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FAO GUIDELINES FOR THE CONSERVATION OF SEA TURTLES

In March 2005, the FAO Committee on Fisheries (COFI) endorsed the [report and recommendations of the FAO Technical Consultation on Sea Turtles Conservation and Fisheries](#) held in November 2004. It called for the immediate implementation by members and regional fisheries management organizations (RFMOs) of the guidelines for reducing sea turtle mortality in fishing operations (Appendix A) included in the report, as well as the other recommendations of the Consultation (Appendix B).

The IATTC has already undertaken various initiatives regarding sea turtles. Two IATTC resolutions address the conservation of sea turtles: [C-04-05](#), *Consolidated resolution on bycatch* (Sections 4 and 8; Appendix C), and [C-04-07](#), *Resolution on a three-year program to mitigate the impact of tuna fishing on sea turtles* (Appendix D). Also, observers on purse-seine vessels have been gathering data on observations of sea turtles and their interactions with the fishery since 1991. Since 2004, the Commission staff has been involved, in close cooperation with scientists from the US National Oceanic and Atmospheric Administration (NOAA), in the organization and implementation of a program to reduce catches of sea turtles in artisanal fisheries in Central and South America; further activities of this type are planned, in particular a joint project in Ecuador with the Overseas Fisheries Cooperation Foundation of Japan and the Ecuadorian fisheries authorities. The program, which draws on methods for releasing turtles researched and developed by NOAA, is supported by government fisheries agencies, the industry, artisanal fishers cooperatives, and non-governmental organizations (NGOs), including the Undersecretariat of Fisheries Resources of Ecuador, NOAA, the US Western Pacific Regional Fishery Council, World Wildlife Fund, The Ocean Conservancy, Defenders of Wildlife (Mexico), and the Asociación de Exportadores de Pesca Blanca of Ecuador (ASOEXPEBLA).

The IATTC staff led a seminar on experimental design for bycatch mitigation experiments at a meeting of the Red de Especialistas en Tortugas Marinas de Latinoamérica, and has organized several presentations on techniques for effective communication with fishing communities.

The IATTC has participated as an observer at meetings of the [Inter-American Convention for the Protection and Conservation of Sea Turtles](#) (IAC), with a view to cooperating closely on matters of mutual concern in the future, and the Secretary of the IAC has joined IATTC staff in workshops for fishers on sea turtle bycatches in Costa Rica. The staff is also involved in the organization of International Fishers Forum III, to be held in Japan in July 2005, on the mitigation of bycatches of seabirds and sea turtles.

In the staff's opinion, the IATTC resolutions, and other actions taken by the Commission and the staff, implement many of the relevant sections of the FAO Guidelines. However, there are several elements of the Guidelines, pointed out below, which are not currently included in the IATTC bycatch resolution or program to mitigate the impact of tuna fishing on sea turtles. The Commission might consider taking further steps to conserve sea turtles by addressing some of these elements with additional research or management measures.

Appendix A.

GUIDELINES TO REDUCE SEA TURTLE MORTALITY IN FISHING OPERATIONS

Preamble

The FAO Code of Conduct for Responsible Fisheries calls for sustainable use of aquatic ecosystems and requires that fishing be conducted with due regard for the environment. Some sea turtle stocks are seriously impacted by fishing and require urgent attention. Because of the critical status of these stocks a broad suite of measures is recommended that includes reduction of fishery-related mortality in addition to other conservation measures.

Because of the concern regarding the status of sea turtles and the possible negative effects of fishing on these populations, the twenty-fifth Session of the FAO Committee on Fisheries (2003) raised the question of sea turtle conservation and interaction with fishing operations and requested that a Technical Consultation be held on the subject matter to consider, *inter alia*, the preparation of guidelines to reduce sea turtle mortality in fishing operations. These guidelines respond to the request of the Committee on Fisheries (COFI) and have been developed on the basis of the report of the Expert Consultation, held in Rome in March 2004.

These guidelines are intended to serve as input to the preparation of FAO Technical Guidelines as well as to offer guidance to the preparation of national or multilateral fisheries management activities and other measures allowing for the conservation and management of sea turtles. These guidelines are voluntary in nature and non-binding. They apply to those marine areas and fisheries where interactions between fishing operations and sea turtles occur or are suspected to occur. They are global in scope but in their implementation national, subregional and regional diversity, including cultural and socio-economic differences, should be taken into account.

These guidelines are directed towards members and non-members of FAO, fishing entities, subregional, regional and global organizations, whether governmental or non-governmental concerned with fisheries management and sustainable use of aquatic ecosystems.

All activities associated with these guidelines should be undertaken with the participation and, where possible, cooperation and engagement of fishing industries, fishing communities and other affected stakeholders.

Implementation of the guidelines should be consistent with the Code of Conduct for Responsible Fisheries as well as with the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem with regard to ecosystem considerations and based on the use of best available science.

1. Fishing operations

A. Appropriate handling and release.

In order to reduce injury and improve chances of survival:

- (i) Requirements for appropriate handling, including resuscitation or prompt release of all bycaught or incidentally caught (hooked or entangled) sea turtles.
- (ii) Retention and use of necessary equipment for appropriate release of bycaught or incidentally caught sea turtles.

B. Coastal trawl

- (i) In coastal shrimp trawl fisheries, promote the use of turtle excluder devices (TEDs) or other measures that are comparable in effectiveness in reducing sea turtle bycatch or incidental catch and mortality.
- (ii) In other coastal trawl fisheries, collect data to identify sea turtle interactions and conduct where

needed research on possible measures to reduce sea turtle bycatch or incidental catch and mortality.

(iii) Implementation of successful methodologies developed as a result of B(ii).

C. Purse seine

(i) Avoid encirclement of sea turtles to the extent practical.

(ii) If encircled or entangled, take all possible measures to safely release sea turtles.

(iii) For fish aggregating devices (FADs) that may entangle sea turtles, take necessary measures to monitor FADs and release entangled sea turtles, and recover these FADs when not in use.

There is no requirement in the resolutions to monitor FADs, nor to recover them when not in use. A [system for marking FADs](#), a prerequisite for any monitoring program, was recommended by the staff in August 2003 and at the IATTC Meeting in June 2004. Also, there is no requirement in the resolutions to release turtles entangled in FADs, just a provision to encourage their release. Marking of fishing gear, which includes FADs is contemplated in the FAO Code of Conduct for Responsible Fisheries and the 1995 UN Fish Stocks Agreement

(iv) Conduct research and development of modified FADs to reduce and eliminate entanglement.

This is contemplated in Paragraph 8a of Resolution C-04-05, but to date little work has been done on this. At the request of the IATTC staff, Captain R. Stevenson developed and tested, on a limited basis, a design which replaced the webbing under FADs with ropes. In April 2004, information on alternative FAD designs, including this one, was circulated to governments, but no response was received.

(v) Implementation of successful methodologies developed as a result of C(iv).

Evidently, the implementation of this provision is dependent on the progress made with the previous item.

D. Longline

(i) Development and implementation of appropriate combinations of hook design, type of bait, depth, gear specifications and fishing practices in order to minimize bycatch or incidental catch and mortality of sea turtles.

This is contemplated in paragraph 2.2 of Resolution C-04-07, but the Commission has not established a program to put any of these provisions into practice. These matters were also extensively discussed at the [4th Meeting of the Working Group on Bycatch](#) in January 2004. Staff members have also participated in programs in Central and South America to promote the use of gears and techniques that reduce bycatches of sea turtles in artisanal fisheries, and a joint program with Ecuador and Japan is expected to start soon.

Recent research has shown positive results for

- Use of large circle hooks with no greater than a 10 degree offset, combined with whole fish bait. These measures have shown to be effective in reducing sea turtle interactions and mortality;
- Arrangement of gear configuration and setting so that hooks remain active only at depths beyond the range of sea turtle interaction; and
- Retrieval of longline gear earlier in the day and reducing soak time of hooks.

(ii) Research should include consideration of the impact of various mitigation measures on sea turtles, target species and other bycaught or incidentally caught species, such as sharks and seabirds.

(iii) Retention and use of necessary equipment for appropriate release of bycaught and incidentally

caught sea turtles, including de-hooking, line cutting tools and scoop nets.

E. Other fisheries

- (i) Assessment and monitoring of sea turtle bycatch or incidental catch and mortality in relevant fishing operations.
- (ii) Research and development of necessary measures for reducing bycatch or incidental catch or to control mortality in other fisheries with a priority on reducing bycatch or incidental catch in gillnet fisheries.
- (iii) In other setnet fisheries, collect data to identify sea turtle interactions and conduct when needed research on possible measures to reduce sea turtle bycatch or incidental catch and mortality.
- (iv) Implementation of successful methodologies developed as a result of E (ii) and (iii).

F. Other measures as appropriate for all fishing practices

- (i) Spatial and temporal control of fishing, especially in locations and during periods of high concentration of sea turtles.

No research has been done on this, and no measures have been introduced. The spatial and temporal restrictions imposed on the purse-seine fishery by IATTC resolutions do not take sea turtle distributions into account. Longline fisheries are subject only to total catch restrictions, with no limits on when or where they may fish.

- (ii) Effort management control especially if this is required for the conservation and management of target species or group of target species.
- (iii) Development and implementation, to the extent possible, of net retention and recycling schemes to minimize the disposal of fishing gear and marine debris at sea, and to facilitate its retrieval where possible.

2. Research, monitoring and sharing of information

A. Collection of information and data, and research

- (i) Collection of data and information on sea turtle interactions in all fisheries, directly or through relevant RFBs, regional sea turtle arrangements or other mechanisms.
- (ii) Development of observer programmes in the fisheries that may have impacts on sea turtles where such programs are economically and practically feasible. In some cases financial and technical support might be required.

The AIDCP On-Board Observer Program gathers extensive data on observations of sea turtles, but the IATTC currently has no observer program for distant water longline vessels. Various member countries have observer programs that cover some longline vessels, but the Commission is not involved in these, nor has it had access to any data collected.

- (iii) Joint research with other states and/or the FAO and relevant RFBs.
- (iv) Research on survival possibilities of released sea turtles and on areas and periods with high incidental catches.

The IATTC has not established a systematic research program for sea turtles that includes these matters.

- (v) Research on socio-economic impacts of sea turtle conservation and management measures on fishers and fisheries industries and ways to improve communication.

The programs referred to under D(i) above are largely concerned with increasing awareness of the

importance of sea turtle conservation among artisanal fishing communities; however, the staff does not have the expertise to study any socio-economic impacts.

- (vi) Use of traditional knowledge of fishing communities about sea turtle conservation and management.

B. Information exchange

- (i) Sharing and dissemination of data and research results, directly or through relevant RFBs, regional sea turtle arrangements or other mechanisms.
- (ii) Cooperation to standardize data collection and research methodology, such as fishing gear and effort terminology, database development, estimation of sea turtle interaction rates, and time and area classification.

The AIDCP On-Board Observer Program and the sea turtle program in central and south America use standardized procedures for collecting and processing data, but no such system exists for other fisheries.

C. Review of the effectiveness of measures

- (i) Continuous assessment of the effectiveness of measures taken in accordance with these guidelines.
- (ii) Review of the implementation and improvement of measures stipulated above.

3. Ensuring policy consistency

- A. Maintaining consistency in management and conservation policy at national level, among relevant government agencies, including through inter-agency consultations, as well as at regional level.
- B. Maintaining consistency and seeking harmonization of sea turtle management and conservation-related legislation at national, sub-regional and regional level.

4. Education and training

- A. Preparation and distribution of information materials such as brochures, manuals, pamphlets and laminated instruction cards.

Both Resolutions C-04-05 and C-04-07 call for the distribution of informational materials on sea turtles to fishermen in the EPO, but no provision is made for funding the preparation of these materials. Donations from NOAA, ASOEXPEBLA, and Defenders of Wildlife-Mexico have paid for the distribution of some materials.

B. Organization of seminars for fishers and fisheries industries on:

- Nature of the sea turtle-fishery interaction problem
- Need to take mitigation measures
- Sea turtles species identification
- Appropriate handling and treatment of bycaught or incidentally caught sea turtles
- Equipment to facilitate rapid and safe release
- Impacts of their operations on sea turtles
- Degree to which the measures that are requested or required to adopt will contribute to the conservation, management and recovery of sea turtle population.
- Impacts of mitigation measures on profitability and success of fishing operations
- Appropriate disposal of used fishing gear

- C. Promotion of awareness of the general public of sea turtle conservation and management issues, by government as well as other organizations

5. Capacity building

- A. Financial and technical support for implementation of these guidelines in developing countries.
- B. Cooperation in research activities such as on status of sea turtle incidental catch in coastal and high seas fisheries and research at foraging, mating and nesting areas.
- C. Establishment of a voluntary support fund.
- D. Facilitation of technology transfer.

6. Socio-economic and cultural considerations

- A. Taking into account :
 - (i) socio-economic aspects in implementing sea turtle conservation and management measures.
 - (ii) cultural aspects of sea turtles interactions in fisheries as well as integration of cultural norms in sea turtle conservation and management efforts.
 - (iii) sea turtle conservation and management benefits to fishing and coastal communities, with particular reference to small-scale and artisanal fisheries.
- B. Promotion of the active participation and, where possible, cooperation and engagement of fishing industries, fishing communities and other affected stakeholders.
- C. Giving sufficient importance to participatory research and building upon indigenous and traditional knowledge of fisherfolk.

7. Reporting

Reporting on the progress of implementation of these guidelines as part of Members' biennial reporting to FAO on the Code of Conduct for Responsible Fisheries and, as appropriate, and, voluntarily, to other relevant bodies such as regional sea turtle conservation and management arrangements.

8. Consideration of other aspects of sea turtle conservation and management

Fishers, research institutions, management authorities and other interested parties dealing with fisheries conservation and management should collaborate with relevant conservation and management bodies, at national, sub-regional and regional level, in the following subject matters:

- A. Collection and sharing of information on sea turtles relative to:
 - (i) Biology and ecology (population dynamics, stock identification, behaviour, diet selection, habitats, breeding, nesting, foraging, migration patterns/areas, nursery grounds, etc).
 - (ii) Sources of mortality other than fisheries.
 - (iii) Status of sea turtle populations, including human-related threats.
- B. Improvement and development of conservation and management measures applied throughout the sea turtle life cycle (habitat/ nesting beach protection, enhancement of sea turtle populations).
- C. Promotion, as appropriate, of participation in regional sea turtle conservation and management arrangements with a view to cooperate on sea turtle conservation and management.

Appendix B.

Recommendations of the FAO Technical Consultation on Sea Turtles Conservation and Fisheries

November 2004; approved by COFI, March 2005

For regional fisheries bodies (RFBs):

- (a) Pay urgent attention to the issue of interactions between fisheries and sea turtles, especially in regard to the collection of statistics on bycatch and fisheries interactions and the adoption of mitigation measures.
- (b) Develop networks with a view to sharing information on mitigation measures adopted and experiences undertaken at national, regional and global levels.

For FAO Member Countries:

- (a) Pay urgent attention to the sea turtle stocks and areas identified of greatest threat.
- (b) Give consideration to the implementation of the elements outlined in the *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations*.
- (c) Cooperate to broaden the mandates of RFBs to reduce the impacts of fishing on sea turtle populations.
- (d) Collect and make available, data and information on trends in sea turtle-fishery interactions, including trends in fishery-related mortalities.
- (e) Support the initiatives with respect to sea turtle conservation and fisheries interactions that FAO will develop and, in particular those member countries in a position to do so, mobilize the necessary funding for their implementation.

For all:

- (a) Collaborate in considering the adoption and implementation of the guidelines, with special consideration to: (i) fishing operations; (ii) research, monitoring and sharing of information; (iii) ensuring policy consistency; (iv) education and training; (v) capacity building, and (vi) socio-economic and cultural considerations, as outlined in the *Guidelines to Reduce Sea Turtle Mortality in Fishing Operations*.
- (b) Harmonize sea turtle conservation and management initiatives within regions.
- (c) Promotion, as appropriate, of participation in regional sea turtle conservation and management arrangements with a view to cooperate on sea turtle conservation and management.

RESOLUTION C-04-05

CONSOLIDATED RESOLUTION ON BYCATCH

ACTIONS BY GOVERNMENTS

Contracting Parties, cooperating non-Parties, fishing entities and regional economic integration organizations (collectively “CPCs”) shall:

4. Sea turtles:

- a. Require fishermen on vessels targeting species covered by the Convention to promptly release unharmed, to the extent practicable, all sea turtles.
- b. Encourage all the CPCs to voluntarily provide the Commission with all data on bycatches of sea turtles in all fisheries targeting species covered by the Convention, recognizing that a comprehensive approach is necessary to deal effectively with sea turtle issues;
- c. 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;
- d. Implement the following actions:
 - i. Train crews of vessels targeting species covered by the Convention, particularly those without observers, in techniques for handling turtles to improve survival after release.
 - ii. Prohibit vessels targeting species covered by the Convention from disposing of salt bags or any other type of plastic trash at sea.
 - iii. Encourage the release, when practicable, of sea turtles entangled in FADs and other fishing gear.
 - iv. Foster the recovery of FADs when they are not being used in the fishery.
 - v. Take measures, including providing assistance, necessary to ensure that longline vessels carry on board the necessary equipment (*e.g.* de-hookers, line cutters and scoop nets) for appropriate release of incidentally caught sea turtles
- e. Require specific measures for encircled or entangled sea turtles, as follows:
 - i. 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.
 - ii. If a turtle is entangled in the net, net roll should stop as soon as the turtle comes out of the water and should not start again until the turtle has been disentangled and released.
 - iii. If a turtle is brought aboard the vessel, all appropriate efforts to assist in the recovery of the turtle should be made before returning it to the water.
- f. Educate fishermen through information dissemination activities, including distributing informational materials and organizing seminars on, *inter alia*, reducing bycatches of sea turtles and safe handling of incidentally caught sea turtles to improve their survivability.

8. Sea turtles:

- a. 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.
- b. Educate fishermen through information dissemination activities, including distributing informational materials and organizing seminars on, *inter alia*, reducing bycatches of sea turtles and safe handling of incidentally caught sea turtles to improve their survivability.

- c. Compile manuals produced by the CPCs for safe handling and release of incidentally caught sea turtles by all gear types, and make those manuals available to all the CPCs for their use.

Appendix D.

RESOLUTION C-04-07

**RESOLUTION ON A THREE-YEAR PROGRAM TO MITIGATE THE
IMPACT OF TUNA FISHING ON SEA TURTLES**

**A. COLLECTION AND ANALYSIS OF ALL AVAILABLE INFORMATION ON
INTERACTIONS WITH SEA TURTLES**

1. For the purpose of collection of statistically reliable scientific data regarding bycatch of sea turtles from fisheries

- a. Contracting Parties, cooperating non-Parties, fishing entities and regional economic integration organizations (collectively “CPCs”) are encouraged to collect, and provide to the IATTC, all available information on fishery interactions with sea turtles in the eastern Pacific Ocean (EPO), including both incidental and direct catches and other impacts on sea turtle populations.
- b. CPCs should develop other techniques, including electronic and other monitoring devices, to improve the collection of scientific data regarding sea turtle bycatch.

2. High priority of research in coastal habitat areas of sea turtles

Interested CPCs, in cooperation with the IATTC, should assign a high priority to conducting research on the interaction between small-scale artisanal fisheries and bycatch of sea turtles in coastal areas.

3. Review of information and data on sea turtles

CPCs and, as appropriate, the IATTC should review available information and data regarding:

- a. biology of sea turtles, including, but not limited to, behavior, diet selection, migration pattern, and nesting areas and nursery grounds.
- b. all sea turtle conservation efforts undertaken by CPCs and other organizations.

To this end, the IATTC should intensify, as appropriate, cooperation with FAO, other regional fisheries management organizations and organizations for sea turtle conservation.

B. MITIGATION MEASURES FOR REDUCING SEA TURTLE BYCATCH

1. Review of effectiveness of mitigation measures

The Commission should review the effectiveness of the mitigation measures and their impact on catches of both sea turtles and target species.

2. Improvement of fishing gears

CPCs and the IATTC should continue to improve techniques to further reduce sea turtle bycatch, and should expeditiously undertake research to determine the effectiveness of the use of circle hooks and other measures in reducing the incidental catch and mortality of sea turtles, and assess their effects on the catch of target species.

C. INDUSTRY EDUCATION

1. Preparation and distribution of informational materials

CPCs and the IATTC should continue wide distribution of informational materials to fishermen who operate in the EPO to assist them in treating incidentally-caught sea turtles properly to improve their survivability.

2. Convening meetings for fishermen

CPCs and the IATTC should continue and expand organization of seminars for fishermen to enable them to treat incidentally-caught sea turtles properly to improve their survivability.

D. CAPACITY BUILDING IN COASTAL DEVELOPING COUNTRIES

The Commission should establish a voluntary fund to assist coastal developing CPCs in improving conservation of sea turtles.

E. REPORTING

CPCs should report to the IATTC, in a timely manner, as appropriate, information relevant to this program.