INTERNATIONAL PACIFIC HALIBUT COMMISSION

IPHC
Harvest Strategy Policy

Agenda item: 6.1
(A. Hicks, I. Stewart, D. Wilson)

IPHC-2025-IM101-11a Rev_1

IPHC-2025-IM101-11b Rev_1

Rev_2

Purpose

1) Review updates and notable changes completed during 2025 to the draft Harvest Strategy Policy (HSP)

IPHC-2025-IM101-11b_Rev_1

2) Seek adoption of the IPHC Harvest Strategy Policy (HSP)

3) Outline future MSE work supporting the HSP

Harvest Strategy Policy (HSP) (2025 reviews and refinements)

What is a Harvest Strategy Policy?

A framework for making decisions to achieve conservation and fishery objectives

- 3 x workshops with the Commission
- 2 x reviews by the Management Strategy Advisory Board (MSAB)
  - MSAB021 (May 2025)
  - Informational session (October 2025)
- 2 x reviews by the Scientific Review Board (SRB)
  - SRB026 (June 2025)
  - SRB027 (September 2025)

Management Strategy Advisory Board (MSAB)

- May 2025 - MSAB021
  - Agreed to continue investigating an objective to stay above a minimum absolute spawning biomass
  - Recommended rewording of priority objectives

- October 2025 - MSAB Informational Session
  - Discussion of future investigations to define depleted and associated concepts
  - Ensure consistency and clarity in the description of overfishing
  - Clarifications to rebuilding sections in HSP

Scientific Review Board (SRB)

- June 2025 - SRB026
  - Recommended clearly defining Overfished and Depleted
  - Recommended adopting a depleted level below which recovery projections would be unreliable

- September 2025 - SRB027
  - Recommended that overfishing be tied to F_{MSY} proxy
  - Recommended specific descriptions of Overfished and Depleted

Harvest Strategy Policy

- Noteworthy improvements since AM101
  - Succinct language for three hierarchical priority objectives (page 10)
  - Provided paragraph on performance metrics (page 10)
  - Definition of overfishing supported by SRB (page 12)
  - Added in a description of *Depleted* (specific level to be determined in the future) (page 15)
  - Schedule of annual and triennial process (page 17)
  - Clarified a rebuilding plan (page 20)

Overfishing

Chapter 2, page 12

Implied **Median**
Would be useful to specify

Overfishing: when the annual fishing intensity is higher than the level required to sustain maximum sustainable yield (MSY). The MSY fishing intensity is currently $F_{SPR=35\%}$ based on current understanding of Pacific halibut population dynamics and fishery characteristics. The MSY fishing intensity may be revised as new information becomes available.

IPHC-2025-SRB027-R (para. 18) The SRB **RECOMMENDED** that the definition of "overfishing" be tied to the Fmsy proxy rather than a probability of becoming overfished or depleted. This is a standard definition of overfishing and distinguishes it from the state of being overfished/depleted

Harvest decision table from 2024 stock assessment

2026 Alternative			*Status quo -10%*	*Status quo -5%*	*Status quo*	*Status quo +5%*	*Status quo +10%*	$F_{46\%}$	*3-Year Surplus / $F_{43\%}$*	*MEY proxy*	*Overfishing limit*
Total mortality (M lb)	0.0	21.9	28.6	30.1	31.6	33.1	34.6	37.0	40.8	45.1	53.7
TCEY (M lb)	0.0	20.0	26.8	28.2	29.7	31.2	32.7	35.1	39.0	43.3	51.9
2026 fishing intensity	$F_{100\%}$	$F_{62\%}$	$F_{54\%}$	$F_{52\%}$	$F_{51\%}$	$F_{49\%}$	$F_{48\%}$	$F_{46\%}$	$F_{43\%}$	$F_{40\%}$	$F_{35\%}$
Fishing intensity interval	--	47-77%	39-71%	37-70%	36-69%	34-68%	33-67%	31-65%	28-62%	26-59%	22-54%

Median Fishing Intensity →

Overfishing →

Stock Trend (spawning biomass)	in 2027	is less than 2026	a
		is 5% less than 2026	b
	in 2028	is less than 2026	c
		is 5% less than 2026	d
	in 2029	is less than 2026	e
		is 5% less than 2026	f
Stock Status (Spawning biomass)	in 2027	is less than 30%	g
		is less than 20%	h
	in 2028	is less than 30%	i
		is less than 20%	j
	in 2029	is less than 30%	k
		is less than 20%	l
Fishery Trend (TCEY)	in 2027	is less than 2026	m
		is 10% less than 2026	n
	in 2028	is less than 2026	o
		is 10% less than 2026	p
	in 2029	is less than 2026	q
		is 10% less than 2026	r
Fishery Status (Fishing intensity)	in 2026	is above $F_{43\%}$	s

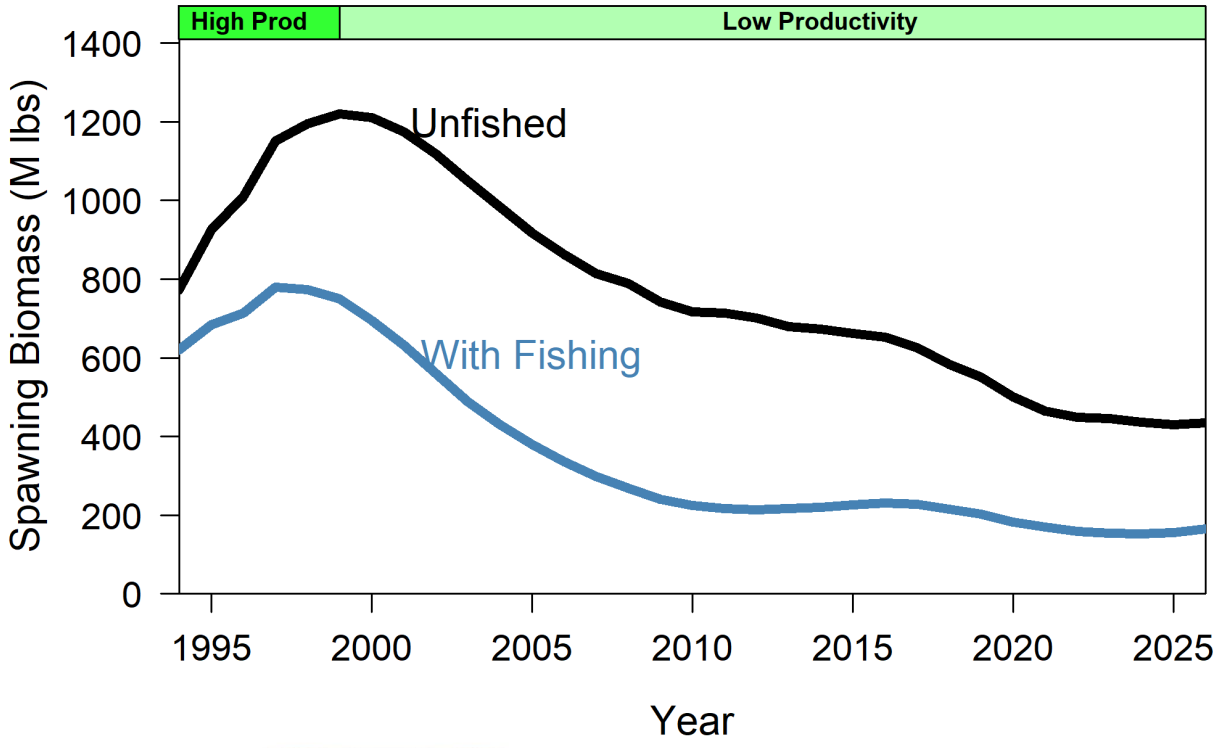
Estimated Risks

Defining a depleted state

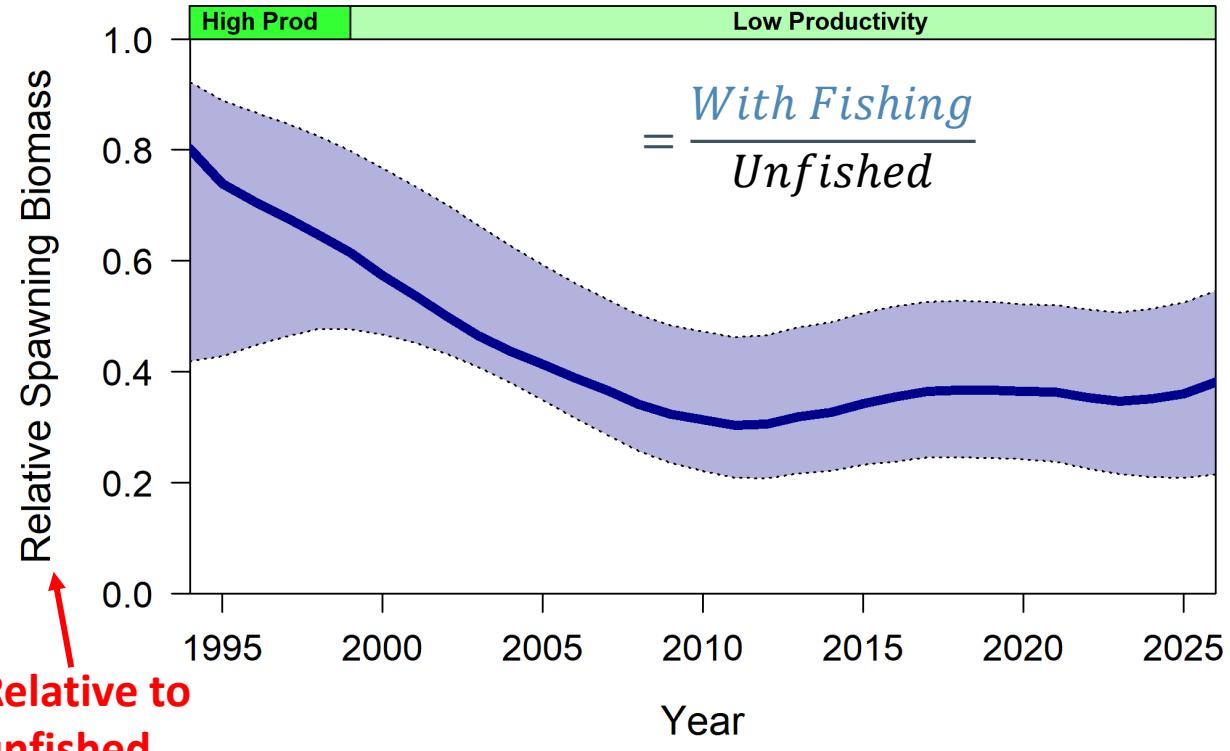
IPHC-2025-SRB026-R, para. 31. The SRB **RECOMMENDED** that the Secretariat/Commission adopt an absolute biomass limit defining "Depleted" to avoid low biomass levels where stock dynamics are poorly understood such that recovery projections would be unreliable

Comparing Overfished and Depleted

Absolute Spawning Biomass



Relative Spawning Biomass

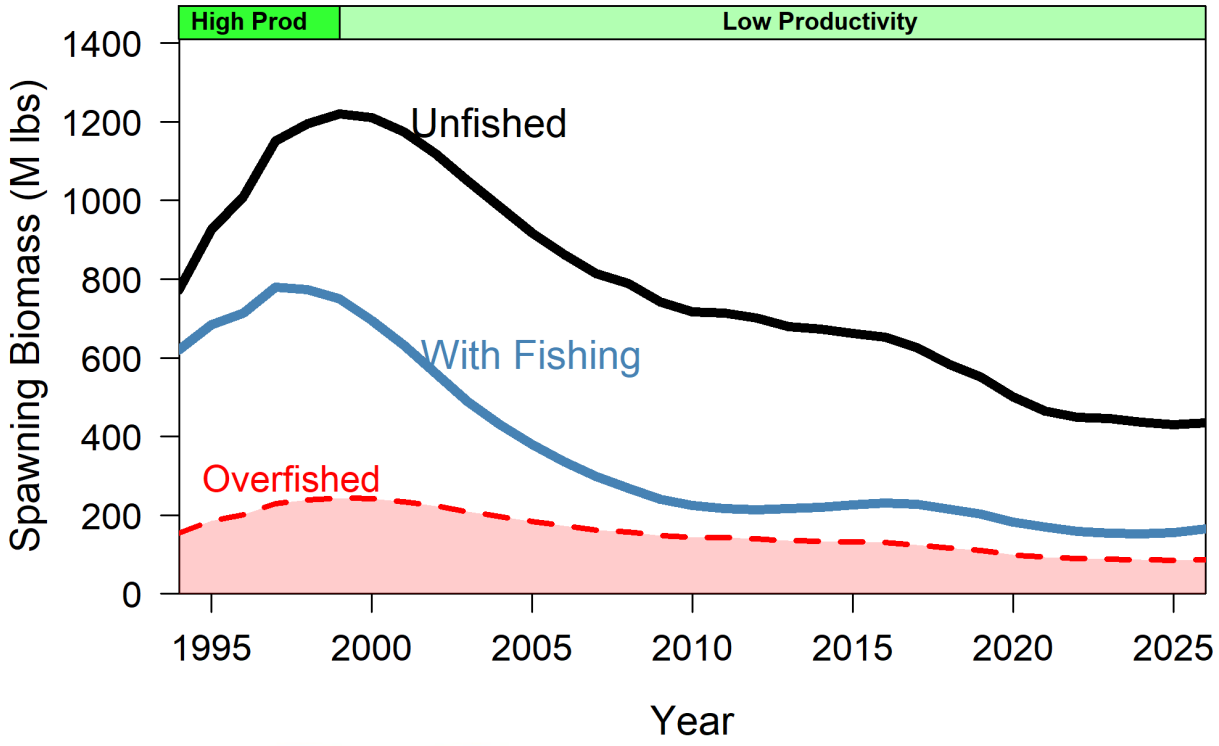


Relative to unfished

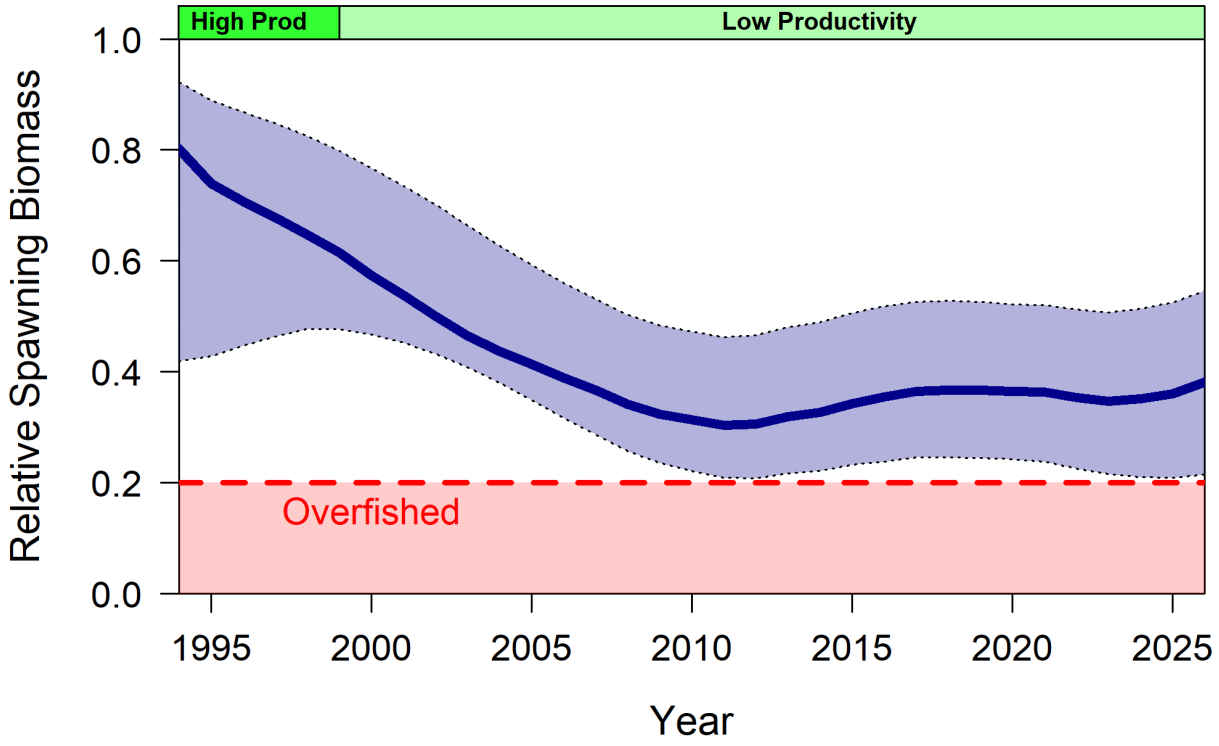
Comparing Overfished and Depleted

- Overfished is a percentage of the dynamic unfished spawning biomass
  - 20% of unfished spawning biomass

Absolute Spawning Biomass



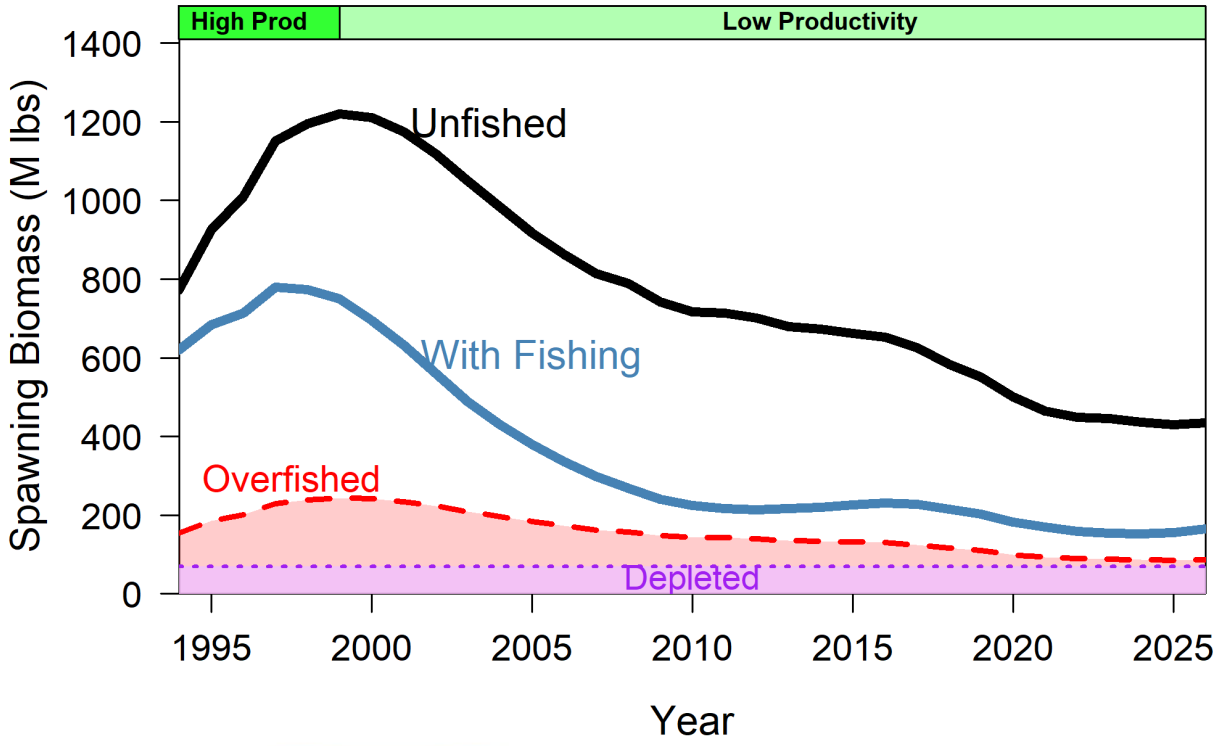
Relative Spawning Biomass



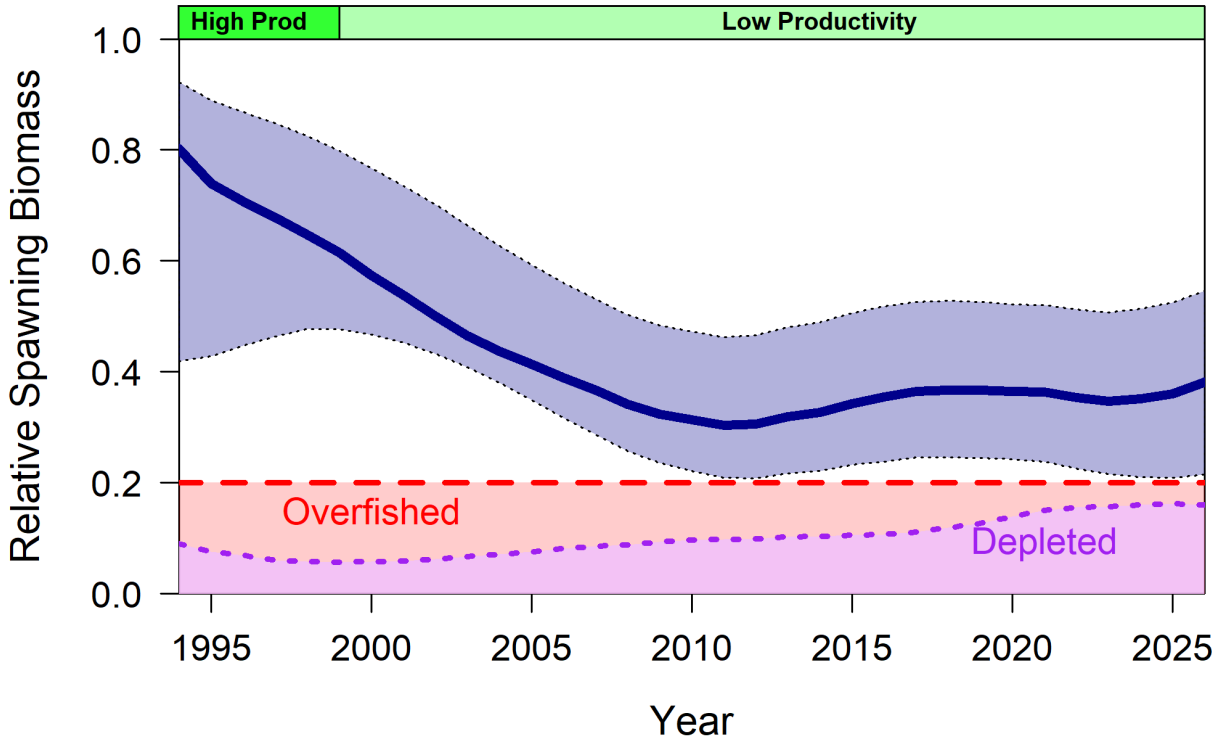
Comparing Overfished and Depleted

- Overfished is a percentage of the dynamic unfished spawning biomass
- Depleted is a constant absolute spawning biomass

Absolute Spawning Biomass



Relative Spawning Biomass



Reference points: Overfished limit & Depleted

Chapter 3, page 15

Overfished is a relative limit reference point defining an unacceptably low ratio of spawning biomass to dynamic unfished spawning biomass that results from fishing alone rather than the combined effects of fishing and the environment. […] Therefore, an overfished state may be fully mitigated by management actions.

Depleted is an absolute limit reference point defined by a spawning biomass below which the potential for recovery is uncertain. Natural variability affects stock size resulting in fluctuations of the spawning biomass, which along with fishing, may result in a '*depleted*' stock where reductions in fishing mortality may not lead to recovery without a change in the environmental conditions affecting the stock. Therefore, a depleted state may be only partially mitigated by management actions.[1]

[1]The concept of depleted has been added to the Harvest Strategy Policy to recognize it as important while research continues to identify an appropriate threshold and develop management procedures for when the stock approaches or surpasses a depleted state. This research will be considered when updating the HSP following the schedule in Table 2

Reference Fishing Intensity

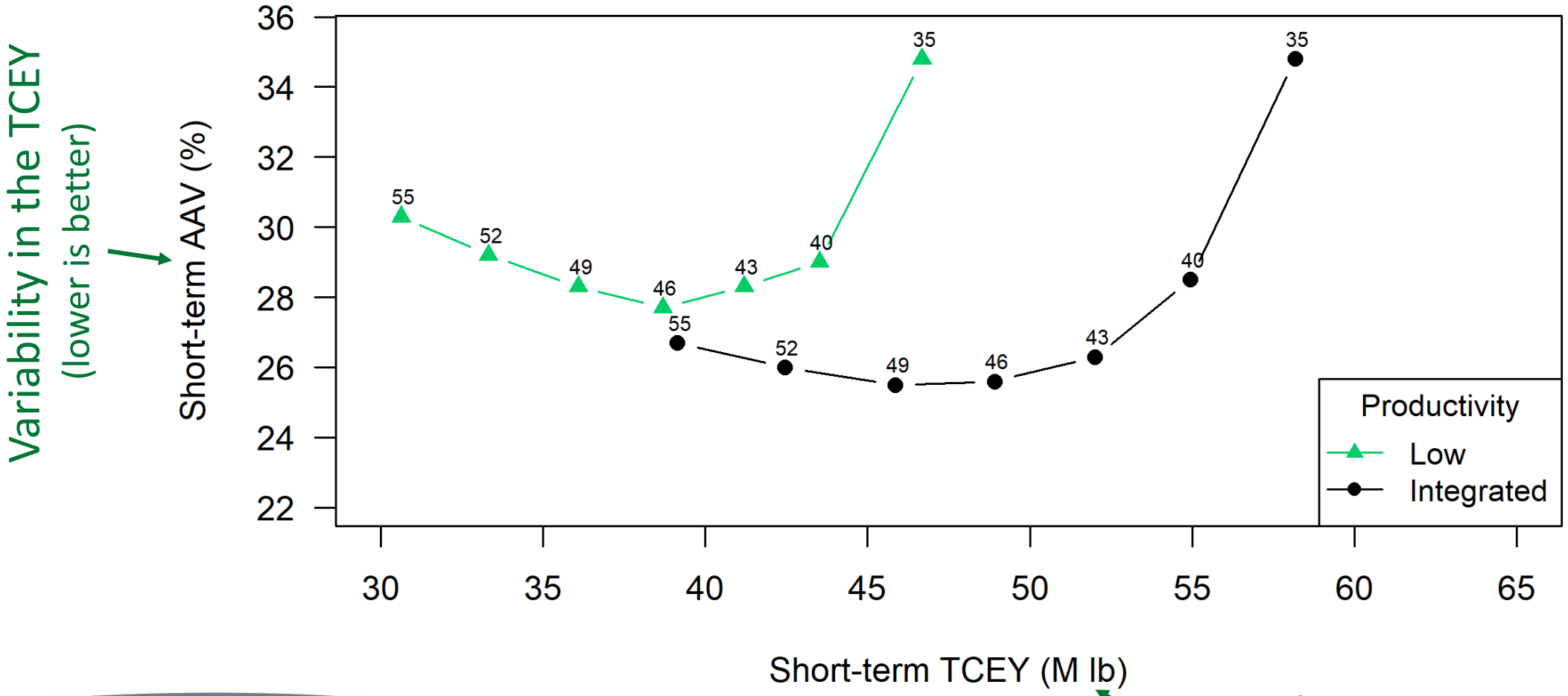
Chapter 4, pages 18-19

- Draft HSP specifies SPR=43%
- MSAB020 recommended SPR=46%
  - “A lower fishing intensity would also reduce the probability that the spawning biomass is less than the 2023 spawning biomass in the short- and long-term, and result in lower interannual variability”
- Recent mortality limits associated with SPRs near 51%.
- Commission expressed interest in learning more about MSE outcomes assuming a “low” productivity scenario

- As with the Overfished and Depleted concepts, the reference SPR can be updated after adoption of the Harvest Strategy Policy

Trade-off between variability in TCEY and TCEY

- The productivity regime has little effect on the optimal SPR



Next steps

- Adopt the IPHC Harvest Strategy Policy at IM101
  - With any final edits

- At AM102, consider next steps
  - Note any items to be examined/considered in 2026
  - Schedule the first review and update
  - MSE program of future work

Recommendations

That the Commission:

1) **NOTE** paper IPHC-2025-IM101-11a Rev_1 that provides an updated draft interim Harvest Strategy Policy and a description of how productivity regimes affect the optimal fishing intensity.
2) **ADOPT** the IPHC Harvest Strategy Policy (IPHC-2025-IM101-11b Rev_1), noting that updates to the reference fishing intensity and the definition of depleted may occur in 2026 following further work by the Secretariat.

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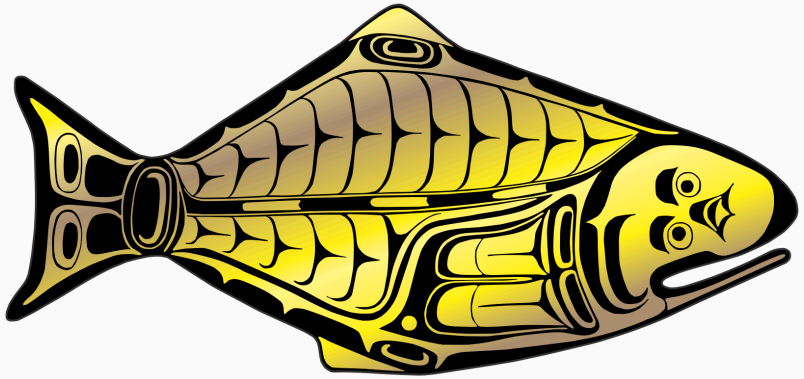

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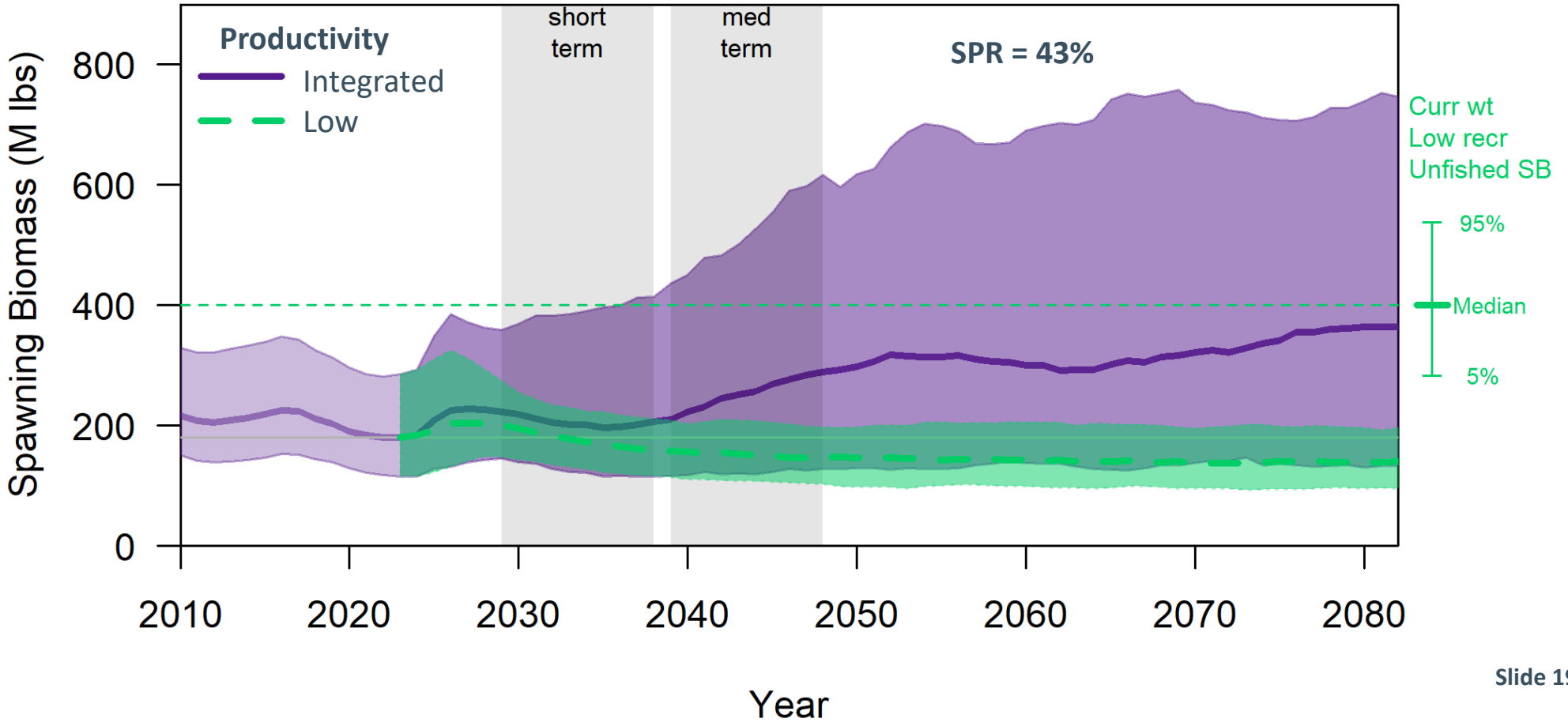
Projection Plots: Spawning Biomass

MSAB Informational Session: trace plots are useful for visualizing short- and long-term spawning biomass projections at given SPR values, along with trade-off plots that compare AAV and TCEY values at differing spawning biomass levels. The MSAB thinks that these will be useful to the Commission decision-making process, but suggests that the Commission be given an example and notified that additional plots at differing SPR levels can be produced as requested.



MSE Results

- Low Productivity
  - Lower TCEYs
    - 9-12 Mlbs lower
  - Higher variability
  - Greater chance of lower RSB
  - Greater chance of lower absolute SB

Integrated (low & high) Productivity							
SPR (%)	35	40	43	46	49	52	55
P(RSB<20%)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
P(RSB<36%)	0.692	0.372	0.195	0.066	0.014	0.001	<0.001
Median TCEY	58.2	55.0	52.0	48.9	45.9	42.5	39.1
AAV	34.8%	28.5%	26.3%	25.6%	25.5%	26.0%	26.7%
Short-term P(SB < SB_{2023})	0.482	0.401	~ 1 in 3 chance		0.254	0.214	0.179

Low Productivity							
SPR (%)	35	40	43	46	49	52	55
P(RSB<20%)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
P(RSB<36%)	0.868	0.677	0.462	0.236	0.081	0.016	<0.001
Median TCEY	46.7	43.5	41.2	38.7	36.1	33.3	30.6
AAV	34.8%	29.0%	28.3%	27.7%	28.3%	29.2%	30.3%
Short-term P(SB < SB_{2023})	0.690	0.609	~ 1 in 2 chance		0.390	0.312	0.241