Report of the September 2019 BSAI Groundfish Plan Team meeting

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Alaska Fisheries
Science Center

Grant Thompson

October 2, 2019

Meeting overview

- Dates: September 17-18
- Place: AFSC Seattle lab
- Leaders: Grant Thompson, Steve Barbeaux (co-chairs); Steve MacLean (coordinator)
- Participation: 14 Team members present, plus numerous AFSC and AKRO staff and members of the public
- Documents and presentation files available on the Team agenda site
  - Link provided on Council agenda (under item C5)

Agenda (action items in red)

- Administrative
- EBS Pacific cod
- Model averaging
- EBS pollock
- BS/RE rockfish
- AI Pacific cod
- Atka mackerel
- Northern rockfish
- Skates BMSY proxy
- Harvest specifications

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Agenda (red brief update here)

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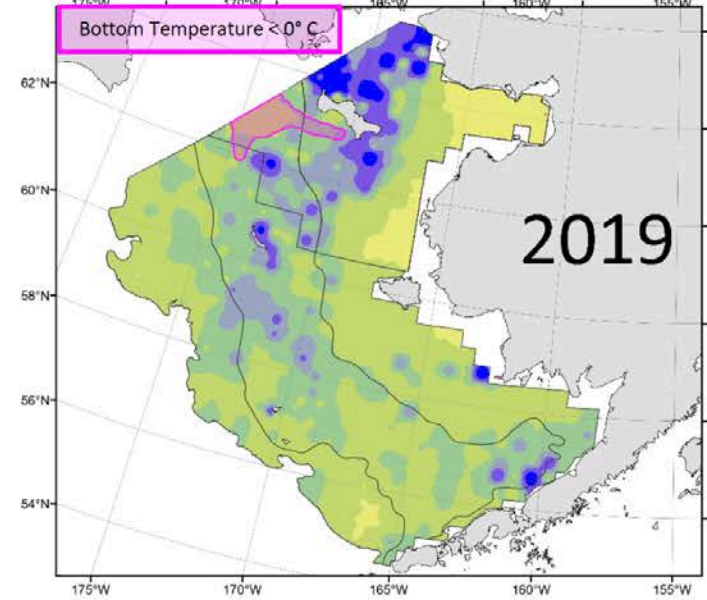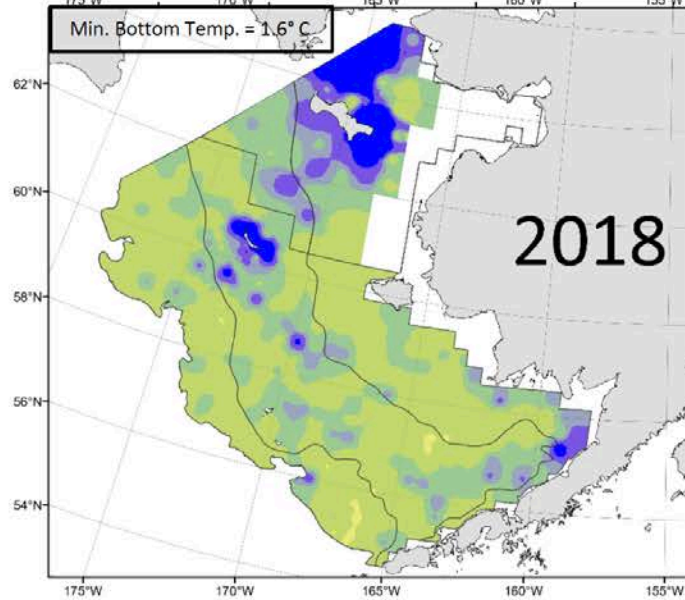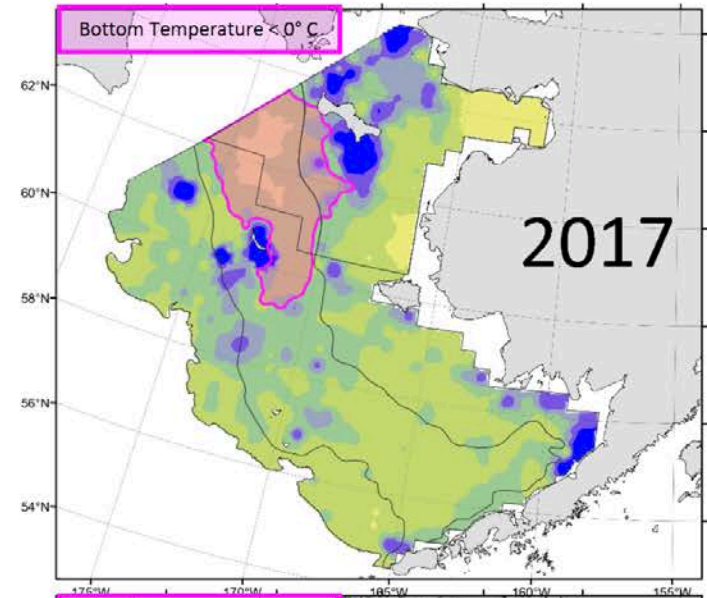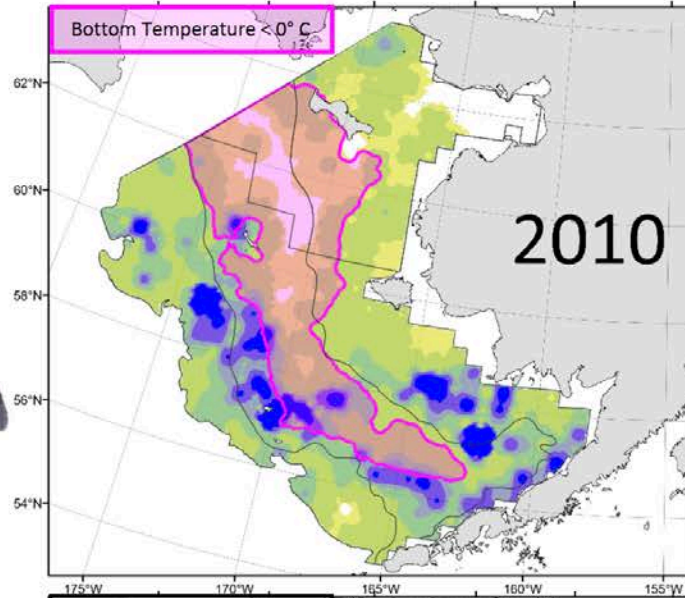- Skates BMSY proxy
- Harvest specifications

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Bering Sea Pacific Cod Distribution
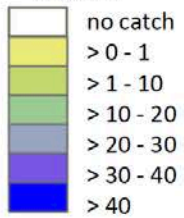
EBS Pacific cod

- Concern that the truncated survey area for the NBS survey in 2018 could cause an overinflation of the 2018 survey estimates
  - Benefit of VAST, as it will tend to smooth between the 2017 and 2019 estimates
  - Compare design-based NBS estimates to the model-based estimates of abundance for only the NBS area
  - VAST estimates without the cold-pool variable
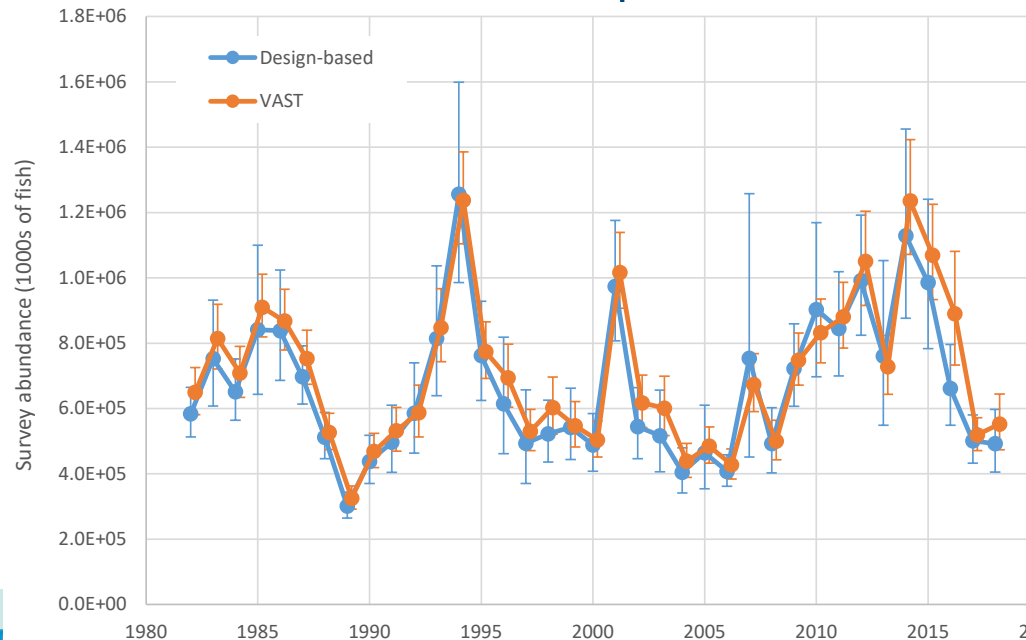
EBS cod

3 hypotheses for addressing survey areas and their contribution to the cod stock

1. EBS population only (do not use NBS information)
2. Combined population of EBS and NBS
3. Separate treatment of EBS and NBS but both included in the overall population

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EBS Pacific cod discussion

- Can Hypothesis 1 (EBS only) be removed, given that:
    1. another year of NBS and EBS survey data are now available,
    2. young fish are present in the NBS,
    3. genetics are similar between the areas, and
    4. the longline fishery has been operating in the NBS
- Given concerns regarding uncertainty in the connection with Russian waters and the possibility that young fish could have moved into the survey area as a result of warm water nearshore in the NBS, Hypothesis 1 is still useful
- Funding is in place for a 2020 NBS survey
- Hypothesis 1 could be downweighted if there is less support for it than for the others

EBS Pacific cod

- Main results: management quantities

EBS/NBS hypothesis:	Combine	EBS only		Combine		Separate	
Model structure:	Base	Simple	Complex	Simple	Complex	Simple	Complex
Model	M16.6i	M19.1	M19.2	M19.3	M19.4	M19.5	M19.6
ADSB	0.090	0.323	0.255	0.106	0.573	0.100	0.351
Mohn's ρ	0.207	0.093	0.679	0.337	0.741	0.558	0.736
B(2019)	290205	96355	190394	303532	322998	221920	201524
B(2020)	246467	118012	169236	244208	266750	194879	176107
maxABC(2019)	181431	12191	108116	200978	218243	135217	120504
maxABC(2020)	137364	17707	81106	142515	169733	98986	87074
B(2019)/B100%	0.44	0.11	0.32	0.47	0.50	0.35	0.34
B(2020)/B100%	0.38	0.13	0.28	0.38	0.42	0.31	0.29
maxFABC(2019)	0.31	0.05	0.30	0.34	0.37	0.30	0.32
maxFABC(2020)	0.29	0.07	0.27	0.31	0.37	0.26	0.28

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EBS Pacific cod recommendations

- Simple and complex versions of models associated with the three developed hypotheses should move forward

    - 6 models be brought forward in November and the author choose an ensemble if time allows along with appropriate weighting

- If time does not allow, bring back six 19.X models and an equal weighting average may be attempted by the Team during the Plan Team meeting with the set or a subset of the available models

- Provide measures of uncertainty for all models so that it would be possible to select ensemble elements and integrate them into a single assessment model

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AI cod

- Preliminary age-structured model presented.
  - Builds on model development from 2012-2016
- November assessment will include New model as well as Tier 5 calculations

Fit to Aleutian Islands survey biomass

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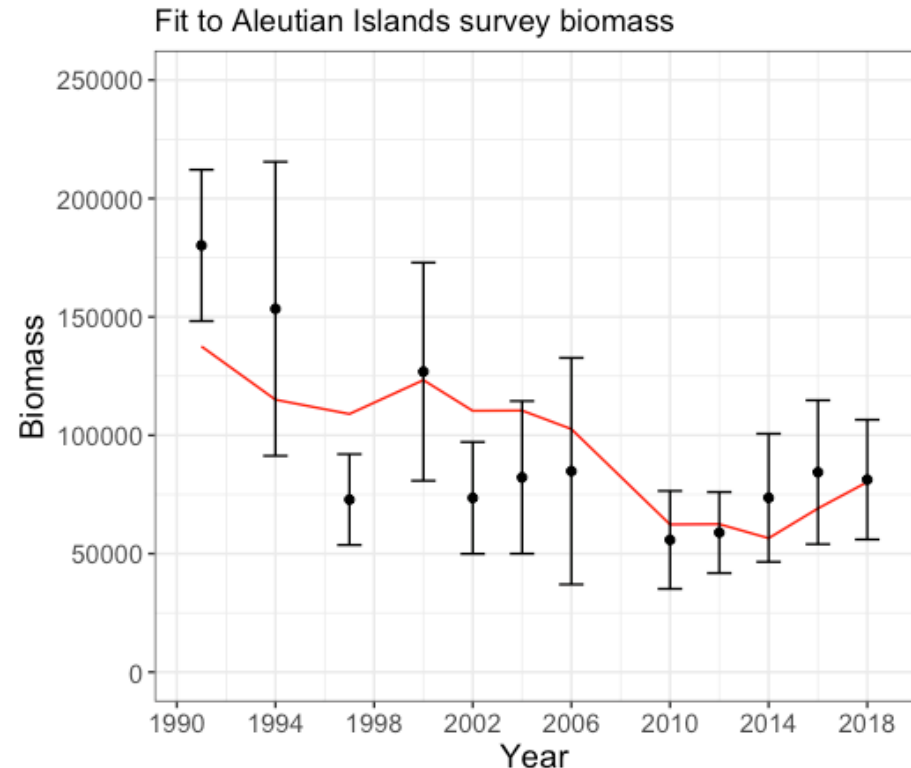
Blackspotted rougheye (BS/RE) rockfish

- Team discussion of MSSC and sub-area ABCs
- Currently continue to identify an MSSC (WAI and CAI) in annual SAFE and RO publishes catch accruing towards this
- MSSC exceeded in all but 1 year since 2014 (again in 2019)
- Team recommended BS RE stock structure research specifically AFSC genomics Activity Plan be highlighted in Research Priorities

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Atka mackerel

Survey biomass time series, by area and fishery CPUE by area
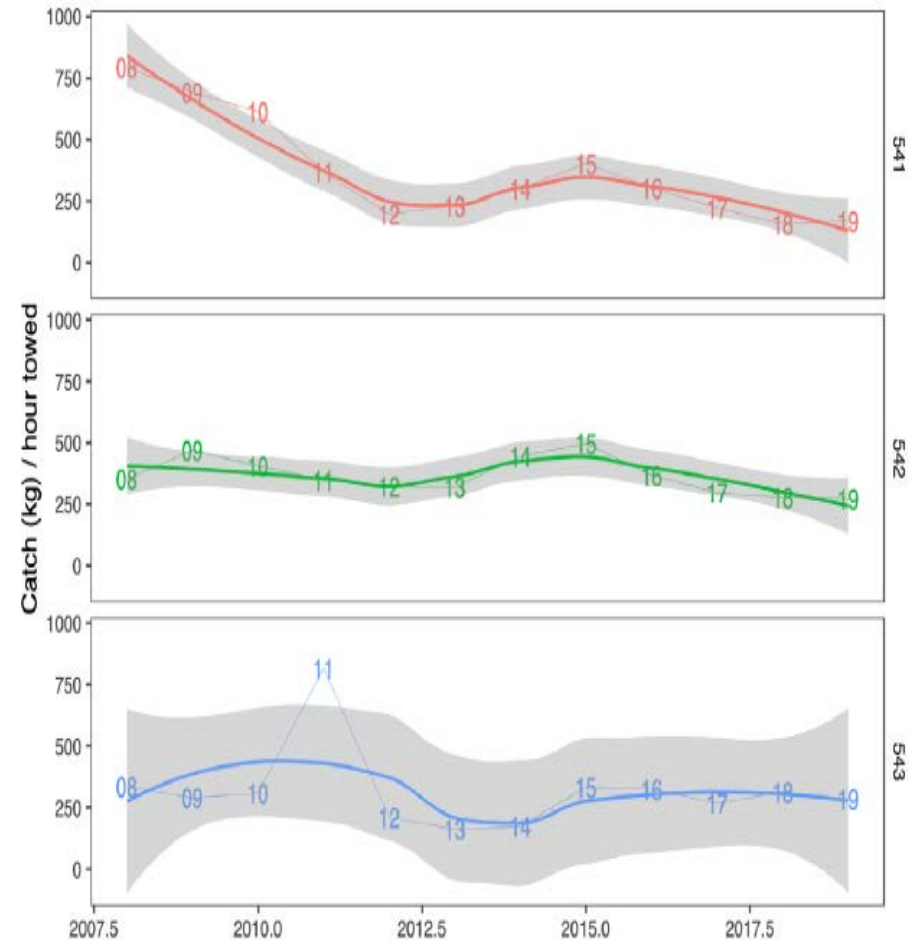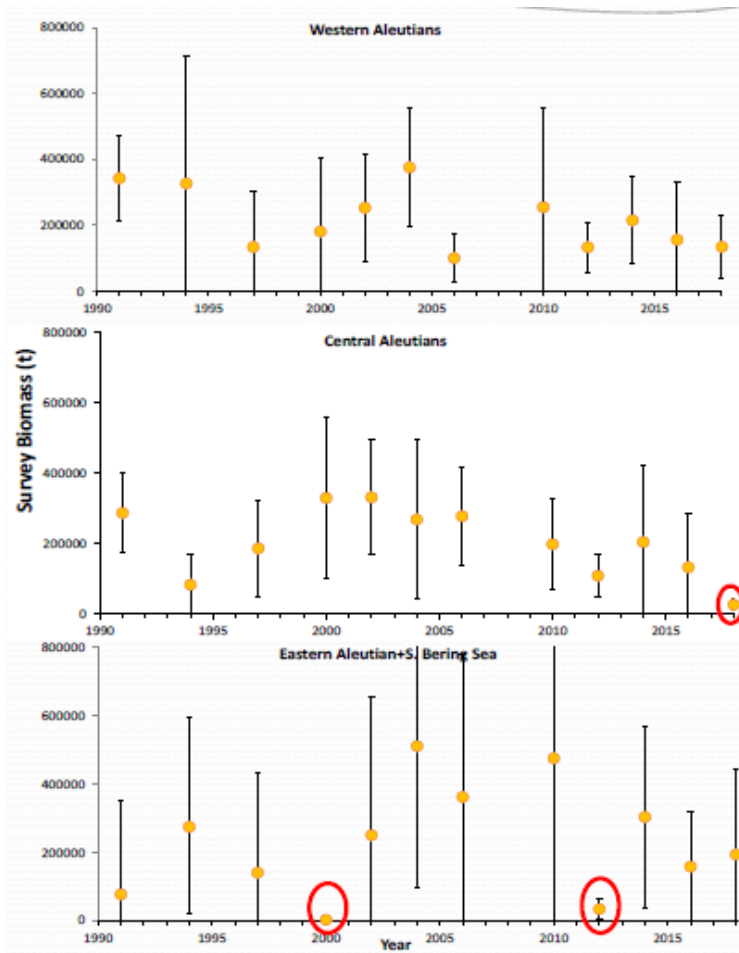
Atka mackerel weighting options presented

CPUE weight	Eastern	Central	Western
0.0	49.6%	9.3%	41.1%
0.5	43.8%	17.0%	39.2%
1.0	40.8%	20.4%	38.7%
2.0	38.0%	22.8%	39.2%
100	32.7%	26.2%	41.1%

- The Team recommends that the authors investigate
  - Application of median smoother
    - Potential for hyperstability within the Atka mackerel fishery to impact this method,
  - Available trip length data
  - Potential to develop an objective weighting for the new approach

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Harvest specifications (1 of 2)

- The Team recommends adoption of the 2020 BSAI final OFLs and ABCs published in the harvest specifications (84 FR 9000, March 13, 2019) for the proposed 2020/2021 BSAI OFLs and ABCs for the purpose of notifying the public of potential final harvest specifications

- The Team noted that the Joint Teams recommended that the authors bring forward two alternatives for OFL in November: (1) combine the BS and AI and (2) combine OFL Alaska-wide

Harvest specifications (2 of 2)

Table 1. Proposed Plan Team recommended OFL, ABC, and TAC for Groundfish in the Bering Sea/Aleutian Islands (metric tons) for 2020-2021. 9/12/2019

Species	Area	2018 OFL	2018 ABC	2018 TAC	Catch as of 12/31/2018	2019 OFL	2019 ABC	2019 TAC	Catch as of 9/7/2019	Plan Team Proposed 2020/2021 OFL	ABC	TAC
Pollock	EBS	4,797,000	2,592,000	1,364,341	1,379,306	3,914,000	2,163,000	1,397,000	1,237,975	3,082,000	1,792,000	
	AI	49,289	40,788	19,000	1,860	64,240	52,887	19,000	1,453	66,981	55,125	
	Bogoslof	130,428	60,800	450	14	183,080	137,310	75	117	183,080	137,310	
Pacific cod	BS	238,000	201,000	188,136	186,702	216,000	181,000	166,475	121,981	183,000	137,000	
	AI	28,700	21,500	15,695	14,719	27,400	20,600	14,214	12,459	27,400	20,600	
Sablefish	BSAI	na	na	na	na	na	na	na	na	10,438	4,682	
	BS	2,887	1,464	1,464	1,598	3,221	1,489	1,489	2,820	n/a	1,994	
	AI	3,917	1,988	1,988	660	4,350	2,008	2,008	465	n/a	2,688	
Yellowfin sole	BSAI	306,700	277,500	154,000	131,544	290,000	263,200	154,000	100,656	284,000	257,800	
Greenland turbot	BSAI	13,148	11,132	5,294	1,835	11,362	9,658	5,294	2,831	10,476	8,908	
	BS	n/a	9,718	5,125	1,672	n/a	8,431	5,125	2,663	n/a	7,777	
	AI	n/a	1,414	169	163	n/a	1,227	169	168	n/a	1,131	
Arrowtooth flounder	BSAI	76,757	65,932	13,621	7,002	82,939	70,673	8,000	6,840	83,814	71,411	
Kamchatka flounder	BSAI	11,347	9,737	5,000	3,108	10,965	9,260	5,000	4,195	11,260	9,509	
Northern rock sole	BSAI	147,300	143,100	47,100	28,275	122,000	118,900	47,100	24,720	147,500	143,700	
Flathead sole	BSAI	79,862	66,773	14,500	11,061	80,918	66,625	14,500	12,652	83,190	68,448	
Alaska plaice	BSAI	41,170	34,590	16,100	23,342	39,880	33,600	18,000	13,861	37,860	31,900	
Other flatfish	BSAI	17,591	13,193	4,000	5,984	21,824	16,368	6,500	3,539	21,824	16,368	
Pacific Ocean perch	BSAI	51,675	42,509	37,361	34,749	61,067	50,594	44,069	32,562	59,396	49,211	
	BS	n/a	11,861	11,861	9,635	n/a	14,675	14,675	6,219	n/a	14,274	
	EAI	n/a	10,021	9,000	8,946	n/a	11,459	11,009	8,191	n/a	11,146	
	CAI	n/a	7,787	7,500	7,312	n/a	8,435	8,385	8,264	n/a	8,205	
	WAI	n/a	12,840	9,000	8,856	n/a	16,025	10,000	9,888	n/a	15,586	
Northern rockfish	BSAI	15,888	12,975	6,100	5,767	15,507	12,664	6,500	8,549	15,180	12,396	
Blackspotted/Rougheye Rockfish	BSAI	749	613	225	238	676	555	279	371	868	715	
	EBS/EAI	n/a	374	75	66	n/a	351	75	67	n/a	448	
	CAI/WAI	n/a	239	150	173	n/a	204	204	304	n/a	267	
Shortraker rockfish	BSAI	666	499	150	250	722	541	358	283	722	541	
Other rockfish	BSAI	1,816	1,362	845	987	1,793	1,344	663	1,066	1,793	1,344	
	BS	n/a	791	275	212	n/a	956	275	564	n/a	956	
	AI	n/a	571	570	775	n/a	388	388	502	n/a	388	
Atka mackerel	BSAI	108,600	92,000	71,000	70,393	79,200	68,500	57,951	46,873	73,400	63,400	
	EAI/BS	n/a	36,820	36,500	36,085	n/a	23,970	23,970	13,113	n/a	22,190	
	CAI	n/a	32,000	21,000	20,889	n/a	14,390	14,390	14,319	n/a	13,310	
	WAI	n/a	23,180	13,500	13,419	n/a	30,140	19,591	19,441	n/a	27,900	
Skates	BSAI	46,668	39,082	27,000	31,207	51,152	42,714	26,000	14,801	48,944	40,813	
Sculpins	BSAI	53,201	39,995	5,000	5,109	53,201	39,995	5,000	4,484	53,201	39,995	
Sharks	BSAI	689	517	180	103	689	517	125	114	689	517	
Squids	BSAI	6,912	5,184	1,200	1,736	0	0	0	0	0	0	
Octopuses	BSAI	4,769	3,576	250	290	4,769	3,576	400	193	4,769	3,576	
Total	BSAI	6,235,729	3,779,809	2,000,000	1,947,838	5,340,955	3,367,578	2,000,000	1,655,860	4,491,785	2,967,269	

Sources: 2018 OFLs, ABCs, and TACs and 2019 OFLs and ABCs are from harvest specifications adopted by the Council in December 2017 and December 2018, respectively; 2018 catches through December 31, and 2019 catches through September 7, 2019 from AKR Catch Accounting.