SEDAR Process Changes and Streamlining Assessments

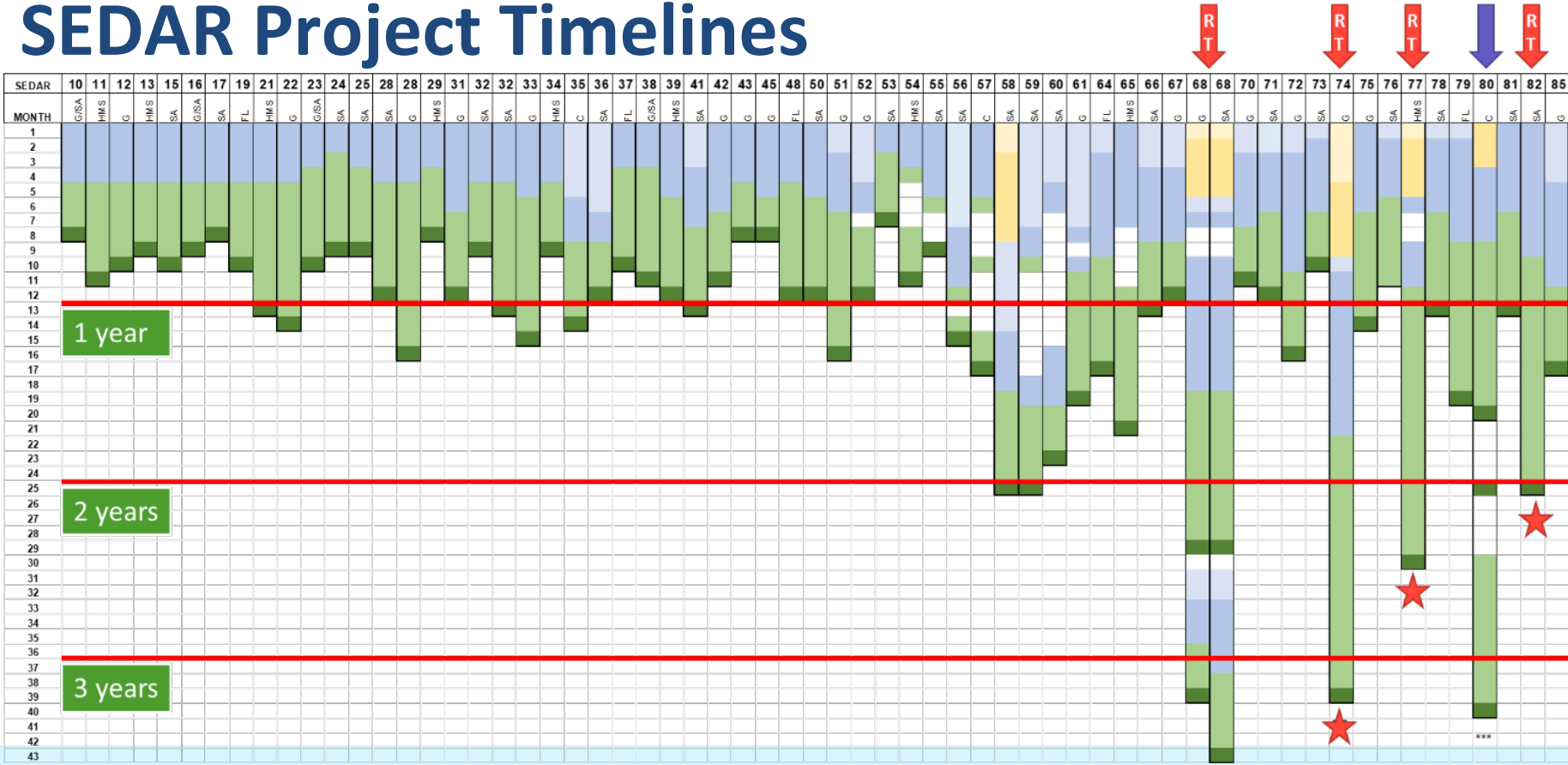
Shannon L. Cass-Calay (Director, SEFSC-SFD)

GMFMC Meeting – August 19-22, 2024

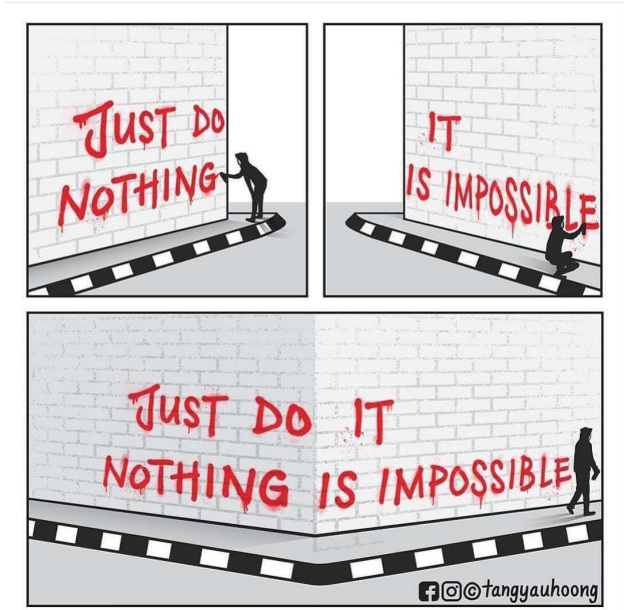
Need to Improve the Current Process

- Many disparate pieces of data. Many data flow dependencies. Many panelists and high transparency. Often leads to numerous meetings and complex models that take longer to complete
- Post-SEDAR evaluations often requested to support management
- Many unassessed species and assessments are infrequent for many stocks
- Gap between last year of assessment and management action is too long
- Current process has limited flexibility to address emergent needs
- Resources for assessment are not increasing, and may decline

What is the problem:
SEDAR Project Timelines



Paradigm Shift



Primary Council Objectives

SAFMC

- Timeliness (i.e. recency of TY)
- Flexibility to address issues that emerge
- Throughput – update catch recommendations more frequently
- Right-sizing of assessments. Appropriate level of review

GMFMC

- Accuracy/Reproducibility
- Timeliness (i.e. recency of TY)
- Throughput
- Automation/Access to data, including FI Indices
- "Long-lasting" catch advice
  - Interim assessment
  - Routine updates, etc
- Transparency
- Thoroughness

Recommended Changes

1) Eliminate RT/OA process ✓

2) Eliminate nomenclature and the slot concept - 

- Not all assessments are the same
- An age structured assessment with minimal changes can be completed in as little as 6-9 months.
- Additional features require additional time (e.g. stock ID, DW, AWs, TWGs, CIE Review, SSC rework)

3) Identify "Key Stocks" and <u>prioritize</u> them 

4) Remaining stocks could be assessed using less time-consuming approaches 

What could this look like?

- Create a predictable calendar that helps:
  - Data providers to better plan workload to improve timely data delivery
  - Increased flexibility to address emergent need without disruption to other projects
- Enhanced throughput with streamlined SEDAR process and innovative approaches (e.g. IA, management procedures)

Pre-decisional GOM Calendar

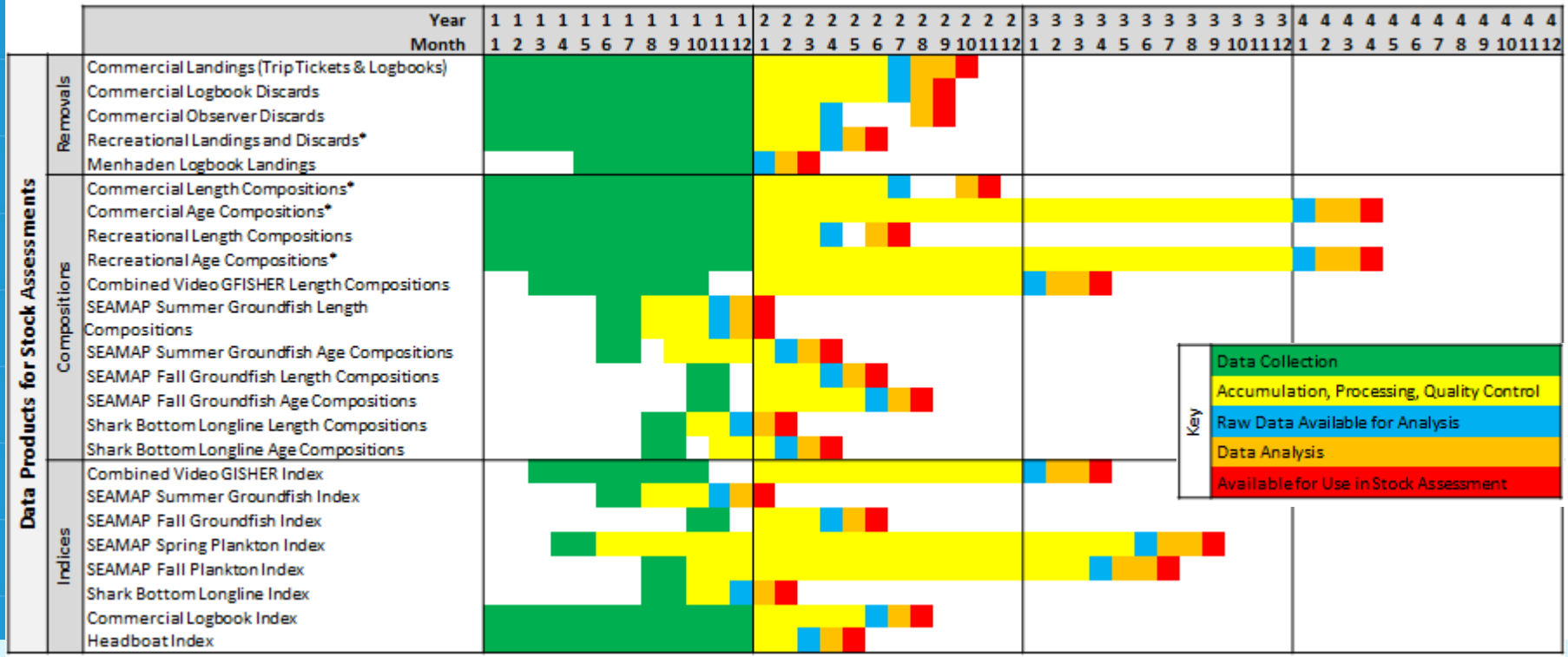
Gulf of Mexico	Last Report	Eff. Date	2024				2025				2026				2027				2028				2029				2030				2031				2032			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Red Grouper	2019	6/2022	D*	A	R								UM								UM						D	A	R								UM	
Shrimp (3 spp)	2019	?	D*	D	A	A	A	A	R								UM								UM				D	A	A	R				
Red Snapper	2023	TBD	R		D	D	D	A	A	A	A	R								UM								UM			D	D	A	A	A	R		
King Mackerel	2020	1/2023						D	D	A	A	R												UM									D	A	A	R		
Gray Triggerfish	2015/20	3/2023									D	A	A	A	R												UM							D	A	A	R
Gag Grouper	2022	6/2024										D	A	A	R							UM								UM					D	A	R
Greater Amberjack	2020	7/2023											D	D	A	A	R									UM							UM			D	A
Tilefish Complex																D	D	A	A	R											UM						
Gray Snapper	2022	6/2024								UM								D	A	A	R								UM							UM	
Vermillion Snapper	2023	TBD																	D	A	A	R												UM				
Yellowedge Grouper	2023	TBD																		D	A	A	R															
Cobia	2020	11/2022											UM									D	D	A	A	R												
Spanish Mackerel	2023	TBD																				D	D	A	A	R												
Lane Snapper	2023	1/2024								UM								UM				D	D	A	A	R								UM				
Scamp	2022	TBD														UM									D	A	A	R										

Progress Toward Streamlining Assessments

- Mapping data delivery timelines
- Data provision improvements
- Data Availability/Gap Analysis
- Appropriate assessment complexity

Gulf of Mexico Region Fisheries Data Timelines

NOAA's Southeast Fisheries Science Center compiled this timeline of primary data sources used in Gulf of Mexico federal fisheries stock assessments. These figures display a generalized timeframe for data collection, data processing, quality checks, availability of raw data, analysis, and availability for use in assessments.



Data Improvement Highlights

- Many efforts to standardize and automate data provision are nearly complete (e.g. commercial finfish landings, recreational removals, length data, and observer data)
- Automated documentation is available for many common types of documents and reports
- Research is underway to identify and develop advanced tech solutions (e.g. FTNIRS, epigenetic ageing, AI to identify fish species in camera surveys)

- ***A few data provision processes (e.g. age composition which affects most/all assessments) still require additional attention. This work is a high priority for the Center***

Stock Assessment Model Complexity

Source: https://www.fisheries.noaa.gov/national/population-assessments/fish-stock-assessment-report

- NOAA Fisheries uses a variety of models to conduct stock assessments.
- When stock assessment scientists conduct an assessment they identify and develop appropriate models based upon the ***available data***.
- Those models fit into one of six general categories based upon their data requirements and products:
  - Index-based
  - Data-limited
  - Aggregate biomass dynamics
  - Virtual population dynamics
  - Statistical catch-at-length
  - Statistical catch-at-age

Gap analysis - GOM

Stock	Current Classifications					
	Catch	Abun	Life Hist	Size/Age	Eco Link	SUM
Red grouper	4	4	3	4	4	19
Gag	4	3	3	4	4	18
Red snapper	4	4	3	4	3	18
Gray triggerfish	4	3	4	4	1	16
Gray snapper	4	4	3	3	1	15
Vermilion snapper	4	3	3	4	1	15
King mackerel	4	3	3	4	1	15
Scamp/Yellowmouth	4	3	3	3	1	14
Spanish mackerel	4	3	3	4	0	14
Tilefish	4	3	3	3	0	13
Brown shrimp	4	3	2	2	2	13
Pink shrimp	4	3	2	2	2	13
White shrimp	4	3	2	2	2	13
Greater amberjack	5	1	1	4	1	12
Cobia	3	2	3	3	1	12

Stock	Current Classifications					
	Catch	Abun	Life Hist	Size/Age	Eco Link	SUM
Snowy grouper	2	2	3	2	0	9
Speckled hind	2	2	3	2	0	9
Warsaw grouper	2	2	3	2	0	9
Wenchman	2	3	2	2	0	9
Blueline tilefish	2	2	3	2	0	9
Lane snapper	3	2	2	2	0	9
Silk snapper	2	1	3	2	0	8
Red drum	2	1	3	1	0	7
Blackfin snapper	2	0	3	2	0	7
Queen snapper	2	0	3	2	0	7
Yellowfin grouper	2	0	2	2	0	6
Cubera snapper	1	0	2	2	0	5
Almaco jack	2	1	1	1	0	5
Lesser amberjack	2	1	1	1	0	5
Banded rudderfish	2	0	1	1	0	4
Royal red shrimp	4	0	0	0	0	4
Nassau grouper	0	0	2	1	0	3

Species captured by GFISHER

Key Species:

- Red Snapper
- Greater Amberjack
- Gag
- Red Grouper
- Gray Snapper

Identify other indices where we have gaps.

Assessed:

Gray Triggerfish
Vermilion Snapper
Yellowtail Snapper
Mutton Snapper
Scamp/Yellowmouth Grouper

Black Grouper
Hogfish
Almaco Jack
Lane Snapper
Lesser Amberjack
Snowy Grouper
Speckled Hind
Wenchman Snapper
Black Seabass

More complex models are the norm, but…

- It is likely that some assessments (or the process used to produce them) are currently more complex than is supported by the available data, or that the resources needed to support that complexity is unwarranted given the priority/importance of the stock.
- Added complexity can improve the stock assessment, but one must also consider the timeliness and frequency of management advice. There is an appropriate balance between thoroughness and throughput/timeliness of management advice.
- The Center will continue work with cooperators and SSCs to identify the appropriate assessment complexity

Other ways to increase throughput of fisheries management advice:

- Reduce the number of webinars/workshops, as appropriate
- More frequent use of update assessments and/or updated projections
  - **Update with data available at the delivery deadline**
  - More possible with data automation improvements
- More frequent use of data limited methods, interim analyses and MPs. Requires additional research to further refine/develop

Next Steps

- Continue conversations with SEDAR cooperators and science advisors to establish and describe the improved SEDAR process (i.e. SOPPs)
- Develop detailed project schedules for stocks to be assessed beginning in 2026
- Continue R&D activities to improve the quality and timeliness of management advice
  - Determine best course of action for providing management advice with uncertain or biased data
  - Evaluate management procedures and interim assessments against stated performance metrics


Thank you!!!


Questions
?
?
Answers
?