

**RECOMMENDATION BY ICCAT ON PROHIBITION ON DISCARDS  
OF TROPICAL TUNAS CAUGHT BY PURSE SEINERS**

*RECALLING* the FAO International Guidelines on by-catch management and reduction of discards that aim to facilitate by-catch management and reduction of discards, in accordance with the FAO Code of Conduct for responsible fishing;

*NOTING* that the *Recommendation by ICCAT on a multi-annual conservation and management programme for tropical tunas* [Rec. 16-01] established a multi-annual conservation and management programme for tropical tunas in the ICCAT Convention area;

*RECOGNISING* that Recommendation 16-01 envisages the adoption of provisions for better by-catch management and reduction of discards in the ICCAT tropical tuna fisheries;

*RECALLING* that the second meeting of the *Ad Hoc Working Group on FADs* recommended development of an appropriate retention policy for tropical tunas to better manage by-catch and reduce discards in tropical tuna fisheries, in accordance with the FAO guidelines;

*TAKING INTO ACCOUNT* the recommendations made by the SCRS in 2017 on tropical tunas;

*RECOGNISING* that other tuna RFMOs have implemented similar conservation and management measures requiring purse seiners to implement full retention of tunas;

*CONCERNED* by the loss of data due to discards of tuna and other species in the ICCAT tropical tuna fisheries;

*TAKING INTO ACCOUNT* the considerable volume of tunas caught in the purse seine fishery targeting tropical tunas in the Atlantic Ocean;

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

***Objective***

The objective of this recommendation is to achieve a substantial reduction in discards of tropical tunas by 2020.

***Retention of tuna species***

1. Contracting Parties and Cooperating Non-Contracting Parties, Entities or Fishing Entities (CPCs) whose purse seiners are authorised to fish for bigeye and/or yellowfin and/or skipjack tuna in the Convention area, pursuant to paragraph 25 of Recommendation 16-01, must require these vessels to retain on board then land or tranship to port all bigeye, skipjack and yellowfin tunas caught, except in the cases described in paragraph 2b.
2. The procedures for implementation of full retention requirements comprise:
  - a) No bigeye, skipjack and/or yellowfin tuna caught by a purse seiner may be discarded during the set once the net is completely closed and when more than half of the net has been retrieved. If there is a technical problem with the closing or retrieval procedure of the net such that this rule cannot be applied, the crew shall make every effort to release the tunas into the water as quickly as possible.
  - b) The following two exceptions apply to this rule:
    - i. When the vessel master determines that the tunas caught (bigeye, skipjack or yellowfin tuna) are not fit for human consumption, the following definitions shall apply:

- “unfit for human consumption” refers to fish that:
    - are meshed or crushed in the purse seine net; or
    - are damaged due to depredation; or
    - have died and decomposed in the net due to a gear failure that has prevented the normal activities of retrieval of the net and fishing and efforts to release the fish alive;
  - “unfit for human consumption” does not include fish that:
    - are considered undesirable in terms of size, marketability, or species composition; or
    - have decomposed or are contaminated as a result of an act or omission of the crew of the fishing vessel.
- ii. When the vessel master determines that the tunas (bigeye, skipjack or yellowfin tuna) have been caught during the last set of a trip and there is not enough storage capacity to store the tunas (bigeye, skipjack or yellowfin tuna) caught during this set, these fish may only be discarded if:
- the master or the crew attempt to release the tuna alive (bigeye, skipjack or yellowfin tuna) as quickly as possible; and
  - no other fishing operation is conducted following the discarding, until such time as the tunas (bigeye, skipjack and yellowfin tuna) onboard the vessel are landed or transhipped.

The CPC shall report all discards observed.

3. CPCs shall encourage their vessels using other gear types (i.e., longline, baitboat and gillnets) to retain onboard and land or, to the extent possible and in compliance with Recommendation 16-15, tranship at port all bigeye, yellowfin and skipjack tuna caught except in the cases where ICCAT measures in force or national regulations prohibit their retention or encourage their release.

***Implementation and review***

4. In 2020, the SCRS shall assess the effectiveness of this Recommendation and submit recommendations to the Commission regarding potential improvements.
5. In 2020, the SCRS shall also undertake work to examine the benefits according to the objectives defined above of retaining non-targeted species catches and present its recommendations to the Commission. The work should take into account all species that are usually discarded on all major gears (i.e., purse-seines, longlines and gillnets), and should look at fisheries that take place both on the high seas and in waters under national jurisdiction and the feasibility of both retaining on-board and processing of the associated landings.

**RECOMMENDATION BY ICCAT AMENDING THE RECOMMENDATION FOR THE CONSERVATION OF  
NORTH ATLANTIC SWORDFISH, REC. 16-03**

*RECALLING* the *Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish* [Rec. 06-02], and the *Recommendations by ICCAT for the Conservation of North Atlantic Swordfish* [Recs. 10-02, Rec. 11-02, and Rec. 16-03];

*FURTHER RECALLING* the *Recommendation by ICCAT on the Principles of Decision Making for ICCAT Conservation and Management Measures* [Rec. 11-13] and the *Recommendation by ICCAT on the Development of Harvest Control Rules and of Management Strategy Evaluation* [Rec. 15-07];

*CONSIDERING* that following both the 2013 and 2017 stock assessment, the SCRS indicated that the stock was not overfished and that overfishing was not occurring, as initially determined in a 2009 stock assessment;

*RECOGNIZING* that based on the 2017 stock assessment, the SCRS advised that a TAC of 13,700 t has only a 36% probability of maintaining the North Atlantic swordfish stock in a rebuilt condition by 2028, whereas a TAC of 13,200 t would increase this probability to 50%, consistent with Recommendation 16-03;

*FURTHER RECOGNIZING* that the total allocation of fishing opportunities for North Atlantic swordfish is superior to the TAC;

*ACKNOWLEDGING* that following the 2017 stock assessment the SCRS indicated that the biomass for North Atlantic swordfish is close to  $B_{MSY}$ ;

*RECALLING* the *Recommendation by ICCAT regarding compliance in the bluefin tuna and North Atlantic swordfish fisheries* [Rec. 96-14];

*TAKING INTO ACCOUNT* the concerns expressed by the Panel of the second ICCAT performance review regarding the possibility to transfer high underage from year to year and that this practice is inconsistent with sound management of the stock;

*TAKING NOTE OF* the *Resolution by ICCAT on Criteria for the Allocation of Fishing Possibilities* [Res. 15-13];

*SEEKING* to ensure that the total catch does not exceed the annual Total Allowable Catch;

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

1. The Contracting Parties, and Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) whose vessels have been actively fishing for swordfish in the North Atlantic shall take the following measures to ensure the conservation of North Atlantic swordfish with the goal of maintaining  $B_{MSY}$ , with greater than 50% probability.
2. TAC and catch limits
  - a) The total allowable catch (TAC) shall be 13,200 t for North Atlantic swordfish for the years 2018, 2019, 2020 and 2021:
  - b) The annual catch limits as shown in the table below shall be applied for the years 2018, 2019, 2020 and 2021:

	<i>Catch limit**</i> <i>13,200 (t)</i>
European Union ***	6,718*
United States***	3,907*
Canada	1,348*
Japan***	842*
Morocco	850
Mexico	200
Brazil	50
Barbados	45
Venezuela	85
Trinidad & Tobago	125
United Kingdom (OTs)	35
France (St. Pierre et Miquelon)	40
China	100
Senegal	250
Korea***	50
Belize***	130
Côte d'Ivoire	50
St. Vincent & the Grenadines	75
Vanuatu	25
Chinese Taipei	270

\* Catch limits of these four CPCs are based upon quota allocation shown in 3.c) of the 2006 *Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish* [Rec. 06-02].

\*\* The following transfers of annual catch limits shall be authorized:

From Japan to Morocco: 100 t

From Japan to Canada: 35 t

From EU to France (St. Pierre et Miquelon): 40 t

From Venezuela to France (St. Pierre et Miquelon): 12.75 t

From Senegal to Canada: 125 t

From Trinidad & Tobago to Belize: 75 t

From Chinese Taipei to Canada: 35 t

From Brazil, Japan, and Senegal, to Mauritania: 25 t each for a total of 75 t for 2018, 2019, 2020 and 2021, on the condition that Mauritania submit its development plan per paragraph 5 of this Recommendation. If a development plan is not submitted, these transfers are considered null. Future decisions regarding access to the North Atlantic swordfish fishery by Mauritania shall be contingent upon submission of its development plan.

These transfers do not change the relative shares of CPCs as reflected in the above catch limits.

\*\*\* Japan shall be allowed to count up to 400 t of its swordfish catch taken from the South Atlantic management area against its uncaught North Atlantic swordfish catch limits.

The European Union shall be allowed to count up to 200 t of its swordfish catch taken from the South Atlantic management area against its uncaught North Atlantic swordfish catch limits.

The US shall be allowed to count up to 200 t of its swordfish catch taken from the area between 5°N and 5°S, against its uncaught North Atlantic swordfish catch limit.

Belize shall be allowed to count up to 75 t of its swordfish catch taken from the area between 5°N and 5°S, against its uncaught North Atlantic swordfish catch limit.

Korea shall be allowed to count up to 25 t of swordfish catch taken from the South Atlantic management area in 2018, 2019, 2020 and 2021, against its uncaught North Atlantic catch limit.

c) If the annual catch exceeds the TAC of 13,200 t, CPCs that have exceeded their individual catch limits shall pay back their overharvest in accordance with paragraph 3 of this recommendation. Any amount of the overharvest remaining after such adjustment shall be deducted from the annual catch limit of each CPC in the year following the excess, on a prorata basis of the catch limits in Table 2 (b) above.

3. Any unused portion or excess of the annual adjusted quota may be added to/shall be deducted from, according to the case, the respective quota/catch limit during or before the adjustment year, as follows:

<i>Catch year</i>	<i>Adjustment year</i>
2016	2018
2017	2019
2018	2020
2019	2021
2020	2022
2021	2023

However, the maximum underage that a Party may carryover in any given year shall not exceed 15% of its initial catch limit (as specified in paragraph 2.b) above and excluding quota transfers) for those CPCs holding catch limits more than 500 t, and 40% for other CPCs.

4. If Japan's landings exceed its catch limits in any year, the overage shall be deducted in subsequent years so that total landings for Japan shall not exceed its total catch limits for the four-year period commencing in 2018. When annual landings by Japan are less than its catch limits, the underage may be added to the subsequent years' catch limits, so that total landings by Japan do not exceed its total for the same four-year period. Any underages or overages from the 2018-2021 management period shall be applied to the four-year management period specified herein.
5. The Commission shall establish at its 2021 meeting conservation and management measures for North Atlantic swordfish on the basis of the SCRS advice resulting from the latest stock assessment as well as the *Resolution by ICCAT on Criteria for the Allocation of Fishing Possibilities* [Res. 15-13]. In support of this effort, the Commission shall consider development/management plans of coastal developing CPCs and fishing/management plans of other CPCs so that adjustments can be made to the existing catch limits and other conservation measures, as appropriate. In the event of the modification of its fishing/management plan, each CPC shall submit the updated version of its fishing/management plan to the Commission by September 15.
6. When assessing stock status and providing management recommendations to the Commission, the SCRS shall consider the interim limit reference (LRP) of  $0.4 \cdot B_{MSY}$  or any more robust LRP established through further analysis.
7. In line with the provisions of *Recommendation by ICCAT on the Development of Harvest Control Rules and of Management Strategy Evaluation* [Rec. 15-07], paragraph 3, the SCRS and the Commission shall continue its dialogue to allow for the development of harvest control rules (HCRs) for consideration in any subsequent recommendations. Further, while the HCRs are being developed, should the biomass approach the level which triggered the establishment of the previous rebuilding plan [Rec. 99-02], then the Commission shall adopt a rebuilding plan, with harvest levels, as recommended by the SCRS, that will meet the Commission's objectives of maintaining or rebuilding stocks to  $B_{MSY}$  within the defined time period.
8. All CPCs catching swordfish in the North Atlantic shall endeavor to provide annually the best available data to the SCRS, including catch, catch at size, location and month of capture on the smallest scale possible, as determined by the SCRS. The data submitted shall be for broadest range of age classes possible, consistent with minimum size restrictions, and by sex when possible. The data shall also include discards (both dead and alive) and effort statistics, even when no analytical stock assessment is scheduled. The SCRS shall review these data annually.
9. In order to protect small swordfish, CPCs shall take the necessary measures to prohibit the taking of and landing of swordfish weighing less than 25 kg live weight, or in the alternative, 125 cm lower jaw fork length (LJFL); however, the CPCs may grant tolerances to boats which have incidentally captured small fish, with the condition that this incidental catch shall not exceed 15 percent of the number of swordfish per landing of the total swordfish catch of said boats.

10. Notwithstanding the provisions of paragraph 9, any CPC may choose, as an alternative to the minimum size of 25 kg/ 125 cm LJFL, to take the necessary measures to prohibit the taking by its vessels in the Atlantic Ocean, as well as the landing and sale in its jurisdiction, of swordfish (and swordfish parts), less than 119 cm LJFL, or in the alternative 15 kg, provided that, if this alternative is chosen, no tolerance of swordfish smaller than 119 LJFL, or in the alternative 15 kg, shall be allowed. For swordfish that have been dressed, a cleithrum to keel (CK) measurement of 63 cm can also be applied. A Party that chooses this alternative minimum size shall require appropriate record keeping of discards. The SCRS should continue to monitor and analyze the effects of this measure on the mortality of immature swordfish.
11. Notwithstanding the provisions of Article VIII, paragraph 2, of the Convention, with respect to the annual individual catch limits established above, the CPCs whose vessels have been actively fishing for North Atlantic swordfish shall implement this recommendation as soon as possible in accordance with the regulatory procedures of each CPC.
12. Notwithstanding the *Recommendation by ICCAT Regarding the Temporary Adjustment of Quotas* [Rec. 01-12], in between meetings of the Commission, a CPC with a TAC allocation of North Atlantic swordfish, as per paragraph 2.b), may make a one-time transfer within a fishing year of up to 15% of its TAC allocation to other CPCs with TAC allocations, consistent with domestic obligations and conservation considerations. Any such transfer may not be used to cover overharvests. A CPC that receives a one-time catch limit transfer may not retransfer that catch limit.
13. CPCs shall issue specific authorizations to vessels 20 meters LOA or greater flying their flag that are authorized to fish for North Atlantic swordfish in the Convention area. Each CPC shall indicate which of such vessels it has so authorized on its vessel list submitted pursuant to the *Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels 20 meters in Length Overall or Greater Authorized to Operate in the Convention Area* [Rec. 13-13]. Such vessels not entered into this record or entered without the required indication that fishing for North Atlantic swordfish is authorized are deemed not to be authorized to fish for, retain on board, transship, transport, transfer, process or land North Atlantic swordfish.
14. CPCs may allow bycatch of North Atlantic swordfish by vessels not authorized to fish for North Atlantic swordfish pursuant to paragraph 13, if the CPC establishes a maximum onboard bycatch limit for such vessels and the bycatch in question is accounted for within the CPC's quota or catch limit. Each CPC shall provide in its Annual Report the maximum bycatch limit it allows for such vessels. That information shall be compiled by the ICCAT Secretariat and made available to CPCs.
15. This Recommendation replaces the *Recommendation by ICCAT for the Conservation of North Atlantic Swordfish* [Rec. 16-03].

**RECOMMENDATION BY ICCAT AMENDING THE RECOMMENDATION FOR  
THE CONSERVATION OF SOUTH ATLANTIC SWORDFISH, REC. 16-04**

*CONSIDERING* that the Standing Committee on Research and Statistics (SCRS) indicates that substantial unquantified uncertainties affect this stock, in particular due to lack or inconsistencies of available data;

*CONSCIOUS* that the SCRS underlined that due to the existing uncertainties there is no room to increase the existing TAC;

*RECOGNIZING* that this multi-annual approach for the management of South Atlantic swordfish reflects the thrust of the *Resolution by ICCAT on Criteria for the Allocation of Fishing Possibilities* [Res. 15-13], adopted by the Commission in 2015, for the period concerned;

*RECOGNISING* that it would be appropriate, as already applicable to other stocks under the purview of ICCAT, to establish an ICCAT register of vessels authorized to fish South Atlantic swordfish;

*ACKNOWLEDGING* that based on the 2017 stock assessment, the SCRS advised that the current TAC of 15,000 t has only a 26% probability of rebuilding the South Atlantic swordfish stock to within MSY reference levels by 2028, whereas a TAC of 14,000 t would have a 50% probability of rebuilding the stock;

*ACKNOWLEDGING* that following the 2017 stock assessment the SCRS confirmed that the stock of South Atlantic swordfish is overfished;

*TAKING INTO ACCOUNT* the concerns expressed by the Panel of the second ICCAT performance review regarding the possibility to transfer high underage from year to year and that this practice is inconsistent with sound management of the stocks;

*SEEKING* to ensure that the total catch does not exceed the annual Total Allowable Catch;

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

***TAC and catch limits***

1. For 2018, 2019, 2020 and 2021, the Total Allowable Catch (TAC) and the catch limits shall be as follows:

	<i>Catch Limit (Unit: t)</i>
TAC <sup>(1)</sup>	14,000
Brazil <sup>(2)</sup>	3,940
European Union	4,824
South Africa	1,001
Namibia	1,168
Uruguay	1,252
United States <sup>(3)</sup>	100
Cote d'Ivoire	125
China	313
Chinese Taipei <sup>(3)</sup>	459
United Kingdom	25
Japan <sup>(3)</sup>	901
Angola	100
Ghana	100
St. Tomé & Príncipe	100
Senegal	417

Korea	50
Belize	125

- (1) The total catch for the four-year management period of 2018-2021 shall not exceed 56,000 t (14,000 t x4). If the yearly total catch of any of the four years exceeds 14,000 t; the TAC(s) for the following year(s) shall be adjusted to ensure that the four-year total will not exceed 56,000 t. In general, these adjustments shall be carried out through prorate reduction of the quota for each Contracting Party and Cooperating non-Contracting Party, Entity and Fishing Entity (CPC).
- (2) Brazil may harvest up to 200 t of its annual catch limit within the area between 5 degrees North latitude and 15 degrees North latitude.
- (3) Japan's, U.S.A's and Chinese Taipei's underage in 2016 may be carried over to 2018 up to 600 t, 100 t and 300 t, respectively, in addition to their quotas specified in this table. Those CPCs may also carry over unused portions during 2017-2021 but such carried over amounts each year shall not exceed the amounts specified here.

Transfers shall be authorized in accordance with paragraph 5.

***Underage or overage of catch***

2. Any unused portion or excess of the annual quota/catch limit may be added to/shall be deducted from, according to the case, the respective quota/catch limit during or before the adjustment year, in the following way for South Atlantic swordfish:

Catch Year	Adjustment Year
2017	2019
2018	2020
2019	2021
2020	2022
2021	2023

However, the maximum underage that a party may carryover in any given year shall not exceed 20% of the quota of the previous year.

***Transfers***

3. Japan shall be allowed to count up to 400 t of its swordfish catch taken from the part of the North Atlantic management area that is east of 35 degrees W and south of 15 degrees N, against its uncaught South Atlantic swordfish quota.
4. The European Union shall be allowed to count up to 200 t of its swordfish catch taken from the North Atlantic management area against its uncaught South Atlantic swordfish quota.
5. The 50 t quota transfers from South Africa, Japan and United States to Namibia (total: 150 t), the 25 t quota transfers from United States to Côte d'Ivoire, the 25 t quota transfer from United States and the 50 t quota transfers from Brazil and Uruguay to Belize (total: 125 t), and the 50 t quota transfer from Brazil to Equatorial Guinea shall be authorized. The quota transfers shall be reviewed annually in response to a request from an involved CPC.

***Minimum size***

6. In order to protect small swordfish, CPCs shall take the necessary measures to prohibit the taking of and landing of swordfish in the entire Atlantic Ocean weighing less than 25 kg live weight, or in the alternative, 125 cm lower jaw fork length (LJFL); however, the CPCs may grant tolerances to boats which have incidentally captured small fish, with the condition that this incidental catch shall not exceed 15 percent of the number of swordfish per landing of the total swordfish catch of said boats.



7. Notwithstanding the provisions of paragraph 5, any CPC may choose, as an alternative to the minimum size of 25 kg/125 cm LJFL, to take the necessary measures to prohibit the taking by its vessels in the Atlantic Ocean, as well as the landing and sale in its jurisdiction, of swordfish (and swordfish parts), less than 119 cm LJFL, or in the alternative 15 kg, provided that, if this alternative is chosen, no tolerance of swordfish smaller than 119 LJFL, or in the alternative 15 kg, shall be allowed. For swordfish that have been dressed, a cleithrum to keel (CK) measurement of 63 cm can also be applied. A Party that chooses this alternative minimum size shall require appropriate record keeping of discards. The SCRS should continue to monitor and analyze the effects of this measure on the mortality of immature swordfish.

#### ***ICCAT Record of vessels authorized to fish South Atlantic swordfish***

8. CPCs shall issue specific authorizations to vessels 20 meters LOA or greater flying their flag that are authorized to fish for South Atlantic swordfish in the Convention area. Each CPC shall indicate which of such vessels it has so authorized on its vessel list submitted pursuant to the *Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels 20 meters in Length Overall or Greater Authorized to Operate in the Convention Area* [Rec. 13-13]. Such vessels not entered into this record or entered without the required indication that fishing for South Atlantic swordfish is authorized are deemed not to be authorized to fish for, retain on board, transship, transport, transfer, process or land South Atlantic swordfish.
9. CPCs may allow bycatch of South Atlantic swordfish by vessels not authorized to fish for South Atlantic swordfish pursuant to paragraph 8, if the CPC establishes a maximum on board bycatch limit for such vessels and that the bycatch in question is accounted for within the CPC's quota or catch limit. Each CPC shall provide in its Annual Report the maximum bycatch limit it allows for such vessels. That information shall be compiled by the ICCAT Secretariat and made available to CPCs.

#### ***Availability of data to SCRS***

10. CPCs shall endeavor to recover any missing catch data for years up to 2015, including reliable Task I and Task II data. CPCs will make available the above data to the SCRS as soon as possible. From 2017 onwards, CPCs shall ensure accurate and timely data submission to the SCRS.
11. All CPCs catching swordfish in the South Atlantic shall endeavor to provide annually the best available data to the SCRS, including catch, catch at size, location and month of capture on the smallest scale possible, as determined by the SCRS. The data submitted shall be for broadest range of age classes possible, consistent with minimum size restrictions, and by sex when possible. The data shall also include discards (both dead and alive) and effort statistics, even when no analytical stock assessment is scheduled. The SCRS shall review these data annually.
12. When assessing stock status and providing management recommendations to the Commission in 2021, the SCRS shall consider the interim limit reference (LRP) of  $0.4 \cdot B_{MSY}$  or any more robust LRP established through further analysis.

#### ***Final provisions***

13. None of the arrangements in this Recommendation shall be deemed to prejudice a future arrangement relating to South Atlantic swordfish.
14. The *Recommendation by ICCAT for the Conservation of South Atlantic Swordfish* [Rec. 16-04] is repealed and replaced by this Recommendation.

**RECOMMENDATION BY ICCAT ON A HARVEST CONTROL RULE  
FOR NORTH ATLANTIC ALBACORE SUPPLEMENTING THE MULTIANNUAL  
CONSERVATION AND MANAGEMENT PROGRAMME, REC. 16-06**

*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 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-year constant annual TACs;

*FURTHER RECALLING* that the Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers (SWGSM) recommended that an external review of the North Atlantic Albacore MSE should be considered by the Commission, ideally in 2018;

*ACKNOWLEDGING* the SCRS work in 2017 to test, through MSE simulations, a large set of HCRs out of which, as advised by the 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 ( $F_{TAR}=F_{MSY}$ ) were associated with lower probabilities, although higher than 60%, of being in the Kobe green quadrant, higher probabilities of the stock being between  $B_{LIM}$  and  $B_{THRESH}$  with only slightly higher long-term yields;

*FURTHER NOTING* the desire for stability in the fishery;

*CONSIDERING* that the SCRS tested a minimum fishing mortality ( $F_{MIN}$ ) that needs to be established in order to ensure a scientific monitoring of the status of the stock should the stock status fall below safe biological limits;

*TAKING INTO ACCOUNT* that if the Commission adopts an HCR then the TAC established via Rec. 16-06 shall be re-established 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 to possible future advice of the SCRS;

*NOTING* the importance of identifying exceptional circumstances that would result in suspending or modifying the application of the HCR;

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

**PART I**  
**GENERAL PROVISIONS**

***Management objectives***

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

**PART II**  
**BIOLOGICAL REFERENCE POINTS AND HARVEST CONTROL RULES**

2. For the purpose of the multiannual management and conservation programme for the North Atlantic albacore, the following interim reference points<sup>1</sup> are established:
  - (a)  $B_{\text{THRESH}} = B_{\text{MSY}}$
  - (b)  $B_{\text{LIM}} = 0.4 * B_{\text{MSY}}$
  - (c)  $F_{\text{TAR}} = 0.8 * F_{\text{MSY}}$
  - (d)  $F_{\text{MIN}} = 0.1 * F_{\text{MSY}}$
3. The North Atlantic albacore stock assessment shall be conducted every three (3) years, with the next stock assessment to occur in 2020.
4. The harvest control rule (HCR) sets a 3-year constant annual total allowable catch (TAC) using the following three values estimated from each stock assessment. For each value the median values as reported in the summary table of the SCRS report shall be used:
  - a) The estimate of current stock biomass ( $B_{\text{curr}}$ ) with respect to  $B_{\text{MSY}}$ .
  - b) The estimate of the stock biomass at Maximum Sustainable Yield ( $B_{\text{MSY}}$ ).
  - c) The estimate of the fishing mortality at MSY ( $F_{\text{MSY}}$ ).
5. The HCR shall have the form shown in **Annex 1** and the following control parameters set as per below:
  - a) The biomass threshold level ( $B_{\text{THRESH}}$ ) is equal to the biomass able to deliver the maximum sustainable yield ( $B_{\text{THRESH}} = B_{\text{MSY}}$ ).
  - b) A fishing mortality target corresponding to 80% of  $F_{\text{MSY}}$  ( $F_{\text{TAR}} = 0.8 * F_{\text{MSY}}$ ) will be applied when the stock status is at, or above, the threshold level ( $B_{\text{THRESH}}$ ).

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<sup>1</sup> For the purposes of this Recommendation, the definitions of Harvest Control Rules and Reference Points adopted in ICCAT Recommendation 15-07 will apply.

- c) If the current biomass ( $B_{CURR}$ ) is estimated to be below the threshold level ( $B_{THRESH}$ ) and higher than  $B_{LIM}$ , then fishing mortality will be reduced linearly for the next multiannual management period ( $F_{NEXT}$ ) on the following basis:

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

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

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

- d) If the current biomass ( $B_{CURR}$ ) is estimated to be at, or below,  $B_{LIM}$ , then the fishing mortality shall be set at  $F_{MIN}$  with a view to ensure a level of catch for scientific monitoring.
- e) The Maximum catch limits ( $C_{max}$ ) recommended are 50,000 t to avoid adverse effects of potentially inaccurate stock assessments.
- f) The maximum change in the catch limit ( $D_{max}$ ) shall not exceed 20% of the previous recommended catch limit when  $B_{CURR} \geq B_{THRESH}$ .
6. The HCR described in paragraph 5 (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**

7. The 3-year constant annual 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

$$1. \quad TAC = F_{TAR} * B_{CURR}$$

- 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

$$1. \quad TAC = F_{NEXT} * B_{CURR}$$

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 5.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

$$1. \quad TAC = F_{MIN} * B_{CURR}$$

with a view to ensure a level of catch for scientific monitoring.

- d) the catch limit resulting from the above calculations will be below the maximum catch limit ( $C_{max}$ ) as reported in paragraph 5e above and shall not increase or decrease by more than 20% from the previous catch limit except when  $B_{CURR} < B_{THRESH}$  or unless otherwise required pursuant to an agreed management response when exceptional circumstances are determined to have occurred by the SCRS.

- e) in the case of 7c, the catch limit could be set at a level lower than  $F_{\text{MIN}} * B_{\text{CURR}}$  if the SCRS considers it sufficient to ensure a level of catch proper for scientific monitoring.
8. Pursuant to paragraphs 4, 5 and 7, a 3-year constant annual TAC of 33,600 t is established for the period 2018-2020. Consistent with the TAC allocations set out in Rec. 16-06, this TAC is allocated among the CPCs as follows:

<i>CPC</i>	<i>Quota (t) for the period 2018-2020</i>
European Union	25,861.6
Chinese Taipei	3,926.0
United States	632.4
Venezuela	300.0

9. Provisions established by paragraph 8 above are without prejudice to the transfers stipulated by 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.

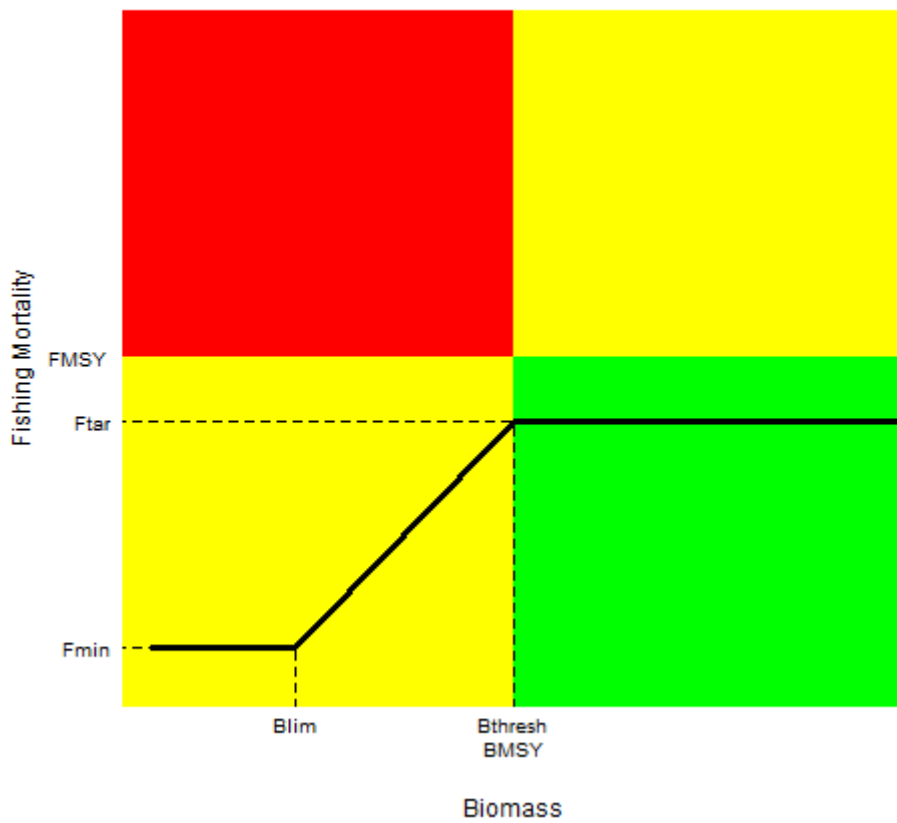
#### **PART IV FINAL PROVISIONS**

##### ***Review and exceptional circumstances***

12. The SCRS is requested to develop in 2018 criteria for the identification of exceptional circumstances, taking into account, *inter alia*, the need for an appropriate balance between specificity versus flexibility in defining exceptional circumstances, and the appropriate level of robustness to ensure that exceptional circumstances are triggered only when necessary.
13. The Commission, through the Standing Working Group of Scientists and Managers, shall develop guidance on a range of appropriate management responses should those exceptional circumstances be found to occur.
14. 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.), the Commission shall review and consider possible revision of the HCR. The SCRS is requested to incorporate these exceptional circumstances in future developments of the MSE framework in order to provide further advice to the Commission.
15. The SCRS shall initiate a peer-review, in time for the 2018 Commission meeting, of the northern albacore MSE, including the operating models, management procedures, calculations of the performance indicators and code. Based on this review and potential refinement of the MSE to be described in a single consolidated report, the Commission may consider additional refinements of the interim HCR in 2018.
16. During 2018-2020, the SCRS shall continue the development of the MSE framework by conducting additional diagnostic checks, exploring additional management procedures including the carry over, and identifying the Operating Models (OMs) that might not be meeting the objectives under a certain HCR. The SCRS shall also indicate the percent of OMs that meet the management objective under each HCR. The SCRS is specifically requested to test, *inter alia*, some variants of the HCR adopted in this recommendation, such as:

- a) Setting a lower TAC limit
  - b) Applying the restriction of 20% maximum TAC change when the current biomass ( $B_{CURR}$ ) is estimated to be below the threshold level ( $B_{THRESH}$ ) and higher than  $B_{LIM}$
  - c) Applying the restriction of 20% maximum TAC reduction or 25% maximum TAC increase when the current biomass ( $B_{CURR}$ ) is estimated to be below the threshold level ( $B_{THRESH}$ ) and higher than  $B_{LIM}$
17. The Commission shall review the interim HCR in 2020 with a view to adopting a long-term management procedure.
18. This Recommendation amends paragraphs 3 and 4 of Rec. 16-06 and does not set a precedent for future implementation of HCRs. The Commission shall consolidate this Recommendation and Recommendation 16-06 into a single Recommendation at its 2018 Commission meeting.

Graphic form of the Harvest Control Rule



**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