

**Draft Recommendation by ICCAT on conservation and management measures,  
including a management procedure, for North Atlantic swordfish**  
(proposal submitted by Canada)

*RECALLING* the Supplemental Recommendation by ICCAT to Amend the Rebuilding Program for North Atlantic Swordfish (Rec. 06-02), the Recommendation by ICCAT for the Conservation of North Atlantic Swordfish (Rec. 10-02, Rec. 11-02, Rec. 16-03), and the Recommendation by ICCAT Amending the Recommendation for the Conservation of North Atlantic Swordfish, Rec. 16-03 (Rec. 17-02) as amended by the Recommendation by ICCAT Replacing Recommendation 22-03 Extending and Amending Recommendation 17-02 for the Conservation of North Atlantic Swordfish (Rec. 23-04);

*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);

*NOTING* that the objective of the Convention is to maintain populations of tuna and tuna-like species at levels that will support maximum sustainable catch (usually referred to as Maximum Sustainable Yield (MSY));

*RECALLING* the Commission's work toward the development of MSE for North Atlantic swordfish to manage fisheries more effectively in the face of identified uncertainties, including efforts to develop operational management objectives, in particular, *Resolution by ICCAT on development of initial management objectives for North Atlantic swordfish* (Res. 19-14);

*FURTHER RECALLING* that paragraph 1e) of Rec. 23-04 called for the Commission to adopt an MP for North Atlantic swordfish in 2024 and apply the MP to establish the total allowable catch (TAC) for 2025-2027 and future years;

*ALSO RECALLING* the results of the 2022 North Atlantic Swordfish Stock Assessment, which showed the stock being in the green quadrant of the Kobe plot (not overfished and no overfishing was occurring) in 2020;

*RECOGNIZING* the total allocation of fishing opportunities for North Atlantic swordfish is superior to recent annual TAC levels and that catches have been well below these levels for many years;

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

*RECALLING* the Recommendation by ICCAT regarding Compliance in the Bluefin Tuna and North Atlantic Swordfish Fisheries (Rec. 96-14);

*SEEKING* to ensure that the total catch does not exceed the annual TAC;

*RECOGNIZING* that the North Atlantic swordfish MSE incorporates a wide range of uncertainties to ensure the selected management procedure (MP) that has been tested through MSE meets identified management objectives concerning status, safety, stability and yield, and supports the overall objective of the Convention;

*NOTING* the importance of identifying exceptional circumstances (EC) that would result in suspending or modifying the application of the MP to remain aligned with the Recommendation by ICCAT on the Principles of Decision Making for Conservation and Management Measures (Rec. 11-13);

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

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

1. The Contracting Parties, and Cooperating non-Contracting Parties, Entities or Fishing Entities (CPCs) whose vessels catch North Atlantic swordfish in the Convention area shall implement the following conservation and management measures including the MP set out in **Annex 1** for establishing annual TACs.

**Management objectives**

2. The management objectives for the North Atlantic swordfish stock are:
  - a) Stock Status:
    - The stock shall have a 60% or greater probability of occurring in the green quadrant of the Kobe plot (no overfishing occurring and not overfished);
  - b) Safety:
    - There shall be a 15% or less probability of the stock falling below  $B_{LIM}^1$  at any point during the 30-year evaluation period;
  - c) Yield:
    - Overall catch levels shall be maximized; and
  - d) Stability:
    - Changes in TAC shall be minimized, consistent with the specifications of the MP as described in **Annex 1**.

Performance measures (indicators) used to evaluate the performance of MPs for each management objective are found in **Annex 2**.

**PART II**  
**MANAGEMENT PROCEDURE AND TOTAL ALLOWABLE CATCH**

3. Consistent with the management objectives specified in paragraph 2, the MCC11 MP is adopted. The MP is fully described in **Annex 1**.
4. The TAC derived from the first application of the MP is 14,769 t and shall apply in 2025, 2026, and 2027. The management cycle length shall be three years; therefore, the MP shall be applied every three years.
5. The SCRS shall apply the MP specified in **Annex 1** in accordance with the timeline set out in **Annex 3** and advise the Commission of the resulting TAC for North Atlantic swordfish for the next three-year management cycle. The SCRS shall assess the occurrence of ECs annually, and the Commission shall act in accordance with the EC Protocol once adopted pursuant to paragraph 20.

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<sup>1</sup> Interim limit reference point (LRP) used in the MSE was  $B_{LIM} = 0.4 * B_{MSY}$ .

6. The Commission shall adopt the TAC based on the outcome of the MP unless the SCRS identifies exceptional circumstances (ECs) that require the Commission to take alternative management actions to remain aligned with the principles of Recommendation 11-13.

### PART III CATCH LIMITS AND RELATED PROVISIONS

#### Catch limits

7. The annual TAC of 14,769 t for North Atlantic swordfish resulting from the application of the MP described in **Annex 1** shall be allocated as follows for the 2025-2027 management period:

<i>CPCs</i>	<i>Catch limit** 14,769 (t)</i>
European Union* <sup>1</sup>	<u>7,408.33</u>
United States* <sup>2</sup>	<u>3,907</u>
Canada *	<u>1,880</u>
Japan* <sup>3</sup>	<u>842</u>
Morocco	<u>1,186</u>
Mexico	<u>200</u>
Brazil	<u>50</u>
Barbados	<u>45</u>
Venezuela	<u>85</u>
Trinidad & Tobago	<u>125</u>
United Kingdom	<u>35.67</u>
France (SPM)	<u>40</u>
China	<u>111</u>
Senegal	<u>250</u>
Korea <sup>4</sup>	<u>50</u>
Belize <sup>5</sup>	<u>130</u>
Côte d'Ivoire	<u>50</u>
St. Vincent & the Grenadines	<u>75</u>
Costa Rica	<u>75</u>
Chinese Taipei	<u>270</u>

\* Notwithstanding the adjustment of the EU quota by 0.67 t in light of the Trade and Cooperation Agreement between the UK and the EU, which established their respective shares of North Atlantic swordfish and other stocks, 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: 150 t

[From Japan to Canada: 35 t]

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

[From Senegal to Canada: 125 t]

[From Trinidad & Tobago to Belize: 75 t]

[...]

[From Japan, and Senegal, to Mauritania: 25 t each for a total of 50 t, on the condition that Mauritania submit its development plan per paragraph 10 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]

[From Trinidad and Tobago to Morocco: 25 t]

[...]

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

<sup>1</sup> 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.

<sup>2</sup> The United States 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.

<sup>3</sup> 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.

<sup>4</sup> Korea shall be allowed to count up to 25 t of swordfish catch taken from the South Atlantic management area against its uncaught North Atlantic catch limit.

<sup>5</sup> 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.

8. 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 7, 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.
9. When setting catch limits under the TAC described in paragraph 8, the Commission shall take into account 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 15 September.

#### Underage or overage of catch

10. If the annual catch in any year exceeds the TAC specified in paragraph 4, CPCs that have exceeded their individual catch limits shall pay back their overharvest in accordance with paragraph 11. Any amount of the overharvest remaining after such adjustment shall be deducted from the annual catch limits of all CPCs, two years following the year in which the excess occurred, on a pro rata basis of the catch limits in paragraph 7. The Commission may also consider the need for further measures, including taking into account any advice of the SCRS pursuant to its evaluation of the existence of ECs.
11. 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>
2023	2025
2024	2026
2025	2027
2026	2028
2027	2029

However, the maximum underage that a CPC may carryover in any given year shall not exceed 15% of its initial catch limit (as specified in paragraph 7 and excluding quota transfers) for those CPCs holding catch limits more than 500 t, and 40% for other CPCs.

12. 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 three-year period commencing in 2025. When annual landings by Japan are less than its catch limits during this period, 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 three-year period. Any overages from a three-year management period, including for 2025-2027, shall be applied to the subsequent three-year management period. Any underages from a three-year management period, including for 2025-2027, may be applied to the subsequent three-year management period if so decided by the Commission.

#### PART IV CONTROL MEASURES

##### **Specific authorization to fish for North Atlantic swordfish and ICCAT record of vessels**

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 Amending Recommendation 13-13 Concerning the Establishment of an ICCAT Record of Vessels 20 meters in Length Overall or Greater Authorized to Operate in the Convention Area* (Rec. 21-14). 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.

##### **Minimum sizes**

15. 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 or less 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.
16. Notwithstanding the provisions of paragraph 15, 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 15 kg/119 cm LJFL, provided that, if this alternative is chosen, no tolerance of swordfish smaller than 119 cm 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 CPC 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.

#### PART V SCIENTIFIC RESEARCH AND DATA REPORTING REQUIREMENTS

17. All CPCs catching swordfish in the North Atlantic shall 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 the 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.
18. The SCRS shall continue work on robustness tests, focusing particularly on the Climate Change scenarios and minimum size limits. The results shall be presented at the Commission no later than 2027 and, if needed, considered for future revisions of the present conservation and management measures for North Atlantic swordfish.
19. No later than 2025, CPCs shall present to the SCRS the statistical methodology used to estimate dead discards and live releases. CPCs with artisanal and small-scale fisheries shall also provide information about their data collection programs. The SCRS shall review these methodologies and, if it determines that a methodology is not scientifically sound, the SCRS shall provide relevant feedback to the CPCs in question to improve the methodologies. Once these methods are approved CPCs should update their catch reporting to incorporate these estimated dead and live discards.

**PART VI**  
**FINAL PROVISIONS**

20. A review of the performance of the MP by the Commission and the SCRS shall be completed by 2030 as set out in **Annex 3** and every 6 years thereafter. The scope of the review should be to ensure the MP is performing in line with objectives and may include: updating the OM reference grid; reconditioning the MSE operating models; retuning the existing MP; and considering the performance of alternative candidate management procedures within an updated MSE framework. Based on that review and subsequent SCRS advice, the Commission shall decide on future management measures, approaches, and strategies, including, inter alia, regarding TAC levels, for North Atlantic swordfish.
21. Panel 4, with scientific guidance from the SCRS, shall develop the EC protocol for this MP during one or more intersessional meetings, as needed, for review and adoption by the Commission at its 2025 annual meeting. The protocol will become **Annex 4** of this Recommendation once adopted.
22. This Recommendation repeals and replaces the *Recommendation by ICCAT Amending the Recommendation for the Conservation of North Atlantic Swordfish, Rec. 16-03 (Rec. 17-02)*, the *Resolution by ICCAT on Development of Initial Management Objectives for North Atlantic Swordfish (Res. 19-14)*, and the *Recommendation by ICCAT Replacing Recommendation 22-03 Extending and Amending Recommendation 17-02 for the Conservation of North Atlantic Swordfish (Rec. 23-04)*.

## Description and formulae for calculating Total Allowable Catches (TACs) for North Atlantic swordfish using the MCC11 Management Procedure (MP) Specifications

### **MCC11**

The MCC11 (Mostly Constant Catch with 11 levels) management procedure is empirical and uses a single input - the North Atlantic Swordfish combined index of abundance (“the Combined Index”). The goal of the MCC11 MP is to have the catch remain as constant as possible and only increase the TAC if the Combined Index increased substantially and only decrease the TAC if the Combined Index declined substantially. This MP is tuned to achieve a 60% probability of being in the Kobe green quadrant (i.e.  $SB \geq SB_{MSY}$  and  $F \leq F_{MSY}$ ) in each of the three 10 year projection time periods (short = years 1-10; medium = years 11-20; long = years 21-30).

### **Abundance index**

The Combined Index uses catch and effort data from 7 ICCAT CPCs and draws from both Task 2 catch and effort data and detailed catch and effort records obtained directly from some CPCs - totaling over 95% of the annual catch in the North Atlantic. The initial year of the index is 1963. The index values are in kilograms of swordfish catch per 1000 hooks. This model-based index uses a Tweedie error distribution and categorical explanatory variables: year, quarter, spatial zone, a targeting variable, and a size class variable.

The predicted year values are then standardized to a mean of 1 over the whole time series. These values are defined as  $I$ .

### **MP specifications**

This MP uses a 3-year management cycle length. The base TAC (constant catch) is 12,600 t - this is an approximation of the constant catch that would result in at least 60% PGK.

A base TAC ( $TAC_{base}$ ) is calculated as:

$$TAC_{base} = \theta 12,600$$

where  $\theta$  is the tuning parameter that results in achieving a 60% PGK in the short-term. The tuning parameter for MCC11 is 0.7562.

$TAC_{base}$  is modified by comparing the ratio of the current 3-year average of the Combined Index ( $I_{curr}$ ) to a historical 3-year average of the Combined Index ( $I_{base}$ ):

$$I_{rat} = \frac{I_{curr}}{I_{base}}$$

$I_{base}$  is calculated as the average of the Combined Index from 2017-2019. The value of  $I_{rat}$  is used to determine how much the  $TAC_{base}$  should be increased or decreased if at all.

The TAC for the following management cycle is calculated as:

$$TAC_{y+1} = TAC_{base} \Delta_{TAC}$$

where  $\Delta_{TAC}$  is calculated as:

$$\Delta_{\text{TAC}} = \begin{cases} 1.85 & \text{if } I_{\text{rat}} \geq 1.85 \\ 1.75 & \text{if } 1.75 \leq I_{\text{rat}} < 1.85 \\ 1.65 & \text{if } 1.65 \leq I_{\text{rat}} < 1.75 \\ 1.55 & \text{if } 1.55 \leq I_{\text{rat}} < 1.65 \\ 1.45 & \text{if } 1.45 \leq I_{\text{rat}} < 1.55 \\ 1.35 & \text{if } 1.35 \leq I_{\text{rat}} < 1.45 \\ 1.25 & \text{if } 1.25 \leq I_{\text{rat}} < 1.35 \\ 1.15 & \text{if } 1.15 \leq I_{\text{rat}} < 1.25 \\ 1.00 & \text{if } 0.75 \leq I_{\text{rat}} < 1.15 \\ 0.75 & \text{if } 0.5 \leq I_{\text{rat}} < 0.75 \\ 0.5 & \text{if } I_{\text{rat}} < 0.5 \end{cases}$$



### Performance Metrics for Management Objectives

Performance Indicators are calculated based on 80 simulations for each of the 9 operating models (OMs) for a 30-year projection under a Candidate Management Procedures (CMP).

<i>Management objectives</i>	<i>Corresponding key PIs</i>
<p><b>Status</b> The stock should have a 60% or greater probability of occurring in the green quadrant of the Kobe matrix.</p>	<p><b>PGK<sub>SHORT</sub></b>: Probability of being in the Kobe green quadrant (i.e., <math>SB \geq SB_{MSY}</math> and <math>F &lt; F_{MSY}</math>) in years 1-10  <b>PGK<sub>MED</sub></b>: Probability of being in the Kobe green quadrant (i.e., <math>SB \geq SB_{MSY}</math> and <math>F &lt; F_{MSY}</math>) in years 11-20  <b>PGK<sub>ALL</sub></b>: Probability of being in the Kobe green quadrant (i.e., <math>SB \geq SB_{MSY}</math> and <math>F &lt; F_{MSY}</math>) over years 1-30  <b>PNOF</b>: Probability of not overfishing (<math>F &lt; F_{MSY}</math>) over years 1-30</p>
<p><b>Safety</b> There should be a 15% or less probability of the stock falling below <math>B_{LIM}</math> (<math>0.4 * B_{MSY}</math>) at any point during the 30-year evaluation period.</p>	<p><b>LRP<sub>ALL</sub></b>: Probability of breaching the limit reference point (i.e., <math>SB &lt; 0.4 * SB_{MSY}</math>) in any of years 1-30.</p>
<p><b>Yield</b> Maximize overall catch levels.</p>	<p><b>TAC1</b>: TAC in the first management cycle (2025-2027)  <b>AvTAC<sub>SHORT</sub></b>: Median TAC (t) over years 1-10  <b>AvTAC<sub>MED</sub></b>: Median TAC (t) over years 11-20  <b>AvTAC<sub>LONG</sub></b>: Median TAC (t) over years 21-30</p>
<p><b>Stability</b> Changes in TAC shall be minimized, consistent with the specifications of the MP as described in <b>Annex 1</b>.</p>	<p><b>VarC</b>: Mean variation in TAC (%) between management cycles over years 1-30</p>

### Schedule for Management Procedure Implementation

Three-year management cycle

Year	Management cycle	Activity					Data inputs	
		MP run	MP advice implemented	Stock assessment	MSE review	EC evaluated	Combined index*	EC indicators
2024		x					x	
2025	1		x			x		x
2026						x		x
2027		x				x	x	x
2028	2		x			x		x
2029				[x]		x		x
2030		x			[x]	x	x	x
2031	3		x			x		x
2032						x		x
2033		x				x	x	x

\*The combined index may be updated every year, depending on the requirements set out in the ECP.