INTER-AMERICAN TROPICAL TUNA COMMISSION

SCIENTIFIC WORKING GROUP

10-13 April 2000
La Jolla, California, USA

CHAIRMAN'S REPORT

AGENDA

1. Welcome, introductions, consideration of agenda
2. Introduction
   a. Objectives of the review of stock assessments
   b. Terms of reference for the working group:
      i. Resolutions of the 64th Meeting on bigeye tuna and FADs, July 1999
      ii. Resolutions of the 65th Meeting on bigeye and bycatch, October 1999
3. Review of stock assessments
   a. Methods
   b. Results
      i. Yellowfin
      ii. Bigeye
      iii. Blue marlin
      iv. Others (skipjack, bluefin, albacore)
4. Review of topics in resolutions
   a. Relationships between catches of tuna and FAD characteristics
      i. Depth
      ii. Bait
   b. Estimates of the natural mortality of the various populations of tunas
   c. Determination of a maximum number of sets on floating objects which the tuna fishery in the EPO can support
   d. Examination of the catches of tunas and associated and dependent species in the fishery on floating objects between 130°W and 150°W
   e. Impact of permanent or temporary closure of areas to the use of FADs, especially in combination with other regulatory measures being considered by the IATTC
   f. The observer program and the coverage needed to obtain reliable scientific information on purse-seine vessels of less than 363 metric tons carrying capacity
   g. Assessment of the impact on the stock of bigeye tuna of catches by purse-seine vessels of less than 363 metric tons and longline vessels
   h. Methods for the collection of data on FADs and improved statistics to determine and project bigeye catch and landings
   i. Estimation of quantity and species of discards by tuna vessels fishing in the EPO for which such information is not available
5. Recommendations
6. Other business
7. Adjournment

DOCUMENTS

1. Status of yellowfin tuna in the eastern Pacific Ocean
2. Status of skipjack tuna in the eastern Pacific Ocean
3. Status of bigeye tuna in the eastern Pacific Ocean
4. Status of bluefin tuna in the Pacific Ocean
5. Status of albacore tuna in the Pacific Ocean
6. Status of blue marlin in the Pacific Ocean
7. Sampling the catch simultaneously for species composition and length frequencies in the multi-species surface fishery for tunas of the eastern Pacific Ocean
8. Production model analysis of yellowfin tuna in the eastern Pacific Ocean and outlook for 2000
9. Procedures for collection and handling of tuna fishery data by field station personnel
10. A-SCALA: an age-structured statistical catch-at-length analysis for assessing tuna stocks in the eastern Pacific Ocean
11. Effect of sample size on bycatch estimation

APPENDICES

1. List of attendees
2. Review of topics in resolutions

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The IATTC Scientific Working Group met in La Jolla, California, on 10-13 April 2000. Dr. Robin Allen, Director of the IATTC, chaired the meeting. The provisional agenda was approved without comments. A list of participants is attached as Appendix 1.

Dr. Allen explained the objectives of the meeting. The first was to present and discuss the stock assessments carried out by the IATTC staff, and the second was to examine relevant research to address topics specified in the IATTC resolutions on FADs (July 1999) and on bigeye tuna (July and October 1999).

In the course of the presentation and discussion suggestions were made to improve the assessments. Some of these will be incorporated into the assessments presented at the 66th IATTC meeting, while others will require further work.

The Chairman's report on the review of topics in resolutions is attached as Appendix 2. In the course of the discussion on the resolutions several points were made which, while not directly addressing the resolutions, were thought to be worth further investigation.

It is suggested that, in addition to investigating the species which associate with FADs, it would be worth investigating whether tunas of different sizes are associated with particular features of FADs.

It was noted that the Vessel Monitoring System (VMS) system used in Peru could be used for real-time catch reporting.

Sampling of tuna aboard vessels would be a much more effective way of estimating species composition and size because samples can be taken before any sorting occurs. Observers are currently fully occupied and it would be difficult for them to sample catches without affecting their existing duties.

Appendix 1.

ATTENDEES - ASISTENTES

MEMBER COUNTRIES – PAISES MIEMBROS

ECUADOR

LUIS TORRES NAVARRETE
Ministerio de Comercio Exterior, Industrialización y Pesca

EL SALVADOR

MARGARITA S. DE JURADO
Ministerio de Agricultura y Ganadería

JAPAN – JAPON

NAOZUMI MIYABE
National Research Institute of Far Seas Fisheries

MEXICO

MARA MURILLO CORREA
GUILLERMO COMPEAN JIMENEZ
PEDRO ULLOA RAMIREZ
MICHEL DREYFUS
Secretaría de Recursos Naturales y Medio Ambiente
JOSE JUAN VELAZQUEZ MACOSHAY
CANAINPES

UNITED STATES OF AMERICA - ESTADOS UNIDOS DE AMERICA

BRENT STEWART
Department of State
JOHN HUNTER
AL COAN
RAY CONSER
P. R. CRONE
National Marine Fisheries Service

VENEZUELA

FREDDY AROCHA
Universidad de Oriente/Instituto Oceanográfico de Venezuela
HÉCTOR LÓPEZ ROJAS
Programa Nacional de Observadores

NON-MEMBER COUNTRIES – PAISES NO MIEMBROS

CANADA

WILLIAM SHAW
Department of Fisheries and Oceans

ESPAÑA - SPAIN

JAVIER ARIZ TELLERIA
Instituto Español de Oceanografía

EUROPEAN COMMUNITY – COMUNIDAD EUROPEA

ALAIN FONTENEAU
Institut de récherche pour le développement (IRD)

PERU

GLADYS CARDENAS QUINTANA
Instituto del Mar del Peru

INTERNATIONAL ORGANIZATIONS - ORGANIZACIONES INTERNACIONALES

VICTOR RESTREPO
International Commission for the Conservation of Atlantic Tunas (ICCAT)

NON-GOVERNMENTAL ORGANIZATIONS

PETER MEISENHEIMER
Consultant, Humane Society of the U.S.

IATTC - CIAT

ROBIN ALLEN, Director
PABLO ARENAS
WILLIAM BAYLIFF
RICHARD DERISO
EDWARD EVERETT
MARTIN HALL
MICHAEL HINTON
JAMES JOSEPH
MARK MAUNDER
ASHLEY MULLEN
JENNY SUTER
PATRICK TOMLINSON
GEORGE WATTERS

Appendix 2.

REVIEW OF TOPICS IN RESOLUTIONS

I. RESOLUTION ON FISH-AGGREGATING DEVICES (64th IATTC Meeting, July 1999)

3. *Establish a scientific working group to carry out comprehensive research, in conjunction with the IATTC staff, to include, but not be limited to*

(a) The relationship between catches of bigeye and yellowfin tuna and the maximum depth of FADs

There is an effect of the depth of FADs on the catches of bigeye, yellowfin and skipjack tunas. However, analyses suggests that the location and the time of year of FAD sets had more of an effect on capture per set of tunas than the characteristics of the FAD or the depth of the purse-seine net. The results suggest that the benefits of modifications to FAD and purse-seine net characteristics may be potentially less than changing fishing areas and seasons. Variation in the effect of net depth and FAD depth on capture per set by area or season may reflect spatial or temporal changes in the thermocline depth or other variation in the physical environment.

(b) The effect of the use of baited FADs on catch rates and size composition of the catch of tunas

The effect is unknown. It was agreed that research on this topic should not be given high priority, because even if there is a relationship, it would be difficult to monitor the use of bait.

(c) Estimates of natural mortality of the various populations of tunas

Few data usable for estimation of the natural mortality rates are available. Tagging is a good tool for obtaining such estimates. This should be directed toward small and medium fish, especially bigeye. The working group endorses a current pilot tagging experiment for bigeye tuna and strongly recommends the full-scale program being undertaken. The results should be compared with those being conducted in other parts of the world. The group noted that the new stock assessment model (A-SCALA) might be used to include estimation of natural mortality. The integration of tagging data in the model might be used to improve these estimates. The pattern of mortality by age used in the new analyses was generally thought to be better than those used previously. However, given the uncertainties in the remaining mortality it is essential that sensitivity analyses should be conducted.

(d) The establishment of a maximum number of sets on floating objects which the tuna fishery in the EPO can support

The answer to this question depends on the objectives because the three main species are caught with the same gear. If the objective is maximization of the catches of yellowfin and/or bigeye, there should be no sets on floating objects. If the sole objective is maximization of the catches of skipjack there should be no limit on the numbers of sets on floating objects. Conclusions on this subject are based on models in which all areas of the EPO are combined and thus may overestimate the effects of measures taken in one area on fish caught in another. The nature of the fishery on floating objects has changed considerably during the last five years. The fishery began around 1994, and experienced a significant ENSO (El Niño-Southern Oscillation) event in 1997-1998. Currently the age composition of bigeye in the catch is quite different to that in the early years. These changes make it difficult to predict the effect of management changes using past data.

(e) The catches of tunas and associated and dependent species in the fishery on floating objects between 130°W and 150°W

Up to now the number of sets and catches of tunas in association with floating objects in this area are small and restricting sets on FADs in this area will have little effect. It is noted that the recommendations of the second meeting of the Bycatch Working Group, held on April 4-6, 2000, state that the Commission should request that the Director evaluate further the effectiveness of other measures, such as area and time closures, to reduce the bycatches.

(f) The impact of permanent or temporary closure of areas to the use of FADs, especially in combination with other regulatory measures being considered by the Commission

It is noted that the recommendations of the second meeting of the Bycatch Working Group, held on April 4-6, 2000, state that the Commission should request that the Director evaluate further the effectiveness of other measures, such as area and time closures, to reduce the bycatches of tunas and other species. Other tuna management bodies are considering this type of measure and it would be useful for these organizations to work together to study the effects of this type of measure.

(g) The feasibility of a program to place observers on purse-seine vessels of less than 400 short tons carrying capacity and the appropriate level of observer coverage necessary to obtain reliable scientific information

A pilot program could be initiated to place observers on Class-5 purse-seiners, but it is more difficult to place them on Class-4 vessels and perhaps impractical to place them aboard smaller vessels. In addition, it would be costly to put observers on smaller vessels, so the trade-offs between logistics and cost versus precision of estimates should be considered. A coverage of about 25 percent would probably be adequate to initiate an observer program with potential changes based on data post-stratification and species targeted. Coverage of 25 percent is enough to detect doubling of effects for class 6 purse-seiners. This may be an underestimate for class 5 vessels. The cost of the program should be considered carefully.

II. RESOLUTION ON THE CONSERVATION AND MANAGEMENT OF BIGEYE TUNA IN THE EASTERN PACIFIC OCEAN (64th IATTC Meeting, July 1999)

3. *Establish a scientific working group to carry out comprehensive research, in conjunction with the IATTC staff, to include, but not be limited to:*

(a) an estimate of the natural mortality rate of bigeye tuna, and

It was noted that this question was addressed in item I 3. (c) above.

(b) an assessment of the impact on the stock of bigeye tuna of catches by purse-seine vessels of less than 400 short tons carrying capacity and longline vessels

The catch of bigeye by small purse-seiners has been about 10-15% of the catch of all purse-seiners and thus the impact would be between 10-15% of the total input of purse-seine catch. The IATTC staff should use the bigeye version of A-SCALA to carry out that research, approximating the effects of the catches of purse seiners with carrying capacities less than 363 metric tons and of longline vessels.

III. RESOLUTION ON BIGEYE TUNA (65th IATTC Meeting, October 1999)

3. *Convene a Working group prior to the meeting of the IATTC in June 200 to address the question of the methods for the collection of data for the fishery on fish-aggregating devices, and to recommend measures to improve the timeliness and accuracy of statistics needed to determine*

bigeye catches and landings, such that the reliability of calculations of catches and projections of catches into the future can be enhanced

The working group reviewed the IATTC data collection systems. The group recognized the improved and expanded sampling program presented by the IATTC staff in particular regarding simultaneous sampling for estimation of species composition and length frequency distributions. The group endorsed the new system of reporting the catches of tunas at frequent intervals by observers and recommended that effort should be made to include all purse-seine vessels. Sampling on land is difficult, as is the case in other areas, so the group strongly endorsed the idea of sampling fish at sea by electronic or photographic means.