

INTER-AMERICAN TROPICAL TUNA COMMISSION

89TH MEETING

Guayaquil (Ecuador)
29 June-3 July 2015

PROPOSAL IATTC-89 J-1 REV~~2~~

SUBMITTED BY THE UNITED STATES

RESOLUTION TO ~~ESTABLISH~~AID IN ESTABLISHING A REBUILDING PLAN FOR PACIFIC BLUEFIN TUNA

EXPLANATORY MEMORANDUM

Rationale: This proposal focuses on establishing interim rebuilding objectives and a general strategy for ~~achieving those objectives~~rebuilding Pacific Bluefin Tuna.

This proposal includes a “rebuilding strategy” with a process for obtaining information from the ISC and IATTC staff to support the development and implementation of effective conservation and management measures. ~~These two elements of the proposal are described in more detail below.~~ harvest control rules and reference points.

Rebuilding objectives: The primary objective in any rebuilding plan is to rebuild the stock to a specified level (“rebuilding target”) in a specified time (“rebuilding period”). ~~The United States proposes a rebuilding target of 20% of the unfished spawning stock biomass (SSB), which is to be reached by 2030”) and in an equitable manner (“relative fishery impact on SSB”). Until the analysis of strategies is complete, a median SSB of 42,592mt will serve as an interim rebuilding objective.~~

~~Given that the stock recruitment relationship for Pacific bluefin tuna is not well known (in the latest stock assessment, steepness was fixed at 0.999, and the ISC Pacific Bluefin Tuna Working Group noted that the estimate was highly uncertain), we firmly believe that the rebuilding target should be expressed in terms of the estimated unfished SSB.~~

~~With respect to the specific proportion of the unfished SSB that should be the rebuilding target, we note that Annex II of the UN Fish Stocks Agreement, provides that “For overfished stocks, the biomass which would produce maximum sustainable yield [B_{MSY}] can serve as a rebuilding target.” Twenty percent of the unfished SSB has been recommended as a reasonable proxy for B_{MSY} for stocks with at least average resilience,⁺ and it has been used as a reference point in place of B_{MSY} in various fisheries. It is being used by the Commission for the Conservation of Southern Bluefin Tuna as an interim rebuilding target (to be achieved by 2035). The International Commission for the Conservation of Atlantic Tunas is using B_{MSY} as the rebuilding target for Atlantic bluefin tuna (to be achieved by 2022, after a rebuilding period of 15 years). The WCPFC has adopted 20%SSB_{F=0} as the limit reference point—as a proxy for B_{MSY} —for the three tropical tuna stocks and for the south Pacific and north Pacific stocks of albacore.~~

With respect to the rebuilding period, we recognize the tradeoffs between the need to rebuild the stock quickly in order to lessen the risk of recruitment failure and the economic impacts of making rapid and

⁺ For example: Mace P.M. 1994. Relationships between common biological reference points used as thresholds and targets of fisheries management strategies. Can. J. Fish. Aquat. Sci. 51:110-122.

large reductions in harvest rates.

In addition to the ~~primary~~~~interim~~ objective of rebuilding the Pacific bluefin tuna stock within a specific amount of time, this proposal includes secondary objectives related to fishing opportunities during the rebuilding period and equitability in the conservation burden. ~~The United States understands that there are likely to be other secondary objectives that reflect the interests of other IATTC members and participants.~~

Rebuilding strategy: This proposal would establish a process using the management strategy evaluation (MSE) approach for developing scientific advice to aid in finding an appropriate balance between the long-term benefits from rebuilding the stock and the near-term costs associated with such rebuilding, as well as to account for scientific uncertainty in stock dynamics and other factors. MSE can help identify rebuilding strategies that meet the agreed upon rebuilding objectives and that are as robust as possible with respect to uncertainty and natural variation.²

MSE involves a series of steps to evaluate a set of candidate management strategies.³ The managers are generally responsible for the steps of establishing the management objectives and associated performance measures, and for identifying candidate management strategies.

The scientists are generally responsible for the steps of developing an operating model and using it to simulate the application of the candidate management strategies into the future and evaluating how they perform with respect to the management objectives, using the specified performance measures. This proposal would establish ~~the rebuilding objectives and associated performance measures, as well as~~ an initial set of candidate management or harvest strategies to be evaluated along with a set of performance measures. The ISC and IATTC staff would be requested to undertake the remaining steps. It is emphasized that MSE is an iterative process, evolving as the managers identify new candidate management strategies and the scientists refine the stock assessment model and operating model.

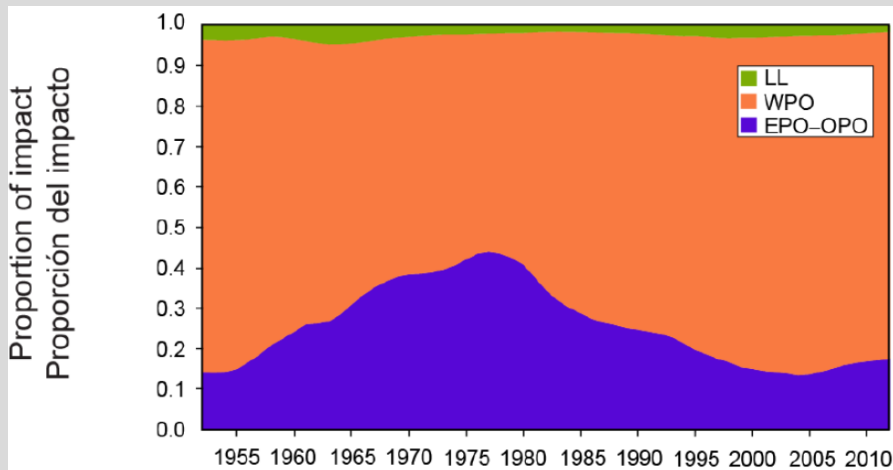
Coordination with the WCPFC: Although the decisions of the IATTC and WCPFC reflect their commitment to work together to rebuild the Pacific bluefin tuna stock, coordination has been challenging. This situation is a result of logistical reasons (e.g., the respective timing of their meetings) and the challenge in finding a balance in conservation actions on both sides of the ocean that is perceived to be equitable by both organizations. This challenge is exacerbated by the two organizations choosing different management strategies (effort and catch limits in the WCPO; catch limits in the EPO), and the fisheries on each side having very different histories. This proposal seeks to resolve these difficulties by reaching an understanding in balancing conservation actions.

We propose to express that balance in terms of the proportion of total fishery impact to the SSB of the respective fisheries in both sides of the ocean. We believe this is an objective and appropriate measure. After examining the history of the relative impacts of the fisheries on the two sides of the ocean, as shown in Figure 1, we suggest a range in the balance of impact of ~~70-80~~55-85% in WCPO fisheries and ~~20-30~~15-45% impact in EPO fisheries would be appropriate for analysis. It can be seen in Figure 1 that from 1950 to 2013 the proportional impacts of the WCPO:EPO fisheries have ranged from approximately ~~87%±13%~~ to ~~55%±45%~~, and the breakdown in 2012 was approximately ~~82%±18%~~.

² See Holland, D. S. (2010), "Management Strategy Evaluation and Management Procedures: Tools for Rebuilding and Sustaining Fisheries", *OECD Food, Agriculture and Fisheries Working Papers*, No. 25, OECD Publishing.

³ See Punt, A. E. and G. P. Donovan. 2007. Developing management procedures that are robust to uncertainty: lessons from the International Whaling Commission. *ICES J. Mar. Sci.* (2007) 64 (4): 603-612.

Figure 1. Impacts of longline fisheries, WCPO non-longline fisheries, and EPO purse seine and sport fisheries on the spawning stock biomass of Pacific bluefin tuna (Figure 19 in IATTC Document SAC-05-10a; a shorter history is available as Figure 6-4 of the ISC's "Stock Assessment of Bluefin Tuna in the Pacific Ocean in 2014").



RESOLUTION TO ESTABLISH A REBUILDING PLAN FOR PACIFIC BLUEFIN TUNA

The Inter American Tropical Tuna Commission (IATTC)

RECOGNIZING that the latest stock assessment of Pacific bluefin tuna (PBF), completed by the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) in 2014, indicates that the stock is in a depleted condition, with the spawning stock biomass (SSB) in 2012 estimated to be less than six percent of the unfished SSB.

NOTING that the International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean (ISC) advised that the projection by the strictest scenario results in an increase in SSB even if the current low recruitment continues.

RECALLING that Article VII, paragraph 1(c) of the Antigua Convention provides that the Commission shall "adopt measures that are based on the best scientific evidence available to ensure the long-term conservation and sustainable use of the fish stocks covered by this Convention and to maintain or restore the populations of harvested species at levels of abundance which can produce the maximum sustainable yield..." (MSY).

ALSO NOTING that the IATTC has adopted MSY-based interim target reference points for tropical tuna species.

UNDERSTANDING that PBF is a Pacific-wide stock that should be managed jointly by the Western and Central Pacific Fisheries Commission (WCPFC) and IATTC.

Agrees that:

SECTION 1: INTERIM REBUILDING OBJECTIVES

- ~~The primary~~ For purposes of the initial analysis in Section 2 below, the interim rebuilding objective of ~~this plan~~ is to rebuild the Pacific bluefin tuna (PBF) stock as follows:

1. ~~Initially rebuild the~~ SSB to the historical median (42,592 metric tons (mt)) by 2024; ~~and~~
 - ~~Rebuild the SSB to 20% of unfished SSB (20% SSB_{recent,F=0}), by 2030.~~
2. During the interim rebuilding period, secondary management objectives are to:
 - Maintain fishing opportunities in all existing PBF-~~directed~~ fisheries to the extent compatible with the primary interim rebuilding objective;
 - Maintain an equitable balance of conservation burden among members and between the Eastern Pacific Ocean (EPO) and Western and Central Pacific Ocean (WCPO).

SECTION 2: REBUILDING STRATEGY

3. ~~The IATTC shall adopt conservation and management measures that have a probability of no less than 60%, but preferably 80%, of achieving each of the two primary rebuilding objectives within each of the two phases of the rebuilding period and that achieve the secondary objectives to the extent possible.~~
4. ~~In support of paragraph 3, the IATTC will work with the WCPFC and ISC to evaluate in collaboration with the Northern Committee, as appropriate the~~ the expected performance of candidate management strategies with respect to the rebuilding objectives, as follows:
 - 4.3. ~~Candidate management strategies: The IATTC will periodically work with the ISC to evaluate specific candidate management strategies~~ harvesting scenarios based on the results of the most recent stock assessment, and appropriate projections/simulations. ~~The ISC is invited to evaluate additional candidate management strategies as it sees fit. The IATTC recommends that the management strategies should be evaluated as part of the ISC's 2016 PBF assessment, if possible. The management strategies that should be evaluated include:~~
 - a. 2,750 ~~Candidate harvesting scenarios: The following scenarios should be evaluated under low, average and high recruitment, as well as with the possible scenarios of biological assumptions (e.g., stock-recruitment relationship, natural mortality). The ISC is invited to evaluate additional candidate harvest scenarios as requested by the WCPFC. The IATTC initially agrees that the harvest scenarios that should be evaluated include:~~
 - i. 3,300 mt/yr in EPO commercial PBF fisheries; 2002-04 fishing effort in all WCPO PBF-directed fisheries; 50% of 2002-04 catches of <30kg PBF in all WCPO fisheries; 2002-04 catches of ≥30kg PBF in all WCPO fisheries.⁴ (i.e., current management measures in EPO and WCPO)
 - ii. ~~3,300 mt/yr in EPO commercial PBF fisheries; 2002-04 fishing effort in all WCPO PBF-directed fisheries; 50% of 2002-04 catches of <30kg PBF in all WCPO fisheries; 2002-04 catches of ≥30kg PBF in all WCPO fisheries.~~⁴
 - iii. ~~3,300 mt/yr in EPO fisheries and~~ and 50% of 2002-2004 catches in all WCPO fisheries.⁴ 3 (i.e., current management with additional reduction for adults in WCPFC)
 - iv. ~~2,885 mt/yr in EPO fisheries and~~ 50% of 2010-2012 catches in all WCPO fisheries.⁴ and EPO fisheries and across all age classes with steepness 0.99 and 0.85.
 - v. A 30% reduction in all catch from scenario 3.a.i, 3.a.ii, and 3.a.iii.
 - v. A 50% reduction in all catch from scenario 3.a.i, 3.a.ii, and 3.a.iii.
 - vi. ~~A harvest control rule in which catches~~ catch limits in each fishery are ~~limited, with the limits reset every~~ fixed for three years, reviewed in concert with the latest full stock assessment, ~~and set such that the rebuilding targets are achieved in the rebuilding period on~~

⁴ For the fisheries in which F is not explicitly limited, the projections should be run such that F in the fishery is not allowed to exceed ten times the 2010-2012 average level in that fishery.

~~an approximately linear trajectory~~, with the catch limits distributed among fisheries such that the distribution of impacts on SSB is as would be expected under ~~management strategy 4.a.ii~~ harvest scenarios 3.a.i, 3.a.ii and 3.a.iii. The harvest control rule shall also be set such that achieves the interim rebuilding objective. This harvest control rule shall also be evaluated with the following assumptions:

- o ~~With an 85/15 split of impacts to the SSB in the WCPO and EPO respectively, equitably reducing the EPO and/or WCPO catch limits as appropriate~~
 - o ~~With an 80/20 split of impacts to the SSB in the WCPO and EPO respectively, equitably reducing the EPO and/or WCPO catch limits as appropriate.~~
 - o ~~With a 75/25 split of impacts to the SSB in the WCPO and EPO respectively, equitably reducing the EPO and/or WCPO catch limits as appropriate.~~
 - o ~~With a 70/30 split of impacts to the SSB in the WCPO and EPO respectively, equitably reducing the EPO and/or WCPO catch limits as appropriate.~~
 - o ~~With a 60/40 split of impacts to the SSB in the WCPO and EPO respectively, equitably reducing the EPO and/or WCPO catch limits as appropriate.~~
- vi.vii. A harvest control rule in which catches in each fishery that takes ~~juveniles~~ PBF of less than 30kg are limited, with the limits reset every year, in concert with the latest value of a recruitment index based on catch per unit effort in one or more of the most appropriate of Japan's inshore fisheries, lagged appropriately. The harvest control rule shall also be set such that ~~it achieves~~ the ~~interim~~ rebuilding ~~targets are achieved in the rebuilding period on an approximately linear trajectory~~ objective, with the catch limits distributed among fisheries such that the distribution of impacts on SSB is as would be expected under ~~management strategy 4~~ harvest scenario 3.a.ii.i.
- vii. ~~Similar to paragraph 4.a.v, with an 80/20 split of impacts in the WCPO and EPO respectively, reducing either the EPO or WCPO limits as needed.~~
- viii. ~~Similar to paragraph 4.a.v with a 75/25 split in impact in the WCPO and EPO respectively, reducing either the EPO or WCPO limits as needed.~~
- ix. ~~Similar to paragraph 4.a.v with a 70/30 split in impact in the WCPO and EPO respectively, reducing either the EPO or WCPO limits as needed.~~
- x. ~~Scenario 4.a.ii above along with a moratorium on harvest of PBF \geq 50kg.~~
- xi. ~~A 30% reduction in all catch from scenario 4.a.i.~~
- xii. ~~A 50% reduction in all catch from scenario 4.a.i.~~
- b. Performance measures: ~~to the extent possible, IATTC, in coordination with the WCPFC and ISC, as part of its 2016 PBF based on the~~ stock assessment, ~~is requested by ISC in 2016, shall seek~~ to measure the performance of candidate ~~management strategies~~ harvest scenarios in the following terms, at a minimum:
- i. Probability of achieving the ~~interim~~ rebuilding ~~objectives on schedule~~ objective.
 - ii. ~~Rebuilding ratio that is~~ For scenarios 5.a.i to 5.a.iv, the ratio of ~~time to achieve~~ the latest expected period of ~~interim~~ rebuilding ~~to the rebuilding period specified in paragraph~~ objective.
 - ii.iii. ~~The time to achieve Bmsy.~~
 - iii. ~~Expected average annual yield, by major fishery, over the two phases of the rebuilding period.~~
 - iv. ~~Expected cumulative yield, in short and long periods (i.e., 5 years from 2015 and 15 years from 2020), by major fishery, over the two phases of the rebuilding period~~ all PBF fisheries.
 - v. Expected annual fishing effort, by ~~major fishery, over the two phases of the rebuilding period~~ all PBF fisheries.

- vi. Inter-annual variability in yield and fishing effort, by ~~major fishery, over the two phases of the rebuilding period~~ all PBF fisheries.
- vii. Probability of SSB falling below the historical lowest level.
- ~~vii.viii.~~ Expected proportional fishery impact on spawning stock biomass of all EPO fisheries and of all WCPO PBF fisheries.
- e. ~~Management strategy evaluation: the IATTC and ISC are encouraged to perform the evaluations as part of a formal management strategy evaluation (MSE). Recognizing that developing the operating model and other aspects of the MSE will take time and might require further dialogue between the IATTC scientific staff, Northern Committee, and the ISC, The evaluations specified in paragraph 4a and 4b, shall be conducted using the best means available, while the MSE is in development.~~
- c. On or before its 2017 Annual (Ordinary) Meeting, the IATTC, if necessary, based on the analysis described in Paragraphs 3.a and 3.b of this section, and in consideration of an analysis by the IATTC staff concerning the comparability and equity of measures taken by the WCPFC, shall develop equitable and comparable conservation and management measures that, when combined with WCPFC measures, would have at least a 60% probability of achieving the interim rebuilding objective.

SECTION 3: DETERMINATION OF FINAL REBUILDING OBJECTIVES

- 4. The IATTC shall consider and develop reference points and harvest control rules for the long term management of PBF after the completion of the analysis in Paragraphs 3.a, 3.b and 3.c of Section 2. To this end, the IATTC shall request of the WCPFC to have a joint meeting of both organizations with stakeholders after the ISC stock assessment completed in 2016 in order to adopt the same reference points.

SECTION 4: MANAGEMENT AFTER REBUILDING

- 5. Once the IATTC and WCPFC determine that the interim rebuilding objectives determined under section 1 have likely been achieved, and the management plan as specified in Section 3 has been approved, this resolution shall no longer apply.
- 6. Management of the stock then shall be guided by the management plan approved under section 3.

SECTION 5: COORDINATION WITH THE WCPFC

WESTERN AND CENTRAL PACIFIC FISHERIES COMMISSION (WCPFC)

- 3.7. If agreed by the WCPFC, the IATTC understands and expects that once the IATTC or WCPFC has adopted a binding measure for a given period, the other organization will, at its first opportunity, make best effort to adopt a complementary measure for at least the same time period. The IATTC will continue to explore advocate for the utility use of using relative fishery impact on SSB as a the principal measure of equity and potential allocation in its engagements with the WCPFC.

SECTION 4: MANAGEMENT AFTER REBUILDING

Once the

- 2. ~~IATTC staff informs the IATTC shall seek to establish a system of communication and information sharing with the WCPFC that the primary rebuilding objectives have likely been achieved, and the, including the real-time sharing of relevant management plan as specified in paragraph 7 has been approved, this resolution shall no longer apply.~~

8. ~~Management of the stock then shall be guided by a management plan that contains long term objectives, reference points and a harvest control rule, to be developed in cooperation with the IATTC scientific staff, ISC, and WCPFC, and approved~~ measures taken by either RFMO and by the IATTC Parties thereto (i.e., time and date of closure of a particular fishery).