

ARROWTOOTH FLOUNDER

GROUND FISH PLAN TEAM, NOV 2020

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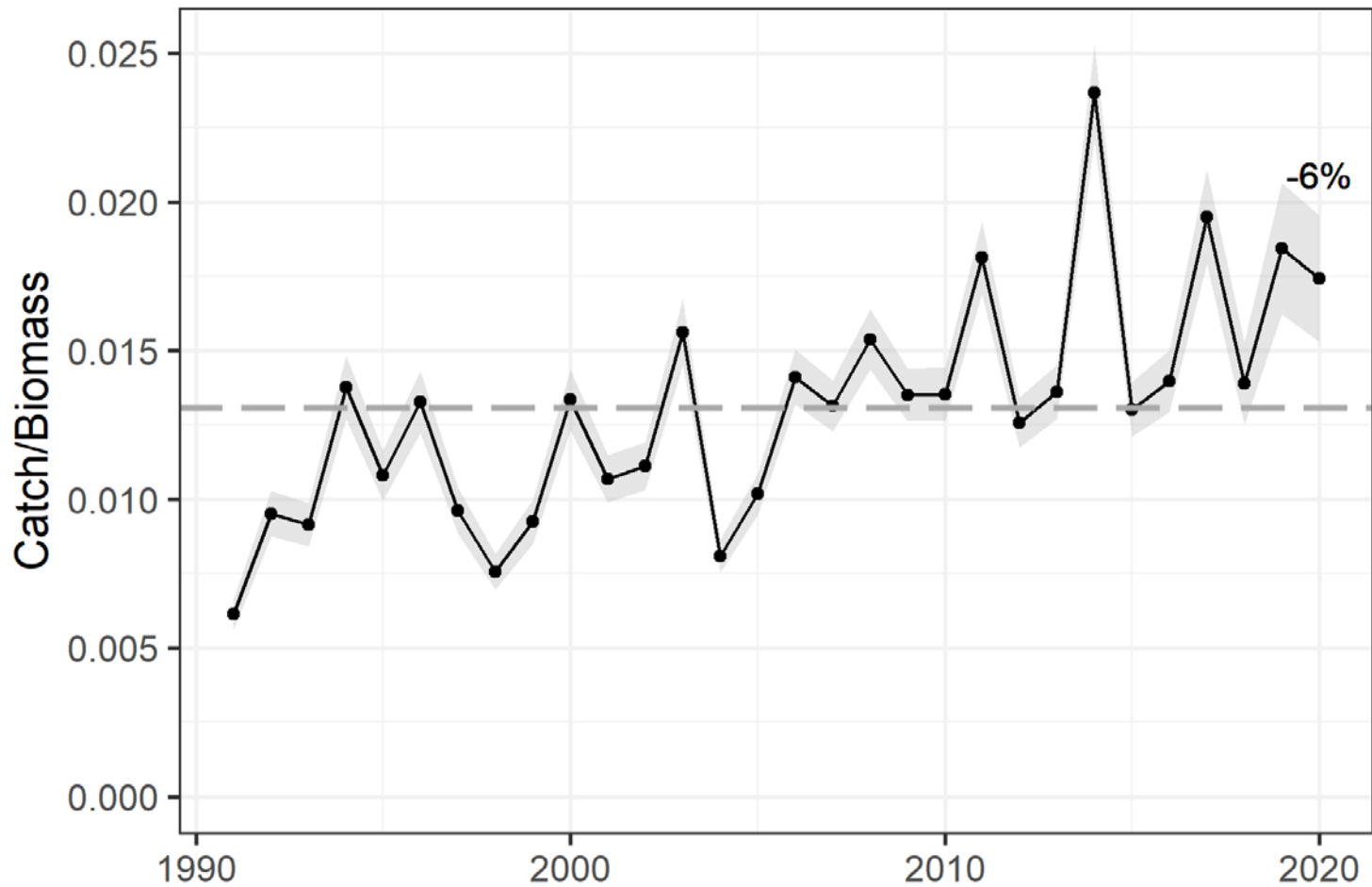


PARTIAL ASSESSMENT (FULL IN ODD YEARS)

TIER 3

- Projection model
- Recommendations for 2021:
 - OFL 151,723 t
 - ABC 126,970 t (<1% decrease from 2020)

CATCH/BIOMASS



SUMMARY TABLE

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)**	0.35, 0.2	0.35, 0.2	0.35, 0.2	0.35, 0.2
Tier	3a	3a	3a	3a
Projected total (age 1+) biomass (t)	1,325,867	1,321,075	1,321,700	1,318,860
Projected Female spawning	756,100	718,325	752,703	724,288
$B_{100\%}$	1,028,329	1,028,329	1,028,330	1,028,330
$B_{40\%}$	411,332	411,332	411,331	411,331
$B_{35\%}$	359,915	359,915	359,915	359,915
F_{OFL}	0.234	0.234	0.234	0.234
$\max F_{ABC}$	0.193	0.193	0.192	0.192
F_{ABC}	0.193	0.193	0.192	0.192
OFL (t)	153,017	127,773	151,723	147,515
$\max ABC$ (t)	128,060	124,357	126,970	123,445
ABC (t)	128,060	124,357	126,970	123,445
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2018	2019	2019	2020
Overfishing	no	n/a	no	n/a
Overfished	n/a	no	n/a	No
Approaching overfished	n/a	no	n/a	No



APPORTIONMENT

Based on random effects model

	Western	Central	West Yakutat	East Yakutat/SE	Total
2019 Area Apportionment	25.5%	54.4%	6.6%	13.5%	100%
2021 ABC (t)	32,377	69,072	8,380	17,141	126,970
2022 ABC (t)	31,479	67,154	8,147	16,665	123,445



SSC/PT COMMENTS

- Plan Team recommends investigating lower recruitment in recent years starting in 2006 and notes that this is before the heatwave
 - We plan to investigate these trends through an ESP in the future
- Plan Team notes the potential of using the AFSC longline survey data for arrowtooth, SSC requests authors to investigate the IPHC survey data.
 - We plan to investigate these two surveys in the next full assessment and may also explore the utility of combining either of these surveys with the bottom trawl survey using model-based methods (VAST) when possible.
- Plan Team and SSC request authors investigate whether opportunistically collected length data should be used in this assessment
 - We plan to evaluate whether this length data should remain in the model in the next full assessment



A wide-angle photograph of a massive glacier flowing through a mountain valley. The glacier is characterized by numerous crevasses and a blueish tint, indicating its age and depth. The surrounding mountains are rugged and partially covered in snow. The sky is overcast and grey. The word "QUESTIONS" is written in large, white, sans-serif capital letters in the upper right quadrant of the image.

QUESTIONS

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