

Original: English

DRAFT RECOMMENDATION BY ICCAT ON A HARVEST CONTROL RULE FOR THE NORTH ATLANTIC ALBACORE SUPPLEMENTING THE MULTI-ANNUAL CONSERVATION AND MANAGEMENT PROGRAMME [REC. 16-06]

(Proposal submitted by the European Union)

RECALLING the Recommendation by ICCAT on a multi-annual conservation and management programme for North Atlantic Albacore [Rec. 16-06] and namely the request to the SCRS to refine the testing of candidate reference points and associated harvest control rules (HCRs) to support the management objectives for the North Atlantic albacore established therein;

CONSIDERING that the 2016 Standing Committee on Research and Statistics (SCRS) stock assessment concluded that the relative abundance of North Atlantic albacore has continued to increase over the last years and is most likely located in the green area of the Kobe plot, and as a result the stock is not overfished and overfishing is not occurring;

RECOGNIZING that the simulations conducted in 2017 using Management Strategy Evaluations (MSE) allow the SCRS to provide advice that is robust to a wide range of uncertainties, including those affecting the 2016 assessment and that, although further work in reviewing and improving the MSE is advisable, none of the concerns is sufficient to preclude the interim implementation of any of the HCRs proposed by the SCRS to establish short-term 3-years constant TACs;

ACKNOWLEDGING the SCRS work in 2017 to test, through MSE simulations, a large set of HCRs out of which, as advised by the Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers (SWGSM), a reduced number of robust HCRs was finally considered. All the selected HCRs are predicted to meet the objectives to be in the green area of the Kobe plot with a probability higher than 60%. Moreover 96% of the Operating Models have shown biomass above B_{MSY} with at least 60 % probability between 2020-2045;

NOTING that the HCRs with the highest target fishing mortalities ($F_{TARG}=F_{MSY}$) were associated with lower probabilities, though higher than 60%, of being in the Kobe green quadrant, higher probabilities of the stock being between B_{LIM} and B_{THR} with only slightly higher long term yields;

FURTHER NOTING that restricting TAC change within 20% from the current level will ensure higher stability and higher long term yields without undermining the status of the stock;

FURTHER RECOGNIZING that such a 20% restriction is, anyhow, without prejudice to possible wider TAC adaptations in case future stock assessments will require it;

CONSIDERING that scientific monitoring of the status of the stock is further necessary should the stock status fall below safe biological limits and that a minimum fishing mortality needs to be established to that end;

TAKING INTO ACCOUNT that if the Commission adopts a harvest control rule (HCR) then the TAC established via Rec. 16-06 shall be reestablished according to the adopted HCR;

CONSIDERING that the SCRS' intention to further explore and to consolidate the MSE framework in the future is without prejudice to the interim adoption of an HCR subject on possible future advice of the SCRS;

NOTING the importance of identifying exceptional circumstances that would result in suspending the application of the HCR and whose definition will assist the SCRS in future development of the MSE framework in order to provide further advice to the Commission;

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

PART I
GENERAL PROVISIONS

Management objectives

The management objectives of the multiannual management and conservation programme for the North Atlantic albacore are those defined in the paragraph 2 of Rec. 16-06.

PART II
BIOLOGICAL REFERENCE POINTS AND HARVEST CONTROL RULES

1. For the purpose of the multiannual management and conservation programme for the North Atlantic albacore the following interim reference points¹ are established:
 - (a) $B_{TARG} > B_{MSY}$
 - (b) $B_{THRESH} = B_{MSY}$
 - (c) $B_{LIM} = 0.4 * B_{MSY}$
 - (d) $F_{TARG} = 0.8 * F_{MSY}$
 - (e) $F_{MIN} = 0.1 * F_{MSY}$
2. The North Atlantic albacore stock assessment shall be conducted every three (3) years, with the next stock assessment to occur in 2020.
3. The harvest control rule (HCR) shall recommend a 3-years constant TAC using the following three values estimated from each stock assessment. For each value the reported median from the reference case adopted by the SCRS for advising the Commission shall be used:
 - a. The estimate of current stock biomass (B_{CURR}) with respect to B_{MSY} .
 - b. The estimate of the stock biomass at Maximum Sustainable Yield (B_{MSY}).
 - c. The estimate of the fishing mortality at MSY (F_{MSY}).
4. The HCR shall have the form shown in **Annex 1** and the following control parameters set as per below:
 - a. The biomass threshold level (B_{THRESH}) is equal to the biomass able to deliver the maximum sustainable yield ($B_{THRESH} = B_{MSY}$).
 - b. The fishing mortality target corresponding to 80% of the F_{MSY} ($F_{TARG} = 0.8 * F_{MSY}$) will be applied when the stock status is at, or above, the threshold level (B_{THRESH}).
 - c. If the current biomass [B_{CURR}] is estimated to be below the threshold level (B_{THRESH}) and higher than B_{LIM} then a sliding linear reduction of fishing mortality for the next multiannual management period [F_{NEXT}] will be applied on the following basis:

¹ For the purposes of this Recommendation, the definitions on Harvest Control Rules and Reference Points adopted in ICCAT Recommendation 2015-07 will apply.

$$\frac{F_{NEXT}}{F_{MSY}} = a + b * \frac{B_{curr}}{B_{MSY}} = -0.367 + 1.167 \frac{B_{curr}}{B_{MSY}}$$

$$\text{where } a = \left[\frac{F_{targ}}{F_{MSY}} \right] - \left[\frac{\frac{F_{targ}}{F_{MSY}} \frac{F_{min}}{F_{MSY}}}{\frac{B_{thresh}}{B_{MSY}} \frac{B_{lim}}{B_{MSY}}} \right] \times \frac{B_{thresh}}{B_{MSY}} = -0.367$$

$$b = \left[\frac{\frac{F_{targ}}{F_{MSY}} \frac{F_{min}}{F_{MSY}}}{\frac{B_{thresh}}{B_{MSY}} \frac{B_{lim}}{B_{MSY}}} \right] = 1.167$$

- d. If the current biomass [B_{CURR}] is estimated to be at, or below, B_{LIM} then the fishing mortality shall be set at F_{MIN} ($0.1 * F_{MSY}$) with a view to ensure proper scientific monitoring.
 - e. The Maximum (C_{max}) and minimum (C_{min}) catch limits recommended are 50,000 t and 15,000 t respectively, to avoid adverse effects of potentially inaccurate stock assessments.
 - f. The Maximum percentage change in catch limit (D_{max}) shall not exceed 20% than the previous recommended catch limit in any case.
5. The HCR described in paragraph 4(a-d) produces a relationship between stock status and fishing mortality as shown in the graph of **Annex 1**. The table of **Annex 2** reports the values of relative fishing mortality to be applied (F_{NEXT}/F_{MSY}) for specific values of relative biomass (B_{curr}/B_{MSY}).

PART III CATCH LIMITS

TAC and catch limits

6. The recommended total 3-years constant Total Allowable Catch (TAC) shall be set as follows:
- a. if the current biomass B_{CURR} is estimated to be at or above the threshold biomass (i.e. $B_{CURR} \geq B_{MSY}$) then the catch limit shall be set at
 1. $TAC = 0.8 * F_{MSY} * B_{curr}$
 - b. if the current biomass B_{CURR} is estimated to be below the threshold biomass (i.e. $B_{CURR} < B_{MSY}$) but greater than B_{LIM} (i.e. $B_{CURR} > 0.4 * B_{MSY}$) then the catch limit shall be set at
 1. $TAC = F_{NEXT} * B_{CURR}$

where a series of indicative values for F_{NEXT} are reported in the table of **Annex 2** or can be calculated through the formula reported in paragraph 4.c above.
 - c. if the current biomass B_{CURR} is estimated to be at, or below, the B_{LIM} (i.e. $B_{CURR} \leq 0.4 * B_{MSY}$) then the catch limit shall be set at
 1. $TAC = 0.1 * F_{MSY} * B_{curr}$

with a view to ensure proper scientific monitoring.
 - d. the recommended catch limit will be between the maximum and the minimum catch limits (C_{max} and C_{min} , respectively) as reported in paragraph 4e above and shall not increase or decrease by more than 20% from the previous catch limit in any case.
 - e. in case of 6c. the catch limit could be set at a level lower than $F_{MIN} * B_{CURR}$ if the SCRS considers it sufficient to ensure proper scientific monitoring.

7. The catch limits shall by default be allocated among the ICCAT Contracting Parties, Cooperating non-Contracting Parties, Entities or Fishing Entities (hereafter referred to as CPCs) in accordance with the allocation scheme agreed by the Commission through Rec. 16-06 as reported hereby below:

<i>CPC</i>	<i>Percentage of total catch limit by CPC</i>
European Union	76.97
Chinese Taipei	11.69
United States	1.88
Venezuela	0.89
Others	8.57

8. For the period 2018-2020 a 3-years constant TAC of 33,600 t is established based on the adopted HCR and it is allocated among the CPCs according to the following:

<i>CPC</i>	<i>Quota (t) for the period 2018-2020</i>
European Union	25,861.9
Chinese Taipei	3,927.8
United States	631.7
Venezuela	299.0
Others	2,879.5

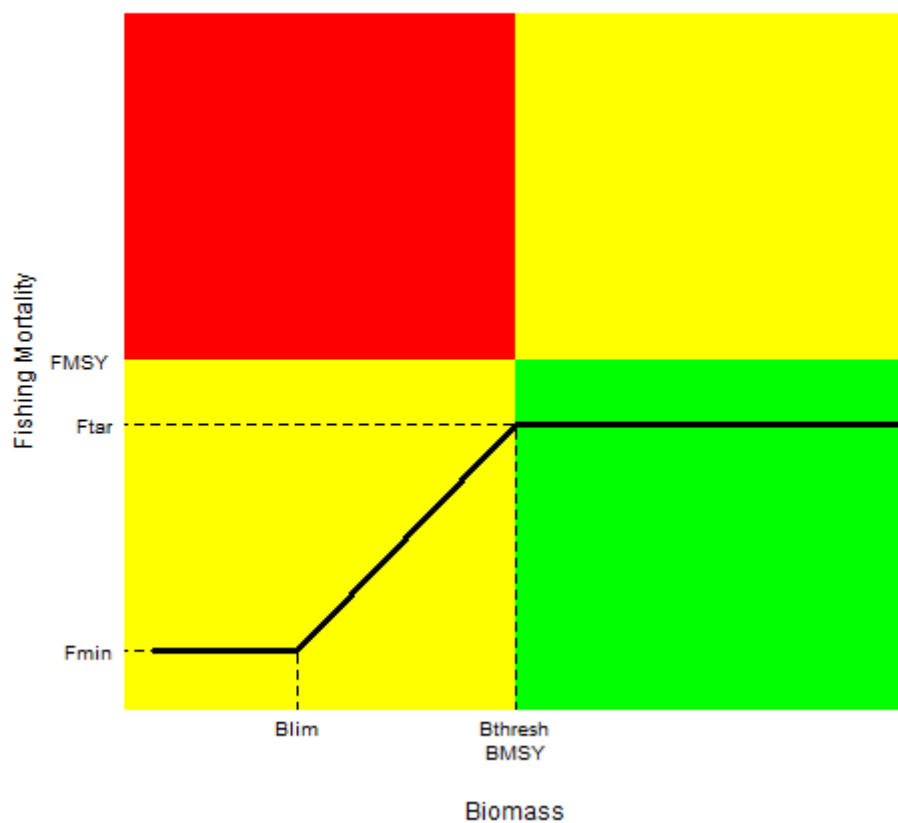
9. Provisions established by paragraph 8 above are without prejudice to the transfers stipulated by the paragraph 4 of Rec. 16-06.
10. Provisions established by paragraph 8 above are without prejudice to the annual catch limit stipulated by paragraph 5 of Rec. 16-06.
11. Provisions established by paragraph 8 above are without prejudice to the derogation stipulated by paragraph 6 of Rec. 16-06.

PART VI FINAL PROVISIONS

Review and exceptional circumstances

12. If exceptional circumstances occur (such as stock trajectories out of the ranges tested by the MSE, extreme environmental regime shift, inability to update the stock status, etc.) a review and possible revision of the HCR may be necessary. The SCRS is requested to incorporate these circumstances in future developments of the MSE framework in order to provide further advice to the Commission.
13. During 2018-2020, the SCRS shall continue the development of the MSE framework, by conducting additional diagnostic checks, exploring additional management procedures, and characterizing the Operating Models (OMs) that might not be meeting the objectives under certain HCR. The SCRS shall also inform about the percent of OMs that meet the management objective under each HCR.
14. This Recommendation amends paragraphs 3 and 4 of Rec. 16-06 and is subject to possible further refinement that could emerge by the MSE work in subsequent years.

Graphic form of the Harvest Control Rule



Annex 2

Values of relative biomass and corresponding relative fishing mortality based on a sliding linear relationship between B_{LIM} and B_{THRESH} as produced by the HCR

B_{CURR}/B_{MSY}	F_{NEXT}/F_{MSY}
1 or above	0.80
0.98	0.78
0.96	0.75
0.94	0.73
0.92	0.71
0.90	0.68
0.88	0.66
0.86	0.64
0.84	0.61
0.82	0.59
0.80	0.57
0.78	0.54
0.76	0.52
0.74	0.50
0.72	0.47
0.70	0.45
0.68	0.43
0.66	0.40
0.64	0.38
0.62	0.36
0.60	0.33
0.58	0.31
0.56	0.29
0.54	0.26
0.52	0.24
0.50	0.22
0.48	0.19
0.46	0.17
0.44	0.15
0.42	0.12
0.40	0.10