
DRAFT AGENDA FOR THE 4TH SESSION OF THE WORKING PARTY ON ECOSYSTEMS & BYCATCH, 20-22 OCTOBER 2008

1. REVIEW OF THE DATA ON BYCATCH

- Review of the data available in the IOTC database (Secretariat)
- Data from other sources

2. SHARKS

- Papers as provided by participants
- Review of any National Plans of Action for the reduction of shark bycatch in tuna fisheries
- Report on the outcomes of the meeting of the Convention on Migratory Species (Sharks) in December 2007.
- IUCN report on the global status of oceanic pelagic sharks and rays
- Advice on interactions between sharks and tuna fisheries in the Indian Ocean

3. SEABIRDS

- Papers provided by participants
- Review of any National Plans of Action for Reducing Incidental Catches of Seabirds in Longline Fisheries
- Update from Birdlife International
- Advice on interactions between seabirds and tuna fisheries in the Indian Ocean

4. TURTLES

- Papers provided by participants
- Review of any National Plans of Action for the reduction of turtle bycatch in tuna fisheries
- Update from IOsea
- Advice on interactions between sea turtles and tuna fisheries in the Indian Ocean

5. MAMMALS

- Papers provided by participants

6. ECOLOGICAL RISK ASSESSMENT FOR BYCATCH MONITORING, ANALYSIS AND MANAGEMENT, IN AN RFMO CONTEXT

7. RESEARCH RECOMMENDATIONS AND PRIORITIES

8. OTHER BUSINESS

DOCUMENTS ATTACHED:

- 2007 Recommendations and work plan
- TOR for the WPEB

NOTES FROM THE SCIENTIFIC COMMITTEE IN 2007

(from IOTC-2007-SC-R)

THE SC ENDORSED THE FOLLOWING RECOMMENDATIONS AND WORKPLAN OF THE WORKING PARTY ON ECOSYSTEMS AND BYCATCH

Using observers to collect data on bycatch

The WPEB strongly recommended that a high level of regional coordination be provided by the Commission covering data collection, data exchange, training and the development of guidelines for the operational aspects of such programmes.

General bycatch

The WPEB identified there is an urgent need to:

- Quantify the effects of fisheries on non-target species and overall on marine ecosystems.
- Develop mitigation measures to reduce adverse effects on these species.

Sharks

The WPEB strongly recommended that shark research should be a major priority for national research bodies.

The WPEB committed to work intersessionally to develop a list of priority shark species and status indicators to enable the resources be monitored to the extent possible. To this end the WPEB recommended that the following preliminary list (Table 1) be refined as a result of a risk analysis over the coming year. The WPEB agreed that given the level of exploitation of blue shark work on this species should commence immediately.

The WPEB recommended that the following work proposal be undertaken:

Recognizing that many CPCs have already developed National Plans of Actions for the Conservation and Management of Sharks (NPOA-Sharks) WPEB recommends the following actions:

1. Species identification and biological data collection:

- a. IOTC to develop guidelines on sharks identification and data collection
- b. CPCs, which conduct research cruises and observer programmes are requested to develop a digital photo archive of shark species recorded during cruises and make it available to all CPCs through IOTC.
- c. CPCs are requested to develop activities to collect data and obtain relationships between fin weight and body weight of sharks and report their results to IOTC as soon as they become available, but at the latest by 2010.
- d. IOTC to develop a regional training module for observers and scientists aimed to improve shark biological data collection and precision.
- e. These training activities will extend in the future on all the bycatch species in line with IOTC's long-term goal to develop an ecosystem-based approach to fisheries management.

2. Fisheries statistics

- a. Each CPC should submit existing fisheries statistics on bycatch, including historical fisheries data and fin trade data to IOTC as soon as they become available, but at the latest by 2009.
- b. As required by IOTC Resolution 05/05 *Concerning the conservation of sharks caught in association with fisheries managed by IOTC*, each CPC should, as a matter of priority, develop obligatory requirements in their national fisheries statistics systems to ensure collection of reliable statistics on shark catches and discards (by species in numbers of individuals and total weight) and submit these data to IOTC.

3. Research and management

- a. Each CPC should identify the principal shark species involved in their national fisheries either as target species or as bycatch,
- b. Those CPCs that have not yet prepared a NPOA-Sharks should do so.
- c. Each CPC should identify research priorities for sharks involved in the national fisheries based on species life history traits and overall vulnerability to fishing pressure. National research as well as the list of endangered species developed by IUCN should be used for such needs.

- d. Each CPC should identify their national needs and relevant funding requirements in order to highlight shark sustainability issues to the public and to International Funding Agencies.
- e. Research on population and demographic structure of shark populations involved in the IOTC managed fisheries.
- f. Submission of existing collections of biological data to IOTC at the finest level available (including data on length frequency distribution, sex ratio, fishing gear, time area strata).

4. Other actions

- a. IOTC is requested to continue to enlarge the compilation of existing and published data on life history patterns of the sharks listed.
- b. All CPCs to develop mitigation measures and fishing gear aimed at reducing non-targeted shark bycatch in the IOTC managed fisheries (e.g. circle hooks, shark scaring bait, and other shark-scaring devices).
- c. When sufficient information is compiled, IOTC should coordinate a regional plan of action for conservation and management of sharks (RPOA-Sharks), with the active participation of CPCs.

Seabirds

The WPEB supported the following research on seabird mitigation measures (Appendix VI of the WPEB report) and encouraged scientists to contribute to this work.

Mitigation measure	Research needs
Night setting	Data on current time of sets by WCPFC fisheries. Effect of night sets on target catch for different fisheries.
Side setting	Currently untested in the Southern Ocean against seabird assemblages of diving seabirds and albatrosses - urgent need for research. In Japan, NRIFS will continue testing in 2007.
Single bird scaring line	Optimal design for pelagic fisheries under development: refine to minimise tangling, optimise aerial extent and positioning, and ease hauling/retrieval. Two studies in progress developing optimal bird scaring lines for pelagic fisheries including Washington Sea Grant and Global Guardian Trust in Japan. Controlled studies demonstrating their effectiveness in pelagic fisheries remain very limited.
Paired bird scaring lines	Development and trialling of paired bird scaring line systems for pelagic fisheries.
Weighted branch lines	Mass and position of weight both affect sink rate. Further research on weighting regimes needed. Testing of safe-leads in progress. Where possible, effect on target catch as well as seabird bycatch should be evaluated. Research on use of integrated-weight branch lines (wire trace) in pelagic fisheries also needs further exploration.
Blue dyed bait	Need for tests in Southern Ocean.
Line shooter	Data needed on effects on hook sink rates in pelagic fisheries.
Underwater setting chute	Design problems to overcome
Management of offal discharge	Further information needed on opportunities and constraints in pelagic fisheries (long and short term).
Thawing bait	Evaluate sink rate of partially thawed bait.

Sea turtles

The WPEB recommended that the following research be undertaken on sea turtles:

- Ongoing research to test the efficacy of circle hooks in reducing sea turtle mortality.
- Estimate the levels of sea turtle mortality due to various fishing methods, including long line, gillnets and purse seine. With respect to purse seine – also estimate the mortality caused by the use of FADs on sea turtles, by considering the various categories of FADs used by the PS fleets, in order to propose agreed mitigation measures to reduce this mortality.
- Describe the sources and scale of ghostfishing taking place in the Indian Ocean - including mortality due to lost FADs.

Marine mammals

While the WPEB agreed that marine mammals were, at this stage, a lower priority than sharks, sea birds and sea turtles, future work in this area is encouraged. Some recommendations for future work in this area included:

- Analysis of purse-seine fishery log-books in order to update the original information on marine mammal diversity and distribution within the IOWS as compiled for baleen whales by Robineau (1991) using data from the period 1982 to 1985
- Review the existing marine mammal data in the IOTC databases
- Encouragement of national scientists to make reports on the sightings made by observers of all marine mammals observed in operations within the IOTC.

Ecosystem approaches

The WPEB recommended that analyses of the purse seine observer data be undertaken to compare species diversity over time – starting in the 1980's. This analysis should also examine the spatial interactions between whales and the fisheries with reference to the Indian Ocean whale sanctuary.

The WPEB also recommended that the data from the historical Soviet fishing operations in the Indian Ocean also be examined in an attempt to understand changes pelagic diversity, and also identify hotspots and which species are likely to interact with the fisheries.

TERMS OF REFERENCE FOR THE IOTC WORKING PARTY ON ECOSYSTEMS AND BYCATCH (WPEB)

1. Monitoring

- Create and maintain an inventory of non-target, associated and dependent species caught by fleets targeting tuna and tuna-like species in the Indian Ocean.
- Improve conventional statistics (catch, effort, size) of species under the IOTC mandate that are caught incidentally in non-targeted fisheries.
- Monitor and improve information on interactions with species that are not under the IOTC mandate, with emphasis on those species of interest to the Commission and for which no Species Group has been established (e.g., sharks, sea turtles and sea birds).
- Facilitate access by scientists to oceanographic and environmental data.

2. Research

- Evaluate the relative impact of the different abiotic and biotic factors (including oceanographic and climate phenomena, directed and incidental fishing, predation, competition, pollutions and other human impacts) that affect the abundance, distribution and migration of IOTC species.
- Characterize main feeding and reproductive habitats of IOTC species.
- Characterize the volume, composition and disposition of non-target species that are caught incidentally in tuna and tuna-like fisheries within the IOTC Convention area.
- Investigate trophic interactions of IOTC species.
- Investigate the impact that changes in fishing gears or fishing technology have on the catch of target and non-target species.

3. Modelling

- Develop and monitor reference points and indicators that explicitly incorporate ecosystem considerations.
- Participate in the development of simulation, dynamic and statistical models focusing on mixed-fisheries, multi-species, by-catch and ecosystem issues.

4. Advice

- Develop mechanisms which can be used to better integrate ecosystem considerations into the scientific advice provided by Scientific Committee to the Commission.
- Investigate through operational models, potential benefits at an ecosystem level of alternative management strategies, such as time-area closures.
- Advise on the impacts of tuna and tuna-like fisheries on the populations of non-target species of interest to the Commission.