



Bigeye tuna MP for adoption

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Current status of BET MSE work

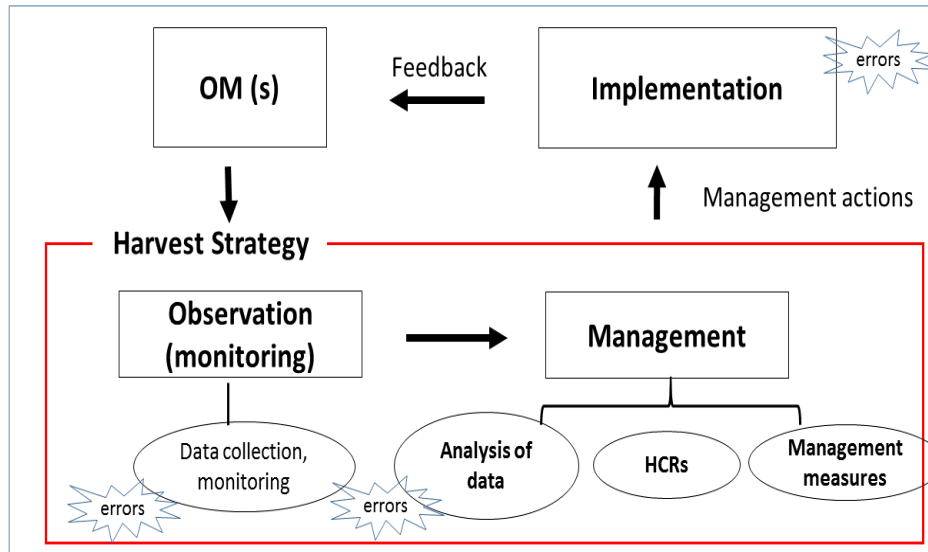
- Process has been progressing for several years
- Given updated catch data (2020) MSE work updated
- Operating Models unchanged from 2021
- Recent focus on Management Procedure (MP) performance
- Specifically:
 1. choose **one** of **two** candidate MPs
 2. choose **one** of **two** agreed tuning objectives

MSE and MPs vs. stock assessment

MSE framework



Record performance statistics
based on management objectives



What features does a robust MP have?

- Stakeholder preferences across MPs worldwide include:
 - Able to understand what MP does given inputs
 - Responds to the key uncertainties
 - Stability in management output (TAC)
 - Able to achieve objectives in a stable way
 - Clarity about trade-offs in performance

Management objectives

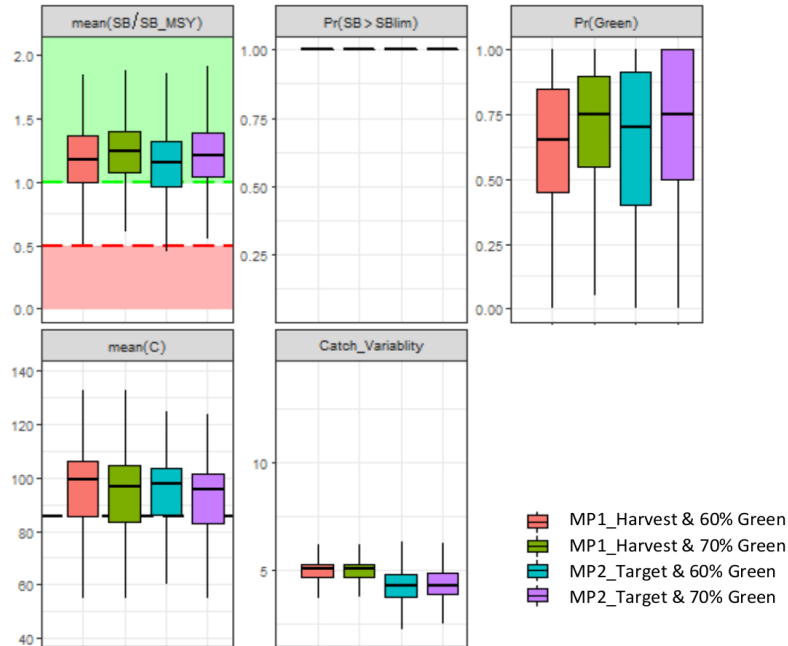
- Overarching objective: Kobe green zone (2034–2048)
- Two probabilities of achieving objectives: 60% & 70%
- Operational constraints on MP:
 1. Overall TAC is set in **three year** blocks
 2. Maximum change - up or down - is 15%

Candidate Management Procedures

- Both MPs fit biomass model to total catch and LL CPUE
- Biomass, F , and depletion then used in MPs
- **MP1 Harvest:**
 - Hockey-stick HCR (fishing mortality F vs depletion)
 - TAC calculated from estimated F and biomass
- **MP2 Target:**
 - Estimates TAC that meets future depletion target

Contrasting MP performance

- High level graphical summary of MP performance



Qualitative performance summary

Performance Metric	MP1_Harvest	MP2_Target
Average catches	Higher	Lower
Probability of initial catch decrease	Higher	Lower
Catch variability	Higher	Lower
Range of Biomass and Fishing mortality at the end of projection period	Wider	Narrower
Probability $B > B_{LIM}$ over the projection period (in robustness test)	Lower	Higher
Probability $F < F_{MSY}$ over the projection period (in robustness test)	Lower	Higher
Recovery from a poor recruitment period (in robustness test)	Faster	Slower

Overall MP performance summary

- Both MPs perform similarly, meet management objectives
- Objectives biggest differentiator of MP performance
- Longer term TAC increases (after first 2 cycles)
- Benefits of **MP1 Harvest**:
 - *Slightly* higher TACs
 - Better initial performance on low recruitment test
- Benefits of **MP2 Target**:
 - Lower probability of initial TAC decrease
 - Lower TAC variability
 - Stable approach to MSY; *slightly* lower risk

Next steps for the Commission

- Select the **management objective** for MP tuning:
 1. **60%** probability of Kobe green zone 2034–2038
 2. **70%** probability of Kobe green zone 2034–2038
- Select & adopt one of two Management Procedures:
 1. **MP1 Harvest**
 2. **MP2 Target**

Thank You

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