

Tab B, No. 8(a)

Sustainable Fisheries Committee

Report from the MRIP Transition Team on Red Snapper and
Other Species in Gulf State Supplemental Surveys
May 2023 Gulf SSC Meeting

- Dr. Richard Cody presented updates on the MRIP Transition Team progress on calibration
- Investigating non-sampling error & recreational angler landing permit
 - 15 studies completed, 3 ongoing, 6 not started
 - All projects not expected to be completed in time for integration into Red Snapper OA
 - Texas landings calibration recommended but not addressed by SEDAR 74 Assessment Development Team
 - Recommendation that Gulf Transition Plan include integration of project findings into assessments

Sustainable Fisheries Committee

Evaluation of Interim Analysis Process

May 2023 Gulf SSC Meeting

- Staff presented an evaluation of interim analyses (IA)
- Preference for fishery-independent index and a request for complementary data to evaluate stock
 - Length and/or age compositions from directed fleets
 - Landings from directed fleets
 - Fisherman Feedback for multiple species
 - Evaluate Index and IA through MSE?
- SSC will review further at a subsequent meeting

Sustainable Fisheries Committee

Management Strategy Evaluation Workshop

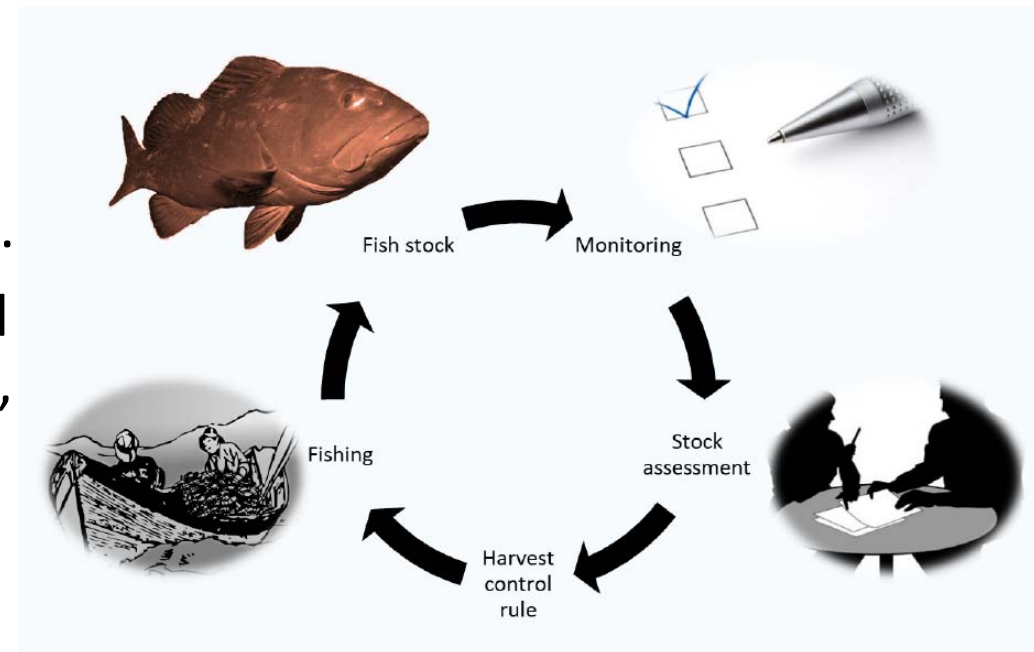
May 2023 Gulf SSC Meeting

MSE Workshop: Background

- The SSC held a one-day workshop to discuss and consider Management Strategy Evaluation (MSE) as a framework to help policy development and decision-making in certain situations.
- Management procedures developed through MSE allow the Council to test management *a priori* before it goes into place.
- The SSC heard presentations from subject matter experts: Drs. Bill Harford, John Walter, Adrian Hordyk, Cassidy Peterson, and Nikolai Klibansky.

What is Management Strategy Evaluation?

- MSE is used to simulate the interactions between data collection, data analysis (stock assessment), and fishery regulations.
- MSE is a simulation-based, analytical framework used to develop a robust, consensus-driven and realistic Management Procedure.
- It is an iterative process involving dialogue between scientists, managers, and stakeholders.



When to Use MSE?

- Identify a clear objective and match resources to scope of problem.
 - MSE is neither cheap nor easy.
 - Reserve the full 'power' of stakeholder-inclusive MSE for highest priority, decisional applications
- Environmental and other changes challenge the assumption that things will be constant.
 - Key assumption of our stock assessments
- Tactical guidance - Develop a management strategy for a particular fishery.
- Strategic guidance - Evaluation of general principles and general strategies.

MSE STEPS



IDENTIFY MANAGEMENT OBJECTIVES

Objectives form the
basis for performance
measures

IDENTIFY KEY UNCERTAINTIES

Those related to biology,
environment, fishery &
management system

DEVELOP AN OPERATING MODEL

Biology, fishery &
implementation model

Punt et al. 2016

MSE STEPS



SELECTION OF PARAMETERS

Those used in the operating model; also, need to quantify parameter uncertainty

IDENTIFY CANDIDATE MANAGEMENT STRATEGIES

Monitoring, assessment, and harvest control rule

SIMULATION & INTERPRETATION

Use performance metrics to inform and refine strategies

Potential Roles of Council, SSC, and NMFS

- Modeling team would be responsible for constructing operating models.
- SSC peer-reviews and adopts the model under advisement of the Council.
- Management objectives quantified by the modeling team under advisement from the SSC and adopted by the Council.
- Management plans tested and refined by the modeling team with the SSC identifying biological “must-pays” (e.g., avoid overfishing, rebuilding plans, etc.) that the Council could then adopt and implement as a management plan based on performance.

Stakeholders expected to advise throughout the MSE process.

When to Apply MSE

- MSE would NOT replace a stock assessment.
- MSE process would only be used in particular strategic situations because it is time and personnel intensive and occupies substantial stakeholder time (often uncompensated).

Full stakeholder MSE

- Full iterative stakeholder involvement
- MSE intended to result in management action
- Where management objectives are not fully developed
- Expensive and time consuming

Intermediate MSE

- Spectrum between full stakeholder MSE and desk MSE
- Moderate resource requirements

Desk MSE

- No stakeholder input
- General research questions
- management objectives are known
- Can be used to test Interim approaches

Not MSE

- Simulation exercises where the full feedback-loop characterizing the MSE is not necessary
- Consider other less resource-intensive approaches
- Risk analyses

When to Apply MSE

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Food for Thought



When to conduct, and when not to conduct, management strategy evaluations

J. F. III Walter^{1,*}, C. D. Peterson¹, K. Marshall², J. J. Deroba³, S. Gaichas³, B. C. Williams⁴, S. Stohs⁵, D. Tommasi^{5,6} and R. Ahrens⁷

- Adoption of binding management advice versus exploring management options
- When there is a really difficult policy decision
- When there are intractable stakeholder conflicts
- When there are disenfranchised stakeholders
- Ecosystem considerations and when system state changing
- When scientific uncertainty threatens the integrity of the current management approach or when status quo management is clearly failing
- When there are conditions which make future projections really unclear

MSE Implementation Stories

- **ICCAT:** bluefin tuna empirical MP-this year, tropical tunas & swordfish-in progress
- **South Atlantic Dolphinfish:** empirical management procedure in development (joint effort of NCSU, SEFSC, & SAFMC)
- **South Atlantic reef fish:** (SAFMC funded, external contractor)
- **Kemps sea turtles:** (partially funded, modeling work ongoing)

Potential Future Gulf Applications

- **Gulf Shrimp:** (currently unfunded-stakeholder workshops in planning)
- **Greater Amberjack:** management measures attempted have failed to rebuild the stock
- SEDAR Steering Committee was not comfortable having the MSE process run through the SEDAR process.
- Council staff thought it most appropriate for the Council to provide direct feedback before embarking on an MSE.

SSC Motion

Motion: The SSC recommends the Council pursue management strategy evaluation (MSE) as a decision support tool with applications to stock assessments, fishery ecosystem issues, and Council decision-making.

Motion carried without opposition.

SSC Motion

Motion: The SSC recommends the Council pursue opportunities to incorporate social and economic performance indicators, as well as human behavioral responses, in management strategy evaluations.

Motion carried without opposition.

Reef Fish Committee

Black Grouper and Yellowfin Grouper Catch Limits
May 2023 Gulf SSC Meeting

- SSC reviewed recent landings trends in black grouper and yellowfin grouper
 - The SSC considered different time periods when evaluating the data
- Concern expressed over the possible relationship between landings and fishery-independent indices
 - If trends are different between data streams, which is more probable?
 - Are landings data representative of stock condition?
 - Large annual variations in MRIP-FES landings data
- SSC determined Tier 3a most appropriate; interested in reviewing available updated fishery-independent data in next assessment

Motion: The SSC discussed the shallow water grouper complex with potential for providing OFL and ABC catch advice. Previously the SSC has provided catch advice for scamp and yellowmouth grouper, leaving black grouper and yellowfin grouper within this complex for consideration. Given a lack of fishery independent data available as well as very high uncertainty in the landings data for black grouper and yellowfin grouper, the SSC recommends additional fishery independent data sources be examined for the next stock assessment. The SSC recommends using Tier 3a for setting the OFL (mean + 2* SD) and option A for the ABC (mean + 1.5 *SD) for the black grouper and yellowfin grouper, with both to be converted to MRIP-FES units. The reference period used for landings is recommended to be 2010-2021. *Motion carried 12 – 4 with 1 abstention and 4 absent.*

Catch Level	Pounds gutted weight
OFL	359,255
ABC	307,752

Reef Fish Committee

Mid-water Snapper Catch Limits
May 2023 Gulf SSC Meeting

- SSC reviewed recent landings trends in blackfin snapper, queen snapper, and silk snapper
 - Remaining 3 species in the mid-water snapper complex (MWS)
 - Wenchman recommended by SSC for removal from MWS in March 2023
- MWS landings, sans wenchman, appear stable over last 10+ years
 - MWS species considered rare-event
- SSC determined Tier 3a most appropriate; acknowledged potential for high landings variability for rare event species under MRIP-FES

Motion: The SSC recommends using Tier 3a for setting the OFL (mean + 2*SD) and option A for the ABC (mean + 1.5*SD) for the mid-water snapper complex, excluding Wenchman, with both to be converted to MRIP-FES units. The reference period used for landings is recommended to be 2012-2021. *Motion carried with no opposition.*

Catch Level	Pounds whole weight
OFL	107,904
ABC	96,689

Ecosystem Committee

SSC Recommendations on a Gulf of Mexico Ecosystem Model
to Support Fisheries Management

May 2023 Gulf SSC Meeting

- Drs. Skyler Sagarese and Holden Harris presented a model to address ecological questions and how biomass targets could be achieved by modification of fishing pressure.
 - Based on menhaden and its predators
 - Ecopath (trophic & fisheries), Ecosim (temporal), Ecospace (spatial)
 - Model can still be improved: species overlap and bycatch, size of prey, environmental drivers, alternate configurations and robust review.
- This is the way to incorporation of Fishery Ecosystem Plan
 - Identification of fishery ecosystem issues