Gulf of Alaska northern and southern rock and shallow-water flatfish partial assessments

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Partial assessment

- Management advice is combined from rock sole projections and biomass estimates from the random effects model for other shallow-water flatfish (SWF)
- Projection model for NRS and SRS
  - Updates
    - 2017 catch estimate 1,059 t from 1,288 t
      - From comprehensive blend database
    - 2018 catch estimate 963 t from 1,288 t
      - As of October: 1,721 t total rock sole
      - Expected additional catch to end of year: 205 t
    - Recruitment: 1977-2015 rather than 1977-2017
  - 2019 catch estimate 1,600 t
    - Average catch from 2013-2017

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Partial assessment

- Management advice is combined from rock sole projections and biomass estimates from the random effects model for other shallow-water flatfish (SWF)

- Random effects model for other SWF
  - Not run because off-year for GOA trawl survey
  - Biomass estimates from 2017 were used

Northern rock sole

Quantity	As estimated or specified last year for:		As estimated or recommended this year for:	
	2018	2019	2019	2020
M (female, male)	0.2, 0.253*	0.2, 0.253*	0.2, 0.253*	0.2, 0.253*
Tier	3a	3a	3a	3a
Projected total (age 0+) biomass (t)	90,794	93,374	93,791	94,110
Projected female spawning biomass (t)	44,536	45,519	47,104	45,967
$B_{100\%}$	51,553	51,553	51,387	51,387
$B_{40\%}$	20,621	20,621	20,555	20,555
$B_{35\%}$	18,044	18,044	17,985	17,985
F_{OFL}	0.462	0.462	0.462	0.462
$maxF_{ABC}$	0.382	0.382	0.382	0.382
F_{ABC}	0.382	0.382	0.382	0.382
OFL (t)	19,960	20,477	20,582	20,836
maxABC (t)	16,802	17,243	17,331	17,548
ABC (t)	16,802	17,243	17,331	17,548
	As determined last year for:		As determined this year for:	
Status	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

Southern rock sole

Quantity	As estimated or *specified last* year for:		As estimated or *recommended this* year for:	
	2018	2019	2019	2020
M (female, male)	0.2, 0.262*	0.2, 0.262*	0.2, 0.262*	0.2, 0.262*
Tier				
Projected total (age 0+) biomass (t)	138,620	139,907	140,338	141,681
Projected Female spawning biomass (t)	71,913	69,178	71,433	69,295
$B_{100\%}$	93,583	93,583	93,518	93,518
$B_{40\%}$	37,433	37,433	37,407	37,407
$B_{35\%}$	32,754	32,754	32,731	32,731
F_{OFL}	0.326	0.326	0.326	0.326
$maxF_{ABC}$	0.271	0.271	0.271	0.271
F_{ABC}	0.271	0.271	0.271	0.271
OFL (t)	25,333	25,689	25,779	26,383
maxABC (t)	21,424	21,717	21,794	22,298
ABC (t)	21,424	21,717	21,794	22,298
	As determined *last* year for:		As determined *this* year for:	
Status	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

Species-specific ABCs and OFLs

Species	Tier	FABC	FOFL	2019 Biomass	2020 Biomass	As specified last year for:				As recommended this year for:			
						2018		2019		2019		2020	
						ABC	OFL	ABC	OFL	ABC	OFL	ABC	OFL
Southern rock sole	3a	0.271	0.326	140,270	141,538	21,424	25,333	21,717	25,689	21,794	25,779	22,298	26,383
Northern rock sole	3a	0.242	0.287	93,748	94,029	16,802	19,960	17,243	20,477	17,331	20,582	17,548	20,836
Yellowfin sole	5	0.15	0.2	35,284	35,284	5,293	7,057	5,293	7,057	5,293	7,057	5,293	7,057
Starry flounder	5	0.15	0.2	29,474	29,474	4,421	5,895	4,421	5,895	4,421	5,895	4,421	5,895
Butter sole	5	0.15	0.2	16,368	16,368	2,455	3,274	2,455	3,274	2,455	3,274	2,455	3,274
English sole	5	0.15	0.2	16,210	16,210	2,432	3,242	2,432	3,242	2,432	3,242	2,432	3,242
Alaska plaice	5	0.15	0.2	10,890	10,890	1,634	2,178	1,634	2,178	1,634	2,178	1,634	2,178
Sand sole	5	0.15	0.2	1,511	1,511	227	302	227	302	227	302	227	302
Total				343,755	345,304	54,688	67,241	55,422	68,114	55,587	68,309	56,308	69,167

- Biomass estimates from last year's random effects model
  - NRS and SRS estimates from projection model

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Shallow-water flatfish management advice

Quantity	As estimated or *specified last* year for:		As estimated or *recommended this* year for:	
	2018	2019	2019	2020
M (natural mortality rate)	0.2	0.2	0.2	0.2
Tier	3a and 5	3a and 5	3a and 5	3a and 5
Biomass (t)	339,152	343,018	343,755	345,304
F_{OFL}	*	*	*	*
$maxF_{ABC}$	*	*	*	*
F_{ABC}	*	*	*	*
OFL (t)	67,240	68,114	68,309	69,167
maxABC (t)	54,688	55,422	55,587	56,308
ABC (t)	54,688	55,422	55,587	56,308
Status	As determined *last* year for:		As determined *this* year for:	
	2016	2017	2017	2018
Overfishing	No	NA	No	NA

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Apportionment

Stock/Assemblage	Area	2018				2019		2020	
		OFL	ABC	TAC	Catch	OFL	ABC	OFL	ABC
Shallow-water flatfish	W	--	25,206	13,250	31	--	25,620	--	25,952
	C	--	25,315	25,315	2,197	--	25,731	--	26,065
	WYAK	--	2,242	2,242	<1	--	2,279	--	2,308
	SEO	--	1,925	1,925	<1	--	1,957	--	1,982
	Total	67,240	54,688	42,732		68,309	55,587	69,167	56,308

- Following the same apportionment from last year's random effects model
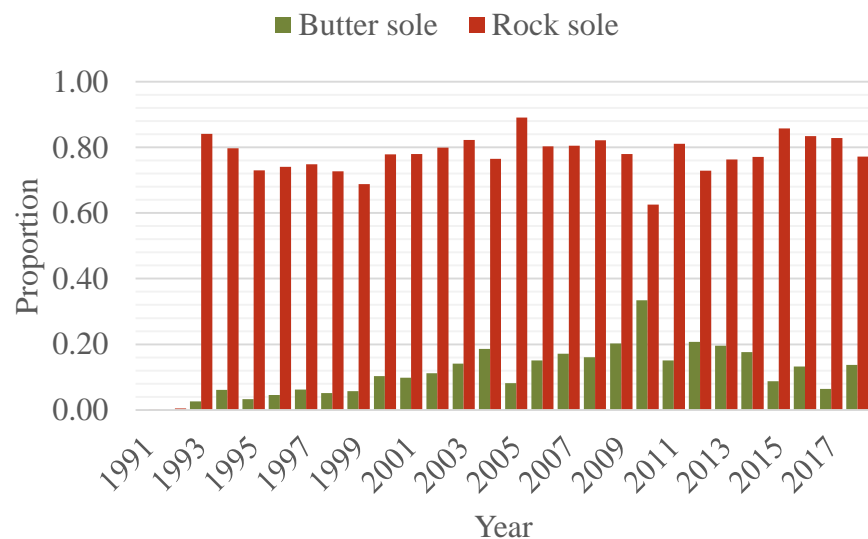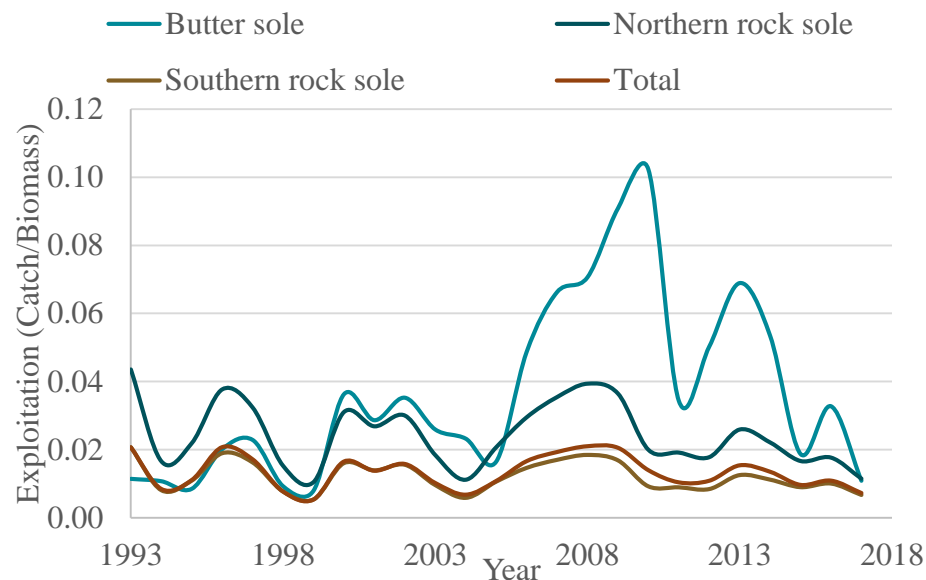
Exploitation
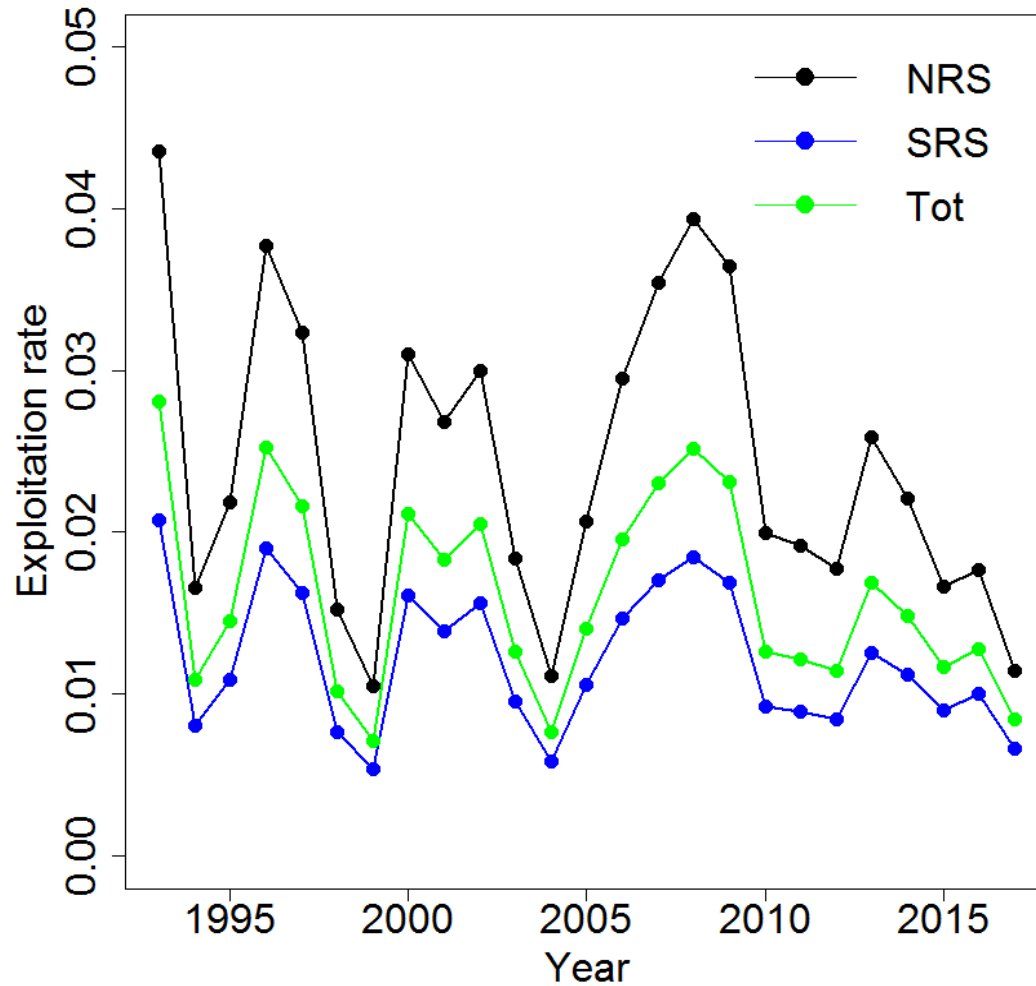
Exploitation

- Butter sole since 1999 has highest rates
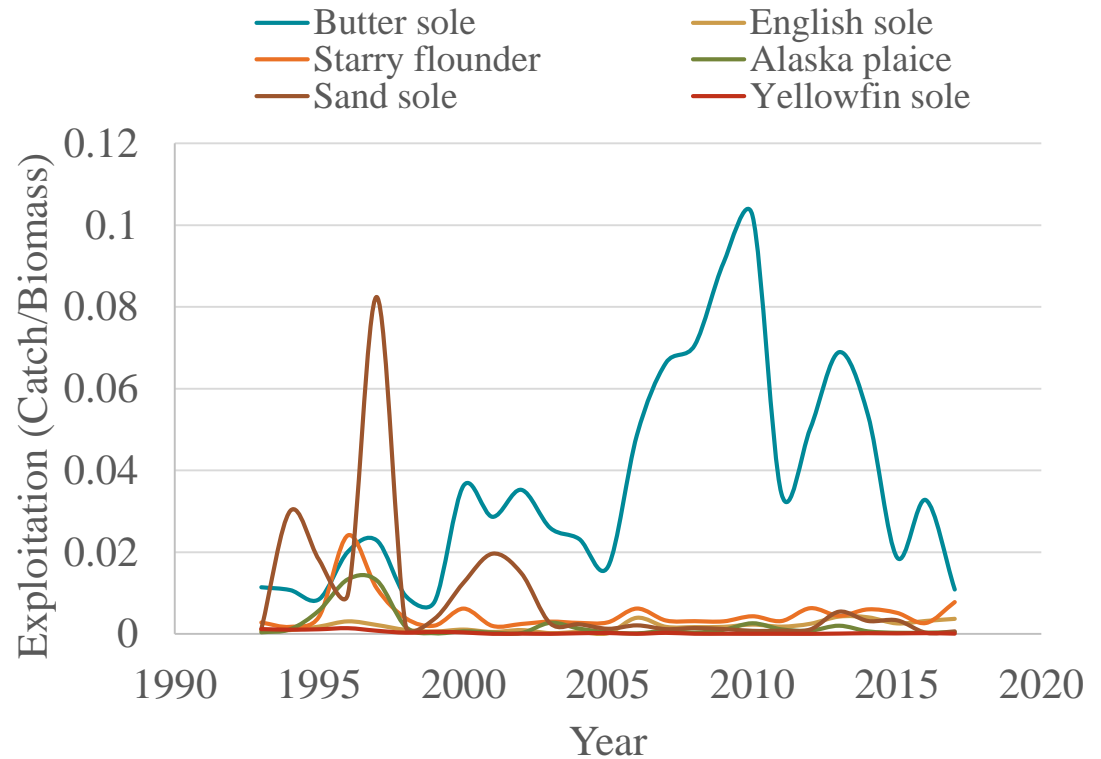
Exploitation

- Rock sole represents 78% of the SWF catch on average since 1993

- Butter sole represents 12% of the SWF catch

Divider Title

Additional Divider Information