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Southeast Fisheries
Science Center

Potential role of SEDAR in Management Strategy Evaluation and Management Procedures

SEFSC

September 6, 2022

Themes:

- SEDAR is a powerful, inclusive and transparent process for conducting collaborative stock assessments.
- As we embark more on management strategy evaluations and their cousins (Interim assessments) what is the role of SEDAR?
- Full, stakeholder inclusive MSE can be multi-year projects, should we fit this into the SEDAR schedule?



Some definitions:

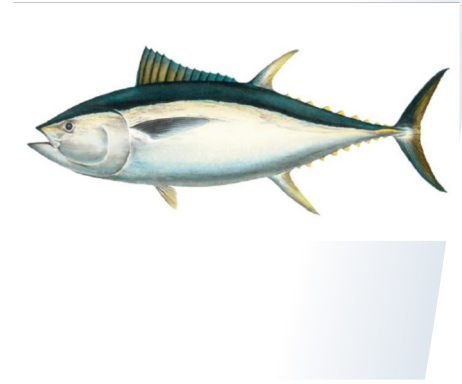
- **Management Strategy Evaluation:** *A simulation-based, analytical framework used to evaluate the performance of multiple management procedures relative to prespecified objectives. It may involve substantial dialogue between scientists, managers, and stakeholders or may be a 'desk' MSE.*
- **Management procedure (MP):** *A pre-agreed framework for setting catch limits, designed to achieve specific **management objectives**. Can be empirical (e.g. index based) or model based, may or may not update stock status*
- **Management objectives (MO):** *Formally adopted goals for the fishery. Either is pre-determined (OY) or developed during the MSE process.*
- **Interim assessment (IA):** *This includes any simple modeling method designed to modify assessment advice on the basis of recent trends. It is designed to produce ABC recommendations and could give changes to stock status. Preferably methods would be fully tested and vetted with the respective council SSC's.*

Why MSE and Interim approaches?

- MPs and IAs can provide more responsive and efficient ABC/ACL advice
- MPs may be simulation tested to be robust to climate change, nonstationarity and other key uncertainties.
- Stakeholder-inclusive MSE explicitly elucidates tradeoffs between competing management objectives, e.g. yield, opportunity, stability etc.
- MPs simulation tested to perform well across multiple objectives may be the path for obtaining 'Optimum' Yield



Increasing use of MSEs & its cousins



ICCAT Northern Albacore- model-based MP adopted, Bluefin tuna
Empirical MP- this year, Tropical tunas & Swordfish-in progress

South Atlantic Dolphinfin- Empirical Management Procedure in development (joint effort of NCSU, SEFSC, & SAFMC)



South Atlantic reef fish (SAFMC funded, external contractor)

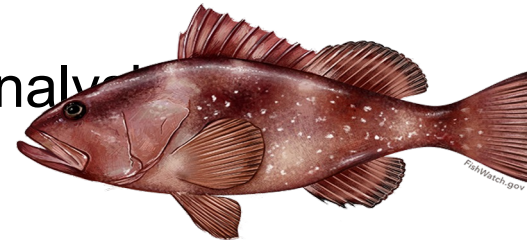
Interim Approaches:

Yellowtail Snapper: Updated assessment (lite) + projections

Red grouper

Red snapper, GRSC-informed analysis

Forthcoming, Vermilion snapper



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Degrees of MSE

Desk MSE:

- conducted by a single or several analysts as a computer exercise
- require little or no stakeholder input as management objectives are pre-defined.
- product *may* qualitatively inform management or resource allocation; may or may not result in MP adoption, usually support an assessment or used to test an **interim assessment**.
- time commitment between 2-12 months; 1-2 full time employees.
- Desk MSEs may focus on general research, such as testing performance of catch control rules or reference points

Full stakeholder-inclusive MSE:

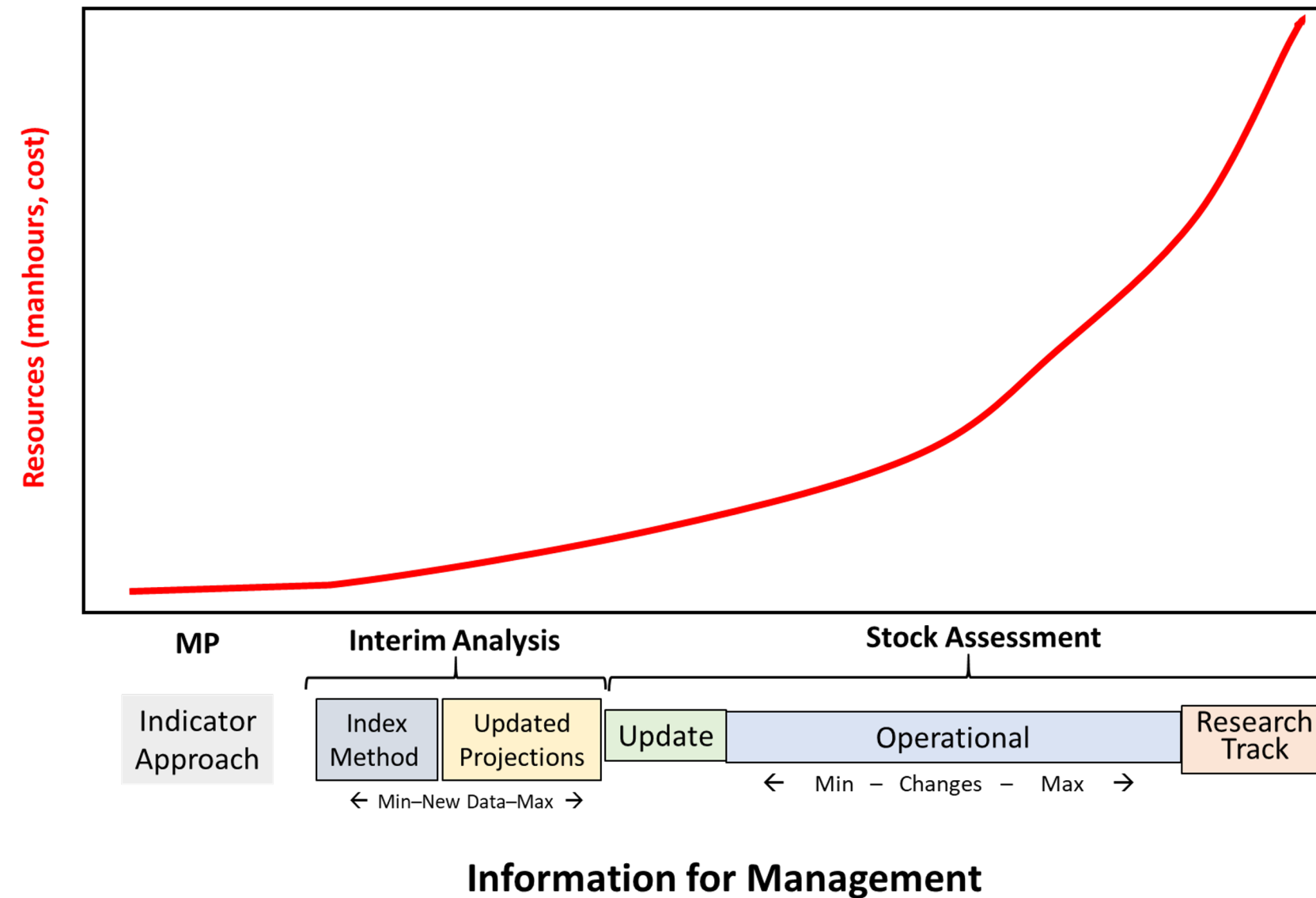
- Use primarily to produce a management action, e.g. a management procedure
- management objectives may need to be defined as part of the process, e.g. what do fishermen want out of the fishery may be unquantified
- require iterative stakeholder-analyst interaction.
- ***highly-resource intensive, 12-36+ month commitment, multiple staff.***



'Assessment 2025' Portfolio approach to advice provision

type		Status	OFL/ ABC	Requirements	Comment
1	Stock assessment	yes	yes	full monty	<ul style="list-style-type: none"> time, resource consuming, gold standard to date
2	Interim Assessment				
a	index-based interim, Huynh et al. e.g. gulf Red grouper	possibly	yes	assessment model, index or other indicator	<ul style="list-style-type: none"> Short-term, more responsive advice, bridge between full stock assessments and management procedures.
b	model-based interim, e.g. Yellowtail snapper	possibly	yes	assessment model, updated data	
c	custom interim	no	yes	assessment model, unique data, e.g. Great Red Snapper Count	
3	MSE-tested Management Procedure , e.g. ICCAT BFT, South Atl. Dolphinfinh	possibly	yes	index, MSE-testing	<ul style="list-style-type: none"> Not all stocks need full assessments, many short-lived or environmentally driven. Nonstationarity in productivity may require robust management approaches. Multiple competing management objectives may need to be considered

“Degrees” of advice provision



Occam's razor (and fiduciary responsibility) would indicate that one chooses the most efficient tool for the job.

Job #1 of fisheries management advice is annual catch limits

Proposal:

1. Many MSEs can and are being done outside of SEDAR; SEDAR cannot be everywhere!
2. SEDAR could consider prioritizing some **full stakeholder MSEs**. These could be developed using one or more SEDAR Procedural Workshops.
3. Limited number of **desk MSEs** to support SEDAR assessments could occur under the umbrella of the Technical Working Groups within the SEDAR process.
4. SEDAR could post the results of **Interim approaches**, using a process similar to posting update assessment results.



SEDAR's role in the portfolio

type		SEDAR ROLE (<i>potential decision point</i>)
1	Stock assessment	Center takes lead in establishing assessment tool, SOW/TORs and project schedule. No other changes.
2	Interim Assessment	
a	index-based interim, Huynh et al. e.g. gulf Red grouper	
b	model-based interim, e.g. Yellowtail snapper	
c	custom interim	
3	MSE-tested Management Procedure, e.g. ICCAT BFT, South Atl. Dolphinfinh	<i>SEDAR could facilitate MSE development through procedural workshops with expert and stakeholder participation. SEDAR could coordinate CIE review of desk-MSE approaches. The implementation of MPs do not require SEDAR participation.</i>

Questions?



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