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SCIENTIFIC AND STATISTICAL COMMITTEE
DRAFT REPORT TO THE
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
December 2nd – 3rd, 2025

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The SSC met from December 2nd – 3rd, 2025 in Anchorage, AK. Members present in Anchorage were:

Sherri Dressel, Co-Chair
Alaska Dept. of Fish and Game

Jason Gasper – Co-chair
NOAA Fisheries—AKRO

Ian Stewart – Co-Chair
Intl. Pacific Halibut Commission

Alison Whitman, Vice Chair
Oregon Dept. of Fish and Wildlife

Fabio Caltabellotta
Washington Dept. of Fish and Wildlife

Martin Dorn
University of Washington

Mike Downs
Wislow Research

Robert Foy
NOAA Fisheries—AFSC

Dana Hanselman
NOAA Fisheries—AFSC

Brad Harris
Alaska Pacific University

Kailin Kroetz
Arizona State University

Andrew Munro
Alaska Dept. of Fish and Game

Franz Mueter
University of Alaska Fairbanks

Chris Siddon
Alaska Dept. of Fish and Game

Patrick Sullivan
Cornell University

Robert Suryan
NOAA Fisheries—AFSC

SSC members that attended remotely:

Chris Anderson
University of Washington

Jennifer Burns
Texas Tech University

Curry Cunningham
University of Alaska Fairbanks

Sarah Wise
NOAA Fisheries—AFSC

SSC Administrative Discussion

The SSC received a presentation with general announcements from Diana Evans (NPFMC).

The SSC was informed that Robert Foy (NOAA-AFSC) would be providing an updated version of his delayed October 2025 presentation to the Council at this meeting. The SSC requests receiving a similar presentation in the near future.

Finally, the SSC celebrated outgoing members Patrick Sullivan and Mike Downs. Dr. Sullivan has been an SSC member since 2020 and came to the NPFMC after a long career at Cornell University. Dr. Sullivan has also served as a member and chair of the Northeast Fishery Management Council SSC and the chair of the Center for Independent Experts. Dr. Downs has been an SSC member since 2018, provided socioeconomic analyses to the NPFMC for 35 years, and has conducted similar work for other federal resource management agencies in Alaska since 1982. Dr. Downs has also worked with a number of other regional fishery management councils and NMFS regional offices. The SSC thanks Dr. Sullivan and Dr. Downs for their service on the SSC and wishes them well in their future endeavors.

C4 GOA/C5 BSAI Groundfish Harvest Specifications for 2026/2027

The SSC received a presentation from Sara Cleaver (NPFMC) and Diana Stram (NPFMC) on the materials provided by NPFMC staff to support setting harvest specifications for the 2025 assessment cycle and from Gretchen Harrington (NMFS-AKRO) on the regulatory overview for specifications. The SSC thanks NPFMC staff for their work to support this process in a timely manner. The SSC appreciates the succinct summary of recent stock trends, new survey results, catch statistics and other relevant new information to facilitate SSC review in the absence of new assessments.

The SSC received public testimony on C4 GOA/C5 BSAI groundfish harvest specifications and process. Written public comment was provided by Caitlin Yeager (At-sea Processors Association), Chad See and Jim Armstrong (Freezer Longline Coalition), Chris Woodley (Groundfish Forum), Andrea Keikkala (United Catcher Boats), Fred Yeck (C/V Seadawn), and Brenden Raymond-Yakoubian (Kawerak Inc.). Oral public testimony was provided by Kelly Drummond and Heather Bauscher (Skipper Science Partnership), Francis Thompson (Algaaciq Tribal Government), Glenn Merill (Glacier Fish Company and North Star Fishing Company), Chad See and Jim Armstrong (Freezer Longline Coalition), Caitlin Yeager and Austin Estabrooks (At-sea Processors Association), Paddy O'Donnell (self), Chris Woodley (Groundfish Forum) and Sarah Webster (Alaska Seafood Cooperative), Julie Bonney (Groundfish Data Bank), and Linda Behnken (Alaska Longline Fishermen's Association). Public testimony is summarized where applicable. The SSC thanks the members of the public who provided testimony.

Based on currently available catch estimates, no stocks were experiencing overfishing in 2024. No stocks with reliable biomass estimates were overfished or approaching overfished as of December 2024. Due to a lack of updated assessments, the overfished status cannot be assessed for 2025. The SSC reviewed harvest projections for the GOA deepwater flatfish complex (the only harvest projection brought forward this year) at their October 2025 meeting. Status determination recommendations made by the SSC are based on the best scientific information available and final status determination will be made by NMFS.

To streamline and simplify the SSC report, recommended ABCs, OFLs and area apportionments are summarized exclusively in Table 1 (BSAI) and Table 2 (GOA). In addition, **due to the lapse in federal appropriation, the SSC will consider Biologically-informed Recommended Distributions (BRD) during its 2026 assessment cycle**.

Table 1. SSC recommended proposed OFL and ABC for Groundfish in the Bering Sea and Aleutian Islands (metric tons) for 2026-2027.

Species	Area	2025			Catch through 11/8/25	2026		
		OFL	ABC	TAC		OFL	ABC	TAC
Pollock	BS	2,957,000	2,417,000	1,389,000	1,324,556	2,496,000	2,036,000	1,375,000
	AI	55,728	46,051	5,000	4,527	56,231	46,437	19,000
	Bogoslof	77,354	58,015	250	63	77,354	58,015	250
Pacific cod	BS	183,509	153,617	133,602	111,227	169,243	141,520	123,077
	AI	16,782	13,376	8,694	4,608	16,273	12,973	8,433
	BSAI/GOA	58,532	47,605	n/a	4,672	57,797	47,008	n/a
Sablefish	BS	n/a	13,203	8,496	3,751	n/a	13,037	8,996
	AI	n/a	11,566	7,940	921	n/a	11,421	7,440
Yellowfin sole	BSAI	299,247	262,557	135,000	80,971	305,039	267,639	145,000
Greenland turbot	BSAI	2,598	1,678	1,678	618	2,059	1,328	1,328
	BS	n/a	1,415	1,415	406	n/a	1,120	1,120
	AI	n/a	263	263	212	n/a	208	208
Arrowtooth flounder	BSAI	104,428	88,683	14,000	9,024	102,472	87,035	14,000
Kamchatka flounder	BSAI	8,019	6,800	6,800	5,038	7,790	6,606	6,606
Northern rock sole	BSAI	165,444	157,487	75,000	39,947	166,220	158,225	75,000
Flathead sole	BSAI	101,621	83,807	36,000	8,432	106,283	87,700	36,000
Alaska plaice	BSAI	34,576	28,745	15,903	6,947	33,965	28,230	16,200
Other flatfish	BSAI	26,083	19,562	4,500	5,353	26,083	19,562	4,500
Pacific Ocean perch	BSAI	44,594	37,375	33,458	31,652	43,084	36,578	33,490
	BS	n/a	10,121	10,121	9,483	n/a	9,905	9,905
	EAI	n/a	6,278	6,278	6,003	n/a	6,144	6,144
	CAI	n/a	5,559	5,559	4,803	n/a	5,441	5,441
	WAI	n/a	15,417	11,500	11,363	n/a	15,088	12,000
Northern rockfish	BSAI	22,848	18,694	12,000	8,014	22,284	18,232	12,000
Blackspotted/Rougheye Rockfish	BSAI	838	706	706	642	902	766	766
	BS/EAI	n/a	408	408	224	n/a	441	441
	CAI/WAI	n/a	298	298	418	n/a	325	325
Shortraker rockfish	BSAI	631	473	473	301	631	473	473
Other rockfish	BSAI	1,406	1,054	1,054	1,026	1,406	1,054	1,054
	BS	n/a	639	639	504	n/a	639	639
	AI	n/a	415	415	522	n/a	415	415
Atka mackerel	C	122,622	103,247	82,000	80,440	107,889	92,361	82,941
	BS/EAI	n/a	46,650	39,000	37,871	n/a	41,731	41,731
	CAI	n/a	26,511	24,443	24,121	n/a	23,716	23,716
	WAI	n/a	30,087	18,557	18,448	n/a	26,914	17,494
Skates	BSAI	44,086	36,523	27,646	19,503	43,285	35,833	27,646
Sharks	BSAI	689	450	400	197	689	450	400
Octopuses	BSAI	6,080	4,560	400	296	6,080	4,560	400
Total	BSAI	4,334,715	3,588,066	2,000,000	1,748,054	3,849,059	3,188,585	2,000,000

Sources: Sources: 2024 and 2025 Final BSAI Harvest Specifications (published March 2024, 2025 and 2026 Final BSAI Harvest Specifications (published March 2025); 2026-2027 Proposed BSAI Harvest Specifications (Council recommendations, October 2025); Catch Accounting System.

Note: BSAI catch (not AK wide catch) for sablefish included in total. ABCs are at the level of the stock or stock complex and shown in "Total" rows. Any quantities shown in "Area" rows are spatial apportionments of ABC and do not reflect ACLs. 2026 and 2027 quantities based on 2025-2026 Proposed BSAI Harvest Specifications (October 2025);2024 and 2025 OFLs, ABCs, and TACs are from harvest

Table 2: SSC recommended OFL and ABC for Groundfish in the Gulf of Alaska (metric tons) for 2026 and 2027.

Species	Area	2024			Catch through 12/31/2024	2025			Catch through 11/8/2025	2026		2027	
		OFL	ABC	TAC		OFL	ABC	TAC		OFL	ABC	OFL	ABC
Pollock	State GHL	n/a	4,769	n/a		n/a	4,526	n/a		n/a	3,326	n/a	3,326
	W (610)	n/a	38,882	38,882	31,585	n/a	37,344	37,344	14,029	n/a	27,453	n/a	27,453
	C (620)	n/a	90,937	90,937	71,727	n/a	82,265	82,265	79,477	n/a	60,477	n/a	60,477
	C (630)	n/a	50,587	50,587	20,717	n/a	51,605	51,605	39,046	n/a	37,936	n/a	37,936
	WYAK	n/a	5,565	5,565	1,382	n/a	5,282	5,282	1,861	n/a	3,883	n/a	3,883
	Subtotal	269,916	190,740	185,971	125,411	210,111	181,022	176,496	134,413	153,971	133,075	153,971	133,075
	SEO	12,998	9,749	9,749	-	12,998	9,749	9,749	2	12,998	9,749	12,998	9,749
	Total	282,914	200,489	195,720	125,411	223,109	190,771	186,245	134,415	166,969	142,824	166,969	142,824
Pacific Cod	W	n/a	8,745	6,121	4,476	n/a	8,710	6,097	5,340	n/a	8,182	n/a	8,182
	C	n/a	20,590	15,442	15,189	n/a	20,506	15,379	13,844	n/a	19,263	n/a	19,263
	E	n/a	2,937	2,203	365	n/a	2,925	2,194	532	n/a	2,748	n/a	2,748
	Total	38,712	32,272	23,766	20,030	38,688	32,141	23,670	19,716	36,459	30,193	36,459	30,193
Sablefish	W	n/a	4,699	4,699	2,777	n/a	4,996	4,746	3,117	n/a	4,687	n/a	4,687
	C	n/a	9,651	9,651	7,267	n/a	10,257	9,744	7,319	n/a	9,622	n/a	9,622
	WYAK	n/a	2,926	2,926	2,370	n/a	3,125	2,686	2,160	n/a	2,652	n/a	2,652
	SEO	n/a	5,320	5,320	4,542	n/a	5,660	5,660	4,826	n/a	5,589	n/a	5,589
	GOA Total	n/a	n/a	22,596	16,956	n/a	n/a	22,836	17,422	n/a	n/a	n/a	n/a
Alaska-wide OFL and ABC	AK Total	55,084	47,146	n/a		58,532	47,605	n/a		57,797	47,008	57,797	47,008
Shallow-Water Flatfish	W	n/a	23,337	13,250	64	n/a	23,755	13,250	107	n/a	23,902	n/a	23,902
	C	n/a	27,783	27,783	2,830	n/a	28,279	28,279	2,025	n/a	28,455	n/a	28,455
	WYAK	n/a	2,778	2,778	1	n/a	2,828	2,828	25	n/a	2,846	n/a	2,846
	SEO	n/a	1,667	1,667	1	n/a	1,697	1,697	-	n/a	1,707	n/a	1,707
	Total	68,121	55,565	45,478	2,896	69,277	56,559	46,054	2,157	69,610	56,910	69,610	56,910
Deep-Water Flatfish	W	n/a	237	237	8	n/a	234	234	1	n/a	231	n/a	227
	C	n/a	2,655	2,655	78	n/a	2,616	2,616	76	n/a	2,570	n/a	2,518
	WYAK	n/a	1,856	1,856	3	n/a	1,828	1,828	6	n/a	1,796	n/a	1,759
	SEO	n/a	2,314	2,314	2	n/a	2,280	2,280	4	n/a	2,239	n/a	2,193
	Total	8,387	7,062	7,062	91	8,263	6,958	6,958	87	8,118	6,836	7,954	6,697
Rex Sole	W	n/a	3,367	3,367	23	n/a	3,382	3,382	12	n/a	3,353	n/a	3,353
	C	n/a	13,639	13,639	539	n/a	13,698	13,698	555	n/a	13,582	n/a	13,582
	WYAK	n/a	1,453	1,453	1	n/a	1,436	1,436	-	n/a	1,413	n/a	1,413
	SEO	n/a	2,905	2,905	-	n/a	2,871	2,871	-	n/a	2,825	n/a	2,825
	Total	25,978	21,364	21,364	563	26,002	21,387	21,387	567	25,743	21,173	25,743	21,173
Arrowtooth Flounder	W	n/a	30,409	14,500	490	n/a	33,593	14,500	260	n/a	33,716	n/a	33,716
	C	n/a	64,871	64,871	17,634	n/a	68,261	68,261	12,765	n/a	68,511	n/a	68,511
	WYAK	n/a	7,870	7,870	31	n/a	6,695	6,695	22	n/a	6,719	n/a	6,719
	SEO	n/a	16,099	6,900	27	n/a	10,998	10,998	28	n/a	11,039	n/a	11,039
	Total	142,485	119,249	94,141	18,182	142,832	119,547	100,454	18,182	143,347	119,985	143,347	119,985
Flathead Sole	W	n/a	13,273	8,650	145	n/a	13,592	8,650	64	n/a	13,757	n/a	13,757
	C	n/a	21,307	21,307	890	n/a	21,817	21,817	836	n/a	22,083	n/a	22,083
	WYAK	n/a	3,876	3,876	-	n/a	3,970	3,970	-	n/a	4,018	n/a	4,018
	SEO	n/a	2,047	2,047	-	n/a	2,097	2,097	-	n/a	2,122	n/a	2,122
	Total	49,414	40,503	35,880	1,035	50,587	41,476	36,534	836	51,176	41,980	51,176	41,980
Pacific ocean perch	W	n/a	1,787	1,787	1,666	n/a	1,753	1,753	1,800	n/a	1,688	n/a	1,688
	C	n/a	28,757	28,757	21,792	n/a	28,209	28,209	23,870	n/a	27,156	n/a	27,156
	WYAK	n/a	2,110	2,110	1,946	n/a	2,070	2,070	1,892	n/a	1,993	n/a	1,993
	SEO	n/a	7,065	n/a	-	n/a	6,930	6,930	-	n/a	6,672	n/a	6,672
	Total	47,466	39,719	39,719	25,404	46,562	38,962	38,962	27,562	44,826	37,509	44,826	37,509
Northern Rockfish	W	n/a	2,535	2,535	316	n/a	1,396	1,396	466	n/a	1,346	n/a	1,346
	C	n/a	2,280	2,280	822	n/a	3,680	3,680	1,213	n/a	3,549	n/a	3,549
	E	n/a	n/a	n/a	n/a	n/a		-		n/a		n/a	
	Total	5,750	4,815	4,815	1,138	6,064	5,076	5,076	1,679	5,848	4,895	5,848	4,895
Shortraker Rockfish	W	n/a	34	34	16	n/a	34	34	3	n/a	34	n/a	34
	C	n/a	189	189	136	n/a	189	189	361	n/a	189	n/a	189
	E	n/a	424	424	195	n/a	424	424	136	n/a	424	n/a	424
	Total	863	647	647	347	863	647	647	500	863	647	863	647
Dusky Rockfish	W	n/a	145	145	72	n/a	209	209	68	n/a	199	n/a	199
	C	n/a	7,365	7,365	2,127	n/a	5,818	5,818	2,179	n/a	5,527	n/a	5,527
	WYAK	n/a	84	84	5	n/a	215	215	23	n/a	204	n/a	204
	SEO	n/a	30	30	-	n/a	96	96	-	n/a	91	n/a	91
	Total	9,281	7,624	7,624	2,204	7,705	6,338	6,338	2,270	7,319	6,021	7,319	6,021
Rougheye and Blackspotted Rockfish	W	n/a	197	197	53	n/a	224	224	55	n/a	229	n/a	229
	C	n/a	315	315	148	n/a	359	359	130	n/a	366	n/a	366
	E	n/a	525	525	102	n/a	597	597	69	n/a	608	n/a	608
	Total	1,555	1,037	1,037	303	1,576	1,180	1,180	254	1,631	1,203	1,631	1,203
Demersal shelf rockfish	W/C/WYAK	n/a	n/a	n/a	n/a	361	271	271	253	361	271	361	271
	SEO	376	283	283	188	524	394	394	266	524	394	524	394

Table 2: SSC recommended OFL and ABC for Groundfish in the Gulf of Alaska (metric tons) for 2026 and 2027 (cont.).

Species	Area	2024 OFL	2024 ABC	2024 TAC	Catch through 12/31/2024	2025 OFL	2025 ABC	2025 TAC	Catch through 11/8/2025	2026 OFL	2026 ABC	2027 OFL	2027 ABC
Thornyhead Rockfish	W	n/a	314	314	37	n/a	206	206	18	n/a	206	n/a	206
	C	n/a	693	693	65	n/a	590	590	73	n/a	590	n/a	590
	E	n/a	621	621	65	n/a	542	542	36	n/a	542	n/a	542
	Total	2,170	1,628	1,628	167	1,784	1,338	1,338	127	1,784	1,338	1,784	1,338
Other Rockfish	W/C/WYAK	n/a	1,353	1,353	544	n/a	1,084	1,084	400	n/a	1,084	n/a	1,084
	SEO	n/a	2,421	300	32	n/a	2,421	300	21	n/a	2,421	n/a	2,421
	Total	4,977	3,774	1,653	576	4,618	3,505	1,384	421	4,618	3,505	4,618	3,505
Atka mackerel	Total	6,200	4,700	4,700	380	6,200	4,700	3,000	967	6,200	4,700	6,200	4,700
Big Skate	W	n/a	745	745	153	n/a	745	745	105	n/a	745	n/a	745
	C	n/a	1,749	1,749	827	n/a	1,749	1,749	1,724	n/a	1,749	n/a	1,749
	E	n/a	341	341	112	n/a	341	341	262	n/a	341	n/a	341
	Total	3,780	2,835	2,835	1,092	3,780	2,835	2,835	2,091	3,780	2,835	3,780	2,835
Longnose Skate	W	n/a	104	104	49	n/a	104	104	81	n/a	104	n/a	104
	C	n/a	1,894	1,894	503	n/a	1,894	1,894	684	n/a	1,894	n/a	1,894
	E	n/a	538	538	234	n/a	538	538	527	n/a	538	n/a	538
	Total	3,380	2,536	2,536	786	3,380	2,536	2,536	1,292	3,380	2,536	3,380	2,536
Other Skates	GOA-wide	887	665	665	645	887	665	665	520	887	665	887	665
Sharks	GOA-wide	6,521	4,891	4,891	1,495	6,521	4,891	4,891	1,536	6,521	4,891	6,521	4,891
Octopuses	GOA-wide	1,307	980	980	190	1,307	980	980	223	1,307	980	1,307	980
TOTAL		**765,608**	**599,784**	**520,020**	**220,079**	**709,422**	**590,762**	**514,635**	**233,343**	**649,068**	**539,299**	**648,904**	**539,160**

Notes: ABCs are at the level of the stock or stock complex and shown in "Total" or "GOA-wide" rows. Any quantities shown by area are spatial apportionments of ABC and do not reflect ACLs. GOA catch (not AK wide catch) for sablefish included in catch totals. ABC for sablefish (AK wide) shown in ABC totals. Catch for Pacific cod does not include state fisheries catch.
Sources: 2025 and 2026 Final GOA Harvest Specifications (published March 2025), 2026-2027 Proposed GOA Harvest Specifications (Council motion, October 2025), NMFS Catch Accounting System (CAS).

C4/C5 Available Information and General Process for Setting Groundfish Harvest Specifications for 2026

Due to the lapse in federal appropriations from October 1–November 12, 2025, AFSC stock assessment authors were unable to complete the 2025 groundfish operational assessments, and the Groundfish Plan Teams (GPTs) did not convene in November to develop any recommendations regarding the 2026 and 2027 final harvest specifications.

To help the SSC navigate this unprecedented situation, Council staff prepared a *Groundfish Specifications Process Document*. The SSC appreciates Council and Regional Office staff for clarifying the Council's "annual two-year" specification process and for outlining a structured process the SSC could follow in the absence of new assessments.

Public testimony on C4 GOA/C5 BSAI harvest specifications is listed above. Public comments regarding the specification process for this year generally favored adopting the preliminary specifications for OFLs and ABCs from October 2025 for final harvest specifications (as well as for area apportionments), arguing that these values reflect the best scientific information available consistent with National Standard 2 requirements. However, some public testifiers urged for increasing the OFL and maxABC for specify stocks due to changes in the 2025 ASFC bottom trawl survey methodology (survey modernization) and increases in the 2025 survey estimates for those species. Commenters cautioned against the use of preliminary information, while others noted that any deviations from the preliminary specifications would require a clear and convincing rationale. Comments also highlighted the need for providing final harvest specifications in a timely manner to avoid missing regulatory deadlines that would result in failure to publish the final harvest specifications before they expire in March 2026, potentially leading to widespread fishery closures.

The SSC considered the process document, public testimony, and past SSC practices to develop a structured framework for setting harvest specifications in 2025. The SSC decided that the starting point under this framework was the preliminary OFL and ABC for 2026 that were recommended by the SSC in October 2025. The framework was then used to consider which stocks should be considered for potential changes to preliminary specifications recommended in October 2025 and whether individual stocks warranted consideration of additional conservation (reductions from the 2026 preliminary ABC). The framework established criteria for considering whether the preliminary specifications, which were based on the most recent fully peer reviewed SAFE reports, remain the best available scientific advice. The process for 2027 specifications was considered separately (section *C4/C5 Process and Harvest Specifications for 2027* in this report). For stocks that were prioritized for review (see below), the SSC considered both the most recent assessment and any relevant new information available since December 2024, as described below. **Finally, the SSC applied the risk table framework for these stocks to evaluate concerns related to the lack of a new assessment in 2025, any new survey or ecosystem concerns, or other concerns related to the 2026 projections.** This approach is consistent with past practices for incorporating information that can not or has not yet been quantitatively integrated into an assessment**.** It also reflects both the limited scope of new data and the fact that no groundfish stocks experienced overfishing in 2024, and none were overfished, or were approaching an overfished condition in 2024.

The SSC highlights several points regarding this year's process. First, the SSC generally applies a "high bar" for reducing from the maxABC resulting from the most recently accepted model under the Council's established Tier system and harvest control rules and peer review process. The SSC applied the same standard here. **Second, the SSC notes that the lack of new assessments in 2025 clearly increases uncertainty and elevates risk for all stocks, but that risk is not currently quantified**. Stock-specific

deliberations therefore focused on whether this additional risk is sufficient to apply any changes from the preliminary harvest specifications (reductions from maxABC). SSC discussions also highlighted the need to explicitly consider the increase in uncertainty as stock trends and reference points are projected forward over multiple years. However, the Council's specifications process is based on the tier system, precautionary harvest control rules, and assessment frequencies that reflect different life history dynamics and are periodically reviewed and adjusted. Therefore, a framework for appropriately quantifying and making adjustments for the increased uncertainty, beyond what was done during this process, was not available and could not be developed in time to address a lapse in scheduled assessments. **The SSC therefore used the established qualitative risk table framework for consistency.**

Stocks prioritized for review included all stocks scheduled for an operational assessment (full or update) in 2025, as well as three stocks that were scheduled for catch reports in 2025 (BSAI Shortraker rockfish, BSAI Other rockfish and GOA Thornyhead), which were highlighted in the December 2024 SSC report as warranting additional scrutiny in 2025 due to declining abundance trends. However, the SSC notes that no new information was available for these stocks at this time with the exception of the 2025 survey datapoint for the GOA Thornyhead stock. Among the scheduled operational assessments, stocks that are assessed on a four-year cycle were not recommended for review in the NPFMC staff process document because these species generally have low recruitment variability and are often underutilized. They were, nevertheless, included in the SSC review. Risks for these stocks are generally lower given the expectation that full assessments will be conducted in 2026 (i.e., in year five instead of year four).

The SSC review draws on a common set of information sources identified in the December 2025 process document, including (1) the 2024 and 2023 SAFE reports; (2) GOA and BSAI catch reports (2024 catches, 2025 catches through November 8, and the 2024 and 2025 TAC, ABC, and OFL) and other summary metrics; (3) 2025 survey information (GOA and EBS bottom-trawl surveys and GOA longline RPNs); and (4) preliminary Ecosystem Status Reports (ESR) and Ecological and Socioeconomic Profiles (ESPs) from October 2025, where available. The SSC notes that the survey results provide important contextual information but cannot be fully interpreted in the absence of integrating survey data in updated assessments that balance multiple data inputs. This is consistent with National Standard 2 guidance, which allows for interim monitoring results to inform decisions but cautions that incomplete analyses should not be treated as substitutes for fully reviewed assessments.

Under this framework, the SSC considered a common set of metrics for each stock where available. The metrics group into four broad categories: (1) assessment context (tier level, assessment frequency, what product was originally scheduled for 2025, risk-table scores from the 2024 assessment, retrospective performance, and whether the 2025/26 ABC already includes an adjustment below maxABC); (2) stock status and exploitation (long-term biomass relative to $B_{35\%}$ and MSST, recruitment trends, recent catch relative to TAC/ABC/OFL); (3) new 2025 information (direction and magnitude of survey changes, any data-quality or survey-design concerns, and additional risk factors from the ESR or ESPs); and (4) projection-related (how much OFL/ABC changes between 2025 and 2026, whether new information and updated catch data are consistent with those used for the projected specifications and other underlying assumptions of those projections). **These metrics are summarized and assessed qualitatively for each stock in the GOA and BSAI harvest specifications sections below. Based on these metrics, the SSC considered whether an additional adjustment from maxABC was warranted.**

C4 GOA Harvest Specifications for 2026

As described above, public testimony generally supported using preliminary specifications for the 2026 OFLs and ABCs, but some testifiers recommended increasing or decreasing OFLs and ABCs in the GOA for individual stocks. One rationale for making such adjustments in the GOA was that it is not subject to

the harvest limit interactions between stocks in the EBS due to the 2M metric ton cap. There were also public comments concerned about the bottom trawl survey redesign and guild-level patterns observed in 2025, suggesting these may be unreliable estimates. Testifiers noted specifically that there were increases in gadids and flatfish, and declines in rockfish. The testifiers noted concerns in the sampling intensity in some of the survey strata. The SSC shares this concern, and in October, **the SSC recommended further investigation into the impacts on the redistributed survey effort, particularly with regard to depth strata and survey coverage compared to historical surveys. Unfortunately, results from these investigations are not available for this meeting.**

Sablefish

Sablefish is a Tier 3 stock for which operational assessments are done annually. The intention for the assessment in 2025 was to prepare a full operational assessment. The SSC received public testimony from Linda Behnken (Alaska Longline Fishermen's Association). Ms. Behnken advocated for an ABC less than maxABC to provide for conservative management of juvenile sablefish and to account for the truncated age distribution in the population. Ms. Behnken also expressed support for work that is underway to evaluate harvest control rules and conduct management strategy evaluations.

The 2024 sablefish assessment showed positive trends in recruitment and spawning biomass, with all year classes since 2014 estimated to have been at or well above average recruitment. While survey biomass indices were leveling off through 2023, the estimated spawning biomass continued to increase with the 2014 year-class being about 90% mature in the 2024 assessment. Spawning biomass in the 2024 assessment was at 63% of B_0, projected to increase to 73% in 2025. Catch reports for 2024 and 2025 indicate that catch is below the ABC (49 % below in 2024, 46% below in 2026), noting the TAC has been set substantially lower than the ABC in recent years. Results from the 2025 longline survey show an increase of 5% for the relative population numbers (RPN) from 2023, while results from the bottom trawl survey (BTS) show a decrease in biomass of 21.3% from the 2023 survey. The BTS, which serves as an index for juvenile sablefish, continues to decline from its recent highs and the point estimate is now slightly below the time-series average. The increase in the longline RPN and decline in the BTS may provide evidence of continued maturation of recent large year classes (e.g., the 2016 year class).

The 2024 assessment did not indicate any elevated risk scores; however, in December 2024, the SSC recommended a Level 2 concern for the assessment category. At that time, the SSC noted concerns about the three data streams (longline survey, BTS, and fishery CPUE) that typically inform the assessment were not available for the 2024 assessment. The SSC also expressed concerns about potential reductions in growth (length- and weight-at-age) due to high abundances of younger fish (Cheng et al. 2024)[1], a factor not captured in the assessment model and that could lead to overestimation of current biomass. The SSC determined that a 5% reduction from maximum ABC was warranted for this stock for 2025. **The concerns described in the SSC's December 2024 minutes still remain, and the SSC recommends that the preliminary OFLs, ABCs, and apportionments be adopted for the 2026 specification, which includes the 5% adjustment from maxABC (as adjusted for whale depredation) specified by the SSC in December 2024.**

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[1] Cheng, MLH., D.R. Goethel, P.F. Hulson, K. B. Echave, and C.J. Cunningham. 2024. ''Slim pickings?'': Extreme large recruitment events may induce density-dependent reductions in growth for Alaska sablefish (*Anoplopoma fimbria*) with implications for stock assessment. *Canadian Journal of Aquatic and Fisheries Science*. https://doi.org/10.1139/cjfas-2024-0228.

Walleye Pollock

Gulf of Alaska pollock is a Tier 3 stock assessed annually; the most recent full assessment was completed in 2024. A full operational assessment had been planned for 2025, but no assessment was completed. The 2024 model projects 2025 spawning biomass at about 243,000 t, roughly 45 % of unfished biomass and above $B_{40\%}$, placing the stock in Tier 3a. The assessment is stable, with small retrospective patterns and consistent results across alternative model configurations. The 2024 risk table identified only Level 1 concerns in population dynamics, ecosystem conditions, and fishery performance, so ABCs for 2025 and 2026 were set at the maximum permissible ABC. Catch in 2024 (125,411 t) and in 2025 through 8 November (134,415 t) remained below TAC and ABC, with 2024 catch at about 63 % of ABC, so recent harvest has been well within the allowable range.

New 2025 survey information shows a 32 % increase in the GOA BTS index relative to 2023 and increases in Shelikof winter acoustic biomass (13 %) and abundance (146 %) compared with 2024, consistent with the 2024 assessment conclusion that biomass is high and the probability of dropping below $B_{20\%}$ in the near term is very low. However, the SSC notes that interpretation of the increase in GOA bottom trawl survey biomass is complicated by the re-stratification in 2025, which appears to coincide with guild-level patterns of increases in several flatfish and roundfish groups and decreases in rockfishes that may reflect changes in survey catchability rather than true changes in abundance. SSC recommendations for considering composition data alongside other indices of abundance and comparing to longline survey results when evaluating whether survey changes may have influenced catchability are noted in the October 2025 SSC Report.

In public testimony, Paddy O'Donnell (self) and Julie Bonney (Alaska Groundfish Data Bank) highlighted concerns about the GOA BTS, concentration of pollock harvest in area 620 and requested that the SSC consider increasing the ABC in response to the increase in 2025 GOA bottom trawl survey estimates. The **SSC discussed setting higher pollock harvest specifications in light of these positive survey signals, but noted that with 2025 and 2026 preliminary ABCs are already set at maxABC. Council staff further noted, the specification process does not allow the ABC to exceed the maximum permissible ABC specified in the assessment, so the SSC did not pursue this option further.** Given the stable assessment, continued low catch relative to ABC and 2025 survey and ecosystem information that does not indicate an increased risk of the ABC exceeding the true OFL, **the SSC did not identify additional risk factors that would warrant a reduction from maxABCs and recommends using the preliminary 2026 OFLs and ABCs along with the current area apportionment for final specifications.**

Pacific Cod

The SSC received public testimony from Julie Bonney (Alaska Groundfish Data Bank) as well as Jim Armstrong and Chad See (Freezer Longline Association). Public testimony focused on the increase in biomass in the BTS and suggested that 2026 harvest specifications could be increased to reflect increased stock abundance. The testifiers also noted that the Pacific cod TAC is distributed across many different gear types with A and B seasons for each, making it difficult to attain the total TAC amount despite the availability of fish.

GOA Pacific cod is a Tier 3 stock with annual assessments. The goal for the 2025 assessment was to provide an operational update assessment. The assessment methodology for Pacific cod has been consistent in recent years, and the assessment results have also been consistent. Catch reports for 2024 and 2025 indicate that catches in 2024 and 2025 (up to Nov. 8) are below the ABC (15.6% below in 2024 and 20.6% below in 2025). Results from the 2025 BTS show a 39% increase, while the longline survey results (used in the assessment) show a 5% decline from 2023, noting that no longline survey was done in 2024. These results, while contrasting, provide evidence that Pacific cod is slowly recovering from a severe population contraction during the 2014-2016 marine heat wave in the GOA. The risk table for the 2024 assessment

indicated only an elevated score for population dynamics due to ongoing low recruitment and slow recovery of the stock. Water temperatures were very warm in the GOA in 2025, but are projected to be near average in the coastal waters of the GOA in 2026. Higher-than-average water temperatures could lead to reduced Pacific cod recruitment. The ABC in 2025 was set to the maximum permissible.

The SSC had discussion about the public comment on setting the ABC above the previously specified maxABC. Based on Council staff input, the specification process does not allow the ABC to exceed the maxABC specified in the most recent stock assessment as noted in the section above.

Relative to 2025, the proposed OFL and ABC in the October preliminary specifications for 2026 and 2027 are 5.8% lower for the OFL and 6.1% lower for the ABC, respectively. **The SSC did not identify any risk factors that would warrant a change from the preliminary 2026 OFLs and ABCs and recommends adopting these values for final specifications. The SSC recommended carrying forward the spatial apportionment of Pacific cod ABC in the GOA for 2025 to 2026 due to the lack of updated estimates.**

GOA Rockfish

Pacific Ocean Perch

GOA Pacific Ocean Perch (POP) is a Tier 3a stock assessed on a biennial schedule. The most recent full operational stock assessment was conducted in 2023. In 2024, a harvest projection was provided. A full operational stock assessment was scheduled for 2025. Public testimony focused on POP fishing being good in 2025. Public testimony also expressed concerns about the 2025 BTS not adequately surveying rockfish habitat compared to the sampling design used in previous years, noting that all GOA rockfish had substantially decreased estimates of biomass in 2025.

According to the GOA 2025 catch report for POP, catch was below the ABC, with 2024 catch at approximately 64% of the ABC) and 2025 catch through Nov. 8 at approximately 70% of ABC).

Results from the 2025 BTS biomass estimates show a 46% decline from 2023, bringing the biomass below the long-term average. The SSC notes that the last six consecutive BTS biomass estimates, from 2013 to 2023, were about average for the time series. In the 2023 assessment, it was noted that survey data for 2023 was highly uncertain for POP due to the presence of several very large hauls. It is also noted that a single 12-ton catch inflated this point estimate for the 2023 survey biomass, which could explain the 46% decrease in the current 2025 BTS biomass estimate, along with approximately 17% fewer stations sampled in 2025. The SSC also notes the large confidence intervals estimated in the survey, which lead to difficulty in interpreting the 2025 point estimate.

The risk table in the 2023 assessment identified Level 2 concerns for Population Dynamics Considerations (unusual trend of rapid increases in stock size and recruitment estimates) and Assessment Related Considerations (strong negative retrospective pattern), with Level 1 scores for Environmental/Ecosystem Considerations, and Fishery Performance, and the SSC accepted maxABC with no adjustment. In the December 2023 report, the SSC discussed that Population Dynamics Considerations were better categorized as Level 1 and noted that the negative retrospective bias identified under Assessment Considerations was not an immediate population concern, as it would lead to conservative advice. In addition, broader ecosystem indicators from the 2025 ESR show very warm conditions in the GOA and strong circulation on the shelf, but there are no new stock-specific signals suggesting increased risk beyond what was already included in the 2023 assessment. Relative to 2025, the proposed OFL and ABC in the specifications for 2026 and 2027 are 3.7% lower.

The SSC had an extensive discussion regarding the decline in BTS biomass in 2025. However, without an updated assessment, consideration of how the survey information indices would integrate within the assessment framework (e.g., age compositions, catchability) was unknown. The SSC discussed other countering arguments that the SSB estimates have usually increased with the addition of new survey

observations, but this was before the downturn in survey biomass. In addition, the previously noted concerns about changes to the trawl survey design remain, as information on how these changes affect POP is not available. The SSC also noted that the projections were based on a catch that was larger than observed through November 2025 by approximately 2,800 t, indicating some level of precaution in the resulting OFLs and ABCs. Ultimately, the SSC did not support an additional reduction from ABC and **recommended the 2026 preliminary OFLs, ABCs, and apportionments be adopted for the 2026 specification. The SSC also recommends the stock should be prioritized for an operational assessment during the 2026 assessment cycle to incorporate the BTS survey information.**

Rougheye/Blackspotted Rockfish

The GOA rougheye/blackspotted (REBS) complex is a Tier 3 biennial assessment that is timed to coincide with the GOA BTS. The most recent operational full assessment for this complex was in 2023. There was no public testimony specific to this stock. Catch reports indicate that the 2024 catch and the preliminary 2025 catches were below the ABC and OFLs, with the 2024 catch accounting for 29% of the ABC. Complex-level biomass estimates from the 2025 GOA BTS survey are relatively stable but remain below the long-term mean, with a 2% decline compared to the 2023 estimate. Rougheye rockfish biomass declined by 20%, while blackspotted rockfish biomass estimates increased by 52%. There was no change in 2025 from the 2023 longline survey, which serves as a secondary index for this stock complex, as the bottom trawl survey is not generally considered ideal for these species. The RPN from the 2023 longline survey was the lowest in the time series.

The 2023 assessment included elevated risk table scores in two categories, a Level 2 in the population dynamics category – overall declines seen in both the BTS and the longline survey and a Level 2 in the assessment category – due to positive retrospective patterns that necessitated fixing M and an inability to capture declines in both indices of abundance used in the assessment. Due to these elevated risk categories, the 2024 harvest projection for REBS suggested a reduction from the maxABC using the same methods as accepted by the SSC in 2023. The recommended 2025 ABC was calculated as the mean of the ABC specified in 2023 and the maxABC from the 2024 harvest projection. That method was carried over for the 2026 ABC, where the mean of the 2025 ABC specified in 2023 and the 2026 maxABC estimated in 2024 is applied. These reductions equate to an approximate 10% reduction for the 2025 ABC and 12% for the 2026 ABC from the maxABCs. There were no ecosystem considerations from 2025 indicating a change from the most recent risk table level in the Ecosystem category.

The SSC did not identify any risk factors that would warrant a change from the 2026 preliminary OFL and ABC and recommends adopting these values for final specifications. Projected specifications for 2026 already include an additional reduction below the maxABC to account for recent declines in survey estimates and the performance issues identified in the 2023 risk table with the Tier 3 SCAA model. The estimated catches used for the 2024 harvest projection are over twice that of the most recently completed catch year. In addition, catches appear to be stable and are well below the ABC.

In October 2025, the assessment authors presented preliminary work for the 2025 full assessment of REBS. The author recommended switching from a Tier 3 SCAA model to a Tier 4 yield-per-recruit approach that the author felt better accounted for species specific differences in biology, persistent issues with misidentification, and poor model behavior of the Tier 3 statistical catch-at-age model. **Given the continued low survey biomass estimates, the previously noted issues with the 2023 assessment, the preliminary information provided in October on a Tier 4 approach, the SSC requests that GOA REBS be a high priority for an operational full assessment in 2026 if possible. Finally, the SSC suggests that apportionments be rolled over for 2026 until an update in apportionments can be provided in the next assessment.**

Shortraker Rockfish

GOA shortraker rockfish is managed as a Tier 5 stock and assessed on a biennial schedule in odd years. The most recent operational assessment was conducted in 2023. The intention for the 2025 assessment cycle was to prepare an update assessment rather than a full assessment and explore a revised apportionment method based on a *rema* model fit to both AFSC longline survey and GOA BTS data. There were no public testimony directly related to GOA shortraker rockfish. During the 2023 assessment cycle, the Tier 5 assessment approach based on smoothed biomass estimates from the *rema* model was updated to estimate additional observation error for the longline survey, rather than a fixed down-weighting of this index. Otherwise, the assessment methodology for this stock has remained largely consistent over time. In 2024, the total GOA catch was 46% below the ABC and catch in subareas did not exceed subarea ABCs. In 2025, catch as of November 8 was 33% below the ABC; however, catch in CGOA has exceeded subarea ABC by 91%. Results from the 2025 GOA BTS show a decrease of 21%, while results for the longline survey (which is also used in the assessment) show a decline of 16% from 2023 (the longline survey did not operate in 2024). Both surveys used in the assessment show large interannual variability, but recent exploitable biomass estimates have been slowly declining since 2007. The risk table included in the 2023 assessment indicated no elevated risk under any category, and the SSC recommended that the ABC be set to the maximum permissible. The SSC discussed the recent declines in indices from both the GOA bottom trawl and longline surveys, as well as the general declining stock trends.

The SSC determined that these concerns do not warrant a reduction from maxABC and recommends using the preliminary 2026 OFL and ABC for final specifications. **The SSC recommends that the spatial allocation of shortraker rockfish ABC in the GOA be carried forward for 2026 due to the absence of updated estimates.** A new apportionment method using both longline survey RPWs and GOA BTS biomass, rather than just the BTS, was proposed by the author and accepted by the GPT in 2023. The GPT recommended a stair-step application to alleviate concerns that the apportionments may constrain fisheries within some subareas (particularly CGOA), similar to GOA REBS. The SSC recommended the status quo apportionment method (trawl survey information only) as there was no immediate conservation concern. Due to the ongoing spatial apportionment discussion, GOA shortraker was highlighted for consideration by the Council. **The SSC recommends that an operational assessment for GOA shortraker rockfish be considered for the 2026 assessment cycle, given the concerns about declining survey abundance, new proposed ABC spatial allocation methods, and the time since the last operational assessment in 2023.**

Other Rockfish

In 2024, SSC reviewed an operational update assessment for GOA Other rockfish, which is typically assessed on a biennial schedule. The last operational full assessment was conducted in 2023. An operational update assessment was scheduled for 2025. The 2024 operational update assessment was provided because of a revision to the species included in the GOA Other rockfish complex. There was no public testimony specific to this stock.

The survey estimates for Other rockfish remain at low but relatively stable levels. Survey results for 2025 indicate there was an 11.6% increase from 2023. The 2024 and 2025 catches were 15% and 12% of the ABC respectively. Otherwise, there were no other new sources of data and no changes to the assessment or apportionment methods.

The Other rockfish is a mixture of Tier 4, Tier 5, and Tier 6 assessment. The 2024 assessment used the accepted models and methods, which differ among stock components. A *rema* model (15.2) is used for the Tier 4 component, Model M23.1 (*rema*) is used for the Tier 5 component, and maximum catch is used for the Tier 6 stock component. The OFL and ABC for this complex are calculated as the sum of the OFLs and ABCs for the Tier 4, 5, and 6 species. The SSC recommended no reductions from maxABC for the 2023

assessment. Apportionments of the ABC for Tier 4 and Tier 5 species are based on the random effects model fit to the area-specific *rema* biomass estimate and subsequent proportions of estimated biomass by area were calculated. The split fractions for delineating the biomass between WYAK and SEO portions of the EGOA are calculated at the species and tier levels using a weighted average.

Removal of seven DSR species from the stock complex resulted in a 72% decrease in the ABC for the Tier 6 component, leading to a 7% decrease in the GOA-wide complex-level ABC.

The SSC did not identify any additional risk factors that would warrant an adjustment from maxABC and recommends adopting the preliminary OFLs and ABCs for 2026 for final specifications. The SSC also agrees that the existing apportionments should be carried over until the next assessment.

Thornyhead Rockfish

GOA Thornyhead is a Tier 5 stock complex assessed on a biennial schedule. A full operational assessment, represented by shortspine thornyhead (*Sebastolobus alascanus*), was completed in 2024. For 2025, only a catch report was planned. No public testimony was provided. The 2024 assessment recommended Model 24.2, which shares process error across areas, simplifying the model and improving model stability. Catch remains well below TAC and ABC, with 2024 catch at approximately 10% ABC and 2025 catch through November 8 at approximately 9% of ABC.

Results from the 2025 BTS show a 25.9% decline from 2023, while the additional longline survey indicated a 21% increase from 2023 (no longline survey was done in 2024). The relative survey trends in the BTS show a steady decline in estimated biomass since 2015. In their October 2025 report, the SSC highlighted the decline in thornyhead estimated biomass for the 2025 survey and asked the author and GOA GPT to note any concerns about the planned 2026/2027 final harvest specifications in their November Plan Team report to be presented at the SSC December meeting. However, due to the federal government shutdown, no information was available to be included as context for the 2026/2027 specifications.

The 2024 risk table identified Level 1 scores to assessment-related issues, population dynamics, ecosystem, and fishery performance, and the SSC accepted maxABC with no additional reduction. In addition, broader ecosystem indicators from the 2025 ESR show very warm conditions in the GOA and strong circulation on the shelf, but there are no new stock-specific signals suggesting increased risk beyond what was already included in the 2024 assessment. Relative to 2025, the proposed OFL and ABC in the specifications for 2026 and 2027 are about 18% lower. Given the low catch-to-ABC ratios and the conservative Tier 5 control rule, there is no strong evidence that the 2026 ABC is mis-specified. **The SSC did not identify any risk factors that would warrant an adjustment from maxABC and recommends the 2026 preliminary OFLs, ABCs, and apportionments be adopted for the final specifications.**

GOA Flatfish

Arrowtooth flounder

GOA arrowtooth flounder is a Tier 3a stock on a quadrennial schedule with harvest projections in intervening years; the last accepted full assessment was in 2021, with off-cycle harvest projections in 2023 and 2024, and a new full assessment and ESP prepared for 2025. There was no public testimony specific to this stock. The assessment has been highly stable across recent cycles, with projected spawning biomass in 2024–2026 nearly double $B_{35\%}$ and has no concerning retrospective pattern. Fishery exploitation remains very low: 2024 catch was about 19% of the TAC and 15% of ABC, and catch through November 8 is about 13% of the 2025 TAC and 11% of ABC. The 2023 BTS biomass estimate was ~5% higher than 2021 yet still below the long-term mean, and the 2025 survey indicates a further increase of roughly 22% relative to

2023, consistent with a modestly increasing trend from a lower-than-historical but stable plateau. The SSC recommended no adjustments from the maxABC as a result of the 2023 assessment. The 2025 ABC is only about 0.2–0.3% higher than in 2024 and the preliminary OFL/ABC only ~0.4% higher again. The SSC did not recommend any reduction below maxABC in the 2024 harvest projection, and ecosystem information in the October 2025 ESR, while highlighting very warm conditions and potential distributional responses for deep-slope spawners such as arrowtooth, does not indicate a directional risk of stock decline or mis-specification of the 2026 ABC. **Given the stable assessment, increasing survey biomass, very low exploitation, and lack of new ecosystem or fishery-performance concerns, the SSC does not identify any risk factors that would warrant revising the preliminary 2026 OFLs and ABCs for GOA arrowtooth flounder and recommends adopting those values, along with existing area apportionments for final specifications.**

Rex Sole

GOA rex sole is a Tier 3a stock with assessments conducted every four years. A full operational assessment was to occur in 2025. Assessment methodology for rex sole has been stable since 2017 when historical fishery age data were included and substantially improved reliability of OFL and ABC estimates. Catch has been consistently below 1% of age-3 biomass and below 3% of ABC since 2021. Catch for 2024 is 2.6% of ABC and so far in 2025 is 2.6% of ABC. There was no public comment specific to rex sole, other than the reference to the 2025 GOA BTS showing higher biomass of flatfish in general, but possibly an effect of survey design changes. Survey estimates have been at or above the long-term mean since 2021, and in 2025 were up 23% from 2023 – and more similar to the 2021 estimate. For the past two decades the stock has been near or significantly above the long-term mean, with 2001 and prior years half to three quarter of the current maximum. The risk table for the last operational assessment in 2021 indicated Level 2 scores for assessment related considerations of increased uncertainty and unresolved issues and population dynamics due to atypical recruitment of age four and five year classes, but ecosystem or fishery performance concerns, and therefore no reduction in ABC. Annual recommended and specified ABCs and OFLs have been notably consistent and steadily increasing since the last full assessment. Relative to 2025, the proposed OFL and ABC from the 2024 preliminary specifications for 2026 and 2027 are 1 % lower for the OFL and ABC. **The SSC did not identify any risk factors that would warrant a change from the preliminary OFLs and ABCs, and therefore recommends adopting these values for final specifications for 2026**. **The SSC recommends no change to apportionment** which has remained the same since the last full assessment in 2021.

Shallow-water Flatfish

Shallow water flatfish complex consists of eight species. Northern and southern rock sole are assessed separately from the other shallow-water flatfish (Tier 5) in this complex using age-structured models and are managed in Tier 3. Assessments are completed every four years. The intention for the assessment in 2025 was to prepare a full operational assessment. There was no public testimony specific to this complex. Assessment methodology for Tier 3 northern and southern rock sole have remained relatively consistent with some more recent recommendations to consider spatial distribution. Catch reports for 2024 and 2025 indicate that catch in 2024 and 2025 (up to Nov. 8) is below the TAC (95.0 % below in 2024, 95.0% below in 2025). Results from the BTS show a 15.9% increase in the shallow water flatfish complex and a 30.8% increase in the northern/southern rock sole complex from 2023 to 2025 with no survey in even years. While the shallow water flatfish complex and the northern/southern rocksole complex were trending down until 2019, the last survey indices were above the 35 year average. The risk table for the 2021 assessment indicated a Level 2 risk for assessment-related considerations because the northern rock sole model fit to the bottom trawl biomass exhibits a pattern of autocorrelation indicating potential non-stationarity and exhibits a strong retrospective pattern. In addition, the GOA GPT indicated that a Level 2 was warranted for assessment-related considerations because yellowfin sole survey estimates have shown a steady decline for a number of years. The ABC in 2024 was set to the maximum permissible. Relative to 2025, the

proposed OFL and ABC in the October preliminary specifications for 2026 and 2027 are 0.01% higher for the OFL and 0.001% higher for the ABC, respectively. **The SSC did not identify any risk factors that would warrant a change from the preliminary OFLs and ABCs for 2026, and therefore recommends adopting these values for final specification**. **The SSC recommends that the spatial allocation of Shallow-water flatfish ABC in the GOA be carried forward for 2026 due to the absence of updated estimates.** The 2025 apportionment by area was estimated by fitting the random effects model to the survey biomass summed over all species (including Tier 3 rock sole) by area and estimating the percent biomass by area.

Skates

The GOA skate complex is a Tier 5 stock consisting of multiple species assessed as three separate units (big, longnose, and other) with OFL and ABC based on survey biomass estimates and natural mortality rates. Directed fishing on skates is prohibited, but bycatch is sufficiently high that they are considered within the fishery. They are on a biennial full-assessment schedule; the last accepted full assessment was in 2023. An operational stock assessment was expected to be completed in 2025. There was no public testimony specific to this complex. The assessment has been relatively stable across recent cycles, with the estimated biomass of longnose skate and big skate similarly stable, albeit with large confidence intervals). While there is significant interannual variation in exploitation rates, there is no concerning retrospective pattern. Incidental catch rates are a significant fraction of the ABC: 2024 catch was about 82% of the ABC and 62% of OFL. Retention of skate is limited to 5%.

There is regional allocation of catch limits across the GOA (W, C, E) for Big and Longnose skates to account concerns about disproportionate harvest by region. For longnose skates, catch was above the ABC in the EGOA in 2023. The 2023 biomass estimates do not indicate concerning trends, and the 2025 estimate for the entire complex is up 8%, with a slight increase in longnose skate estimates, and stable for big skates.

The 2023 risk table did not identify any concerns that rise above Level 1 and therefore no reduction from maxABC was recommended by the SSC at that time. Similarly, the ecosystem information in the October 2025 ESR does not indicate a directional risk of stock decline or mis-specification of the 2026 ABC. **Given the stable assessment, slight increase in survey biomass, and lack of new ecosystem or fishery-performance concerns, the SSC does not identify risk factors that would warrant a reduction from maxABC and recommends adopting the preliminary 2026 OFL and ABC for final specifications, allong with the existing area apportionments.**

Atka Mackerel

The GOA Atka mackerel is a Tier 6 stock, having no reliable biomass estimate and a highly patchy distribution. The stock is on a biennial survey schedule with harvest-projection updates in intervening years. The last accepted full assessment was in 2021. An operational stock assessment was expected to be completed in 2025. There was no public testimony specific to this stock. There has been no directed fishery on Atka mackerel since 1996, and the TAC has historically been set at the maximum permissible to allow for bycatch in other fisheries. GOA Atka mackerel are managed as a single stock with no spatial apportionment.

Fishery exploitation remains very low: 2024 catch was about 16% of the ABC and 12% of the OFL. Overall, the biomass assessment has been relatively stable (albeit with large CIs) across recent cycles, with projected biomass in 2025 of ~89,000 t, up approximately 16% from 2023. The 2021 risk table scored assessment considerations, environmental considerations, and fisheries performance concerns as Level 1, and population dynamic considerations as unknown. The SSC did not support any reduction of ABC below maxABC at that time.

Ecosystem information in the October 2025 ESR, while highlighting very warm conditions, does not indicate a directional risk of stock decline or mis-specification of the preliminary 2026 ABC, particularly given the relatively low and/or stable abundance of the major Atka mackerel predators.

Given the stable assessment, increasing survey biomass, very low exploitation, and lack of new ecosystem or fishery-performance concerns, the SSC does not identify any risk factors that would warrant an adjustment from maxABC. The SSC recommends adopting the preliminary 2026 OFL and ABC for final specifications.

Octopus

GOA octopus is a Tier 6 stock with all species lumped into a single assemblage, although the bulk of commercial catch is Pacific octopus. Assessment is based on catch and is conducted every four years. A full operational assessment was to occur in 2025. There was no public testimony specific to this stock. The OFL and ABC from the last full assessment in 2021 have been held constant in all subsequent years. Catch was 15% of OFL in 2024 and 20% of ABC, and catch so far in 2025 is 17% of OFL and 23% of ABC. There was no public comment related to octopus. Annual survey estimates can vary by an order of magnitude and reflect difficulty in sampling the stock with a bottom trawl. There is no risk table for GOA octopus. Annual OFL and ABC have remained unchanged and rolled over each year since the last full assessment in 2021. **The SSC did not identify any risk factors that would warrant a change from the 2026 preliminary OFL and ABC, and therefore recommends adopting these values for final specifications**. There is no apportionment for this stock.

C5 BSAI Harvest Specifications for 2026

Most of the testimony supported adopting the preliminary specs from October 2025 for final harvest specifications, arguing that they best reflect Best Scientific Information Available. Some testimony cautioned against the use of preliminary information, while others noted that any deviations from the preliminary specifications would require a clear and convincing rationale. Stock-specific considerations for BSAI stocks are noted under each stock below or, for sablefish, under C5. Other comments relevant to this year's specifications included concerns over salmon bycatch in the pollock fishery and were centered on food security for fishing communities in western AK.

Walleye Pollock

Eastern Bering Sea Pollock

The SSC reviewed the available 2025 survey and ESR information relevant to EBS pollock. Public testimony specific to this stock mostly supported the adoption of the preliminary specifications from October 2025 for final harvest specifications. Public testimony also noted the decline in the 2025 survey biomass along with the challenge of finding harvestable pollock during the B season and requested a lower TAC of 1.2 mt.

EBS walleye pollock are assessed annually and were reclassified as a Tier 3 stock in December 2024. The stock was scheduled for a full assessment this year. The assessment model has been relatively consistent with some updates to data inputs or date weights in most years. Recent positive retrospective biases were associated with initial overestimates of the strength of the 2012 year class, which declined and stabilized over time. A similar pattern emerged for the 2018 year class, with high initial estimates that decreased somewhat over time. This year's class has been estimated to be the strongest on record and while the ultimate magnitude is still uncertain, its strength is supported by multiple years of observations. The strength of the 2018 year class has a strong impact on SSB projections. The projections for 2026 using last

year's model had a level of uncertainty that was very similar to the estimated uncertainty for 2024 and 2025, moderating concerns about not having an assessment this year.

Catches in 2024 and 2025 (through Nov. 8) were well below the respective ABCs (57% in 2024, 55% in 2025), as is often the case for this stock. The 2025 catch-to-date was slightly (1.9%) below the catch assumed for 2026 projections, hence there was no concern about unrealistic catches in the projection. Stock biomass and ABC can vary considerably from year to year due to high recruitment variability. Recruitment has been below average since 2018 and the stock is projected to decline in 2026. Bottom trawl survey estimates of biomass and abundance in the EBS decreased by 30% and 36%, respectively, from 2024 to 2025. The NBS biomass estimate increased by 51% from 2023 (no survey in 2024) and a preliminary index of mid-water biomass from Acoustic Vessels of Opportunity (AVO) increased by 24% from 2024. Variability in these abundance and biomass indices is well within the typical range of variability observed for this stock.

Based on the 2024 assessment, estimated spawning stock biomass has been above B_{MSY} since 2012 with one exception (2020). Considering the recent Tier 3 designation, the risk table in the 2024 assessment did not indicate any elevated scores. The ESR suggests favorable conditions for walleye pollock in 2025 with average to warm sea surface temperatures, average to good prey conditions and above average body condition indices for pollock in the EBS and NBS. These conditions suggest no ecosystem concerns for pollock at this time. The proposed OFL and ABC in the October preliminary specifications for 2026 are 31% and 16% lower than the 2025 OFL and ABC, respectively, reflecting the expected decrease in biomass. **Based on these considerations, the SSC concluded that no reductions from the preliminary ABC is warranted and recommends adopting the preliminary OFL and ABC values for 2026 final specifications.**

BSAI Pacific Cod

Eastern Bering Sea Pacific Cod

EBS Pacific cod is a Tier 3 stock for which assessments are done annually. The intention was to prepare an update assessment rather than a full assessment in 2025. Public testimony was received germane to the EBS cod assessment from Jim Armstrong and Chad See (Freezer Longline Coalition) indicating a preference to use the 2026 preliminary specifications because the recent biomass estimates and decrease in ABC were similar. Assessment methodology for Pacific cod has been consistent in recent years and assessment results have also been very consistent.

Catch reports for 2024 and 2025 indicate that catch in 2024 and 2025 (up to Nov. 8) is below the ABC (85 % of ABC in 2024, 85% of ABC 2025). Results from the 2025 AFSC EBS bottom trawl survey show a decrease of 10%. The survey results are similar to the decline in projected 2026 and 2027 ABCs from 2025 (-8%). The NBS survey was down 36% but is a much smaller component of the biomass at this time. The preliminary ESR climate data and ESP (2024) show no particularly concerning trends for EBS Pacific cod. The 2024 risk table identified ecosystem concerns at a Level 2 but didn't recommend any reductions. The retrospective pattern in the 2024 assessment was small and negative (subsequent assessment years result in higher spawning biomass than previously estimated). For 2025, the ABC was set to the maximum permissible. **The SSC did not identify any risk factors that would warrant a change from the preliminary OFL and ABC, and therefore recommends adopting these values for final specifications for 2026. The SSC recommends that the spatial apportionment of Pacific cod ABC in the EBS be carried forward for 2026 due to the absence of updated estimates.**

Aleutian Islands Pacific cod

AI Pacific cod is a Tier 3 stock for which assessments are completed annually. The intention was to prepare an update assessment rather than a full assessment in 2025. There was no public testimony specific to this stock. Assessment methodology for AI Pacific cod changed from a Tier 5 to a Tier 3 in 2024 and the model achieved adequate fits to survey trends and compositional data, had good convergence properties, and had improved retrospective patterns over previous model parameterizations. Catch reports indicate that catch in 2025 (up to Nov. 8) is well below the ABC (35%). Results from the AI BTS show a 2% decrease from 2022 to 2024 with no survey in odd years. This stock is at an all-time low at $B_{24\%}$ with average recruitment in recent years. While the SSC was concerned that the projection model used long-term average recruitment and historical natural mortality (instead of recent estimates), it was acknowledged that such changes in life history parameters in projections may be warranted under climate change. The risk table for the 2024 assessment indicated a Level 2 population dynamics and Level 2 ecosystem risk due to the poor fit to the trawl survey biomass and continued warm conditions in the AI. However, temperatures were still below the thermal limits that were exceeded in the GOA in previous years. The ABC in 2024 was set to the maximum permissible, removing the 2023 10% reduction from maxABC as a result of moving to a Tier 3 harvest control rule, which reduces harvest at low biomass levels and addressed some of the previous concerns. Relative to 2025, the proposed OFL and ABC in the October preliminary specifications for 2026 and 2027 are 3.2 % lower for the OFL and 3.0% lower for the ABC, respectively. **The SSC did not identify any risk factors that would warrant a change from the preliminary OFL and ABC for 2026, and therefore recommends adopting these values for final specification**. **The SSC recommends that the spatial allocation of Pacific cod ABC in the Aleutian Islands, which sets the harvest limit in Area 543 for Steller sea lion protection measures after subtraction of the State GHL from the overall AI ABC, be carried forward for 2026 due to the absence of updated estimates.**

BSAI Flatfish

Yellowfin Sole

Yellowfin sole is an annually assessed Tier 1 stock, with its most recent full assessment completed in 2024. The 2025 assessment was intended to be an operational full assessment, and the next anticipated assessment would be conducted in 2026. There was no public testimony specific to this stock. Catch reports indicate that catch in 2024 and preliminary catch in 2025 (up to November 8) are well below the 2024 and 2025 ABCs and OFLs. Results from the 2025 EBS bottom trawl survey are relatively stable, with a 3% increase from 2024, but survey biomass remains below the long-term mean. In the NBS, yellowfin sole biomass declined by 21% from the most recent survey in 2023 and has dipped below the long-term mean as well. The 2024 assessment estimated that spawning biomass of yellowfin sole has been slowly declining since the 1970s but has stabilized over the last decade. There were no elevated risk scores in the 2024 assessment and the 2025 and 2026 ABC were set to the maxABC with no reduction in 2024. Fish condition increased for yellowfin sole relative to 2024 in the SEBS. Other available ecosystem information appears to indicate no substantial changes from the 2024 interpretation of the Environment/Ecosystem category of the risk table (Level 1). The 2025 OFL and ABC were lower than previously estimated, reflecting the decreased estimates of total and spawning biomass between the 2023 and 2024 assessments. The projected 2026 OFL and ABC were slightly higher than 2025. These projected OFL/ABCs used a 5 year average catch (2020 – 2024) instead of the maxABC for the 2025 catch. **The SSC did not identify any risk factors that would warrant a change from the 2026 preliminary OFLs and ABCs and recommends adopting these values for final specifications**.

In October 2025, the BSAI GPT and the SSC were considering a tier change (from Tier 1 to Tier 3) and the magnitude of potential changes in harvest specifications as a result of this tier change are unknown. **The SSC requests that an operational full assessment be prioritized for yellowfin sole in 2026.**

Greenland Turbot

BSAI Greenland turbot is a Tier 3 stock assessed on a biennial cycle, with the most recent operational assessment occurring in 2024. The intention for the 2025 assessment cycle was to prepare a full assessment. There was no public testimony specific to this stock. Some new assessment models were being reviewed in September but a final recommendation for any new assessment methodology was not available this year. In 2024, the authors had significant assessment related concerns, scoring it a Level 3 and suggested a 10% reduction from maxABC. The model does exhibit a positive retrospective pattern (subsequent assessment years result in lower spawning biomass than previously estimated). The SSC determined that the risk factors necessitated a 25% reduction, highlighting a lack of information from the EBS slope region.

Catch of BSAI Greenland turbot has consistently been well below the ABC. In 2024 catch (768 t) was 24% of ABC (3,188 t), and in 2025 through November 8 catch (618 t) is 37% of ABC (1,678 t). Neither the BS or AI catches were close to exceeding the respective ABCs and OFLs. NMFS bottom trawl survey biomass for the EBS increased 14% from 2024 to 6 kt, but remains well below the 1987-2025 average of 22 kt. NBS bottom trawl survey biomass decreased by 76%, but Greenland turbot are rare within this region. There were no longline or slope BTS in the BSAI in 2024 or 2025. The preliminary ESR climate data and 2024 ESR show no particularly concerning trends for BSAI Greenland turbot and the 2024 risk table identified ecosystem concerns at a Level 1. In 2025 the ABCs in 2025/2026 were set with the 25% reduction from maxABC. **The SSC did not identify any new risk factors that would warrant a change from the preliminary OFLs and ABCs, which already included the 25% reduction from maxABC, and therefore recommends adopting these values for final specifications in 2026**. The preliminary ABC and OFL in 2026 decrease from 2025 despite the increase in the EBS BTS, so that built in precaution is noted. **The SSC recommends that the spatial allocation of turbot ABC in the BSAI be carried forward for 2026 due to the absence of updated estimates.**

BSAI Rockfish

Northern Rockfish

BSAI northern rockfish is a Tier 3 stock assessed on a biennial schedule; the most recent full assessment was completed in 2023, and a harvest projection was completed in 2024. A full operational assessment was scheduled for 2025. There was no public testimony specific to this stock. The current age-structured model has been used for several cycles and was retained in 2023 and 2024, but the risk table assigned Level 2 scores for assessment and population dynamics due to a moderate negative retrospective pattern, reliance on strong priors for key parameters, and a mismatch between the genetically structured Aleutian stock and BSAI-wide management. Despite these concerns, the 2023 assessment concluded that stock abundance is high and exploitation rates are low and recommended the maximum-permissible ABC. The 2024 harvest projection indicated spawning biomass remains well above $B_{40\%}$, and shows small declines in total biomass from 2024 to 2026. Catch remains well below management limits: the catch/ABC ratio was 0.46 in 2024 and 0.43 in 2025 (through 8 November), and projections for 2025–2026 assume catches of 7,706 t and 7,514 t, substantially below the ABCs. The most recent AI BTS in 2024 indicates survey biomass has stabilized at a relatively high level following earlier increases. Fishery performance indicators show a well-developed target fishery with increasing CPUE and targeting in recent years but no evidence of declining performance, and exploitation rates averaged 0.016 from 2004–2023 in all subareas. The ecosystem status reports describe continued warm conditions in the Aleutian region but do not identify northern rockfish as a species of particular concern, and ecosystem and fishery-performance categories in the risk table remain at Level 1. The ABCs for 2025 and 2026 from the 2024 harvest projection were set at the maximum permissible Tier 3 values.

Given the high biomass relative to reference points, low and stable exploitation, absence of new survey or ecosystem information indicating a deterioration in status, and the fact that existing Level 2 assessment and spatial-structure concerns are long-standing and already acknowledged, **the SSC does not identify new risk factors that would justify an adjustment below the maxABC. The SSC therefore recommends adopting the preliminary OFLs and ABCs for BSAI northern rockfish and continuing to apply the current BSAI-wide spatial apportionment for final specifications in 2026.**

Shortraker Rockfish

BSAI shortraker rockfish is a Tier 5 stock assessed on a biennial schedule; the most recent full assessment was completed in 2024 using the *rema* framework, which updated the 2022 AI BTS and the 2023 EBS slope longline survey. The next full assessment is scheduled for 2026. No public testimony was provided specific to this stock. The 2024 update showed that Aleutian survey biomass declined by about 40% from 2022 to 2024, reaching the second-lowest estimate in the time series. The 2023 EBS slope longline index also declined slightly from 2021, but total biomass remained on the order of 20,000 t. The risk table assigned a Level 2 score for assessment considerations due to increasing data gaps, such as the end of the EBS slope trawl surveys and the lack of AI longline data, along with difficulties in estimating region-specific process error. However, population dynamics, ecosystem, and fishery performance were all scored at Level 1. Considering the conservative Tier 5 F_{MSY} proxy and low exploitation, the authors and SSC recommended setting ABC at the maximum permissible level without an additional adjustment. Catch remains well below TAC and ABC: 2024 catch was roughly one-third of the ABC, and 2025 catch through November 8 was about two-thirds of the ABC. As there is no new 2025 survey index for shortraker rockfish, the 2024 AI BTS remains the most recent abundance data and is already accounted for in the 2025 and 2026 OFL and ABC from the 2024 assessment. Long-term trends indicate fluctuating yet generally stable biomass, with removals accounting for a small fraction of total abundance. The preliminary October ESR notes continued warm conditions on the Bering and Aleutian slopes and ongoing changes in prey and predator fields, but does not identify stock-specific concerns for this long-lived deep-slope rockfish. Relative to 2024, the OFL and ABC for 2025 and 2026 were reduced by about 11% to reflect the lower recent survey biomass, and these values are carried forward to 2027 in the preliminary specifications.

Given the low exploitation, conservative Tier 5 control rule, lack of new survey information in 2025, and absence of elevated population-dynamics, ecosystem, or fishery-performance concerns, the SSC does not identify additional risk factors that would warrant an adjustment below the maxABC. The SSC recommends adopting the preliminary OFLs and ABCs for final 2026 specifications.

Other Rockfish

The BSAI Other Rockfish complex is managed under Tier 5 and is assessed in two parts, including shortspine thornyhead (SST) and the remaining "non-SST" species (predominantly dusky rockfish but including at least 11 other species), based on assumed differences in natural mortality. This rockfish complex is assessed on a biennial schedule to align with the AI bottom trawl survey. The most recent operational (update) assessment was conducted in 2024. The intention for 2025 was to prepare a catch report only. There was no public comment on BSAI Other Rockfish. In 2024, total BSAI catch exceeded the BSAI-wide ABC by 8%. For 2025, BSAI catch (up to Nov. 8) was 3% below the ABC . EBS catch did not exceed EBS subarea ABC in 2024 (-10%) and as of 8 November 2025 the EBS catch remains below the EBS subarea ABC. AI catch exceeded the AI subarea ABC by 51% in 2024 and 26% in 2025 (up to Nov. 8). The SSC noted in its December 2023 report that exceedances have occurred in a majority of the last ten years for this complex within the AI region. There was no new survey information for 2025. The 2024 operational assessment, however, noted a 23% decline in the estimated biomass, influenced by a 61% decline in the EBS slope longline survey RPW index for SST between 2021 and 2023. The AFSC longline

survey was canceled in 2024 and restructured to occur in the GOA in odd years (beginning in 2025) and in the BSAI in even years (beginning 2026).

The model structure for BSAI Other Rockfish has been relatively stable with updates mainly to the platform used (ADMB to *rema* model) in 2022 and the addition of longline survey relative population weights (RPWs) for SST on the EBS slope. Model fits to the various survey biomass estimates show a generally declining trend for SST, with a decline in the total biomass estimate starting in 2015 but leveling off in 2023 and 2024. The other species in the complex show generally stable or increasing biomass trends. In December 2024, the SSC discussed the decline in estimated biomass for the other rockfish complex and requested that, if available, new survey results be brought forward for review at the September 2025 BSAI GPT meeting. During the 2024 assessment cycle, elevated risk (Level 2) concerns were identified in the assessment-related considerations due to the lack of EBS Slope trawl surveys, in the population dynamics considerations given the 61% decrease in longline survey RPWs for SST between 2021 and 2023, and in the fishery performance considerations given the potential for approaching or exceeding the OFL. No increased risks related to environmental considerations were identified. Despite increased levels of concern, the assessment authors noted that Tier 5 harvest control rules are conservative. In 2024, the SSC concurred with the author and GPT in recommending the maximum permissible ABC for 2025.

The SSC did not identify any risk factors that would warrant a reduction from maxABC, and therefore recommends adopting the preliminary OFL and ABC for final specifications in 2026. **The SSC recommends that the spatial apportionment of Other Rockfish ABC in the BSAI be carried forward for 2026 due to the absence of updated estimates.** The September 2025 GOA Plan Team report did note that there were questions regarding recent increases in non-target catches of rockfish in the BSAI, including components of the other rockfish complex, and increased BS/RE complex avoidance behavior by the fleet. Shortspine thornyheads comprise more of the incidental catch in the POP fishery, while dusky rockfish comprise the majority of the incidental catch in the Atka mackerel fishery. **The SSC recommends that an operational assessment for BSAI Other Rockfish be prioritized for the 2026 assessment cycle.**

Skates

The BSAI skate complex includes two components, a Tier 3 age-structured model for Alaska skate (*Bathyraja parmifera*) in the EBS and a Tier 5 random effects model for all other skates, and is assessed every two years. The last full assessment was in 2023. In 2024, a harvest projection was presented. An operational full assessment was intended for 2025. There was no public testimony directly related to the BSAI skate complex. The assessment methodology for the Tier 3 Alaska skate component has been consistent in recent years; however, the 2023 assessment noted a number of concerns including: overestimation of biomass during colder years and underestimated during the warmer years, and substantial retrospective bias with indication that the model is overestimating SSB. Furthermore, at the October SSC meeting, it was reported that the model accepted in 2023 (Model 14_2d) did not converge because some parameters were on bounds and other parameters had very high relative standard errors. The GPT and SSC supported the authors bringing forward additional models to address some of these issues. For the Other Skate component of the stock complex, the assessment methods have used a random effects model since 2014, and transitioned to the *rema* framework in 2023.

Catch reports indicate that catch in 2024 and 2025 (up to Nov. 8) are below the ABC (28% below in 2024, 47% below in 2025). The catch through Nov. 8 in 2025 is below the five year mean total catch used in the 2024 harvest projections. Results from the 2025 AFSC EBS BTS show a 2% decrease in the estimated biomass of the Alaska skate component of the complex compared to 2024 and a 15% increase for Bering skate (a component species of the Other Skates). The spawning biomass of Alaska skate had been trending up since 2007 with a slight decrease starting in 2021. The risk table for BSAI skates was most recently updated in 2023 with the last full operational assessment. Assessment-related concerns were rated at a Level

2 for Alaska skates because of the strong retrospective bias, but Level 1 for other skates. All other categories were rated as Level 1.

The ABC for 2025 was set to the maximum permissible. Relative to 2025, the proposed OFL and ABC in the October preliminary specifications for 2026 and 2027 are 1.9% lower for both the OFL and ABC. The preliminary OFLs and ABCs are based on the harvest projection presented in 2024 for the Tier 3 Alaska skate component and the Tier 5 other skates where information from 2023 assessment was brought forward. There were no additional risk factors from the September GPT or October SSC ESR presentation that were identified for BSAI skates. However, an additional consideration in the 2023 assessment was the tendency for the model to underestimate biomass in warmer years, which is anticipated to occur during fall 2025 and 2026. **The SSC did not identify any factors that would warrant a change from the preliminary OFL and ABC, and therefore recommends adopting these values for final specifications in 2026. Given the concerns related to the Alaska skate assessment model raised during the 2025 assessment cycle, the SSC recommends that a full operational assessment of BSAI skates be prioritized for the 2026 stock assessment cycle.**

C4 GOA/C5 BSAI Process and Harvest Specifications for 2027

The SSC discussed options for determining the final OFL and ABC specifications for 2027. The options considered included: 1) a simple rollover of the 2026 final specifications, 2) a simple rollover of the final 2026 specifications with an additional reduction in ABC for all stocks that were scheduled for full assessments in 2025, and 3) the stock-specific method used for setting the 2026 OFL and ABC specifications at this meeting (see "*C4 GOA/C5 BSAI Available Information and General Process for Setting Groundfish Harvest Specifications for 2026*"). **With the lack of additional survey or environmental information available to inform potential changes to 2027 specifications at this time, the SSC agreed upon the simple rollover of the 2026 specifications for 2027.** The SSC notes that the 2027 preliminary specifications represent the 2026 preliminary specifications duplicated for an additional year and not an additional year of projection from the previous stock assessment as is normally the case when assessments are conducted. However, there was a clear expectation that many of these stocks would be assessed in 2026 and thus updated 2027 OFL and ABC projections would be made in the fall of 2026 and available for the 2027/2028 specification cycle. **If any of these stock assessments are not updated in 2026, the SSC signals its intent to re-evaluate the potential for additional reductions from outdated maximum ABCs due to an additional year of uncertainty in these specifications**. This outcome was informed by the previous discussion regarding the potential assessment schedule for 2026 that suggested that many of these stocks would likely receive operational assessments in 2026 (see section *"C4 GOA/C5 BSAI Recommendations for 2026 Assessment Cycle"*).

C4 GOA/C5 BSAI Recommendations for 2026 Assessment Cycle

The SSC received public testimony suggesting a PT meeting and expedited assessments in early 2026. **The SSC noted that off-cycle assessments during 2026 could reduce the ability to produce additional assessments on the normal schedule in the fall and would only affect 2027 specifications from January to March. The SSC did not discuss whether to recommend any expedited assessments at this time.** The SSC was informed by Dr. Foy (NOAA-AFSC) about potential plans for the 2026 fall stock assessment cycle. The proposed specific recommendations include: 1) stock assessments with a one-year cycle will be completed as normal; 2) shifting all stock assessments with a four-year cycle forward by one year (regardless of when they were scheduled), leaving only the two-year cycle stocks; and finally, 3) prioritize those two-year stocks from 2025 and 2026. However, AFSC cannot complete all the potential assessments with existing resources, especially if additional requests arise during this Council meeting. Therefore, **the SSC recommends forming an internal agency workgroup consisting of AFSC stock assessment**

authors, SSC members, and Council staff coordinators, if possible, to meet prior to February to prioritize and recommend which two-year cycle stocks should be conducted in the 2026 assessment cycle. The starting point would be to assess all 2025 two-year-cycle stocks and complete them in 2026. For the 2026 two-year-cycle stocks, the workgroup would determine which stocks should be prioritized for 2026 and which stocks should be postponed, depending on staff time and AFSC's capacity to advance them. Another consideration for the workgroup would be to recommend the type of assessment to be developed (e.g., operational full versus operational update). The focus of the prioritization would be on stocks with increased conservation concerns. **The SSC recommends the workgroup present a report on the prioritized stocks and other 2026 process recommendations at the February 2026 SSC meeting to allow for public comment and review by the full SSC.**

In the event that all the planned assessments from 2025 cannot be completed in 2026, **the SSC requests the internal agency workgroup prioritize the following stocks for assessment in 2026: AI Pacific Cod, BSAI Yellowfin Sole, GOA RE/BS, GOA Shortraker, BSAI Other Rockfish, BSAI Skates, and GOA POP, and assessments normally on an annual cycle (e.g., Pollock and Pacific Cod). The basis for prioritizing these non-annual species is identified in each of the specific sections above.**

C4 GOA/C5 BSAI Concluding General Comments for Future Assessment Cycles

The SSC suggests several general recommendations for future stock assessment cycles that could prevent some of the challenges faced this year and could explore ways to maximize information and analysis given current resources.

The SSC recommended consideration of timing adjustments to the existing groundfish review process that might help complete more stocks within a single cycle. These might include adjusting the schedule to review some preliminary model runs in June and moving catch reports to October.

Additionally, the SSC recommends an agency/plan team research initiative to improve and evaluate stock assessment projections for OFL and ABC setting. Elements of the initiative might include updated projection models, better documentation of projection methods, and consideration of potential opportunities for developing guidelines for good practice and options for standardization. An approach for making projections suitable for OFL and ABC setting for more years than the current two-year approach should be developed. Importantly, an evaluation of projection uncertainty is needed using retrospective analysis or other methods as appropriate, for example, by quantitatively comparing preliminary and final specifications among years across a range of species, or by comparing projections of varying length with those based on the finalized assessment model. This research is intended to inform the stock assessment process in a management environment with a potential for increased reliance on model projections.

Finally, the SSC noted that there may be benefits to addressing broader issues related to assessment frequency and projection uncertainty. The SSC noted there could be benefits to a general framework to compare harvest recommendations observed with a new assessment to the case where a new stock assessment is not available. A management strategy framework could be useful in this effort (e.g. Hutniczak et al. 2019[2]) and may align with work on survey frequency already underway at AFSC. A full investigation would estimate the expected change in fishery value from increasing assessment frequency (e.g. Hutniczak et al. 2019) and could also explore the communities that would be impacted. Simpler approaches could focus on the extent to which increasing stock assessment frequency changes non-economic outcomes (e.g. maxABC, identification of biomass drops, etc.), rather than economic value. In addition to providing insights into how performance of model projections and fishery outcomes change over various forecast

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[2] Hutniczak, B., Lipton, D., Wiedenmann, J. and Wilberg, M., 2019. Valuing changes in frequency of fish stock assessments. Canadian Journal of Fisheries and Aquatic Sciences, 76(9), pp.1640-1652.

intervals, this type of framework and analysis could provide a quantitative measure of the benefit of more frequent assessments that can be compared across stocks and used in the stock prioritization process.

C6 BSAI Crab

The SSC received a report on the November 2025 Crab Plan Team (CPT) meeting from Anita Kroska (NPFMC) and the CPT co-chair Katie Palof (ADF&G). The SSC appreciates the CPT's efforts to streamline their presentation to the SSC.

BSAI Crab Harvest Specifications and SAFEs

Table 3 includes the stock status determination criteria and Table 4 includes the December 2025 SSC recommendations.

Table 1. Stock status in relation to status determination criteria for 2025/2026 as estimated by the most recent assessment. Hatched areas indicate parameters not applicable for that tier. Values are in thousands of metric tons (kt). Status determination recommendations made by the SSC are based on the best scientific information available and final status determination will be made by NMFS Headquarters following SAFE review.

Ch.	Stock	Tier	MSST	B_{MSY} or B_{MSY} proxy	2025/26[1] MMB	2025/26 MMB/ MMB$_{MSY}$	2025/26 OFL	2025/26 Total Catch	Rebuilding Status
1	EBS snow crab	4					20.11		
2	BB red king crab	3					5.85		
3	EBS Tanner crab	3					51.02		
4	Pribilof Islands red king crab	4	0.64	1.283	2.586	2.02	0.4899		
5	Pribilof Islands blue king crab	4	2.07	4.15	0.162	0.039	0.00116		**overfished**
6	St. Matthew Island blue king crab	4					0.129		
7	Norton Sound red king crab	4	0.98	1.96[2]	2.15	1.10	0.284	0.17	
8	AI golden king crab	3					3.166		
9	Pribilof Islands golden king crab[3]	5					0.114		
10	Western AI red king crab	5					0.056		

[1] MMB on 2/1/2025 for Norton Sound red king crab as estimated in the 2025 assessment and on 2/15/2026 for all other Tier 1-4 stocks using the 2026 assessments.

[2] B_{MSY} proxy basis years for NSRKC are 1980 - 2025.

[3] PIGKC specifications are set on a calendar year basis.

Table 2. SSC recommendations for Eastern Bering Sea crab stocks. Stocks for which specifications are rolled over between assessments (St. Matthew blue king crab, Pribilof Islands golden king crab and Western Aleutian Islands red king crab) are also included. Biomass values are in thousand metric tons (kt). Tier designations in this table are based on the projected stock status in 2026/2027. Stocks for which the SSC recommended different harvest specifications from the CPT are bolded. Harvest specifications for SAFE Chapters 1 – 6 are set in October and Chapters 8 – 10 are set in June, in the year according to the assessment frequency cycle (see current SAFE Introduction for assessment cycle). Chapter 7 is set in December 2025.

Ch.	Stock	Tier	F_{OFL}	B_{MSY} or B_{MSY}proxy	B_{MSY} basis years[1]	2026/27[2] MMB	2026/27 MMB / B_{MSY}	Natural Mortality (M)	2026/27 OFL	2026/27 ABC	ABC Buffer
1	E. Bering Sea snow crab										
2	Bristol Bay red king crab										
3	E. Bering Sea Tanner crab										
4	Pribilof Is. red king crab	4a	0.21	1.283	2000-2024	2.586	2.02	0.21	0.4899	0.3674	25%
5	Pribilof Is. blue king crab[3]	4c	0	4.15	1980/81-1984/85; 1990/91-1997/98	0.162	0.04	0.18	0.00116	0.00087	25%
6	St. Matthew blue king crab										
7	Norton Sound red king crab	4b	0.17	2.00	1980-2025	1.56	0.78	0.23	0.193	0.135	30%
8	Aleutian Is. golden king crab										
9	Pribilof Is. golden king crab	-	-	-		-	-	-		
10	W. Aleutian Is. red king crab	-	-	-		-	-	-		

[1] For Tiers 3, 4 where B_{MSY} proxy is estimable, the years refer to the time period over which the estimate is made. For Tier 5 stocks it is the years from which the catch average for OFL is estimated.

[2] MMB is estimated on 2/1/2026 for Norton Sound red king crab and on 2/15/2027 for all other Tier 1-4 stocks, using the current assessments.

[3] The F_{OFL} of 0 for PIBKC is indicative of a closed directed fishery due to stock status per the crab FMP guidelines.

Norton Sound Red King Crab

The SSC thanks the CPT for their presentation on the 2025 Norton Sound red king crab (NSRKC) assessment. The SSC notes that this assessment has transitioned to a new author, Caitlin Stern (ADF&G), with Ms. Palof. Finally, the SSC appreciates ADF&G being able to bring an update forward. Public testimony was provided by Melanie Bahnke, President Kawerak, Inc., recommending a more collaborative approach be used with the Tribes on research and assessment of NSRKC, including data gathering, understanding trends, and developing models. The SSC supports such a process moving forward.

NSRKC is an annual Tier 4 assessment. This assessment has used the Generalized size-structured Model for Assessing Crustacean Stocks (GMACS) framework since 2024. The model used for 2025 harvest specifications was accepted for specifications in November 2024 and is detailed in the 2024 SAFE document. Six model options were presented for 2026 harvest specifications. Model 24.0b was presented at the May 2025 CPT meeting and is the base model. Model 25.0a was also presented at the May 2025 CPT model and is Model 24.0b with shell condition removed and the fixed value of M for males $\leq$ 123 mm CL increased to 0.23 from the value of 0.18 used in the base model, where 0.23 is the M value estimated in the most recent Bristol Bay red king crab (BBRKC) stock assessment.

In response to suggestions from the SSC and the CPT, four other models were considered that represent two different approaches to addressing the potentially unrealistically high fishing mortality (F) values for some years of the winter commercial fishery that are estimated by models 24.0b and 25.0a. Model 24.0b6, based on model 24.0b, uses upper and lower bounds on F borrowed from the current BBRKC model for the winter commercial fishery. The use of this bound leads to lower, and likely more realistic, estimated F values. Model 25.0a1, based on model 25.0a, also uses the BBRKC upper bound on F for the winter commercial fishery. Model 24.0b7, based on Model 24.0b, uses a different selectivity pattern for the winter commercial fishery than is used in Model 24.0b. Rather than using the same, dome-shaped functional form for selectivity for the winter commercial fishery as is used for the winter pot survey, this model uses the same, asymptotic functional form for selectivity for the winter commercial fishery as is used for the summer commercial fishery. This change in the functional form for selectivity for the winter commercial fishery also leads to lower estimated F values. Model 25.0a2, based on model 25.0a, uses the same selectivity pattern configuration as model 24.0b7.

The SSC concurs with the CPT to use Model 25.0a2 for setting harvest specifications for 2026/27. Using Model 25.0a2, the Tier 4 B_{MSY} proxy was calculated as the average of mature male biomass on February 1 during 1980-2025. The estimated 2026 mature male biomass on February 1 was below the B_{MSY} proxy, placing NSRKC in Tier 4b. The corresponding F_{MSY} proxy for NSRKC was M =0.23 yr-1 (using the default gamma =1.0). Since the stock is in Tier 4b the associated F_{OFL} falls on the slope of the control rule and was computed as 0.17 yr-1.

Results from Model 25.0a2 place NSRKC indicate that the NSRKC stock is not overfished. Catch did not exceed the OFL, so the stock is not subject to overfishing in 2025. In terms of the buffer, the CPT recommended a continuation of the 30% buffer as the GMACS update did not directly address all of the persistent issues with this assessment. The sources of uncertainty identified when setting the 2025 ABC are still relevant. These include:

- uncertainty regarding biological characteristics:

  - M and size-at-maturity are borrowed from other stocks;

  - impact of seasonal movement on survey estimates;

  - uncertainty in stock vs. survey areas;

- shortage of discard data on which to base estimates of total catch mortality;

- estimates of total catch mortality rely on *ad hoc* methods to estimate discards;

- the model consistently overestimates the proportion of large crab; and

- whether the high estimate for *M* in the largest size class is reasonable remains unresolved.

- while the retrospective pattern in the assessment has improved, the remainder of the issues still support a 30% buffer.

For these reasons, the SSC concurs with the use of the 30% buffer for this assessment.

The SSC prioritizes further exploration of model-based index of abundance for this stock, given the concern about the apparent lack of overlap between the survey stock distribution. However, the SSC supports further work to update the standardization of the fishery CPUE index planned by the author as a lower priority as well. Authors should prioritize aligning the footprint of the NBS bottom trawl survey abundance index and the length compositions. **The SSC recommends refining projections for this and other Tier 4 stocks so that F_{MSY} reference points more closely align with achieving the resultant B_{MSY} reference point.**

The SSC appreciates the detailed responses to SSC and CPT comments on previous work on this assessment. The January 2026 CPT modeling workshop certainly seems like an appropriate venue for moving this assessment and several of the SSC recommendations for analysis forward. The SSC thanks the authors and CPT for following up on SSC recommendations regarding the risk table for this stock as presented in Appendix B.

Aleutian Islands Golden King Crab Model Runs

The SSC received a presentation on results from multiple Aleutian Islands golden king crab (AIGKC) assessment models as well as explorations of time-varying parameters, appropriate size at maturity to use for calculating management-related quantities, and spatial/vessel effects in the post-rationalization fishery data to identify potentially time-varying processes such as catchability or selectivity. The SSC appreciates the author's responsiveness to and thorough consideration of prior CPT and SSC comments.

Eight GMACS models were considered to bring forward for the 2026 AIGKC assessment for both the EAG and WAG in May/June 2026. AIGKC is managed as a Tier 3 stock with a single OFL and ABC. The ADF&G manages the fishery on a two-area basis (EAG and WAG) with a harvest strategy based on model-estimated mature male abundance that splits the TAC and specifies a maximum harvest rate for EAG and WAG.

- **23.1c**: base model, accepted for specifications in May 2025;

- **25.0a**: Model 23.1c, non-equilibrium initial conditions starting in 1981 and equal emphasis factors on all likelihood components;

- **26.0**: Model 23.1c, with spatiotemporal standardized CPUE index, catchability time-blocks 1995 - 2004 and 2005 - 2024;

- **26.0a**: Model 26.0, non-equilibrium initial conditions starting in 1981 and equal emphasis factors on all likelihood components;

- **26.1**: Model 26.0a, with additional subdistrict-specific time blocks on directed fishery selectivity;

- **26.1a**: Model 26.0a, with a random walk on directed fishery selectivity from 2005 - 2024;

- **26.1b**: Model 26.0a, with additional subdistrict-specific time blocks on directed fishery catchability;

- **26.1c**: Model 26.1, with additional subdistrict-specific time blocks on catchability.

One model series developed from the 2024 base model (23.1c) was updated to the most recent GMACS version (2.20.31) and no changes to model outputs were found. A second model series was developed from Model 25.0a which changes the initial conditions to start the model in 1981 with non-equilibrium conditions and weights all catch types equally. Aligning the catch weighting did not have a large effect on fits to catch.

Model 26.0 (based on model 23.1c) and Model 26.0a (based on Model 25.0a) standardized CPUE data using a *sdmTMB* spatiotemporal random effects model with catchability changing in two time blocks corresponding to rationalization (1995-2004, 2005-2024). The author considered spatial mesh size and interaction between soak time and time period but neither affected the model results so they were not pursued in subsequent models. Effective soak time had the largest effect on the CPUE index with depth and gear not having large effects in both EAG and WAG. The SSC appreciated the author's exploration of the sdmTMB model-based standardization of fishery dependent data as a method for developing an index of relative abundance for input into the assessment model. The SSC encourages the author and CPT to continually be aware that model-based standardization does not necessarily address all biases that may occur due to preferential sampling and diagnostics that evaluate potential sources of bias remain valuable.

The SSC encourages continued exploration of the relevance of including depth as the figures on depth that resulted from the estimation process seem to indicate that depth plays very little if any role in prediction and inclusion may in fact increase colinearity and inflation of prediction variance. Running the estimation with and without depth may help clarify its contribution to model prediction and, specifically, to prediction in areas with low data availability. Depth, as with any covariate, is most useful if there is a strong contrast in what is covered (i.e. the range of depths measured) as well as contrast in what it is attempting to predict (i.e. the range seen in fishery CPUE that results).

Further models based on 26.0a considered time varying selectivity blocks (26.1), selectivity changes in a random walk (26.1a), catchability time blocks (26.1b), and both selectivity and catchability time blocks (26.1c). Time blocks were different in the EAG and WAG based on fishing behavior changes at rationalization. Estimated recruitment and mature male biomass differed among the scenarios especially in the EAG and post rationalization.

The CPT discussed and the SSC agrees that there are time varying processes due to the changes in fleet dynamics and behavior, but varying catchability was unrealistic. Otherwise, the model fits to size compositions were reasonable.

The SSC concurs with the CPT recommendations to bring Models 23.1c, 26.0, 26.0a, and 26.1 forward for setting specification in May 2026. These models continue to explore the value of a revised bias correction strategy for recruitments during a 1960-1980 "spin-up" period (e.g. model 23.1c series) versus estimating the initial size structure in 1981 to address negative recruitment deviations due to the difference in population scale between 1960 and 1981 (e.g. Model 26.0 series).

The SSC recommends that the author continue to explore the unaccounted spatially or temporally varying process in the EAG post-rationalized period that was resulting in large additional variance and poor fits.

The SSC continues to recommend that a future modeling effort incorporate the cooperative industry survey data, but this is not a priority over continued efforts on resolving data conflicts.

For the final assessment, the SSC supports the recommendations regarding spatiotemporal model plot formatting, provision of year one size composition data in Model 23.1C, provision of historical retrospective changes relative to model changes, and previous recommendations to identify potential ecosystem indicators that could be applicable to AIGKC.

The author also addressed previous SSC recommendations to calculate a combined OFL by evaluating stock status relative to a combined MMB reference point, then using that status to adjust the F_{OFL} control rule in each area to compute OFLs and summing. The SSC continues to support this method of OFL estimation for 2026. However, CPT was concerned that this approach may not be appropriate now that the EAG and WAG are diverging in population trajectories, and expressed an interest in management approaches that could respond to these diverging trends. **The SSC recommends that the CPT explore methods to obtain an overall OFL and ABC to address these concerns. For example, area-specific ABCs could be developed by area to reflect area-specific concerns, then the area ABCs would be summed for an overall ABC.**

The CPT discussed a combined area model noting that this is currently not possible in GMACS without a workaround such as a two-area model with sex stratification among fleets. The SSC recommends revisiting the criteria in the stock structure table and reconsider whether M should be expected to be similar in the EAG and WAG, perhaps through a more simple diagnostic model.

The author explored metrics to determine if changes in CPUE are due to changes in fishing behavior (e.g. changes in number of strings or number of pots per boat). There was no evidence of bias in abundance based on differences in fishing performance.

In reviewing the size-at-maturity data, the author explored bootstrapping analysis with mixed results. The SSC agrees with the CPT that the bootstrapping analysis should continue to be explored to address the results but recommends that the author first assess the value of considering chela data with the limited link between physiological and functional maturity, and review of molt increment data and selectivity in fitting tag-recapture data given the issues with model fits to growth.

SSC Member Associations

At the beginning of each meeting, members of the SSC publicly acknowledge any direct associations with SSC agenda items. If an SSC member has a financial conflict of interest (defined in the 2003 Policy of the National Academies and discussed in Section 3) with an SSC agenda item, the member should recuse themselves from participating in SSC discussions on that subject, and such recusal should be documented in the SSC report. In cases where an SSC member is an author or coauthor of a report considered by the SSC, that individual should recuse themselves from discussion about SSC recommendations on that agenda item. However, that SSC member may provide clarifications about the report to the SSC as necessary. If, on the other hand, a report is prepared by individuals under the immediate line of supervision by an SSC member, then that member should recuse themselves from leading the SSC recommendations for that agenda item, though they may otherwise participate fully in the SSC discussion after disclosing their associations with the authors. The SSC notes that there are no financial conflicts of interest between any SSC members and items on this meeting's agenda.

At this December 2025 meeting, a number of SSC members acknowledged associations with specific agenda items under SSC review. Chris Siddon is married to Elizabeth Siddon, an editor of the 2024 BSAI ESR and a contributor to risk table considerations in multiple stock assessments from 2024. Dr. Siddon also

supervises Caitlin Stern (NSRKC co-author), Tyler Jackson (AIGKC co-author) and Katie Palof (CPT co-chair). Robert Foy is the third or greater level supervisor for Chris Lunsford, Melissa Haltuch, and Elizabeth Siddon who provided expertise at this meeting as well as survey leads who provided data for SSC consideration (C4/C5 process discussion, C5 BSAI 2026 specs, C4 GOA 2026 Specs). He is the second level supervisor for Dana Hanselman on GOA and BSAI arrowtooth flounder and the third or greater level supervisor for all AFSC groundfish stock assessment and ESR authors. Jason Gasper is married to Cindy Tribuzio, who is the 2024 lead assessment author for BSAI skates, co-author on GOA Other rockfish and lead author on BSAI/GOA sharks. Curry Cunningham is a collaborator on multiple projects on sablefish, supervises Matt Cheung and Josh (co-authors on the 2024 BSAI/GOA sablefish assessment), and is married to Krista Oke, who contributed to the 2024 ESR. Dana Hanselman is the first level supervisor of Groundfish Plan Team GOA co-chair Chris Lunsford and EBS ESR lead Elizabeth Siddon. Dr. Hanselman is also the second level or greater supervisor of other Plan Team members and assessment contributors, Pete Hulson, Jane Sullivan, Cindy Tribuzio, Kristen Omori, Kevin Siwicke, Dan Goethel, Ben Williams, and Katy Echave. Finally, Dr. Hanselman is also married to Dr. Shotwell, BSAI plan team co-chair, author of arrowtooth and shortraker assessments and ESPs and a co-author of arrowtooth flounder assessments.