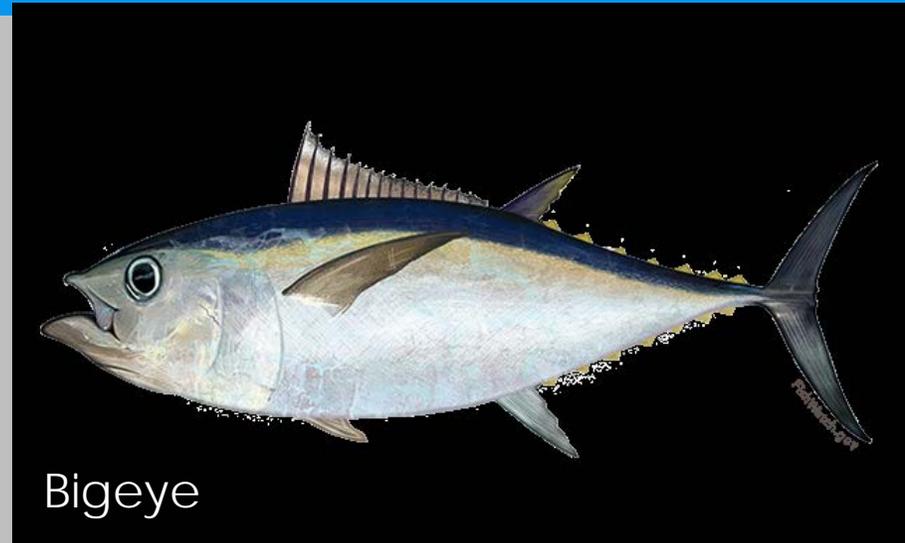




2021 SCRS Report



Bigeye

Panel 1- Tropical Tunas



Yellowfin



Skipjack



Tropical Tuna Summary

SCRS activities for 2021 focused on Exec Summaries for assessed stocks (BET), Research Recommendations, workplans and responses to the Commission.

Presentation Summary

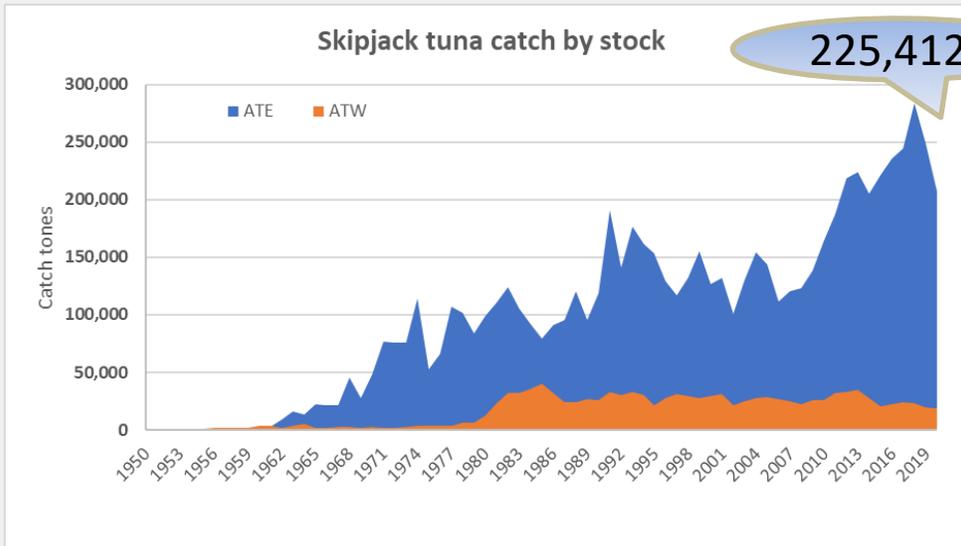
- AOTTP
- Brief Review of State of Stocks and Outlook for YFT and SKJ
- 2021 BET stock assessment and Executive Summary
 - Effects of Current regulations
 - Management recommendations
- Responses to the Commission
- Work Plan



- Two stocks –Eastern Atlantic and western Atlantic.
- Last Stock assessment for east and west Skipjack was in 2014.
- Next stock assessment scheduled for 2022.
- There are currently no specific regulations in place for skipjack tuna.
- Committee was not in a position to provide a reliable estimate of the maximum sustainable yield for the eastern stock.
- Catches updated to 2020
- Indices not updated since the last assessment.
- Essentially no changes in advice.

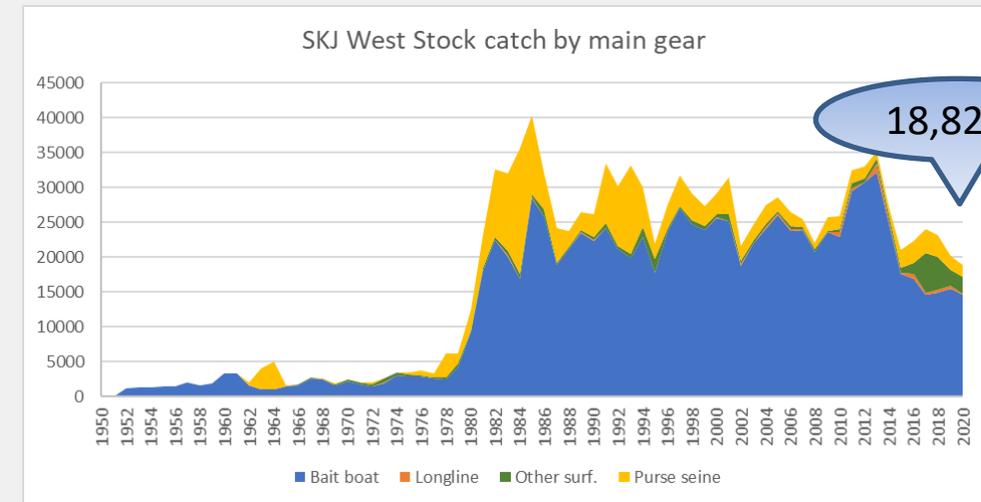
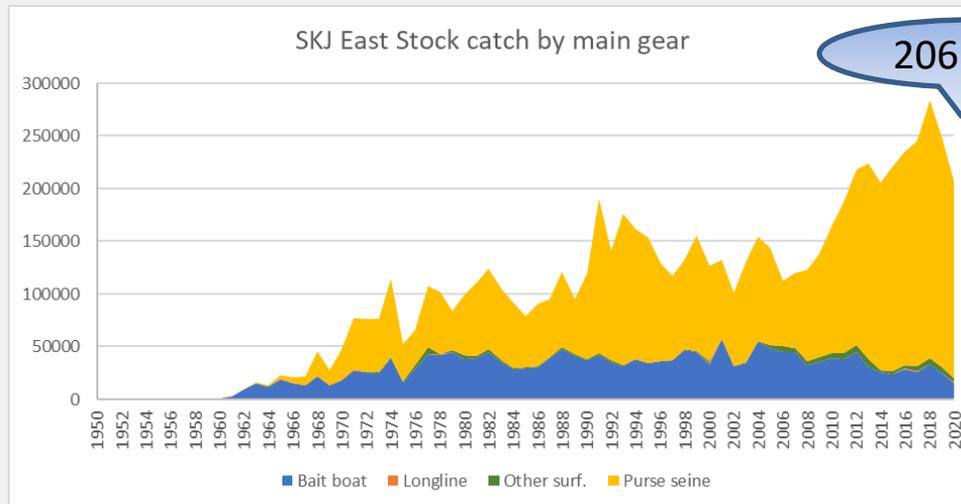


Catches – Tasks I and II Updated to 2020



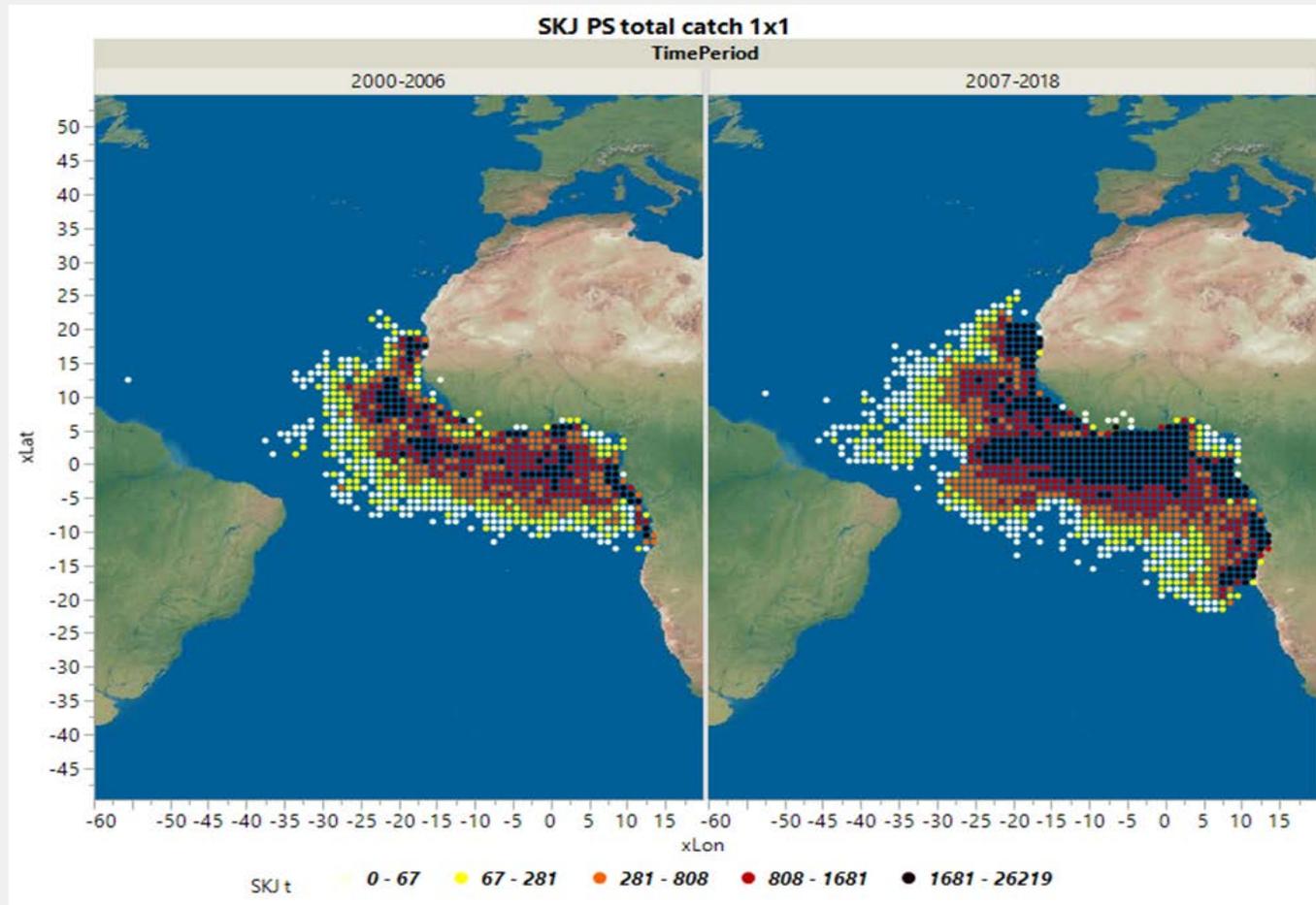
- Decline in catch since the early 1990s (due to a decrease in nominal fishing effort and/or to a moratorium effect), followed by a strong increase until 2018 then declining to 225,412t in 2020.

- Catchability of SKJ increased in the early 1990s due to FADs fishing





Spatial distribution of SKJ for the PS fisheries



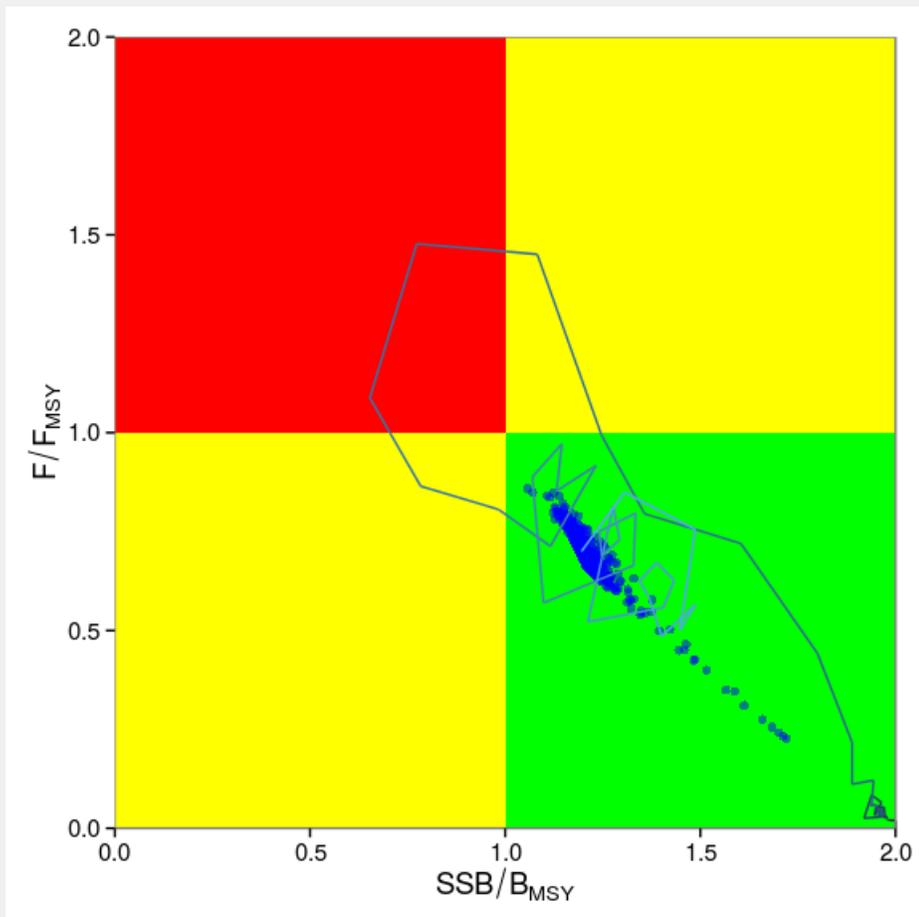
Purse seiner

(2000-2018)



State of the stocks

Western Skipjack



Likely Not Overfished and Overfishing not occurring.

	East Atlantic	West Atlantic
Maximum Sustainable Yield (MSY)	Probably higher than previous estimates (143,000-170,000)	Around 30,000-32,000 t
Current yield (2020)	206,589 t	18,824 t
Current Replacement Yield	Unknown	Somewhat below 32,000 t
Relative Biomass (B_{2013}/B_{MSY})	Likely >1	Probably close to 1.3
Mortality due to fishing (F_{2013}/F_{MSY})	Likely <1	Probably close to 0.7
Management measures in force	Rec. 16-01	None



Stock Assessment 2019 – Input data up to 1950-2018

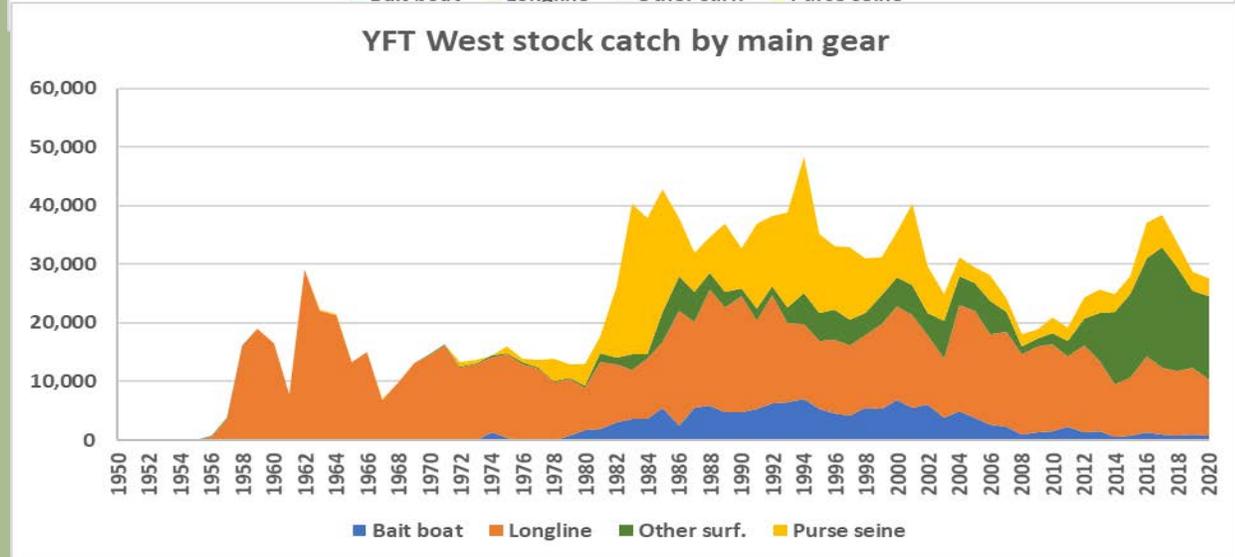
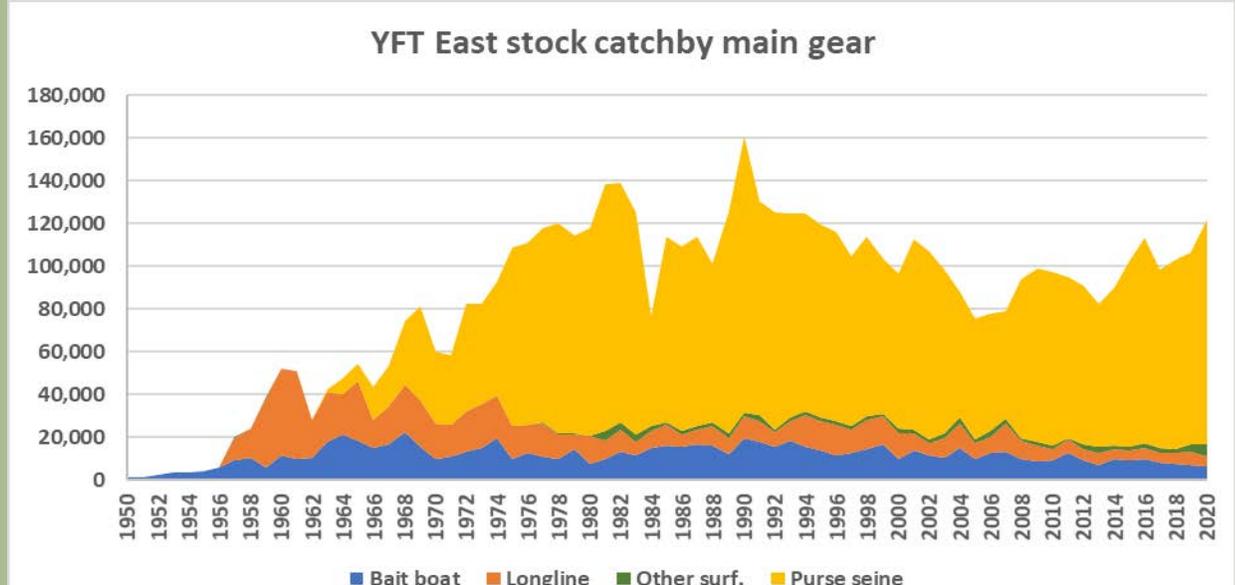


Yellowfin Tuna

- Ages up to 18 years were observed in otoliths and validated using ^{14}C bomb radiocarbon.
- Growth of YFT better estimated using a Richards function than a von Bertalanffy function (AOTTP information)
- Age-specific natural mortality function (e.g. Lorenzen) based on T_{max} of 18 rather than 11 used in previous assessment.
- Several New Indices used in the 2019 assessment.



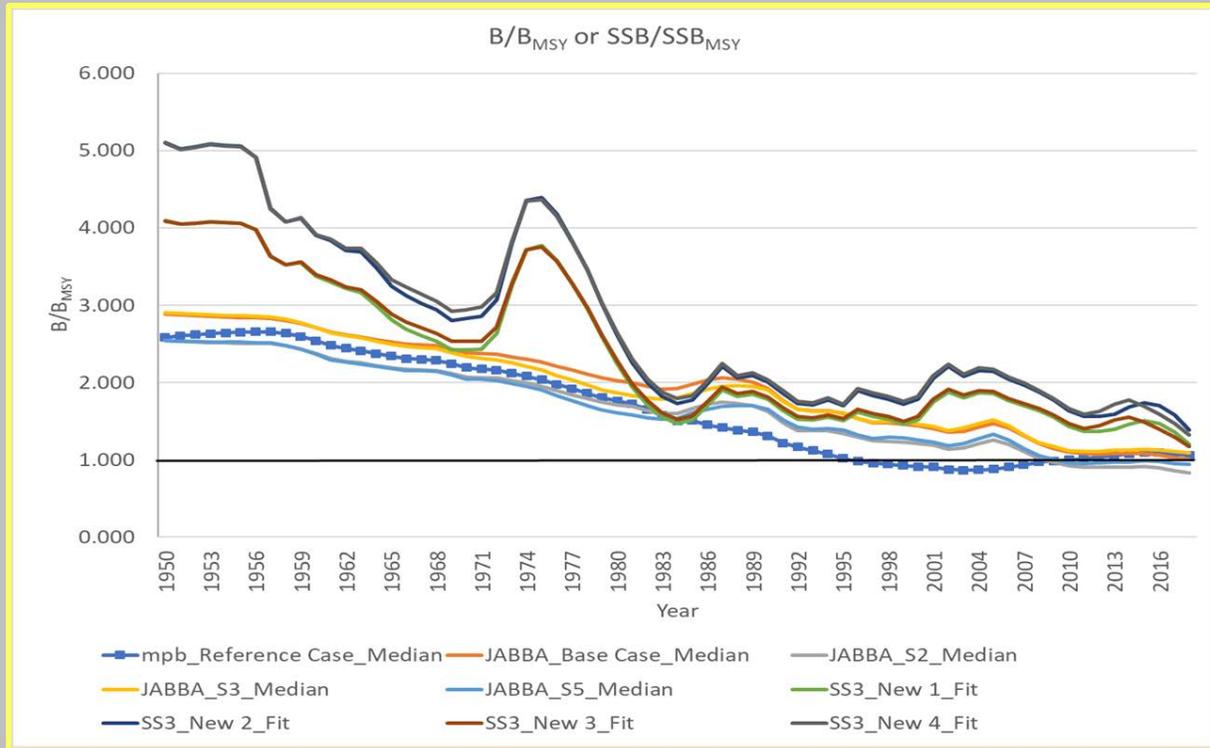
- 3 Major Gears (PS, BB, LL)
- Highest landings (194,000 t) in 1990.
- Decreased to 100,000 t by 2007.
- A TAC of 110,000 t was adopted in 2012.
- Purse seine vessels targeting tropical tunas in the eastern Atlantic has increased in the last five years.
- Catches increased from 135,312 in 2019 to 149,202t in 2020, mainly in the East.



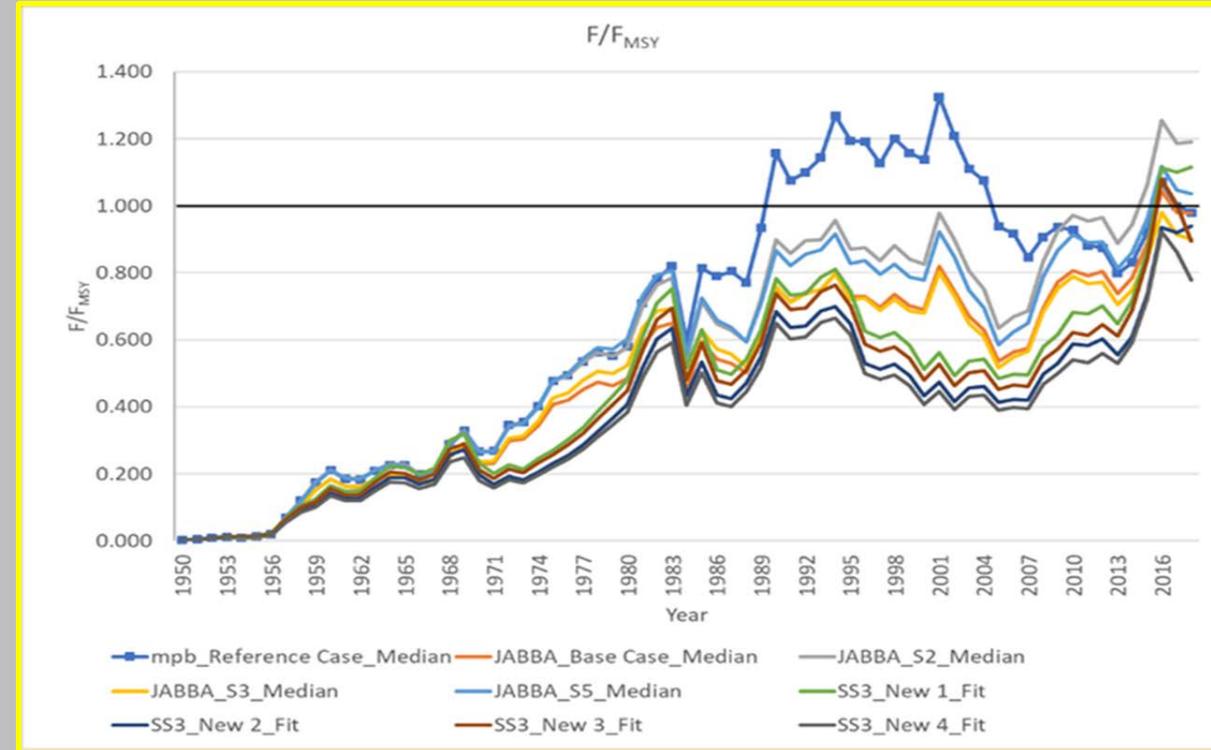


Assessment Results

Biomass relative to Bmsy



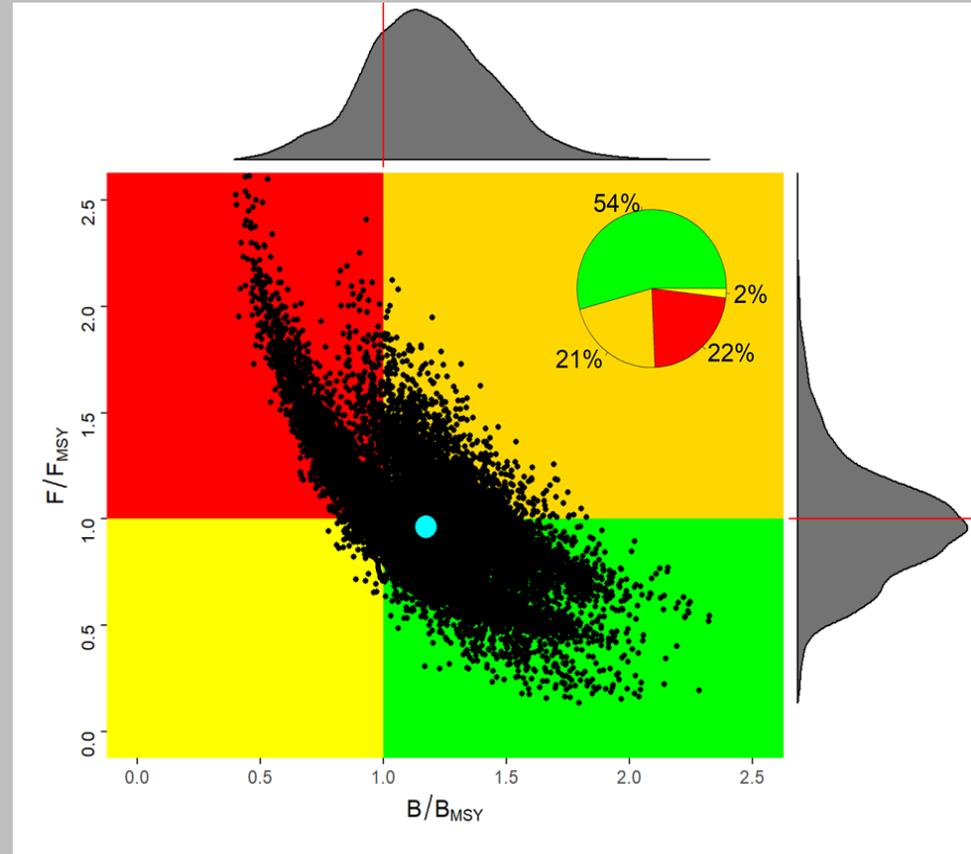
Fishing Mortality relative to Fmsy





Stock Assessment Results:

- Combined Results of Stock Synthesis, JABBA and MPB
- $B/B_{MSY} = 1.17$
 - Not Overfished
- $F/F_{MSY} = 0.96$
 - Not Overfishing
- $MSY = 121,298$ t
 - Mean MSY 2016-2018



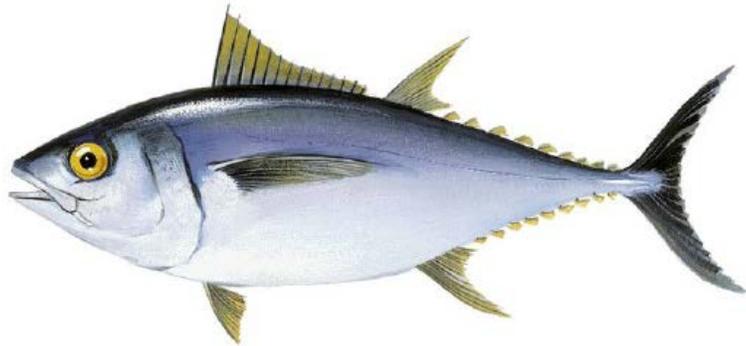
The 2019 result appears more optimistic than in 2016. However, the group cautioned that the difference in the results is not due to stock recovery. Instead, the perceived improvement is more likely due to changes in key data inputs (M, growth, indices) and the suite of models applied (JABBA, MPB, SS).



- Maintaining a TAC of 120,000 t is expected to maintain healthy stock status (no overfishing, not overfished) through 2033 with at least 63% probability

Joint Probability that $F \leq F_{MSY}$ and $B \geq B_{MSY}$

TAC Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
0	64	84	95	99	100	100	100	100	100	100	100	100	100	100
60000	64	75	85	92	96	97	98	99	99	99	100	100	100	100
70000	64	74	83	90	94	96	97	98	98	99	99	99	100	100
80000	64	72	79	86	91	94	96	97	97	98	98	99	99	99
90000	64	70	77	82	87	90	92	94	95	96	97	97	98	98
100000	64	68	73	77	82	85	87	89	90	92	93	94	94	95
110000	64	66	69	72	75	77	79	81	82	83	84	85	86	86
120000	63	63	64	65	65	66	66	67	67	68	65	65	66	66
130000	58	57	56	54	52	50	47	46	45	44	43	42	38	38
140000	48	45	42	38	35	31	29	26	24	22	21	20	20	19
150000	39	34	30	25	21	17	15	13	12	12	11	10	9	7



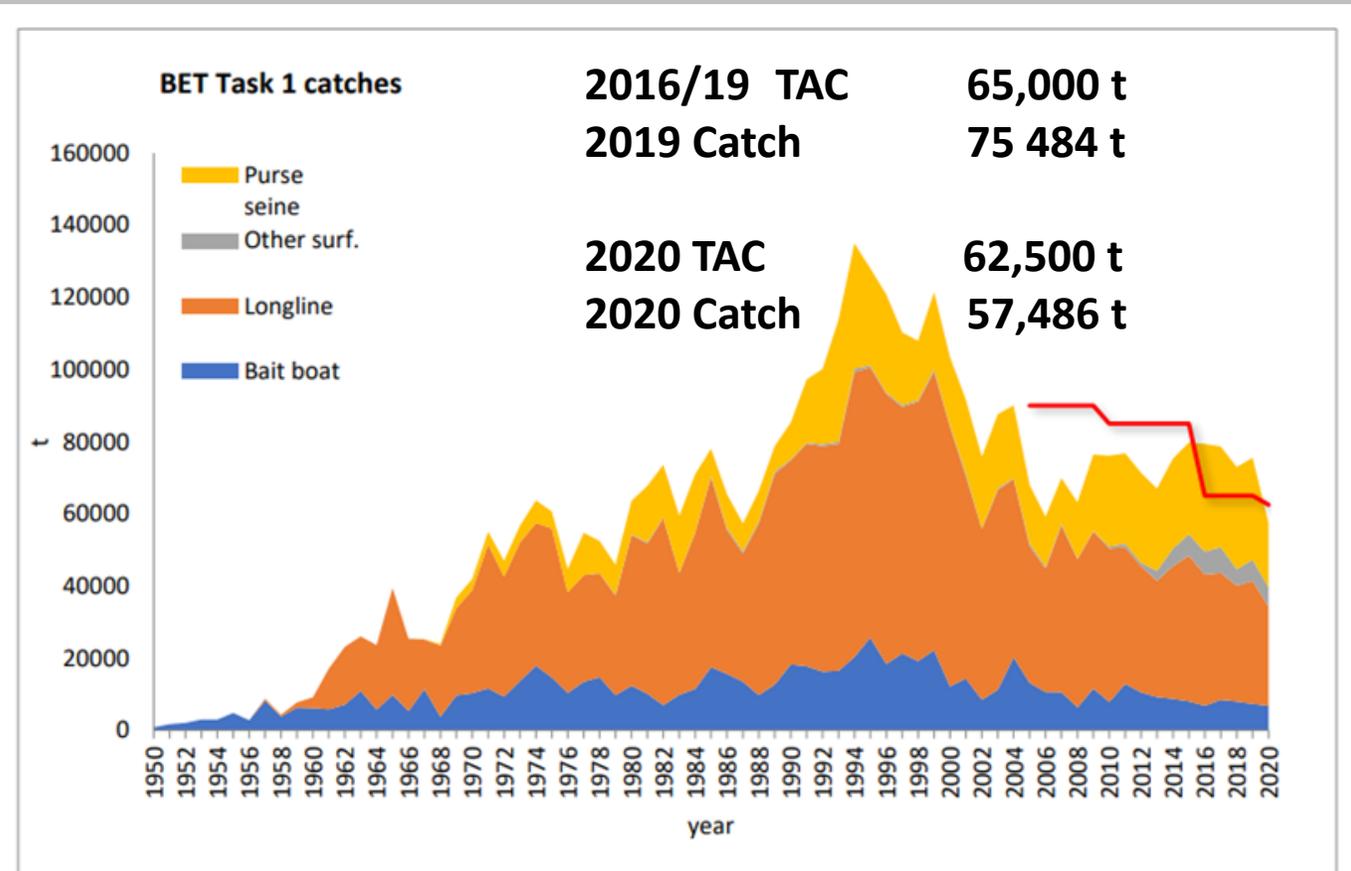
BIGEYE (*Thunnus obesus*)

- Latest assessment 2021 based on data to 2019
- Update of fishery indicators:
 - Catch (1950-2020)
 - Juvenile index of abundance based on acoustic buoys from FOBs/FADs (2010-2019)
- New Joint Longline index developed in 2021 (1979-2019).

- Significant changes made in the assessment Inputs (i.e., maximum age and natural mortality assumptions, the relative abundance indices used and the fleet structure.
- Modeling approaches, included non-equilibrium (MPB) and Bayesian state-space (JABBA) production models as well as an integrated statistical assessment models (Stock Synthesis) which was used to provide management advice.



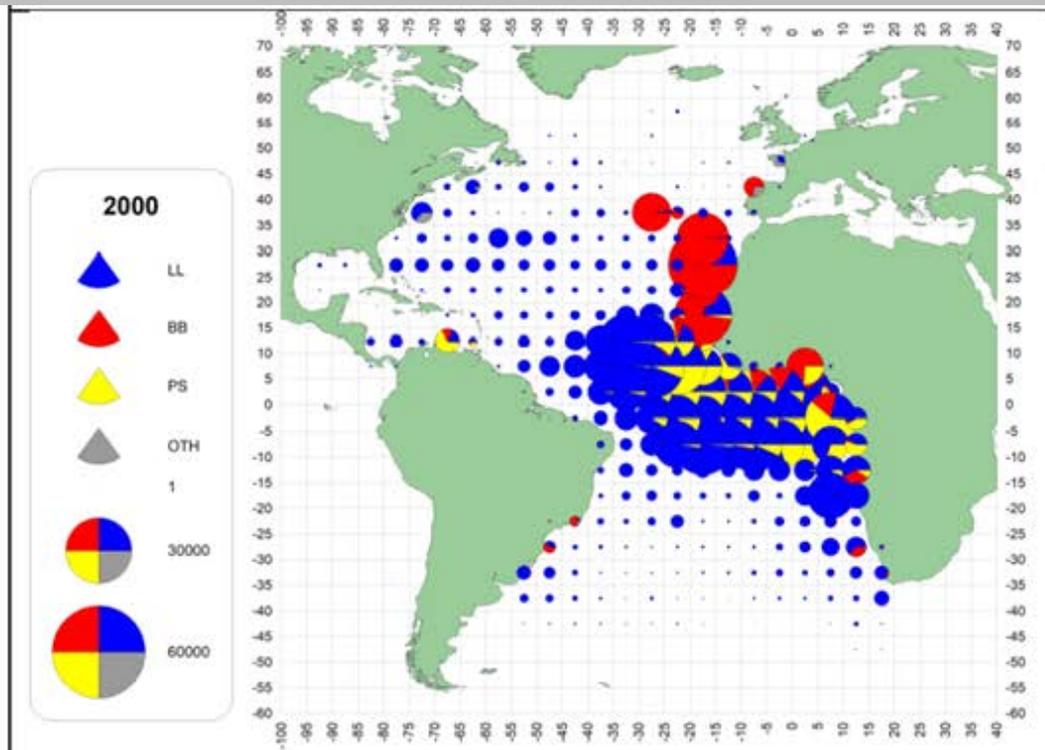
Nominal catches exceeded TAC (65,000 t) between 2016 and 2019 by 13-21%
 The 2020 catch was approximately 9% below the TAC.



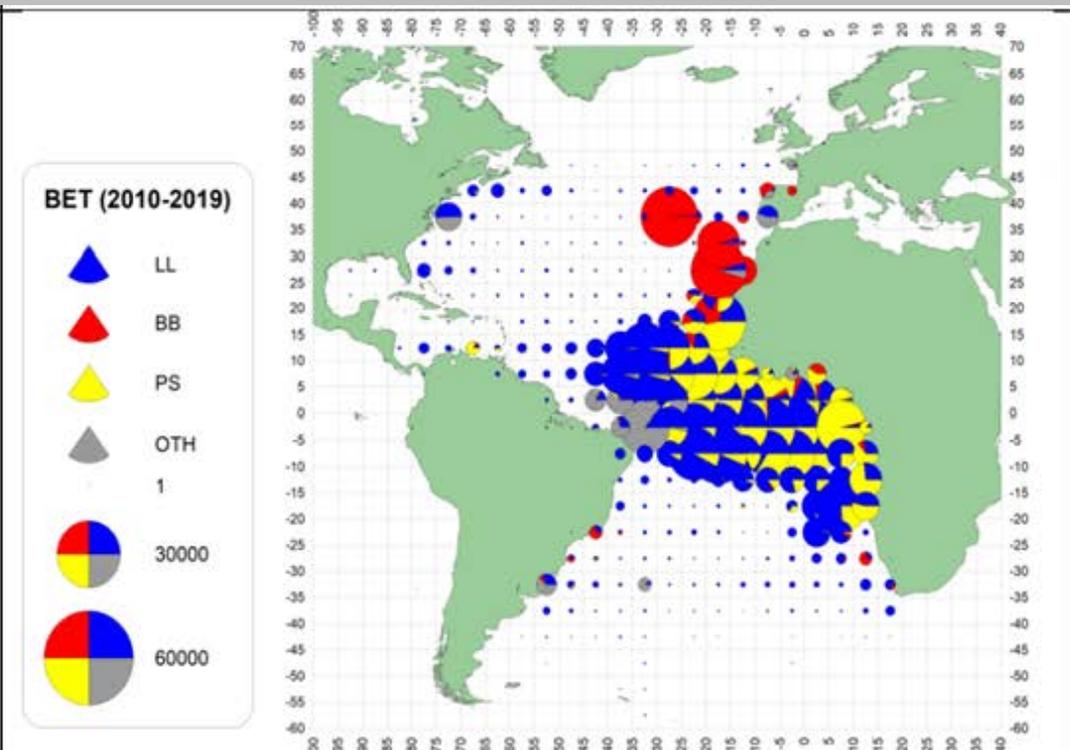
BET-Figure 3. Bigeye tuna estimated and reported catches for all the Atlantic stock (t). The value for 2020 represents catch reports until September 18, 2021.



Geographical distribution of the bigeye tuna catch by major gears 2000-09 and 2010-2019.



e. BET (2000-09)

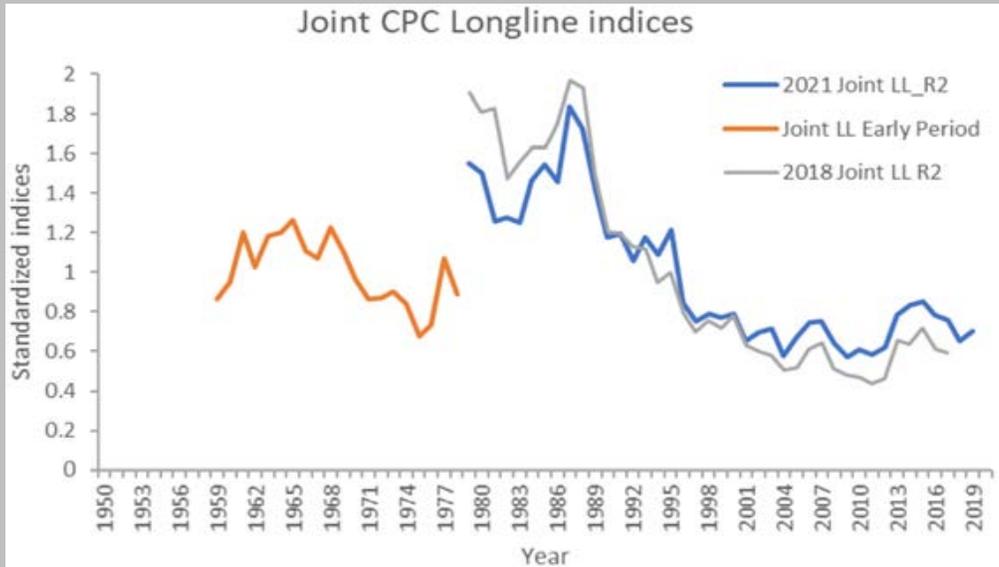


f. BET (2010-19)

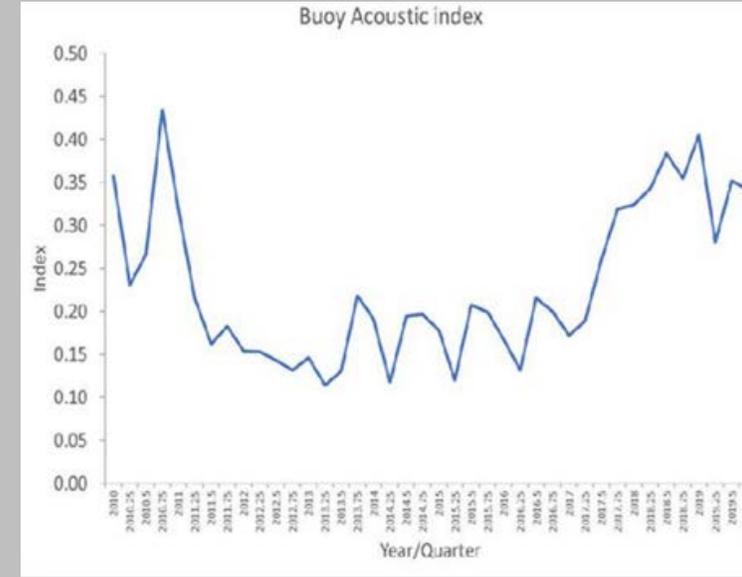


ICCAT CICTA CICAA

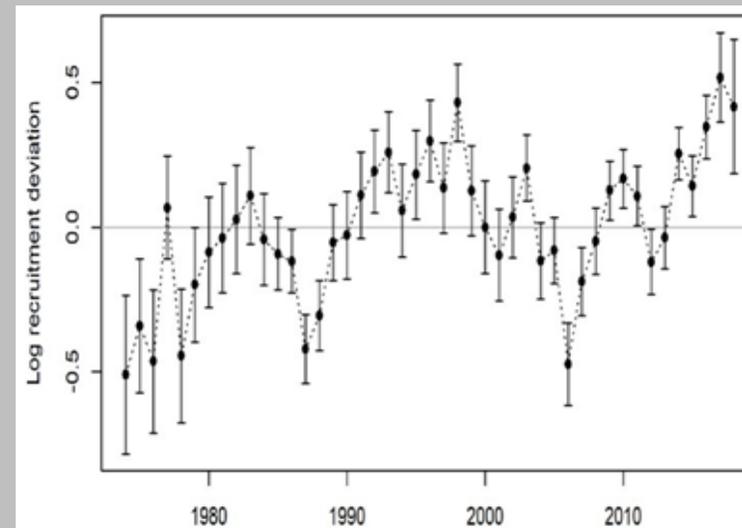
BET Fishery indicators and Recruitment



Joint Longline index (1959-1978 without vessel identification and 1979-2017 with vessel identification included in the standardization).



Quarterly Buoy acoustic index. (2010-2019).



Recruitment Deviations. (1974-2018)



BET SS assessment Uncertainty

Outputs:

- Only Stock Synthesis model used to provide Management advice.
- The SS uncertainty grid includes 27 equally weighted model configurations,
- The two production models, non-equilibrium and Bayesian state-space, although not used for management advice provided comparable perception of stock status.
- The median relative biomass (B/B_{MSY}) and relative fishing mortality (F/F_{MSY}) trajectories from production models and the Stock Synthesis models depicted similar patterns within the SS uncertainty bounds.

BET Uncertainty Grid:

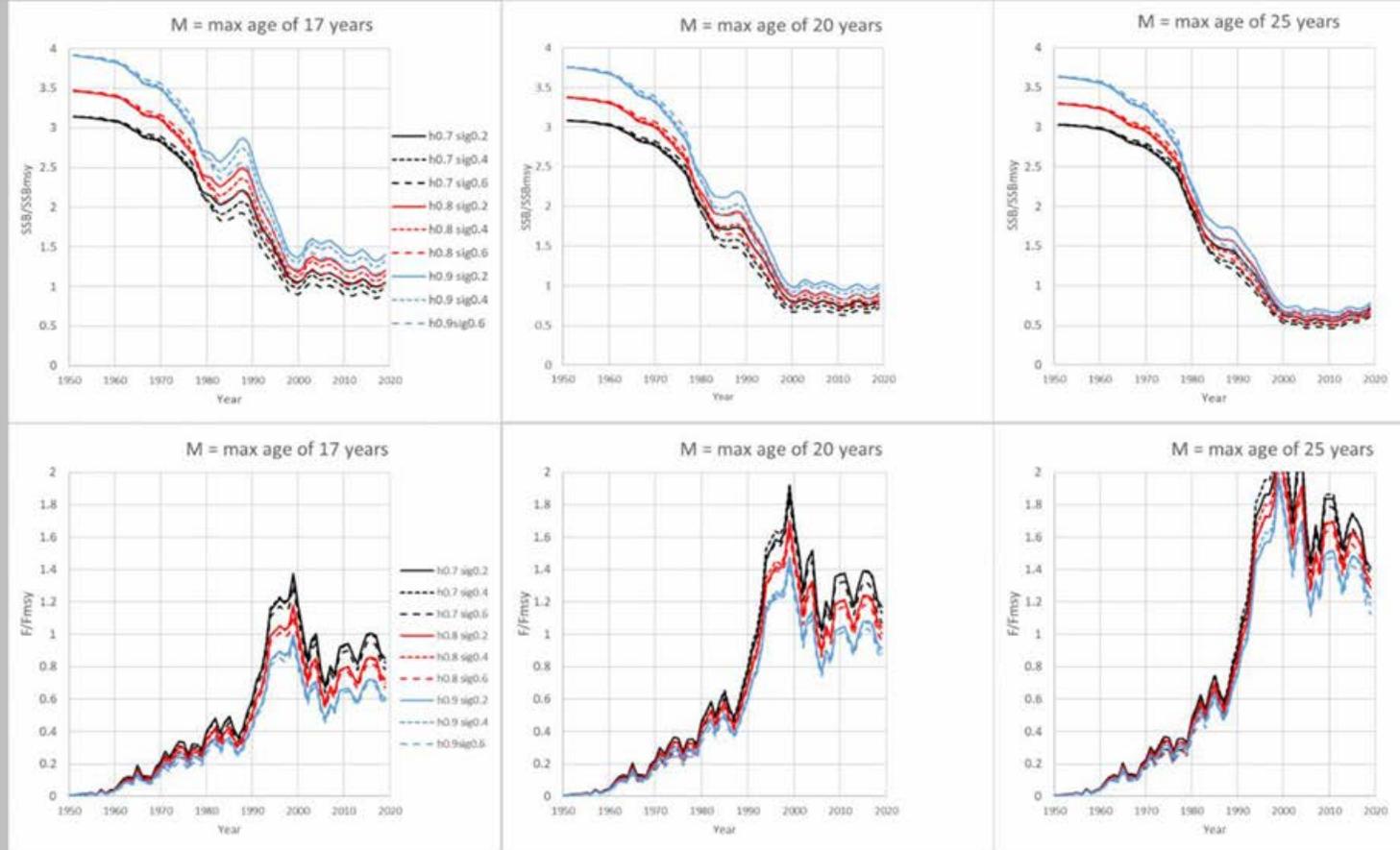
Parameter	Value1	Value2	Value3
Max_Age	17	20	25
Steepness	0.7	0.8	0.9
Sigma R	0.2	0.4	0.6

BET SS Stock Trends

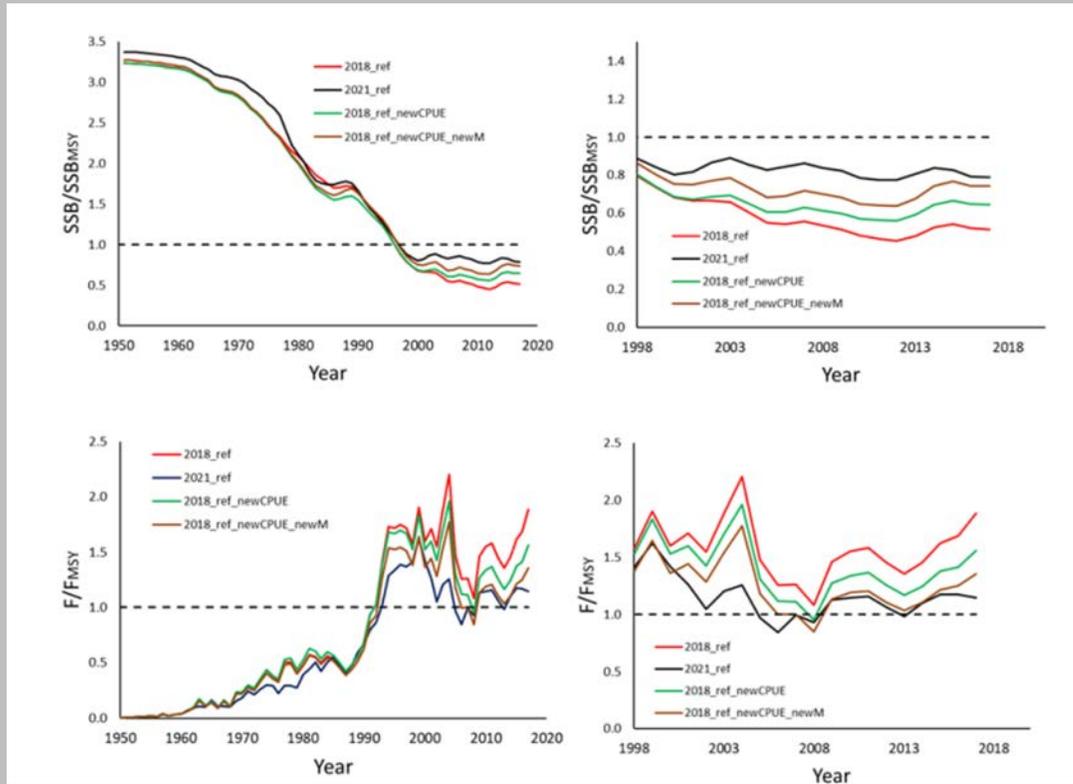


Outputs:

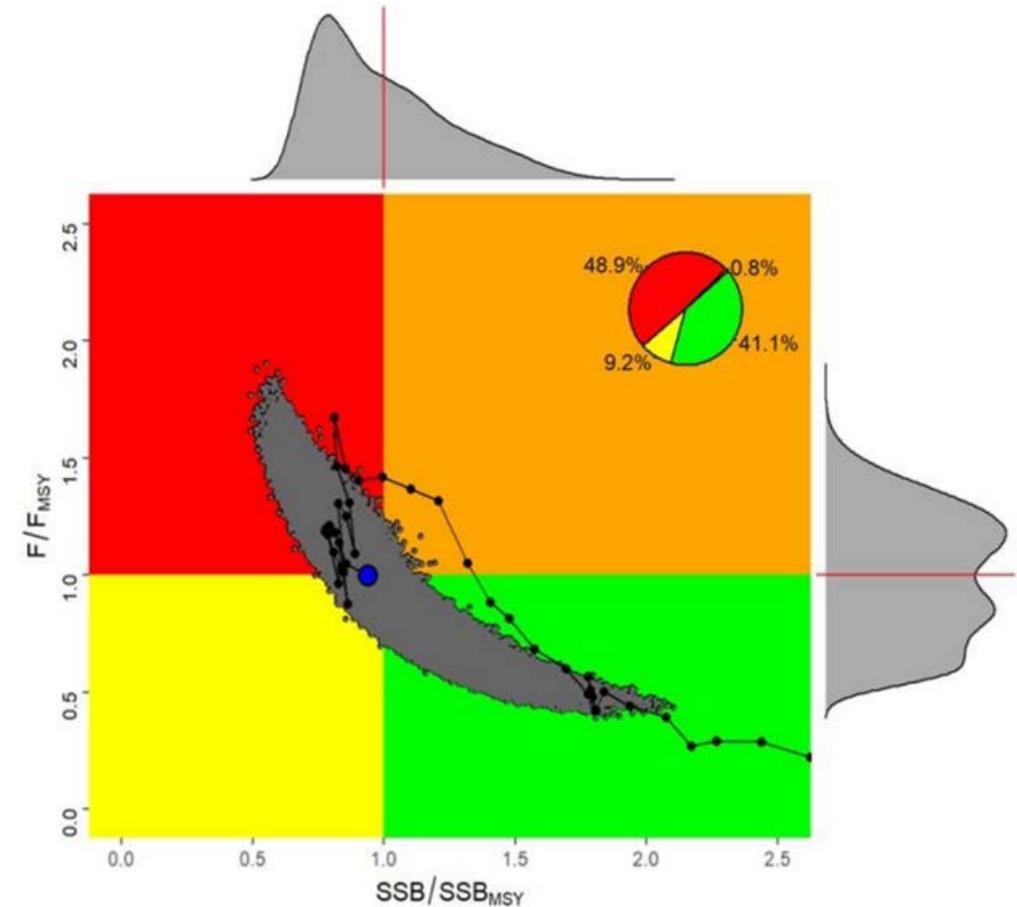
BET-Figure 7. Time series of stock status trends across the 27 Stock Synthesis models of the uncertainty grid. Panels in each row represent the different assumptions of maximum age and thus natural mortality. Upper panels represent SSB/SSBMSY trends and lower panels F/FMSY trends. Individual lines represent different combinations of steepness and Sigma R.



All model configurations show increasing F and decreasing biomass trajectories from 1950-2019. However, the trends slowed from 1998 with a slight upward trend in SSB/SSBmsy and decrease in F/Fmsy in the last few years.



Sensitivity runs showing time series of stock status trends (left 1950-2017, right 1998-2017, for SSB/SSB_{MSY} and F/F_{MSY}) demonstrating the effects of changes in stock status resulting from the incorporation of the 2021 joint longline index and the new assumptions about natural mortality.



BET-Figure 8. Stock Synthesis: Kobe plot of SSB/SSB_{MSY} and F/F_{MSY} for stock status of Atlantic bigeye tuna in 2019 based on the log multivariate normal approximation across the 27 uncertainty grid model runs of Stock Synthesis with an insert pie chart showing the probability of being in the red quadrant (48.9%), green quadrant (41.1%), orange (0.8%) and in yellow (9.2%). Blue circle is the median and marginal histograms represent distribution of either SSB/SSB_{MSY} or F/F_{MSY}.



ATLANTIC BIGEYE TUNA SUMMARY

Maximum Sustainable Yield	86833 t (72,210-106440 t) ¹
Current (2020) Yield	57,486t²
Relative Spawning Biomass (SSB_{2019}/SSB_{MSY})	0.94 (0.71-1.37) ¹
Relative Fishing Mortality (F_{2019}/F_{MSY})	1.00 (0.63-1.35) ¹
Stock Status (2019)	Overfished: Yes Overfishing: No

Important:

Increased harvests on small fishes could have had negative consequences for the productivity of bigeye tuna fisheries (e.g. reduced yield at MSY and increased SSB required to produce MSY).

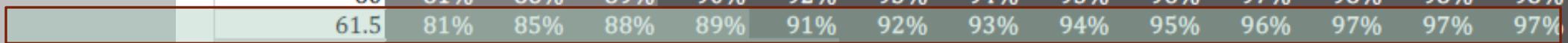
Rec. 19-02 contains measures aimed at increasing long-term sustainable yield by reducing the catch of juveniles of tropical tunas.

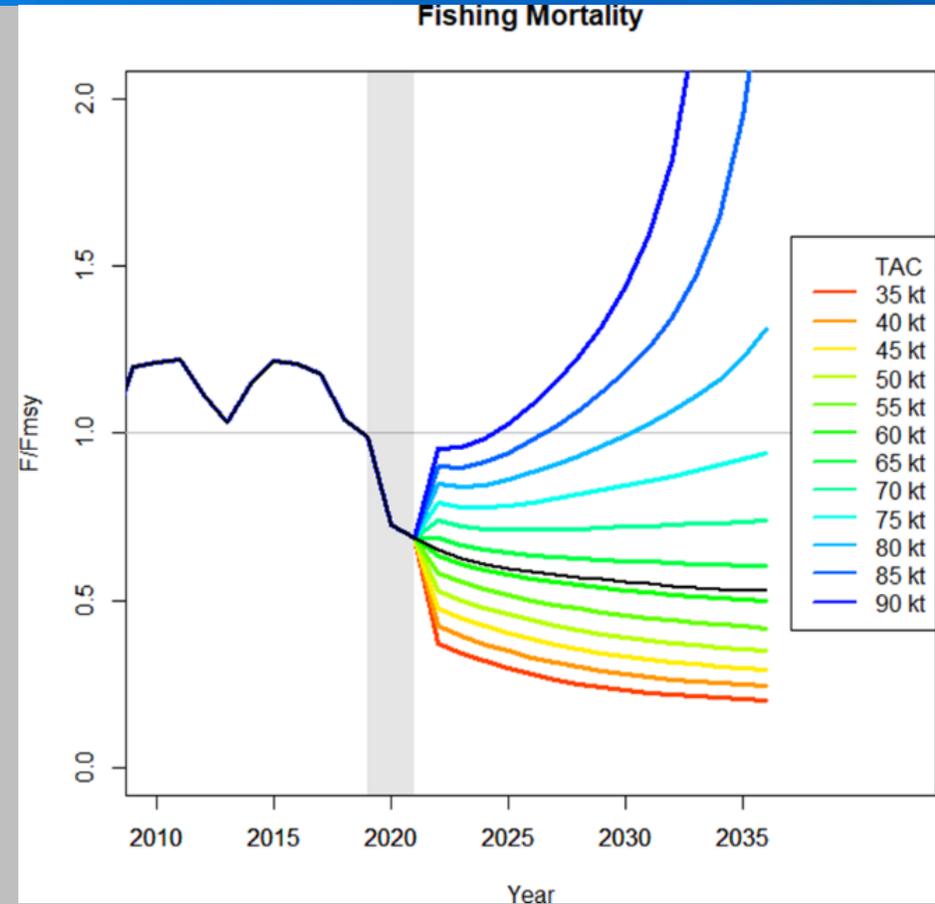
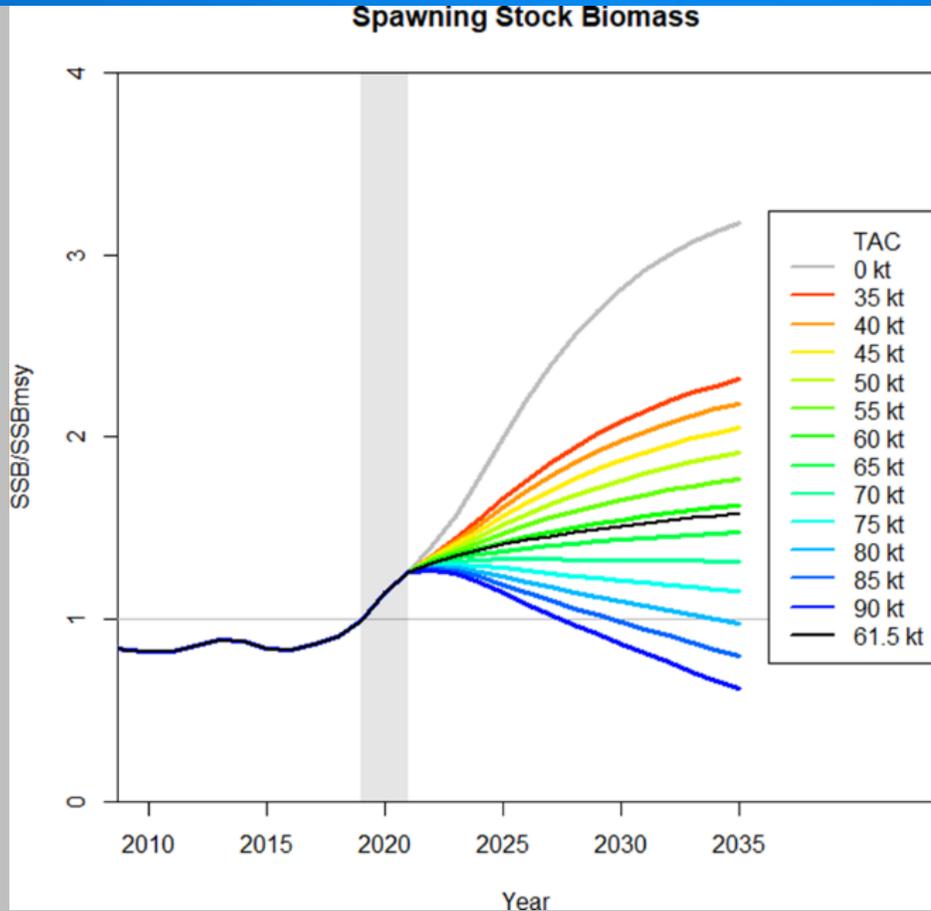


Probability of Not Overfished ($SSB \geq SSB_{msy}$) and Overfishing not occurring ($F \leq F_{MSY}$)

TAC (1000s mt)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
35	85%	91%	96%	98%	99%	100%	100%	100%	100%	100%	100%	100%	100%
37.5	85%	91%	96%	98%	99%	100%	100%	100%	100%	100%	100%	100%	100%
40	85%	90%	95%	98%	99%	100%	100%	100%	100%	100%	100%	100%	100%
42.5	84%	90%	94%	97%	99%	99%	100%	100%	100%	100%	100%	100%	100%
45	84%	89%	94%	96%	98%	99%	100%	100%	100%	100%	100%	100%	100%
47.5	83%	89%	93%	96%	97%	99%	99%	100%	100%	100%	100%	100%	100%
50	83%	88%	92%	95%	97%	98%	99%	99%	100%	100%	100%	100%	100%
52.5	83%	88%	92%	94%	96%	97%	98%	99%	99%	100%	100%	100%	100%
55	82%	87%	91%	93%	95%	96%	97%	98%	99%	99%	100%	100%	100%
57.5	82%	86%	90%	92%	93%	95%	96%	97%	98%	98%	99%	99%	99%
60	81%	86%	89%	90%	92%	93%	94%	95%	96%	97%	98%	98%	98%
61.5	81%	85%	88%	89%	91%	92%	93%	94%	95%	96%	97%	97%	97%
62.5	81%	85%	87%	89%	90%	91%	92%	93%	94%	95%	96%	96%	97%
65	81%	84%	86%	87%	87%	88%	89%	90%	90%	92%	92%	93%	93%
67.5	80%	83%	84%	85%	85%	85%	85%	85%	86%	87%	87%	87%	88%
70	79%	82%	83%	82%	82%	81%	81%	80%	81%	81%	80%	81%	82%
72.5	78%	80%	80%	79%	79%	77%	75%	74%	74%	74%	74%	73%	73%
75	76%	78%	77%	76%	74%	72%	70%	68%	68%	66%	65%	65%	64%
77.5	73%	74%	74%	72%	70%	67%	64%	62%	59%	58%	57%	56%	54%
80	70%	71%	70%	68%	64%	61%	57%	55%	52%	50%	48%	47%	46%
82.5	67%	67%	65%	63%	59%	55%	52%	47%	44%	42%	41%	40%	39%
85	63%	63%	60%	58%	53%	48%	45%	40%	37%	36%	34%	34%	34%
87.5	59%	58%	55%	53%	47%	42%	38%	34%	31%	30%	29%	29%	30%
90	55%	54%	50%	48%	41%	37%	32%	28%	26%	25%	25%	26%	25%

TAC





Deterministic projections of SSB/SSBMSY and fishing mortality for the 27 Stock Synthesis uncertainty grid runs at 35,000-90,000 t constant catch for Atlantic bigeye tuna. The lines are the mean of 27 deterministic runs and the black line is for the current TAC (61,500 t). The grey bar represents the period when catches for 2020 and 2021 are fixed to 59,919 t and 61,500 t respectively.

BET - Management Recommendations

- The Atlantic bigeye tuna stock status has improved since 2017 and was estimated to be overfished but not undergoing overfishing.
- A future constant catch of 61,500 t, which is the TAC established in Rec. 19-02, will have a high probability (97%) of maintaining the stock in the green quadrant of the Kobe plot by 2034.
- Current stock status and the outlook for the stock are more uncertain than portrayed in the Summary Table and the K2SM. Projection probabilities should be interpreted with caution
- Uncounted uncertainties include the appropriateness of the range of natural mortalities used in the uncertainty grid and the change in methodology used to develop the joint longline index.
- The Commission should consider adopting a TAC that would shift the stock status of BET towards the green zone of the Kobe plot with a high probability..
- Increased harvests on small yellowfin and bigeye tunas have negative consequences on both long-term sustainable yield and stock status.

Skipjack Tuna – Unchanged since 2019 SCRS Report

- Committee recommends that the catch and effort levels for the eastern stock do not exceed the 2012-2013 catch or effort. Catches in 2019 and 2020 decreased substantially.
- The Commission should be aware that increasing harvests and fishing effort for skipjack could lead to involuntary consequences for other species caught in combination with skipjack in certain fisheries (juveniles of yellowfin and bigeye).
- For the West Atlantic, the Committee recommends that the catches should not be allowed to exceed the MSY.



Yellowfin Tuna – Unchanged since 2019 SCRS Report

- Catches above 120,000 t are expected to further degrade the condition of the yellowfin stock. Since 2016, catch have averaged 137,000 t, but increased to 149,202 in 2020. Catches above 140,000 t carry an increased risk of driving the stock below $20\%B_{MSY}$ (13% by 2033).
- Significant overages are frequent. Existing conservation and management measures appear to be insufficient. The Group recommends that the Commission strengthen such measures.
- Increased harvests on small yellowfin and bigeye tunas has negative consequences to both long-term sustainable yield and stock status.
- Should the Commission wish to increase long-term sustainable yield, the Group recommends that effective measures be found to reduce fishing mortality on small yellowfin and bigeye tuna



Tropical Tunas Workplan for 2021/2022

- Data Prep and Assessment of skipjack stocks (2022)
- Advance the definitions of TRO MSE management objectives and performance indicators, as well as to continue to make progress on the MSE for the Western stock of skipjack.
- Explore the relationship between FOB management measures, including limitations of FOB fishing sets, number of FOB operational buoys, and number of FOB buoy / FAD deployments;
- Assess the efficiency (e.g. reduction of BET and YFT juveniles catches) and the appropriateness of the FOB closures in [Rec. 19-02]
- the Group recommended that the FAD Working Group be revitalized in 2022. Last met in 2017.



SCRS Calendar for 2022

TT MSE

2022 – Data preparatory
2022 - SKJ Assessment

2022 SCRS Calendar

	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE							
January						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
February									1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
March		1	2	3	4																																
April					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
May							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
June			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
July					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
August	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
September				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
October						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
November	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
December			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				

(*) Meetings of SC-STATS, ALB, BFT, BIL, SHK, SMT, SWO and TRO (+) SC STATs will be on 19 Sep 2022 Free day in ICCAT Meeting of technical nature Commission meetings/Secretariat meeting preparation/holidays



Tropical Tuna

Support for the 2022 Skipjack Stock Assessment including

- the SCRS scientists and the Secretariat to prepare the data,
- investing in ageing spines collected under the AOTTP, and
- contracting an external expert to review the full stock assessment process.

Support the continuation of MSE for tropical tunas:

- Continue to invest in the recovery of AOTTP tagged fish and maintenance of the tagging database, and
- Support to advance the development of the multi-stock MSE and the western skipjack MSE.

Budget Breakdown

Tropical tunas	2022	2023
Tag recovery and maintenance of AOTTP database	55,000 €	49,000 €
Biological studies:		
Age and growth of BET		15,000 €
Age and growth of SJK	15,000 €	
MSE		
Western SKJ	25,000 €	25,000 €
Multi-stock MSE	50,000 €	75,000 €
Stock assessments		
Reviewer for SKJ	10,000 €	
Total	155,000 €	164,000 €

21.1 Discards in purse seine fisheries, Rec. 17-01, para 4.

Background: In 2020, the SCRS shall assess the effectiveness of this Recommendation (to retain and land) and submit recommendations to the Commission regarding potential improvements.

The Committee was unable to provide a detailed response this year. However, previous studies estimated that these discards were small for Spanish purse seiners in the mid-2000s (0.2 t per free school set and 1.1 t per FOB set). New guidelines and best practices adopted by fleets and the discard prohibition (Rec. 17-01) that entered into force in 2018 suggest that current discards are probably fewer than the levels indicated in the earlier study.



21.2 Discards in purse seine fisheries, Rec. 17-01, para 5.

Background: In 2020, the SCRS shall examine the benefits of retaining non-targeted species catches. The work should examine the feasibility of both retaining on-board and processing of the associated landings of all species that are usually discarded for all major gears (i.e., purse-seines, longlines and gillnets), on the high seas and in waters under national jurisdiction.

Discards of the purse seine fleet are probably small because 1) most of the bycatch (particularly small tunas species and other bony fish) form part of the so called “faux poisons”, and 2) of the discard prohibitions in Rec. 17-01. It was noted that Rec. 17-01 is not exclusively directed to purse seine fleets (para 5) but also to the other major gears targeting tropical tunas. Table 21.2.1 (next slide) shows the most important CPCs and gears contributing to the bigeye tuna catch and reporting discards in ST02 or ST09.



21.3 The TAC for 2022 and future years, Rec. 19-02, para 3.

Background: The Total Allowable Catch (TAC) for bigeye tuna shall be 62,500 t in 2020 and 61,500 t in 2021. The TAC for 2022 and future years shall be considered in 2021 on the basis of SCRS advice..

A Stock Assessment for Bigeye Tuna was conducted in 2022. For more information on TAC refer to the outlook section of the Bigeye tuna Executive Summary (Item 9.1 of the SCRS Report).

21.4 Fishing prohibited with FADs, Rec. 19-02, para 28.

Background: FAD fishing prohibited 1 January to 28 February for 2020 and 1 January to 31 March in 2021, throughout the Convention area. This should be reviewed and, if necessary, revised based on advice by the SCRS taking into account monthly trends in free school and FAD-associated catches and the monthly variability in the proportion of juvenile tuna in catches. SCRS should provide this advice to the Commission in 2020.

The Committee noted that an analysis of historical monthly catches will be of limited use because it would not reflect the behaviour of fleets under the current FAD closure described in Rec. 19-02. Furthermore, it was also noted that the Commission request refers to catch in 2020 and 2021 but such catch data were not available to the Committee this year.

The Committee recalled an ATTOP study (Perez et al., 2021) that concluded both moratoria were efficient for limiting recaptures on juvenile skipjack and yellowfin during the November-February period, no conclusion could be drawn for bigeye due to the limited number of bigeye tuna released inside and outside the FAD time area closure.



21.4 Fishing prohibited with FADs, Rec. 19-02, para 28.

The Committee agreed to continue to work on this response in 2022 and to conduct the following analyses:

- Prepare a table with the recent evolution of monthly PS tropical tuna catches by fishing mode and species, using Task 2 information from 2010 to 2020, indicating the different time area FAD closures that have been in place. The table should include percentages across months by species and across species by month.
- An analysis identifying months that minimize yellowfin and bigeye juveniles while maintaining skipjack catches.
- Derive from the most recent Stock Synthesis results for YFT and BET, appropriate indicators of the evolution of fishing mortality of one-year old for the major surface fleets.



21.5 Maximum number of FAD sets which should be established per vessel or per CPC, Rec. 19-02, para 31.

Background: With a view to establishing FAD set limits to keep the catches of juvenile tropical tunas at sustainable levels, in 2021 SCRS should inform the Commission about the maximum number of FAD sets which should be established per vessel or per CPC. To support this analysis,

- Fishing effort associated with FADs is a complex interaction of factors such as number of FADs deployed, FADs monitored by vessel, technology of the buoy, and the use of supply vessels,
- A recent SCRS paper prepared for Panel 1 (SCRS/2021/135) contains information on the available catch, effort in fishing time, number of FAD deployments, FAD loss, types of FADs and other variables for the purse seine fleets. Unfortunately, such information, can be challenging to interpret.



21.5 Maximum number of FAD sets which should be established per vessel or per CPC, Rec. 19-02, para 31.

- CPCs have the option to report activities using one of multiple effort metrics. Most CPCs have not reported effort in number of FAD sets.
- In short, there is not enough information at the present time to provide advice on the maximum number of FAD sets per vessel as requested by the Commission.
- The Committee notes that unless new and detailed information becomes available (requested of CPCs), any guidance provided to the Commission on this matter would be on the maximum number of FAD sets per fleet and not per CPC or vessel.

21.6 Impact of support vessels on the catches of juvenile yellowfin and bigeye tuna, Rec. 19-02, para 33.

Background: Further analysis shall be conducted by the SCRS on the impact of support vessels on the catches of juvenile yellowfin and bigeye tuna to be considered in 2020.

- Data availability is limited (ST07) with no information available to make the linkage between catches of the PS vessels and the supporting supply vessel(s).
- Ongoing EU analysis to standardize the PS FAD CPUE that incorporate a supply vessel effect in the standardization. To be completed for skipjack assessment in 2022.
- The Committee is unable to provide a final response to this request at this time.

Table 21.6.1. Number of supply vessels reported by Flag/fleet with the ST07 Supply vessel forms by year to the ICCAT Secretariat. The blank cells indicate no reporting, 0 indicates no support vessels reported, and positive values the number of supply vessels in each year.

Num Supp Vessels			2013	2014	2016	2018	2019	2020	
Status	Flag	Flag/fleet							
CP	EUROPEAN UNION	ESP					4		
		FRA					0	0	
		PANAMA	PAN				4		
	CURAÇAO	CUW	1	1			2	2	
	BELIZE	BLZ			1		4	3	
	EL SALVADOR	SLV						1	
	SENEGAL	SEN					1		
	UNITED KINGDOM	BMU						0	
		GBR						0	0
		SHN						0	0
		TCA						0	0
		VGB						0	0
	LIBYA	LBY				0			
MEXICO	MEX					0			
EU_FRA (St-Pierre et Miquelon)	SPM					0			
NCC	Bolivia	BOL				0	0	0	
NCO	Non-contracting parties	LCA					0		
Total Supp Vessels			1	1	1	0	15	6	

21.7 SCRS recommendation on presence of a human observer on board in accordance with Annex 7 and/or an Electronic Monitoring system, Rec. 19-02, para 55.

Background: Background: For longline vessels flying their flag 20 meters length overall (LOA) or greater targeting bigeye, yellowfin and/or skipjack in the Convention area, CPCs shall ensure a minimum of 10% observer coverage of fishing effort by 2022, through the presence of a human observer on board in accordance with Annex 7 and/or an Electronic Monitoring system. For this purpose, the Working Group on Integrated Monitoring Measures (IMM WG), in cooperation with the SCRS, shall make a recommendation to the Commission for endorsement at its 2021 Annual meeting:

No response was provided by the Committee however it was noted that a Subgroup within the Billfishes Species Group was created to start addressing this issue.

21.8 Refine the MSE process in line with the SCRS roadmap and continue testing the candidate management procedures, Rec. 19-02, para 62.

Background: The SCRS shall refine the MSE process in line with the SCRS roadmap and continue testing the candidate management procedures. On this basis, the Commission shall review the candidate management procedures, including pre-agreed management actions to be taken under various stock conditions. These shall take into account the differential impacts of fishing operations (e.g. purse seine, longline and baitboat) on juvenile mortality and the yield at MSY.

An updated roadmap was prepared for the tropical tunas MSEs based on the activities agreed during the intersessional meeting of the Tropical Tuna Species Group. This was integrated with the roadmaps for other species MSE (17.5 of the SCRS Report. Highlights for 2022 are presented in the following slide.



21.8 Refine the MSE process in line with the SCRS roadmap and continue testing the candidate management procedures, Rec. 19-02, para 62. Continued.

	SCRS	Commission
2021	<p>SCRS agrees on major sources of uncertainty to be considered in the MSE and candidate performance indicators for Tropical tuna MSEs</p> <p>SCRS conducts bigeye tuna stock assessment</p> <p>SCRS modifies OM for WKSJ to include the whole of the western Atlantic.</p> <p><i>JCAP/ICCAT Training workshops on MSE and HCR for Portuguese and Spanish speaking scientists and managers</i></p>	<p>Commission to review and provide feedback on:</p> <ul style="list-style-type: none"> - management objectives and performance indicators to be used for tropical tunas MSE - proposed update if tropical tuna MSE roadmap
2022	SCRS conducts skipjack stockassessment	
	SCRS reconditions OMs for SKJ in WSKJ MSE model and ESKJ in mixed species MSE model in light of new SKJ assessments	
	SCRS initiates development and testing of candidate Management procedures (MP) for western SKJ	Commission considers WSKJ MSE simulations and initial candidate MPs developed by SCRS. Commission agrees on final set of MPs to be evaluated in the WSKJ MSE
	Independent review of tropical tuna MSE process and technical review of Western SKJ MSE	



21.9 Efficacy that full fishery closures along the lines of those proposed in PA1_505A/2019, Rec. 19-02, para 66a.

Background: Actions required from the SCRS and the Secretariat:

a) The SCRS shall explore the efficacy that full fishery closures along the lines of those proposed in PA1_505A/20195 might have to reduce the catches of tropical tunas to the agreed levels; and the potential of such scheme to reduce the catches of juvenile bigeye and yellowfin tunas, in line with recommendations from the SCRS;

The Committee did not advance the analysis of previous work on this closure. The Committee will attempt to conduct the analysis in 2022.



21.10 Estimate of capacity in the Convention area, to include at least all the fishing units that are large-scale or operate outside the EEZ of the CPC they are registered in, Rec. 19-02, para 66b.

- The Committee can only presently report on capacity estimates of large-scale purse-seine vessels (hold capacity ≥ 335 m³).
- The Committee estimates that at least 74 and possibly 80 large-scale purse seiners were operating in the Convention Area as of the first half of 2021. The combined Fish Hold Volume (FHV) of the 80 vessels was 114,864 m³, which is equivalent to about 89,472 t of fish carrying capacity. This suggests that the current capacity is higher than necessary to meet current catch recommendations (5-6 trips/year/vessel).
- The Committee notes that these estimates are active capacity not potential capacity (88 vessels authorized)
- The Committee wants to highlight that there is a need to agree on a set of indicators of capacity which are useful to both the Commission and the Committee.
- The Committee intends to evaluate the capacity and number of other fleet components (e.g. Support vessels, BB, LL) in the future.

21.10 Estimate of capacity in the Convention area, Continued.

Table 21.10.1. Estimated number of large-scale purse seiners operating in the Atlantic Ocean from 2014 to 2018 (left; Table 2 of the 2019 SKJ Executive Summary, 2019 SCRS report) and minimum and maximum numbers estimated for 2020 (SCRS/2020/123) and 2021 (SCRS/2021/153).

FLAG	SCRS 2019					SCRS 2020		SCRS 2021	
	2014	2015	2016	2017	2018	2020 (Min)	2020 (Max)	2021 (Min)	2021 (Max)
Neth. Antilles	2	-	-	-	-	-	-	-	-
Belize	3	2	2	3	2	8	8	8	8
Brazil	-	-	-	-	-	0	1	0	1
Cabo Verde	3	4	2	1	1	1	1	1	1
Curaçao	-	4	5	5	5	4	4	4	4
Cote d' Ivoire	1	0	0	0	0	0	0	0	0
El Salvador	0	2	4	4	4	4	4	3	3
Morocco	-	-	-	-	-	1	1	3	4
Spain	15	12	10	10	10	10	10	11	11
France	9	9	11	10	10	9	9	10	10
Ghana	12	12	13	13	15	16	16	16	17
Guatemala	2	2	2	2	2	2	2	2	2
Liberia	-	-	-	-	-	2	2	2	2
Panama	2	3	2	2	2	3	6	5	6
Senegal	0	3	4	5	7	7	7	7	7
Venezuela	-	-	-	-	-	1	1	2	4
Total	49	53	55	55	58	68	72	74	80

21.11 The SCRS and the Secretariat shall prepare TORs to carry out an evaluation of the monitoring, control and surveillance mechanisms in place in ICCAT CPCs. Rec. 19-02, para 66c.

The Committee and the Secretariat were unable to provide a detailed response this year.



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Thank You