TO: Pacific Salmon Commission
FROM: Chinook Technical Committee
DATE: March 28, 2024
SUBJECT: AABM Fisheries Pre-season Abundance Indices for 2024 and Post-season Abundance Indices for 2023

The Chinook Technical Committee (CTC) is providing to the Commission the results of completed calibration CLB2403 of the Pacific Salmon Commission (PSC) Chinook Model for 2024. The calibration provides the 2024 pre-season Abundance Indices (AIs) for determining the annual catch limits (ACLs) for the Southeast Alaska Cape Suckling to Dixon Entrance sport, net and troll (SEAK), the Northern British Columbia troll and Haida Gwaii sport (NBC), and the West Coast Vancouver Island troll and outside sport (WCVI) Aggregate Abundance-Based Management (AABM) fisheries. The calibration also provides the AIs required for determining the 2023 post-season ACLs for all three AABM fisheries: SEAK, NBC and WCVI.

The PSC adopted a new multivariate model (Equation 1) in conjunction with 17 tiers (Appendix Table A.1) on February 16, 2023 to determine the pre-season ACL for the SEAK AABM fishery in 2023. This multivariate model utilizes the PSC Chinook Model pre-season AI (Pre AI), the catch per unit effort from the early winter power troll fishery in district 113 of Southeast Alaska for stat weeks 41–48 (CPUE), and the one-year-ahead projected AI from the prior year's PSC Chinook Model calibration (Projection).

$$Post\ AI = \beta_0 + \beta_1 Pre\ AI + \beta_2 \ln(CPUE) + \beta_3 Projection$$

Equation 1

The PSC did not reach agreement on an alternative methodology for setting the SEAK AABM catch limit for 2024; therefore, per Chapter 3, subparagraph 7(e), the PSC Chinook Model estimate of the AI and Table 1 in Chapter 3 of the 2019 Pacific Salmon Treaty (PST) Agreement shall be used to determine the annual pre-season and post-season catch limits moving forward.

Please note the following:

1. The 2023 pre-season ACL for the SEAK AABM fishery was determined from Appendix Table A.1 based on the results of the multivariate model (Equation 1).
2. The 2023 pre-season ACLs for the NBC and WCVI fisheries were determined from Table 1 in Chapter 3 of the 2019 PST Agreement based on the 2023 pre-season AIs generated by CLB2304 of the PSC Chinook Model.

3. The 2024 pre-season ACLs for the SEAK, NBC, and WCVI AABM fisheries were determined from Table 1 in Chapter 3 of the 2019 PST Agreement based on the 2024 pre-season AIs generated by CLB2403 of the PSC Chinook Model.

The 2024 pre-season AIs and the associated ACLs for each of the AABM fisheries are shown in Table A. The 2023 post-season AIs along with observed catches, pre-season AIs and associated ACLs for each of the AABM fisheries are shown in Table B.

Table A. The 2024 SEAK, NBC and WCVI pre-season AIs calculated using the PSC Chinook Model, as well as associated ACLs for the 2024 AABM fisheries.

	SEAK	NBC	WCVI
Abundance Index	1.44	1.48	0.92
Annual Catch Limit	211,400	179,400	105,000

Table B. Pre-season AIs, observed catches, post-season AIs, and associated ACLs for the 2023 AABM fisheries.

Pre-season			
	SEAK	NBC	WCVI
Abundance Index	1.42 (multivariate model)[1]	1.16	1.02
Annual Catch Limit	206,027 (Tier 9, Appendix Table A.1)	141,700	115,500
Actual			
Observed Catch	202,740	78,254	83,596
Post-Season			
Abundance Index	1.69	1.73	1.02
Annual Catch Limit	267,600[2]	229,000	115,500

[1] The CLB2304 2023 pre-season AI for SEAK was 1.15, which would yield a non-tiered ACL of 144,200 if the PSC Chinook Model was being used.

[2] The 2023 post-season ACL for SEAK was based on the 17-tier table in the Appendix (Table A.1).

APPENDIX

Appendix Table A.1. The 17 tiers used to determine the SEAK AABM fishery ACL in 2023.

Tier	Abundance Index Range	AI Midpoint	Catch Limits
1	Less than 0.895	NA	Commission Determination
2	Between 0.895 and 0.945	0.920	107,498
3	Between 0.945 and 0.985	0.965	111,888
4	Between 0.985 and 1.035	1.010	116,278
5	Between 1.035 and 1.105	1.070	127,130
6	Between 1.105 and 1.175	1.140	142,101
7	Between 1.175 and 1.245	1.210	157,072
8	Between 1.245 and 1.345	1.295	191,963
9	Between 1.345 and 1.455	1.400	206,027
10	Between 1.455 and 1.555	1.505	220,091
11	Between 1.555 and 1.665	1.610	252,358
12	Between 1.665 and 1.765	1.715	267,594
13	Between 1.765 and 1.875	1.820	282,830
14	Between 1.875 and 2.015	1.945	314,799
15	Between 2.015 and 2.145	2.080	335,288
16	Between 2.145 and 2.285	2.215	355,778
17	Greater than 2.285	2.285	373,801

cc John Field
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