

# Steps of MSE introduction

- comparison with CCSBT case –

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# N-ALB MSE

## Steps of MSE in CCSBT

- 1) Decision of management objectives and reference points
- 2) Decision of OM structures and conditioning
- 3) Decision of simulation specification
- 4) Developments of OM for evaluations of MPs
- 5) Simulations of MP candidates using OM
- 6) Reiterate 1) – 5) with
  - \* communications & feedback between SCRS & commissions
  - \* gradual changes of inputs to OM from virtual to actual data, e.g. CPUE
- 7) Final evaluations of reference points and agreements of MP



Current N-ALB

## Southern Bluefin tuna MSE

The Current MSE started to develop in 2002 & finalized in 2011  
Most of time dedicated to the selection of MP  
The performance of multiple MPs were tested.

### Current MSE

OM & MP are simple age structured model, also used in assessment.

Index; Jap LL CPUE and juvenile survey index

TAC decided by “angle” of index trend

# N-ATL ALB vs Southern Bluefin Tuna

	NAL Albacore	Southen Bluefin tuna
MP	Production model	Simple age structured model > Production model
	Constant F	Feedback (TAC decided by Index trend) > Constant F
	Tested by simulated index	Tested by actual index
Index	Different CPUE represent different age classes Standardization of some CPUEs questioned Many indices obtained from bycatch fishery	Adult = JAP LL (target fishery) Recruit = Survey index

# Challenges of N-ALB MSE 1

- 1) Updated stock assessments in 2016 had problems
- 2) Problems of MULTIFAN-CL stock assessment, whose output data used in OM

e.g., assumption of single selectivity for single fishery



Would not work for large scale fisheries like Chinese Taipei & Japan

MULTIFAN-CL analysis should be re-conducted with improved data  
For re-creation of OM

# Challenges of N-ALB MSE 2

- 1) Repeated communications between SCRS and Commissions to finalize OM and to agree MP & reference point

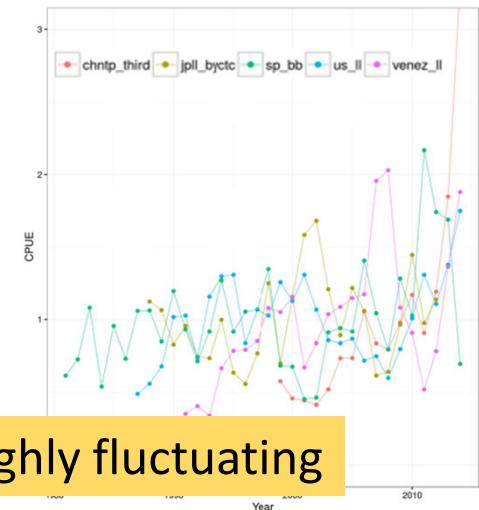
WITH

- 2) Change MP inputs from virtual & ideal CPUE to realistic CPUEs

Currently MP evaluated with model created CPUE representing all age classes

But reality is;

Venezuelan LL	; Spawning ground
US LL	; Immature fish
Surface (BB, TL, TW)	; Immature and juvenile
Chinese Taipei LL	; Immature & adult fish
Japan LL	; Immature & adult fish



CPUEs used for MSE should be robust, while almost indices are highly fluctuating