

Revised roadmap for the ICCAT MSE processes adopted by the Commission in 2022

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.

* For 2023, the roadmap reflects progress to-date in some detail. For 2024 onward, more general steps for the SCRS and Commission are anticipated pending outcomes of the 2023 Annual Meeting.

This version of the roadmap for the ICCAT MSE processes includes changes suggested by the SCRS in 2023, which are underlined in the table below.

		<i>Northern Albacore</i>	<i>Bluefin Tuna</i>	<i>Northern Swordfish</i>	<i>Tropical Tunas (BET, YFT, Eastern SKJ)</i>	<i>Western Skipjack</i>
2022	COMM intersessionally		<p>COMM (PA2) met intersessionally (March, May, July, October) to:</p> <ul style="list-style-type: none"> - recommend final operational management objectives and identify performance indicators - consider final CMPs <p>Ambassadors' workshops held in February and October.</p>			

		<i>Northern Albacore</i>	<i>Bluefin Tuna</i>	<i>Northern Swordfish</i>	<i>Tropical Tunas (BET, YFT, Eastern SKJ)</i>	<i>Western Skipjack</i>
	SCRS development	<p>SCRS worked on a new SS model for NALB that will be used for future development of a new MSE reference grid.</p> <p>Per Rec. 21-04, the SCRS tested alternatives to the adopted MP, as well as determined the number of CPUE series and the level of underreporting that would trigger the occurrence of exceptional circumstances.</p>	<p>SCRS conducted stock assessment for BFT-E (based on work conducted by subgroups on models and indices).</p> <p>SCRS completed MSE, incorporating feedback from COMM provided at dialogue meetings with PA2.</p>	<p>SCRS conducted stock assessment (North and South Atlantic).</p> <p>SCRS reconditioned OMs considering new information from the stock assessment and finalized OM grid.</p> <p>SCRS continued development and testing of CMPs.</p> <p>SCRS continued work on criteria for determining exceptional circumstances.</p>	<p>SCRS conducted SKJ stock assessments.</p> <p>SCRS conducted preliminary conditioning of single-stock BET and YFT OMs.</p>	<p>SCRS conducted SKJ stock assessments.</p> <p>SCRS reconditioned OMs in light of new assessment.</p> <p>SCRS initiated development and testing of CMPs.</p>

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2022	SCRS implementation	SCRS evaluated existence of exceptional circumstances.				
	COMM at Annual Meeting		COMM adopted an MP at the Annual Meeting, including TAC for western stock and TAC for eastern/Med stock for 2023-2025.			<u>COMM adopted initial management objectives.</u>

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2023*	Commission intersessionally		<p>COMM (PA2) <u>developed</u> 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) <u>met</u> 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) - <u>recommend</u> operational management objectives and identify performance indicators <p><u>Ambassadors' meetings held in June and October.</u></p>	<p>COMM (PA1) dialogue with SCRS on management objectives and performance indicators to be used for tropical tunas MSE.</p>	<p>COMM (PA1) <u>met</u> intersessionally (<u>May and October, with SCRS participation, to:</u></p> <ul style="list-style-type: none"> - <u>recommend final operational management objectives and identify performance indicators</u> - <u>consider final CMPs.</u>

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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>[...]</p>	<p>SCRS <u>provided</u> 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 <u>finalized</u> MSE results, incorporating 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 <u>held</u>.</p>	<p>SCRS to complete 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 <u>evaluated</u> existence of exceptional circumstances.</p>	<p>SCRS <u>evaluated</u> 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 to continue use of the MP to set 2024-2026 TAC at the Annual Meeting, on the predetermined timescale for MP setting.</p> <p>Per Rec. 21-04, COMM to review the MP, taking SCRS analyses into account.</p>	<p>COMM to adopt exceptional circumstances protocol as a new Annex in MP (Rec. 22-09).</p>	<p>COMM to adopt an MP, including the TAC.</p>		

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2024*	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 and continue any outstanding work from 2023.</p>	<p>COMM (PA1) to develop <u>initial operational MOs for the multi-stock TRO MSE</u>. PA1 also to <u>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).</u></p>	<p>COMM (PA1) to meet <u>intersessionally, with SCRS participation, to:</u></p> <ul style="list-style-type: none"> - <u>recommend final operational management objectives and identify performance indicators</u> - <u>consider final CMPs</u> - <u>-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.</u>

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2024*	SCRS development	<p>SCRS will finalize a grid of reference and robustness OMs based on Stock Synthesis as part of a new MSE.</p> <p>SCRS to improve Observation Error Model by incorporating statistical properties of CPUE residuals.</p> <p>SCRS to test the adopted MP on the new uncertainty grid.</p>		<p>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.</p> <p>The SCRS to continue to develop robustness scenarios.</p>	<p>SCRS to conduct yellowfin assessment.</p> <p>External peer review of Observation and Operating models.</p> <p>Meetings of Technical MSE Group.</p> <p>Initial development of candidate MPs and testing of MPs.</p>	<p><u>SCRS to complete MSE, incorporating feedback from COMM through PA1.</u></p> <p><u>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.</u></p> <p><u>SCRS to develop climate change scenarios to test robustness of MPs.</u></p>

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	SCRS implementation	SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.	SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.	SCRS to evaluate existence of exceptional circumstances and advise on any necessary actions taking into account, to the extent possible, the latest draft of the exceptional circumstances protocol. SCRS to evaluate the MP relative to robustness scenarios.	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.	<u>SCRS to evaluate the existence of exceptional circumstances and advise on any necessary actions taking into account, to the extent possible, the latest draft of the exceptional circumstances protocol.</u>
	Commission at Annual Meeting			COMM to adopt exceptional circumstances protocol as new Annex in MP.		<u>COMM to consider final evaluation of CMPs and adopt an MP with an exceptional circumstances protocol at the Annual Meeting.</u>

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2025	Commission intersessionally	[...]			<p><u>COMM (PA1) to meet intersessionally, with SCRS participation, to:</u></p> <ul style="list-style-type: none"> - <u>discuss CMPs, operational management objectives, and performance indicators</u> - <u>refine CMP(s)</u> - <u>recommend final operational management objectives and identify performance indicators</u> <p><u>Ambassadors' meetings to be held.</u></p>	
	SCRS development	<p>SCRS to test alternative candidate MPs (e.g, based on JABBA, or empirical).</p> <p>[...]</p>	[...]	[...]	<p><u>SCRS to finalize MSE results, incorporating feedback from COMM through PA1.</u></p>	

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2025	SCRS implementation	SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol. [...]	SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol. [...]	SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol. [...]		<u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u>
	Commission at Annual Meeting	[...]	COMM to continue use of the MP to set TAC on the predetermined timescale defined in the MP setting. [...]	[...]	<u>COMM to adopt an MP, including the TACs.</u>	[...]
<u>2026 and beyond*</u>	<u>Commission interessionally</u>	<u>PA2 will provide guidance to SCRS on updated management objectives and performance statistics.</u>			<u>COMM (PA1) to develop 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.</u>	

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	<u>SCRS development</u>	<p><u>SCRS to test alternative candidate MPs (e.g., based on IABBA, or empirical).</u></p> <p><u>SCRS to complete new MSE in 2026.</u></p>	<p><u>SCRS to review the MP in 2027-2028 as outlined in Rec. 22-09.</u></p>	<p><u>The SCRS to review the MP in 202X-202X as indicated in Rec. 23-XX.</u></p>	<p><u>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.</u></p>	
	<u>SCRS implementation</u>	<p><u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u></p> <p><u>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</u></p>	<p><u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u></p> <p><u>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</u></p>	<p><u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u></p> <p><u>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</u></p>	<p><u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u></p> <p><u>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stocks.</u></p>	<p><u>SCRS to evaluate existence of exceptional circumstances in accordance with the EC protocol.</u></p> <p><u>SCRS to conduct periodic assessments to ensure that the conditions considered in MP testing are still applicable to the stock.</u></p>

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