



Tautog Risk & Uncertainty Decision Tools: Hypothetical Scenarios

Report to the Tautog Management Board
ASMFC Winter Meeting 2022

Background



- The draft Risk and Uncertainty Policy & Decision Tool provide a method for arriving at the appropriate **risk tolerance** level for a stock, given management priorities and characteristics of the species and fishery
 - This risk tolerance level can then be used to select a harvest level based on projections
 - It is **not** a tool for assessing the varying risk levels of different management approaches, this could be done using other tools such as an MSE

Background



Technical inputs characterize factors relevant to R&U for a fishery:

- Stock status
- Model uncertainty
- Management uncertainty
- Environmental uncertainty
- Ecosystem importance
- Socioeconomic considerations

Technical Inputs

x

Weightings

Decision Tool

Risk Tolerance Level

Weightings are based on how important each technical input is to risk decision-making for managers

Risk tolerance level = **goal probability of achieving the reference points**

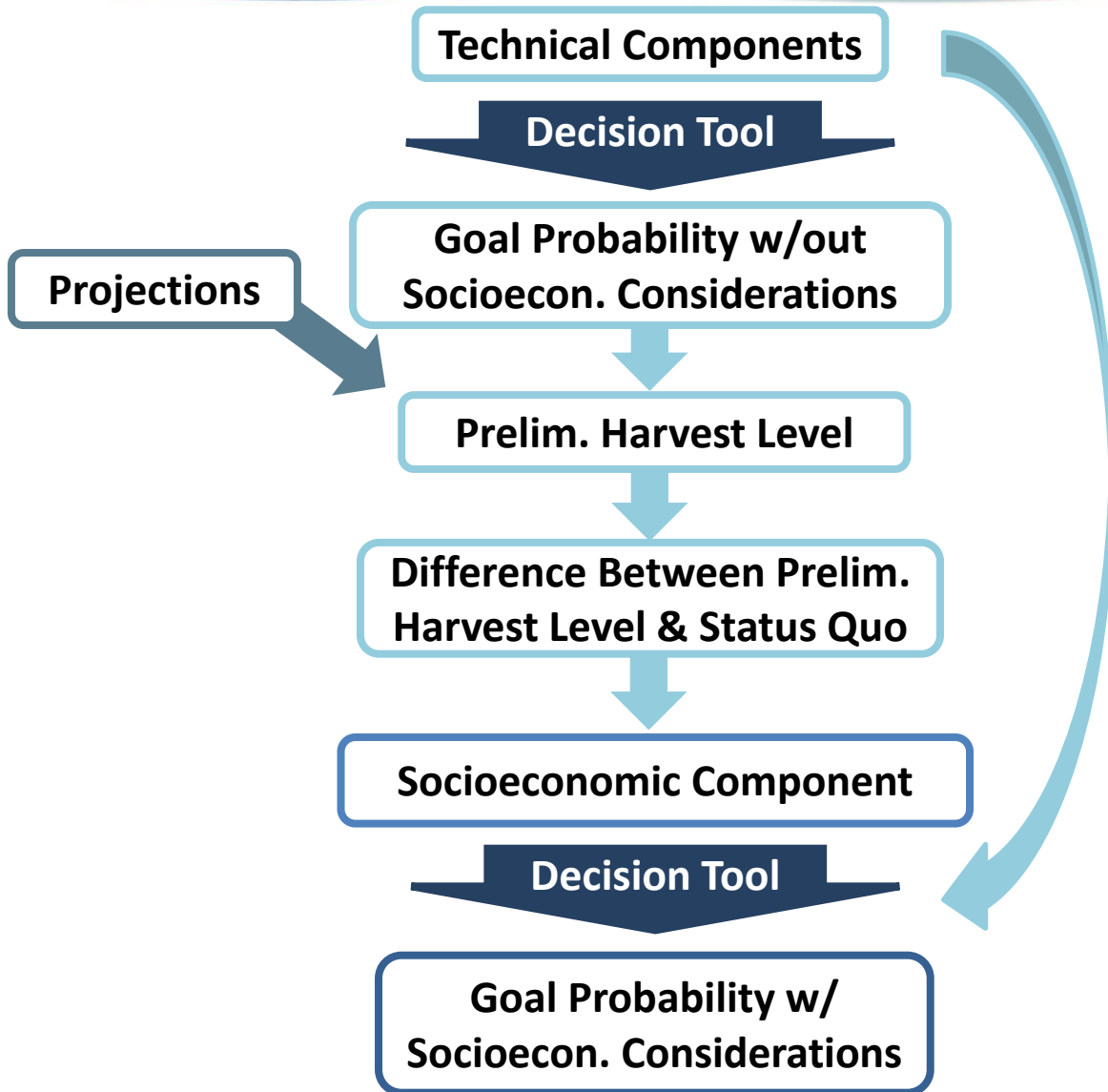
This probability will be used with projections to ID a harvest level

Updates

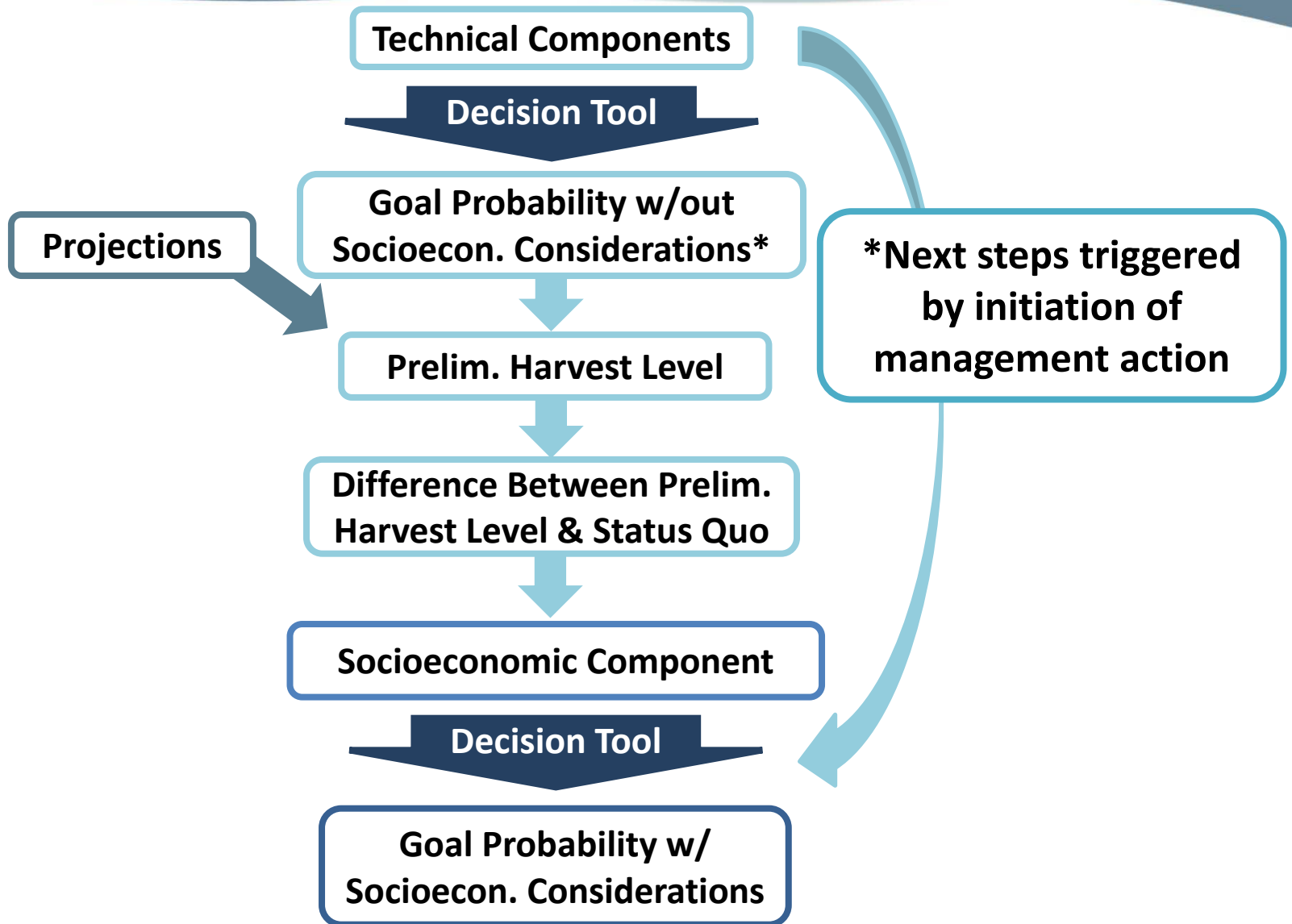


- Tautog was selected as a pilot case for the policy
 - The Tautog TC & CESS provided technical inputs
 - The Tautog Board provided input on weightings
 - These were combined to develop 4 regional Tautog Risk & Uncertainty Decision Tools
- Fall 2021 Meeting
 - Tautog Board reviewed the preliminary Decision Tools
 - The Board did not initiate a management action
 - Board requested hypothetical scenarios to improve understanding of the Decision Tools & their use

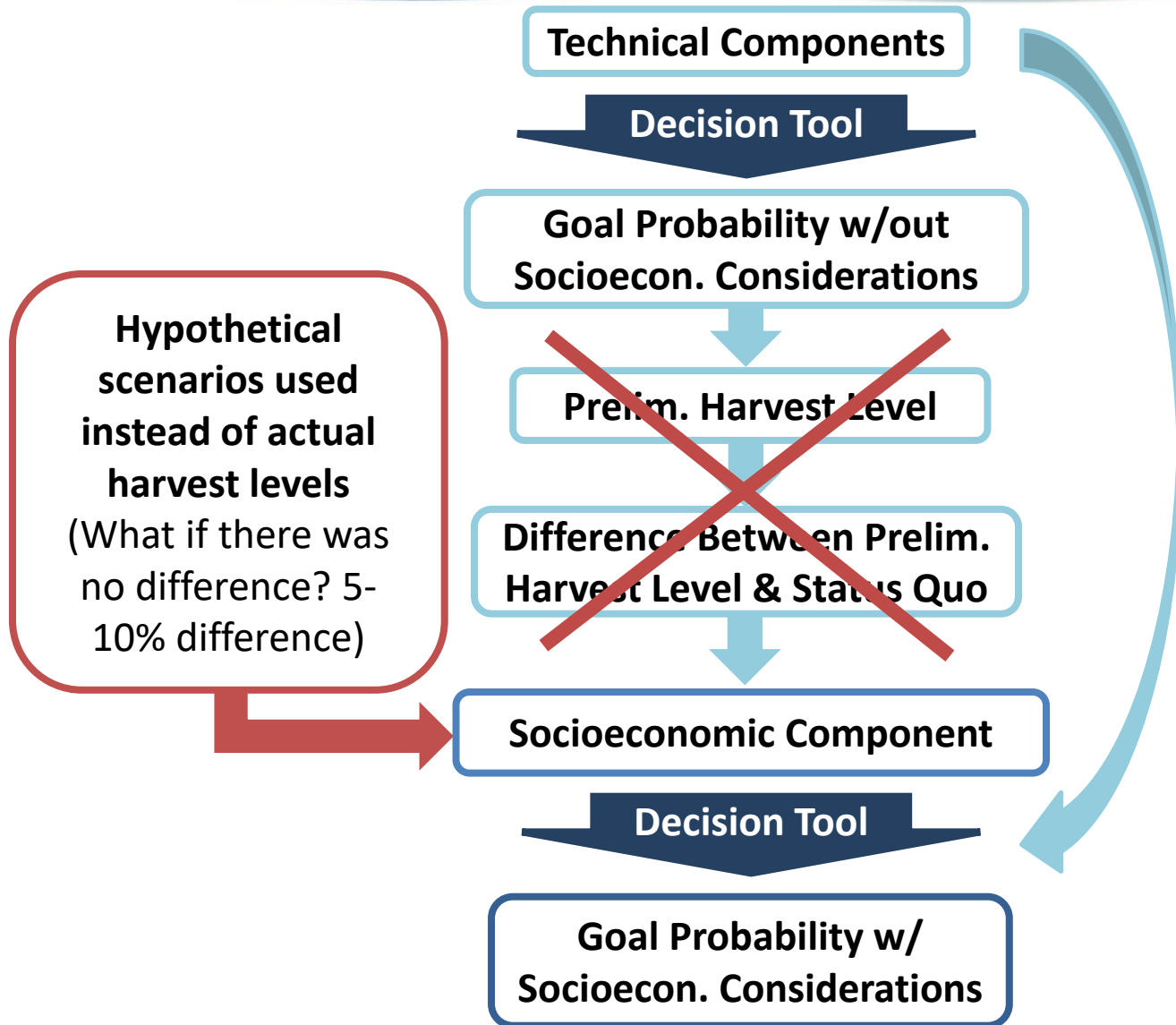
R&U Process



R&U Process



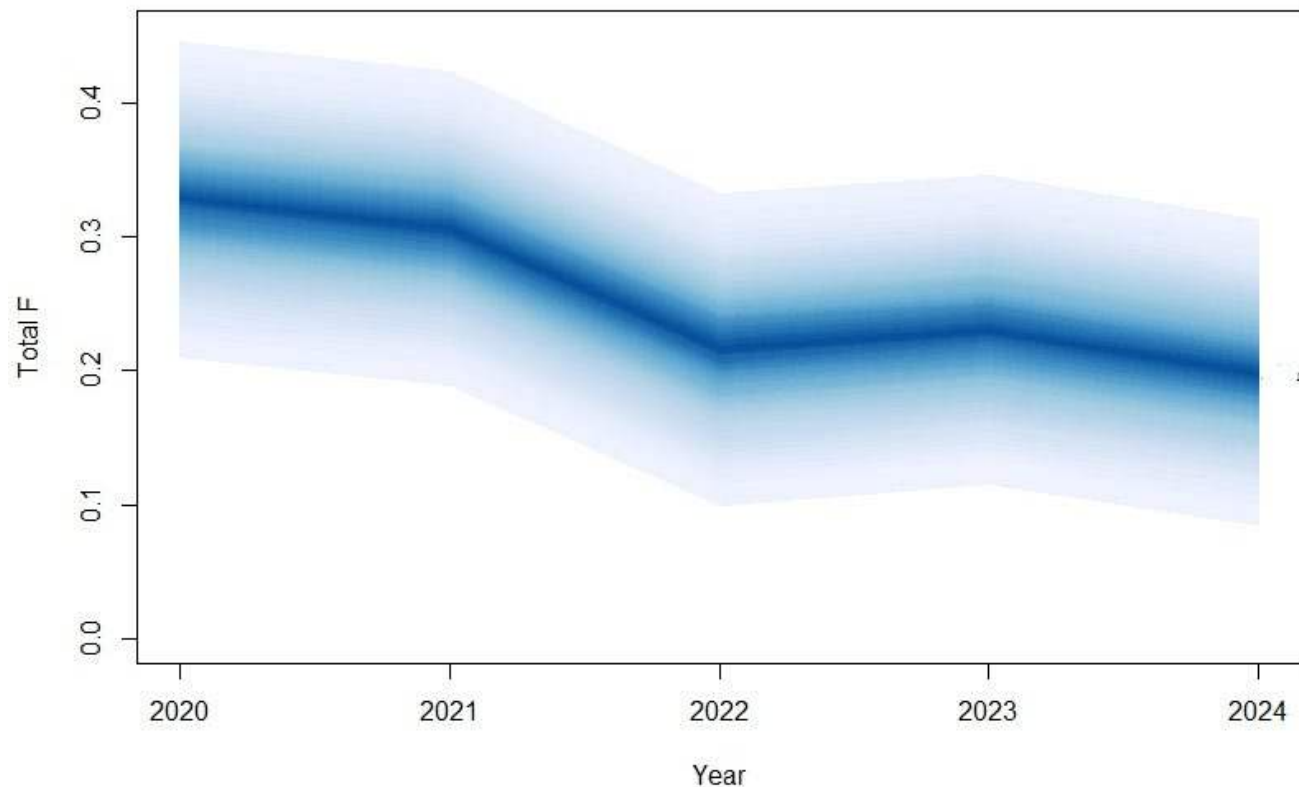
R&U Process



Probability Illustration



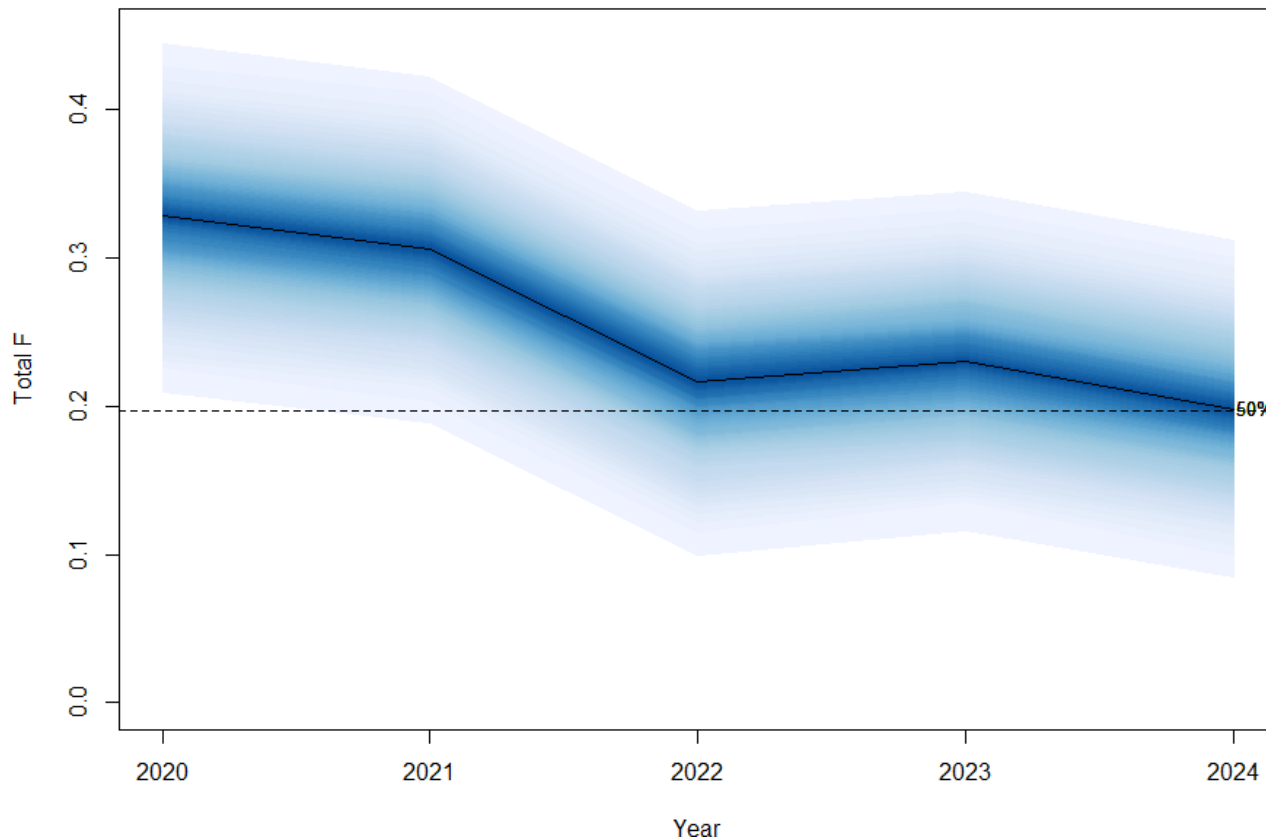
- Stock assessment projections take into account uncertainty: conduct 1,000 runs with different starting abundance, recruitment, etc. which gives you a range of projected F values in the terminal year



Probability Illustration



- What is better, a higher or lower probability?
 - In the case of F , the higher the probability you set, the more conservative your management will be



50%

Probability:

} Half of projections are above F target

} Half are below F target

Probability Illustration



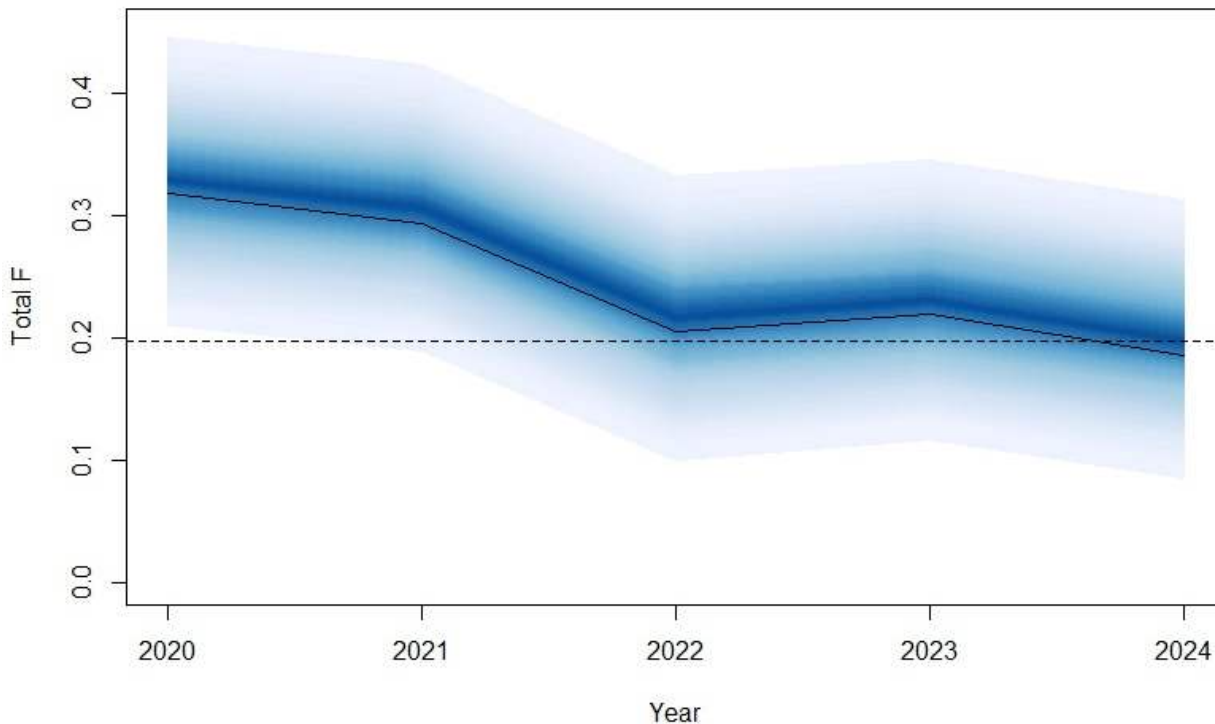
- What is better, a higher or lower probability?
 - In the case of F , the higher the probability you set, the more conservative your management will be

60% Probability:

(harvest level for 60% prob. < harvest level for 50%)

40% of projections are above F target

60% are below F target



Goal Probabilities



- Using the technical inputs from the TC and weightings from the Board, the decision tools can produce regional goal probabilities without socioeconomic considerations
 - This includes everything except the socioeconomic component (stock status, model/management/environmental uncertainty, and ecosystem importance components)
 - The following are the regional goal probabilities without socioeconomic considerations:

MARI	LIS	NJ-NYB	DelMarVa
54%	59%	61%	56%

- For reference, Amendment 1: min. 50% of F target

Hypothetical Scenarios



- Hypothetical differences between preliminary harvest level and status quo harvest level:
 - No difference
 - 5-10% difference
- Alternate weightings for the socioeconomic components were also included in the scenarios, to further illustrate the potential effects of different harvest levels
 - With the current weightings & scores the short-term (ST) and long-term (LT) socioeconomic components cancel each other out
- Hypothetical changes to the socioeconomic component weightings:
 - No change (weightings based on Board input)
 - ST socioeconomic scored as most important (5), with LT as least important (1), and vice-versa
 - Extra-high weighting to ST socioeconomic. (10), with LT least important (1), and vice-versa

Hypothetical Scenarios



Scenario	Socioecon. Weightings				Goal Probabilities (w/ socioecon.)			
	Comm.		Rec.		MARI	LIS	NJ-NYB	DelMar Va
	ST	LT	ST	LT				
Scenario 1: No change to harvest level								
1: Any weightings	*	*	*	*	54%	59%	61%	56%
Scenario 2: 5-10% change to harvest level								
2a: No change to weightings	0.09	0.09	0.1	0.1	54%	59%	61%	56%
2b: ST most important (5); LT least important (1)	0.16	0.03	0.16	0.03	52%	56%	59%	54%
2c: ST most important w/ extra high weighting (10); LT least (1)	0.25	0.03	0.25	0.03	50%	55%	57%	52%
2d: ST least important (1); LT most (5)	0.03	0.16	0.03	0.16	56%	61%	63%	58%
2e: ST least important (1), LT most w/ extra high weighting (10)	0.03	0.25	0.03	0.25	58%	62%	65%	60%

Any questions?





LEC Feedback on Commercial Tagging Program



Tautog Management Board

January 25, 2021

Background



- August: Board was presented initial reports (TC, Industry, LEC) on implementation of tagging program
 - Focus was general
 - Assessing compliance & reducing illegal harvest has not been done in-depth
- October: Board considered questions for the LEC to answer to help assess;
 - 1) compliance with tagging program
 - 2) impact of the program in reducing illegal harvest and markets

Today



- Summary of LEC feedback on each of the Board questions

Questions



- 1. Are there any areas of concern (ex. specific fisheries or markets) where compliance with tautog tagging requirements remains a significant issue? Please be as specific as possible.**

LEC Feedback Q#1



- A few Commercial Harvesters in possession of fish above the trip limit upon returning to the dock or penning fish up at sea.
 - Cite need to avoid multiple trips in bad weather
- Generally good compliance in the commercial fishery, primary concern is recreational trips
 - Harvest above the trip limits, coordination among bad actors makes monitoring difficult
- LEC challenged by limited staff and competing priorities in monitoring illegal harvest

Questions



2. Is there a practical way for Agencies to collect information on non-compliance with tagging requirements in the fishery or markets that could inform and improve the efficiency and effectiveness of law enforcement efforts?

Examples might include specific types of advance information gathered by agency biologists or by partner organizations. Please be as specific as possible.

LEC Feedback Q#2



- Using other agencies or organizations to monitor markets is challenging
 - Distrust of outsiders from the community
 - Inspections need to be synced, otherwise illegal sales move else where
- Again, most commercial harvesters and markets appear compliant. It is unclear if collecting non-compliance information would help more
 - Best approach is LEC meeting regularly, exchanging updates
- Primary area of concern is recreational fishery, but increasing monitoring is challenged by limited staff

Questions



3. Any additional thoughts or recommendations for improving the efficiency and effectiveness of enforcement of the tagging program?

LEC Feedback Q#3



- A few LEC members have heard frustration from commercial harvesters about the tag type
- Best way to strength compliance with the tagging program is to have full buy-in from commercial sector
- Continuing to test and evaluate tag types may improve compliance

Questions



4. Now that the tagging program has been underway for a couple of years, what is your expectation on if the program will ultimately be successful at reducing illegal fishing and markets?

LEC Feedback Q#4



- Overall, the LEC is in agreement that the tagging program has reduced the illegal harvest
- The big change is that illegal harvest seems to primarily be in the recreational fishery
 - When harvest is above the possession limit, it is difficult to determine if the extra fish are intended for private consumption or illegal sales



Questions?