



Prioritizing Fish Stock Assessments

Collaborative Implementation Throughout the
Southeast Region

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NOAA
FISHERIES

Take Home Messages

- NMFS initiated the prioritization project to assure efficient use of limited assessment capacity
- Strong push from OMB, GAO, Congress
- Designed to be implemented in collaboration with Councils; factors considered will not be unfamiliar
- Designed to assess every managed stock at a sufficient, and objectively determined, level and frequency
- Produces a ranking that is strong advice, but not prescriptive

Overview

- History of prioritization project
- Prioritization goals
- Process overview
- Roles for NMFS, SEDAR, Councils

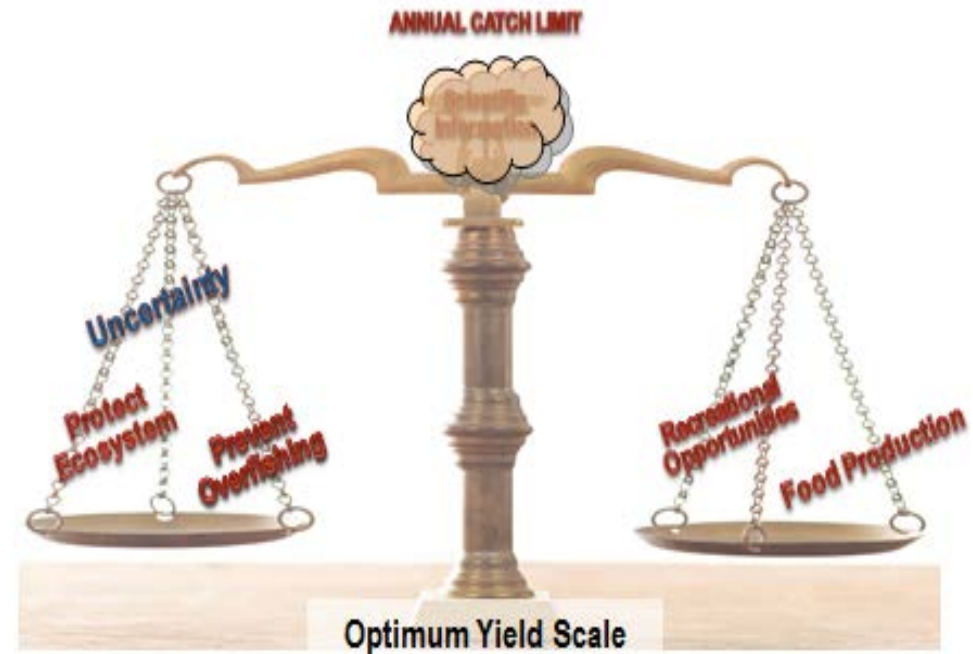
Prioritization Timeline

- 2011: Initiate development in response to budget process
- 2013: Appears in proposed MSA reauthorization
- Feb 2014: Draft process presented to CCC and open for public comment
- June 2014: Public comments summarized for CCC
- Sept 2014: GAO report endorses draft plan
- June 2015: Revised process presented to CCC
- Aug 2015: Prioritization document release; implementation initiated

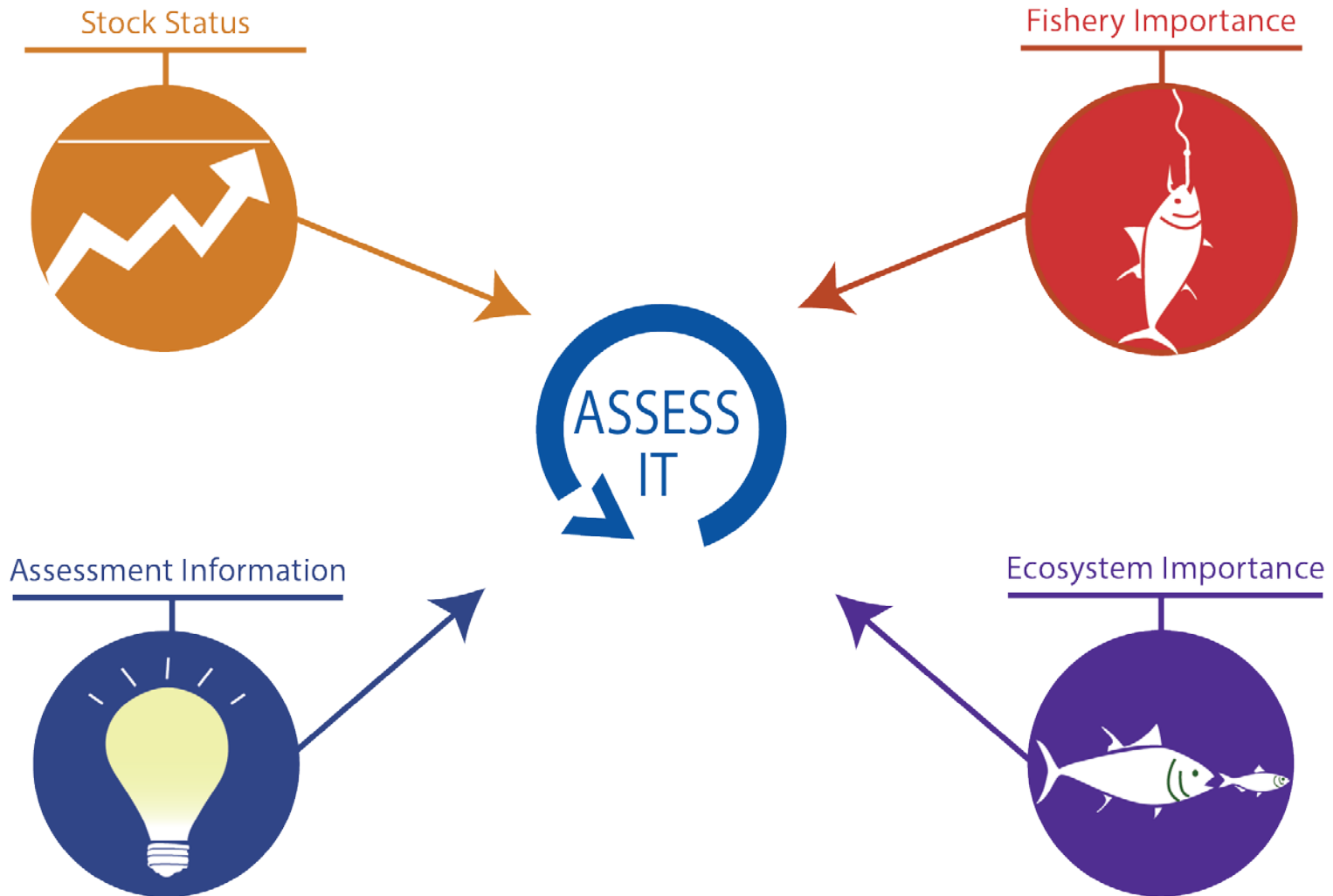
Why Prioritize?

- Data and capacity limit the number and complexity of assessments that can be completed each year
- All stocks need some level of assessment at some frequency, but
- Diminishing returns; Perfection is not an option

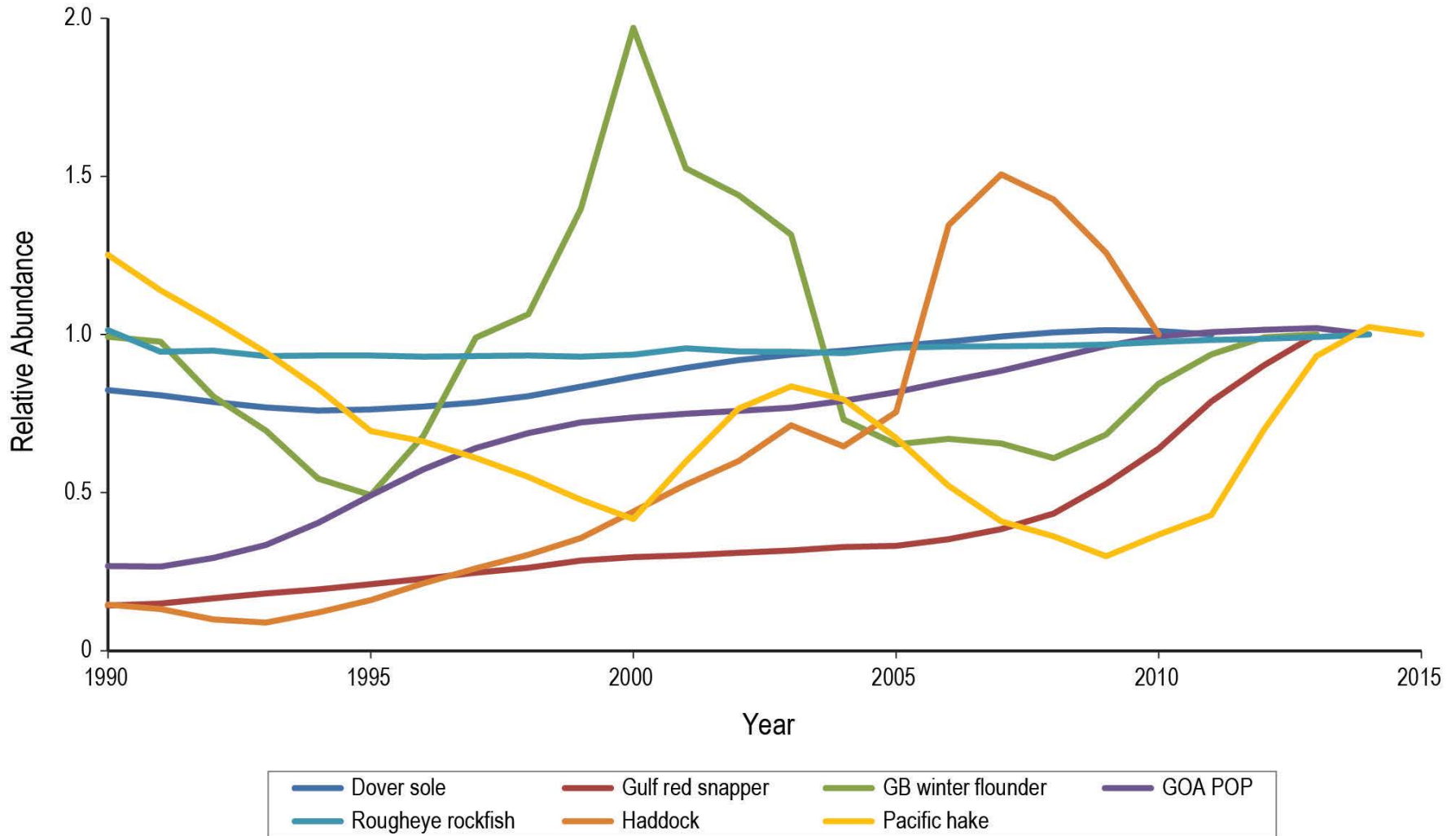
Balance Conservation and Utilization



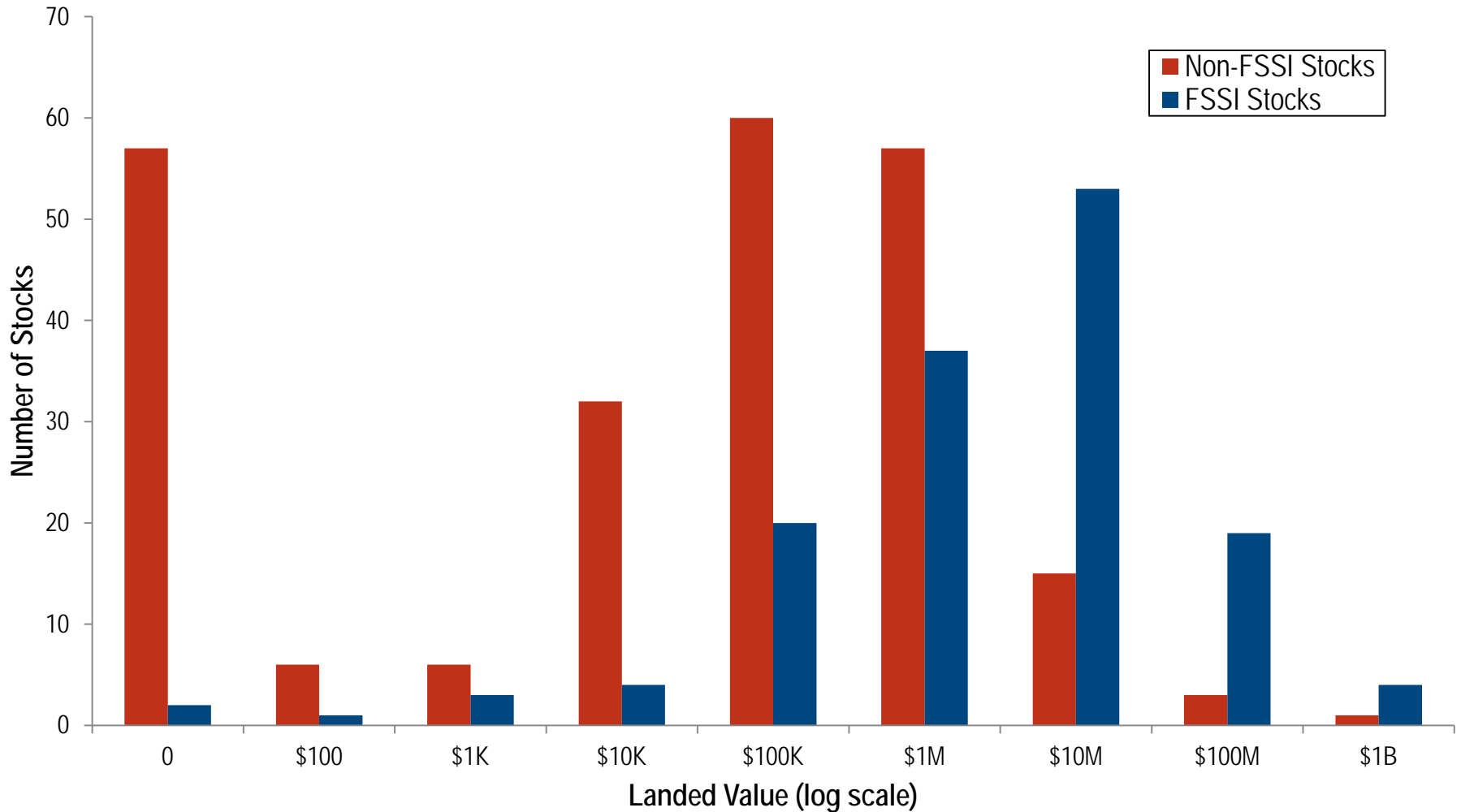
Which Stocks Need Assessment?



Assess Variable Stocks More Frequently

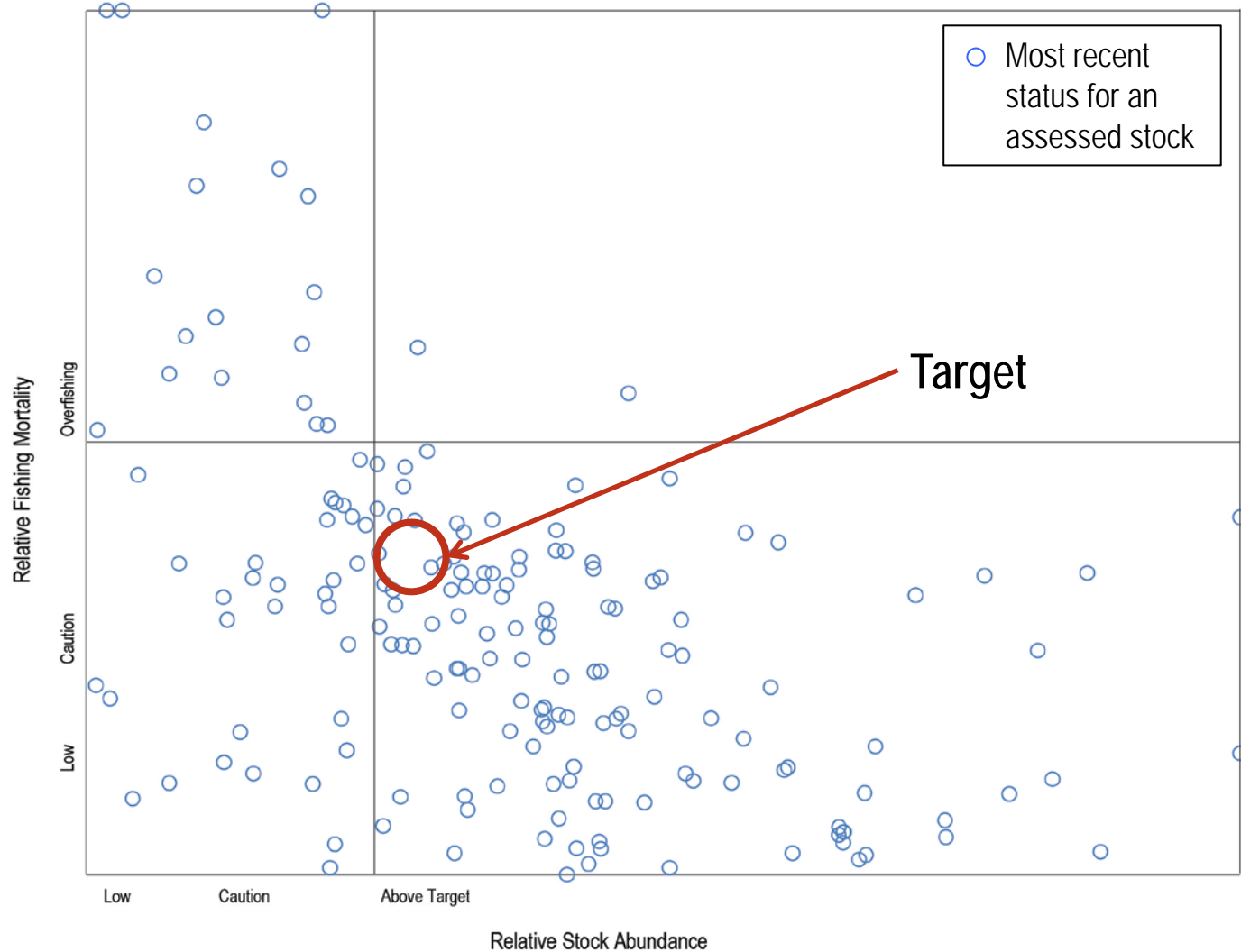


Importance: Range of Commercial Values



*FSSI = Fish Stock Sustainability Index; data are for stocks with annual catch limits

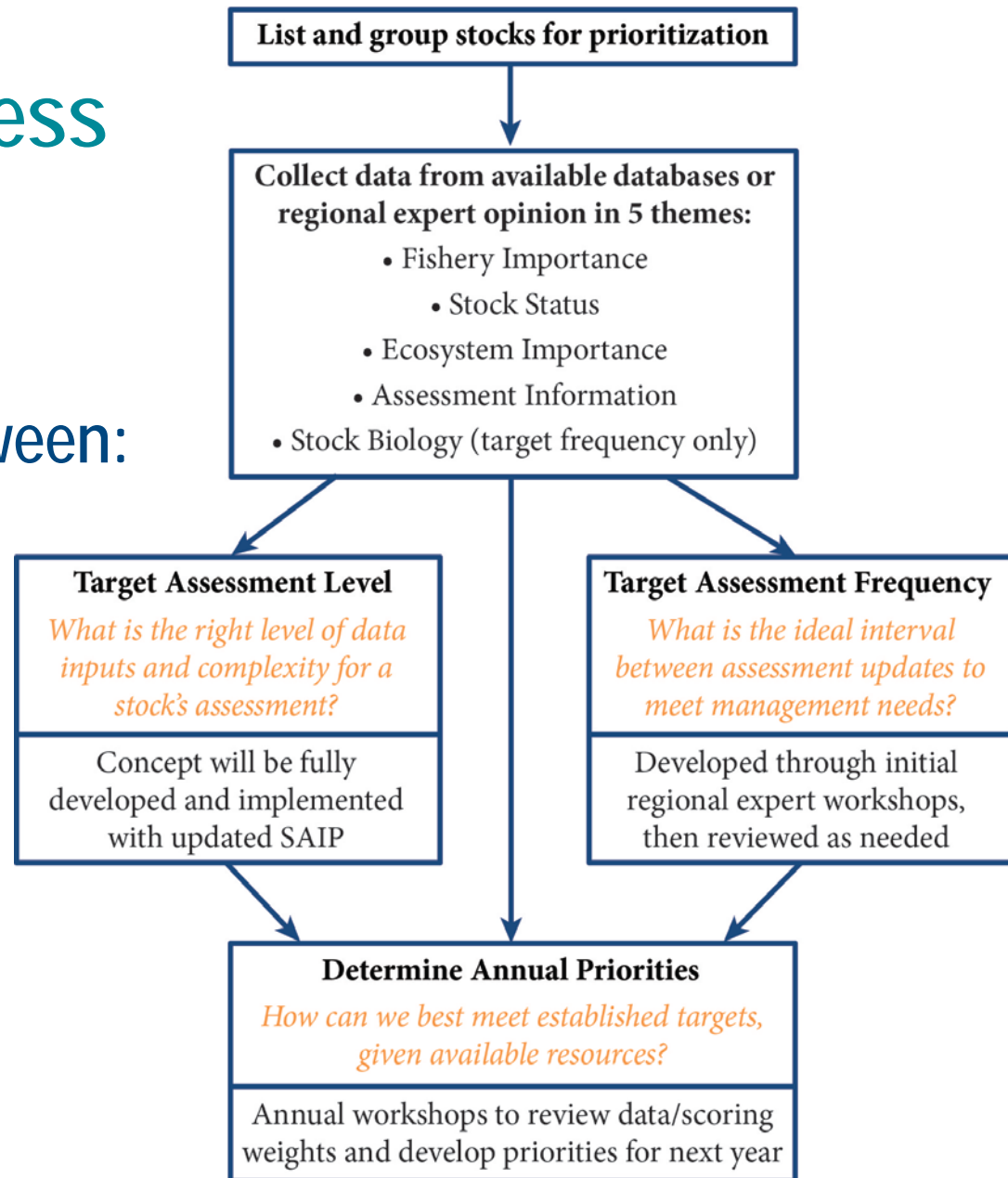
Status: Which Stocks are Pushing Limits?



Prioritization Process

Collaborative activity between:

- NMFS
- Councils
- Other regional partners



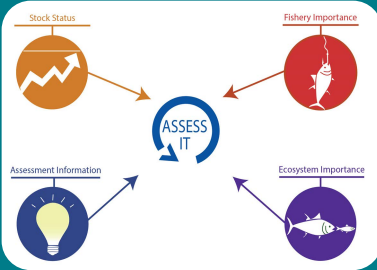
Prioritization Factors

Category	Factor	Source	Raw Scores
FISHERY	Commercial Fishery Importance - rescaled log(ex-vessel value)	SIS- ACL	0-5
	Recreational Fishery Importance - from regional input	Experts	0-5
	Importance to Subsistence	SIS	0-5
	Non-Catch Value	Experts	0-5
	Constituent Demand/Choke Stock	Experts	0-5
	Rebuilding Status	Experts	0-1
STOCK	Relative Stock Abundance	SIS	1-5
	Relative Fishing Mortality	SIS	1-5
ECO	Key Role in Ecosystem	Experts	1-5
ASMT	Unexpected Changes in Stock Indicators	Experts	0-5
	Relevant New Type of Information Available	Experts	0-5
	Years Assessment Overdue - relative to Target Frequency	SIS	0-10

Three Regional Science Activities

Stock Assessment Prioritization (<http://goo.gl/8pQ898>)

- Objective and transparent process to prioritize stocks for assessment
- Establishes target assessment level and frequency for each stock
- Cooperative process between NMFS, FMCs and other stakeholders



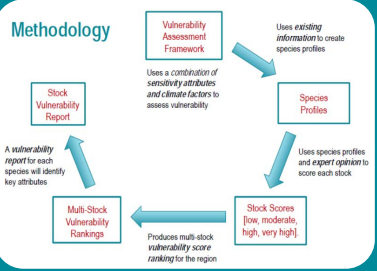
Habitat Assessment Prioritization (<http://goo.gl/ZPNxbn>)

- Process to develop regional habitat science priorities
- Uses criteria to score stocks appropriate to prioritizing habitat science
- Recently completed for West Coast stocks



Climate Vulnerability Assessment (<http://goo.gl/0sARjR>)

- Estimates relative vulnerability of fish stocks to potential climate change
- Based on existing information on species distributions and life history
- Results help managers identify ways to reduce risks/impacts to fisheries



Scoring Inputs

Stock Assessment Prioritization

Habitat Science Prioritization

Climate Vulnerability Assessment

*excludes Exposure Variables

Commercial Fishery Importance

FSSI or FMC Priority

Habitat Specificity

Recreational Fishery Importance

Habitat Science Benefits SA?

Prey Specificity

Importance to Subsistence

Habitat Science Benefits EFH?

Sensitivity to Ocean Acidification

Non-Catch Value

Fishery Status

Sensitivity to Temperature

Constituent Demand

Habitat Disturbance/Vulnerability/Rarity

Stock Size/Status

Rebuilding Status

Habitat Dependence

Other Stressors

Relative Stock Abundance

Ecological Importance

Adult Mobility

Relative Fishing Mortality

Economic, Social, and Mgmt Value

Spawning Cycle

Key Role in Ecosystem

Complexity in Reproductive Strategy

Unexpected Changes in Indicators

ELH Survival/Settlement Requirements

New Type of Information

Population Growth Rate

Years Assessment Overdue

Dispersal of Early Life Stages

How Does Prioritization Work?

Regional experts provide scores for stocks across each of the 12 prioritization factors

	Stock 1	Stock 2	...	Stock X
Factor 1				
Factor 2				
...				
Factor 12				

Weights for each of the 12 prioritization factors

	Weight
Factor 1	
Factor 2	
...	
Factor 12	

Product of relative scores and weights are summed across all 12 factors for each stock

Sorted list of results provides guidance on assessment priorities for upcoming cycle

Roles in Prioritization Process

NMFS



Collates data from databases and past assessments

Expert Groups:
NMFS
Councils
Other Partners



Provide scores for each stock for the other factors

NMFS/Council
Leadership



Assigns weights within ranges to each factor

SEDAR
Committee



Uses the proposed list, upcoming management cycle, data availability, and assessment capacity to determine set of assessments to do

Next Steps for Southeast

1. Meet with each Council's SSCs and/or other groups
2. Develop process and timeline tailored for SEDAR and the GOM, S. Atl., and Caribbean Councils
3. Establish expert groups from NMFS and each Council to develop:
 - a. stock lists for prioritization (within FMP?; deal with complexes, Ecosystem Component species, etc.)
 - b. ecosystem importance scores
 - a. coordinate with habitat prioritization and climate vulnerability efforts
 - c. recreational importance scores
 - d. scores for additional fishery importance categories
 - e. recent stock indicator data (catch rel. ABC; survey trends, etc.)
 - f. target assessment frequencies and levels
 - g. range of factor weights
4. Use table of scores x weights to inform each Council's deliberation on priority stocks for assessment

Questions for SEDAR Committee

- OK with Implementation with Council's?
- What degree of Council committee involvement (especially factor weights and fishery importance scores) is feasible?
- Which FMP, and timeline, can be targeted for prototype implementation?

Future Directions

- Management Strategy Evaluations for select stocks can better inform setting of target assessment level and frequency
- Gaps between current and target assessment levels, and the number of overdue assessments, informs future investments in capacity
- The simple “factor score x weight” approach evolves to calculate a portfolio of assessments that achieve the greatest overall benefits