Pacific Community
Communauté du Pacifique

Evaluation of CMM 2021-01


Bigeye


Yellowfin


Skipjack

SPF-OFP

WCFC20-2023-15

WCPFC20, Rarotonga, Dec 2023

Rev1 – table in slide 9 updated to have corrected number of FAD sets and scalar for year 2022

Content

- CMM evaluation

Step 1: Develop alternative scenarios for future fishing levels possible under CMM2021-01

Step 2: Evaluate the consequences of each scenario for tropical tuna stocks, and compare to CMM2021-01 objectives

Presentation won't cover additional analyses in appendices 1-4 of WCPFC20-2023-15

CMM 2021-01 evaluation

Step 1: Scenarios evaluated and scalars developed:

- **'Optimistic'** = essentially 2019-2021 avg levels, CMM is implemented
- **'Fully utilised'** = all opportunities under the CMM maximised; 2012 PS effort as per skipjack MP, high seas FAD sets maximised, LL BET catch limits taken. **NOTE: we don't assume Table 1 total PS levels are met – mostly aspirational.**
- In between **'SKJ MP'** scenario – PS effort at 2012 levels, LL catch at 2 alternates

- Evaluated for BET (recent and long-term recruitment), YFT and SKJ
- For YFT and SKJ, PS impact is primarily through the overall PS effort
- For BET PS impact is primarily through the FAD set effort
- For YFT – continue assuming BET LL catch scalars are applied to yellowfin, as no YFT limits specified in CMM.

Evaluating stock impacts

- 30 yr stochastic projections off latest assessment model grids
  - BET run for the two recruitment scenarios ('recent' and 'long term')
- Future PS effort and LL catch set at scenario levels (scaled off 2019-2021 levels)
  - Most domestic ID/PH/VN fisheries set at **2016-2018** average ~~catch~~ **effort** levels for Yellowfin tuna evaluation
- Outcomes presented:
  - 'equilibrium' outcomes (depletion $SB/SB_{F=0}$ and F/F_{MSY}) at end of 30 yr projection
  - Risk relative to LRP (and F_{MSY}) at end of 30 yr projection
  - 'Snapshot' evolution of stock status (see WCPFC20-2023-15)

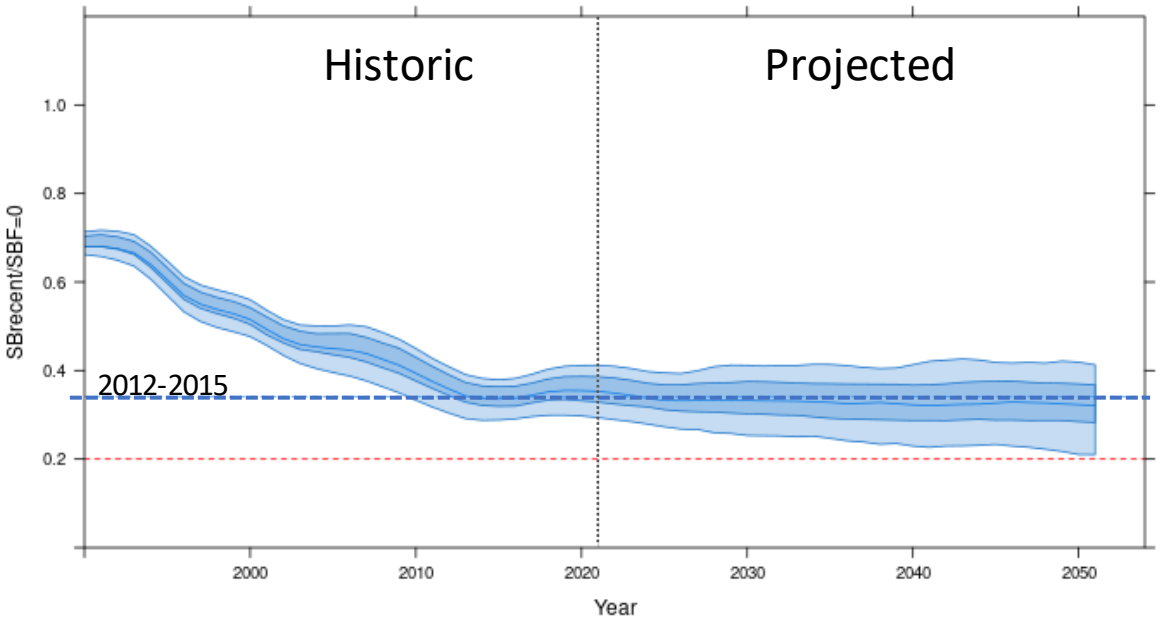
BET outcomes

Scenario		Scalars relative to 2019-2021		Median $SB_{2051}/SB_{F=0}$	Median $SB_{2051}/SB_{F=0}$ v $SB_{2012-15}/SB_{F=0}$	Median $F_{2047-2050}/F_{MSY}$	Median ratio $F_{2047-2050}/F_{MSY}$ v $F_{2017-20}/F_{MSY}$	Risk (%)[1]	
Recruit	Fishing level	Purse seine	Longline					SB_{2051}<LRP	F>F_{MSY}
Recent	Optimistic[2]	1	1	0.46	1.35	0.57	0.97	0%	26%
	SKJ MP	1.19	1	0.43	1.27	0.62	1.05	0%	29%
		1.19	1.62	0.34	0.99	0.87	1.47	0%	43%
	Fully utilised	1.22	1.62	0.34	0.99	0.90	1.53	0%	44%
Long-term	Optimistic[2]	1	1	0.43	1.26	0.79	1.34	0%	38%
	SKJ MP	1.19	1	0.41	1.19	0.89	1.51	0%	44%
		1.19	1.62	0.30	0.88	1.39	2.36	22%	66%
	Fully utilised	1.22*	1.62	0.29	0.85	1.44	2.44	24%	68%

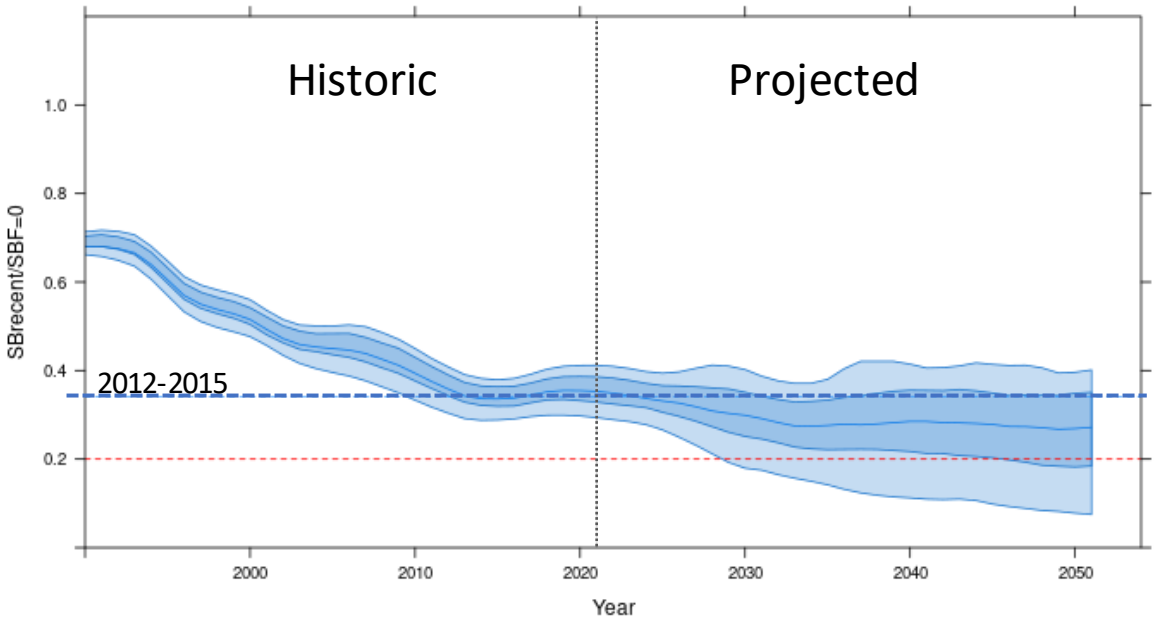
CMM objective $SB_{2012-2015}/SB_{F=0}$ = 0.34

Fully utilised - Bigeye

Recent recruitment



Long term recruitment



YFT/SKJ outcomes

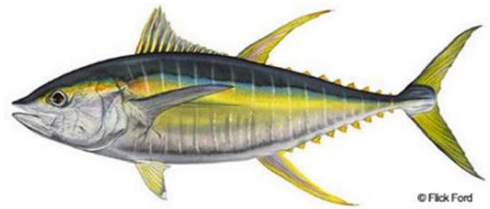
Stock	Fishing level	Scalars relative to 2019-2021		Median $SB_{2051}/SB_{F=0}$	Median $SB_{2051}/SB_{F=0}$ v $SB_{2012-15}/SB_{F=0}$	Median $F_{2047-2050}/F_{MSY}$	Median ratio $F_{2047-2050}/F_{MSY}$ v $F_{2017-20}/F_{MSY}$	Risk (%)[1]	
		Purse seine	Longline					SB_{2051}<LRP	F>F_{MSY}
Yellowfin	Optimistic	1	1	0.41	0.93	0.57	1.14	0%	0%
	SKJ MP	1.19	1	0.38	0.87	0.61	1.22	0%	0%
	SKJ MP/Fully utilised	1.19	1.62	0.34	0.78	0.67	1.34	4%	2%

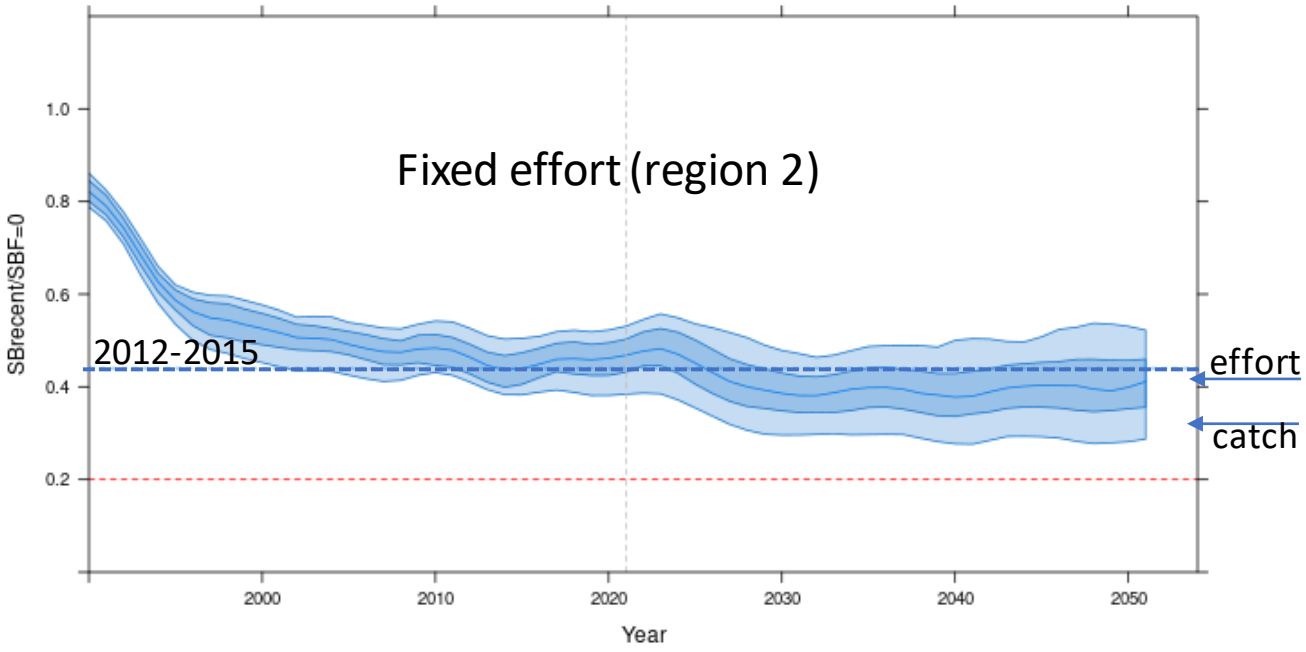
$SB_{2012–2015}/SB_{F=0}$ = 0.44

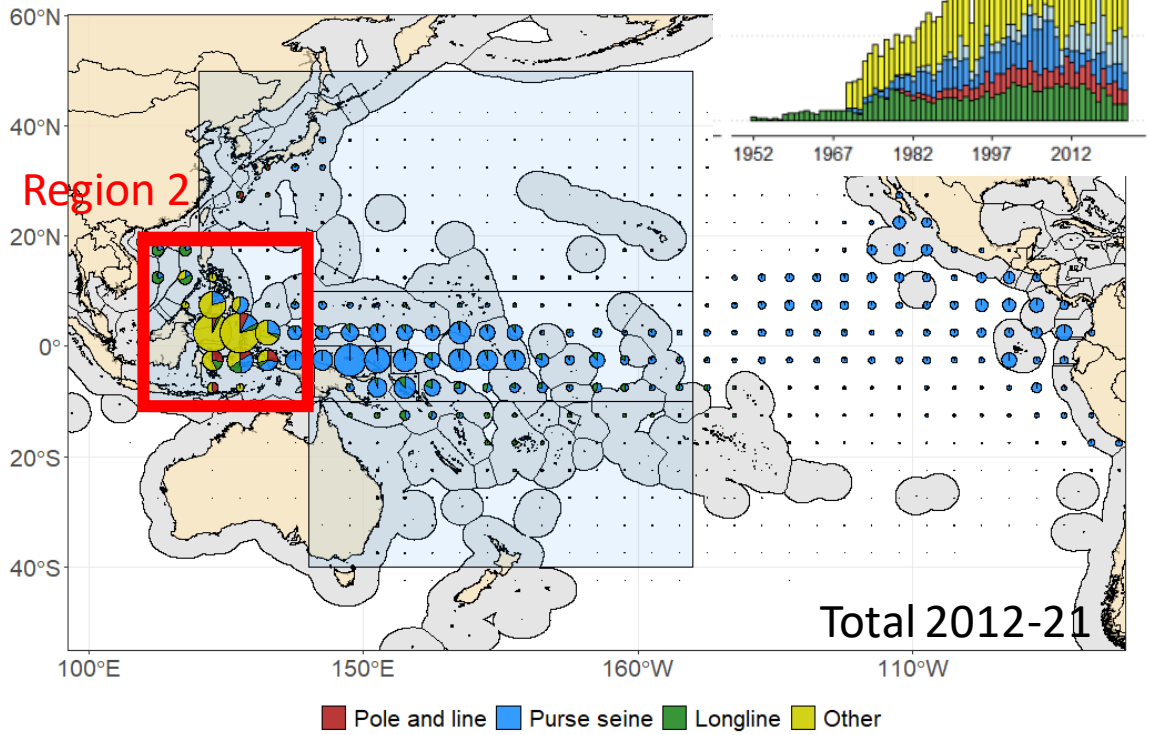
					Median $SB_{2051}/SB_{F=0}$ v $SB/SB_{F=0}$ = 0.50				
Skipjack	Optimistic	1	1	0.53	1.07	0.31	0.97	0%	0%
	SKJ MP/Fully utilised	1.19	1.62	0.50	1	0.35	1.09	0%	2%

SKJ TRP: $SB/SB_{F=0}$ = 0.50

Optimistic scenario - Yellowfin







TTMW4 - Re-evaluated where most R2 fisheries projected on 2016-18 <u>effort</u>

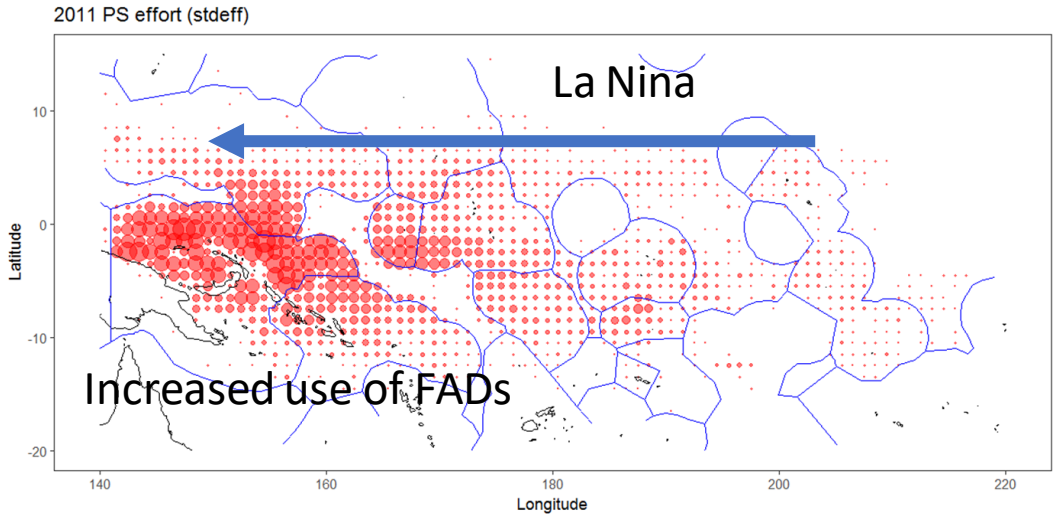
2016-2018 catches in Region 2 drive that regional component downwards

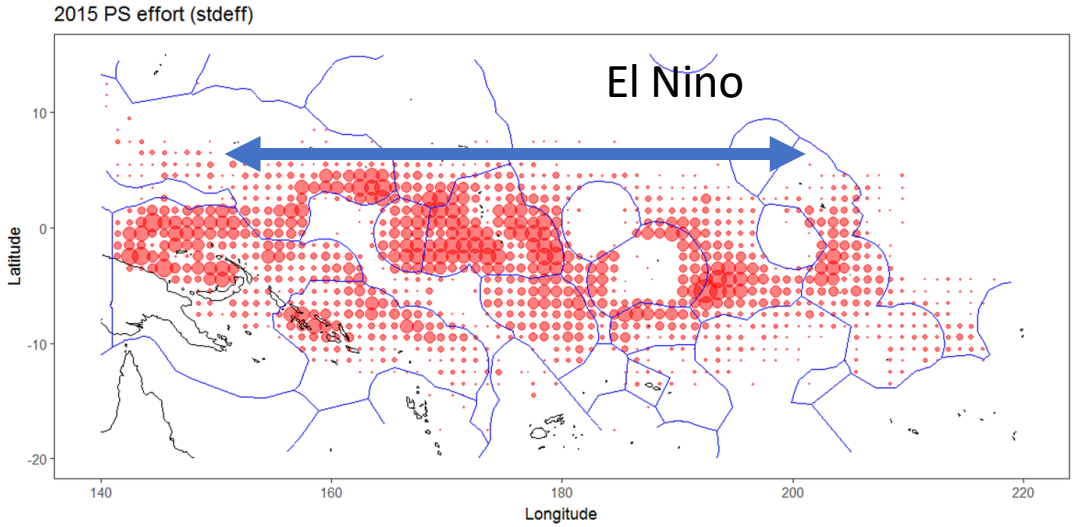
"SC19 recommends that the Commission note the need for clear limits for these [miscellaneous fisheries in Region2]"

Recent fishing levels v expected under CMM

	Average 2019-21	2020	Observed Scalar 2020	2021	Observer Scalar 2021	2022	Observed Scalar 2022
Purse seine effort (**FAD sets**)[1]	15,869	15,271	**0.96**	17,383	**1.10**	18,428	**1.13**
Longline bigeye catch (mt)	56,083	53,298	**0.95**	51,054	**0.91**	51,873	**0.92**
Longline yellowfin catch (mt)	66,099	56,260	**0.85**	57,836	**0.87**	70,257	**1.06**

Expected: Fully utilised: LL = 1.62, FAD sets =1.22





SC19 FAD related outcomes

- **FAD limits: data available, no vessel reached the 350 monitored buoys/day limit, 90% < 130 buoys/day.**
- **FAD materials:** limited information on materials during COVID to gauge transition to non-entangling (mesh net ban) FADs by 2024, most FADs still use netting, additional data fields required, FAD logbook for vessel operators.
- **Research on biodegradable FADs** delayed due to COVID, work extended to 2025, support for additional work that would continue io 2026 (funding from EU, ISSF…..)
- Review **timelines for transition to biodegradable FADs** (review by FADMO-IWG, TTC), how to incentivise use of biodegradable FADs etc.
- Option for **better reporting of FAD activities** – numbers deployed, numbers lost/abandoned and a process for abandoning/deactivation of FAD buoys

Summary

- ‘Fully utilised’ CMM 2021-01 achieves objectives (skipjack MP TRP) for **skipjack**
- ‘Fully utilised’ CMM 2021-01 *marginally* achieves objective (2012-2015) for **bigeye** under ‘recent’ recruitment scenario, but not under ‘longer-term’ recruitment
- ‘Fully utilised’ CMM 2021-01 does not achieve objective (2012-2015) for **yellowfin** (caveat around assumption that yellowfin is scaled consistent with bigeye catch, and stock status is still similar to BET)
- Overall, **little room to increase** fishing opportunities above ‘overall’ current CMM limits and still meet objectives.