

Harvest Projection Assessments

GOA Groundfish Plan Team



September, 2024

Pacific ocean perch - Williams/Kapur
Roughey/blackspotted - Sullivan
Arrowtooth flounder - Shotwell
Flathead sole - Kapur
Rex sole - McGilliard
Shallow water flatfish - Bryan
Deepwater flatfish - McGilliard

Pacific ocean perch (Tier 3a)

Not overfishing, overfished or approaching overfished

- Fishery Trends: catch increasing/level following increases in ABC
- Survey Trends: Persistent large biomass,
 - last survey 2023, next 2025
- Last full/update assessment 2023, next 2025
- 2025 spawning biomass 224,800 trend increasing
- ABC: 28,962 t; OFL: 46,562 t
 - No reduction or change from maxABC

Quantity/Status	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025*	2026*
M (natural mortality)	0.074	0.074	0.074	0.074
Tier	3a	3a	3a	3a
Projected total (age 2+) biomass (t)	650,027	628,75	637,024	617,148
Projected female spawning biomass	228,030	221,38	224,800	217,966
B _{100%}	343,618	343,61	343,618	343,618
B _{40%}	137,447	137,44	137,447	137,447
B _{35%}	120,266	120,26	120,266	120,266
F _{OFL}	0.12	0.12	0.119	0.119
maxF _{ABC}	0.10	0.10	0.099	0.099
F _{ABC}	0.10	0.10	0.099	0.099
OFL (t)	47,466	45,835	46,562	44,826
maxABC (t)	39,719	38,354	38,962	37,509
ABC (t)	39,719	38,354	38,962	37,509
Status	As determined last year for:		As determined this year for:	
	2023	2024	2024	2025
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No



Rougheye/Blackspotted rockfish (Tier 3a)

Not overfishing, overfished or approaching overfished

- Fishery Trends: 2024 projected to be the lowest catch since 2009
 - Switch to pot gear in sablefish fishery
 - Unexplained decreased catches in rockfish TRW
- Survey Trends: No 2024 LLS
 - Recent LLS and BTS below average
- Last full assessment 2023, next full 2025
- 2025 spawning biomass 13,078, trend increasing
- ABC: 1,180 t, OFL: 1,576 t
 - Reduction from maxABC, same method as 2023 (Level 2 assessment & popdy in Risk table)

Quantity	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
M (natural mortality rate)	0.042	0.042	0.042	0.042
Tier	3a	3a	3a	3a
Projected total (ages 3+) biomass (t)	46,029	46,109	46,360	46,319
Projected female spawning biomass (t)	12,986	13,005	13,078	13,059
$B_{100\%}$	21,878	21,878	21,878	21,878
$B_{40\%}$	8,751	8,751	8,751	8,751
$B_{35\%}$	7,657	7,657	7,657	7,657
F_{OFL}	0.045	0.045	0.045	0.045
$maxF_{ABC}$	0.038	0.038	0.038	0.038
F_{ABC}	0.030	0.030	0.034	0.034
OFL (t)	1,555	1,566	1,576	1,631
maxABC (t)	1,302	1,310	1,319	1,365
ABC (t)	1,037	1,041	1,180	1,203
Status	As determined last year for:		As determined this year for:	
	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No



Thanks to Jane Sullivan

Arrowtooth Flounder (Tier 3a)

Not overfishing, overfished or approaching overfished



- Fishery Trends: Catch larger than in 2023, but still low, increases in central GOA, most in ATF fishery, ~10% in rockfish fishery
- Survey Trends: Most recent survey in 2023, below average, but increase from 2021
- Last full assessment 2021, next full 2025
- Update Projection Catch:
 - 2024: 12,726 t, 2025: 12,770 t, 2026: 11,278 t
 - Catch/Biomass increase from 2023, but still below average
- ABC: 119,547 t, OFL: 142,832 t
- CEATTLE model for full assessment 2025, see presentation Wednesday afternoon

Quantity/Status	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025*	2026*
M (female, male)	0.2, 0.35	0.2, 0.35	0.2, 0.35	0.2, 0.35
Tier	3a	3a	3a	3a
Projected total (age 1+) biomass (t)	1,295,410	1,311,810	1,316,560	1,341,280
Projected female spawning biomass (t)	698,842	695,299	699,407	696,032
B _{100%}	1,018,700	1,018,700	1,018,700	1,018,700
B _{40%}	407,478	407,478	407,478	407,478
B _{35%}	356,544	356,544	356,544	356,544
F _{OFL}	0.225	0.225	0.225	0.225
maxF _{ABC}	0.185	0.185	0.185	0.185
F _{ABC}	0.185	0.185	0.185	0.185
OFL (t)	142,485	142,074	142,832	143,347
maxABC (t)	119,249	118,912	119,547	119,985
ABC (t)	119,249	118,912	119,547	119,985
Status	As determined last year for:		As determined this year for:	
	2023	2024	2024	2025
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

Thanks to Kalei Shotwell

Flathead sole (Tier 3a)

Not overfishing, overfished or approaching overfished

- Fishery Trends: catch remains low
 - Impact of pandemic
- Survey Trends: decrease in 2023 but still high
 - last survey 2023, next 2025
- Last full/update assessment 2022, next 2026
- 2025 spawning biomass 98,986, trend stable
- ABC: 41,476 t, OFL: 50,587 t
 - No reduction or change from maxABC

Quantity/Status	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025*	2026*
M (natural mortality)	0.2	0.2	0.2	0.2
Tier	3a	3a	3a	3a
Projected total (age 2+) biomass (t)	294,616	292,639	293,674	291,288
Projected female spawning biomass (t)	96,604	98,468	98,986	100,272
B _{100%}	92,582	92,582	92,582	92,582
B _{40%}	37,033	37,033	37,033	37,033
B _{35%}	32,404	32,404	32,404	32,404
FOFL	0.36	0.36	0.36	0.36
maxF F _{ABC}	0.29	0.29	0.29	0.29
OFL (t)	49,414	50,322	50,587	51,176
maxABC ABC (t)	40,503	41,258	41,476	41,980
ABC (t)	40,503	41,258	41,476	41,980



GOA Rex sole (Tier 3a)

Not overfishing, overfished nor approaching overfished

- Fishery Trends: catch remains low
 - 348 t as of August 31, 2024
- Survey Trends (as of 2023):
 - 2023 biomass lower than 2021
- Last full/update assessment 2021, next 2025
- ABC: 21,387 t, OFL: 26,002 t
 - No reduction or change from maxABC

Quantity	As estimated or specified this year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
<i>M</i> (natural mortality rate)	0.17	0.17	0.17	0.17
Tier	3a	3a	3a	3a
Projected total (3+) biomass (t)	129,611	129,296	129,835	129,082
Female spawning biomass (t)	60,486	61,413	61,695	61,649
<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	See area-specific tables below		See area-specific tables below	
<i>maxF</i> ABC				
<i>F</i> ABC				
OFL (t)	25,978	25,900	26,002	25,743
maxABC (t)	21,364	21,303	21,387	21,173
ABC (t)	21,364	21,303	21,387	21,173
Status	As determined last year for:		As determined this year for:	
	2022	2023	2023	2024
Overfishing	no	n/a	no	n/a
Overfished	n/a	no	n/a	no
Approaching overfished	n/a	no	n/a	no



Thanks to Carey McGilliard

Shallow water flatfish and N/S rock sole (Tier 3a, 5)

Not overfishing, overfished nor approaching overfished

Northern rock sole, Central-Eastern GOA	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
Quantity				
<i>M</i> (natural mortality rate; female, male)	0.2, 0.232*	0.2, 0.232*	0.2, 0.232*	0.2, 0.232*
Tier	3a	3a	3a	3a
Projected total (age 0+) biomass (t)	38,855	40,172	39,925	40,808
Projected Female spawning biomass (t)	16,054	17,427	17,277	17,890
<i>B</i> _{100%}	20,913	20,913	20,913	20,913
<i>B</i> _{40%}	8,365	8,365	8,365	8,365
<i>B</i> _{33%}	7,320	7,320	7,320	7,320
<i>F</i> _{OFL}	0.181	0.181	0.181	0.181
<i>maxF</i> _{ABC}	0.153	0.153	0.153	0.153
<i>F</i> _{ABC}	0.153	0.153	0.153	0.153
OFL (t)	5,227	5,419	5,383	5,504
<i>maxABC</i> (t)	4,466	4,631	4,600	4,703
ABC (t)	4,466	4,631	4,600	4,703
Status	As determined last year for:		As determined this year for:	
	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No

Northern rock sole, Western GOA	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
Quantity				
<i>M</i> (natural mortality rate; female, male)	0.2, 0.254*	0.2, 0.254*	0.2, 0.254*	0.2, 0.254*
Tier	3a	3a	3a	3a
Projected total (age 0+) biomass (t)	67,086	67,327	67,322	67,374
Projected Female spawning biomass (t)	29,303	30,348	30,344	30,491
<i>B</i> _{100%}	28,702	28,702	28,702	28,702
<i>B</i> _{40%}	11,481	11,481	11,481	11,481
<i>B</i> _{33%}	10,045	10,045	10,045	10,045
<i>F</i> _{OFL}	0.385	0.385	0.385	0.385
<i>maxF</i> _{ABC}	0.313	0.313	0.313	0.313
<i>F</i> _{ABC}	0.313	0.313	0.313	0.313
OFL (t)	10,749	11,047	11,046	11,119
<i>maxABC</i> (t)	8,916	9,168	9,168	9,290
ABC (t)	8,916	9,168	9,168	9,290
Status	As determined last year for:		As determined this year for:	
	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No



Thanks to Meaghan Bryan

Shallow water flatfish and N/S rock sole (Tier 3a, 5)

Not overfishing, overfished nor approaching overfished

Southern rock sole, Central-Eastern GOA	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
Quantity				
<i>M</i> (natural mortality rate; 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)	134,978	135,672	135,442	135,558
Projected Female spawning biomass (t)	49,889	54,623	54,486	56,993
<i>B</i> _{100%}	53,439	53,439	53,439	53,439
<i>B</i> _{40%}	21,376	21,376	21,376	21,376
<i>B</i> _{35%}	18,703	18,703	18,703	18,703
<i>F</i> _{OFL}	0.268	0.268	0.268	0.268
<i>maxF</i> _{ABC}	0.224	0.224	0.224	0.224
<i>F</i> _{ABC}	0.224	0.224	0.224	0.224
OFL (t)	17,787	18,322	18,283	18,522
<i>maxABC</i> (t)	15,024	15,483	15,450	15,657
ABC (t)	15,024	15,482	15,450	15,657
	As determined last year for:		As determined this year for:	
Status	2022	2023	2023	2024
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, Western GOA	As estimated or specified last year for:		As estimated or recommended this year for:	
	2024	2025	2025	2026
Quantity				
<i>M</i> (natural mortality rate; female, male)	0.2, 0.271*	0.2, 0.271*	0.2, 0.271*	0.2, 0.271*
Tier	3a	3a	3a	3a
Projected total (age 0+) biomass (t)	114,483	113,960	113,955	113,202
Projected Female spawning biomass (t)	45,481	49,057	49,053	50,699
<i>B</i> _{100%}	43,788	43,788	43,788	43,788
<i>B</i> _{40%}	17,515	17,515	17,515	17,515
<i>B</i> _{35%}	15,326	15,326	15,326	15,326
<i>F</i> _{OFL}	0.222	0.222	0.222	0.222
<i>maxF</i> _{ABC}	0.185	0.185	0.185	0.185
<i>F</i> _{ABC}	0.185	0.185	0.185	0.185
OFL (t)	14,718	14,926	14,925	14,825
<i>maxABC</i> (t)	12,430	12,612	12,612	12,531
ABC (t)	12,430	12,612	12,612	12,531
	As determined last year for:		As determined this year for:	
Status	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a
Overfished	n/a	No	n/a	No
Approaching overfished	n/a	No	n/a	No



Thanks to Meaghan Bryan

Shallow water flatfish and N/S rock sole (Tier 3a, 5)

Not overfishing, overfished nor approaching overfished

- Fishery Trends: catch remains low
 - Small preliminary increase in the rock sole catch in 2024
- Survey Trends (as of 2023):
 - Butter sole and NRS declining, English sole increasing
- Last full/update assessment 2021, next 2025
- ABC: 56,559 t, OFL: 69,277 t
 - No reduction or change from maxABC

Quantity/Status	As estimated or <i>specified last</i> year for:		As estimated or <i>recommended this</i> year for:	
	2024	2025	2025	2026
<i>M</i> (natural mortality)	0.2**	0.2**	0.2**	0.2**
Tier	3a, 5	3a, 5	3a, 5	3a, 5
Biomass (t)	453,606	455,335	453,606	455,146
F_{OFL}	*	*	*	*
$\max F_{ABC}$	*	*	*	*
F_{ABC}	*	*	*	*
OFL (t)	68,121	69,354	69,277	69,610
$\max ABC$ (t)	55,565	56,623	56,559	56,910
ABC (t)	55,565	56,623	56,559	56,910
	As determined <i>last</i> year for:		As determined <i>this</i> year for:	
Status	2022	2023	2023	2024
Overfishing	No	n/a	No	n/a



GOA Deepwater flatfish (Tier 3a)

Not overfishing, overfished nor approaching overfished

- Fishery Trends: catch remains low
 - 60 t as of August 31, 2024
- Survey Trends (as of 2023):
 - 2023 biomass similar to 2021
- Last full/update assessment 2023, next 2027
- ABC: 6,958 t, OFL: 8,263 t
 - No reduction or change from maxABC

Species	Quantity	As estimated or specified last year		As estimated or recommended this year	
		2024	2025	2025	2026
Dover sole	<i>M</i> (natural mortality rate)	0.119(f), 0.113(m)	0.119(f), 0.113(m)	0.129(f), 0.128(m)	0.129(f), 0.128(m)
	Tier	3a	3a	3a	3a
	Projected total (3+) biomass (t)	86,182	84,080	84,026	81,999
	Projected Female spawning biomass (t)	24,938	24,375	24,399	23,960
	<i>B</i> _{100%}	15,968	15,968	15,968	15,968
	<i>B</i> _{40%}	6,387	6,387	6,387	6,387
	<i>B</i> _{35%}	5,589	5,589	5,589	5,589
	<i>F</i> _{OFL}	0.15	0.15	0.15	0.15
	<i>maxF</i> _{ABC}	0.12	0.12	0.12	0.12
	<i>F</i> _{ABC}	0.12	0.12	0.12	0.12
	OFL (t)	8,263	8,133	8,139	7,990
	maxABC (t)	6,969	6,860	6,865	6,739
ABC (t)	6,969	6,860	6,865	6,739	
Greenland turbot	Tier	6	6	6	6
	OFL (t)	49	49	49	49
	maxABC (t)	37	37	37	37
	ABC (t)	37	37	37	37
Kamchatka flounder	Tier	6	6	6	6
	OFL (t)	69	69	69	69
	maxABC (t)	51.75	51.75	52	52
	ABC (t)	51.75	51.75	52	52
Deepsea sole	Tier	6	6	6	6
	OFL (t)	6	6	6	6
	maxABC (t)	4	4	4	4
	ABC (t)	4	4	4	4
	OFL (t)	8,387	8,257	8,263	8,114
	maxABC (t)	7,062	6,953	6,958	6,832
	ABC (t)	7,062	6,953	6,958	6,832



Thanks to Carey McGilliard