

BSAI SHORTRAKER ROCKFISH GROUNDFISH PLAN TEAM, NOV 2020

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FULL ASSESSMENT IN EVEN YEARS

TIER 5 RANDOM EFFECTS MODEL

- Aleutian Islands (AI) and eastern Bering Sea (EBS) slope survey biomass
- No model changes, no new survey data since 2018
- Recommendations for 2021:
 - Biomass 24,055 t
 - OFL 722 t
 - ABC 541 t (same as last year)

SSC/PT COMMENTS

- The SSC requests that authors of full assessments fill out the risk table, include the table ranking descriptions, and remove the overall score
 - We completed the risk table as per SSC request
- SSC recommends developing methods to be robust to future survey reductions and consider model-based survey time series for Tier 4,5
 - We plan to investigate model-based survey time series as a way to integrate several potential surveys available for BSAI shortraker. We provide the current estimates of the AFSC longline survey and the IPHC longline survey in the Data section as a start at this investigation
 - As an interim to the VAST methods we plan to follow the GOA shortraker methods for using the bottom trawl and longline survey together in the random effects model



TIER 5 ASSESSMENT METHODS FOR SHORTRAKER

$$(F_{OFL} = M, F_{ABC} = 0.75 * M)$$

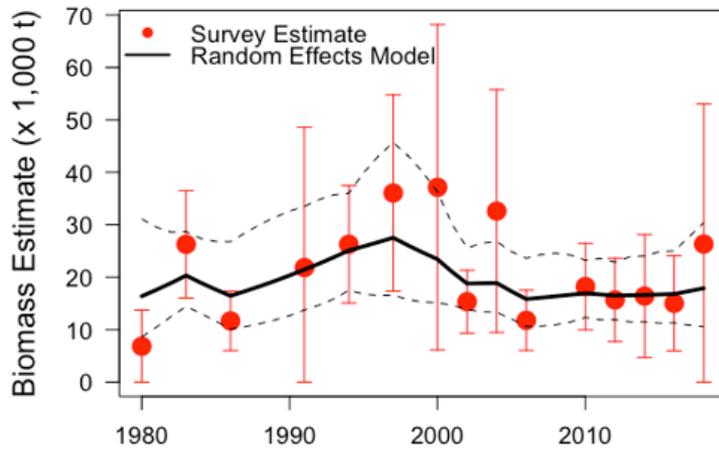
- Random effects model fit to AI and EBS slope trawl survey biomass
 - Split AI survey into AI and Southern Bering Sea (SBS)
- BSAI-wide ABC and OFL
- Same as last year

Quantity	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2020	2021	2021	2022
M (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)	24,055	24,055	24,055	24,055
F_{OFL}	0.03	0.03	0.03	0.03
$\underline{\underline{maxF_{ABC}}}$	0.0225	0.0225	0.0225	0.0225
F_{ABC}	0.0225	0.0225	0.0225	0.0225
OFL (t)	722	722	722	722
$\underline{\underline{maxABC}}$ (t)	541	541	541	541
ABC (t)	541	541	541	541
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2018	2019	2019	2020
Overfishing		n/a		n/a

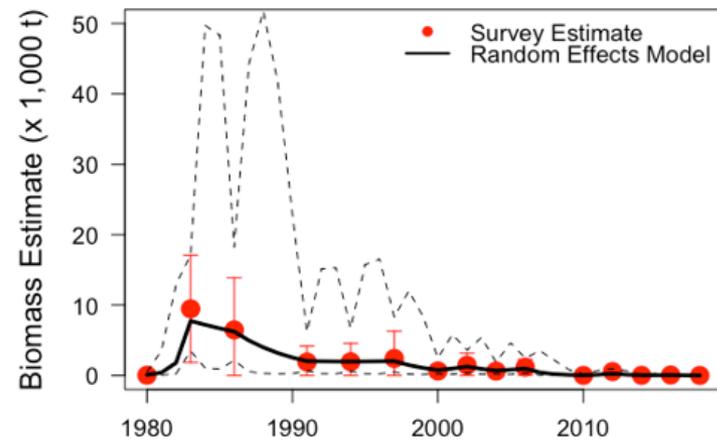


SHORTRAKER TOTAL BIOMASS = 24,055 t

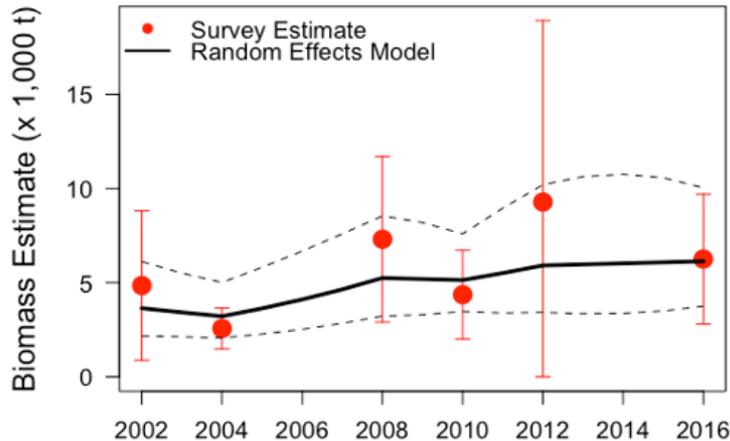
Aleutian Islands



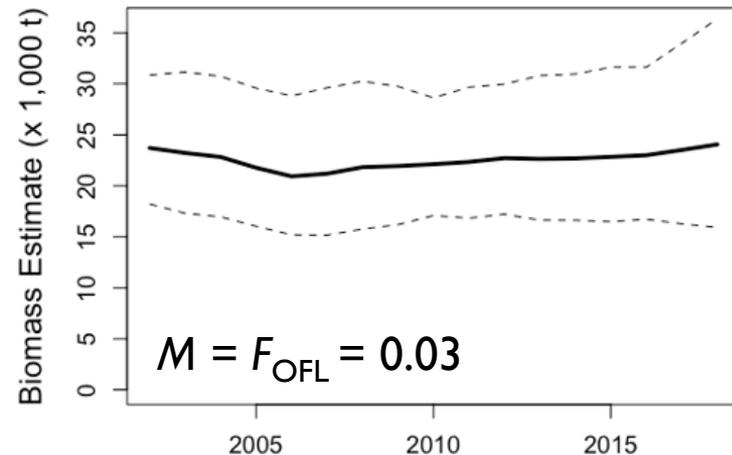
Southern Bering Sea



Bering Sea Slope



BSAI Total Biomass



RISK TABLE – NEW THIS YEAR

<i>Assessment-related considerations</i>	<i>Population dynamics considerations</i>	<i>Environmental/ ecosystem considerations</i>	<i>Fishery Performance considerations</i>
Level 1: No apparent concern	Level 1: No apparent concern	Level 1: No apparent concern	Level 1: No apparent concern

All Level I so we do not recommend a reduction from max ABC

Assessment – catch over TAC in 2019, but 2020 normal, lack of surveys (will review next)

Pop dy and Fishery – little information, but biomass trending upward, slight increase in <35 cm fish suggesting potential increase in recruitment

Environment (Ortiz and Zador)

- Warm temperatures at 100-250 m since 2016
- Limited diet data in the AI suggests Shortraker are generalists so this can mitigate when bioenergetic demands increase in warm temperatures

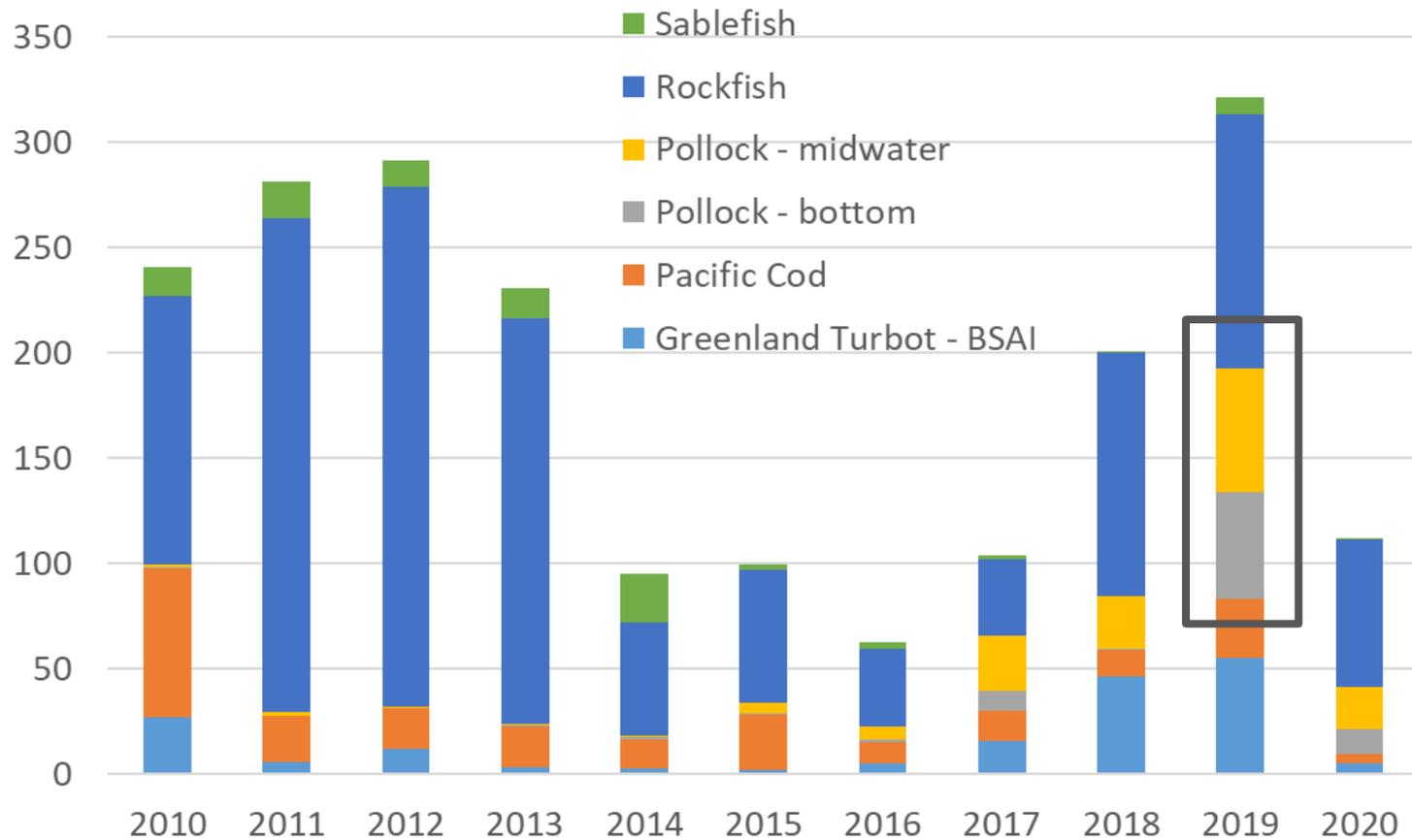


ASSESSMENT CONSIDERATIONS

- Catch over TAC in 2019, but back to normal now
- No AI survey 2020, unknown 2021 or 2022
- No slope survey since 2016, unknown 2021 or 2022
- Need some alternatives and there fortunately are some!!!
- AFSC Longline survey
 - Starts in 1996, alternate years in Aleutian Islands (even) and Bering sea (odd)
 - Length data since 1996, see alternating pattern
- IPHC Longline survey
 - Starts in 1998, annually in the Aleutian Islands and Bering Sea, no length data

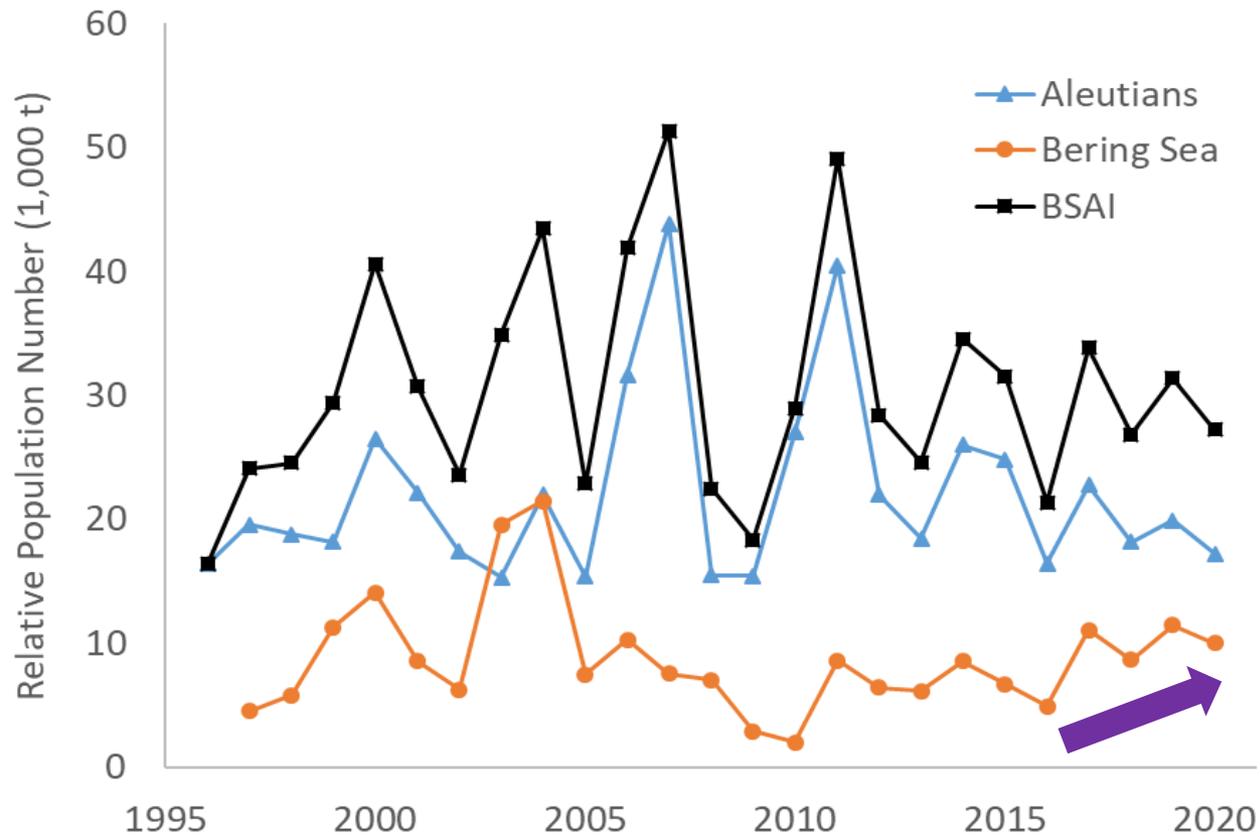


CATCH BY TARGET FISHERY

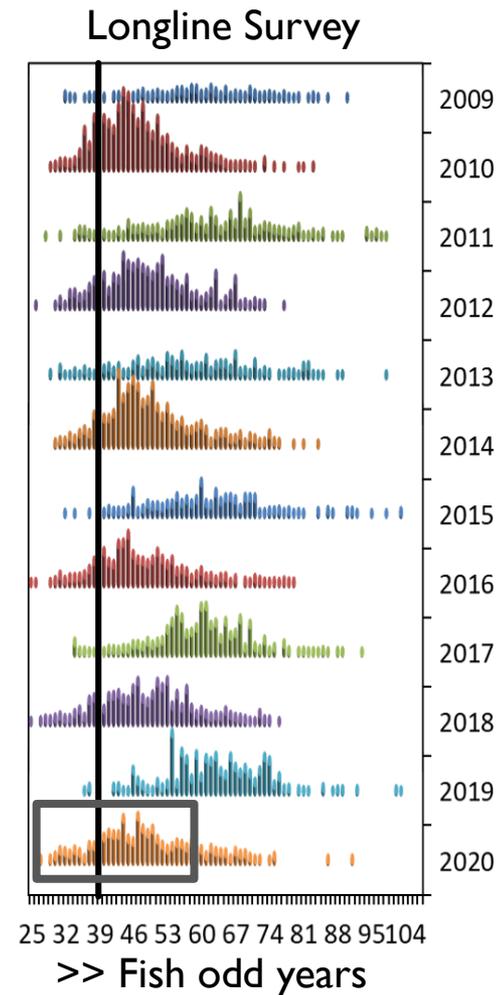
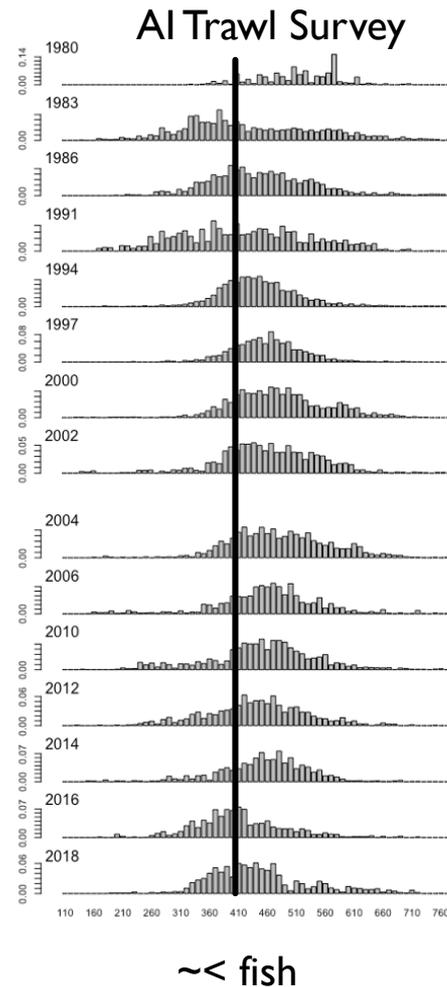
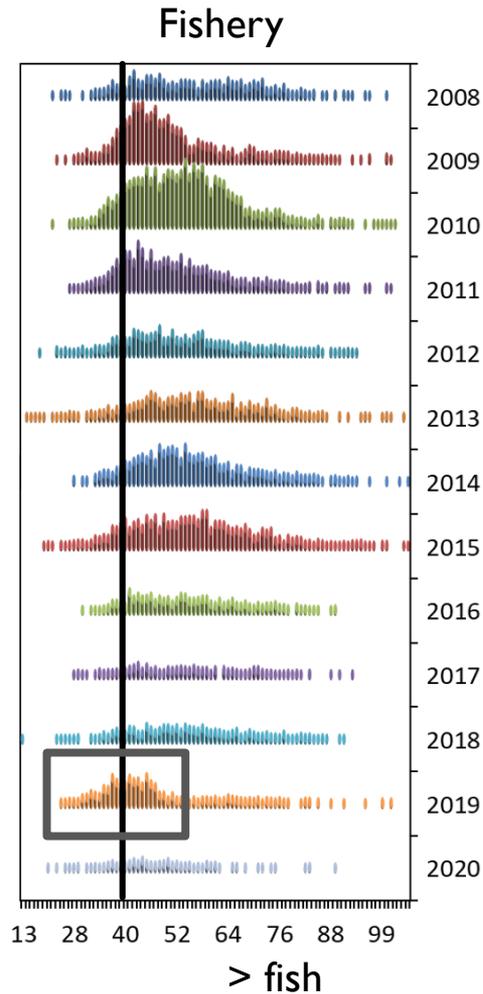


AFSC LONGLINE SURVEY

BSAI Shortraker Relative Population Number

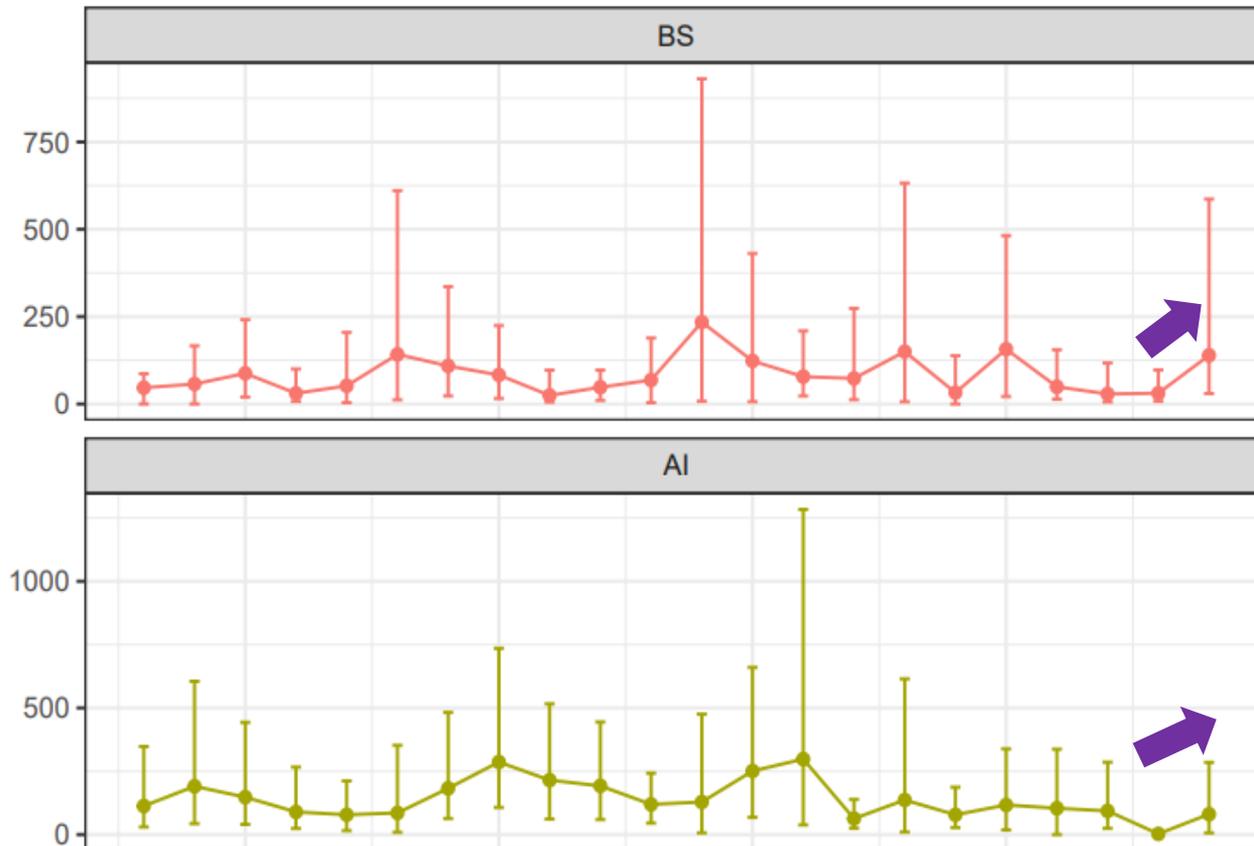


AFSC LONGLINE SURVEY LENGTHS



IPHC LONGLINE SURVEY

Shortraker rockfish Relative Population Number
(+/- 95% bootstrap CI)



QUESTIONS

900 LBS @ ALL RADIUS

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