Pacific Community
Communauté du Pacifique

Agenda Item 7a
Revised bio-economic TRPs

SPC-OFP, HSW-WP-05

HSW 3 – 30/11 - 1/12/15

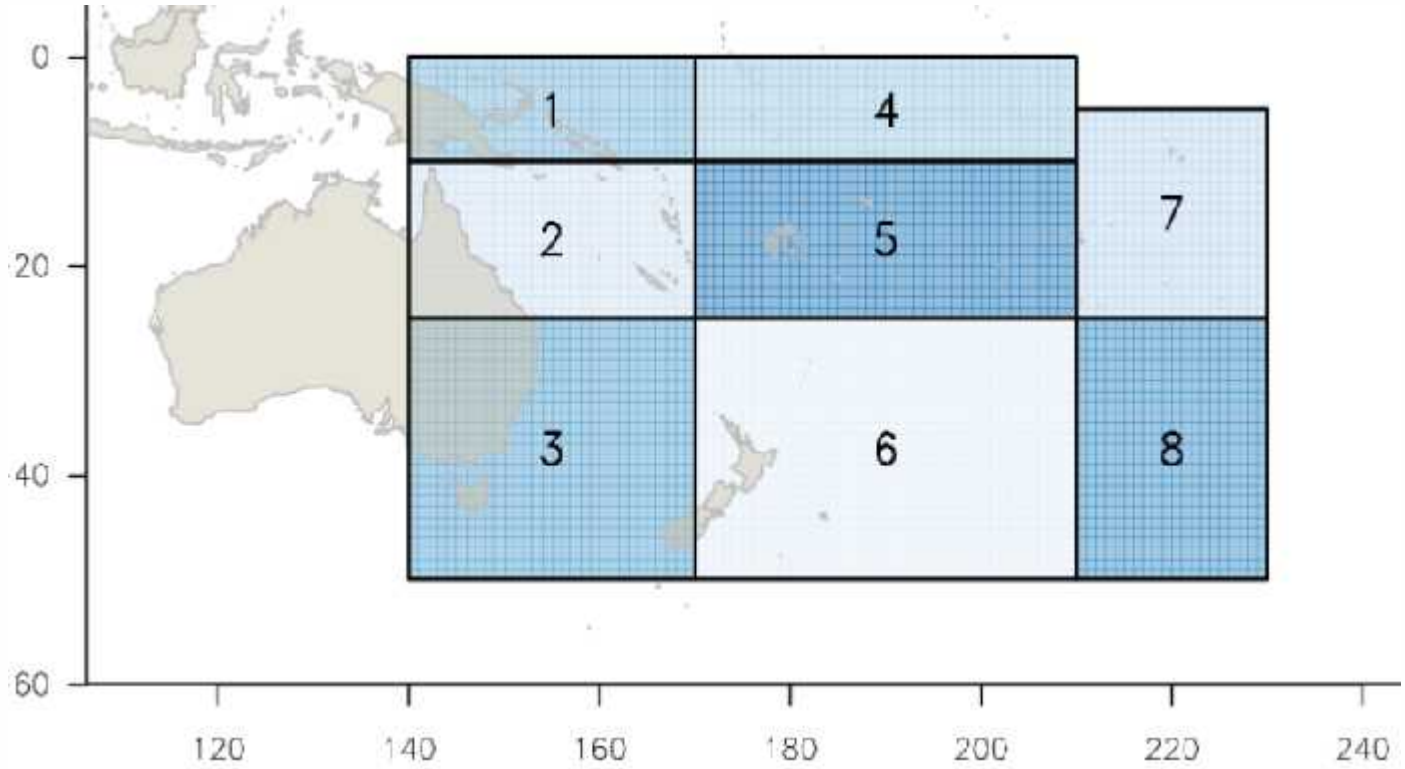
Stones Hotel, Kuta, Bali, Indonesia

Overview

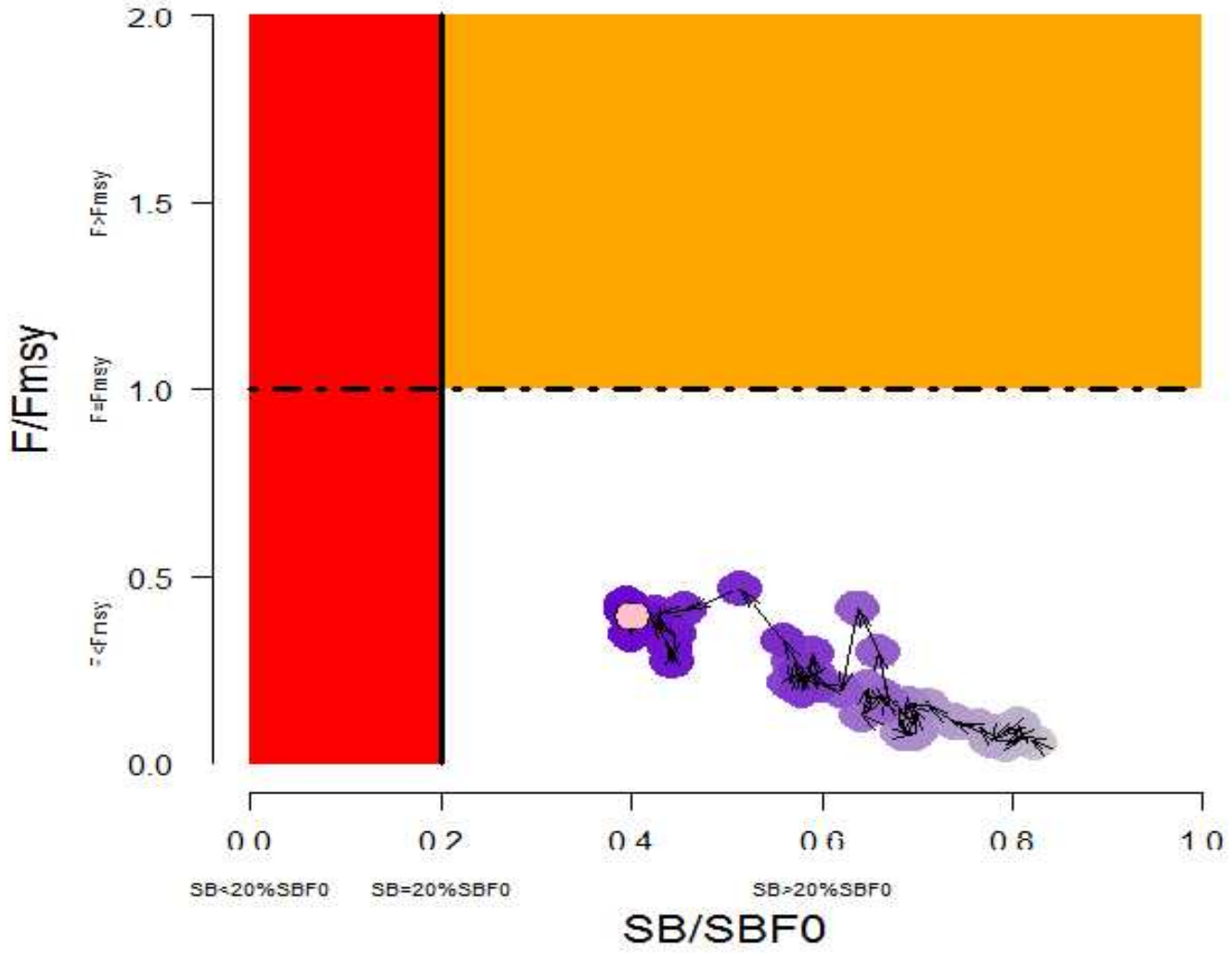
- New (2015) assessment results
- Update of bio-economic TRPs
- Areas for consideration

Latest assessment - 2015

- New spatial structure, new input parameters
- Reference case stock status & conclusions



Majuro plot



- $C_{current}$ ~ or < MSY

Updated analyses for a south Pacific albacore target reference point

(as requested by SC11)

SPC, Oceanic Fisheries Programme (OFP), Noumea, New Caledonia
Pacific Islands Forum Fisheries Agency, Honiara, Solomon Islands

Background

- Two parts:
  - updated bio-economic model for the southern longline fishery (incorporating multispp catch values)
  - Examine conditions arising under alternative TRP levels

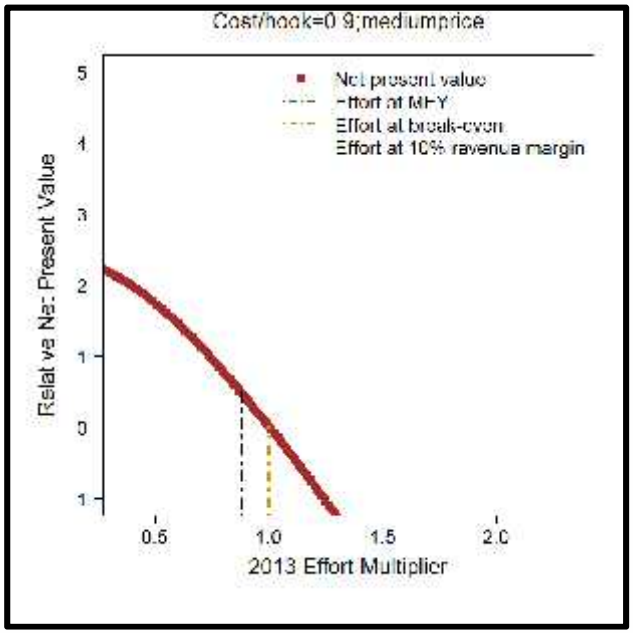
Notes:

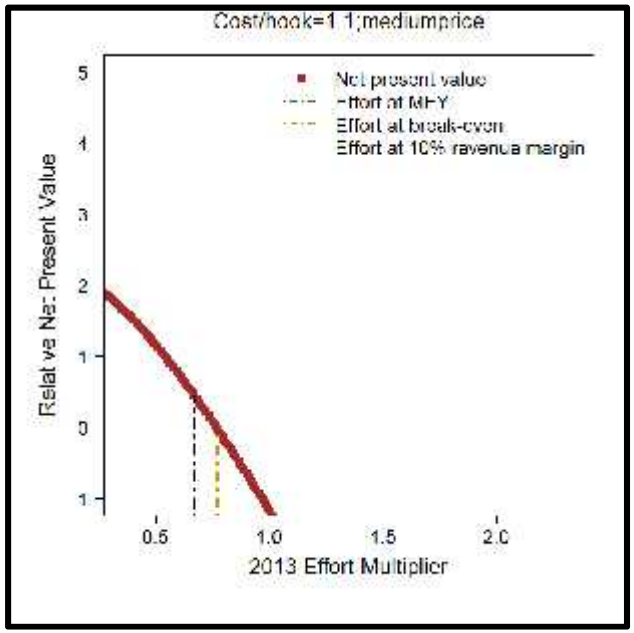
  - Results are an ‘average’ (some fleets will be better, some will be worse)
  - The TRP is where we want to be. WHEN and how we want to get there is the next question!

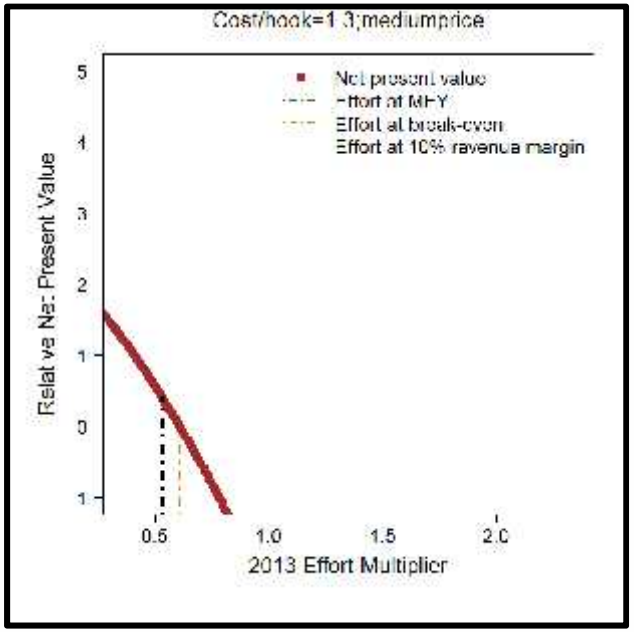
Target levels examined

- MSY [discarded]
- Financial targets
  - MEY
  - ‘Breakeven’ (sufficient profit to remain in the fishery)
  - 10% revenue over economic costs (additional profits)

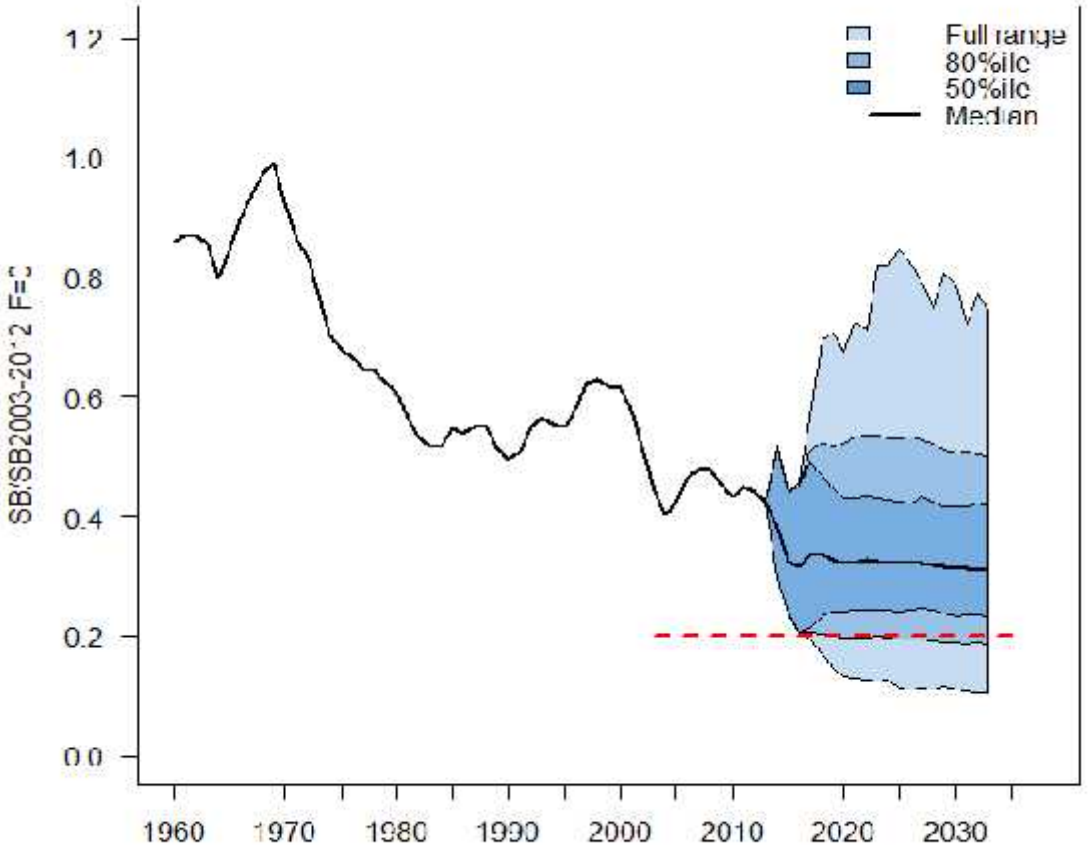
Bio-economic analysis (NPV)







Status quo run (2013 conditions)



Indicator	Value
$SB_{2013}/SB_{F=0}$	0.41
$SB_{2033}/SB_{F=0}$	0.32
Risk v LRP	20%
VB_{2033}/VB_{2013}	0.86

	LL effort scalar (2013)	Median $SB_{2033}/SB_{F=0}$	Median longline VB_{2033}/VB_{2013}	Median albacore catch (C_{2033}/C_{2013})	Risk SB_{2033} < LRP
Status quo (2013)	1	0.32	0.86	0.72	20%
MEY					
costs \$0.9-1.3 per hook	0.25	0.59	1.49	0.41	0%
10% revenue margin over costs					
cost \$0.9 per hook	0.88	0.34	0.92	0.70	9%
cost \$1.1 per hook	0.67	0.40	1.05	0.64	0%
cost \$1.3 per hook	0.53	0.45	1.17	0.59	0%
Break-even					
cost \$0.9 per hook	1	0.32	0.86	0.72	20%
cost \$1.1 per hook	0.77	0.37	0.99	0.67	4%
cost \$1.3 per hook	0.61	0.42	1.10	0.62	0%

Table 1: stock and fishery status under alternative TRPs

Consider objectives

Median $SB_{2033}/SB_{F=0}$	LL effort scalar	Avg % vessel profit @ cost per hook ($/hook)		
		0.90	1.10	1.30
0.32	1	0%	-	-
0.34	0.88	10%	-	-
0.37	0.77	22%	0%	-
0.40	0.67	30%	10%	-
0.42	0.61	35%	15%	0%
0.45	0.53	41%	20%	10%

Table 2: revenue over economic costs for given stock levels

Discussion points

- Continuing to fish at recent levels leads to further stock and fishery CPUE declines, and a 20% chance of the stock falling below the LRP. Is this acceptable?
- Is it enough to ensure a low risk of breaching the LRP? This 'minimum' TRP (~37% $SB_{F=0}$ at 5%) means a decline in CPUE from recent levels, a stock size 4% lower than recent levels – its lowest level ever - and zero profit.
- If fleet profitability is desired, what profit levels are preferred?
- Do the corresponding changes in fishing effort/catch to achieve those levels affect decisions?