

INTER-AMERICAN TROPICAL TUNA COMMISSION

83RD MEETING

La Jolla, California (USA)

25 – 29 June 2012

DOCUMENT IATTC-83-05c (REVISED)

RECOMMENDATIONS BY THE STAFF FOR THE CONSERVATION OF TUNAS AND SHARKS IN THE EASTERN PACIFIC OCEAN, 2012-2013

A. CONSERVATION OF TUNAS

BACKGROUND: BIGEYE TUNA

IATTC conservation Resolution [C-11-01](#), in its paragraph 13, calls for the IATTC scientific staff to “...propose, if necessary, appropriate measures to be applied in future years.” For 2012, the staff’s assessment of bigeye tuna (Document [SAC-03-06](#)) is an update of the 2011 assessment; a full assessment of bigeye is planned for 2013. The staff’s conclusion from this year’s assessment is that fishing mortality of bigeye is excessive, as is indicated by the base case point estimate for the F multiplier¹ of 0.95 ([SAC-03-06](#), Table 1), and that the measures established in Resolution [C-11-01](#) have not had the intended effect of reducing the fishing mortality of bigeye to the maximum sustainable yield (MSY) level. Also, the Kobe plot for 2012 ([SAC-03-06](#), Figure 6) is very similar to that of the 2011 assessment, and thus continues to support the staff’s conclusions regarding the bigeye stock. However, there is a considerable overlap between the target F multiplier of 1.0 and the 95% confidence intervals for the F multiplier of 0.95, indicating that the evidence supporting such a conclusion is not definitive. Nonetheless, the staff considers that, as a precautionary measure, the duration of the closures established in that resolution (61 days, on average, during 2009-2011) should be increased. Another factor supporting this is the growing capacity of the purse-seine fleet: as of 8 May 2012 this was 214,422 cubic meters (m³) of well volume, the highest since 2009. In May 2011, after a year of an apparent declining trend, it was 208,100 m³; by June it had increased to 211,231 m³, and by the end of 2011 had reached 213,008 m³. Consequently, the duration of closures of the fishery cannot be reduced because of a reduction in fleet capacity. Taking into account the F multiplier of 0.95 and the increase in fleet capacity, the staff considers it advisable that the closure of the fishery be increased to 74 days in 2012 and 2013, to reduce the fishing mortality of bigeye to the MSY level.

A. YELLOWFIN, SKIPJACK, AND BIGEYE TUNAS

The staff recommends applying the following conservation and management measures for yellowfin, skipjack, and bigeye tunas in the eastern Pacific Ocean² (EPO) during 2012 and 2013:

1. Apply these measures in the years 2012-2013 to all CPCs’ purse-seine vessels of IATTC capacity classes 4 to 6 (more than 182 metric tons carrying capacity), and to all their longline vessels over 24 meters length overall, that fish for yellowfin, bigeye, and skipjack tunas in the EPO.

¹ The ratio of the current fishing mortality (F_{current} , defined as the average fishing mortality for the three most recent years (2009-2011)) to the fishing mortality that will produce the maximum sustainable yield (F_{MSY}). An F multiplier of 1.0 means that $F_{\text{current}} = F_{\text{MSY}}$; if it is below 1.0, fishing mortality is excessive ($F_{\text{current}} > F_{\text{MSY}}$)

² Defined as the IATTC Convention Area, as established in Article III of the Antigua Convention

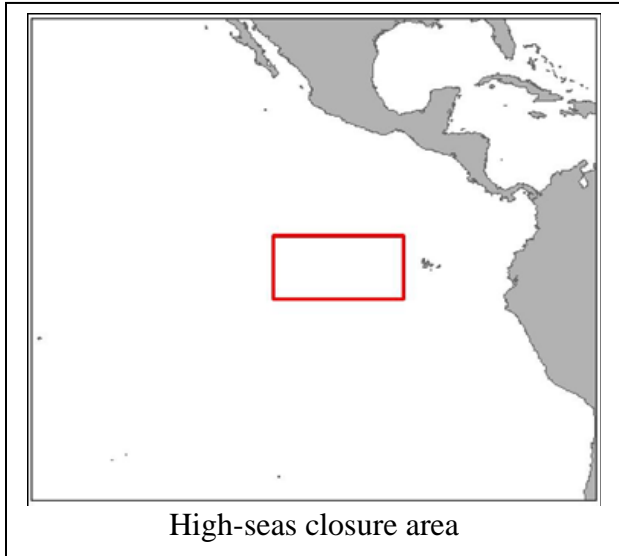
2. Exempt pole-and-line, troll, and sportfishing vessels, and purse-seine vessels of IATTC capacity classes 1-3 (less than 182 metric tons carrying capacity) from these measures.
3. All purse-seine vessels covered by these measures must stop fishing in the EPO for a period of 62 to 74 days in each of the two years 2012 and 2013. These closures should be effected in one of two periods in each year as follows:
 - 2012 – [17][29] July to 28 September, or from [6][18] November to 18 January 2013.
 - 2013 – [17][29] July to 28 September, or from [6][18] November to 18 January 2014.
4. Notwithstanding paragraph 3, purse-seine vessels of IATTC capacity class 4 (between 182 and 272 metric tons carrying capacity) will be able to make only one single fishing trip of up to 30 days duration during the specified closure periods, provided that any such vessel carries an observer of the On-Board Observer Program of the Agreement on the International Dolphin Conservation Program (AIDCP).
5. Close the fishery for yellowfin, bigeye, and skipjack tunas by purse-seine vessels within the high-seas area defined in Resolution [C-11-01](#) from 0000 hours on 29 September to 2400 hours on 29 October.
6. China, Japan, Korea, and Chinese Taipei should undertake to ensure that the total annual catches of bigeye tuna by their longline vessels in the EPO during 2012-2013 do not exceed the following levels:

Metric tons	2012-2013
China	2,507
Japan	32,372
Korea	11,947
Chinese Taipei	7,555

7. For 2012 and 2013, adjust the total annual longline catches of bigeye tuna in the EPO appropriately if the existing 62-day closure of the purse-seine fishery is lengthened in those years.
8. All other CPCs should undertake to ensure that the total annual catches of bigeye tuna by their longline vessels in the EPO during 2012-2013 do not exceed the greater of 500 metric tons or their respective catches of bigeye tuna in 2002. CPCs whose annual catches exceed 500 metric tons should provide monthly catch reports to the Director. For 2013, the limits in this paragraph should remain in effect if the conservation measures for purse-seine vessels are maintained, as ratified or adjusted in accordance with paragraph 11.
9. In order to evaluate progress towards the objectives of these measures, in 2013 the IATTC scientific staff should analyze the effects on the stocks of the implementation of these measures, and previous conservation and management measures, and propose, if necessary, appropriate measures to be applied in future years.
10. The IATTC should continue efforts to promote compatibility between the goals and effectiveness of the conservation and management measures adopted by the IATTC and WCPFC.
11. In 2013 the results of these measures should be evaluated in the context of the results of the stock assessments and of changes in the level of active capacity in the purse-seine fleet and, depending on the conclusions reached by the scientific staff, the duration of the closure for 2013 should be ratified or adjusted.
12. Another request was made to examine an option of individual vessel quotas (IVQ) for vessels fishing on floating objects for the purpose of establishing an alternative to lengthening the closures in resolution C-11-01. The purpose of this approach would be to establish limits on the amount of bigeye that could be taken in a defined offshore area by an individual vessel; any vessel that reached its limit

would have to stop setting on floating objects in that area. Obviously, if a vessel were able to avoid setting on bigeye, which appears to be likely, then it would not reach its IVQ. The analysis produced an update to the results presented in Document IATTC-78-06b.

13. The results in Appendix A indicate that an adequate conservation measure for bigeye would be to continue the closures in resolution C-11-01 plus establish IVQs of 0.56 t per cubic meter (m^3) of vessel capacity on the total catch (retained catch plus discards) of bigeye and yellowfin combined. The 0.56 t/m^3 rate corresponds to an analysis based on restriction of maximum potential annual catch during 2009-2011; it could be set higher, at 1.2 t/m^3 , if it were based on 2009-2011 average vessel performance. Yellowfin was included in the IVQ rates for several reasons, including: (1) distinguishing small yellowfin from bigeye can be difficult at sea; (2) conservation of yellowfin of the small sizes generally caught in floating-object sets is an appropriate management goal.



14. Another alternative to lengthening the total area closures in resolution C-11-01 would be to lengthen the closure of the offshore area described in section 5 of C-11-01 (figure). The staff has not made a thorough analysis of this option, but rather relied on a simple approximation, utilized in current closure calculations, which equates a one month closure of the offshore area to three days of closure of the entire EPO. By that approximation, the conservation effect for bigeye achieved by a 12-day extension of the closure, from 62 days to 74 days, could be obtained by lengthening the closure of the offshore area by four months.

B. PACIFIC BLUEFIN TUNA:

The scientific staff's recommendations concerning Pacific bluefin tuna are as follows :

As a precautionary measure, each CPC with flag vessels that catch Pacific bluefin tuna should take the measures necessary to:

1. Control the fishing mortality of Pacific bluefin tuna by commercial tuna vessels fishing under its jurisdiction during each of the years 2012-2013, to ensure that the annual catches in the EPO by commercial vessels under its jurisdiction do not exceed the average annual level of such catches during 1994-2007.

Each CPC should take the measures necessary to control the fishing mortality of Pacific bluefin tuna and inform the Director of any such measures.

2. Ensure that the total annual fishing effort for Pacific bluefin tuna in the EPO by sportfishing vessels under its jurisdiction does not exceed the maximum annual level of such effort during 2006-2010.

All CPCs should provide monthly reports of sportfishing catches and fishing effort to the Director.

The above recommendations are subject to revision, depending on the outcome of the ISC working group meeting in May 2012.

C. NORTHERN ALBACORE TUNA:

The 2011 ISC Working Group on assessment of northern albacore concluded that "The north Pacific albacore stock is considered to be healthy at current levels of average historical recruitment and fishing

mortality, $F_{2006-2008}$.” The Group therefore recommended “... maintaining present management measure (no increase in effort beyond “current” levels (2002-2004)).” The Group found that “In addition, $F_{2006-2008}$ is consistently lower than $F_{2002-2004}$ (current fishing mortality in the 2006 assessment) up to age-6, after which both measures of F are similar.”

Consequently, the scientific staff’s recommendations concerning northern albacore tuna are as follows:

1. As discussed during the 80th meeting of the IATTC, establish an *ad hoc* working group to develop an operational definition of the “current levels” of effort specified in paragraph 1 of Resolution [C-05-02](#);
2. Amend Resolution [C-05-02](#) to require that the required six-monthly reports include information on effort as well as catch, and to clarify that data provided should be for the EPO only.

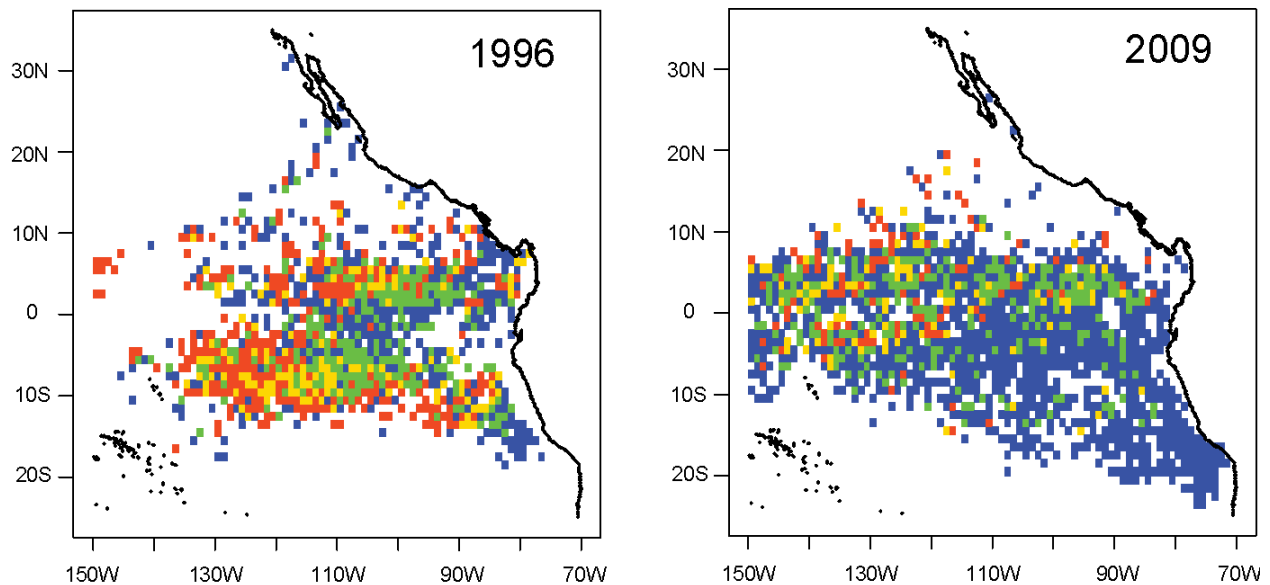
B. CONSERVATION OF SILKY SHARKS

Recent information received about trends in catch rates and distribution of catches of silky sharks (*Carcharhinus falciformis*) show that catch rates have declined substantially in the eastern Pacific Ocean³ (EPO), particularly south of the equator (Figure 1). A formal assessment of silky sharks has not been completed, but there is sufficient information to warrant recommending some precautionary measures.

The staff recommends the conservation and management measures for silky sharks in the EPO set out below;

1. Resolution [C-11-10](#) should be extended to include silky sharks, but apply to purse-seine vessels only.
2. For vessels other than purse-seiners, all silky sharks captured in fisheries that do not target this species should be released as soon as they are seen in the net, on the hook, or on deck, to improve their chances of survival.
3. Longline vessels that target sharks in the EPO, defined as those whose shark catches for a given trip exceed 50% of their total catch, should not increase their fleet's fishing effort, defined as number of days fishing, beyond the level applied in 2011.
4. Paragraph 11 of Resolution [C-05-03](#) should be changed so that reporting of shark catches by species and of fishing effort is mandatory for all vessels.
5. Research experiments should be conducted on mitigation of shark catches, especially in longline fisheries, and on estimation of survival of sharks captured by all gear types, with priority given to those gears with significant captures. Survival experiments should include studies of the effects on survival of shorter sets and on the use of circle hooks.
6. Establish a fund to support research on mitigation of shark captures and data collection projects.

FIGURE 1. Average silky shark bycatch per set (BPS), in numbers of sharks, by 1° area for floating-object sets by purse-seine vessels of IATTC capacity class 6 in 1996 and 2009. Blue: BPS = 0; green: 0 < BPS ≤ 1; yellow: 1 < BPS ≤ 2; red: BPS > 2.



³ Defined as the IATTC Convention Area, established in Article III of the Antigua Convention

Appendix A.

INDIVIDUAL VESSEL QUOTAS FOR PURSE-SEINE VESSELS THAT FISH ON FADs

Two analyses of IVQ limits on the total catch (retained catch plus discards) of bigeye and yellowfin combined were carried out. On the basis of observer estimates of total catch of these two species, 100 purse-seine vessels were identified that caught a minimum of 50 t of bigeye during 2009-2011. During that period, the annual total catch by these vessels averaged 50,656 t and 29,611 t of bigeye and yellowfin tuna, respectively. Yellowfin was included in the IVQ analysis for several reasons, including: (1) distinguishing small yellowfin from bigeye can be difficult at sea; (2) conservation of yellowfin of the small sizes generally caught in floating-object sets is an appropriate management goal.

The objective of the analyses was to determine the IVQ that would have resulted in a 5% reduction in the annual total catch of yellowfin and bigeye combined during 2009-2011. The 5% target reduction is based on the current base case assessment for bigeye tuna, and takes into account the annual 59-62 day closures and 1-2 month off-shore closures of the purse-seine fishery during 2009-2011.

The first analysis is based on the maximum potential total catch by these 100 vessels, using the formula *Maximum Potential Total Catch = IVQ_rate*(vessel capacity)*. The IVQ rate of 0.56 t per m³ of capacity corresponds to a maximum potential annual total catch of yellowfin and bigeye combined which is 5% below the level of annual total catch during 2009-2011.

The second analysis is based on the actual performance of these vessels during 2009-2011, in terms of each vessel's annual total catch of bigeye and yellowfin combined in the years in which it was active in the FAD fishery. This analysis recognizes that some vessels catch far less bigeye and yellowfin than their capacity would indicate. The IVQ in this analysis is based on the formula *IVQ = minimum of IVQ_rate*(vessel capacity) and total catch of bigeye and yellowfin combined*. The IVQ rate of 1.2 t per m³ of capacity corresponds to an annual total catch of yellowfin and bigeye combined which is 5% below the level of annual total catch in the years during 2009-2011 in which the vessel was active in the FAD fishery.