North Pacific Fishery Management Council

SSC Workshop on Risk Tables
for ABC advice to Council

Webconference: https://npfmc.adobeconnect.com/ssc/

By phone only, dial 1-800-832-0736 room number 1448344#

Background

Excerpt from December SSC minutes

"The goal of this workshop will be to evaluate how the risk table process is working; address consistency issues with the risk table as identified by the GPTs, authors, and SSC; and to provide guidance for moving forward. The SSC appreciates hearing about the challenges the authors and JGPT have found with the risk table process."

Excerpt from JPT minutes

It was also challenging to assess what the magnitude of reduction from maxABC is appropriate when reduction is warranted.

The goals of the workshop are the following:
1) Define "risk" and "uncertainty"
2) Compare ABC and OFL buffers for scientific uncertainty with ABC reductions due to the Risk Table
3) Assess the progress and value of species-specific risk tables for all stocks
4) Evaluate risk table consistency among species and highlight challenges
5) Discuss future options

The workshop will include two plenary sessions (beginning and end) and a 50 minute breakout session of open discussion between stock assessment authors, Plan Teams and SSC members (session leads in parentheses). Time will be allocated for public testimony relevant to the workshop topics at the end and conclude with a wrap up session by the SSC.

Agenda
Feb 5, 8am - 12:00pm AST

8:00 - 8:10 AM AKT Introduction and workshop goals

8:10 - 8:30 (20 min) Summary of case studies for risk table adjustments

(Shotwell, Zador and Dorn)
● Brief historical overview of risk tables (timeline and purpose) (Table 1)
● Synthesis of stock responses 2018-2020 (Tables 2 and 3)
● Lessons learned (e.g., transparency, evaluation of consistency, documentation of when there is no concern, acknowledges novel observations)

8:30 - 8:50 (20 min) Issues, challenges and concerns

Group Discussion (Anne Hollowed facilitator)
- Challenges for species complexes
- Challenges for data limited stocks
- Interpreting response for non-target stocks
- Should we continue to produce risk tables for all (or any) full assessments
- Challenges with time constraints - Should Plan Teams and SSC review all of them, or only when a reduction is recommended?

8:50 - 9:40 (50 min) Breakout Session 1

Discussion of tangible steps towards quantifying the importance of external changes in fishery performance in stock assessments

(Haynie, Ianelli, and Kasperski)
- Are there mechanistic linkages to stock health that are revealed by fishery performance data?
- Recognizing Data lags and interpreting trends (e.g., fishery selectivity changes in most recent years, predictions in future years).
- How do we define "fishery" performance risk for bycatch stocks, and how would it be affected by changes in bycatch and incidental catch?

Discussion of tangible steps toward quantifying the importance of assessment risk

(Thompson)
- Data selection
- Parameterization
- Trade-offs in model complexity
- Ensembles

8:50 - 9:40 (50 min) Breakout Session 2

Discussion of tangible steps towards quantifying the risk of external changes in population conditions

(Spencer and Goethel)
- Importance of age diversity?
- Importance of recruitment uncertainty?
- Importance of growth uncertainty?
- Importance of maturation uncertainty?
- Interaction between perceived stock status and population risk category.

Discussion of tangible steps towards quantifying risk of external changes in ecosystem conditions

(Shotwell, Ferriss, Siddon, Zador)
- Mechanistic linkages quantifying risk of ecosystem process (the four factors).
- Pathway for moving from recognition of ecosystem anomalies to qualitative projection of risk of overfishing.

9:40 - 9:55 Break

9:55 - 10:25 (30 min) Plenary discussion of key findings from breakout groups

The following session will include ~ 30 min of introduction to the topic followed by a ~15 min open discussion between stock assessment authors, PTs and SSC

10:25 - 11:10 (45 min) Frameworks for addressing scientific uncertainty

(Dorn and Thompson)
- What sources of scientific uncertainty are already incorporated in the existing buffer between ABC and OFL? Do these differ from the Risk Table?
- P* approaches for crab and PFMC Decision theoretic approaches
- A probabilistic approach for linking the risk table to ABC reductions
- Full feedback MSE
- Scoring - pros and cons of overall scores?
- Should "increased" concern be evaluated relative to: (1) previous assessments of the same stock/complex or (2) typical assessments with the same tier or (3) typical assessments across all tiers, conditions under which elevated risk levels should result in reduction from maxABC.

11:10 - 11:40 (30 min) Public Testimony relevant to workshop topics

11:40 - 12:00 (20 min) SSC discussion

Table 1. Risk table categories and descriptions.

	Assessment-related considerations	Population dynamics considerations	Environmental/ecosystem considerations	Fishery Performance
Level 1: Normal	Typical to moderately increased uncertainty/minor unresolved issues in assessment.	Stock trends are typical for the stock; recent recruitment is within normal range.	No apparent environmental/ecosystem concerns	No apparent fishery/resource-use performance and/or behavior concerns
Level 2: Substantially increased concerns	Substantially increased assessment uncertainty/ unresolved issues.	Stock trends are unusual; abundance increasing or decreasing faster than has been seen recently, or recruitment pattern is atypical.	Some indicators showing adverse signals relevant to the stock but the pattern is not consistent across all indicators.	Some indicators showing adverse signals but the pattern is not consistent across all indicators
Level 3: Major Concern	Major problems with the stock assessment; very poor fits to data; high level of uncertainty; strong retrospective bias.	Stock trends are highly unusual; very rapid changes in stock abundance, or highly atypical recruitment patterns.	Multiple indicators showing consistent adverse signals a) across the same trophic level as the stock, and/or b) up or down trophic levels (i.e., predators and prey of the stock)	Multiple indicators showing consistent adverse signals a) across different sectors, and/or b) different gear types
Level 4: Extreme concern	Severe problems with the stock assessment; severe retrospective bias. Assessment considered unreliable.	Stock trends are unprecedented; More rapid changes in stock abundance than have ever been seen previously, or a very long stretch of poor recruitment compared to previous patterns.	Extreme anomalies in multiple ecosystem indicators that are highly likely to impact the stock; Potential for cascading effects on other ecosystem components	Extreme anomalies in multiple performance indicators that are highly likely to impact the stock

Table 2. 2019 summary of risk table outcomes

Stock	Assessment-related	Population Dynamics	Environment /Ecosystem	Fishery Performance	Overall	Proposed Reduction
Sablefish	2	3	2	3	3	0.57
EBS Pollock	1	2	2	2	2	0.43
GOA Pollock	2	1	1	1	2	0.10
EBS Pacific Cod	1	1	2	1	2	*
AI Pacific Cod	1	1	2	1	2	*
GOA Pacific Cod	2	2	2	1	2	*
BSAI Northern Rockfish	2	1	2	1	2	0
GOA POP	2	2	1	1	2	0
GOA Arrowtooth	1	1	2	1	2	0
BSAI Yellowfin Sole	1	1	1	1	1	0
BSAI Alaska Plaice	1	1	1	1	1	0
BSAI Atka Mackerel	1	1	1	1	1	0
GOA RE/BS	1	1	1	1	1	0
GOA Other Rockfish	1	1	1	1	1	0
GOA Shortraker	1	1	1	1	1	0
GOA Atka Mackerel	1	Unknown	1	1	1	0
GOA Octopus	1	1	1	1	1	0
GOA Skate	1	1	1	1	1	0

Table 3. 2019-2020 Risk scores and proposed reductions.

Stock	Assessment related		Population Dynamics		Environment Ecosystem		Fishery Performance		Proposed Reduction	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Sablefish	2	3	3	3	2	2	3	3	57%	57%
EBS pollock	1	1	2	1	2	2	2	2	43%	30%
Bogoslof pollock		1		1		1		1		0%
AI pollock		1		1		1		1		0%
EBS Pacific Cod	1	1	1	1	2	2	1	1	*	0%
AI Pacific cod	1	1	1	1	2	2	1	1	*	0%
BSAI Yellowfin sole	1	1	1	1	1	1	1	1	0%	0%
BSAI Alaska Plaice	1		1		1		1		0%	
BSAI Greenlnd turb.		1		1		2		1		0%
BSAI Arrowtooth		1		1		1		1		0%
BSAI Kamchatka		1		1		1		1		0%
BSAI Northrn rock sole		2		1		1		1		0%
BSAI Flathead		1		1		1		1		0%
BSAI Other Flatfish		1		1		1		1		0%
BSAI POP		2		1		1		1		0%
BSAI Blackspotted/RE		3		2		1		2		0%
BSAI Northrn Rockfish	2		1		2		1		0%	
BSAI Shortraker		1		1		1		1		0%
BSAI Other Rockfish		2		1		1		1		0%
BSAI Atka Mackerel	1	1	1	1	1	1	1	1	0%	
BSAI Skates		1		1		1		1		0%
BSAI Sharks		2		2		1		1		0%
BSAI Octopus		1		1		1		1		0%
GOA pollock	2	1	1	1	1	1	1	1	10%	0%
GOA Pacific cod	2	2	2	2	2	1	1	1	*	0%
GOA Nrthrn Rckfish		1		1		1		1		0%
GOA Arrowtooth	1		1		2		1		0%	
GOA Deepwtr Flat	2		1		1		1		0%	
GOA POP	2	2	2	2	1	1	1	1	0%	0%
GOA Northrn Rockfish		1		1		1		1		0%
GOA Dusky Rockfish		2		1		1		1		0%
GOA Rougheye/BS	1		1		1		1		0%	
GOA Thornyheads		1		1		1		1		0%
GOA Other Rockfish	1		1		1		1		0%	
GOA Shortraker	1		1		1		1		0%	
GOA Atka Mackerel	1		Unknown		1		1		0%	
GOA Skate	1		1		1		1		0%	
GOA Sharks		2		2		1		1		0%
GOA Octopus	1		1		1		1		0%	