

Revised roadmap for the ICCAT MSE processes adopted by the Commission in 2023 and revised by the SCRS in 2024

This schedule is intended to guide the development of harvest strategies for priority stocks identified in *Recommendation by ICCAT on the development of Harvest Control Rules and of Management Strategy Evaluation* (Rec. 15-07) (North Atlantic albacore, North Atlantic swordfish, eastern and western Atlantic bluefin tuna, and tropical tunas). It builds on the initial roadmap that was appended to the 2016 Annual Meeting report, which has been revised regularly based on the SCRS advice and Commission decisions. It provides an aspirational timeline that is subject to revision and should be considered in conjunction with the stock assessment schedule that is revised annually by the SCRS. Due to the amount of cross-disciplinary dialogue that may be needed, intersessional Panel meetings and/or meetings of the Standing Working Group to Enhance Dialogue between Fisheries Scientists and Managers (SWGSM) will be necessary. However, the exact timeline for delivery is contingent on funding, prioritization, and other work of the Commission and SCRS. Tasks are divided into four categories: Commission intersessionally, SCRS development, SCRS implementation, and Commission at Annual Meeting. The table below contains the revisions suggested by the SCRS during its 2024 plenary meeting for Commission consideration. New text is underlined, and removed text is indicated with [...].

		Northern Albacore	Bluefin Tuna	Northern Swordfish	Tropical Tunas (BET, YFT, Eastern SKJ)	Western Skipjack
2023*	Commission intersessionally		<p>COMM (PA2) developed an exceptional circumstances protocol through an iterative consultation process with the SCRS that provides, inter alia, guidance on range of appropriate management responses should exceptional circumstances be found to occur.</p>	<p>COMM (PA4) met intersessionally (March, June, October), with SCRS participation, to:</p> <ul style="list-style-type: none"> -discuss CMPs, operational management objectives, and performance indicators -refine CMP(s) -recommend operational management objectives and identify performance indicators <p>Ambassadors' meetings were held in June and October.</p>	<p>COMM (PA1) dialogue with SCRS on management objectives and performance indicators to be used for tropical tunas MSE.</p>	<p>COMM (PA1) met intersessionally (May and October), with SCRS participation, to:</p> <ul style="list-style-type: none"> -recommend final operational management objectives and identify performance indicators -consider final CMPs.

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2023*	SCRS development	SCRS to initiate independent peer review of MSE process				
		<p>New SS3 reference case developed for future conditioning of OMs.</p> <p>Reference and Robustness grid of OMs reconsidered.</p>	<p>SCRS provided final advice to COMM (PA2) on criteria for determining exceptional circumstances and inclusion in the exceptional circumstances protocol to be developed by Panel 2 in consultation with the SCRS.</p>	<p>SCRS incorporated feedback from COMM through PA4.</p>	<p>SCRS to list major sources of uncertainty to be considered in the MSE for multi-stock tropical tuna MSEs.</p> <p>Developing operating and observational error models.</p> <p>Capacity building workshops held.</p>	<p>SCRS advanced work on the SKJ W MSE, incorporating feedback from COMM through PA1.</p>
	SCRS implementation	<p>SCRS conducted assessment to ensure that the conditions considered in MP testing are still applicable to the stock.</p> <p>SCRS evaluated existence of exceptional circumstances.</p>	<p>SCRS evaluated existence of exceptional circumstances taking into account, to the extent possible, the latest draft of the exceptional circumstances protocol provided to the SCRS by 1 September 2023.</p>			

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2023*	Commission at Annual Meeting	<p>COMM continued to use of the MP to set 2024-2026 TAC at the Annual Meeting, on the predetermined timescale for MP setting.</p> <p>[...]</p>	<p>COMM to adopt adopted exceptional circumstances protocol as new Annex in MP (Rec. 22-09/Rec. 23-07).</p>	<p>COMM reviewed updated results.</p>		<p>COMM reviewed updated results on performance of CMPs.</p>
2024*	Commission intersessionally			<p>[...]</p> <p><u>COMM (PA4) met intersessionally (October), with SCRS participation, to review and discuss updated CMPs and results, and to discuss operational management objectives and the MP implementation schedule.</u></p> <p><u>Ambassadors' meeting was held in October.</u></p>	<p>[...]</p>	<p>SCRS will presented recommendation on CMPs to the COMM (PA1), to:</p> <ul style="list-style-type: none"> - consider final CMPs <p>[...]</p> <p><u>Ambassadors' meeting was held in October.</u></p>

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2024*	SCRS development	<p>SCRS <u>started elaboration of a grid of reference and robustness OMs based on Stock Synthesis as part of a new MSE.</u></p> <p>SCRS <u>started improvements of the Observation Error Model by incorporating statistical properties of CPUE residuals.</u></p> <p>SCRS <u>preliminarily tested the adopted MP on the new reference uncertainty grid.</u></p> <p>SCRS <u>reviewed climate change impacts on albacore. to consider them in robustness tests.</u></p>		<p>SCRS <u>updated, reviewed, and approved the combined index.</u></p> <p>SCRS <u>reviewed and approved projections and CMP performance in light of the updated combined index.</u></p> <p>SCRS <u>tested two-year data lags on CMP performance.</u></p> <p>[...]</p> <p>The SCRS <u>continued to develop robustness scenarios.</u></p>	<p>SCRS to <u>conducted yellowfin assessment.</u></p> <p>[...]</p> <p><u>External peer review of observation and operating models.</u></p> <p><u>Initial development of candidate MPs and testing of MPs.</u></p> <p>Meetings of Technical MSE Group.</p> <p>[...]</p> <p>SCRS to <u>started the development of educational material to explain how the 3 species interact in the proposed MSE, and w</u></p> <p><u>What information the SCRS needs from PA1 in order to begin constructing and testing the operating models, including capacity building workshops.</u></p>	<p>[...]</p> <p>The following abundance indices were <u>should be updated using data through 20223, if possible, maintaining the model structure of these indices as used in the 2022 SKJ-W stock assessment: Baitboat Brazil Present, Handline Brazil, Purse Seine Venezuela, and Longline United States of America.</u></p> <p>[...]</p> <p>SCRS to develop climate change scenarios to test robustness of MPs.</p> <p>SCRS to <u>developed and proposed a time schedule for SKJ-W MSE updates and revisions.</u></p>

		Northern Albacore	Bluefin Tuna	Northern Swordfish	Tropical Tunas (BET, YFT, Eastern SKJ)	Western Skipjack
2024*	SCRS implementation	SCRS to evaluated existence of exceptional circumstances in accordance with the EC protocol.	SCRS to evaluated existence of exceptional circumstances in accordance with the EC protocol.	[...] [...]	External peer review of Observation and Operating models. Initial development of candidate MPs and testing of MPs. SCRS to develop clear educational material to explain how the 3 species interact in the proposed MSE and what information the SCRS needs from PA1 in order to begin constructing and testing the operating models, including capacity building workshops.	[...]
	Commission at Annual Meeting			COMM to adopted an MP, <u>implementing a TAC for 2025-2027 including the TAC.</u>	<u>COMM adopted interim operational management objectives at the Annual Meeting.</u>	COMM <u>adopted</u> to consider final evaluation of CMPs and adopt an MP at the Annual Meeting.

2025	Commission intersessionally			<p>COMM (PA4) to develop an exceptional circumstances protocol through an iterative consultation process with the SCRS that provides, inter alia, guidance on a range of appropriate management responses should exceptional circumstances be found to occur</p>	<p>COMM (PA1) to develop initial operational MOs for the multi-stock TRO MSE. PA1 also to provide guidance to the SCRS on how to handle: trade-offs in species yields; changes in effort over time; changes in gear use over time; changes in closure periods over time; and, variable allocations over time (and therefore changes in geospatial effort and gear type over time).</p> <p>COMM (PA1) to meet intersessionally, with SCRS participation, to:</p> <ul style="list-style-type: none"> - discuss CMPs, operational management objectives, and performance indicators - refine CMP(s) - recommend final operational management objectives and identify performance indicators <p>Ambassadors' meetings to be held.</p>	<p>SCRS to develop an exceptional circumstances protocol through an iterative consultation process that provides, inter alia, guidance on a range of appropriate management responses should exceptional circumstances be found to occur.</p> <p>Ambassadors' meeting to be held.</p>
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		Northern Albacore	Bluefin Tuna	Northern Swordfish	Tropical Tunas (BET, YFT, Eastern SKJ)	Western Skipjack
2025	SCRS development	<p><u>SCRS to finalize the grid of reference and robustness OMs based on Stock Synthesis as part of a new MSE.</u></p> <p><u>SCRS to finalize the improvement of the Observation Error Model.</u></p> <p><u>SCRS to test the adopted MP on the new reference uncertainty grid.</u></p> <p>SCRS to test alternative candidate MPs (e.g., based on JABBA <u>model</u>, or empirical).</p>		<p><u>SCRS to provide final advice to COMM (PA4) on criteria for determining exceptional circumstances and inclusion in the exceptional circumstances protocol to be developed by Panel 4 in consultation with the SCRS.</u></p> <p><u>The SCRS to continue to develop robustness scenarios, as requested by COMM.</u></p>	<p>SCRS to finalize MSE results, incorporating feedback from COMM through PA1.</p>	<p><u>SCRS to finalize MSE results, incorporating feedback from COMM through PA1.</u></p> <p>SCRS to develop an exceptional circumstances protocol.</p> <p><u>SCRS to develop climate change scenarios to test robustness of MPs.</u></p>
	SCRS implementation	<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p>	<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p> <p><u>SCRS to provide the TAC for 2026-2028 by the MP.</u></p>	<p><u>Should a final EC protocol be ready well in advance of the SCRS annual meeting.</u></p> <p>SCRS to evaluate existence of exceptional circumstances in accordance with <u>that</u> protocol.</p>		<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p>

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2025	Commission at Annual Meeting		COMM to continue use of the MP to set TAC on the predetermined timescale defined in the MP setting.	COMM to adopt <u>exceptional circumstances</u> protocol.	COMM to adopt an MP, including the TACs.	<u>COMM to consider final evaluation of CMPs, and adopt an MP, including the TACs, at the Annual Meeting.</u>
2026 and beyond*	Commission interessionally	PA2 will provide guidance to SCRS on updated management objectives and performance statistics.			[...]	<u>In 2026, SCRS to develop an exceptional circumstances protocol through an iterative consultation process that provides, inter alia, guidance on a range of appropriate management responses should exceptional circumstances be found to occur.</u>

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2026 and beyond*	SCRS development	<p>SCRS to test alternative candidate MPs (e.g., based on JABBA model, or empirical).</p> <p>SCRS to complete new MSE in 2026.</p>	<p>SCRS to review the MP in 2027-2028 as outlined in Rec. 22-09.</p>	<p>The SCRS to review the MP <u>on a pre-determined schedule, as defined by COMM.</u></p>	<p>SCRS to provide final advice to COMM (PA1) on criteria for determining exceptional circumstances and inclusion in the exceptional circumstances protocol to be developed by Panel 1 in consultation with the SCRS.</p>	<p>In 2026, SCRS to provide final advice to COMM (PA1) on criteria for determining exceptional circumstances and inclusion in the exceptional circumstances protocol to be developed by Panel 1 in consultation with the SCRS.</p>

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2026 and beyond*	SCRS implementation	<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p> <p>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</p>	<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p> <p>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</p>	<p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</p> <p>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</p>	<p><u>SCRS to develop an exceptional circumstances protocol through an iterative consultation process that provides, inter alia, guidance on range of appropriate management responses should exceptional circumstances be found to occur.</u></p> <p>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol. (2027)</p> <p>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stocks.</p>	<p>SCRS to evaluate the existence of exceptional circumstances in accordance with the EC protocol.</p> <p>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</p>

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	Commission at Annual Meeting	<p>COMM to continue use of the MP to set management measures on the predetermined timescale defined in the MP setting.</p> <p>Per Rec. 21-04, COMM to consider adoption of new MP in 2026.</p>	<p>COMM to continue use of the MP to set TAC on the predetermined timescale defined in the MP setting.</p> <p>COMM to review the MP in 2028.</p>	<p>COMM to continue use of the MP to set TAC on the predetermined timescale for MP setting.</p>	<p>COMM to adopt an MP, including the TACs.</p> <p>COMM to adopt exceptional circumstances protocol in 2027 as a new Annex in MP.</p> <p>COMM to continue use of the MP to set TACs on the predetermined timescale for MP setting.</p>	<p>COMM to continue use of the MP to set TAC on the predetermined timescale for MP setting.</p>

* Assumes that the workplan is accomplished as described.

LIST OF ACRONYMS:

- BET** = Bigeye tuna
- BFT** = Bluefin tuna
- COMM**=Commission
- CMP** = Candidate Management Procedure
- HCR** = Harvest Control Rule
- MP** = Management Procedure
- MSE** = Management Strategy Evaluation
- OM** = Operating Model
- SCRS** = Standing Committee on Research and Statistics
- TAC** = Total Allowable Catch
- TRO** = Tropical tunas