

**RESOLUTION BY ICCAT ON THE THIRD MEETING OF THE STANDING WORKING GROUP FOR
ENHANCING THE DIALOGUE BETWEEN FISHERIES SCIENTISTS AND MANAGERS (SWGSM)**

RECOGNIZING that ICCAT has adopted Recommendation 15-07 for the development of Management Strategy Evaluation (MSE) and Harvest Control Rules (HCR);

ACKNOWLEDGING that in 2016 the Standing Committee on Research and Statistics (SCRS) responded to the Commission's request to provide a 5-year schedule for advancing this work;

CONSIDERING the need for continuing dialogue between scientists and managers;

**THE INTERNATIONAL COMMISSION FOR THE CONSERVATION
OF ATLANTIC TUNAS (ICCAT) RESOLVES THAT:**

Based on ICCAT Recommendation 14-13, for Enhancing the Dialogue between Fisheries scientists and Managers, a meeting of the Standing Working Group for Enhancing the Dialogue Between Fisheries Scientists and Managers (SWGSM) will be held in 2017 and thereafter as appropriate.

Appendix 1

Draft Agenda for 2017

1. SWGSM Terms of Reference (Rec. 14-13) and outcomes of 1st and 2nd SWGSM meetings
2. Outcomes of the 2016 Joint Tuna RFMOs Working Group on Management Strategy Evaluation (MSE)
3. Status of the development of harvest control rules (HCR) and actions to be taken in 2017 for priority stocks identified in Rec. 15-07¹:

NALB:

- Status update on the testing of candidate HCRs through MSE

BFT:

- Status update on MSE-related work by the SCRS
- Consideration of management objectives
- Identification of performance indicators

NSWO:

- Identification of the acceptable quantitative probability of achieving and/or maintaining the stock in the green zone of the Kobe plot and avoiding the limit reference point
- Identification of performance indicators

¹ Chairs of respective Panels together with the SCRS Species Group chairs and the SCRS Chair will work intersessionally to prepare an analysis of how management objectives have been established for priority stocks, which performance indicators have been identified and progress toward MSE/HCR development to date. An example of performance measures and associated statistics is attached (**Appendix 2**).

Tropical tunas:

- Identification of the acceptable quantitative probability of achieving and/or maintaining the stocks in the green zone of the Kobe plot and avoiding the limit reference point
 - Review of indicative performance indicators adopted in Rec. [16-01]², Annex 9
4. Recommendations to the Commission on management objectives, performance indicators and HCR for stocks referred to under point 3
 5. Review of the 5-year road map for the development of MSE/HCR for priority stocks
 6. Consideration of other stocks for possible addition to the 5-year road map
 7. Outcomes of the 2016 Joint Tuna RFMO Working Group on Ecosystem Based Fisheries Management (EBFM)
 8. Development of a draft road map to implement EBFM, including roles and responsibilities

² This measure was repealed and successively replaced by Recommendations 19-02, 21-01, 22-01, and 24-01.

Performance Indicators and Associated Statistics

| PERFORMANCE INDICATORS AND ASSOCIATED STATISTICS | UNIT OF MEASUREMENT | TYPE OF METRICS |
|--|---------------------|---|
| Status | | |
| 1.1 Minimum biomass relative to B_{MSY} | B / B_{MSY} | Minimum over [x] years |
| 1.2 Mean biomass relative to B_{MSY} . ¹ | B / B_{MSY} | Geometric mean over [x] years |
| 1.3 Mean fishing mortality relative to F_{MSY} | F / F_{MSY} | Geometric mean over [x] years |
| 1.4 Probability of being in the Kobe green quadrant | B, F | Proportion of years that $B \geq B_{MSY}$ & $F \leq F_{MSY}$ |
| 1.5 Probability of being in the Kobe red quadrant ² | B, F | Proportion of years that $B \leq B_{MSY}$ & $F \geq F_{MSY}$ |
| 2 Safety | | |
| 2.1 Probability that biomass is above B_{lim} ($0.4B_{MSY}$). ³ | B / B_{MSY} | Proportion of years that $B > B_{lim}$ |
| 2.2 Probability of $B_{lim} < B < B_{thresh}$ | B / B_{MSY} | Proportion of years that $B_{lim} < B < B_{thresh}$ |
| 3 Yield | | |
| 3.1 Mean catch – short term | Catch | Mean over 1-3 years |
| 3.2 Mean catch – medium term | Catch | Mean over 5-10 years |
| 3.3 Mean catch – long term | Catch | Mean in 15 and 30 years |
| 4 Stability | | |
| 4.1 Mean absolute proportional change in catch | Catch (C) | Mean over [x] years of $(C_n - C_{n-1}) / C_{n-1}$ |
| 4.2 Variance in catch | Catch (C) | Variance over [x] years |
| 4.3 Probability of shutdown | TAC | Proportion of years that TAC=0 |
| 4.4 Probability of TAC change over a certain level. ⁴ | TAC | Proportion of management cycles when the ratio of change ⁵ $(TAC_n - TAC_{n-1}) / TAC_{n-1} > X\%$ |
| 4.5 Maximum amount of TAC change between management periods | TAC | Maximum ratio of change ⁶ |

¹ This indicator provides an indication of the expected CPUE of adult fish because CPUE is assumed to track biomass.

² This indicator is only useful to distinguish the performance of strategies which fulfil the objective represented by 1.4.

³ This differs slightly from being equal to 1- Probability of a shutdown (4.3), because of the choice of having a management cycle of 3 years. In the next management cycle after B has been determined to be less than B_{lim} the TAC is fixed during three years to the level corresponding to F_{lim} , and the catch will stay at such minimum level for three years. The biomass, however, may react quickly to the lowering of F and increase rapidly so that one or more of the three years of the cycle will have $B > B_{lim}$.

⁴ Useful in the absence of TAC-related constraints in the harvest control rule.

⁵ Positive and negative changes to be reported separately.

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