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**REVISIONS TO CMM 2008-03  
CONSERVATION AND MANAGEMENT MEASURE OF SEA TURTLES**

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**United States of America**

## **Revisions to CMM 2008-03 Conservation and Management Measure of Sea Turtles**

### **Proposal by the United States of America to the Fifteenth Regular Session of the Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean**

#### **Explanatory Note**

##### **Mitigation in longline fisheries**

The current sea turtle measure, CMM 2008-03, entered into effect in 2009. The measure requires, in paragraph 7, that CCMs with longline vessels that fish for swordfish in a shallow-set manner use at least one of the following measures to mitigate the capture of sea turtles: i) use large circle hooks with offsets of no more than 10 degrees; ii) use whole finfish for bait; iii) apply an alternative measure reviewed by the WCPFC's Scientific Committee (SC) and Technical and Compliance Committee and approved by the Commission; or iv) be granted an exemption on the basis of minimal interactions as determined by the SC.

In 2016, CCM compliance with obligations under CMM 2008-03 was assessed under the WCPFC Compliance Monitoring Scheme. There were extensive discussions on the specific requirements of paragraph 7, particularly the meanings of the terms "fish for" and "shallow-set manner", and it was noted that consideration should be given to updating the measure (2016 Final CMR Executive Summary, paragraph 17).

Additionally, the WCPFC convened two workshops in 2016 that were funded by the ABNJ (Common Oceans) Tuna project to analyze the effectiveness of sea turtle mitigation in Pacific longline fisheries with respect to rates of interaction and mortality. The workshops were attended by representatives from 13 CCMs, as well as representatives from IGOs and NGOs. Utilizing confidentially held fishery observer data from the Secretariat of the Pacific Community (SPC) member countries, as well as data accessed under special confidentiality arrangements with Chinese Taipei, Japan and Réunion, SPC compiled a dataset representing over 2,300 turtles caught by 34 fleets across the Pacific between 1989-2015.

The workshops focused on analyzing operational and environmental factors associated with longline fisheries interactions with leatherback, loggerhead, green and olive ridley sea turtles. The workshops relied on baseline data and a range of fishing effort scenarios to estimate the relative effectiveness of various mitigation measures in reducing sea turtle interactions. The workshops estimated the effectiveness of small and large circle hooks, finfish bait, and the removal of the first and/or second hooks closest to the floats to mitigate sea turtle interactions and mortalities in Pacific longline fisheries. The workshop categorized small circle hooks as having a minimum width of 4.0 cm or smaller, and large circle hooks having a minimum width of 4.4 cm or larger. The following conclusions were reached by the workshops based on

predictive modeling efforts<sup>1</sup>:

1. For all four sea turtle species there would be limited reductions in interactions, and even more limited reductions in at-vessel mortalities, resulting from strengthening mitigation for only the fisheries already regulated by CMM 2008-03 (i.e., self-identified shallow-set effort targeting swordfish).
2. For all four sea turtle species, expansion of mitigation measures to all shallow-set fisheries would deliver substantially weaker reductions in at-vessel mortalities compared to mitigation in deep-set fisheries, due to lower at-vessel mortalities in shallow set fisheries, and because some CCMs have already implemented mitigation based on CMM 2008-03 for their shallow-set swordfish fisheries.
3. For all four sea turtle species, additional deep-set mitigation measures would deliver stronger reductions in at-vessel mortalities compared to interactions. This is a result of the fact that sea turtles caught in deep sets have a higher probability of at-vessel mortality due to asphyxiation, as documented in previous studies.
4. For all four sea turtle species combined, mitigation measures in deep-set fisheries would result in a greater reduction in overall interactions than expansion of mitigation measures to all shallow-set fisheries. Although interactions are more likely in shallow sets, the greater amount of effort in deep-set fisheries (4 times greater effort in deep-set than shallow-set fisheries) contributes to this result.
5. For all four species the effect of large (minimum width of 4.4 cm or larger) circle hooks in reducing interactions is greater than the effect of finfish bait, but the degree of difference varies across species and across sectors (i.e. shallow versus deep).
6. In terms of reducing both interactions and at-vessel mortalities in deep-set fisheries, mitigation involving removal of the hook position closest to the float would be similar in effectiveness to changing to finfish bait. Removal of the two hook positions closest to the float would be similar in effectiveness to changing to large circle hooks.
7. The effect of removing the two hook positions closest to the float would be greater than removing only the first hook positions closest to the float. However, the difference varies by species, with the weakest mitigation effect for leatherback sea turtles, which tend to interact with longline gear at greater depth than the other species.

Recognizing both the difficulty in assessing compliance with the obligations in CMM 2008-03 and the outcomes of the ABNJ workshops, as noted in paragraph 341 of the TCC14 Summary Report, “*TCC14 recommended to WCPFC15 that it adopt revisions to paragraph 7 of CMM 2008-03 that remove ambiguities in the scope of application of the measure*”.

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<sup>1</sup> Common Oceans (ABNJ) Tuna Project. 2017. Joint Analysis of Sea Turtle Mitigation Effectiveness. WCPFC-SC13-2017/EB-WP-10. Available at <https://www.wcpfc.int/node/29568>.

Based on the recommendation from TCC14, and given these conclusions of the workshops, as well as other recent studies that lend additional support to the effectiveness of large circle hooks and finfish bait in reducing sea turtle bycatch in shallow-set fisheries<sup>2</sup>, the United States believes specific mitigation requirements should be established for deep-set longline fisheries in addition to those currently in place for shallow-set longline fisheries. We are proposing that all longline vessels be required to use at least one of the following mitigation methods: (1) large circle hooks; (2) whole finfish for bait; or (3) another mitigation measure, plan, or activity that has been reviewed by the Scientific Committee and the Technical and Compliance Committee and approved by the Commission.

An approach like this would remove the ambiguities in the existing measure with respect to the meanings of “fish for” and “shallow-set manner.” Removing the ambiguity regarding the vessels and activities to which the current requirements apply would result in additional reductions in at-vessel mortalities.

Based on the modeling exercise in the ABNJ report, the anticipated reduction in sea turtle interactions across all species are expected to be in the range of 6-19% for shallow-set vessels that do not target swordfish (i.e., for vessels not subject to the mitigation requirements in the current CMM) depending on which mitigation option is chosen<sup>3</sup>. For the deep-set fisheries, where interaction rates are generally low but mortality rates from interactions are high, we anticipate a reduction in at-vessel mortalities between 11 and 38% depending on the species and the selected mitigation option (Table 1).

Table 1. Anticipated reductions in at-vessel mortalities in deep-set fisheries for whole finfish bait or large circle hooks by species. Summarized from the ABNJ report.

Sea Turtle Species	Finfish bait (percent reduction)	Large circle hook (percent reduction)
Loggerhead	11.3	36.8
Olive ridley	14.0	36.0
Green	13.7	34.6
Leatherback	15.3	38.5

Based on studies conducted in the Pacific and Atlantic we do not anticipate any reduction in target species catch rates<sup>4</sup>.

<sup>2</sup> Swimmer Y., Gutierrez A., Bigelow K., Barcelò C., Schroeder B., Keene K., Shattenkirk K., and Foster D.G. 2017. Sea Turtle Bycatch Mitigation in U.S. Longline Fisheries. *Frontiers in Marine Science*. Vol. 4, Article 260, August 2017

<sup>3</sup> See Figure 28 of the ABNJ report.

<sup>4</sup> Reinhardt, James F., et al. "Catch rate and at-vessel mortality of circle hooks versus J-hooks in pelagic longline fisheries: A global meta-analysis." *Fish and Fisheries* 19.3 (2018): 413-430.

## REVISIONS TO CMM 2008-03 ON SEA TURTLES

### Explanatory Note Addressing CMM 2013-06 Criteria

CMM 2013-06 requires that in considering any new proposal, the Commission shall apply the following questions to determine the nature and extent of the impact of the proposal on SIDS and territories in the Convention Area. After consultations with some of the SIDS and territories that would be affected by this proposal, the United States has prepared responses.

*1) Who is required to implement the proposal?*

All CCMs with longline vessels that fish in the Convention Area, for species covered by the Convention, would be required to implement the proposed revised mitigation measures.

*2) Which CCMs would this proposal impact and in what way(s) and what proportion?*

The proposed revisions would impact all CCMs with longline vessels that fish in the Convention Area, for species covered by the Convention. CCMs would be required to implement additional mitigation measures as outlined in the proposed revisions.

*3) Are there linkages with other proposals or instruments in other Regional Fisheries Management Organizations or international organizations that reduce the burden of implementation?*

Conclusions from recent workshops held by the ABNJ (Common Oceans) Tuna project to analyze the effectiveness of sea turtle mitigation in Pacific longline fisheries have highlighted the effectiveness with respect to sea turtle bycatch mitigation of the proposed revisions for longline fisheries.

Other tuna RFMOs (IATTC, IOTC and ICCAT) incorporate provisions in their sea turtle resolutions to encourage their members to contribute to capacity building activities or voluntary funds that support developing states, and in IATTC's case coastal state developing states, in their implementation of mitigation measures and other requirements as prescribed in their respective CMMs for sea turtles. However, there no specific actions to directly assist to reduce or avoid the burden of implementation.

*4) Does the proposal affect development opportunities of SIDS?*

There may be administrative work necessary to implement the additional mitigation measures. However, it is not anticipated that the proposal will affect development opportunities for SIDS.

*5) Does the proposal affect SIDS domestic access to resources and development aspirations?*

It is not expected that the proposed revisions would affect SIDS domestic access to resources or development aspirations.

*6) What resources, including financial and human capacity, are needed by SIDS to implement the proposal?*

Technical assistance might be needed by some SIDS and territories to revise national legislative and policy instruments. Resources to develop awareness materials and outreach might be needed to inform industry of the changes.

7) *What mitigation measures are included in the proposal?*

A delay in effectiveness, until 1 January 2020, is proposed to allow for legal implementation (including changes applied as part of annual licensing schedules, and applicable terms and conditions), and outreach to industry.

8) *What assistance mechanisms and associated timeframe, including training and financial support, are included in the proposal to avoid a disproportionate burden on SIDS?*

CMM 2008-03, paragraph 10, authorizes the Secretariat to obligate resources to the SRF to be used to assist developing State Members and Territories in implementing the FAO Guidelines to Reduce Sea Turtle Mortality, and paragraph 11 encourages CCM contributions to the SRF to support implementation efforts for this CMM. Noting the current discussions on SRF, CCMs, and Observers could be encouraged to contribute to the SRF specifically for the purpose of implementing this proposal.

## CONSERVATION AND MANAGEMENT OF SEA TURTLES

*The Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean;*

*In accordance with the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean:*

*Recognizing the ecological and cultural significance of all species of sea turtles in the western and central Pacific Ocean (WCPO);*

*Further recognizing that the five marine turtle species in the WCPFC Convention Area are threatened or critically endangered;*

*Considering the adverse effects of fishing for highly migratory fish stocks on some populations of sea turtles in the WCPO through capture, injury and mortality;*

~~*Recalling that the United Nations Food and Agriculture Organization (FAO) endorsed Guidelines to Reduce Sea Turtle Mortality in Fishing Operations at its twenty-sixth Session of the Committee on Fisheries, held in March 2005, and recommended their implementation by regional fisheries bodies and management organizations;*~~

~~*Noting that recent international scientific studies using large circle hooks in shallow-set pelagic longline fishing targeting swordfish show, when compared to conventional hooks, significantly lower sea turtle catch rates without undue adverse effects on catch rates of target species;*~~

~~*Further noting that scientific studies indicate circle hooks' further mitigative effects for sea turtles and other incidentally caught species in terms of post-release mortality, as the hooking locations tend to be such that resultant injuries are less severe than with conventional hooks;*~~

~~*Further noting that regardless of what hook type is used, international scientific studies using finfish bait show when compared to squid bait, significantly lower sea turtle catch rates in shallow-set pelagic longline swordfish fisheries;*~~

~~*Acknowledging that the Commission has adopted measures and reporting requirements for sea turtle interactions in longline fisheries that fish for swordfish in a shallow-set manner;*~~

~~*Deeply concerned that the Pacific leatherback (*Dermochelys coriacea*) subpopulations have declined drastically over the last three decades;*~~

~~*Guided by recent work that has led to advancements in best practices and technologies to avoid interactions and/or reduce the severity of interactions with sea turtles, including ÷*~~

~~*WCPFC and Common Oceans (ABNJ) Tuna Project workshops (2016) on the Joint Analysis of*~~

Sea Turtle Mitigation Effectiveness and scientific studies that indicate that the use of large circle hooks and fish bait, independently and together, reduce the rate of interaction and significantly decreases sea turtle bycatch when used in shallow and deep-set pelagic longline fishing;

Acknowledging that many countries have undertaken circle hook trials in their longline fisheries in the last decade;

Affirming that additional measures should be undertaken to reduce sea turtle bycatch and mortality in tuna fisheries;

Acknowledging that relatively simple proactive and reactive efforts on the part of fishermen can serve to both avoid sea turtle interactions and minimize the adverse consequences of such interactions when they occur;

~~Noting that shallow set longline fisheries also pose significant risks to vulnerable seabird populations in higher latitudes it necessary to achieve a balance in mitigation requirements across species vulnerable to longline interactions;~~

~~Recognizing that the Inter American Tropical Tuna Commission (IATTC) adopted, at its 75th meeting, a Resolution to Mitigate the Impact of Tuna Fishing Vessels on Sea Turtles that includes mandatory provisions to apply to purse seine and longline vessels;~~

~~Recalling Article 22 of the Convention, which provides for cooperation with other organizations, particularly the IATTC, with a view to avoiding duplication of, and achieving consistency in, conservation and management measures;~~

Adopts, in accordance with Articles 5 and 10 of the Convention, that:

1. Commission Members, Cooperating non-Members and participating Territories (CCMs) will implement, as appropriate the FAO Guidelines to Reduce Sea Turtle Mortality in Fishing Operations and to ensure the safe handling of all captured sea turtles, in order to improve their survival.
2. ~~Beginning in 2009,~~ CCMs shall report to the Commission in Part 2 of their annual reports the progress of implementation of the FAO Guidelines and this measure, including information collected on interactions with sea turtles in fisheries managed under the Convention.
3. All data collected by the WCPFC Regional Observer Program (ROP), shall be reported to the Commission as provided in paragraph 2 above or as agreed to under other Commission data collection provisions.
4. CCMs shall require fishermen on vessels targeting species covered by the Convention to bring aboard, if practicable, any captured hard-shell sea turtle that is comatose or inactive as soon as possible and foster its recovery, including giving it resuscitation, before returning it to the water. CCMs shall ensure that fishermen are aware of and use proper mitigation and



handling techniques, as described in WCPFC guidelines ~~to be developed and provided to all CCMs by the Secretariat.~~

5. CCMs with purse seine vessels that fish for species covered by the Convention shall:

- a. Ensure that operators of such vessels, while fishing in the Convention Area:
  - i. To the extent practicable, avoid encirclement of sea turtles, and if a sea turtle is encircled or entangled, take practicable measures to safely release the turtle.
  - ii. To the extent practicable, release all sea turtles observed entangled in fish aggregating devices (FADs) or other fishing gear.
  - iii. If a sea turtle is entangled in the net, stop net roll as soon as the turtle comes out of the water; disentangle the turtle without injuring it before resuming the net roll; and to the extent practicable, assist the recovery of the turtle before returning it to the water.
  - iv. Carry and employ dip nets, when appropriate, to handle turtles.
- b. Require that operators of such vessels record all incidents involving sea turtles during fishing operations and report such incidents to the appropriate authorities of the CCM.
- c. Provide the results of the reporting under paragraph 5(b) to the Commission as part of the reporting requirement of paragraph 2.
- d. Provide to the Commission the results of any research related to the development of modified FAD designs to reduce sea turtle entanglement and take measures to encourage the use of designs found to be successful at such reduction.

6. CCMs with longline vessels that fish for species covered by the Convention shall ensure that the operators of all such longline vessels carry and use line cutters and de-hookers to handle and promptly release sea turtles caught or entangled, and that they do so in accordance with WCPFC guidelines ~~that are to be developed and provided to all CCMs by the Secretariat.~~ CCMs shall also ensure that operators of such vessels are, where appropriate, required to carry and use dip-nets in accordance with these WCPFC guidelines.

7. ~~Starting on 1 January 2010,~~ CCMs with longline vessels ~~that fish for swordfish in a shallow-set manner~~<sup>†</sup> shall:

- a. Ensure that the operators of such vessels, while in the Convention Area, are required to employ or implement at least one of the following three methods to mitigate the capture of sea turtles:

- i. Use only large circle hooks<sup>5</sup>, which are fishing hooks that are generally circular or oval in shape and originally designed and manufactured so that the point is turned perpendicularly back to the shank. These hooks shall have an offset not to exceed 10 degrees.
  - ii. Use only whole finfish for bait.
  - iii. Use any other measure, mitigation plan<sup>6</sup> or activity that has been reviewed by the Scientific Committee (SC) and the Technical and Compliance Committee (TCC) and approved by the Commission to be capable of reducing the interaction rate (observed numbers per hooks fished) of turtles ~~in swordfish shallow-set longline fisheries~~.
- b. The requirements of paragraph 7(a) need not be applied to those ~~shallow-set swordfish~~ longline fisheries determined by the SC, based on information provided by the relevant CCM, to have minimal<sup>7</sup> observed interaction rates of sea turtles over a three-year period and a level of observer coverage of at least 10% during each of those three years.
  - c. For the purpose of implementing this paragraph (7), establish and enforce their own operational definitions of ~~shallow-set swordfish longline fisheries~~, large circle hooks, and any measures under 7(a)(iii) or adopted by the Commission under paragraph 11~~2~~, ensuring that they are as enforceable as possible, and report these definitions to the Commission in Part 2 of their annual reports.
  - d. Provide for their longline vessels to record all incidents involving sea turtles during fishing operations and report such incidents to the appropriate authorities of the CCM.
  - e. Provide the results of the reporting under paragraph 7(d) to the Commission as part of the reporting requirement of paragraph 2.

~~8. CCMs with longline fisheries other than shallow-set swordfish fisheries are urged to:~~

- ~~a. Undertake research trials of circle hooks and other mitigation methods in those longline fisheries.~~
- ~~b. Report the results of these trials to the SC and TCC, at least 60 days in advance of the annual meetings of these subsidiary bodies.~~

9.8. The SC and TCC will annually review the information reported by CCMs pursuant to

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<sup>5</sup> The 2016 FAO ABNJ (Common Oceans) Tuna Project workshops on the Joint Analysis of Sea Turtle Mitigation Effectiveness considered a large circle hook as one of a size 16/0 or larger, with a minimum width of 4.4 cm or larger.

<sup>6</sup> A mitigation plan details the actions that will be taken to achieve specified reductions in sea turtle interactions.

<sup>7</sup> To be determined by the Scientific Committee<sup>5</sup>.

this measure. Where necessary an updated suite of mitigation measures, specifications for mitigation measures, or recommendations for their application will be developed by these committees and provided to the Commission for its consideration and review.

~~10.9.~~ This measure authorizes the Secretariat to obligate resources available to the Special Requirements Fund to be used to assist developing State Members and Territories in implementing the FAO Guidelines to Reduce Sea Turtle Mortality. These funds can be used to train and encourage fishers to adopt appropriate methods and technologies to reduce interactions with sea turtles and to mitigate their adverse effects.

~~11.10.~~ The Commission urges CCMs to contribute to the Special Requirements Fund to support eligible members in their efforts to implement this measure, or to provide such support through bilateral arrangements.

~~12.11.~~ The Commission will regularly consider additional or new mitigation measures ~~for other longline and purse seine fisheries~~, based on advice from the SC and TCC and on information provided by CCMs pursuant to this measure.

~~The Secretariat, in coordination with interested CCMs, shall develop guidelines for the handling of sea turtles and distribute them to CCMs no later than June 30, 2009.~~

~~13.12.~~ Nothing in this measure shall prejudice the sovereignty and sovereign rights of coastal States, including for traditional fishing activities and the rights of traditional artisanal fishers, to apply alternative measures for the purpose of exploring, exploiting, conserving and managing sea turtles, including any national plans of action for the conservation and management of sea turtles, within areas under their national jurisdiction.

~~13. This measure shall enter into effect and replace CMM 2008-03 on 1 January 2020.~~