



ASMFC Risk and Uncertainty Policy Update

ISFMP Policy Board
August 5, 2020

Background



- The idea was to develop a process that could be used for many different risk decisions made by the ASMFC
 - Would create a systematic process to meet the ASMFC’s risk policy goals
 - Would create transparency in the assessment of risk by the ASMFC
- The original idea was to develop a decision tree to implement this process
 - As you moved down the tree making decisions, “buffers” were added and removed (i.e. PLINKO!!!)

Background



Initial Decision

Management Needed

Decision on Information Available

Data Rich

Data Poor

Quantifiable Decisions

No Overfishing Occurring

Overfishing Occurring

Unknown

To Be Developed...

Below target

Above target

Not overfished

Overfished

Unknown

At or above target

Below target

Model Diagnostics Good

Model Diagnostic Issues

Management Uncertainty Accounted for

Management Uncertainty Unaccounted for

Low

Medium

High

Ecosystem: Climate Effects Accounted for

Ecosystem: Climate Effects Unaccounted for

Low

Medium

High

Qualitative Decisions

Evolution of the Approach



- The Striped Bass TC and the CESS were consulted on the general risk & uncertainty approach and the striped bass example
 - Developed a preliminary striped bass example
- Came to the realization that this approach was fairly brittle and would likely need frequent maintenance
 - Adding new information or adjusting the importance of a category would require redoing the entire tree
 - Would not be able to incorporate extreme events well
 - Technical information and value judgements were mixed together

New & Improved Approach



- The risk & uncertainty approach was revised with input from the Striped Bass TC & CESS, including:
 - Refinements to information included in the approach (inputs)
 - A new formula for combining the inputs into a final probability of management success

R&U Decision Tool Inputs



- The following information is incorporated into the R&U Decision Tool, split into four categories:

1. Stock Assessment & Technical Determinations

Stock status: is stock overfished/depleted?

Stock status: is stock above or below biomass target?

Stock status: is overfishing occurring?

Stock status: is fishing mortality above or below the target?

2. Additional Uncertainty Determinations

Model uncertainty

Management uncertainty

Environmental uncertainty

R&U Decision Tool Inputs



3. Additional Risk Determinations

Trophic importance

4. Economic & Social Determinations

Commercial short-term economic & social considerations

Commercial long-term economic & social considerations

Recreational short-term economic & social considerations

Recreational long-term economic & social considerations

- Further details on inputs are provided in the TC Guidance Document
- **Recommendation:** task ASC, MSC, and CESS with developing specific criteria for each input

New R&U Formula



Like the decision tree, the new formula incorporates these inputs into a final probability of management success. Specifically:

Probability of
Management
Success

$$\longrightarrow p(Z) = \frac{1}{1 + e^{-Z}}$$

Where: $Z = a + b_1x_1 + b_2x_2 + \dots$,

Constant

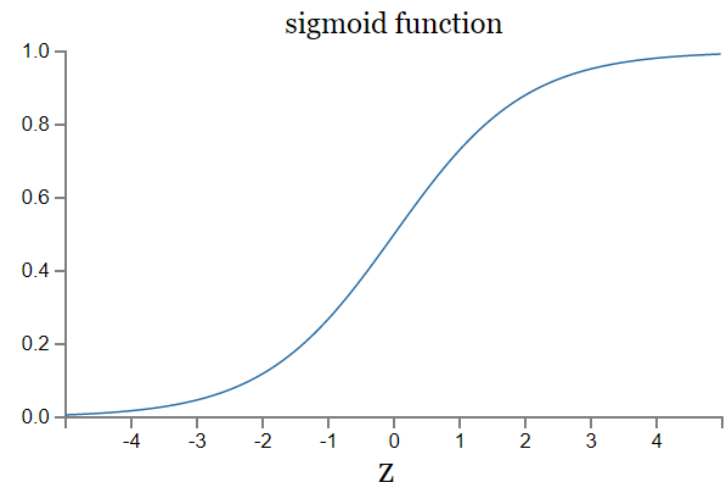
Weighting
(relative
importance)

Inputs
(question
answers)

New R&U Formula



- The new formula uses a sigmoid function to address the issues identified in the preliminary decision tree. Specifically, it is:
 - Easily adapted to new information
 - Consistent across species, even if information available is different
 - Able to handle extreme cases
- By separating technical information from weightings, the approach:
 - Is more transparent
 - Easier to use

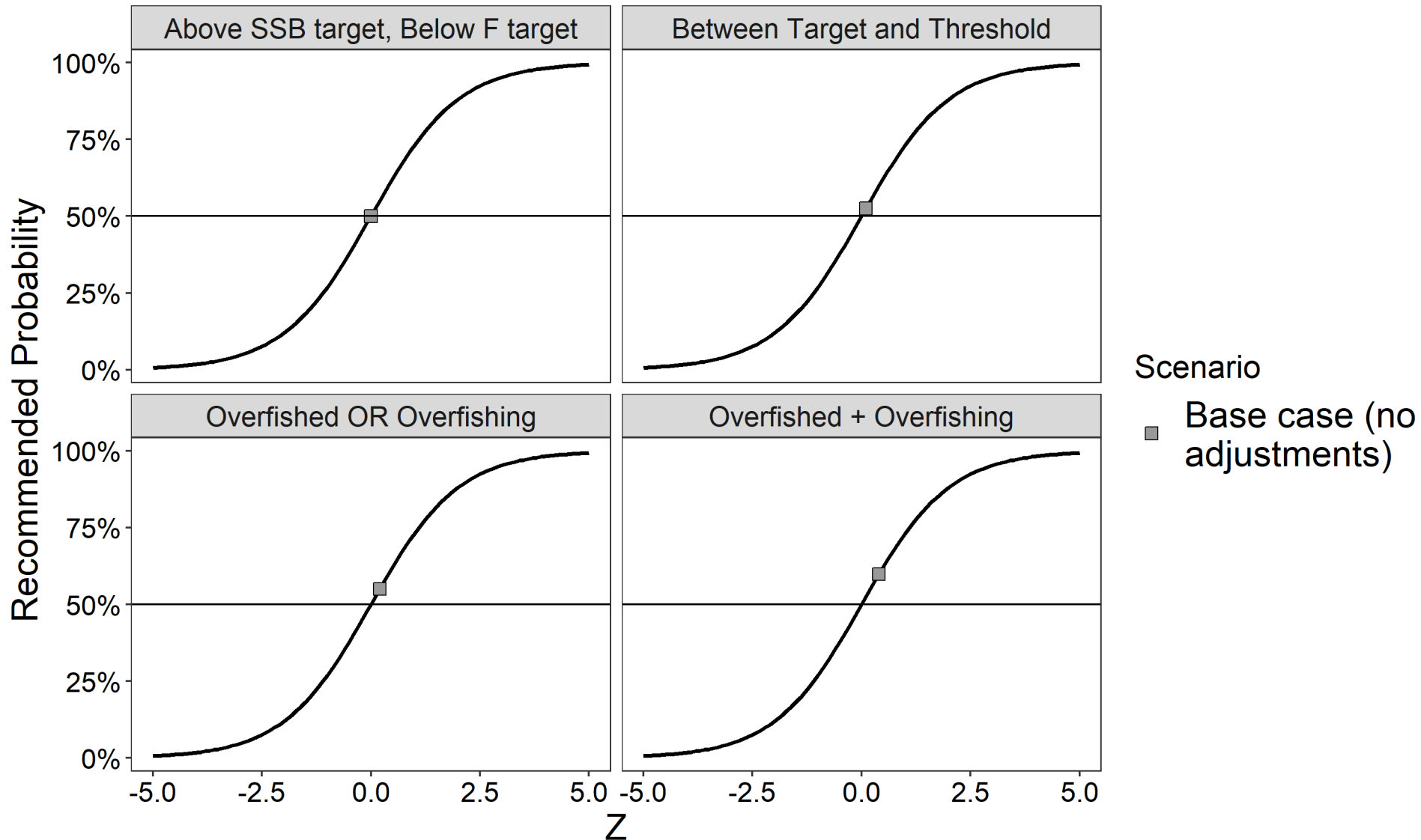


Example

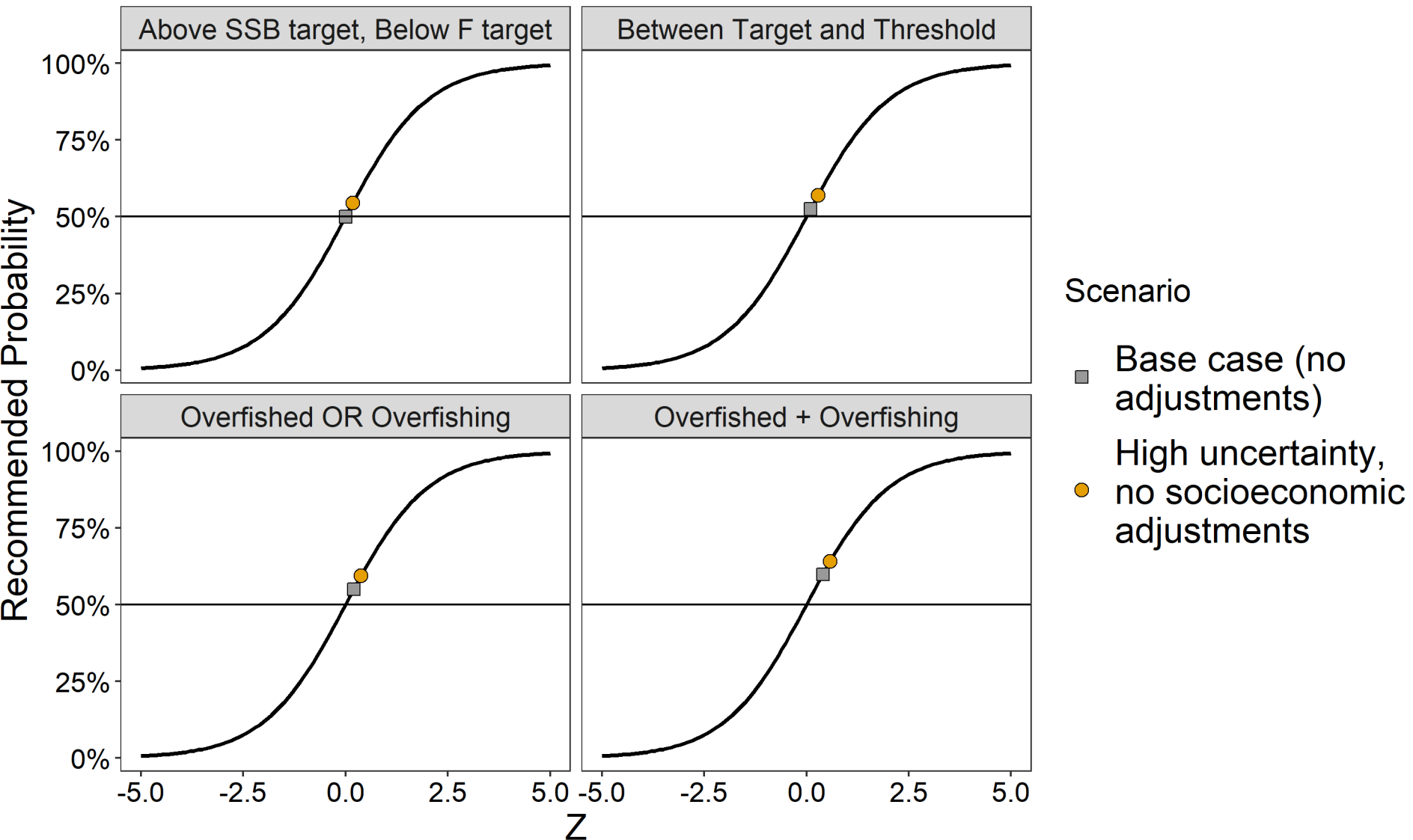


- We need to set a TAC for a species
- What probability should the TAC have of F being at or below the F target?
 - Higher probability = lower TAC, more risk averse
 - Lower probability = higher TAC, more risk prone

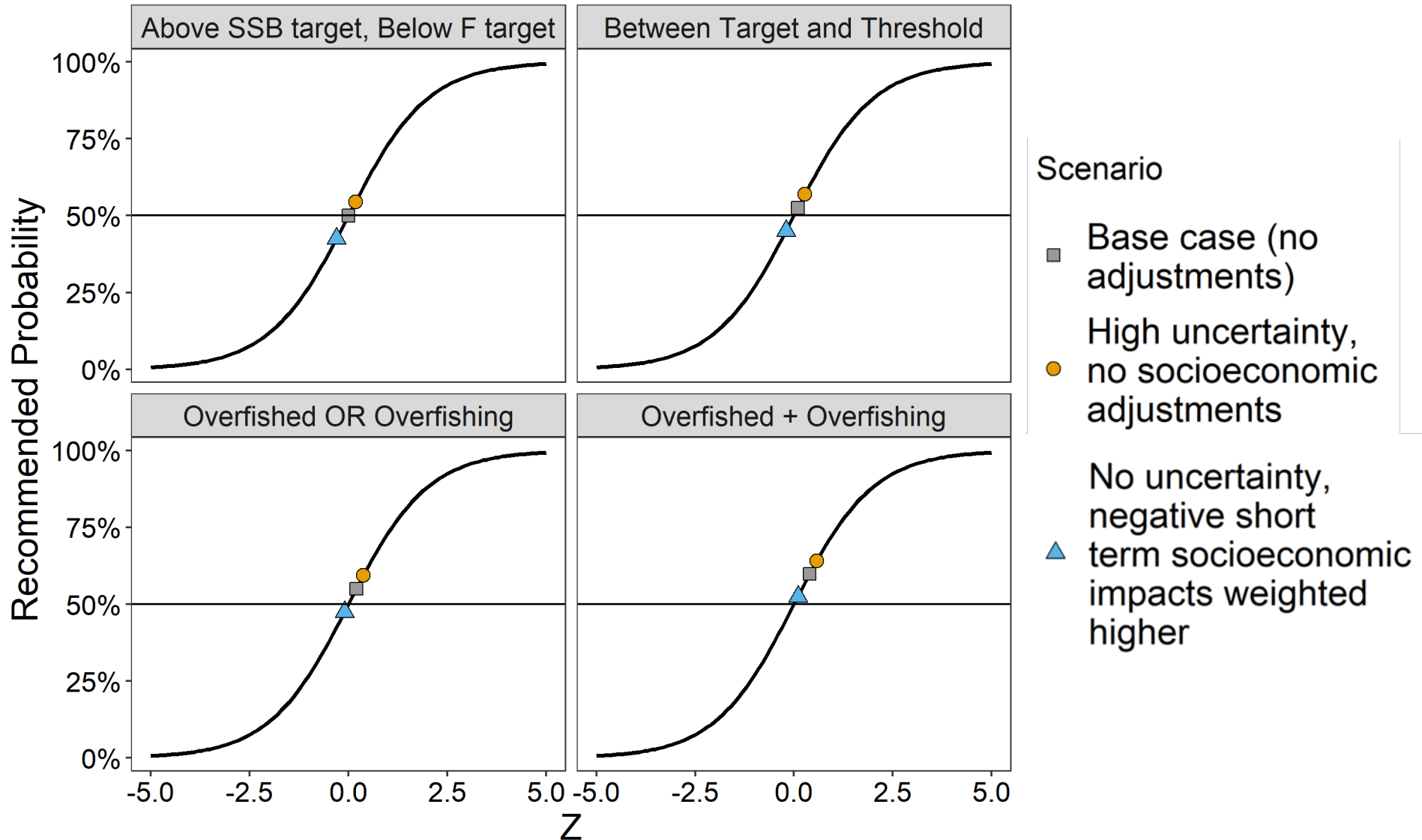
Example - Figure 1



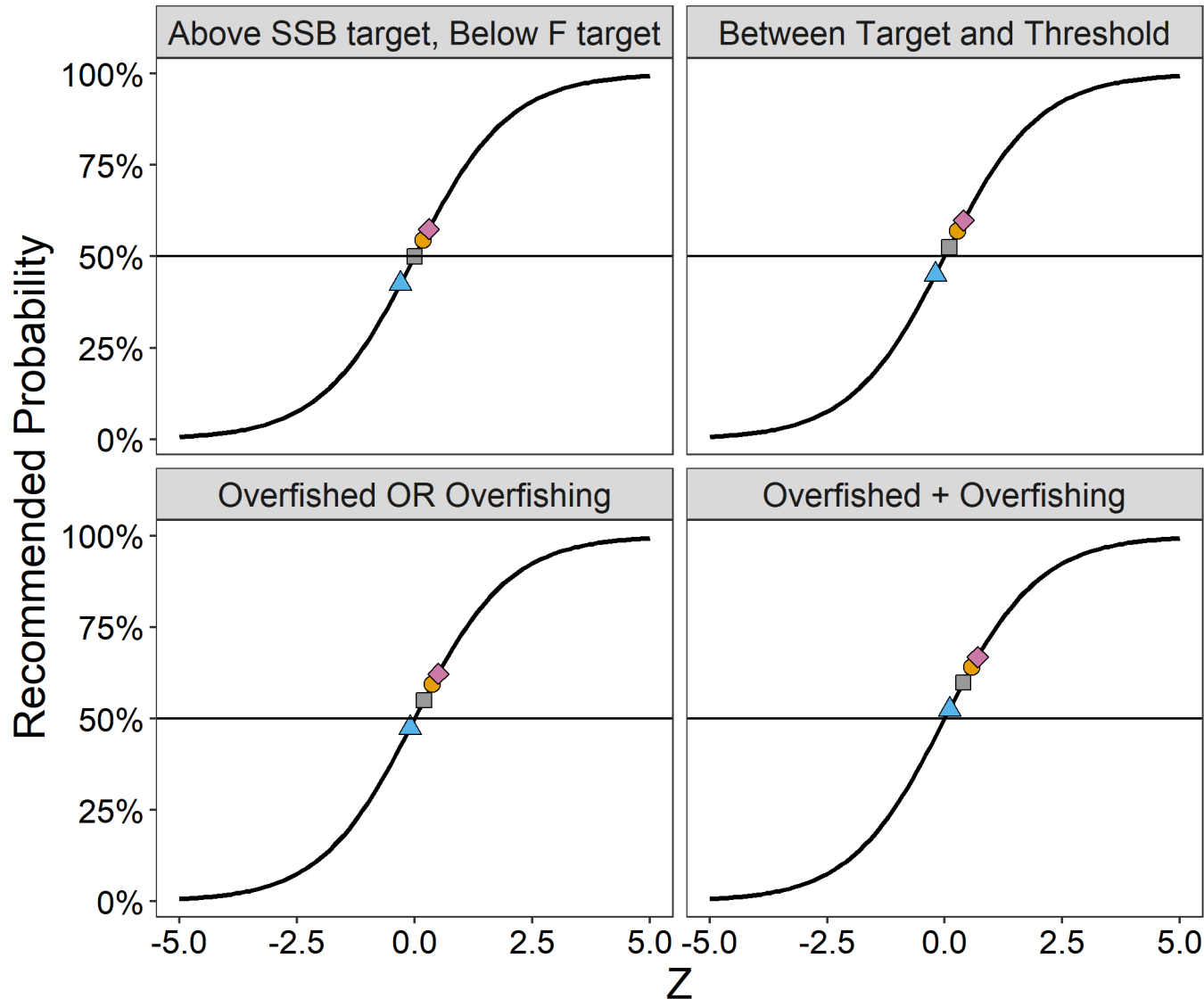
Example - Figure 2



Example - Figure 3



Example - Figure 4



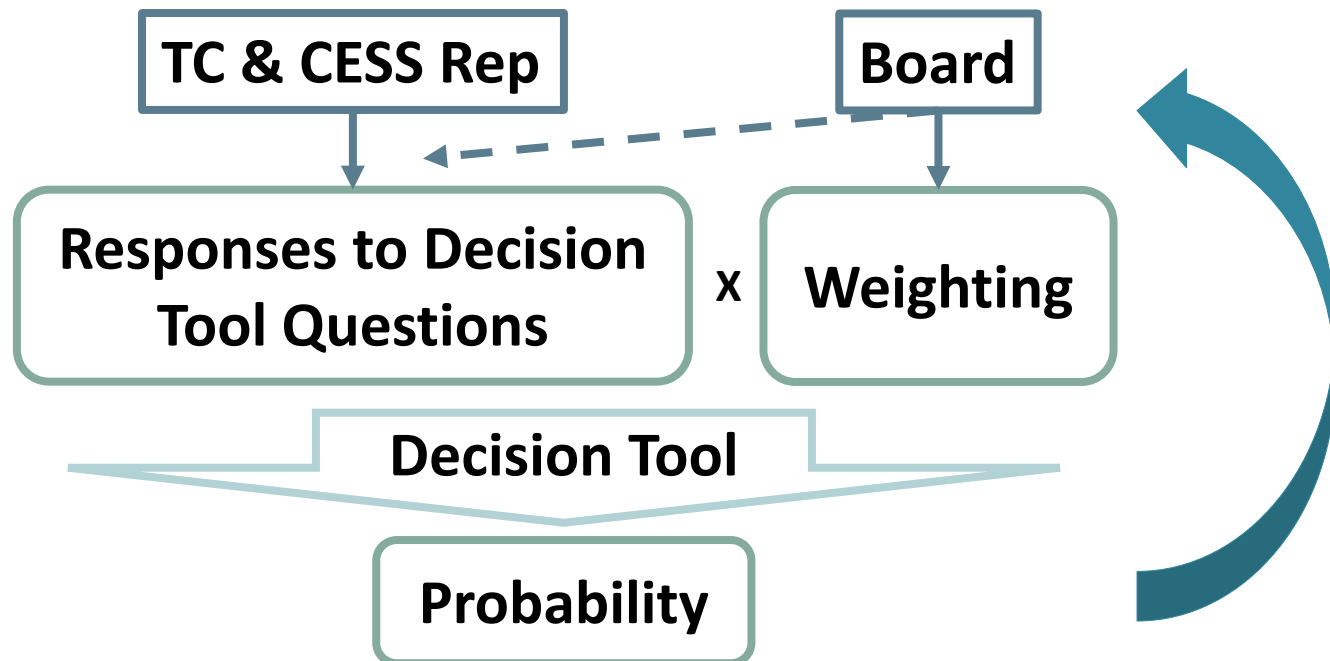
Scenario

- Base case (no adjustments)
- High uncertainty, no socioeconomic adjustments
- ▲ No uncertainty, negative short term socioeconomic impacts weighted higher
- ◆ No uncertainty, positive long term socioeconomic impacts weighted higher

R&U Process



- The decision tool will be developed by the species Board in collaboration with the TC, in a process separate from management decisions
- The probability of management success will be used by the TC/PDT to develop management options in the future



Discussion



- Any feedback on the revised risk & uncertainty approach as a whole?
- The Board could use surveys and/or voting tech (clickers) to collectively determine weighting preferences
 - would this be a good approach?
- The socioeconomic questions are currently the only components that can both increase and decrease the probability of management success
 - should other components also be allowed to decrease the probability?

Potential Next Steps



- Incorporate feedback from the Board
- Work with ASC, MSC, & CESS to refine criteria for decision tool inputs
- Revise striped bass example to fit the revised approach
 - Including test run with the Striped Bass Board



Assessment Science Committee Report to ISFMP Policy Board

August 2020

ASC Update



- The Assessment Science Committee (ASC) met on May 20th, 2020 to address several agenda items, including assessment report streamlining, rescheduling the advanced stock assessment training, and revising the ASMFC stock assessment schedule.

Proposed Stock Assessment Schedule



Species	2018	2019		2020	2021	2022	2023	2024
American Eel						x		
American Shad				ASMFC				
American Lobster				ASMFC				
Atlantic Croaker								x
Atlantic Menhaden		SEDAR				Update		
Atl. Menhaden ERPs		SEDAR				Update		
Atlantic Sea Herring	SARC-Spring			Management		Management		Management
Atlantic Striped Bass	SARC-Fall				Update		Update	
Atlantic Sturgeon								x
Black Drum						x		
Black Sea Bass	Update	Operational*			Management	SARC - Fall	Management	
Bluefish	Update	Operational*			Management	SARC - Fall	Management	
Coastal Sharks				SEDAR		SEDAR		
Cobia		SEDAR						
Horseshoe Crab		ASMFC			ASMFC (ARM)			Update
Jonah Crab							Management	
Northern Shrimp	ASMFC				Update		Update	
Red Drum						ASMFC		SEDAR
River Herring							Update	
Scup	Update	Operational*			Management		Management	
Spanish Mackerel					Operational			
Spiny Dogfish	Update					SARC - Spring		
Spot								x
Spotted Seatrout								
Summer Flounder	SARC-Fall				Management		Management	
Tautog					Update			
Weakfish		Update						
Winter Flounder				Management		Management		Management

Proposed Schedule Changes



The following proposed changes were made to the ASMFC Stock Assessment Schedule since the previous schedule was approved by the ISFMP Policy Board in October 2019:

- The years 2023 and 2024 were added to the schedule and populated based on NMFS assessment schedules and standard ASMFC assessment frequencies
- **Horseshoe Crab:** the Adaptive Resource Management (ARM) Framework benchmark in 2021 was included on the schedule
- **Jonah Crab:** a first-time assessment was tentatively scheduled for 2023

Proposed Schedule Changes



- 11 benchmark assessments and 4 assessment updates were scheduled for 2022
- Recognizing the 2022 workload bottleneck, the ASC recommends the following changes to redistribute the workload to other years:
 - **Atlantic croaker:** shift the benchmark assessment from 2022 to 2024
 - **Atlantic sturgeon:** shift the assessment update from 2022 to 2024
 - **Spot:** shift the benchmark assessment from 2022 to 2024

Proposed Schedule Changes



- **River herring:** the assessment update was shifted from 2022 to 2023 to reflect the substantial workload and time needed to complete the update
- **Striped bass:** the schedule for striped bass remained the same (with a tentative assessment update in 2021)
 - However, the ASC recommended consulting the Striped Bass Management Board and Technical Committee on the pros and cons of shifting the update to a later year.

Proposed Stock Assessment Schedule



Species	2018	2019		2020	2021	2022	2023	2024
American Eel						x		
American Shad				ASMFC				
American Lobster				ASMFC				
Atlantic Croaker								x
Atlantic Menhaden		SEDAR				Update		
Atl. Menhaden ERPs		SEDAR				Update		
Atlantic Sea Herring	SARC-Spring			Management		Management		Management
Atlantic Striped Bass	SARC-Fall				Update		Update	
Atlantic Sturgeon								x
Black Drum						x		
Black Sea Bass	Update	Operational*			Management	SARC - Fall	Management	
Bluefish	Update	Operational*			Management	SARC - Fall	Management	
Coastal Sharks				SEDAR		SEDAR		
Cobia		SEDAR						
Horseshoe Crab		ASMFC			ASMFC (ARM)			Update
Jonah Crab							Management	
Northern Shrimp	ASMFC				Update		Update	
Red Drum						ASMFC		SEDAR
River Herring							Update	
Scup	Update	Operational*			Management		Management	
Spanish Mackerel					Operational			
Spiny Dogfish	Update					SARC - Spring		
Spot								x
Spotted Seatrout								
Summer Flounder	SARC-Fall				Management		Management	
Tautog					Update			
Weakfish		Update						
Winter Flounder				Management		Management		Management



Questions?



Report to the Atlantic States Marine Fisheries Commission

ISFMP Policy Board

August 5th, 2020

Steering Committee Meeting



- Met virtually May 26-27th
 - Update on current on-the-ground projects
 - Update on conservation mapping project
 - Discussed outreach and communications initiatives
 - Consensus on Melissa Laser award recipient
 - Reviewed 2020-2021 Action Plan



**FY2021 NFHAP-USFWS On the
Ground Conservation Funding
RFP will be released in August**
www.atlanticfishhabitat.org

Project Funding



FishAmerica Foundation Funding

- Led by FWC FWRI
- Florida Bay experiencing sponge loss due to algal blooms
- Growing 5,000 sponges for outplanting
- Benefits gray snapper, spiny lobster, others



Project Funding



NOAA Recreational Fishing Funding

- 1-acre oyster reef restoration
- Eastern branch of Lynnhaven River, VA
- Led by Chesapeake Bay Foundation & Lynnhaven River Now
- Fisher engagement through site location and outreach via Virginia Rod and Reef Slam: Angling for Oyster Restoration

Project Funding



USFWS-NFHAP Funding

- Magothy River Shoreline Restoration (MD)
- County Line Dam Removal (NJ)
- Oyster Reef Restoration Mosquito Lagoon (FL)
- Town Brook Stream Restoration (MA)
- \$161,934 directly to on-the-ground restoration

Project Endorsement



Upper & Lower Kickemuit River Dam Removal

- Led by Bristol County Water Authority and Save the Bay
- Warren, Rhode Island
- Dam created in 1954 to protect water supply from tidal inundation after Hurricane Carol but no longer used
- Open ~8 sq mi for river herring, others



**ACFHP would like to
thank ASMFC for your
continued operational
support**



Habitat Committee Report

Presented to ASMFC Policy Board

August 5th, 2020

Habitat Committee Meeting



- Met virtually May 28-29
- Updates on documents in progress: Acoustic Impacts, Fish Habitats of Concern, Habitat Hotline
- Update on Northeast Regional Habitat Assessment and ACFHP
- Discussion on clean water and ecological flows. Committee wants next Habitat Management Series to focus on dissolved oxygen and pH
- Discussion on living shoreline impacts to SAV

Living Shoreline Impacts to SAV



- Background document in briefing materials
- Living shorelines (LSLs), when properly sited are a great alternative to hardened shorelines
 - Incorporate vegetation or other natural ‘soft’ elements
 - Shoreline stabilization
 - Wave attenuation
 - Erosion control
 - Improve fish habitat
- Habitat Committee supports the use of these softer, more ecologically beneficial means of protecting and stabilizing shorelines

Living Shoreline Impacts to SAV



- Streamlined permitting process developed on state and federal level, and LSL preference codified in some state laws and regulations
- However, some states are placing LSLs in close proximity to submerged aquatic vegetation (SAV) beds, directly or indirectly impacting this important habitat for many Commission-managed species
- SAV is EFH and HAPC, and the ASMFC updated our SAV Policy in 2018, emphasizing its importance

Living Shoreline Impacts to SAV



- Habitat Committee recommends that shoreline stabilization alternatives to avoid or minimize impacts to SAV should be considered
- A hierarchical approach to siting and design of LSLs that incorporates avoidance and minimization measures should be demonstrated before unavoidable impacts to SAV are considered

Living Shoreline Impacts to SAV



- Because of:
 - Ecological importance of SAV
 - Increasing instances of LSL and nature-based projects being proposed in conflict with SAV
 - Continued reported losses of SAV along Atlantic coast and worldwide
 - Difficulties associated with mitigating and restoring SAV
- The Habitat Committee requests Policy Board approval to develop a LSL Policy that would be protective of SAV



**As always, we welcome suggestions for
action items you would like the
committee to work on.**

Questions?