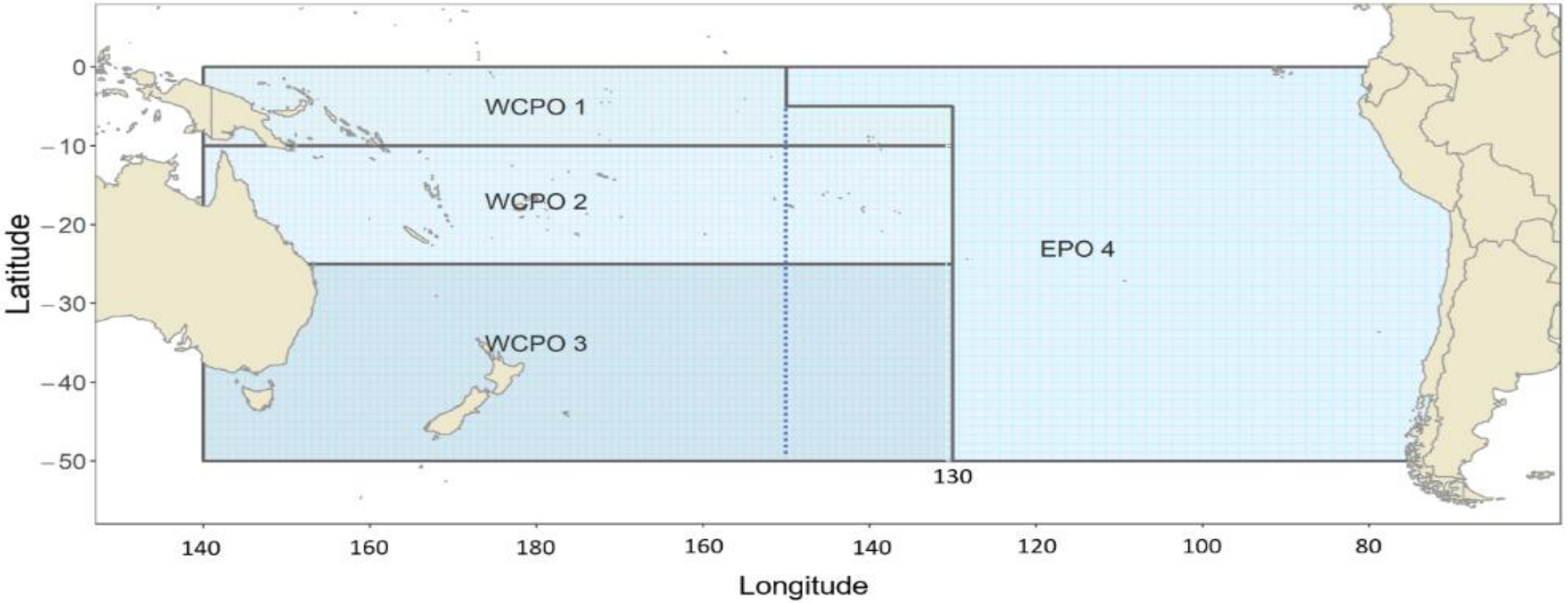
Current status of the iTRP and management objectives for South Pacific albacore

WCPFC SPA ROADMAP IWG, VIRTUAL, 15 JULY 2022

BACKGROUND

- SPA iTRP adopted (56%$SB_{F=0}$) at WCPFC15 in 2018
- New stock assessment agreed by SC17 in 2021
- SC17 requested the SSP to:
  a) recalibrate the WCPFC TRP that would on average achieve the agreed goal of an 8% increase in vulnerable biomass (CPUE proxy) for the southern longline fishery as compared to 2013 levels;
  b) undertake projections to estimate the constant catch levels that would achieve that recalibrated TRP, on average, over the long-term.

2021 SP ALBACORE ASSESSMENT - MODEL



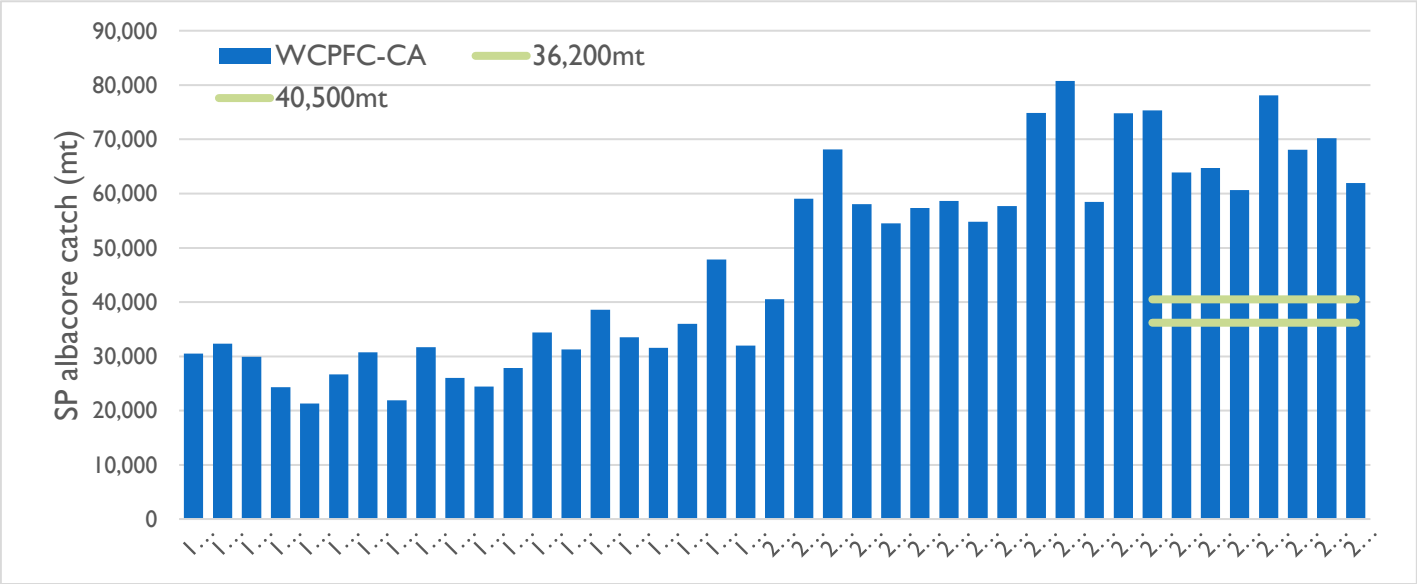
- Key uncertainty:
  - Movement – little tagging information - SC17 ‘down weighted’ one element of this axis

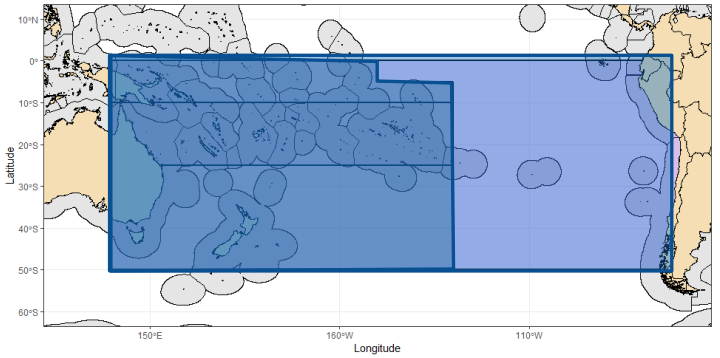
TRP RECALIBRATION

- Comparable approach to that used for SKJ TRP re-calibration
  - Project the stock forward stochastically across the model grid (with SC17 weighting)
  - Project for 30 years under ‘long term’ recruitment
  - Catchability assumed constant
  - Adjust future longline and troll catches relative to 2017-2019 levels so that the weighted average longline vulnerable biomass in the WCPFC-CA = 2013 levels + 8%, under two SC17-specified scenarios:
    - All catches across South Pacific fleets adjusted
    - Only catches for fleets within the WCPFC-CA adjusted
  - Resulting WCPFC-CA stock depletion = new TRP

RESULTING RE-CALIBRATED TRP

Region where catch adjusted	Catch scalar (from 2017-19 avg)	WCPFC-CA		WCPFC-CA catch
		$SB_{2049}/SB_{F=0}$	Risk ($SB_{2049}/SB_{F=0}$ < LRP)	
South Pacific wide	0.56	0.68	1%	~40,500 mt
WCPFC-CA	0.50	0.68	2%	~36,200 mt





WCPFC18

- ‘noted the advice of the SC17 related to a recalibration of the interim TRP for the SP albacore’
- Discussion focussed on notable catch reduction levels required to achieve the iTRP
- Too great a trade-off to achieve CPUE objectives
- Need to investigate SPA management objectives further - acceptable trade-offs between catch reductions and CPUE increases
- SPA IWG Chair requested further analyses
  - Evaluate implications of different future catch levels for stock and fishery

APPROACH

- Project forward under different future catch levels:
  - Ranging from status quo to iTRP level reductions
  - Changes in LL and TR equally
  - Performed a) in WCPFC-CA only, and b) across South Pacific
- Evaluate the implications for stock and fishery

RESULTS – WCPFC-CA CHANGE

Catch scalar (cf 2017-2019 avg)	Approx catch (mt)		Vulnerable Biomass			F/F_{MSY}		Depletion	
	WCPFC_CA	Remainder EPO	VB/VB_{2013}+8%	VB/VB_{2013}	$VB/VB_{2017\text{-}2019}$	F/F_{MSY}	Risk $F > F_{MSY}$	Risk < LRP	Long-term avg $SB/SB_{F=0}$ (WCPFC-CA)
1	72,200	15,600	-38%	-33%	-12%	0.27	11%	22%	0.43
0.9	65,000	15,600	-27%	-22%	+3%	0.23	10%	18%	0.48
0.8	57,800	15,600	-20%	-14%	+13%	0.21	9%	15%	0.53
0.7	50,600	15,600	-13%	-6%	+23%	0.17	6%	11%	0.58
0.6	43,400	15,600	-6%	+2%	+34%	0.14	3%	6%	0.63
0.5	36,100	15,600	0%	+8%	+43%	0.12	1%	2%	0.68

56%

RESULTS – SP-WIDE CHANGE

Catch scalar (cf 2017-2019 avg)	Approx catch (mt)		Vulnerable Biomass			F/F_{MSY}		Depletion	
	WCPFC_CA	Remainder EPO	VB/VB_{2013}+8%	VB/VB_{2013}	$VB/VB_{2017\text{-}2019}$	F/F_{MSY}	Risk $F > F_{MSY}$	Risk < LRP	Long-term avg $SB/SB_{F=0}$ (WCPFC-CA)
1	72,200	15,600	-38%	-33%	-12%	0.27	11%	22%	0.43
0.9	65,000	14,100	-26%	-20%	+5%	0.22	9%	14%	0.49
0.8	57,800	12,500	-18%	-11%	+16%	0.19	8%	9%	0.55
0.7	50,600	11,000	-10%	-2%	+28%	0.15	3%	5%	0.61
0.6	43,400	9,400	-2%	+6%	+39%	0.12	1%	1%	0.67
0.5	36,100	7,800	+6%	+15%	+50%	0.10	0%	0%	0.72

WCPFC-CA change only for comparison

Catch scalar (cf 2017-2019 avg)	Approx catch (mt)		Vulnerable Biomass			F/F_{MSY}		Depletion	
	WCPFC_CA	Remainder EPO	VB/VB_{2013}+8%	VB/VB_{2013}	$VB/VB_{2017\text{-}2019}$	F/F_{MSY}	Risk $F > F_{MSY}$	Risk < LRP	Long-term avg $SB/SB_{F=0}$ (WCPFC-CA)
0.7	50,600	15,600	-13%	-6%	+23%	0.17	6%	11%	0.58

RECOMMENDATIONS FOR SPA-IWG

- Review trade-offs between catch reductions and longline catch rate (VB) increases to clarify management objectives;
- Identify desired additional performance indicators to illustrate other desired management objectives;
- Suggest a tractable sub-set of additional scenarios to be evaluated, as required;
- Consider developing advice for WCPFC19 on implications of different future catch levels for the stock and fishery;
- Note the implications of management applied solely in the WCPFC-CA or across the South Pacific;
- Note recommendation to explore implementing fishery changes through a tested Harvest Strategy management procedure.