

INTERNATIONAL PACIFIC



HALIBUT COMMISSION

# MSE Management Procedures and Milestones

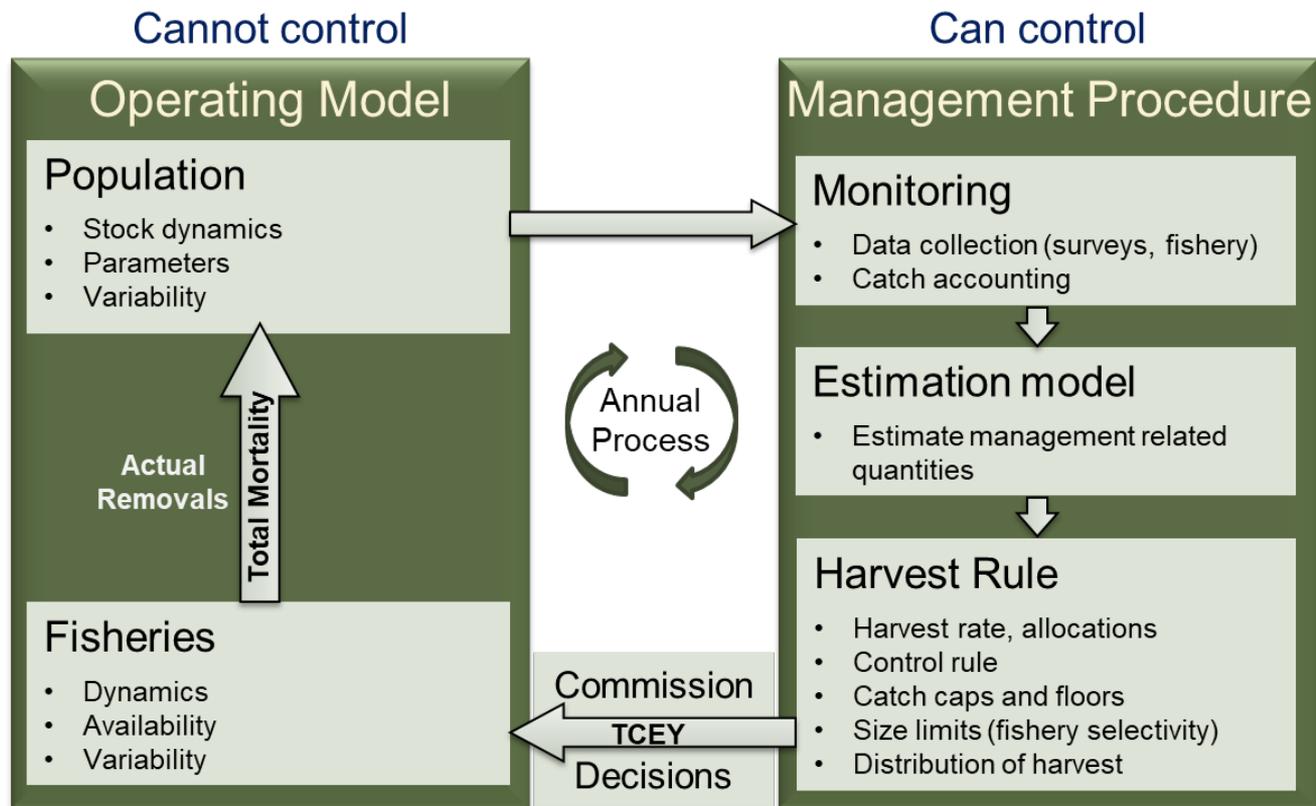
Agenda Item 4

IPHC-2022-SS012-04

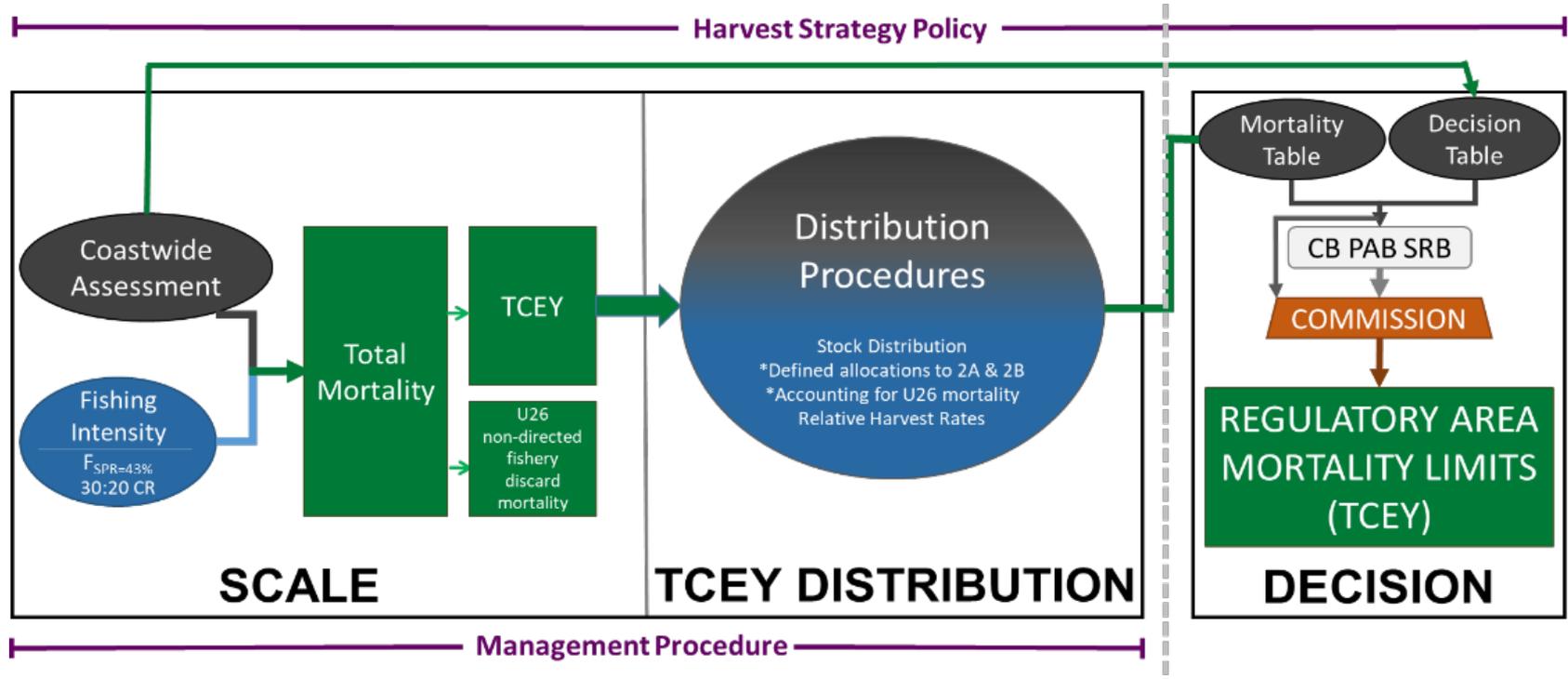
(A. Hicks & I. Stewart)



# MSE framework



# Current Interim Harvest Strategy Policy



# Management Procedures evaluated for AM097

Element	MP-A	MP-B	MP-C	MP-D	MP-E	MP-F	MP-G	MP-H	MP-I	MP-J	MP-K
TCEY constraint of 15%		Blue									
Max Fishing Intensity buffer 36%				Blue							
O32 stock distribution	Yellow										
O32 stock distribution (5-year moving average)										Yellow	
All sizes stock distribution									Yellow		
Fixed shares updated in 5th year from O32 stock distribution											Yellow
Relative harvest rates of 1.0 for 2-3A, and 0.75 for 3B-4	Red	Red		Red	Red	Red	Red		Red	Red	
Relative harvest rates of 1.0 for 2-3, 4A, 4CDE, and 0.75 for 4B								Red			
Relative harvest rates by Region: R2=1, R3=1, R4=0.75, R4B=0.75			Red								
1.65 Mlbs fixed TCEY in 2A	Dark Green										
Formula percentage for 2B	Dark Green										
National Shares (2B=20%)						Dark Green					



# MSE Program of Work 2021-2023

[IPHC-2021-MSE-02](#)

ID	Category	Task	Deliverable
F.1	Framework	Develop migration scenarios	Develop OMs with alternative migration scenarios
F.2	Framework	Implementation variability	Incorporate additional sources of implementation variability in the framework
F.3	Framework	Develop more realistic simulations of estimation error	Improve the estimation model to more adequately mimic the ensemble stock assessment
F.5	Framework	Develop alternative OMs	Code alternative OMs in addition to the one already under evaluation.
M.1	<b>MPs</b>	Size limits	Identification, evaluation of size limits
M.3	<b>MPs</b>	Multi-year assessments	Evaluation of multi-year assessments
E.3	Evaluation	Presentation of results	Develop methods and outputs that are useful for presenting outcomes to stakeholders and Commissioners

# Size limits

- Investigate various size limits
  - **No size limit** and **current size limit**
    - These are easy with minimal modifications to MSE framework
  - **26 inch size limit**
    - Will require modifications to MSE framework
    - May not be much different than no size limit
      - Directed commercial catch is less than 2% U26
- Useful objectives
  - Primary objectives
  - Fishery objectives related to efficiency
  - Consider value of the fishery and how markets may react



# Multi-year stock assessment

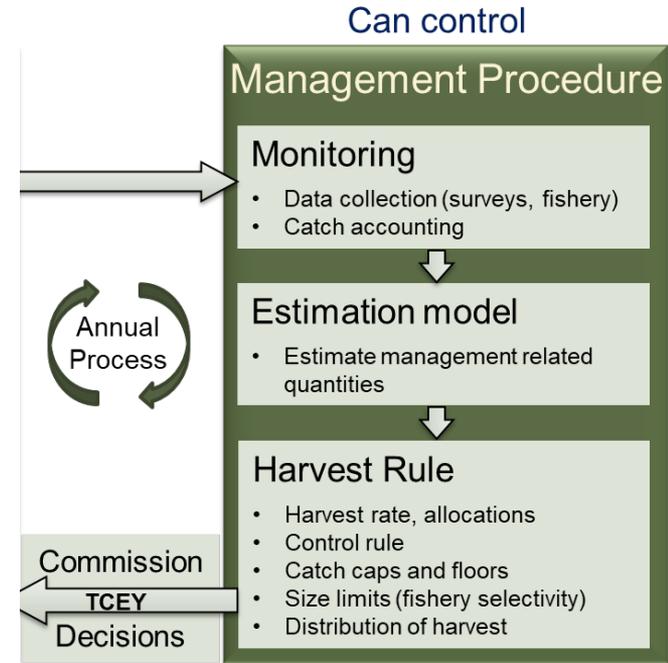
- MPs with stock assessment not conducted annually
  - FISS would remain as is
    - an annual survey
- Objectives to consider
  - Primary objectives
  - What fishery stability means
  - Importance of transparency
  - Other benefits to stock assessment, research, and management

Freq	Non-assessment years
Biennial	Constant
	Empirical coastwide TCEY with no change to distribution proportions
	Empirical coastwide TCEY, updated distribution with distribution procedure*
	<i>Empirical rule in each IPHC Regulatory Area</i>
Triennial	Constant
	<i>Empirical coastwide TCEY with no change to distribution proportions</i>
	<i>Empirical coastwide TCEY updated distribution with distribution procedure</i>
	<i>IPHC Regulatory Area empirical rule</i>



# Distribution Procedures

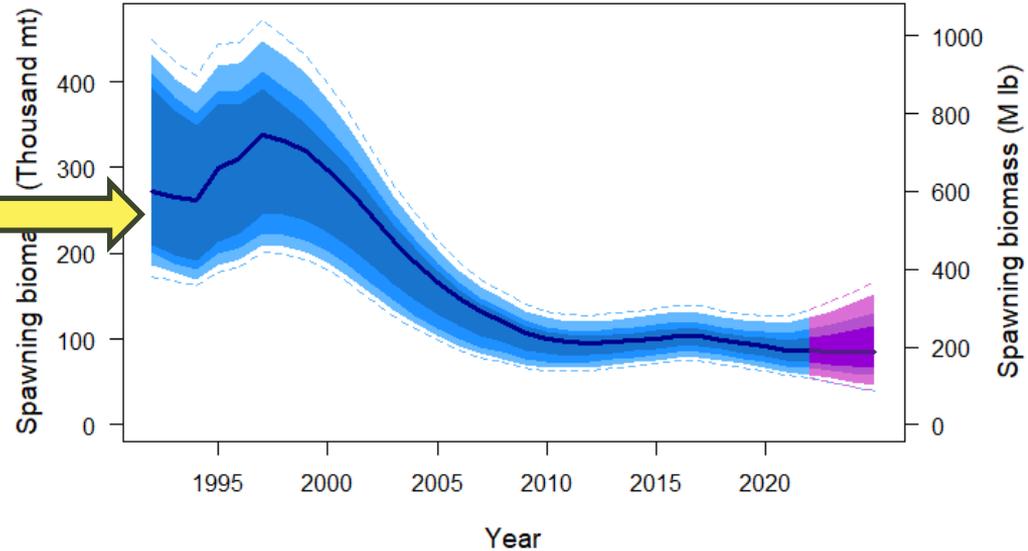
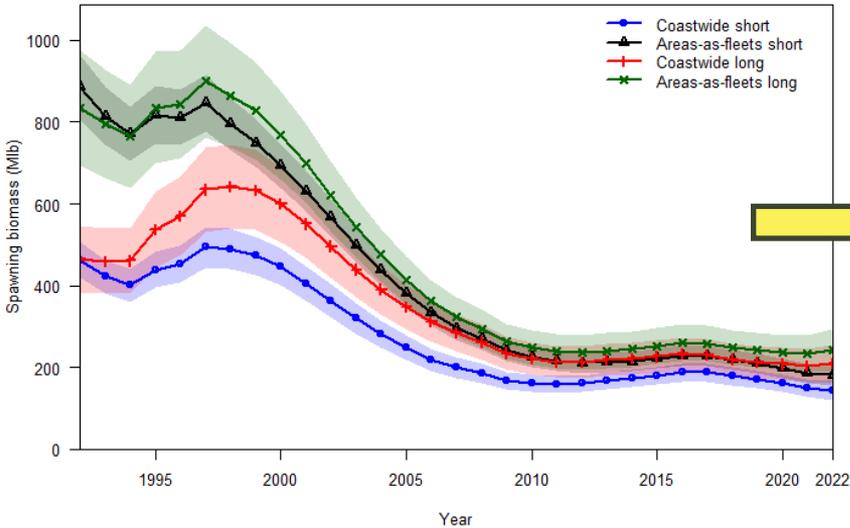
- The entire MP must be implemented to investigate these elements of the MP
- Distribution of the TCEY may have an influence on outcomes
- Can integrate over distribution procedures to capture the possible future methods



# Integration

Combining multiple scenarios into one summarized output

For example, the ensemble integrates the four models into one output



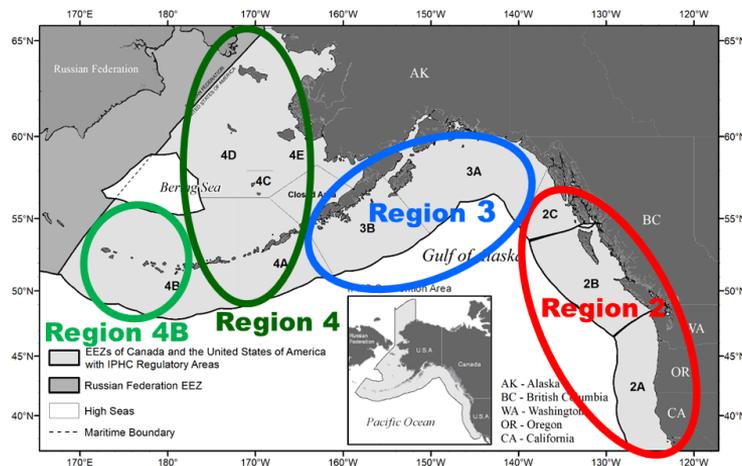
# Distribution procedures: Reg Area

	Stock distribution Relative harvest rates	Years in stock distribution	2A & 2B Agreements	Elements from
<b>1a</b>	Baseline O32	Recent year	None	MP-G
<b>1b</b>	Baseline O32	Recent year	Interim	MP-A
<b>1c</b>	Baseline All Sizes	Recent year	None	MP-G, MP-I
<b>1d</b>	Baseline All Sizes	Recent year	Interim	MP-A, MP-I
<b>1e</b>	Baseline O32	5-year moving average	None	MP-J
<b>1f</b>	Baseline O32	5-year moving average	Interim	MP-B, MP-J
<b>1g</b>	Baseline All Sizes	5-year moving average	None	MP-I, MP-J
<b>1h</b>	Baseline All Sizes	5-year moving average	Interim	MP-A, MP-I, MP-J
<b>1i</b>	Baseline O32 for AK	Recent year	2A 1.65, 2B 20%	MP-A, MP-F
<b>1j</b>	Baseline O32 for AK	5-year moving average	2A 1.65, 2B 20%	MP-A, MP-F, MP-J
<b>1k</b>	Baseline All Sizes for AK	Recent year	2A 1.65, 2B 20%	MP-A, MP-F, MP-I
<b>1l</b>	Baseline All Sizes for AK	5-year moving average	2A 1.65, 2B 20%	MP-A, MP-F, MP-I, MP-J
<b>2</b>	Regulatory Area Fixed	NA	Possible	



# Distribution procedures: Biological Region

	Stock distribution Relative harvest rates	Years in stock distribution	2A & 2B Agreements	Elements from
3a	Regional O32	Recent year	None	MP-C, MP-G
3b	Regional All Sizes	Recent year	None	MP-C, MP-G, MP-I
3c	Regional O32	5-year moving average	None	MP-C, MP-G, MP-J
3d	Regional All Sizes	5-year moving average	None	MP-C, MP-G, MP-I, MP-J
4	Regional Fixed	NA	Implied	



# Average adopted TCEY distribution

Year	2A	2B	2C	3A	3B	4A	4CDE	4B
2020- 2022	4.3%	18.3%	15.1%	34.8%	8.7%	5.0%	10.3%	3.6%
	37.6%			43.5%		15.3%		3.6%
2019- 2022	4.3%	18.7%	15.4%	34.9%	8.4%	5.0%	10.3%	3.6%
	37.8%			43.2%		15.3%		3.6%
2014- 2017	3.1%	20.5%	16.1%	32.4%	9.5%	4.6%	10.1%	3.7%
	39.7%			41.9%		14.7%		3.7%



# Distribution procedures: Reg Area

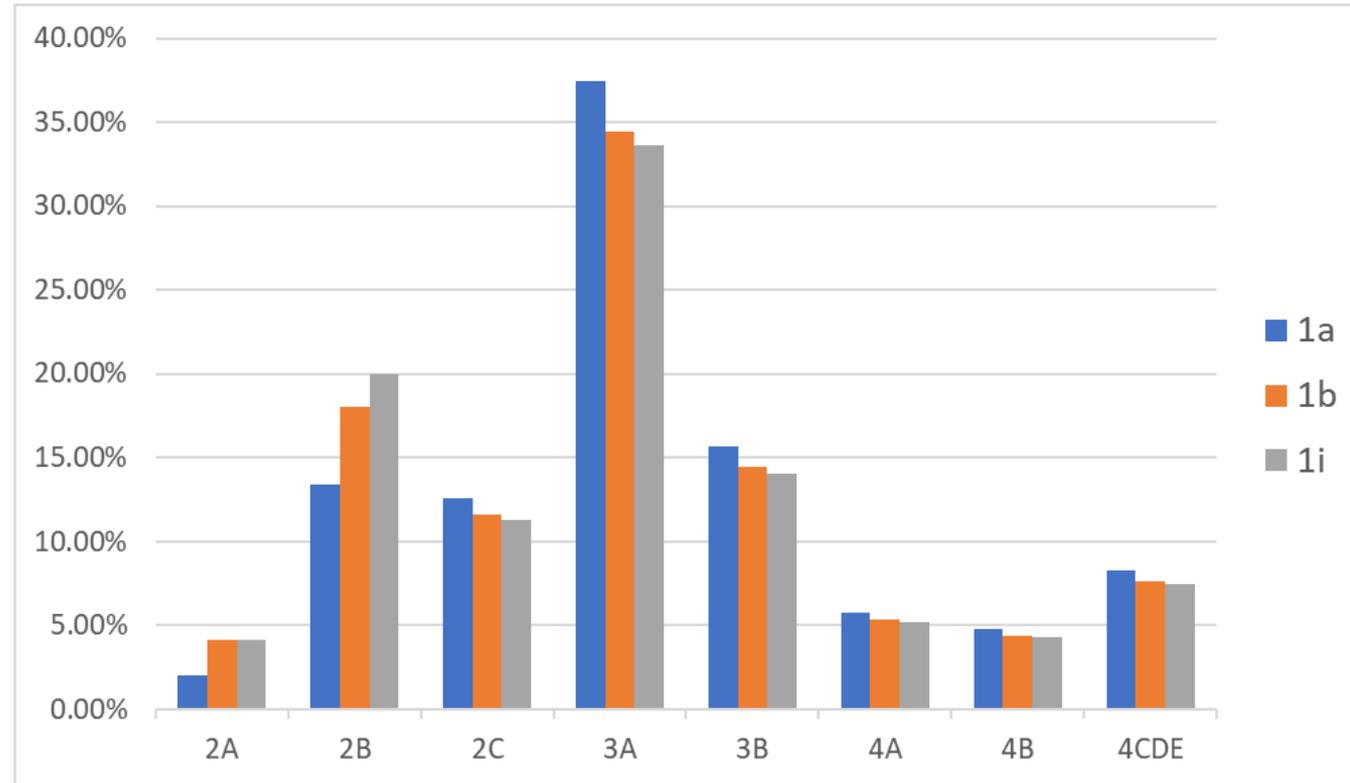
	Stock distribution Relative harvest rates	Years in stock distribution	2A & 2B Agreements	Elements from
<b>1a</b>	Baseline O32	Recent year	None	MP-G
<b>1b</b>	Baseline O32	Recent year	Interim	MP-A
<b>1c</b>	Baseline All Sizes	Recent year	None	MP-G, MP-I
<b>1d</b>	Baseline All Sizes	Recent year	Interim	MP-A, MP-I
<b>1e</b>	Baseline O32	5-year moving average	None	MP-J
<b>1f</b>	Baseline O32	5-year moving average	Interim	MP-B, MP-J
<b>1g</b>	Baseline All Sizes	5-year moving average	None	MP-I, MP-J
<b>1h</b>	Baseline All Sizes	5-year moving average	Interim	MP-A, MP-I, MP-J
<b>1i</b>	Baseline O32 for AK	Recent year	2A 1.65, 2B 20%	MP-A, MP-F
<b>1j</b>	Baseline O32 for AK	5-year moving average	2A 1.65, 2B 20%	MP-A, MP-F, MP-J
<b>1k</b>	Baseline All Sizes for AK	Recent year	2A 1.65, 2B 20%	MP-A, MP-F, MP-I
<b>1l</b>	Baseline All Sizes for AK	5-year moving average	2A 1.65, 2B 20%	MP-A, MP-F, MP-I, MP-J
<b>2</b>	Regulatory Area Fixed	NA	Possible	



# MP distributions (example)

2021 stock distribution

TCEY = 40 Mlbs



# Summary of MPs

## Size Limits

- None
- *26 inches*
- Current (32 inches)

## Multi-year assessments

- Biennial
  - Constant
  - Change coastwide TCEY
  - Change CW TCEY and distribution

## Distribution

- Integrate over multiple procedures



# Milestones in 2022

Jan	Feb- Apr	May	June	Jul- Aug	Sep	Oct	Nov
AM098		MSE Info Session	SRB020		SRB021	MSAB018	IM098
MSE PoW update		OMs MPs Presentation	Framework OMs MPs Presentation		Results Evaluation	Results Evaluation	Results Evaluation

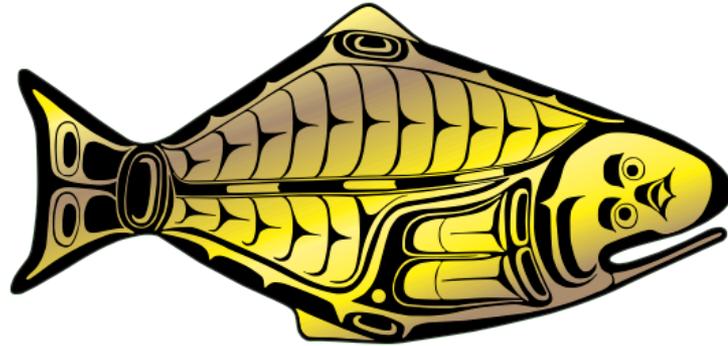


# Recommendations

- a) **NOTE** paper IPHC-2022-SS012-04
- b) **RECOMMEND** integrating the following distribution procedures into the MSE simulations investigating size limits and multi-year assessments, with implementation variability where applicable.
  - (1a) Baseline based on recent year O32 FISS results with no agreements for 2A and 2B,
  - (1b) Baseline based on recent year O32 FISS results with current interim agreements for 2A and 2B,
  - (1i) Baseline based on recent year O32 FISS results with 1.65 Mlbs to 2A and 20% national share of the coastwide TCEY to 2B.



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