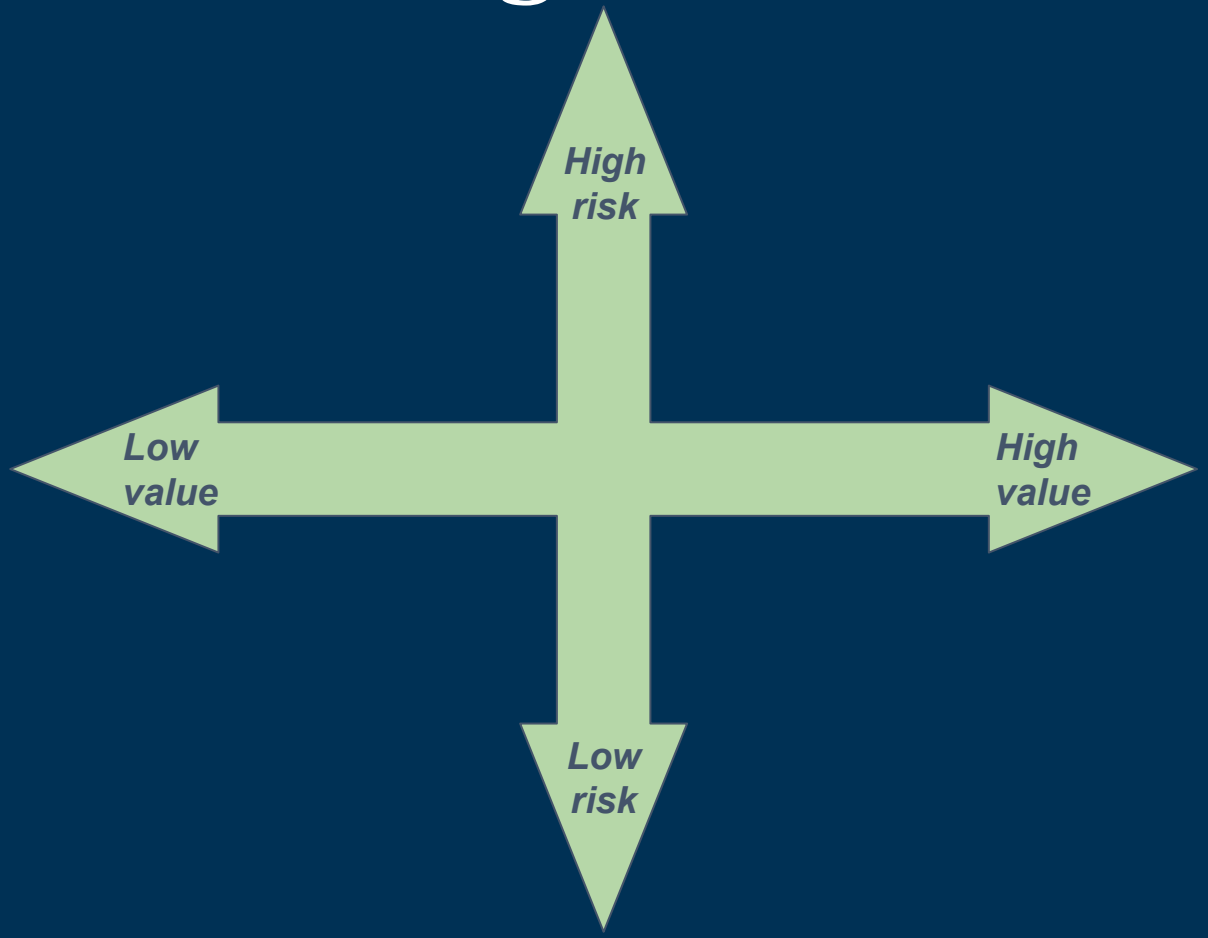
Framework for Narrowing the Scope of NMFS Management and Science



NOAA FISHERIES

NMFS Leadership Council Goals

Create a prioritization framework employing a nationally-consistent methodology for

- Regional implementation to *help* guide decisions on scope of science *and* management
  - Re-visit species and complexes in need of federal management
  - Re-visit appropriate levels of assessment and management

- National implementation to help guide resourcing
  - Align investments and approaches to monitoring, assessment and management with the risks of not making those investments

Baseline precepts

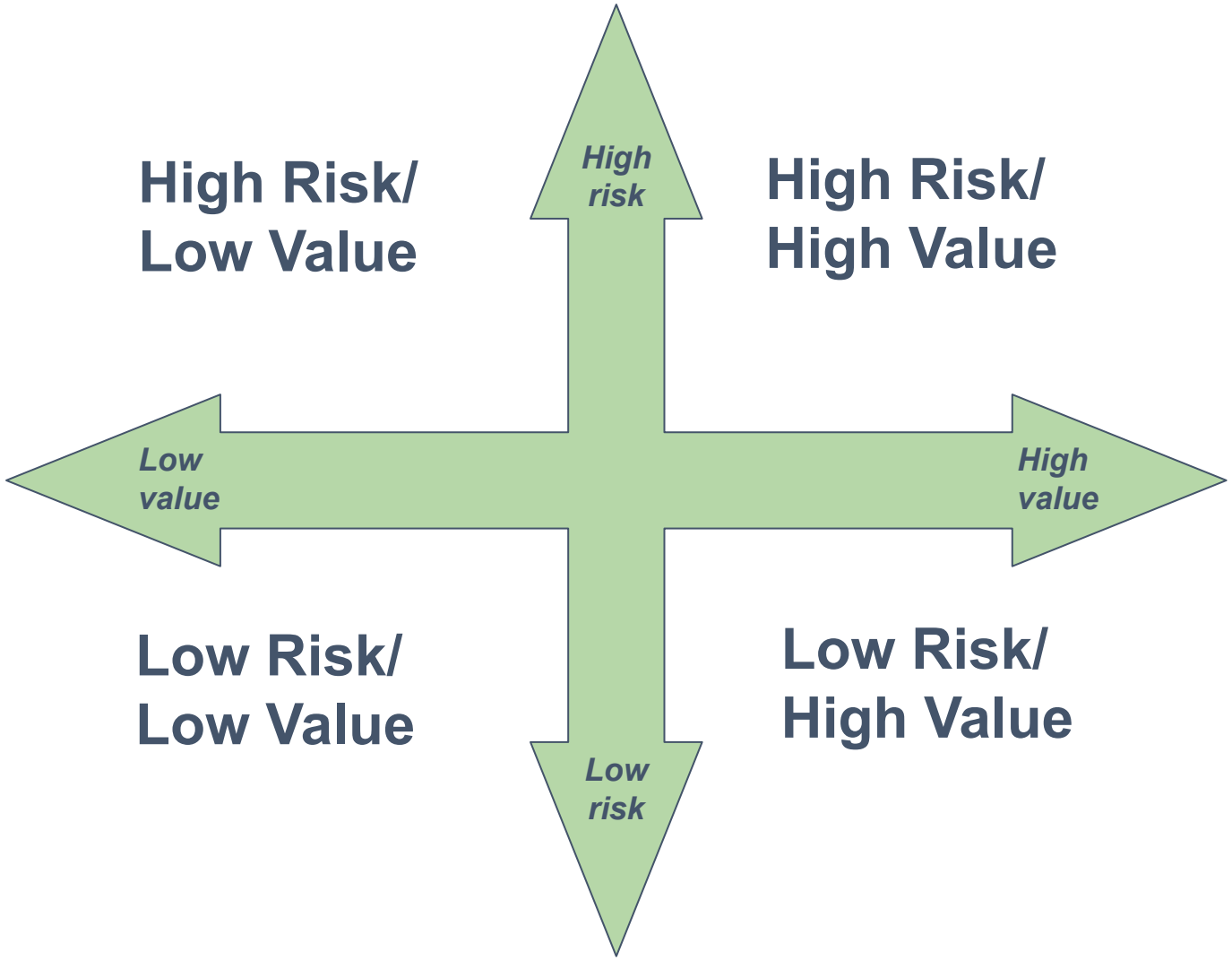
- We cannot continue to manage the 500+ stocks/stock complexes currently in FMPs the way we have been attempting to do it
- There will be impacts to NMFS staff, Councils, fisheries, and fishing communities to changing how we manage our fisheries
- We want to balance national consistency and interoperability with regional flexibility while maintaining accountability
- Application of regional R/V matrices must be co-developed with Science Center, Regional Office and Councils (i.e., *Scientists are involved in the discussions regarding management changes. Managers are involved in the discussions regarding science changes)*

Baseline precepts

In order to evaluate how we should prioritize each region (or each FMP/complex), we need to understand:

- collective economic and social value of the federally-managed fisheries in each jurisdiction
  - Economics (Value-added to GDP)
  - Societal value beyond economics
- ability of management to promulgate effective regulations, which is a function of
  - the ability to prevent overfishing (reflecting data quality and enforcement)
  - the ability to predict how the stocks will react (including their susceptibility to changes in the fishery or environment)

General approach: Risk/Value Matrix



Value Categories

- Commercial
- Recreational
- Social (over and above economics)

Risk Categories

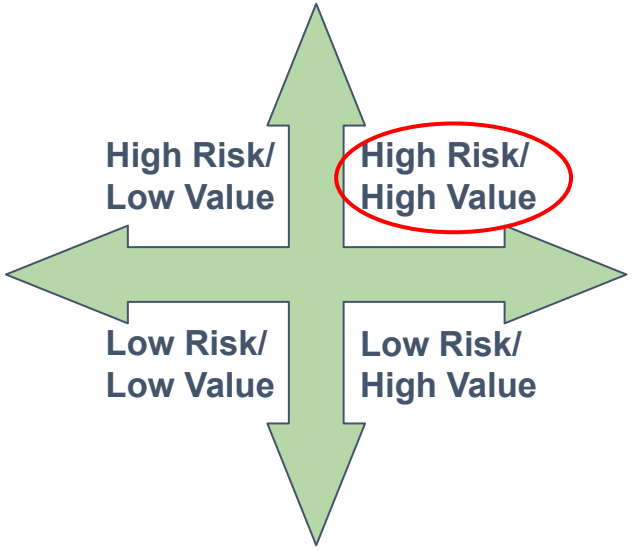
- Susceptibility to env. Phenomenon and fishing (CVA/PSA)
- Ecosystem impact

Prioritization of Stocks/Complexes for Management

High Risk/High Value

Examples of Actions

- Consider managing as single stock/species
- Status determination criteria based on estimate of MSY or proxy deemed most likely to achieve MSY
- Accountability measures consider multi-year approach
- Consider need for spatial or temporal (e.g., sub-area or sub-annual) management



Prioritization of Stocks/Complexes for Management

Low Risk/High Value

Examples of Actions

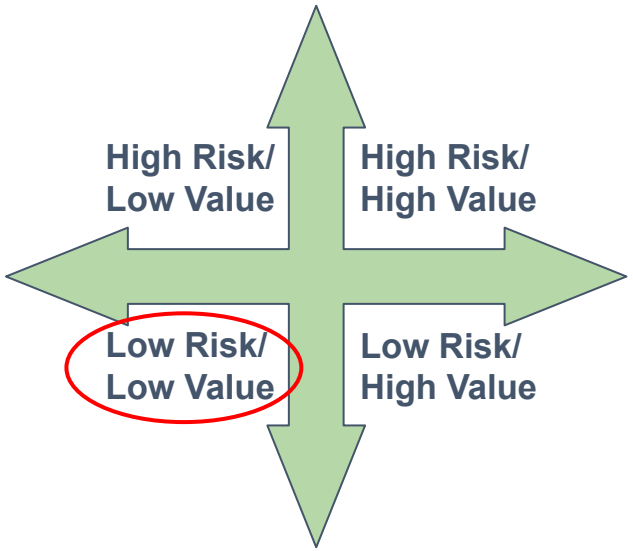
- Consider managing as part of a stock complex
- Status determination criteria based on estimate of MSY or proxy deemed most likely to achieve MSY
- Accountability measures use averages or other multi-year approach
- Any spatial or temporal management (e.g., sub-area or sub-annual management) is at lower granularity

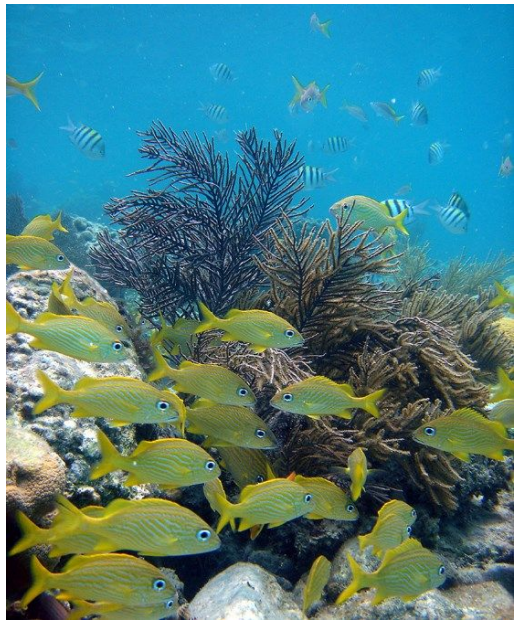
Prioritization of Stocks/Complexes for Management

Low Risk/Low Value

Examples of Actions

- Consider removing from FMP
- Consider designating as Ecosystem Component or part of a complex to simplify management
- Status determination criteria based on simple proxies
- Accountability measures use averages or other multi-year approach
- No spatial or temporal management



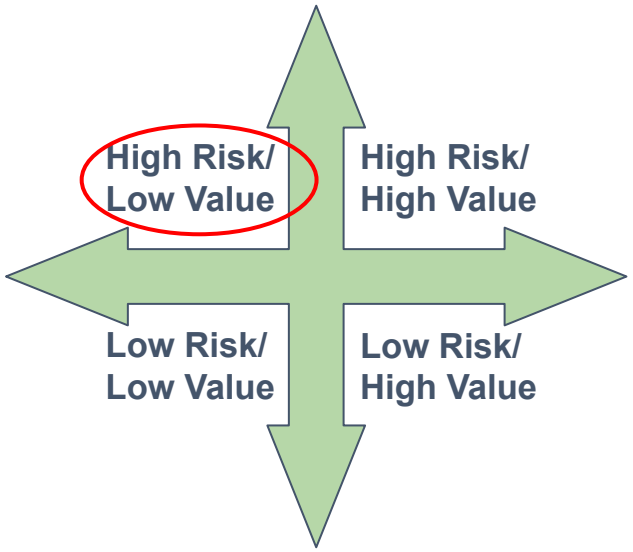


Prioritization of Stocks/Complexes for Management

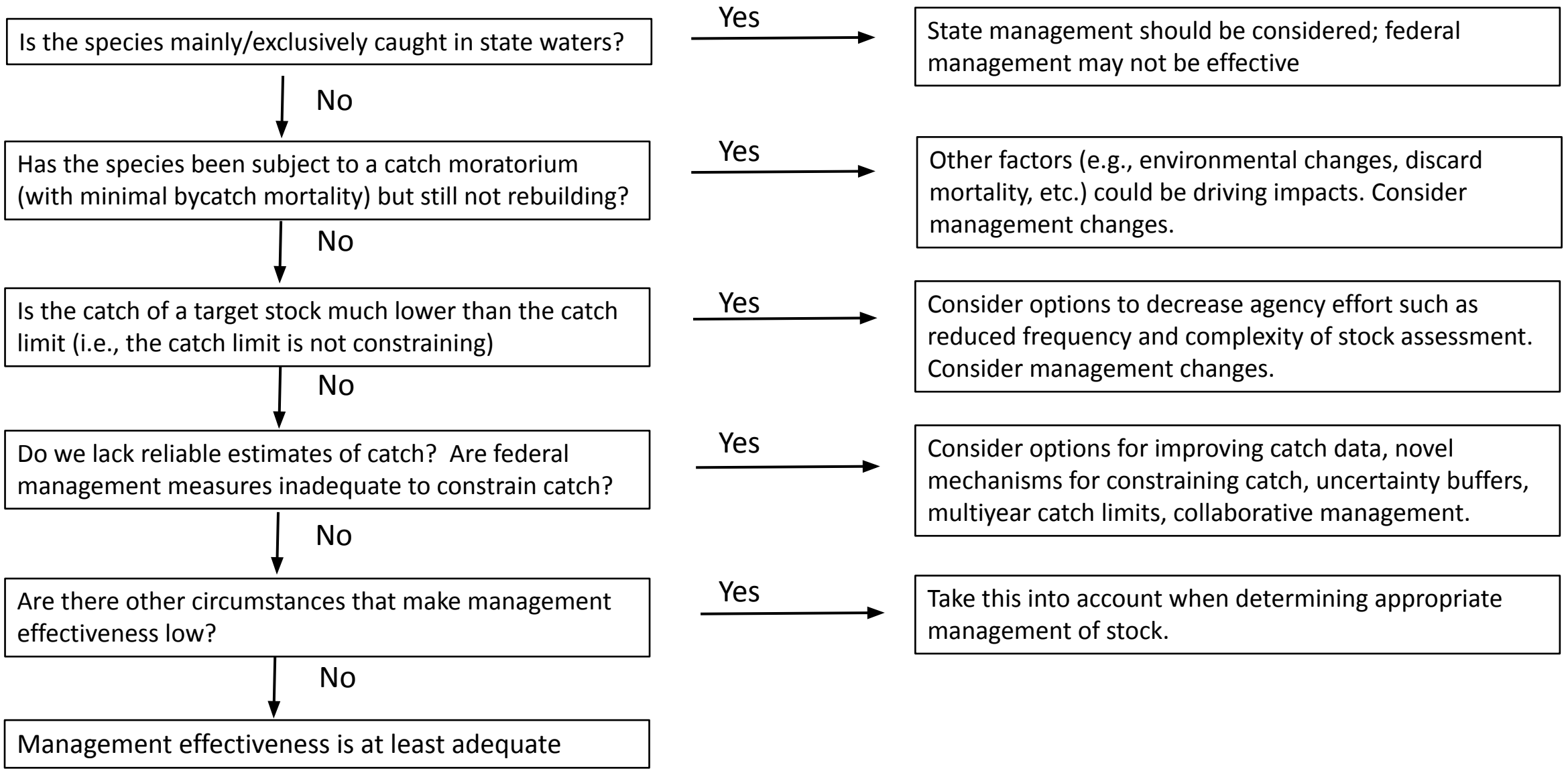
High Risk/Low Value

Examples of Actions

- Management will depend on specific circumstances (e.g., source of the high risk)
- Consider managing as part of a species complex or prohibiting harvest
- Status determination criteria based on simple proxies
- Accountability measures consider multi-year approach
- Consider need for spatial or temporal (e.g., sub-area or sub-annual) management



Draft Decision Tree: Effectiveness of Management



Implementation: April

1. Articulate objectives:
   a. Narrow scope of management and science to align with resources
   b. Reproducible and consistent across country
   c. Co-develop with science and managers
2. Acquire data to help quantify risk and value
   a. Apply standard approaches - NMFS

Implementation: April, June 30

1. Articulate objectives:
   a. Narrow scope of management and science to align with resources
   b. Reproducible and consistent across country
   c. Co-develop with science and managers
2. Acquire data to help quantify risk and value
   a. Apply standard approaches - NMFS
   b. Ground truth semi-quantitative measures of social value and ecosystem value with Councils
3. Place stocks/fishery in R/V matrix. ID potential changes to species management (e.g., remove from FMP, change to EC, complex)
4. Once stocks/fisheries distributed on matrix, review and adjust
   a. Does subsistence or cultural value indicate stock should be in a different quadrant? Justify
   b. Does international management indicate stock should be in a different quadrant? Justify
   c. Management effectiveness (apply decision tree)

Implementation: Summer/Fall

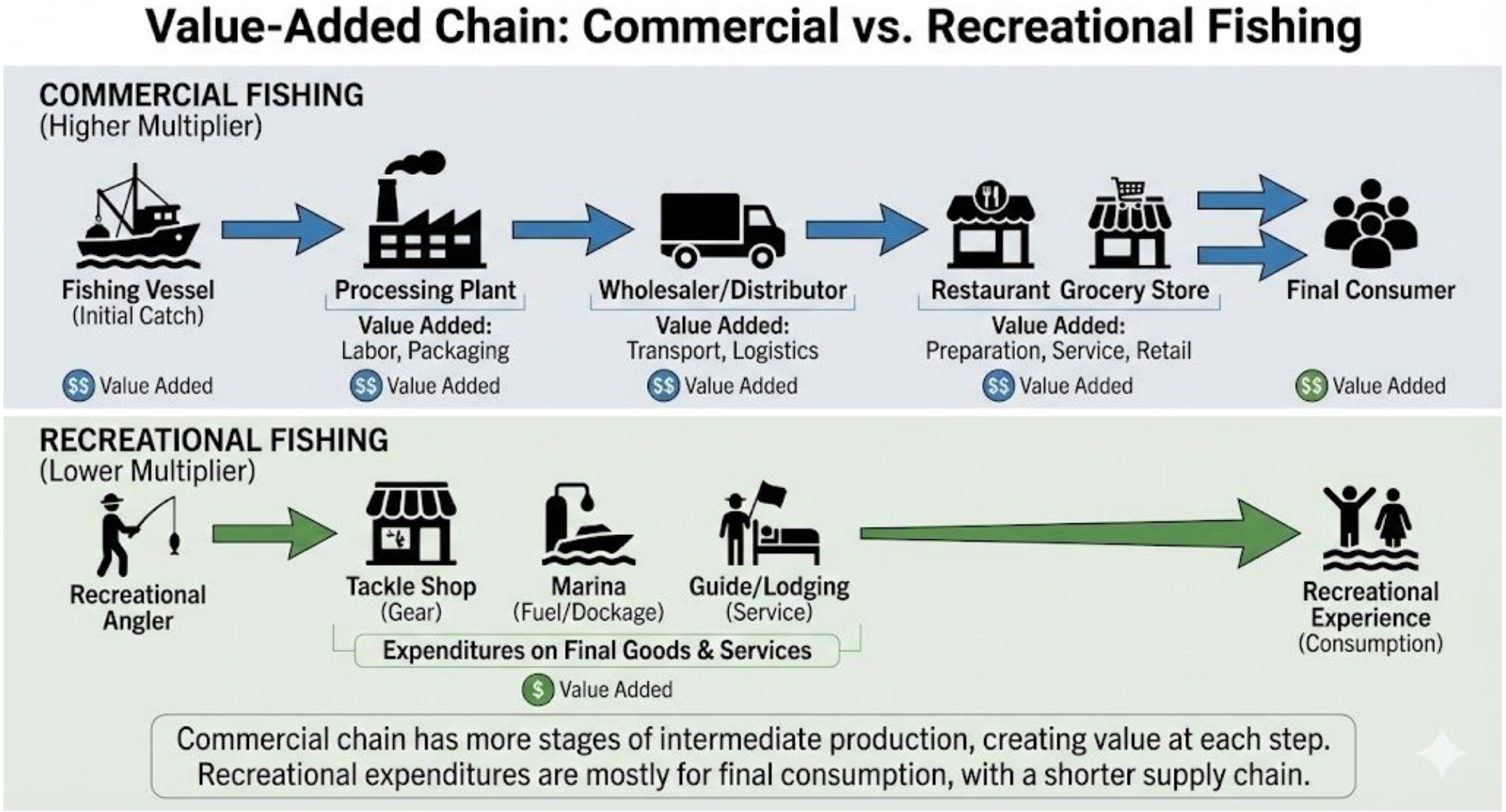
5. WGs run stock assessment prioritization on results for those single spp stocks needing individual ACLs and identify analytical approach for stock complexes
6. Calculate data requirements for proposed analytical approaches, e.g., EBFM cap, target data levels for each stock/complex
7. Run a data collection prioritization process to identify how best to meet objectives and thresholds
8. Submit results to HQ
9. Two concurrent actions:
    1. combine regional matrices into national matrix
    2. Councils and RO identify FMP/database/etc changes needed to meet suggested management changes via Council process.
        - Consider other changes to simplify management
        - Discuss plans for calculating/monitoring/implementing ecosystem caps
        - ID priorities and assign staff for making management changes

Progress in Southeast Region: Level of granularity
(What is the best level for analysis?)

GMFMC Shallow water reef fish
GMFMC Deepwater bottomfish
GMFMC Coastal pelagics
GMFMC Shrimp
SAFMC Shallow water reef fish
SAFMC Deepwater bottomfish
SAFMC Coastal pelagics
SAFMC Shrimp
SAFMC Dolphin/Wahoo
GMFMC/SAFMC - Spiny Lobster
CFMC Shallow water reef fish
CFMC Deepwater bottomfish
CFMC Small pelagics
CFMC Spiny lobster
CFMC Queen Conch
HMS Sharks (domestic)
HMS ICCAT (Tunas-like)
ASMFC Menhaden

Rather than

Progress in Southeast Region: Economic value



Progress in the Southeast Region: Risk

Risk Categories

- CVA: Susceptibility to environment (climate vulnerability)
- PSA: Susceptibility to fishing (productivity-susceptibility)
- Ecosystem importance

Methods and caveats:

- Scores calculated species-specific level for each metric
- For species grouping scores, used averages of individual scores weighted by recent commercial revenues
- Scores not available for all species (larger gaps for Caribbean region)

RESULTS:	CVA	PSA	Eco
CFMC Deepwater Bottomfish	3.11		
CFMC Shallow Water Reef Fish	2.78	2.80	
CFMC Small Pelagics	2.06		
CFMC Spiny Lobster	3.00	2.64	
CFMC Queen Conch	4.00		
GFMC Coastal Pelagics	1.79	2.46	8.34
GFMC Deepwater Bottomfish	2.82	3.62	0.72
GFMC Dolphin/Wahoo	1.18	2.46	0.05
GFMC Red Drum	1.00	3.00	10.00
GFMC Shallow Water Reef Fish	1.95	3.31	1.22
HMS Sharks	2.12	3.68	
HMS Tunas	1.70		
SATL Coastal Pelagics	2.03		3.15
SATL Deepwater Bottomfish	4.00	3.48	0.11
SATL Dolphin/Wahoo	2.00		0.92
SATL Shallow Water Reef fish	2.82	3.14	0.53
GFMC Shrimp	1.00	2.46	0.15
GFMC Spiny lobster	2.00	2.46	0.48
Gulf menhaden	2.00		4.81
Atlantic menhaden	2.00		0.41
SAFMC Golden Crab	4.00		
SAFMC Shrimp	3.95	2.66	0.03
SAFMC Spiny lobster	4.00		

Status of SE Value/Risk Matrix

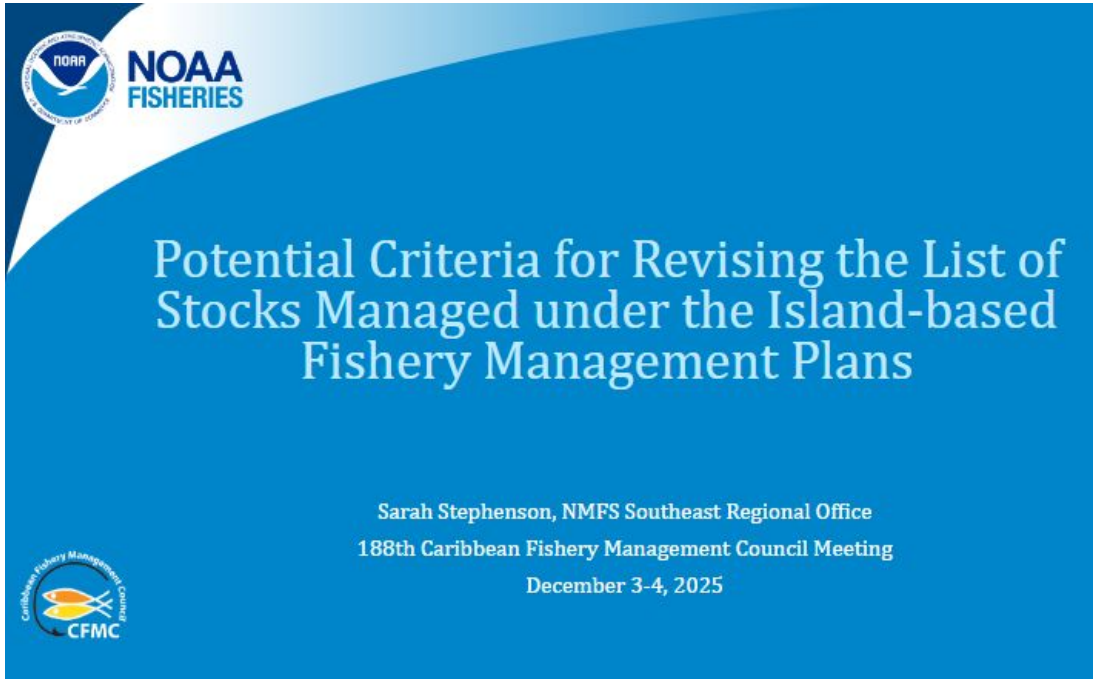
Value added (to GDP)

Commercial	$3.4B
Recreational	$3.7B

	Value		Risk		
Species Group	Economic	Social	PSA	CVA	Ecosystem
CFMC: Deepwater Bottomfish	$18.89			3.11	
CFMC: Shallow Water Reef Fish	$17.25		2.80	2.78	
CFMC: Small Pelagics	$7.60			2.06	
CFMC: Spiny Lobster	$30.45		2.64	3.00	
CFMC: Queen Conch	$14.78			4.00	
GFMC: Coastal Pelagics	$495.62		2.46	1.79	8.34
GFMC: Deepwater Bottomfish	$25.05		3.62	2.82	0.72
GFMC: Dolphin/Wahoo	$74.19	?	2.46	1.18	0.05
GFMC: Red Drum	$636.76		3.00	1.00	10.00
GFMC: Shallow Water Reef Fish	$1,393.83		3.31	1.95	1.22
HMS Sharks	$92.44		3.68	2.12	
HMS Tunas/Billfish	$833.75			1.70	
SAFMC: Coastal Pelagics	$324.56			2.03	3.15
SAFMC: Deepwater Bottomfish	$22.51		3.48	4.00	0.11
SAFMC: Dolphin/Wahoo	$92.83			2.00	0.92
SAFMC: Shallow Water Reef Fish	$314.81		3.14	2.82	0.53
GFMC Shrimp	$1,329.50		2.46	1.00	0.15
GFMC Spiny Lobster	$134.66		2.46	2.00	0.48
Gulf Menhaden	$800.04			2.00	4.81
ASMFC Menhaden	$1.36			2.00	0.41
SAFMC Golden Crab	$2.19			4.00	
SAFMC Shrimp	$242.96		2.66	3.95	0.03
SAFMC Spiny Lobster	$201.72			4.00	

Progress to date with Councils:
Removing Species from the FMU

SAFMC is considering removal from the FMU or ecosystem component designation for 17 snapper-grouper species



CFMC is conducting a comprehensive review of all managed species and will be revising the list of stocks included in their Island-based FMPs

Streamlining the Assessment and Management Process

yr	Q	A. Status quo	B. SEDAR Key stocks	B. SEFSC/FL-internal	C. Update-lites	D. ACL update (MP or IA)
2023	4	terminal year	terminal year	terminal year	terminal year	terminal year
2024	1	data processing (1 y)	processing (9 m)	processing (9 m)	processing (6 m)	processing (3 m)
2024	2	data processing (1 y)	processing (9 m)	processing (9 m)	processing (6 m)	SEFSC internal (3 mos)
2024	3	data processing (1 y)	processing (9 m)	processing (9 m)	SEFSC internal (3 mos)	SSC review (3 mos)
2024	4	data processing (1 y)	SEDAR (1 y)	SEFSC internal (3 mos)	SSC review (3 mos)	AF/CE (3 mos)
2025	1	SEDAR (1.5 y)	SEDAR (1 y)	SEFSC internal (3 mos)	AF/CE (3 mos)	NMFS rulemaking (3 mos)
2025	2	SEDAR (1.5 y)	SEDAR (1 y)	SEFSC internal (3 mos)	NMFS rulemaking (3 mos)	Rule on the water
2025	3	SEDAR (1.5 y)	SEDAR (1 y)	SSC review (6 mos)	Rule on the water	
2025	4	SEDAR (1.5 y)	SSC review (6 mos)	SSC review (6 mos)		
2026	1	SEDAR (1.5 y)	SSC review (6 mos)	AF/CE (6 mos)		
2026	2	SEDAR (1.5 y)	AF/CE (6 mos)	AF/CE (6 mos)		
2026	3	SSC review (6 mos)	AF/CE (6 mos)	NMFS rulemaking (6 mos)		
2026	4	SSC review (6 mos)	NMFS rulemaking (6 mos)	NMFS rulemaking (6 mos)		
2027	1	Council action (1.5 y)	NMFS rulemaking (6 mos)	Rule on the water		
2027	2	Council action (1.5 y)	Rule on the water			
2027	3	Council action (1.5 y)				
2027	4	Council action (1.5 y)				
2028	1	Council action (1.5 y)				
2028	2	Council action (1.5 y)				
2028	3	NMFS rulemaking (6 mos)				
2028	4	NMFS rulemaking (6 mos)				
2029	1	Rule on the water				

*note that some indices for IA and MPs are on a longer lag (e.g. Gfisher)

How does our resourcing match priorities?