Yellowfin

Yellowfin in the EPO are considered to constitute a single, separate stock. It appears that the yellowfin population has experienced two different recruitment and biomass regimes (1975-1983 and 1984-2001), with the second regime having greater recruitment and biomass than the first. The spawning biomass ratio (the ratio of the spawning biomass in a given year to that for the equilibrium unfished stock; SBR) of yellowfin in the EPO was below the level that will support the average maximum sustainable yields (AMSYs) during the low-recruitment regime period, but above that level during the high-recruitment regime period. The two different productivity regimes may support two different levels of AMSY and associated SBRs.

The current SBR for yellowfin in the EPO is above the SBR level at AMSY. The standardized fishing effort levels are estimated to be less than the levels that will support the AMSY (based on the current distribution of effort among the different fisheries). However, due to the large recruitment that entered the fishery in 1998, the catch levels are greater than the corresponding values at the AMSY. Because of the flat yield curve, current effort levels are estimated to produce, under average conditions, catch that is only slightly less than the AMSY.

Projections of the future status of the yellowfin stock in the EPO with the current effort levels and average recruitment indicate that the population will decline to an SBR level lower than the current level, but will remain above the level that will support the AMSY. These simulations were carried out using the average recruitment for the 1975-2001 period. If the average recruitment for the 1984-2001 period had been used, it is likely that the estimates of SBR and catches would be higher. If a stock-recruitment relationship is assumed, the results are more pessimistic, and the current biomass is estimated to be below the level that would support AMSY for most of the model time frame, except for the last few years.

The average weight of fish in the catch of all fisheries combined has been well below the critical weight (49.5 kg), suggesting that the recent age-specific pattern of fishing mortality is not satisfactory from a

yield-per-recruit standpoint. The AMSY calculations indicate that the catches could be greatly increased if the fishing effort were directed more toward longlining and purse-seine sets on yellowfin associated with dolphins. This would also increase the SBR levels.

4.2. Skipjack

The current stock assessment of skipjack tuna is considered preliminary because: (1) it is not known whether the catch per day of fishing for the purse-seine fisheries is proportional to the abundance of the fish; (2) it is possible that there is a population of large skipjack that is invulnerable to the fisheries; (3) the stock structure in relation to the western and central Pacific is uncertain; and (4) the estimates of absolute biomass have changed by more than an order of magnitude since the previous assessment.

The recruitment of skipjack tuna to the fisheries in the EPO is highly variable. The fishing mortality is estimated to be about the same or less than the natural mortality. These estimates of mortality from A-SCALA are supported by independent estimates from tagging data. The biomass fluctuates mainly in response to the variations in recruitment, except for the low biomass levels in the early 1980s that appear to be the consequence of high fishing mortality rates.

The analysis indicates that a group of cohorts with very high biomass entered the fishery during 1998-1999 and that these cohorts increased the catches during 1999 and 2000. There is also an indication that the most recent recruitments have been low, which may lead to lower biomasses and catches. However, these estimates of low recruitment are based on limited information and are therefore very uncertain.

There is considerable variation in the SBR for skipjack tuna in the EPO. In 2002 the SBR is at a low level (about 0.23). AMSY and yield-per-recruit calculations estimate that the maximum yields are achieved with infinite fishing mortality because the critical weight is less than the average weight at recruitment to the main fisheries. This is uncertain, however, due to uncertainties in the estimates of natural mortality and growth.

4.3. Bigeye

At the beginning of January 2002 the spawning biomass of bigeye tuna in the EPO was at a low level. At that time the SBR was about 0.28, with lower and upper confidence limits (±2 standard deviations) of about 0.15 and 0.41. The estimate of the upper confidence bound is close to the estimate of SBR_{AMSY} (0.38), suggesting that at the start of January 2002 the spawning biomass of bigeye in the EPO was less than the level that is required to produce the AMSY. However, the spawning biomass appears to have been above this level throughout most of the July 1980-January 2001 period. The stochastic projections indicate that within the next three years the SBR is likely to continue to decline to well below the level that would be expected if the population were producing the AMSY. This decline is likely to occur regardless of the environmental conditions and the amount of fishing that occur in the near future because the projected estimates of SBR are driven by the small cohorts that were produced during 1999-2001. The projected SBR may increase by 2006, but the timing and rate of this increase would be dependent on future levels of recruitment (which may be driven by future environmental conditions) and fishing mortality.

The average weight of fish in the catch of all fisheries combined has been below the critical weight (about 35.5 kg) since 1993, suggesting that the recent age-specific pattern of fishing mortality is not satisfactory from a yield-per-recruit standpoint.

The distribution of effort among fishing methods affects both the equilibrium yield per recruit and the equilibrium yield. When floating-object fisheries take a large proportion of the total catch, the maximum possible yield per recruit is less than that when longline catches are dominant. Also, if the longline catches are dominant, the maximum yield per recruit (or a value close to it) can be obtained over a wide range of fishing mortality (F) multipliers. When floating-object fisheries take a large proportion of the

total catch, a more narrow range of *F* multipliers produces a yield per recruit that is close to the maximum. When floating-object fisheries take a large proportion of the total catch and a stock-recruitment relationship exists, extremely large amounts of fishing effort would cause the population (and therefore the yield) to decline significantly. When longline catches are dominant, the population can sustain substantially higher fishing mortality rates. These conclusions are valid only if the age-specific selectivity pattern of each fishery is maintained.

Recent retained catches of bigeye from the EPO are estimated to have been about 12% above the AMSY level. If fishing mortality is proportional to fishing effort, and the current patterns of age-specific selectivity are maintained, the level of fishing effort that is estimated to produce the AMSY is about 185% of the current level of effort. However, increasing the effort to 185% of its present level would increase the long-term average yield by only about 11%, while at the same time decreasing the spawning potential of the stock by about 42%.

The catch of bigeye by the surface fleet may be determined largely by the strength of the cohorts recruited the the fishery. If this is the case, that catch will probably decline when the large cohorts recruited during 1995-1998 are no longer vulnerable to the surface fisheries. The AMSY of bigeye in the EPO could be maximized if the age-specific selectivity pattern were similar to that for the longline fishery that operates south of 15°N.

The sensitivity analyses support the view that, at the start of 2002, the spawning biomass was below the level at which it would be if the stock were producing the AMSY. However, the sensitivity analyses in this years assessment, those presented in IATTC Stock Assessment Report 2, and the stochastic analyses indicate that there is uncertainty in the estimate of the AMSY and the amount of fishing mortality that is required to achieve this yield. Both of these quantities are sensitive to how the assessment model is parameterized and to the data that are included in the assessment. It is important to understand that the estimates of the status of the stock are highly dependent on the method used to calculate the fishing mortalities used in the yield calculations. If the catchabilities remain as high as during the most recent years, and the effort continues at its recent levels, the bigeye population is estimated to be overexploited with respect to producing the AMSY.

Some participants in the Working Group thought that the review highlighted uncertainties in several parameters (longline catch statistics, spawner-recruit relationship, stock structure, and life history parameters) used in the bigeye tuna stock assessment that warrant further evaluation. Some participants believed that the uncertainties were significant, and may cumulatively influence the assessment results. Accordingly, they suggested that fishery management recommendations be developed after completion of the evaluation, and an analysis be conducted on the impacts of the recommendations on the various sectors of the fishery, especially since the measures adopted in response to the recommendations would likely remain in place for a reasonably long period to achieve the predicted outcomes.

4.4. Striped marlin

Alternative hypothesis concerning the stock structure of striped marlin were considered. Differences in the genetic composition of samples from different areas have suggested that there is more than one stock in the EPO. However, the fishery data and analyses indicate that the striped marlin in the EPO are from a single stock. The status of the species was evaluated using the Deriso-Schnute delay difference population dynamics model fitted to catch-per-unit-of-effort (CPUE) data that had been standardized using a general linear model (GLM). The effective fishing effort for striped marlin included in CPUE was estimated using habitat-based standardization. The results indicate that the AMSY of striped marlin in the EPO is about 4,500 mt (range: 4,300 to 4,700 mt) and that the 1998 stock biomass was about that expected at AMSY. During 1991-1998 the average annual retained catch was about 3,100 mt (range: 2,600 to 3,900 mt). Preliminary estimates of the retained catch in 1999-2000 of about 1,800 to 2,000 mt are on the order of one-half the estimated AMSY. During the 1991 to 1998 period (1998 was the last year

for which standardized effort data were available for this analysis), the ratio of observed standardized effort to that effort expected to yield AMSY at B_{AMSY} (F_{AMSY}: about 1.8 million standardized hooks) steadily decreased from about 1.4 to 0.7. During this period the ratio of the estimated annual biomass to the biomass that would support the AMSY increased at an average annual rate of about 0.064 from about 0.62 to 1.07. Preliminary estimates of the nominal fishing effort for 2000-2001 show continuing decreases in nominal hooks fished in the EPO, which may lead to continuing decreases in effective effort for striped marlin in the region and continuing increases in the B/B_{AMSY} ratio. Due to the large amount of information on stock dynamics contained in the standardized trend of annual abundance, sensitivity analyses indicated that these results were stable to perturbations across the entire range of natural survival rates (0.2 to 0.8) and Brody growth coefficients (0.40 to 0.95) tested.

During the meeting it was mentioned that, though the two-stock hypothesis was not considered plausible, given available data and analyses of catch rates, very preliminary results of analyses of stock status assuming the north and south stock hypothesis indicated that the B/B_{AMSY} ratio for the putative northern stock was on the order of 0.2. On checking these results, it was found that this was not the case: the ratio would be on the order of 0.5, with F/F_{AMSY} averaging about 0.76 during 1993-1998.

Several participants in the meeting asked that further attempts should be made to learn more about stock structure of striped marlin, and recommended that there should be no increase in fishing effort directed at striped marlin until after the results of the analyses of stock structure, growth, and mortality rates are available and the results of a stock assessment incorporating these results are presented.

4.5. Pacific bluefin, albacore, swordfish, and blue marlin

A review of the most recent assessments of these species was presented for consideration. No additional recommendations for actions or additional analysis prior to the upcoming 69th Meeting of the IATTC were made.

5. Ecosystem modeling

The Commission staff has developed a multispecies mass-balance model for the pelagic eastern tropical Pacific (ETP) in an attempt to learn more about how the ecosystem functions and to investigate the relative ecological implications of alternative fishing strategies. The ecosystem model was developed using Ecopath with Ecosim (EwE). The mass balance was generated from estimates of the abundance of the resources (biomasses), the productivity or mortality rates of the resources, how they interact (diet compositions and food consumption rates), and how efficiently the resources are utilized in the ecosystem.

The species components, scope, geographic extent, and parameter requirements of the model were briefly reviewed. The average retained and discarded catches of the model components by five fisheries during 1993-1997 were used in the model. Sensitivity analyses have been performed, both for the Ecopath mass-balance and the dynamic trajectories predicted by Ecosim.

In the pelagic ETP, the fisheries can be viewed as the apex predators of the ecosystem. The trophic level of each fishery was computed based on the catch-weighted average trophic levels of the components of the retained and discarded catches for each fishery, plus 1.0. The trophic levels for the base model, *i.e.* averaged over 1993-1997, from smallest to largest, were 4.72, 4.72, 4.77, 4.78, and 5.19 for pole-and-line vessels, unassociated purse-seine sets, floating-object sets, dolphin sets, and longlining, respectively. The year-to-year variation in trophic level, *i.e.* the "trophic status" of each fishery, may hold promise as a metric for evaluating the relative interannual effects of the fisheries on the ecosystem. The trophic status was estimated for 1993-2001, based on the retained and discarded catches per year for the surface fisheries, by applying the trophic levels estimated by the base model weighted by the catch data by fishery and year for all model groups. The trophic status of the discarded catches varied considerably, but no clear trend was evident.

6. Summary and recommendations

6.1. General recommendations

Assessments of tunas in the Atlantic and Indian Oceans are generally carried out assuming that catchability has increased over time. It was recommended that alternative models be examined to test the recent estimates for yellowfin, which show no changes in catchability but marked increases in recruitment in recent years, and the recent estimates of declining recruitment and increasing catchability for bigeye. The staff would endeavor to do so before the 69th Meeting of the Commission in June 2002.

The critical examination of the residuals in the bigeye assessment was welcomed as a diagnostic tool, and the meeting recommended that a broader suite of diagnostics be examined in future assessments. The diagnostic results, which in some cases are too voluminous to include in the assessment documents, should be posted to the IATTC's web site and become part of the permanent record associated with the assessment documents. In addition, the staff should organize a workshop in the fall of 2002 to further consider diagnostics; it was agreed that the yellowfin tuna assessment model would be used for this initial workshop. Appendix B, provided by one of the participants at the second meeting of the Scientific Working Group, shows a list of examples of possible diagnostics for complex models. The group endorsed the plans to further reduce the number of parameters used in A-SCALA.

The group requested that more detail be added to the striped marlin assessment report to document the basis for use of the single-stock hypothesis, including more details on the published genetic analyses. The group also indicated a desire for more information on the habitat-based standardization method.

The group discussed the suggestion of management schemes based on reference points, sustainability indicators, and the precautionary approach, and considered that it was worthy of further consideration. The group considered that the development and additional fine-tuning of existing reference points are appropriate for management. Further development of the ecosystem model as a tool to understand dynamics of the EPO ecosystems, continued bycatch and discard monitoring, and an integrated approach in the multi-species tuna fisheries context would add to ecosystem considerations in fisheries management.

6.2. Advice from the IATTC staff to the Commission for the management of the fisheries

Following the review of the assessments, additional work will be carried out, and the results will be taken account of in the advice provided at the 69th Meeting of the IATTC in June 2002. The conclusions reported here are, of course, subject to change as a result of that work.

6.2.1. Yellowfin

The basecase estimates indicate that the biomass of yellowfin is at a relatively high level, following strong recruitment during the late 1990s. The strong recruitments have allowed catches above the AMSY without depressing the stock size below the AMSY level. The spawning biomass is above the level at which the AMSY would be achieved, and the current fishing effort is estimated to be less than the effort required to produce the AMSY. However, the yield curve is fairly flat at its maximum, and there would be little to gain from allowing effort to increase to the AMSY level.

There have apparently been two different productivity regimes, with different levels of AMSY, and the biomass required to produce the AMSY may differ between the regimes. The average weight of the yellowfin in the catch is much less than the critical weight, so increasing the average weight of the fish caught could substantially increase the AMSY.

An alternative assessment, using a stock-recruit relationship with a steepness of 0.75, was conducted. In this case the current effort exceeds the level that would produce the AMSY. While this alternative was thought to be less likely than the basecase, it is generally acknowledged that some relationship must exist

between stock and recruitment, and thus the best estimates are likely to lie between the basecase and the alternative.

The conclusion is that current fishing mortality should not be allowed to increase.

6.2.2. Skipjack

The analysis is still preliminary; however, while the 2002 assessment differs significantly from that of 2001 in terms of estimates of biomass, the overall picture, that the fishery is having little effect on the stock, remains the same. High recruitment during 1998 increased the biomass and catches, but recent lower recruitment caused the biomass to decline in 2000 and 2001. The estimates of fishing mortality are similar to or less than those of the natural mortality. The biomass is highly variable, and is driven by fluctuations in recruitment. There is little evidence of the fishery causing a major decline in the biomass, and no management action is recommended.

6.2.3. Bigeye

The status of bigeye tuna is uncertain because the stock has been highly vulnerable to the purse-seine fishery only since about 1994, and because the fishery has been in a state of rapid change since then. It was emphasized that the assessment of bigeye is more difficult and uncertain than that of yellowfin. The purse-seine fishery has changed rapidly since fish-aggregating devices (FADs) were introduced, and the recruitment has apparently fluctuated considerably. The estimates of the life history parameters are not as reliable as those for yellowfin. The stock structure remains uncertain, with the possibility that there are interactions between bigeye of the eastern and western Pacific.

The biomass of bigeye declined into 2002, as predicted in 2001, after reaching a recent peak during 2000. The spawning biomass is now below the level that supports the AMSY. Weak recruitment has been a recent concern, with below-average recruitment occurring each quarter since mid-1998. The spawning biomass is expected to continue to decline for the next year, with a muted recovery expected afterward, provided that recruitment returns to average levels. The level of fishing effort required to produce the AMSY is estimated to be either at (99%) or above (185%) the current level of effort, depending on whether the catchability of the floating-object fishery remains at the high levels of the last two years or returns to its post-1993 average. If the recruitment is more strongly related to spawning biomass (steepness = 0.75), as considered in a plausible alternative presented in the Document A4, the stock status is more pessimistic, and the chances of recovery at the current levels of fishing effort are reduced or improbable.

Near-term caution is recommended in the management of bigeye tuna because the spawning biomass has recently reached the lowest levels ever estimated (covering years of analysis for 1980-present) and because a recent series of weak recruitment has occurred. The analysis does not suggest that there is a need for drastic management actions, but a reduction in fishing effort on FADs for three months in offshore waters (west of 95°W) or for two months in the eastern Pacific would be a precautionary approach. Recent measures for management of bigeye tunas based on holding catches of small bigeye tunas (those <60cm) below peak levels reached in 1999 are not likely to be adequate for currently managing the bigeye resource: those catch constraints work well only with large recruitments, which have not occurred during the last two years.

6.2.4. Striped marlin

The basecase assessment of striped marlin assumed a single stock in the eastern Pacific. The catches have decreased over recent years, and currently the stock is at about the level that will provide the AMSY, and the fishing effort is below the level required to produce the AMSY. As more data become available, these analyses should be updated to ensure that, if indications develop that the condition of the stock(s) of striped marlin has deteriorated, action could be considered in a timely manner.

6.2.5. Pacific bluefin, albacore, swordfish, and blue marlin

No recommendations for management are being made for the fisheries for these species in the EPO at this time.

7. Other Business

No other business was discussed.

8. Adjournment

The meeting was adjourned on May 8, 2002.

Appendix A.

ATTENDEES—ASISTENTES

MEMBER COUNTRIES—PAISES MIEMBROS

ECUADOR

FRANKLIN ORMANZA
Instituto Nacional de Pesca

JAPAN—JAPON

NAOZUMI MIYABE
MIKI OGURA
National Research Institute of Far Seas Fisheries
PETER MIYAKE
Federation of Japan Tuna Fisheries Co-operative Associations

MEXICO

GUILLERMO COMPEAN JIMENEZ
LUIS FLEISCHER
PEDRO ULLOA RAMIREZ
Instituto Nacional de la Pesca

MICHEL DREYFUS
FIDEMAR

UNITED STATES OF AMERICA—ESTADOS UNIDOS DE AMERICA

DAVID AU
RAMON CONSER
PAUL CRONE

STEVEN REILLY
GARY SAKAGAWA
National Marine Fisheries Service

NON-MEMBER COUNTRIES—PAISES NO MIEMBROS

ESPAÑA—SPAIN

JAVIER ARIZ TELLERIA
Instituto Español de Oceanografía

JULIO MORON
OPAGAC

EUROPEAN UNION—UNION EUROPEA

ALAIN FONTENEAU
Institut de Recherche pour le Developpement (IRD)

PERU

GLADYS CARDENAS
Instituto del Mar del Peru

TAIWAN/CHINESE TAIPEI

CHI-LU SUN
National Taiwan University
REN-FEN WU
Overseas Fisheries Development Council

NON-GOVERNMENTAL ORGANIZATIONS

RUSSELL NELSON
The Billfish Foundation

IATTC—CIAT

ROBIN ALLEN, Director
PABLO ARENAS
WILLIAM BAYLIFF
RICHARD DERISO
MARTIN HALL
SHELTON HARLEY
MICHAEL HINTON
MARK MAUNDER
ASHLEY MULLEN
ROBERT OLSON
JENNY SUTER
PATRICK TOMLINSON

Appendix B.

INTERMEDIATE RESULTS AND DIAGNOSTICS COMMONLY USED IN REVIEWING STOCK ASSESSMENT MODELING RESULTS

1. Matrix of predicted catch numbers by age and time period. Similar matrices for stock numbers and instantaneous fishing mortality rates.
2. Table of parameters estimated, values at the global solution, CVs, flags identifying parameters that hit constraints or significant penalties.
3. Details of the phased estimation of parameters. Trace of initial parameter values at the beginning of each phase plus values of parameters (estimated and fixed) and likelihood components at the end of each stage of estimation (including at the global solution).
4. Correlation among selected parameter estimates, namely those directly related to management advice, *e.g.* recent-period estimates of recruitment, catchability, selectivity, spawning biomass, *etc*.
5. Examination of the response surface at the global solution—especially with respect to changes in key management parameters. For example, convergence checks using different initial value vectors. Likelihood profiling on key management parameters can also be informative here.
6. Residuals summarized and plotted by various types (including, but not limited to, size-composition residuals).
7. Influence of priors. Plot priors *vs*. their respective posterior, including implied priors for key management parameters.
8. Predictive capability of environmental factors. Develop predictive relationships and appropriate lags (*e.g.* for recruitment) using half of the available time series. Examine the utility of environmental factors when applied to the other half of the time series.
9. Compare and contrast results obtained from other assessment methods, *e.g*. by applying commonly-used age-structured models to the predicted catch-at-age data from the A-SCALA model.

Appendix 3.

INTER-AMERICAN TROPICAL TUNA COMMISSION
COMISION INTERAMERICANA DEL ATUN TROPICAL

PERMANENT WORKING GROUP ON COMPLIANCE
GRUPO DE TRABAJO PERMANENTE SOBRE EL CUMPLIMIENTO

3RD MEETING

MANZANILLO (MEXICO)
JUNE 25, 2002

CHAIR'S REPORT

After the opening of the meeting and the introduction of delegates, Brian Hallman of the IATTC staff presented a review of the Commission resolutions currently in force to be considered by the Working Group.

These were:

1. Resolution on Bycatch - 66th Meeting, June 2000
2. Resolution on Fish-Aggregating Devices - 67th Meeting, October 2000
3. Resolution on Yellowfin Tuna - 68th Meeting, June 2001
4. Resolution on Bigeye Tuna - 68th Meeting, June 2001

Mr. Hallman then presented the results of the staff's review of compliance with these resolutions by vessels operating under the IATTC program. In doing so, he referred delegates to Document COM-3-00 prepared by the staff as a background paper for the meeting.

1. RESOLUTION ON BYCATCH

The first item discussed was the Resolution on Bycatch. Three elements of the resolution were discussed separately: the release of non-target fish species including sharks, rays, billfishes, mahi-mahi and other non target species; the release of sea turtles; and the requirement for full retention of catches of yellowfin, bigeye and skipjack tuna.

1.1. Release of non-target fish species

On non-target species, the staff noted that the Commission had insufficient information to assess compliance with the Resolution on Bycatch, which calls for these species to be released unharmed to the extent practicable. **The Working Group recommends that the staff, and national authorities managing the national observer programs, ensure that observers include such information in the future** to allow the staff to better assess the implementation of this provision of the Resolution.

1.2. Release of sea turtles

On sea turtles, the staff summarized the information in Document COM-3-00 indicating that, based on available observer data, compliance with the requirement to stop net roll when a sea turtle was entangled in the net was 52%. Staff further noted that of the 85 observed turtle mortalities, 78 (92%) died as a result of going through the power block.

The Working Group expressed its concern with the level of compliance with this requirement and agreed that further efforts should be undertaken to improve it. Some delegations stressed that the goal of the Commission should be to reduce sea turtle mortality as a result of going through the power block to zero, given that this can achieved through existing procedures already contained in the resolution.

At the request of the delegations, the staff agreed to provide to each flag state a breakdown of compliance with the requirement by its fleet. **The Working Group requested that each flag state investigate the incidents contained in the staff's report and report back to the next meeting of the Working Group the results of those investigations**.

In addition, **the Working Group requested that each flag state send a letter to its Captains reminding them of the requirement and reiterating the importance of complying with it**.

In addition, **the Working Group agreed to recommend to the Commission two modifications to that part of the resolution calling for the deployment of a speedboat to rescue sea turtles. First, to change the first sentence of paragraph 5 of the resolution to read as follows: "Whenever a sea turtle is sighted in the net, all reasonable efforts should be made to rescue the turtle before it becomes entangled in the net, including, if necessary, the deployment of a speedboat." Second, to change the third requirement of paragraph 5 of the resolution to read as follows: "If a turtle is brought on board the vessel, all appropriate efforts to assist in the recovery of the turtle should be made before returning it to the water."**

The Working Group also discussed the matter of continued mortality of sea turtles by entanglement in webbing below fish aggregating devices (FADs). While noting that this was not currently a compliance issue, the Working Group emphasized that this was an important element of the work of the Bycatch Working Group and that further work should be conducted within that group to look at these issues.

1.3. Requirement for full retention

As noted in Document COM-3-00, the bycatch resolution calls for the implementation of a program to require all purse-seine vessels to first retain on board and then land all bigeye, skipjack, and yellowfin tuna caught, except fish considered unfit for human consumption. Discussion on this issue centered on the difficulty of assessing compliance with this requirement, given the nature of the data available and the complex system required of vessel crews, observers and Commission staff to monitor and evaluate activities of vessels to implement this requirement. Reporting was generally low (48%) and some forms contained incomplete information with respect to the requirement. Although not directly related to the issue of compliance, there was also discussion of the extent to which the requirement had achieved the intended goal of providing an incentive to reduce the capture of small fish.

The Working Group noted that the Bycatch Working Group was recommending to the Commission that the full retention requirement be extended for an additional two years. **The Working Group recommended that that Commission, in considering whether to extend this requirement, consider the logistical complexity of the program and the additional effort that would be required by crews, IATTC and national observer programs, and the Commission staff in order to implement the program and monitor and assess compliance, particularly in light of the uncertain benefits of the requirement.**

2. RESOLUTION ON FISH AGGREGATING DEVICES

The two elements of this resolution relevant to the work of the Working Group are the prohibition of transshipments at sea by purse-seine vessels fishing for tuna in the eastern Pacific Ocean (EPO) and the prohibition on the use of tender vessels operating is support of vessels fishing on FADs in the EPO.

The Working Group welcomed the report by the staff that there had been no observed or reported incidents of transshipments at sea and the last reported sighting of a tender vessel in the EPO was on June 17, 2000.

3. RESOLUTION ON YELLOWFIN TUNA

The Resolution on Yellowfin Tuna resulted in the closure of the fishery for yellowfin tuna in the

Commission's Yellowfin Regulatory Area (CYRA) on October 27, 2001. Vessels fishing for other species in the CYRA were allowed to land up to 15% yellowfin per trip after the date of the closure.

The Working Group discussed the report on compliance with the resolution in Document COM-3-00. Although aggregated for the purposes of the staff's analysis in the document, reported violations fell into two categories: 1) vessels continuing to target yellowfin tuna after the closure provided in the resolution; and 2) vessels exceeding the 15% limit on catches of yellowfin tuna caught while fishing for other species.

With respect to the first category, some delegates expressed the view that there was no excuse for Class 6 vessels to continue to fish for yellowfin tuna after the closure. With respect to the second category, delegates discussed the difficulty of estimating the percentage of yellowfin caught during a particular set or trip. In addition, some delegations reported that vessels fishing for other species at times made sets in which the majority of the catch was estimated to be yellowfin tuna.

The Working Group discussed the compliance issues raised by the fact that during the closure, some fishing activities were prohibited while others were permitted. In particular, monitoring compliance with the closure was complicated by fishing activities for yellowfin tuna outside the CYRA and for other species within the CYRA which resulted in some catches of yellowfin tuna.

The staff also reviewed a letter received from one Commission member requesting information on actions by each flag state to implement the yellowfin tuna closure. The staff noted that while it has received copies of the legal instruments implementing the closure from some flag states, others had not provided this information. The members of the Working Group noted the importance of efforts by each flag state to implement Commission conservation and management measures within its own national legal framework. In this regard, **the Working Group recommended that the Commission request each flag state that has not yet provided to the Secretariat a copy of its legal instrument implementing the 2001 yellowfin closure to do so as soon as possible.**

4. RESOLUTION ON AT-SEA REPORTING

The staff presented the information in Document COM-3-00 indicating that at-sea reporting by all fleets was approximately 50%. The staff noted that the Resolution on At-Sea Reporting adopted by the Commission at its 68th Meeting did not create a binding obligation with respect to weekly reporting and so failure to provide such a weekly report is not a violation of Commission requirements, but that the Working Group should be aware of the level of compliance with this provision. The members of the Working Group noted the importance of timely at-sea reporting, especially as a tool for implementing measures related to catch quotas. As a result, **the Working Group recommended that the Commission request that each flag state send a letter to the owners and captains of its vessels reiterating the importance of timely at-sea reporting and urging them to provide such reports on a weekly basis as provided in the resolution.**

The members of the Working Group agreed that the discussion and recommendation of the group would not prejudice the position of any country regarding whether the Commission should consider a binding requirement to ensure full and timely at-sea reporting on a weekly basis.

5. GENERAL RECOMMENDATIONS

The Working Group recommended that the Commission request that each flag state investigate reports of alleged violations of the resolutions-in-force and report back to the Working Group at its next meeting on the results of those investigations and the actions taken by the flag state.

In addition, the Working Group recommended that the Commission direct the staff to establish a process for tracking notifications to flag states of possible violations of the resolutions-in-force and the responses received.

6. OTHER ITEMS

6.1. VMS

Due to time limitations, the Working Group agreed that the discussion on vessel monitoring systems should be deferred to the meeting of the Commission.

6.2. MCS Network

Paul Ortiz of the United States National Marine Fisheries Service gave a presentation on the International Network on Monitoring Control and Surveillance.

Appendix 4.

INTERNATIONAL DOLPHIN CONSERVATION PROGRAM | **INTER-AMERICAN TROPICAL TUNA COMMISSION**

JOINT WORKING GROUP ON FISHING BY NON-PARTIES

1ST MEETING

Manzanillo (Mexico)
June 21, 2002

CHAIR'S REPORT

The Group received at the beginning of its meeting a presentation and discussed the draft terms of reference prepared by the IATTC staff (Document JWG-1-04), which were presented in general terms. A new draft (attached) emerged from the discussion and the observations made, and will be distributed for comment by the Group. It was noted by some delegations that the discussion of this item was hampered by the late distribution of the document.

On another matter, the Director presented information on the responsibilities of regional fisheries management organizations in implementing the FAO International Plan of Action on Illegal, Unreported and Unregulated Fishing.

New draft terms of reference will be discussed at the next meeting of the Working Group.

Appendix 5.

INTER-AMERICAN TROPICAL TUNA COMMISSION

RESOLUTION ON THE CAPACITY OF THE TUNA FLEET OPERATING IN THE EASTERN PACIFIC OCEAN (REVISED)

The Parties to the Inter-American Tropical Tuna Commission (IATTC):

Aware that the issue of excess fishing capacity is of concern worldwide and is the subject of an International Plan of Action developed by the United Nations Food and Agriculture Organization;

Understanding that excess fishing capacity in a region makes it more difficult for governments to agree on and implement effective conservation and management measures for the fisheries of that region;

Concerned that purse-seine fishing capacity in the eastern Pacific Ocean (EPO) has been increasing in recent years;

Believing that it is important to limit fishing capacity in the EPO in order to help ensure that the tuna fisheries in the region are conducted at a sustainable level;

Aware of the importance of tuna fishing to the economic development of the Parties;

Committed to giving full effect to the relevant rules of international law, as reflected in the United Nations Law of the Sea Convention;

Recalling the resolutions to limit the capacity of the tuna purse-seine fleet in the EPO approved by the IATTC at its 62nd Meeting in October 1998 and by correspondence on 19 August 2000;

Seeking to address the problem of excess capacity in the tuna purse-seine fleet operating in the EPO by limiting such capacity to a level which, in harmony with other agreed management measures and projected and actual levels of catch, will ensure that tuna fisheries in the region are conducted at a sustainable level:

Have agreed as follows:

1. For the purposes of this Resolution, the EPO is defined as the area bounded by the coastline of the American continents, the 40° North parallel, the 150° West meridian and the 40° South parallel.
2. For the purposes of this Resolution, and without setting any precedent, "participant" means Parties to the IATTC, and States and regional economic integration organizations (REIOs), and fishing entities that have applied for membership of the Commission or that cooperate with the management and conservation measures adopted by the Commission. The Commission shall determine which States, REIOs and fishing entities are considered to be cooperating with such management and conservation measures.
3. To finalize and adopt, as soon as possible, a plan for regional management of fishing capacity, as specified in the resolution on fleet capacity of 19 August 2000. Such a plan shall take into account the right of coastal States and other States with a longstanding and significant interest in the tuna fisheries of the EPO to develop and maintain their own tuna fishing industries.
4. To review on a regular basis, and modify if necessary, the methods for estimating fishing capacity and the target level of 158,000 m^3, established in the resolution on fleet capacity of 19 August 2000, for the total capacity of the purse-seine fleet, taking into account the level of the stocks of tuna and other relevant factors.
5. To use the Regional Vessel Register ("the Register") established by the resolution of the 66th

Meeting of the Commission, as of 28 June 2002, with any subsequent modifications that do not increase the total capacity of purse-seine vessels established in the Register, as the definitive list of purse-seine vessels authorized by the participants to fish for tunas in the EPO. Any purse-seine vessel fishing for tunas in the EPO that is not on the Register would be considered to be undermining IATTC management measures. The Register shall include only vessels flying the flags of participants. Each participant shall verify the existence and operational status of, and confirm the accuracy of the information on, its vessels, as required by that resolution, including the requirement to promptly notify the Director of the Commission ("the Director") of any modifications to that information. For purse-seine vessels, the Register shall include only vessels that have fished in the EPO before 28 June 2002. A participant may remove any vessel flying its flag from the Register by notifying the Director.

6. The well volume of each purse-seine vessel, once confirmed by the relevant participant and verified by an independent survey supervised by the Director, shall be reflected in the Register.

7. To prohibit the entry of new vessels, defined as those not included in the Register, to the EPO purse-seine fleet, except to replace vessels removed from the Register, and provided that the total capacity of any replacement vessel or vessels does not exceed that of the vessel or vessels replaced.

8. To prohibit increasing the capacity of any existing purse-seine vessel unless a purse-seine vessel or vessels of equal or greater capacity is removed from the Register.

9. Notwithstanding paragraphs (7) and (8), above, by January 1 of each year, a participant may notify the Director of any purse-seine vessel operating under its jurisdiction and listed on the Register that will not fish in the EPO in that year. Any vessel identified pursuant to this paragraph shall remain on the Register as "inactive" and shall not fish in the EPO in that year. In such cases, the participant may substitute another purse-seine vessel or vessels on the Register, and those vessels shall be authorized to fish in the EPO provided that the total "active" capacity of purse-seine vessels flying the flag of that participant in any year does not exceed the capacity listed for such vessels on the Register as of 28 June 2002.

10. Subject to the provisions of this resolution:

10.1. Notwithstanding paragraphs (7) and (8), the following participants may add purse-seine vessels to the Register after 28 June 2002, within the following limits*:

Costa Rica:	9364 m^3
El Salvador:	861 m^3
Nicaragua:[1]	5300m^3
Peru:	3195 m^3

10.2. Guatemala may increase its purse-seine fleet by 1700 m^3 and commits to obtaining that capacity within a period of two years.

11. In the implementation of paragraph (10.1) above, a participant wishing to bring a new vessel into the EPO shall (1) so notify the other participants, through the Director, and (2) undertake efforts to find a suitable vessel from the Register for at least four months following such notification before bringing a new vessel into the EPO.

12. Notwithstanding paragraphs (7) and (8), a limit of 32 United States vessels authorized and

* Costa Rica, Colombia, and Peru maintain long-term capacity requests of up to 16,422 m^3, 14,046 m^3, and 14,046 m^3, respectively. The Parties also acknowledge that France has expressed an interest in developing a tuna purse-seine fleet on behalf of its overseas territories in the EPO.

[1] 4038 m^3 in the original resolution adopted in June; modified by consensus of the Parties, 3 November 2002

licensed to fish in other areas of the Pacific Ocean under an alternative international fisheries management regime, and that may occasionally fish to the east of 150° West, shall be authorized to fish in the EPO provided that: a) the fishing activity of any such vessels in the EPO is limited to a single trip not to exceed 90 days in one calendar year; b) the vessels do not possess a Dolphin Mortality Limit pursuant to the Agreement on the International Dolphin Conservation Program; and c) the vessels carry an approved observer. A similar exception shall be considered for vessels of other participants with a similar record of participation in the EPO tuna purse-seine fishery and that meet the criteria listed above.

13. Nothing in this resolution shall be interpreted to limit the rights and obligations of any participant to manage and develop the tuna fisheries under its jurisdiction or in which it maintains a longstanding and significant interest.[2]

14. To urge all non-Parties to provide the information required by this resolution and comply with its provisions.

[2] This paragraph was agreed *ad referendum* pending consultations among Costa Rica, El Salvador, Nicaragua, and Venezuela on a possible alternative.

Appendix 6.

INTER-AMERICAN TROPICAL TUNA COMMISSION

RESOLUTION ON BYCATCH

The Inter-American Tropical Tuna Commission (IATTC), meeting in Manzanillo (Mexico), on the occasion of its 69th Meeting:

Recalling and reaffirming the Resolutions on Bycatch adopted at the 66th and 68th Meetings of the Commission in June 2000 and June 2001;

Recognizing that a number of the objectives established in these resolutions have not been achieved;

Considering that many of these objectives can be achieved easily and with little expense;

Noting the recommendations of the 3rd meeting of the Working Group on Bycatch in March 2002;

Has agreed as follows:

1. To continue the program requiring the full retention and landing of tunas and the release, to the extent practicable, of non-target species, as described in those Resolutions, for two additional years, beginning January 1, 2003, with an annual review of the effect and effectiveness of this program so adjustments can be made if appropriate;
2. To urge the Parties to ensure that their respective fleets comply fully with the requirements of these resolutions and the guidelines for implementation prepared by the Commission staff;
3. Regarding the reduction of the incidental mortality of juvenile tunas:
    a. To pursue the establishment of mechanisms for communicating information on areas of high concentration of juvenile tunas in real time within the fleet or parts of the fleet, taking account of the importance of ensuring confidentiality of such information;
    b. To support, and seek the necessary funds for, the following future studies and research:
    1. Develop technology for releasing juvenile tunas, particularly sorting grids.
    2. Apply technology for the identification of species and size composition in schools prior to setting, for example acoustic technology.
4. Regarding sea turtles:
    a. To encourage all the Parties to voluntarily provide the Commission with all data on incidental catches of sea turtles in all fisheries, mainly those for tunas, recognizing that a comprehensive approach is necessary to deal effectively with sea turtle issues;
    b. To encourage FAO to address the conservation and management of sea turtles, including the issue of bycatches of sea turtles as part of such a comprehensive approach;
    c. To fully enforce the requirements of the resolutions regarding releasing captured sea turtles;
    d. That all cases of non-compliance be addressed by the Permanent Working Group on Compliance, and that the Parties apply suitably severe sanctions in such cases to ensure effective compliance;
    e. To implement the following actions:

1. Publicize the requirement to release turtles and the other provisions of the Resolutions.
2. Train crews of tuna purse-seine vessels, particularly those without observers, in techniques for handling turtles to improve survival after release, and encourage States to take similar actions for other tuna fisheries.
3. To study and formulate recommendations regarding modifications of the design of FADs to eliminate entanglement of sea turtles, particularly the use of webbing hanging below FADs.
4. To prohibit tuna-fishing vessels disposing of salt bags or any other type of plastic trash at sea.
5. To encourage the release, when practicable, of sea turtles entangled in FADs.
6. To foster the recovery of FADs when they are not being used in the fishery.

5. To implement the following actions regarding billfish, sharks and rays to further the objectives of the resolution on bycatch of June 2000:
    1. Publicize the requirement to release sharks, billfishes and rays, and develop techniques and/or equipment to facilitate the release of these species from the deck or from the net.
    2. Seek the necessary funds to carry out experiments to determine the survival rates of released billfish, sharks and rays.
    3. Define areas and periods in which any of these species are most likely to be caught.
    4. Encourage all Parties, as well as States and fishing entities with vessels fishing for tunas and tuna-like species in the eastern Pacific Ocean, to adopt similar measures, as appropriate.
6. Regarding other species of large pelagic fish of interest to the artisanal fishery, particularly *mahi mahi*, to identify areas of high bycatches of these species, and verify the stability in time and space of any such areas.
7. Regarding bycatches by vessels not already covered by programs to obtain information on such bycatches implemented in accordance with the resolution of June 2000, to pursue actions to obtain such information.
8. For longline vessels, to urge those governments with such vessels operating in the region to provide the required bycatch information as soon as possible.

Appendix 7.

INTER-AMERICAN TROPICAL TUNA COMMISSION

RESOLUTION ON FINANCING

The Parties to the Inter-American Tropical Tuna Commission (IATTC):

Understanding the importance of ensuring sufficient funding for the Commission so it may continue to effectively develop and implement the agreed conservation and management program for the living marine resources of the eastern Pacific Ocean (EPO);

Aware that the allocation of the costs of supporting the Commission among Parties should be transparent, fair and equitable, stable, and predictable, but also should allow for redistribution of costs as new Parties join;

Giving due consideration to the requirement in the Convention establishing the Commission that the proportion of the expenses paid by each Party should be related to the proportion of the total catch utilized by that Party and the consensus of the Parties that other factors should be considered in determining their proportional contributions;

Recognizing that the ability of a Party to make its contribution may be limited by circumstances beyond its control, and that such a situation may require a reconsideration of the budget for that year;

Noting that several non-Parties derive benefits from catching or utilizing fish covered by the Convention, but do not make contributions to the Commission;

Recalling the Resolution on Finance adopted by the Commission in June 2001; and

Taking note of the staff's proposals regarding the budget presented in Document FIN-5-00 and the urgent need to implement a long-term financing system;

Have agreed as follows:

1. To adopt the recommended budget of US$ 4,540,718 for FY 2003 presented in Background Paper C1.

2. To contribute to the budget of the IATTC for FY 2003, and provisionally for FY 2004, in accordance with the following schedule of payments, taking into account the draft funding formula illustrated in the tables attached to the Minutes of the 5th Meeting of the Working Group on Finance held August 29-31, 2001 in La Jolla, California.

(US$)	**FY 2003**	**FY 2004** (provisional)
Costa Rica	65,912	65,912
Ecuador	276,923	276,923
France	66,943	66,943
Guatemala	44,934	44,934
Japan	486,422	515,850
Mexico	934,825	994,654
Nicaragua	13,063	13,063
Panama	80,894	80,894
Peru	24,306	24,306
El Salvador	17,383	28,620
United States	2,100,000	1,998,120
Venezuela	309,177	393,682
Vanuatu	46,953	46,953
Total	**4,467,735**	**4,550,854**

3. To continue deliberations on the funding formula in order to achieve consensus among the Parties on the use of the formula for determining each Party's contribution to the IATTC budget for FY 2004 and for the longer term, taking into account the review described in paragraph 4.
4. That, as part of these deliberations, the Parties will review, among other matters, the percentages for the base and operational contributions with the purpose of ensuring continuity of the Commission's operations, taking into account the interest of some countries that this portion of contributions be sufficient to cover the Commission's administrative expenses.
5. Each Party shall make its contribution in a timely manner to ensure that the program of work adopted by the Commission can be carried out.
6. The Director shall inform each Party, at least two months prior to the annual meeting, of its projected contribution for the following two financial years.
7. That the Commission should pay no more than 30% of the costs associated with the AIDCP On-Board Observer Program for vessels of member states.
8. That the contributions of any new member of the Commission shall be determined on the same basis as the contributions of existing members, subject to the Commission's financial regulations.
9. To consider incorporating the element of price in the calculations in the table should the differential in the prices paid for yellowfin and skipjack tuna increase significantly.
10. To call upon States not presently members of the IATTC which have vessels fishing for fish covered by the Convention to make voluntary contributions to the Commission until such time as they might become members.

Appendix 8.

INTER-AMERICAN TROPICAL TUNA COMMISSION

RESOLUTION ON COMPLIANCE

The Parties to the Inter-American Tropical Tuna Commission (IATTC) have agreed as follows:

1. That the IATTC staff, and the national authorities managing the national observer programs, ensure that observers include sufficient information to allow the staff to better assess the implementation of the Resolution on Bycatch adopted at the 66th Meeting of the Comission in June 2000.
2. To request that each flag State send a letter to the owners and captains of its vessels reminding them of the requirement and reiterating the importance of complying with it.
3. To make two modifications to the Resolution concerning the release of sea turtles. First, to change the first sentence of paragraph 5 of the resolution to read as follows: "Whenever a sea turtle is sighted in the net, all reasonable efforts should be made to rescue the turtle before it becomes entangled in the net, including, if necessary, the deployment of a speedboat". Second, to change the third requirement of paragraph 5 of the resolution to read as follows: "If a turtle is brought on board a vessel, all appropriate efforts to assist in the recovery of the turtle should be made before returning it to the water".
4. In considering whether to extend the full retention requirement established by that Resolution on Bycatch of June 2000, consider the logistical complexity of the program and the additional effort that would be required by crews, IATTC and national observer programs, and the Commission staff in order to implement the program and monitor and assess compliance, particularly in light of the uncertain benefits of the requirement.
5. To request each flag state that has not yet provided to the Secretariat a copy of its legal instrument implementing the 2001 yellowfin closure to do so as soon as possible.
6. To request that each flag state send a letter to the owners and captains of its vessels reiterating the importance of timely at-sea reporting and urging them to provide such reports on a weekly basis as provided in the Resolution on At-Sea Reporting adopted by the Commission at its 68th Meeting.
7. To request that each flag state investigate reports of alleged violations of the resolutions-in-force and report back to the Working Group at its next meeting on the results of those investigations and the actions taken by the flag state.
8. To direct the IATTC staff to establish a process for tracking notifications to flag states of possible violations of the resolutions-in-force and the responses received.

Appendix 9.

INTER-AMERICAN TROPICAL TUNA COMMISSION

RESOLUTION ON THE CONSERVATION OF YELLOWFIN AND BIGEYE TUNA IN THE EASTERN PACIFIC OCEAN

The Inter-American Tropical Tuna Commission, having responsibility for the scientific study of the tunas and tuna-like fishes of the eastern Pacific Ocean (EPO), 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 tuna resource of the EPO 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,

Notes that in the years from 1980 through 2001, excepting 1987, the Director recommended conservation measures to the Commissioners, and that in turn such measures were approved by the Commissioners for recommendation to their respective governments, and

Believing that it is important to follow a precautionary approach when addressing conservation and management measures for the tuna resource of the EPO, and

Recognizing Japan's initiative to reduce the number of large-scale tuna longline fishing vessels in its fleet by 20% (132 vessels) by the scrapping of vessels in accordance with the FAO Plan of Action,

Considering that the studies of yellowfin and bigeye tuna presented at this meeting show that, the current fishing effort (2000-2001 average) would be above the average maximum sustainable yield levels for both species if recruitment is strongly dependent on the amount of spawning.

Resolves:

1. That a limitation on the catches by purse-seine tuna-fishing vessels in the EPO is necessary before the end of 2002;
2. That the fishery by purse-seine tuna-fishing vessels in the EPO be closed from 0000 hours on 1 December to 2400 hours on 31 December 2002;
3. To discourage landings and commercial transactions in tuna or tuna products originating from fishing activities prohibited by this resolution. The Director may provide relevant information to the Parties to assist them it this regard.
4. Each Party shall:
   - 4.1. On or before 1 October 2002, inform all interested parties in its national tuna industry of the closure, and send a copy of this notice to the Director.
   - 4.2. Ensure that at the time the closure begins, and for the entire duration of the closure, all purse-seine tuna-fishing vessels flying its flag in the EPO are in port. The only exception to this provision shall be that vessels carrying an observer from the AIDCP On-Board Observer Program may leave port during the closure.
   - 4.3. Take the relevant measures and inform the Director of these on or before October 1, 2002.
5. Longline, pole-and-line and sportfishing vessels are not subject to the measures above.

6. States and fishing entities with large-scale tuna longline vessels are encouraged to undertake initiatives similar to that of Japan with respect to fleet reduction in the EPO, and not to increase their fishing effort in the EPO.
7. That all Parties and other interested States work diligently to achieve the implementation of such a program for the conservation of the tuna resource for 2002.