

GOA Rex Sole Partial Assessment

(Full assessment planned for 2021)

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Western-Central and Eastern combined

- Projections are done separately for the Western-Central region and the Eastern region
- This table sums the results of the separate projections for the entire GOA

Quantity	As estimated or specified this year for:		As estimated or recommended this year for:					
	2018	2019	2019*	2020*				
<i>M</i> (natural mortality rate)	0.17	0.17	0.17	0.17				
Tier	3a	3a	3a	3a				
Projected total (3+) biomass (t)	97,982	97,967	98,818	99,383				
Female spawning biomass (t)	45,750	43,575	44,072	43,392				
<i>B</i> _{100%}	See area-specific tables below		See area-specific tables below					
<i>B</i> _{40%}								
<i>B</i> _{35%}								
<i>F</i> _{OFL}								
<i>maxF</i> _{ABC}	See area-specific tables below		See area-specific tables below					
<i>F</i> _{ABC}								
OFL (t)					18,706	17,692	17,889	17,942
maxABC (t)					15,373	14,529	14,692	14,725
ABC (t)	15,373	14,529	14,692	14,725				
Status	As determined last year for:		As determined this year for:					
	2016	2017	2017	2018				
Overfishing	no	n/a	no	n/a				
Overfished	n/a	no	n/a	no				
Approaching overfished	n/a	no	n/a	no				

Western-Central Only

- Projection model uses output from age-structured model
- Used age 3 recruits
- 2018 catch estimated as 2018 current catch up to Oct 6 + 5-yr average Oct 6-Dec 31 catch
- 2019-2020 catch estimated as 2013-2017 average catch

Quantity: (Western-Central GOA)	As estimated or specified this year for:		As estimated or recommended this year for:	
	2018	2019	2019*	2020*
M (natural mortality rate)	0.17	0.17	0.17	0.17
Tier	3a	3a	3a	3a
Projected total (3+) biomass (t)	76,644	76,631	77,483	77,939
Female spawning biomass (t)	36,374	34,569	35,066	34,484
$B_{100\%}$	48,138	48,138	48,138	48,138
$B_{40\%}$	19,255	19,255	19,255	19,255
$B_{35\%}$	16,848	16,848	16,848	16,848
F_{OFL}	0.29	0.29	0.29	0.29
$maxF_{ABC}$	0.23	0.23	0.23	0.23
F_{ABC}	0.23	0.23	0.23	0.23
OFL (t)	14,375	13,558	13,755	13,788
maxABC (t)	11,825	11,145	11,308	11,327
ABC (t)	11,825	11,145	11,308	11,327
Status	As determined last year for:		As determined this year for:	
	2016	2017	2017	2018
Overfishing	no	n/a	no	n/a
Overfished	n/a	no	n/a	no
Approaching overfished	n/a	no	n/a	no

Eastern Only

- Same methods, but for Eastern area
- There is no trawling in the Eastern GOA

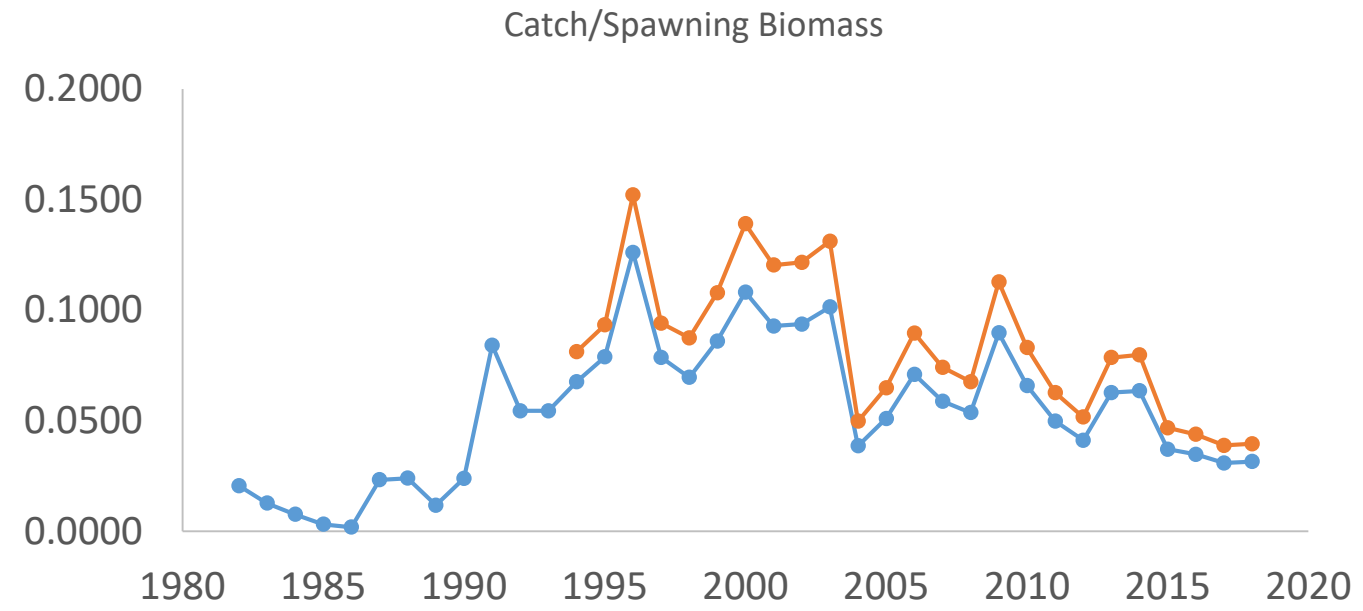
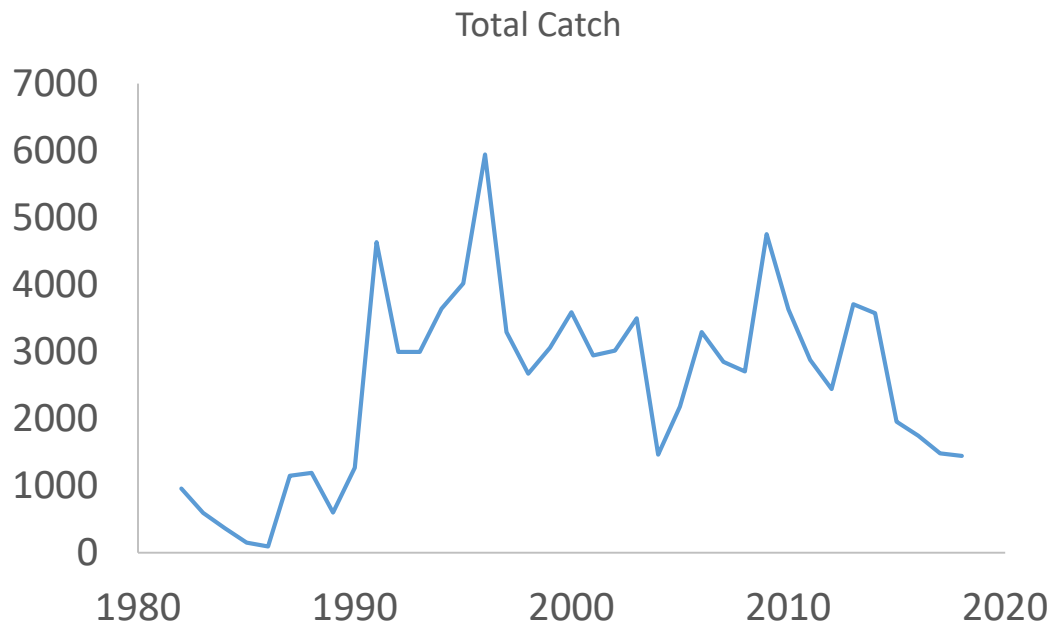
Quantity: (Eastern GOA)	As estimated or <i>specified this year for:</i>		As estimated or <i>recommended this year for:</i>	
	2018	2019	2019*	2020*
<i>M</i> (natural mortality rate)	0.17	0.17	0.17	0.17
Tier	3a	3a	3a	3a
Projected total (3+) biomass (t)	21,338	21336	21,335	21,444
Female spawning biomass (t)	9,376	9,006	9,006	8,908
<i>B</i> _{100%}	9,597	9,597	9,597	9,597
<i>B</i> _{40%}	3,839	3,839	3,839	3,839
<i>B</i> _{35%}	3,359	3,359	3,359	3,359
<i>F</i> _{OFL}	0.31	0.31	0.31	0.31
<i>maxF</i> _{ABC}	0.25	0.25	0.25	0.25
<i>F</i> _{ABC}	0.25	0.25	0.25	0.25
OFL (t)	4,331	4,134	4,134	4,154
maxABC (t)	3,548	3,384	3,384	3,398
ABC (t)	3,548	3,384	3,384	3,398
Status	As determined <i>last year</i> for:		As determined <i>this year</i> for:	
	2016	2017	2017	2018
Overfishing	no	n/a	no	n/a
Overfished	n/a	no	n/a	no
Approaching overfished	n/a	no	n/a	no

Area Apportionment

- Random effects model used to smooth survey biomass by area
- ABC is distributed to the Western and Central areas using the relative proportion of Western-Central biomass in those two areas
- ABC is distributed to West Yak and SE using the relative proportion of Eastern biomass in those two areas

Quantity	Western	Central	Total Western-Central	West Yakutat	Southeast	Total Eastern
Area Apportionment	26.10%	73.90%	100.00%	48.96%	51.04%	100.00%
2019 ABC (t)	2,951	8,357	11,308	1,657	1,727	3,384
2020 ABC (t)	2,956	8,371	11,327	1,664	1,734	3,398

- Survey biomass in 2017 was 97,720 t, up ~12% from 2015



—●— All GOA Catch/Spawning Biomass —●— Western-Central Catch/Biomass