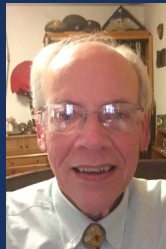# C6 BSAI GROUNDFISH PLAN TEAM REPORT

STEVE MACLEAN, OCTOBER 2021

From SSC presentation by Grant Thompson

AGENDA : ACTION ITEMS

- Administrative
- Arctic Regional Action Plan
- Eastern Bering Sea Regional Action Plan
- ACLIM 2.0
- EBS Pacific Cod ESP
- EBS Pacific Cod Assessment
- AI Pacific Cod
- Impact of altering sample design and density on survey indices

- Performance of model-based indices with alternative sampling strategies
- BSAI Turbot
- EBS Pollock
- Blackspotted/Rougheye Genetics and Spatial Issues
- 2022 and 2023 Harvest Specifications and Halibut DMRs

2022/2023 SPECIFICATIONS

Species	Area	2020 OFL	2020 ABC	2020 TAC	Catch as of 12/31/2020	2021 OFL	2021 ABC	2021 TAC	Catch as of 9/11/2021	Plan Team Proposed 2022/2023 OFL	Plan Team Proposed 2022/2023 ABC	Plan Team Proposed 2022/2023 TAC
Pollock	EBS	4,085,000	2,043,000	1,425,000	1,367,229	2,594,000	1,626,000	1,375,000	1,297,613	2,356,000	1,484,000	
	AI	66,973	55,120	19,000	3,205	61,856	51,241	19,000	1,497	61,308	50,789	
	Bogoslof	183,080	137,310	75	9	113,479	85,109	250	49	113,479	85,109	
Pacific cod	BS	191,386	155,873	141,799	141,537	147,949	123,805	111,380	98,057	128,340	106,852	
	AI	27,400	20,600	13,796	7,474	27,400	20,600	13,796	4,170	27,400	20,600	
Sablefish	BSAI	50,481	n/a	n/a	n/a	60,426	29,558	n/a	4,207	70,710	36,955	
	BS	n/a	2,174	1,861	5,302	n/a	3,396	3,396	2,993	n/a	4,863	
	AI	n/a	2,952	2,039	1,210	n/a	4,717	4,717	1,213	n/a	6,860	
Yellowfin sole	BSAI	287,307	260,918	150,700	133,799	341,571	313,477	200,000	83,790	374,982	344,140	
Greenland turbot	BSAI	11,319	9,625	5,300	2,326	8,568	7,326	6,025	1,578	7,181	6,139	
	BS	n/a	8,403	5,125	1,648	n/a	6,176	5,125	1,126	n/a	5,175	
	AI	n/a	1,222	175	678	n/a	1,150	900	453	n/a	954	
Arrowtooth flounder	BSAI	84,057	71,618	10,000	10,684	90,873	77,349	15,000	6,753	94,368	80,323	
Kamchatka flounder	BSAI	11,495	9,708	6,800	7,442	10,630	8,982	8,982	6,417	10,843	9,163	
Northern rock sole	BSAI	157,300	153,300	47,100	25,937	145,180	140,306	54,500	13,448	213,783	206,605	
Flathead sole	BSAI	82,810	68,134	19,500	9,393	75,863	62,567	25,000	8,042	77,763	64,119	
Alaska plaice	BSAI	37,600	31,600	17,000	20,078	37,924	31,657	24,500	14,531	36,928	30,815	
Other flatfish	BSAI	21,824	16,368	4,000	4,174	22,919	17,189	6,500	2,370	22,919	17,189	
Pacific Ocean perch	BSAI	58,956	48,846	42,875	40,417	44,376	37,173	35,899	23,698	42,384	35,503	
	BS	n/a	14,168	14,168	11,944	n/a	10,782	10,782	3,119	n/a	10,298	
	EAI	n/a	11,063	10,613	10,621	n/a	8,419	8,419	5,854	n/a	8,041	
	CAI	n/a	8,144	8,094	7,966	n/a	6,198	6,198	4,898	n/a	5,919	
	WAI	n/a	15,471	10,000	9,886	n/a	11,774	10,500	9,826	n/a	11,245	
Northern rockfish	BSAI	19,751	16,243	10,000	8,443	18,917	15,557	13,000	5,642	18,221	14,984	
Blackspotted/Rougheye Rockfish	BSAI	861	708	349	517	576	482	482	349	595	500	
	EBS/EAI	n/a	444	85	149	n/a	313	313	107	n/a	324	
	CAI/WAI	n/a	254	264	368	n/a	169	169	242	n/a	176	
Shortraker rockfish	BSAI	722	541	375	294	722	541	500	346	722	541	
Other rockfish	BSAI	1,793	1,344	1,088	1,096	1,751	1,313	916	631	1,751	1,313	
	BS	n/a	956	700	359	n/a	919	522	273	n/a	919	
	AI	n/a	388	388	739	n/a	394	394	358	n/a	394	
Atka mackerel	BSAI	81,200	70,100	59,305	58,884	85,580	73,590	62,257	34,736	79,660	68,220	
	EAI/BS	n/a	24,535	24,535	24,291	n/a	25,760	25,760	13,691	n/a	23,880	
	CAI	n/a	14,721	14,721	14,596	n/a	15,450	15,450	14,922	n/a	14,330	
	WAI	n/a	30,844	20,049	19,997	n/a	32,380	21,047	19,814	n/a	30,010	
Skates	BSAI	49,792	41,543	16,313	19,135	49,297	41,257	18,000	15,619	47,372	39,596	
Sculpins	BSAI	67,817	50,863	5,300	5,155	n/a	n/a	n/a	n/a	n/a	n/a	
Sharks	BSAI	689	517	150	179	689	517	200	308	689	517	
Octopuses	BSAI	4,769	3,576	275	691	4,769	3,576	700	146	4,769	3,576	
Total	BSAI	5,584,382	3,272,581	2,000,000	1,874,613	3,945,315	2,747,727	2,000,000	1,637,689	3,802,167	2,682,318	

Sources: 2020 OFLs, ABCs, and TACs and 2021 OFLs and ABCs are from harvest specifications adopted by the Council in December 2019 and December 2020, respectively; 2020 catches through December 31, and 2021 catches through September 11, 2021 from AKR Catch Accounting.

PT RECOMMENDATIONS: SPECS

- Team recommended adoption of proposed 2022 and 2023 harvest specification overfishing levels and acceptable biological catch amounts, and their adoption by the SSC

- Team approved the 2022 and 2023 halibut discard mortality rates, recognizing that the GOA non-pelagic trawl CP sector now has sufficient sample size to evaluate the GOA trawl CP DMR, recommended DMR is 83%

BSRE GENETICS AND SPATIAL ISSUES

- Diana Stram reviewed timeline of discussions re: spatial management

- Wes Larson reported on recent genetic study of blackspotted rockfish

  - Comprehensive study using whole-genome resequencing involving 5.4 million SNPs

  - No detectible genetic structure

    - Not unexpected given large population size, long generation time, and dynamic habitat

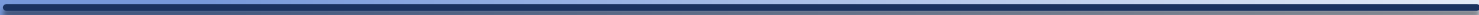# PT RECOMMENDATIONS: BSRE GENETICS AND SPATIAL ISSUES

- Evaluate costs/benefits of a tagging study

- Evaluate costs/benefits of an IBM to answer questions surrounding larval dispersal and stock replenishment rates in the AI

- Support ranking of "strong concern"

- Retains recommendations from 2020: Team requests guidance from the SSC and Council on how to reduce incidental catch in areas with disproportionate spatial exploitation

PT RECOMMENDATIONS: BSRE GENETICS AND SPATIAL ISSUES

- Pursue other items on SSC list from December 2020

  - Convene another workshop on spatial management addressing BSAI blackspotted rockfish and spatial management issues in general

    - Consider and develop alternative management tools for dealing with stocks with rankings of "strong concern" due to prevalence as bycatch

EBS PACIFIC COD

- Grant Thompson presented EBS Pcod assessment

- Results for CIE Review

  - Focused on Ensemble Modeling

    - Development of specific models in ensamble

    - Specification of model weights

- Responses to SSC and GPT comments

- Base model and four additional models adding new features

PT RECOMMENDATIONS: EBS PCOD

- The Team recommended advancing the current assessment and ensemble and associated ranking and weights for November

- The Team recommended the current ensemble weighting, and welcomes alternative weighting approaches at the authors' discretion

  - If alternative weightings are presented, authors should provide explanation

AI PACIFIC COD

- Ingrid Spies presented AI Pcod assessment

- Base model is Tier 5 from 2019

- New Basic model (19.0) and three models that varied by a single feature (19.0a, 19.0b, 29.0c)

PT RECOMMENDATIONS: AI PCOD

- Team recommended that Model 19.0c not be included as an alternative, but information from that model presented in November as a sensitivity run or supportive evidence.

- Team recommended that Models 19.0, 19.0a, and 19.0b, and the current Tier 5 model be brought forward in November.

EBS POLLOCK

- Jim Ianelli described work conducted for EBS pollock assessment
  - Results of genetic studies for EBS, NBS, GOA, and AI
  - Alternative weighting indices
  - Pollock movement and abundance along US-Russia boundary
  - Geostatistical methods for combining trawl and acoustics\
  - Copepod index for age 0 pollock survival
  - ACLIM to evaluate SRR sensitivity results in increased risk ranking
  - Alternative diagnostics on selectivity changes
  - Research on shifts in relative year class strength

PT RECOMMENDATIONS: EBS POLLOCK

- Team recommended ESP for EBS pollock added to the list of new ESPs

BSAI GREENLAND TURBOT

- Meaghan Bryan presented summary of CIE review of BSAI Greenland turbot assessment

  - Evaluate all models and data

  - Identify strengths and weaknesses

  - Make recommendations for future changes

PT RECOMMENDATIONS: BSAI TURBOT

- Team endorsed the recommendations of the CIE review and expect the authors' responses to them in the next assessment.