WCPO Bigeye and Yellowfin TRPs (WCPFC21-2024-31)

COMMISSION
Twenty First Regular Session
Suva, Fiji

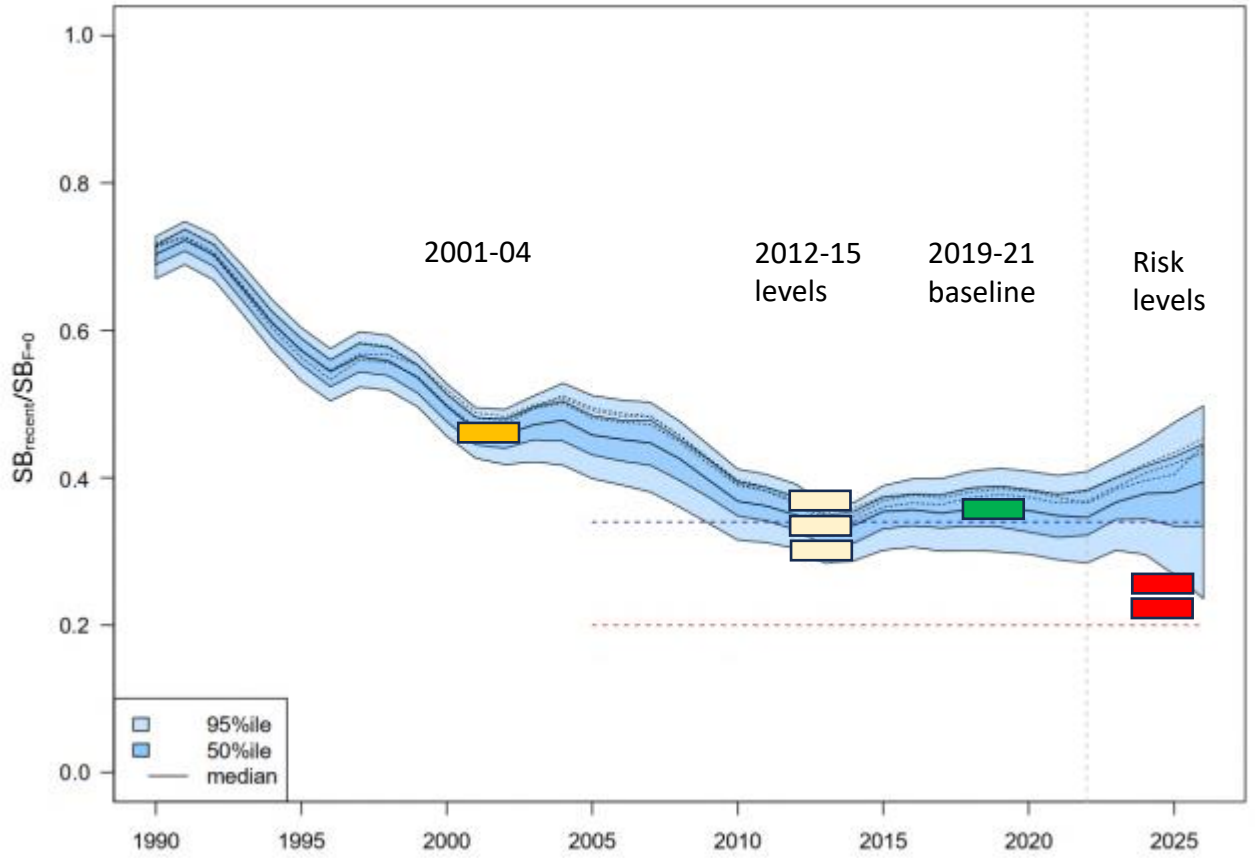
SPC-OFP
28 November – 3 December 2024

Introduction

- WCPFC HS workplan – BET and YFT TRPs to be adopted this year (WCPFC21)
- No clear guidance yet from managers on levels
  - Exception - comment at WCPFC20 re incorporating FAD closure considerations
- To provide some information, re-ran analyses of WCPFC18-2021-11
  - Used analyses underpinning TT CMM discussions at WCPFC20

Approach

- Projection analyses
- Adjust future fishing to achieve desired candidate depletions in the long term
- BET for two recruitment scenarios
  - ‘recent’
  - ‘long term’



Approach

- TRPs could be achieved with many different balances of PS effort and LL catch
- Two approaches for future fishing levels:
  - Equal proportional change in PS effort and LL catch cf 2019-2021 levels (see WCPFC18-2021-11)
  - Incorporate recent CMM decisions
    - Fix PS effort at 2012 levels (CMM 2022-01)
    - Incorporate shortened FAD closure (CMM 2023-01) – for BET only
    - Adjust LL catches to achieve future depletion levels
- Re PS: SKJ and YFT affected by overall effort, BET by effort AND FAD closure
- YFT Region 2 – 'other' gear fishing levels set to 2016-2018 effort
- SC20 request for SPA outcomes – assume tropical LL change affects fishing levels in 0-10°S area of SPA assessment

Results – BET recent recruitment

- PS defined through CMMs
  - Table 8, cut down; PS mult either +40% or +62%

2012-2015 levels
BET: 34%$SB_{F=0}$
YFT: 44%$SB_{F=0}$

BET: recent recruitment				Notes	Equiv. SKJ $SB/SB_{F=0}$*	Equiv. YFT $SB/SB_{F=0}$*	Equiv. SPA $SB/SB_{F=0}$
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0.34	0%	+50%	0%	Avg. 2012-2015	50%	35%	47%
0.37	+9%	+25%	0%	Avg. 2012-2015 + 10%	50%	37%	49%
0.32	-6%	+50%	1%	Avg. 2012-2015 minus FAD closure	50%	34%	47%

Take 2012-2015 level PS/LL fishing conditions
Calculate impact on PS FAD set multiplier of removing FAD closure (Table 1 effort multiplier)
Identify resulting depletion level
For this table - look at LL change needed to achieve that depletion level

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0.29	-15%	+85%	10%	10% risk re LRP	50%	33%	46%
0.26	-24%	+100%	20%	20% risk re LRP	50%	32%	45%

- YFT – Few TRP scenarios are achievable within the range of LL catch multipliers examined (more than 50% reduction or 100% increase in catches needed)

Results – BET recent recruitment

- PS CMM

2012-2015 levels
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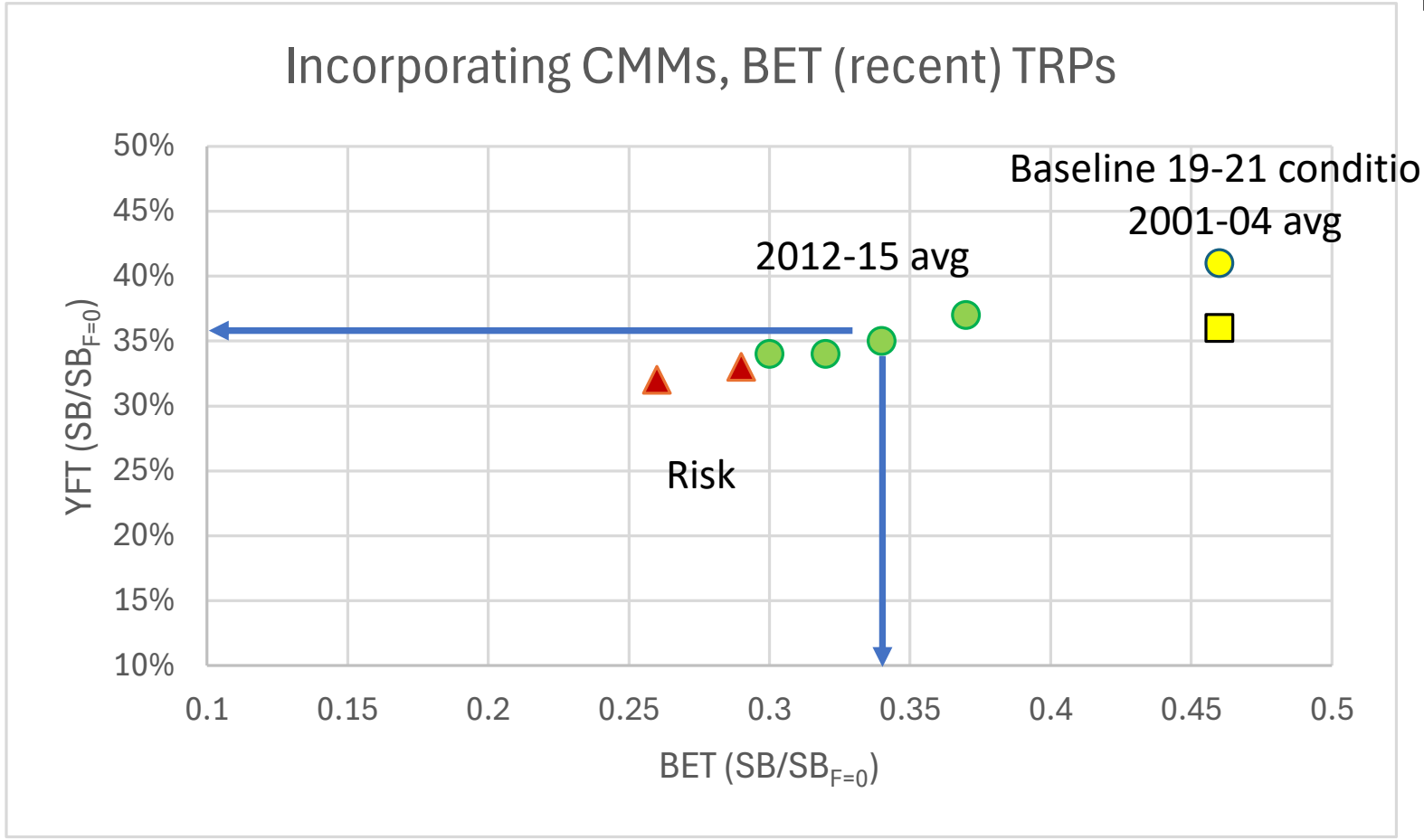

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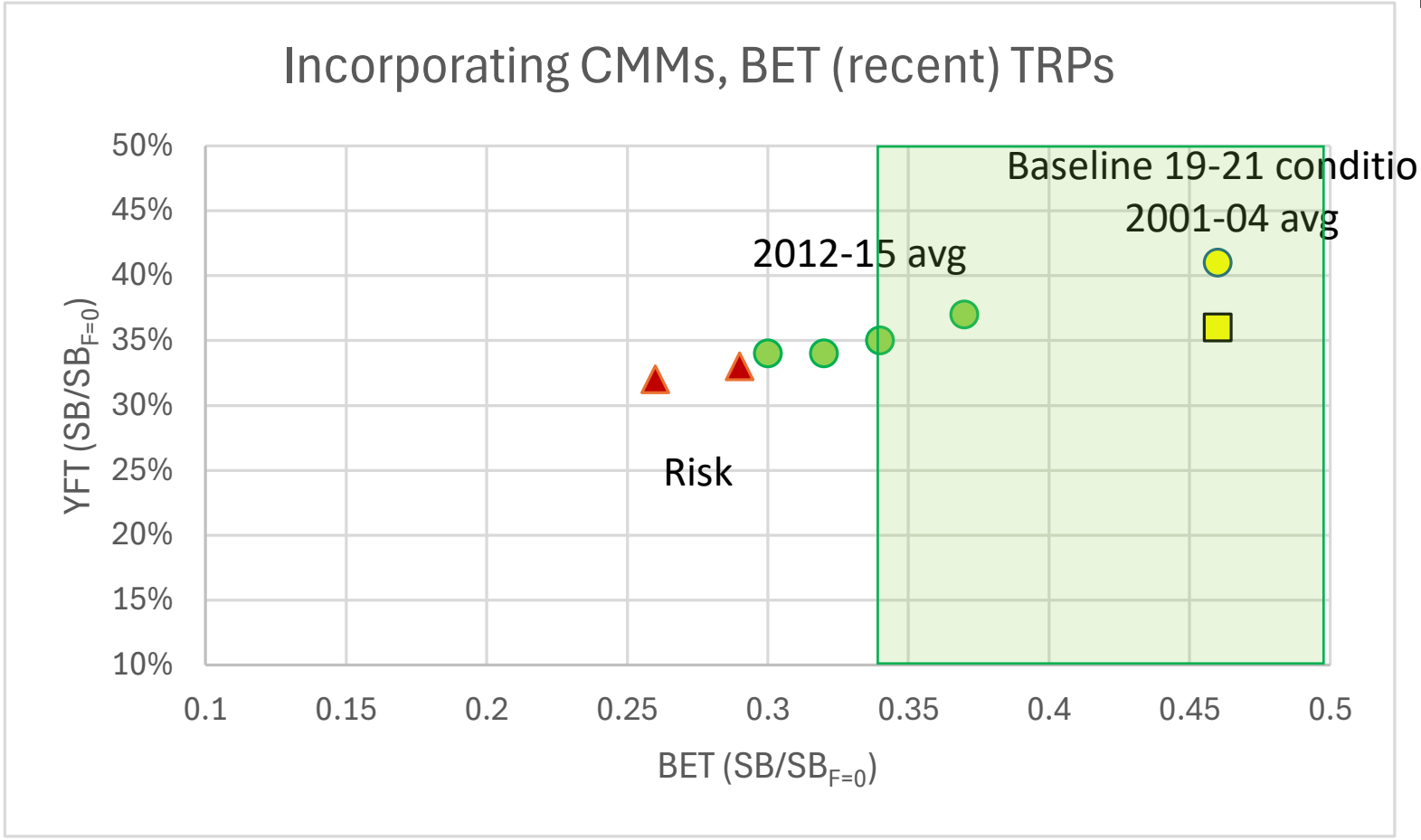

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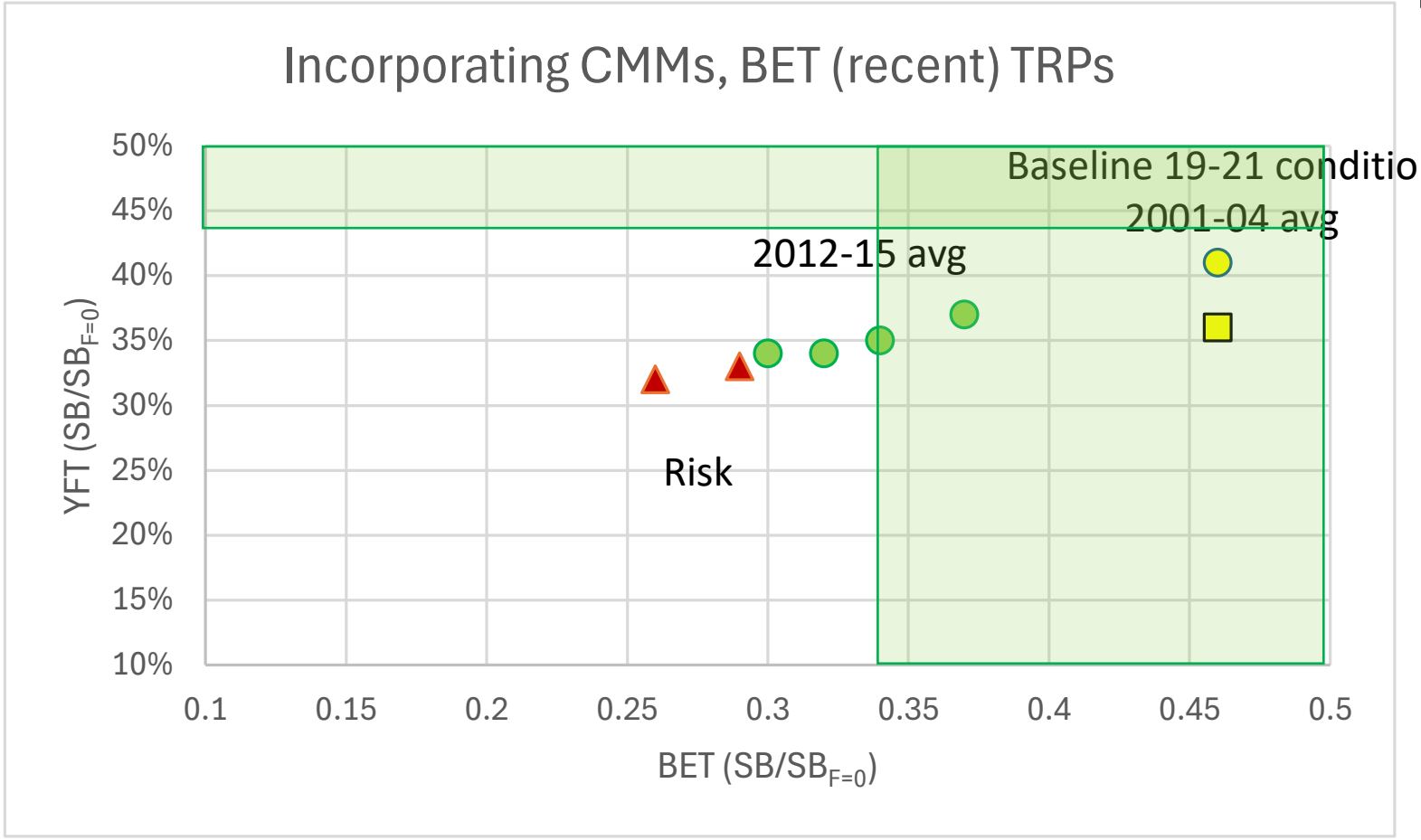


Vulnerable biomass

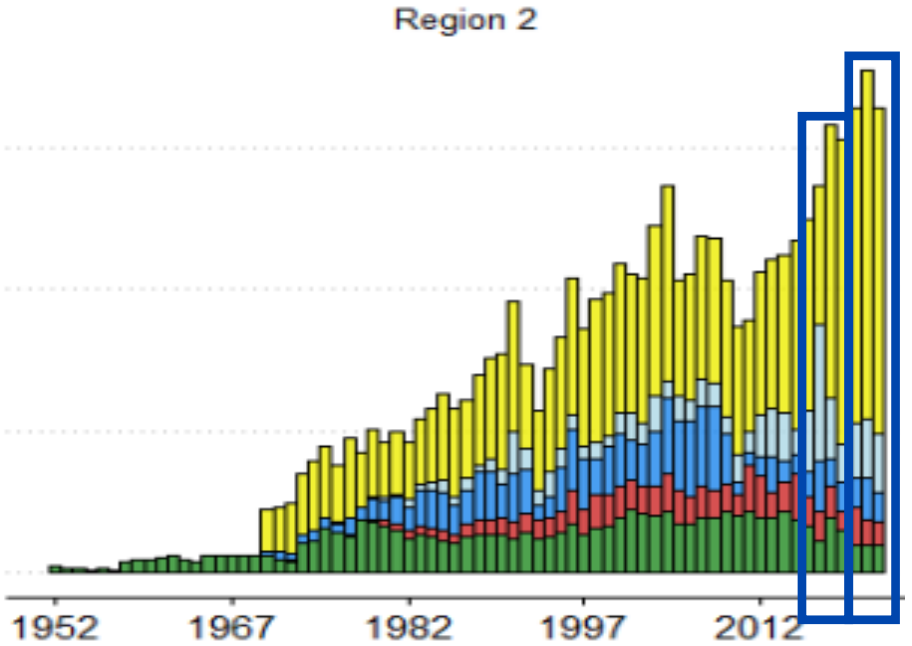
BET: recent recruitment		Bigeye vulnerable biomass (rel. 2019-2021 average)		Yellowfin vulnerable biomass (rel. 2019-2021 average)	
Median depletion level ($\%SB_{F=0}$)	Change in SB ($\%SB_{F=0}$) from 2012-2015 average	'Tropical' longline	'Southern' longline	'Tropical' longline	'Southern' longline
0.46	+35%	0.97	1.64	0.84	1.01
0.30	-12%	0.50	1.35	0.61	1.40
0.34	0%	0.58	1.42	0.69	1.47
0.37	+9%	0.67	1.50	0.79	1.55
0.32	-6%	0.48	1.37	0.69	1.47
0.46	+35%	0.87	1.66	0.98	1.70
0.29	-15%	0.43	1.28	0.54	1.33
0.26	-24%	0.37	1.22	0.48	1.28

Table 9 (BET recent recruitment)

- Main impacts in the tropical LL fishery for all stocks
- Impact on 'southern' LL fishery is less
  - Generally increases for BET and YFT across candidate TRPs

YFT – higher catches in region 2

- Evaluated the impact of higher recent fishing levels (effort) for YFT
- Results in Appendix 2
- Surprisingly little impact on PS/LL conditions to achieve candidate TRPs
  - Level of effort increase leads to limited extra catches given level of depletion in region 2



2023 YFT assessment Figure 4, western Tropical region catch by gear group Yellow = Miscellaneous gears

Notes

- Using SC-suggested ‘objectives’ – managers have not defined candidate levels
- Challenges in simultaneously achieving current TT CMM objectives across stocks
  - Likely to require trade offs between stock objectives
  - SPA: While baseline conditions achieve recalibrated iTRP, scenarios with increases in longline fishing may reduce SPA stock below that target.
- ‘Threshold’ TRPs
  - Status needs manager’s clarification
  - ‘target’ achieved on average, limit not exceeded/permissible to exceed with a set risk?
  - Specify the probability of being ‘at or above’

More notes

- Commission identify the bigeye TRP stock level achieving desired outcomes
  - Assists design of BET MP
  - Define a single TRP level to achieve on average?
- Commission identify ‘baseline’ BET levels
  - e.g. FAD closure duration, longline catch levels
- Noting not all fisheries taking YFT will be controlled by an MP in the mixed fishery framework
  - Yellowfin TRP defined by outcomes of other stock’s MPs?
  - How should the catch of relevant components of ‘other fisheries’ be dealt with within evaluations for yellowfin? [Here - set at levels consistent with 2016-18 levels (see CMM 2022-01)]

WCPFC21

- Invited to:
  - Discuss the outcomes for bigeye and yellowfin tuna under the different SC16 candidate TRP levels examined to aid their scheduled decisions on bigeye and yellowfin TRPs.
  - Note the assumptions made for fisheries (baselines, effort/catch) within these evaluations.
  - Consider how a threshold target reference point may be specified

BET recent, equal change

BET: recent recruitment									
Median depletion level ($\%SB_{F=0}$)	Change in SB ($\%SB_{F=0}$) from 2012-2015 average	Change in SB ($\%SB_{F=0}$) from 2018-2021 average	Change in fishing from 2019-2021 levels		Risk $SB/SB_{F=0}$ < LRP	**Notes**	**Equiv. SKJ $SB/SB_{F=0}$ ***	**Equiv. YFT $SB/SB_{F=0}$ ***	**Equiv. SPA $SB/SB_{F=0}$**
			Purse seine	Longline					
0.46	+35%	+31%	0%	0%	0%	Base 2019-2021 conditions	53%	41%	50%
0.30	-12%	-14%	+60%	+60%	5%	Avg. 2012-2015 – 10%	48%	33%	47%
0.34	0%	-3%	+45%	+45%	0%	Avg. 2012-2015	50%	36%	48%
0.37	+9%	+6%	+30%	+30%	0%	Avg. 2012-2015 + 10%	52%	38%	49%
0.32	-6%	-9%	+50%	+50%	1%	Avg. 2012-2015 minus FAD closure	52%	37%	47%
0.46	+35%	+31%	0%	0%	0%	Avg. depletion 2000-04	53%	41%	50%
0.29	-15%	-17%	+65%	+65%	10%	10% risk re LRP	46%	32%	47%
0.26	-24%	-26%	+80%	+80%	20%	20% risk re LRP	45%	30%	46%

BET long term, equal change

BET: long-term recruitment						Notes	Equiv. SKJ $SB/SB_{F=0}$*	Equiv. YFT $SB/SB_{F=0}$*	Equiv. SPA $SB/SB_{F=0}$
Median depletion level ($\%SB_{F=0}$)	Change in SB ($\%SB_{F=0}$) from 2012-2015 Average	Change in SB ($\%SB_{F=0}$) from 2018-2021 average	Change in fishing from 2019-2021 levels		Risk $SB/SB_{F=0}$ < LRP				
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0.43	+26%	+23%	0%	0%	0%	Base 2019-2021 conditions	53%	41%	50%
0.30	-12%	-14%	+45%	+45%	16%	Avg. 2012-2015 – 10%	50%	36%	48%
0.34	0%	-3%	+30%	+30%	3%	Avg. 2012-2015	52%	38%	49%
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YFT, equal change

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0.41	-7%	-13%	0%	0%	0%	Base 2019-2021 conditions	53%	46%/43%	50%
0.39	-11%	-17%	+10%	+10%	0%	Avg. 2012-2015 – 10%	52%	41%/38%	50%
0.44	0%	-6%	-10%	-10%	0%	Avg. 2012-2015	55%	46%/44%	51%
0.48	+9%	+2%	-30%	-30%	0%	Avg. 2012-2015 + 10%	60%	53%/51%	52%
0.50	+14%	+6%	-40%	-40%	0%	Avg. depletion 2000-2004	63%	57%/55%	52%
0.31	-30%	-34%	+50%	+50%	10%	10% risk re LRP	44%	30%/27%	47%
0.27	-39%	-43%	+70%	+70%	20%	20% risk re LRP	42%	26%/23%	46%

BET recent, CMM levels

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YFT, CMM levels

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0.50	+14%	+6%	+17%	> -50%	0%	Avg. depletion 2000-2004		-/-	-
-*	-	-	+17%	> +100%	10%	10% risk re LRP		-/-	-
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