

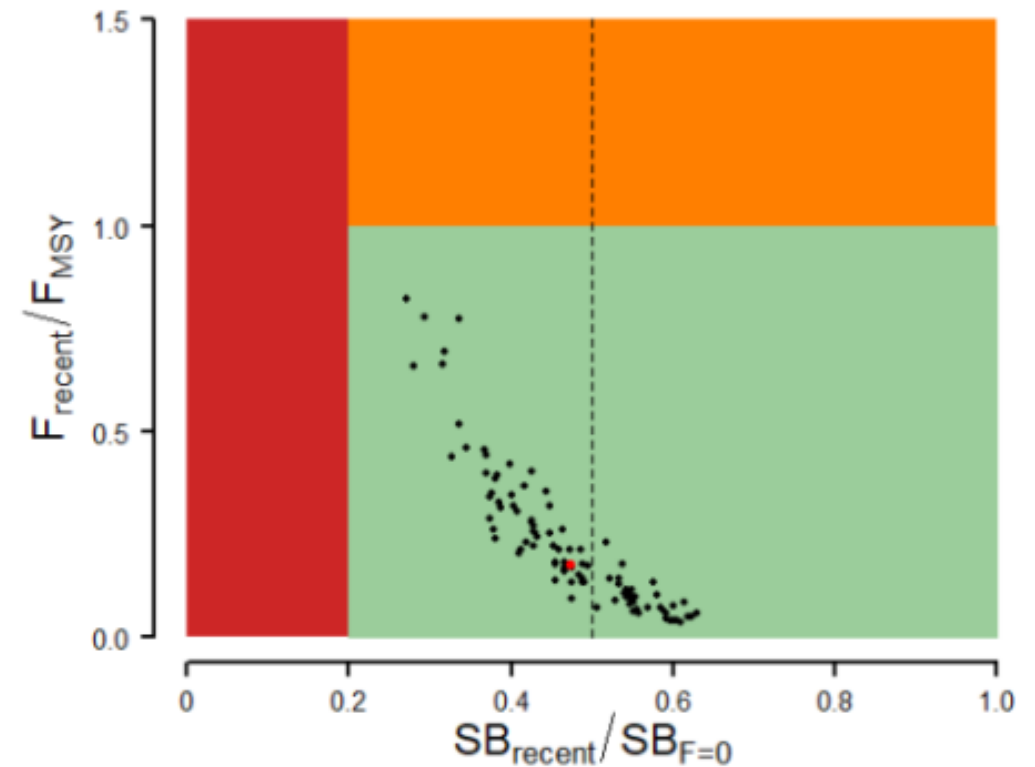
South Pacific albacore iTRP progress (WCPFC21-2024-29)

COMMISSION
Twenty First Regular Session
Suva, Fiji

SPC-OFP
28 November – 3 December 2024

SPA iTRP recalibration

- SPA iTRP defined by WCPFC20 as $0.96 \times SB_{2017-2019} / SB_{F=0}$
 - Value of iTRP updated with new assessment
 - Result: iTRP = 50% $SB_{F=0}$



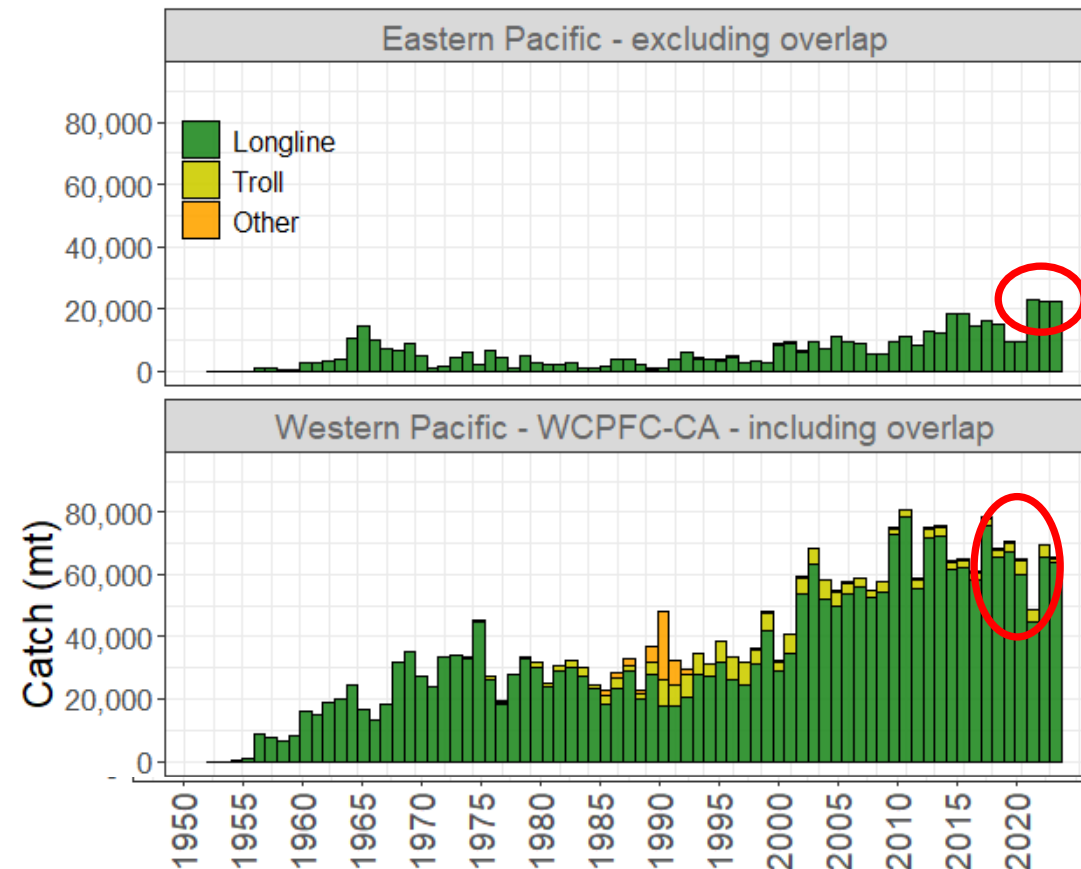
SPA iTRP – alternative depletions

- Used stochastic projections and look at long term implications
- Catch based projections – based on weight of fish OR numbers (SC20)
 - Catch in weight more pessimistic
- Adjust future catch to achieve depletions in the long term

- When considering higher future catches (to achieve more depleted stock status), some projections ‘failed’ (insufficient fish to allow the projected catch to be taken)
 - These runs set to zero for the estimation of depletion and risk

SPA iTRP baseline catches

- Baseline 2020-2022 catch levels in the WCPFC-CA.
 - Remainder of EPO 'set' at 22,500 mt

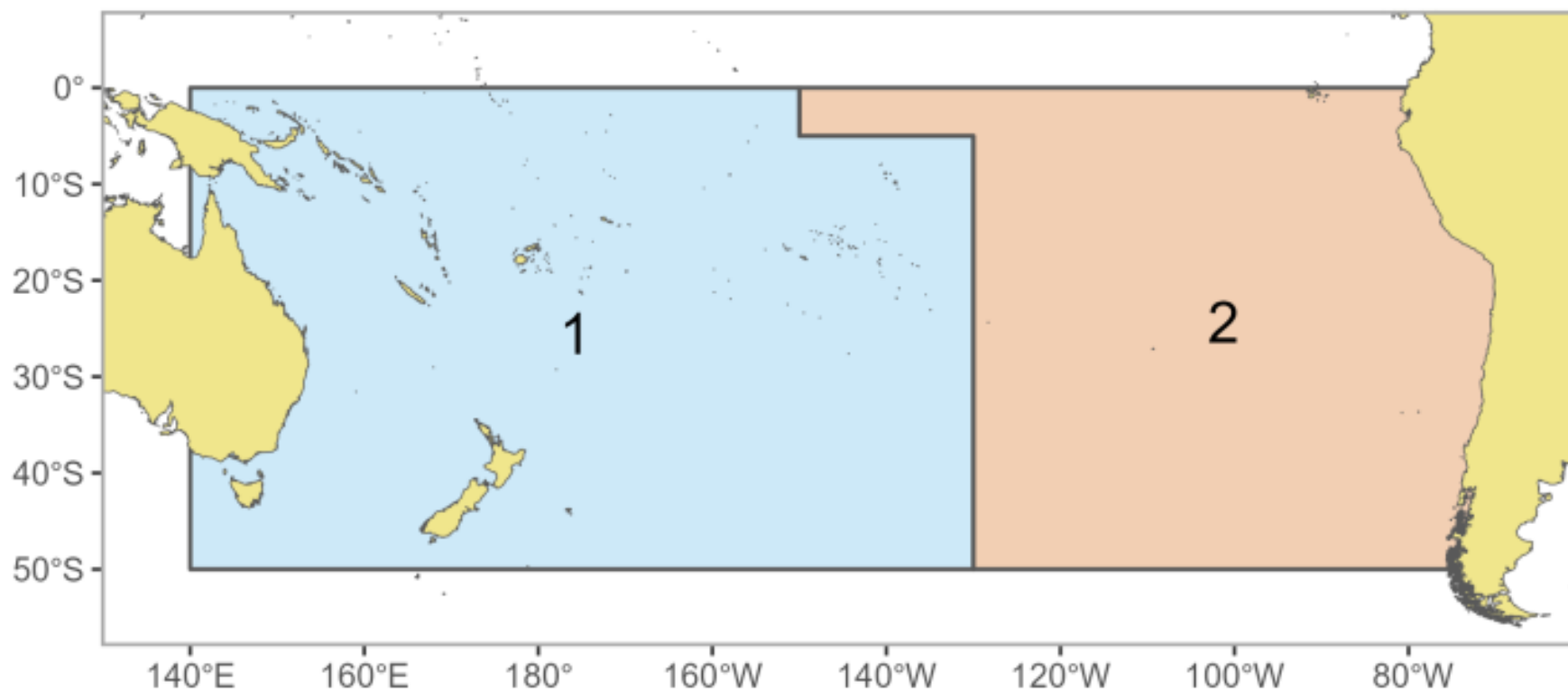


22,500 mt

~60,700 mt (LL + TR)

SPA iTRP 'fishery control' scenarios

- Two scenarios
 - Adjust WCPFC-CA LL & TR fisheries up and down, constant catch in remainder EPO
 - Adjust across the whole of the South Pacific (where EPO adjusted from 22.5k)



2024 SPA stock assessment

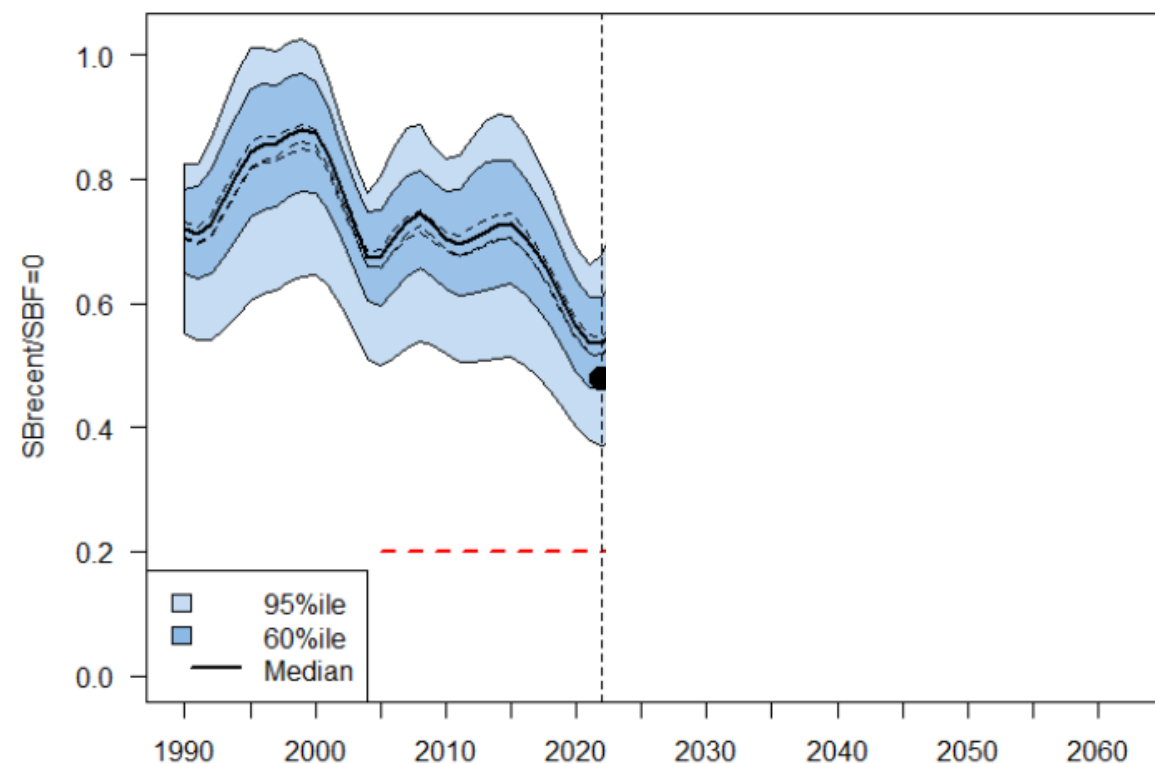


Figure 62: South Pacific albacore SB depletion for the WCPFC Convention Area from the uncertainty grid of assessment model runs for the period 1990 to 2022 (the vertical line at 2022 represents the last year of the assessment), and stochastic projection results for the period 2023 to 2062 assuming actual catch and effort levels in 2022, and that 2022 fishing levels continued. Prior to 2022 the data represent the 60th and 95th percentiles of the uncertainty grid from the assessment models and the median. During the projection period (2023-2062) levels of recruitment variability estimated over the period used to estimate the stock-recruitment relationship (1972-2020) are assumed to continue in the future. The dashed lines indicate three example trajectories (chosen randomly out of 5000) from the model grid. The red dashed line represents the WCPFC agreed limit reference point (0.20). Point represents $SB_{recent}/SB_{F=0}$, as defined within the stock assessment process.

2024 SPA stock assessment

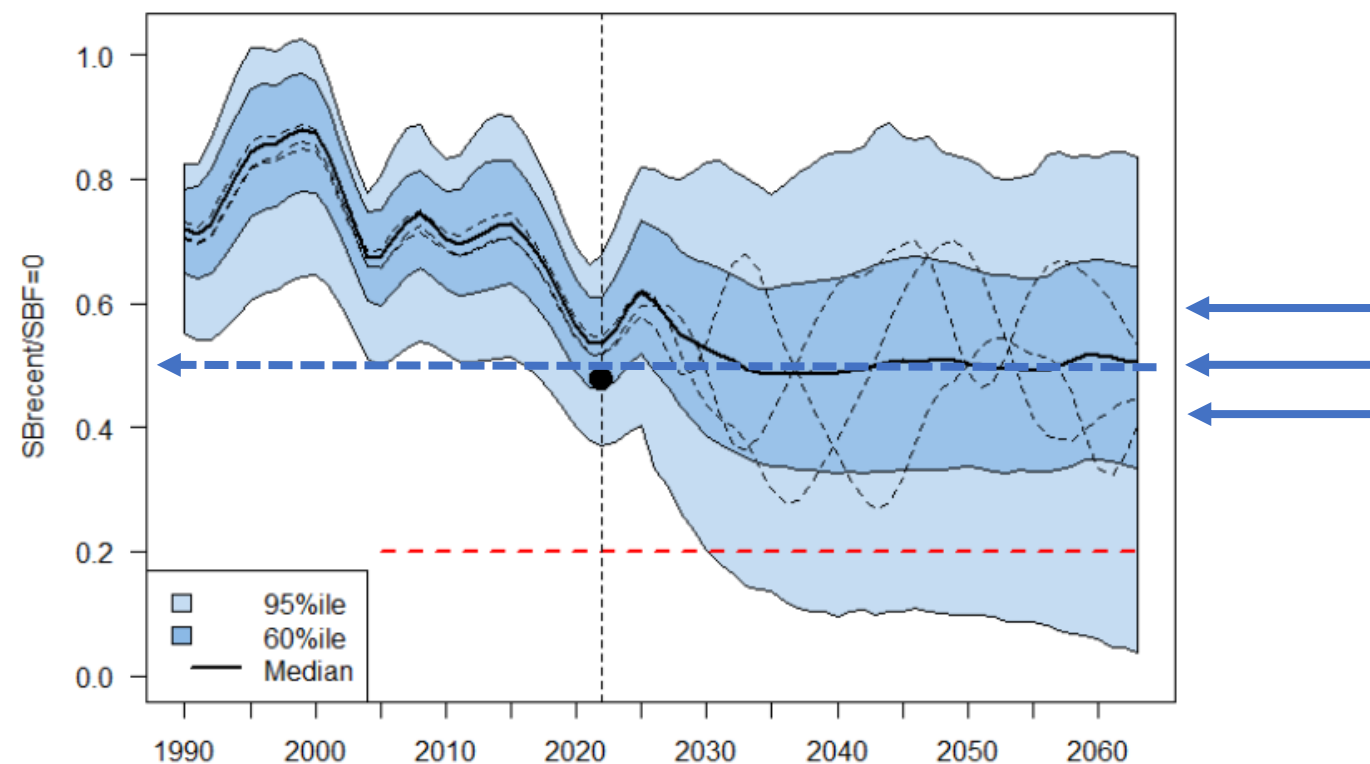


Figure 62: South Pacific albacore SB depletion for the WCPFC Convention Area from the uncertainty grid of assessment model runs for the period 1990 to 2022 (the vertical line at 2022 represents the last year of the assessment), and stochastic projection results for the period 2023 to 2062 assuming actual catch and effort levels in 2022, and that 2022 fishing levels continued. Prior to 2022 the data represent the 60th and 95th percentiles of the uncertainty grid from the assessment models and the median. During the projection period (2023-2062) levels of recruitment variability estimated over the period used to estimate the stock-recruitment relationship (1972-2020) are assumed to continue in the future. The dashed lines indicate three example trajectories (chosen randomly out of 5000) from the model grid. The red dashed line represents the WCPFC agreed limit reference point (0.20). Point represents $SB_{recent}/SB_{F=0}$, as defined within the stock assessment process.

SPA iTRP

- WCPFC-CA only adjustment to catch (weight) – Table 2 – cut down

Depletion	
Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017- 2019 SB _{F=0}
0.56	1.07
0.53	1.01
0.50	0.96
0.46	0.88
0.42	0.80

Constant catch projections – outcomes will be less pessimistic under an MP

SPA iTRP

- WCPFC-CA only adjustment to catch (weight) – Table 2 – cut down

Catch scalar	
(cf 2020-2022 avg)	(cf 2017-2019 avg)
0.85	0.70
0.925	0.76
1	0.83
1.075	0.89
1.15	0.95

Depletion	
Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}
0.56	1.07
0.53	1.01
0.50	0.96
0.46	0.88
0.42	0.80

Constant catch projections – outcomes will be less pessimistic under an MP

SPA iTRP

- WCPFC-CA only adjustment to catch (weight) – Table 2 – cut down

Catch scalar		Approx catch (LL+TR, mt)		Depletion	
(cf 2020-2022 avg)	(cf 2017-2019 avg)	WCPFC-CA	Remainder EPO	Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}
0.85	0.70	51,600	22,500	0.56	1.07
0.925	0.76	56,150	22,500	0.53	1.01
1	0.83	60,700	22,500	0.50	0.96
1.075	0.89	65,250	22,500	0.46	0.88
1.15	0.95	69,800	22,500	0.42	0.80

Constant catch projections – outcomes will be less pessimistic under an MP

SPA iTRP

- WCPFC-CA only adjustment to catch (weight) – Table 2 – cut down

Catch scalar		Approx catch (LL+TR, mt)		Depletion		
(cf 2020-2022 avg)	(cf 2017-2019 avg)	WCPFC-CA	Remainder EPO	Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}	Risk < LRP
0.85	0.70	51,600	22,500	0.56	1.07	6%
0.925	0.76	56,150	22,500	0.53	1.01	10%
1	0.83	60,700	22,500	0.50	0.96	14%
1.075	0.89	65,250	22,500	0.46	0.88	20%
1.15	0.95	69,800	22,500	0.42	0.80	26%

Constant catch projections – outcomes will be less pessimistic under an MP

SPA iTRP

- WCPFC-CA only adjustment to catch (weight) – Table 2 – cut down

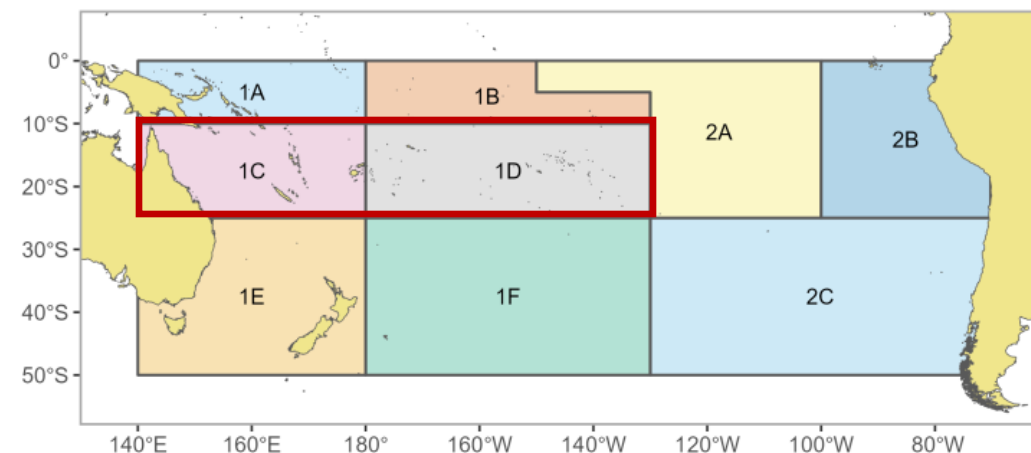
Catch scalar		Approx catch (LL+TR, mt)		Depletion			Vulnerable biomass
(cf 2020-2022 avg)	(cf 2017-2019 avg)	WCPFC-CA	Remainder EPO	Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}	Risk < LRP	VB/VB ₂₀₁₇₋₂₀₁₉
0.85	0.70	51,600	22,500	0.56	1.07	6%	0.83
0.925	0.76	56,150	22,500	0.53	1.01	10%	0.78
1	0.83	60,700	22,500	0.50	0.96	14%	0.73
1.075	0.89	65,250	22,500	0.46	0.88	20%	0.68
1.15	0.95	69,800	22,500	0.42	0.80	26%	0.64

Constant catch projections – outcomes will be less pessimistic under an MP

Examination of LL vulnerable biomass

Long term avg SB/SB _{F=0} (WCPFC-CA)	DWFN fleet		PICT fleet	
	VB/VB ₂₀₁₇₋₂₀₁₉	VB/VB ₂₀₁₃	VB/VB ₂₀₁₇₋₂₀₁₉	VB/VB ₂₀₁₃
0.56	0.83	0.75	0.82	0.74
0.53	0.77	0.71	0.75	0.68
0.50	0.72	0.66	0.68	0.62
0.46	0.67	0.61	0.61	0.56
0.42	0.62	0.57	0.56	0.50

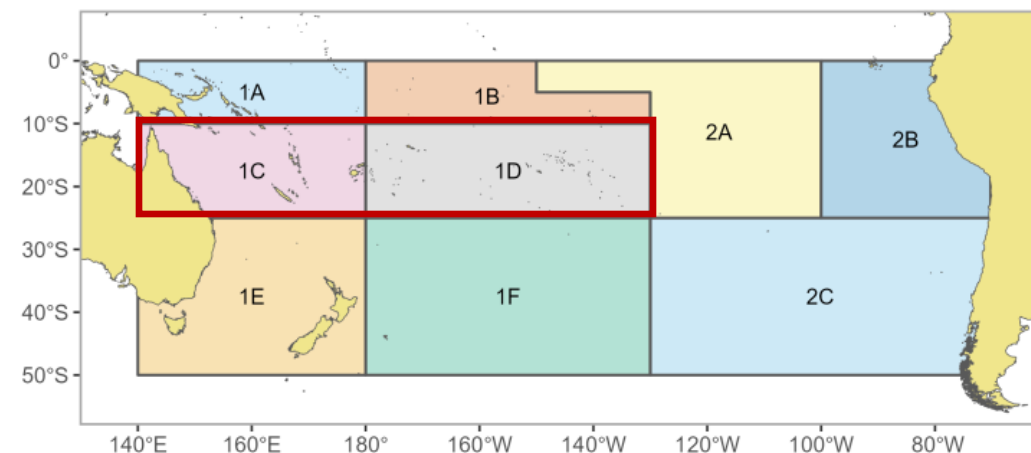
Table 5



Examination of LL vulnerable biomass

Long term avg SB/SB _{F=0} (WCPFC-CA)	DWFN fleet		PICT fleet	
	VB/VB ₂₀₁₇₋₂₀₁₉		VB/VB ₂₀₁₇₋₂₀₁₉	
0.56	0.83		0.82	
0.53	0.77		0.75	
0.50	0.72		0.68	
0.46	0.67		0.61	
0.42	0.62		0.56	

Table 5



EPO catch assumption (catch in wt)

EPO 20-22

Catch scalar		Approx catch (LL+TR, mt)		Depletion	
(cf 2020-2022 avg)	(cf 2017-2019 avg)	WCPFC-CA	Remainder EPO	Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}
0.85	0.70	51,600	22,500	0.56	1.07
0.925	0.76	56,150	22,500	0.53	1.01
1	0.83	60,700	22,500	0.50	0.96
1.075	0.89	65,250	22,500	0.46	0.88
1.15	0.95	69,800	22,500	0.42	0.80

Table 2

EPO 17-19

Catch scalar		Approx catch (LL+TR, mt)	
(cf 2020-2022 avg)	(cf 2017-2019 avg)	WCPFC-CA	Remainder EPO
0.925	0.76	56,150	13,500
0.99	0.82	60,100	13,500
1.05	0.87	63,700	13,500
1.125	0.93	68,300	13,500
1.2	0.99	72,850	13,500

Table 7

Summary

- Recalibrated iTRP = 50% $SB_{F=0}$
- Trade off:
 - greater depleted stock ~ higher relative catch, lower catch rates and greater LRP risk
 - Less depleted stock > relatively lower catches, higher catch rates and lower LRP risk
- Impact on CPUE declines greater on PICT fleets as stock becomes more depleted
- Catch weight assumption is more 'pessimistic' – but matches mgmt. basis
- Level of fishing in the EPO does affect catch level needed to achieve WCPFC-CA TRP

WCPFC21

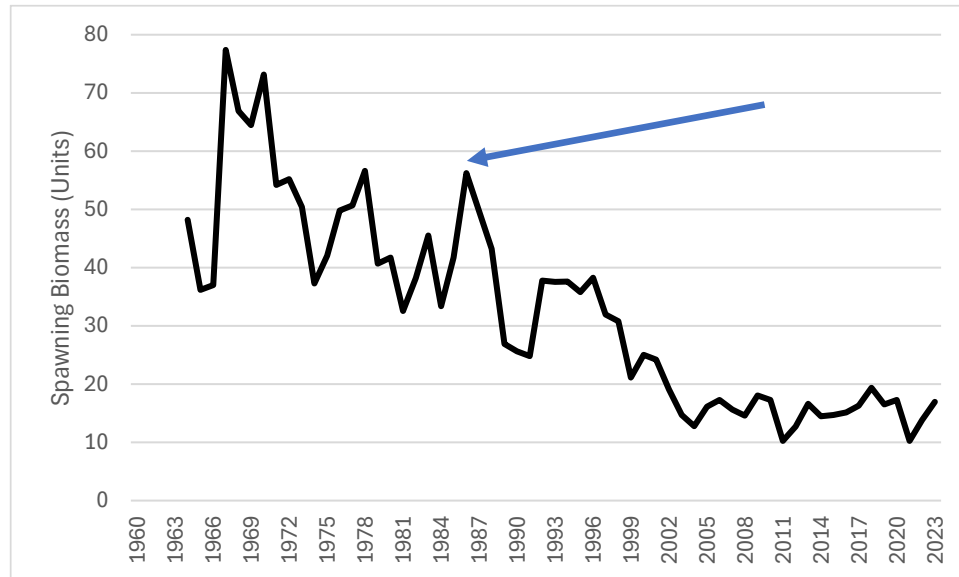
- Invited to:
 - consider the results presented here when adopting the confirmed or amended iTRP within a Conservation and Management Measure that specifies a management procedure for South Pacific albacore tuna.

SPA iTRP – numbers v weight (T2 v T1)

- WCPFC-CA only adjustment to catch (numbers/**weight**) (EPO fixed)

Catch scalar (cf 2020-2022 avg)	Approx catch (LL+TR, mt)	Depletion		Vulnerable biomass		
		WCPFC-CA	Long term avg SB/SB _{F=0} (WCPFC-CA)	Risk < LRP	VB/VB ₂₀₁₇₋₂₀₁₉	VB/VB ₂₀₁₃
0.875/0.85	53,100/ 51,600		0.56	3%/6%	0.82/ 0.83	0.74/ 0.74
0.935/0.925	56,750/ 56,150		0.53	5%/10%	0.79/ 0.78	0.70/ 0.70
1 / 1	60,700		0.50	8% / 14%	0.74/ 0.73	0.67/ 0.68
1.18/1.075	71,300/ 65,250		0.46	16%/20%	0.64/ 0.68	0.57/ 0.61
1.25 / 1.15	75,900/ 69,800		0.42	19%/26%	0.59/ 0.64	0.53/ 0.57

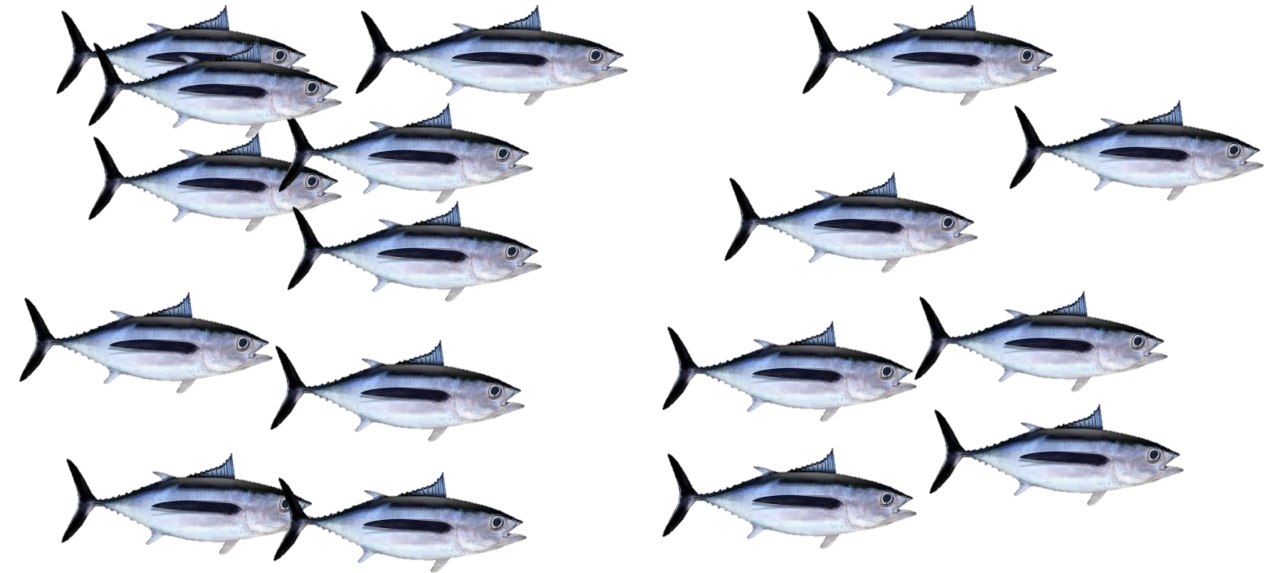
SPA iTRP – caveats



Projected catch

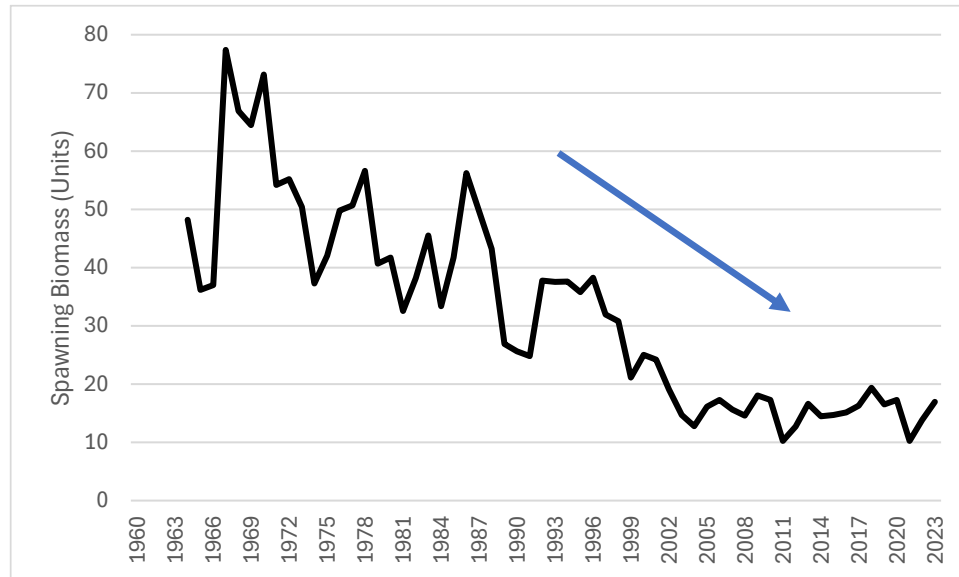
Numbers = 10 fish

Weight = 350kg



Weight = 400kg

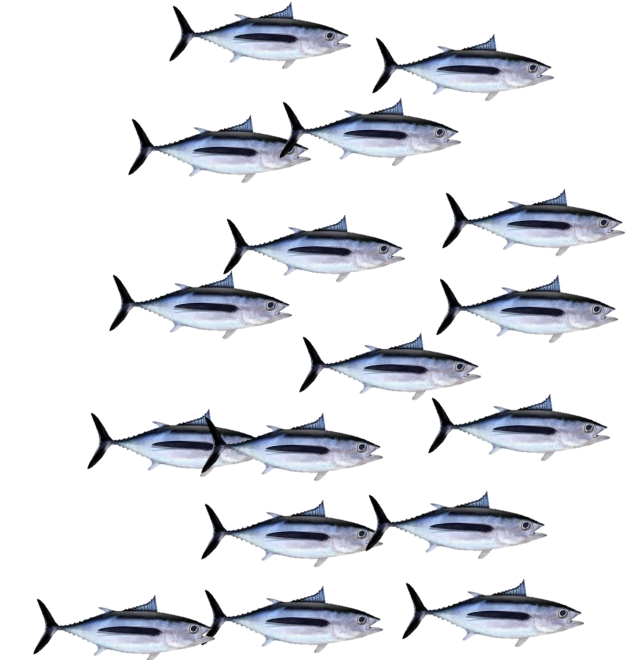
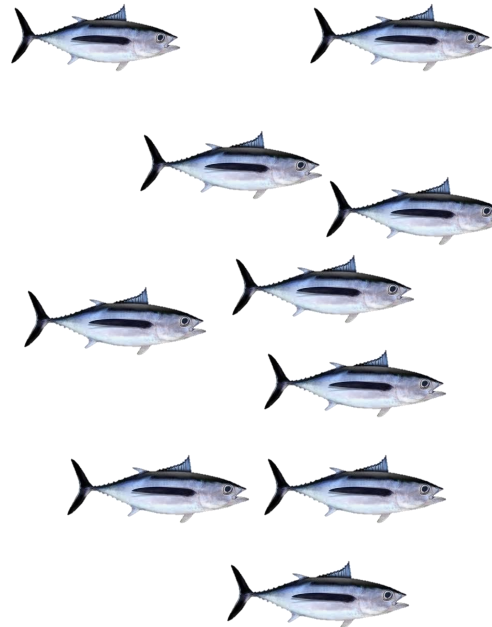
SPA iTRP – caveats



Projected catch

Numbers = 10 fish

Weight = 350kg



Weight = 300kg?



WCPFC-CA catch (numbers)

Catch scalar (cf 2020- 2022 avg)	Approx catch (mt)		Depletion				Vulnerable biomass		F/F _{MSY}	
	WCPFC- CA	Remain der EPO	Long term avg SB/SB _{F=0} (WCPFC- CA)	% 2017- 2019 SB _{F=0}	Depletio n relative to iTRP	Risk < LRP	VB/VB ₂₀ 17-2019	VB/VB ₂₀ 13	F/F _{MSY}	Risk F>F _{MSY}
0.875	53,100	22,500	0.56	1.07	1.11	3%	0.82	0.74	0.18	5%
0.935	56,750	22,500	0.53	1.01	1.05	5%	0.79	0.70	0.19	7%
1	60,700	22,500	0.50	0.96	1.00	8%	0.74	0.67	0.20	9%
1.180	71,300	22,500	0.46	0.88	0.92	16%	0.64	0.57	0.24	14%
1.250	75,900	22,500	0.42	0.80	0.84	19%	0.59	0.53	0.25	18%

WCPFC-CA catch (weight)

Catch scalar (cf 2020- 2022 avg)	Approx catch (mt)		Depletion				Vulnerable biomass		F/F _{MSY}	
	WCPFC- CA	Remain der EPO	Long term avg SB/SB _{F=0} (WCPFC- CA)	% 2017- 2019 SB _{F=0}	Depletio n relative to iTRP	Risk < LRP	VB/VB ₂₀ 17-2019	VB/VB ₂₀ 13	F/F _{MSY}	Risk F>F _{MSY}
0.85	51,600	22,500	0.56	1.07	1.11	6%	0.83	0.74	0.18	6%
0.925	56,150	22,500	0.53	1.01	1.05	10%	0.78	0.70	0.19	8%
1	60,700	22,500	0.50	0.96	1.00	14%	0.73	0.65	0.20	10%
1.075	65,250	22,500	0.46	0.88	0.92	20%	0.68	0.61	0.21	12%
1.15	69,800	22,500	0.42	0.80	0.84	26%	0.64	0.57	0.23	13%

SP-wide catch (numbers)

Catch scalar (cf 2020- 2022 avg)	Approx catch (mt)		Depletion				Vulnerable biomass		F/F _{MSY}	
	WCPFC- CA	Remain der EPO	Long term avg SB/SB _{F=0} (WCPFC- CA)	% 2017- 2019 SB _{F=0}	Depletio n relative to iTRP	Risk < LRP	VB/VB ₂₀ 17-2019	VB/VB ₂₀ 13	F/F _{MSY}	Risk F>F _{MSY}
0.880	53,400	19,800	0.56	1.07	1.11	3%	0.84	0.75	0.17	4%
0.940	57,050	21,150	0.53	1.01	1.05	5%	0.79	0.71	0.19	6%
1	60,700	22,500	0.50	0.96	1.00	8%	0.74	0.67	0.20	9%
1.100	66,800	24,750	0.46	0.88	0.92	13%	0.67	0.60	0.23	13%
1.180	71,600	26,550	0.42	0.80	0.84	17%	0.62	0.56	0.24	17%

SP-wide catch (weight)

Catch scalar (cf 2020-2022 avg)	Approx catch (mt)		Depletion				Vulnerable biomass		F/F _{MSY}	
	WCPFC-CA	Remainder EPO	Long term avg SB/SB _{F=0} (WCPFC-CA)	% 2017-2019 SB _{F=0}	Depletion relative to iTRP	Risk < LRP	VB/VB ₂₀ 17-2019	VB/VB ₂₀ 13	F/F _{MSY}	Risk F>F _{MSY}
0.88	53,400	19,800	0.56	1.07	1.11	6%	0.83	0.74	0.17	5%
0.94	57,050	21,150	0.53	1.01	1.05	10%	0.78	0.70	0.19	7%
1	60,700	22,500	0.50	0.96	1.00	14%	0.73	0.65	0.20	10%
1.06	64,350	23,850	0.46	0.88	0.92	20%	0.68	0.61	0.23	12%
1.12	68,000	25,200	0.42	0.80	0.84	25%	0.64	0.57	0.24	14%