



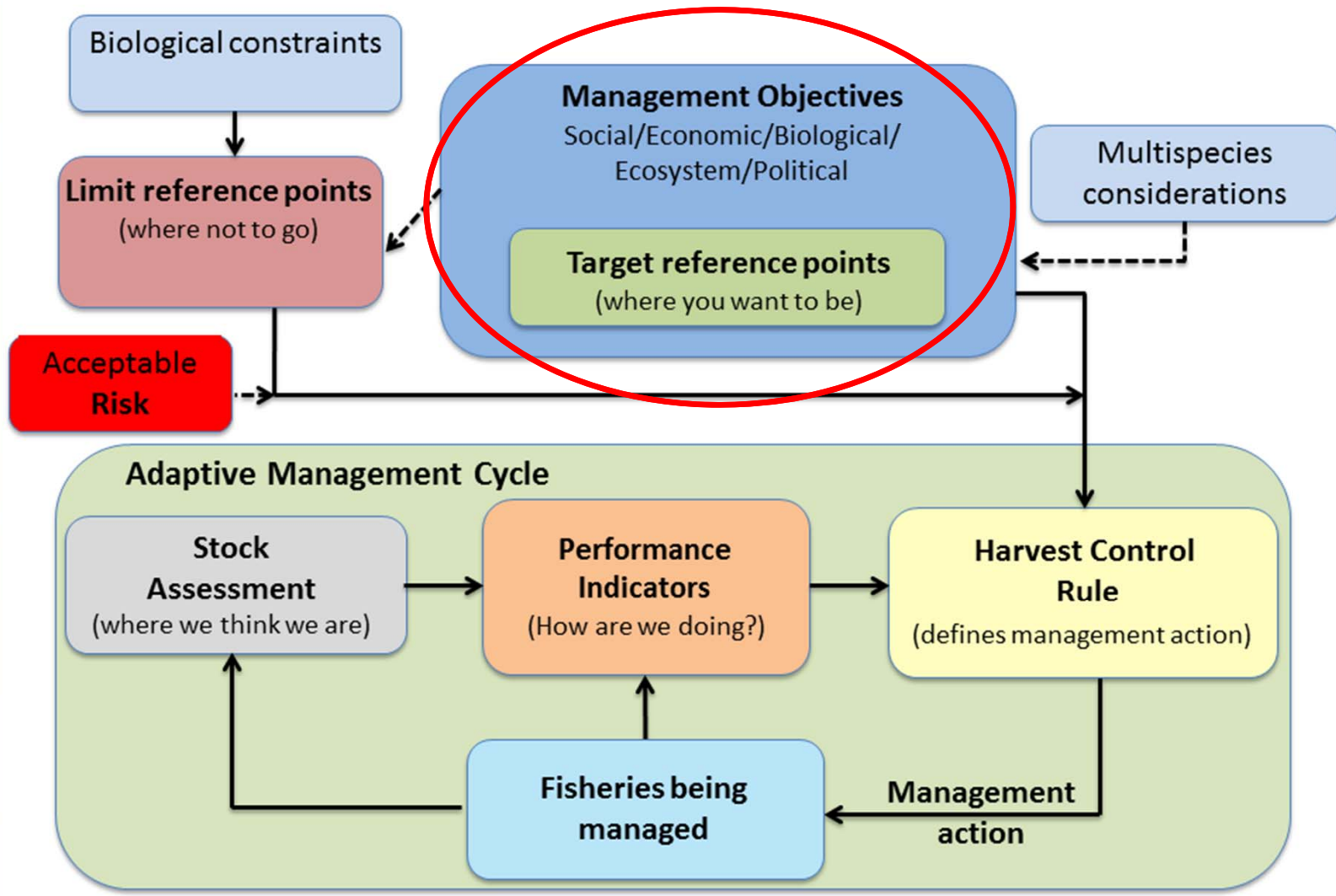
Compatibility & consequences of alternative potential TRPs for the south Pacific albacore stock

MOW3-WP/06

SPC, OFP

MOW3 meeting, Apia, Samoa

Friday 28th November 2014





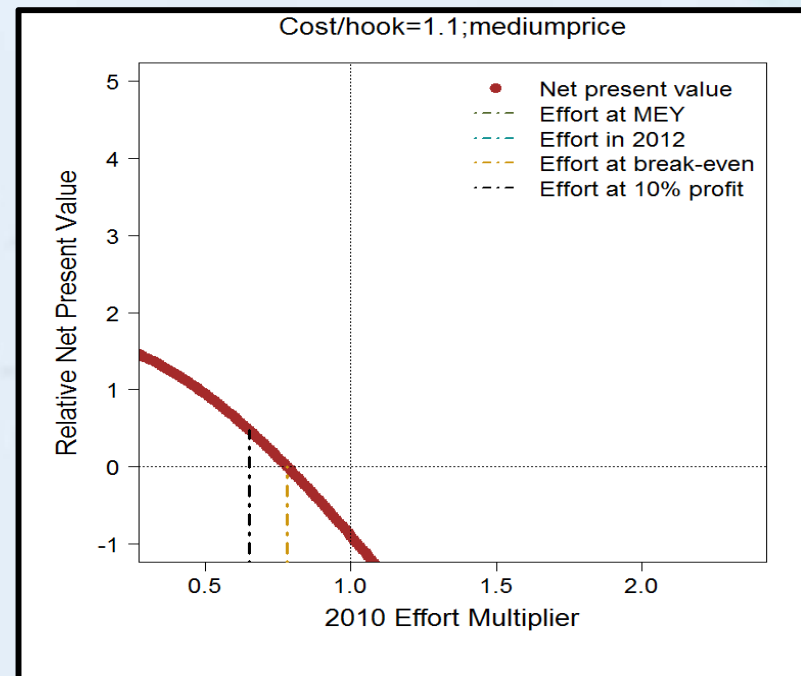
Aims

- Consequences of using 'minimum' south Pacific albacore biomass target reference point levels compatible with different levels of LRP risk;
- Consequence of achieving the 'default' MSY reference point;
- Examine candidate TRPs based upon fishery objectives such as catch rates, fishery profitability and MEY;
 - 2010 catch rates
 - MEY, 10% 'super profit', & 'break-even' levels
- Motivate discussion on the compatibility and acceptability of different candidate target levels, and the potential implications of those management options for the southern longline fishery.



Approach

- Required update and application of the 'south Pacific albacore bio-economic model' (Appendix 1 of the paper)
 - New financial information (lower fish prices)
 - Updated 'bycatch' level relationships
 - 3 levels of fishing costs





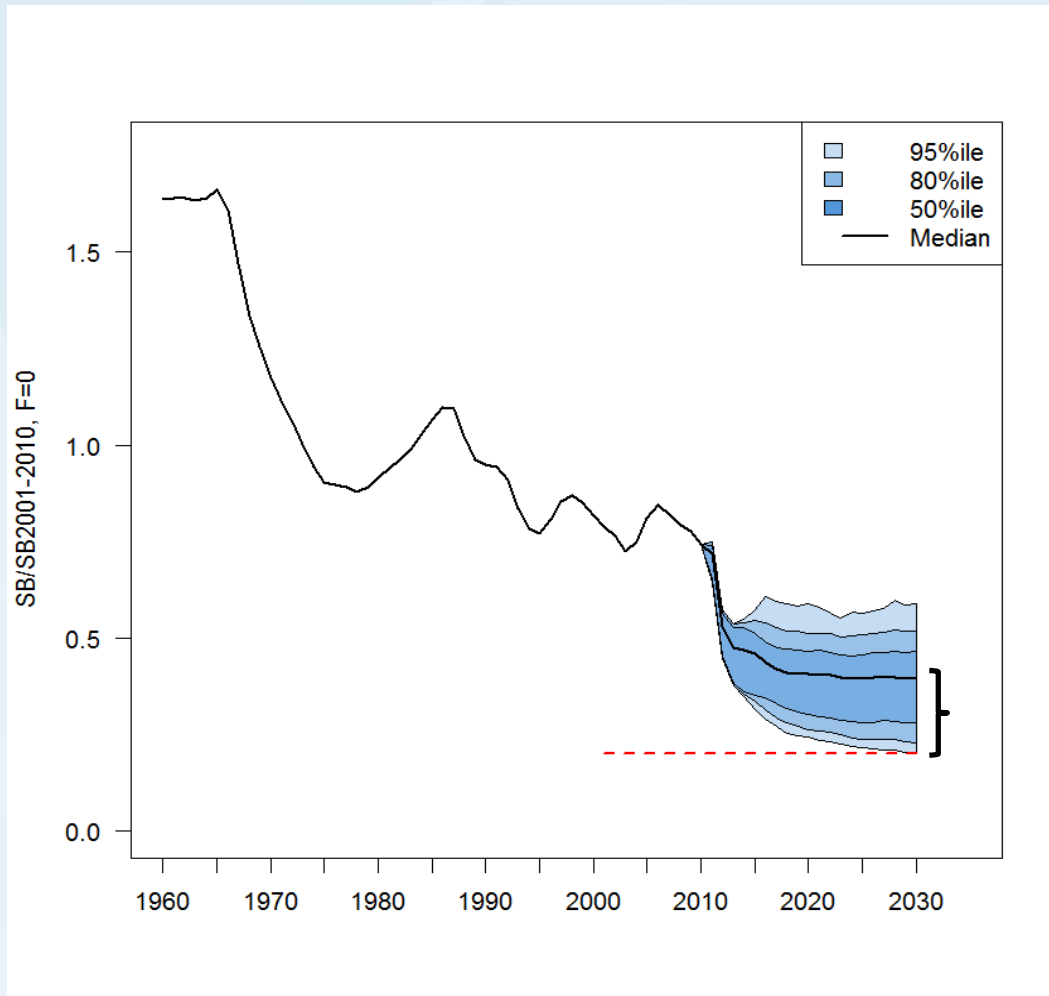
Approach to examine TRPs

- Stock projections from the 2012 assessment model
 - 200 x 20 year stochastic projections
 - Using SC10 recommendations to capture uncertainty
 - Future effort within the longline fishery was scaled
 - Recruitment variability around the SRR
- Identified LL fishing levels that achieved the various reference points examined on average
- Examined the consequences for the south Pacific albacore stock, including
 - Average stock status and risk relative to the agreed LRP
 - Catch rates
 - etc



'Minimum' TRPs – risk analysis

5% risk

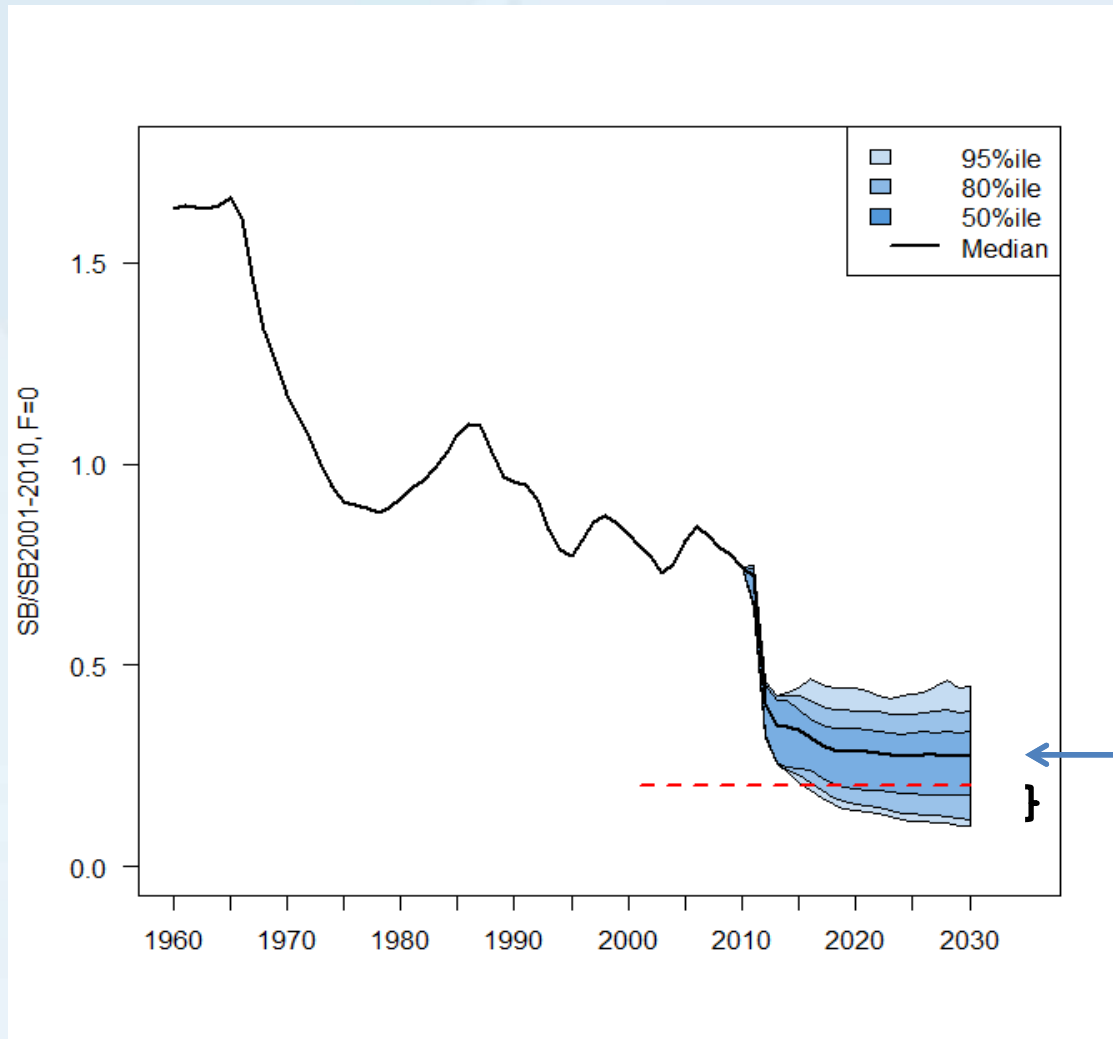


5% risk

Scalar	3.8
Median SB/SB _{F0}	0.38
Risk SB<LRP	5%
VB/VB ₂₀₁₀	46%



MSY

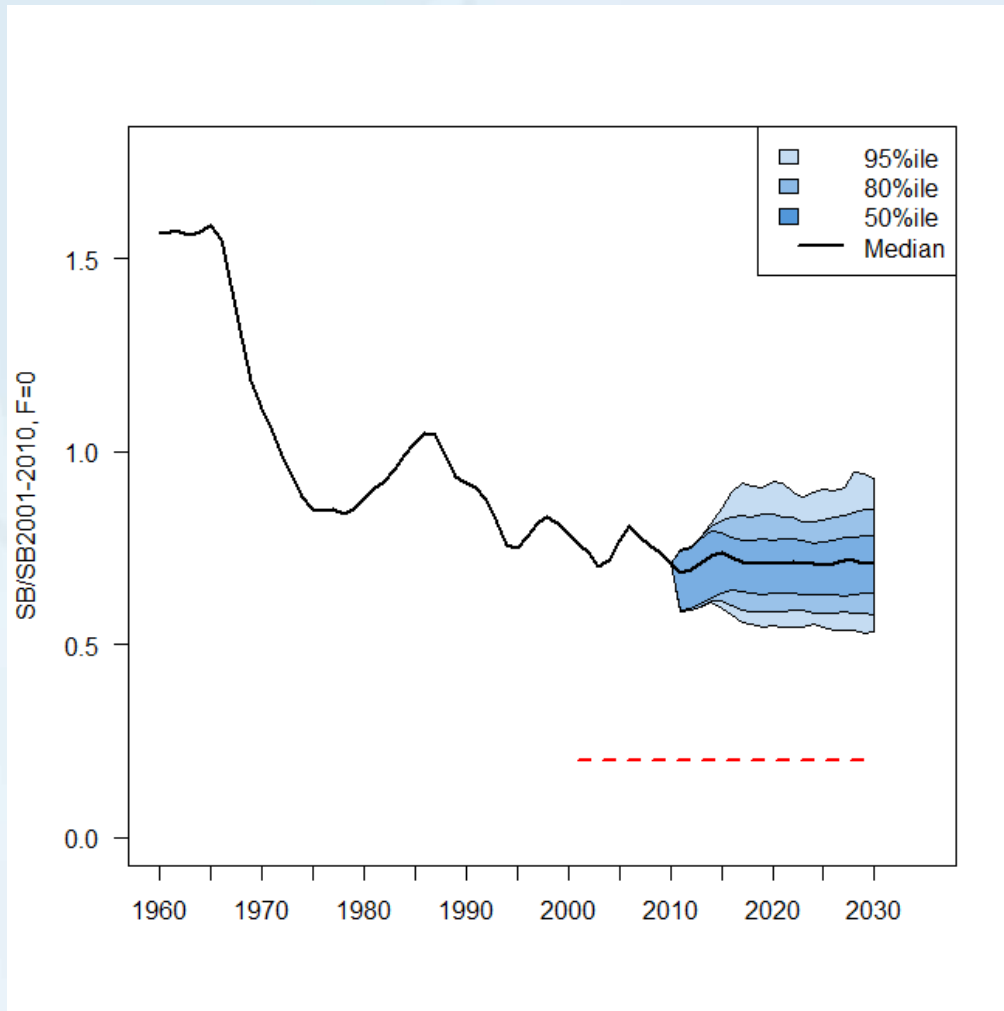


Scalar	6.8
Median SB/SB _{F0}	0.25
Risk SB<LRP	34%
VB/VB ₂₀₁₀	28%

Level = MSY



CPUE at 2010 levels

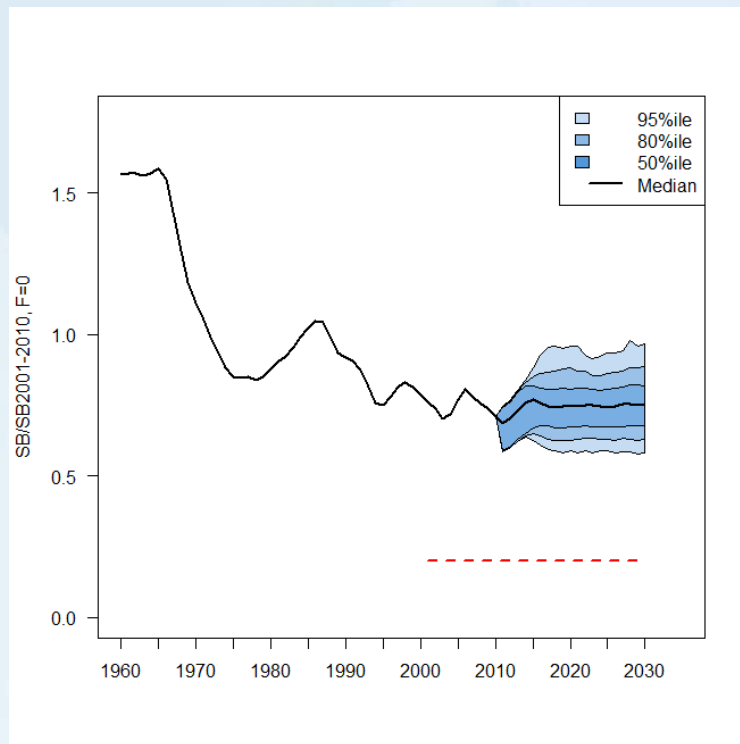


Scalar	0.83
Median SB/SB _{F0}	0.71
Risk SB<LRP	0%
VB/VB ₂₀₁₀	100%
Making money?	No



Economic TRP levels

'10% profit' level



'Medium' price & cost scenario

	MEY
Scalar	<0.25
Median SB/SB _{F0}	0.90
Risk SB<LRP	0%
VB/VB ₂₀₁₀	136%
Making money?	Max



Summary

- MSY as a long term target implies a high risk of falling below the LRP (1 in 3 chance)
- Recovering CPUE to 2010 levels is not enough to make profits in the fishery at current prices (i.e. 2010 CPUE is below levels needed to breakeven)
- MEY as a target implies major reductions in effort to be achieved at current prices
- Achieving a 10% profit within the fishery may be a more sensible target at current prices, but reductions from 2010 effort levels still required, of 6%-53% dependent on costs.
- 'Breaking even' (basic returns) generally required reductions in effort from 2010 levels (dependent upon prices and costs)



Discussion points

- Confirmation of the need and rationale for a Harvest Strategy for southern LL fishery, including a TRP for SPA, that meets management objectives (e.g. economic, social and biological).
- Do we want a TRP to maximize economic yield – or will it be necessary to trade off objectives and get a ‘pretty good’ economic yield?
- How should we consider the differing economic performance of fleets when considering MEY-based target reference points?
- How best to further the development of a harvest strategy for the southern LL fishery (e.g. further bio-economic analyses) as part of the work of the Commission?