# C6 Gulf of Alaska Groundfish Plan Team Report

OCTOBER 2021

SARA CLEAVER, COUNCIL STAFF





From SSC Presentation by Dr. Jim Ianelli



# GOA Groundfish Plan Team Members

Jim Ianelli	AFSC REFM (co-chair)
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Kresimir Williams	AFSC RACE
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## Agenda: Action Items

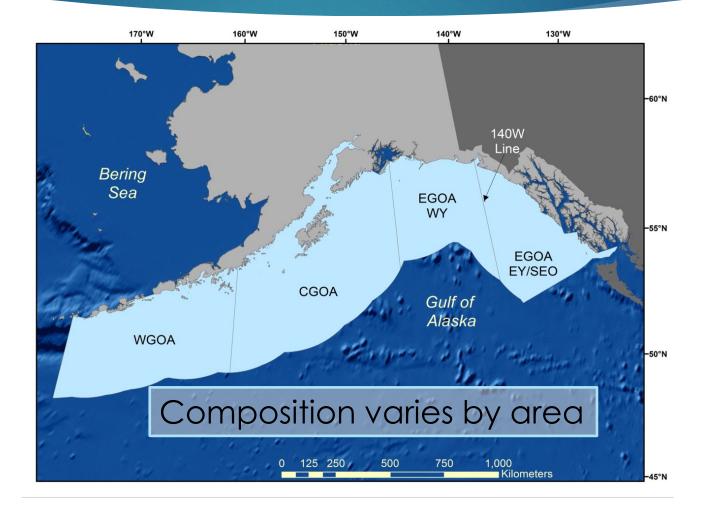
- Administrative
- GOA Regional Action Plan
- GOA CLIM
- GOA Bottom Trawl Survey Results
- ► GOA Bottom Trawl Survey Design
- Shelikof Survey
- Shelikof Time Series/SummerAcoustics
- Gulf of Alaska Summer AcousticSurvey

- GOA Pollock
- GOA Other Rockfish
- GOA Pacific Ocean Perch
- GOA Flathead Sole
- Northern and Southern Rock Sole
- GOA Pacific Cod ESP
- GOA Pacific Cod Model Updates
- 2022 and 2023 Harvest Specification Recommendations and Halibut DMRs





# Other rockfish and DSR Complexes





### Other Rockfish/ DSR

#### 2015

Proposed GOA-wide DSR

#### 2017

PT/SSC approved Alternative 3a and moving to NPFMC Spatial Management Policy Step 2

#### 2019

- Continued discussion
- PT/SSC reiterated support of moving to Step 2

#### 2021

Multivariate analysis of life history and vulnerabilities and SDM

#### **Spatial Management Policy Step 2:**

With input from the agency, the public, and its advisory bodies, the Council (and NMFS) should identify the economic and management implications and potential options for management response to these findings and identify the suite of tools that could be used to achieve conservation and management goals.



## Other Rockfish/DSR

NS1 guidelines: "Where practicable, the group of stocks should have a **similar geographic distribution**, **life history characteristics**, and **vulnerabilities to fishing pressure** such that the impact of management actions on the stocks is similar. The vulnerability of individual stocks should be considered when determining if a particular stock complex should be established or reorganized, or if a particular stock should be included in a complex"

The Team recommends, based on the analyses presented, that the DSR complex be split from the ORx complex GOA-wide.



The Team requests guidance from the SSC on any further analyses needed to support this proposal.

### GOA Groundfish Proposed Harvest Specifications

The Team approved the proposed harvest specifications for 2022 and 2023 by recommending the 2022 GOA final harvest specifications for OFLs and ABCs as published in the Federal Register in February 2021.

The Team approved the 2022 and 2023 halibut discard mortality rates with one change to GOA trawl CP.



			2020		Catch as of	2021 Catch as of Plan Team Proposed 2022					2/23	
Species Area		OFL	ABC	TAC	12/31/2020	OFL	ABC	TAC	9/11/2021	OFL	ABC	TAC
	te GHL	n/a	2,712	-		n/a	2,643	n/a		n/a	2,298	n/a
W (6	(610)	n/a	19,175	19,175	19,005	n/a	18,477	18,477	10,635	n/a	16,067	
C (8	820)	n/a	54,458	54,458	55,399	n/a	54,870	54,870	40,993	n/a	47,714	
Pollock C (8		n/a	26,597	26,597	25,575	n/a	24,320	24,320	10,020	n/a	21,149	
WY		n/a	5,554	5,554	5,180	n/a	5,412	5,412	5,143	n/a	4,708	
	Subtota		108,494	105,782	105,159	123,455	105,722	103,079	66,791	108,767	91,934	-
EYA	AK/SEO	13,531	10,148	10,148	-	13,531	10,148	10,148	1	13,531	10,148	
100	Tota		118,642	115,930	105,159	136,986	115,870	113,227	66,792	120,298	102,082	-
W		n/a	4,942	2,076	222	n/a	7,986	5,590	3,417	n/a	12,892	
Pacific Cod E		n/a	8,458	3,806	3,501	n/a	13,656	10,242	6,996	n/a	22,045	
	-1	n/a	1,221	549	221	n/a	1,985	1,489	198	n/a	3,204	
Tota	31	17,794	14,621	6,431	3,944	28,977	23,627	17,321	10,611	46,587	38,141	-
W		n/a	2,278	1,942	1,469	n/a	3,224	2,428	1,190	n/a	4,165	
C	(ALC	n/a	7,580	6,445	6,053	n/a	9,527	8,056	5,214	n/a	11,111	
Sablefish WY/		n/a	2,521	2,343	1,834	n/a	3,451	2,929	1,858	n/a	4,009	
SEC		n/a	4,524	3,663	3,139	n/a	5,273	4,579	2,576	n/a	5,948	
	A Total	n/a	16,883	14,393	12,495	n/a	21,475	17,992	10,838	n/a	25,231	-
Alaska-wide OFL and ABC	AK Tota		22,009	n/a	n/a	60,426	29,588	n/a		70,710	38,955	n/a
W		n/a	23,849	13,250	20	n/a	24,151	13,250	20	n/a	24,460	
C		n/a	27,732	27,732	4,338	n/a	28,082	28,082	1,354	n/a	28,442	
Shallow-Water Flatfish WY/		n/a	2,773	2,773	1	n/a	2,808	2,808	1	n/a	2,844	
EYA	AK/SEO	n/a	1,109	1,109	1	n/a	1,123	1,123	1	n/a	1,137	
181	Tota		55,483	44,884	4,380	68,841	58,164	45,263	1,376	69,691	56,883	-
W		n/a	228	226	1	n/a	225	225	1	n/a	225	
C C	(A)Z	n/a	1,948	1,948	98	n/a	1,914	1,914	67	n/a	1,914	
Deep-Water Flatfish WY/		n/a	2,105	2,105	3	n/a	2,088	2,088	5	n/a	2,068	
EYA	AK/SEO	n/a	1,751	1,751	3	n/a	1,719	1,719	4	n/a	1,719	
w	Tota		6,030	6,030	105	7,040	5,926	5,926 3,013	77	7,040	5,926 3,013	-
l v		n/a	2,901	2,901	38 1,201	n/a	3,013 8,912		102	n/a	8,912	
	/AIZ	n/a	8,579	8,579	1,201	n/a		8,912	183	n/a		
		n/a	1,174	1,174		n/a	1,208	1,208	- 1	n/a	1,208	
EYA	AK/SEO Tota	n/a 1 18,127	2,224 14,878	2,224 14,878	1,238	n/a 18,779	2,285 15,418	2,285 15,416	193	n/a 18,779	2,285 15,418	
w	1018	10,127 n/a	31,455	14,500	282	10,779 n/a	32,377	14,500	135	10,779 n/a	31,479	•
vv C		n/a n/a	68,669	68,669	20,755	n/a n/a	69,072	69,072	7,983	n/a n/a	67,154	
Arrowtooth Flounder WY	/Al/		10,242	6,900	20,755		8,380	6,900	46		8,147	
	AK/SEO	n/a n/a	17,694	6,900	35	n/a n/a	17,141	6,900	20	n/a n/a	16,665	
ETA	Tota		128,060	96,969	21,121	151,723	126,970	97,372	8,164	147,515	123,445	
w	rota	n/a	13,783	8,650	100	101,723 n/a	14,209	8,650	23	147,515 n/a	14,380	-
l c		n/a	20,201	15,400	1,811	n/a	20,826	15,400	449	n/a	21,078	
Flathead Sole WY/	/AK	n/a	2,354	2,354	1,011	n/a	2,427	2,427	748	n/a	2,458	
	AK/SEO	n/a	1,858	1,858		n/a	1,915	1,915		n/a	1,939	
	Tota		38,196	28,262	1,911	47,982	39,377	28,392	472	48,534	39,851	
W			1,437	1,437	1,338		1,643	1,843	1,322		1,572	
		n/a				n/a				n/a		
C		n/a	23,678	23,678	22,389	n/a	27,429	27,429	21,442	n/a	26,234	
Pacific ocean perch WY	YAK	n/a	1,470	1,470	1,486	n/a	1,705	1,705	1,662	n/a	1,631	
W/O	C/WYAK	31,587	26,585	26,585	25,191	36,563	30,777	30,777	24,426	34,974	29,437	-
SE	0	5,525	4,653	4,653	-	6,414	5,400	5,400	-	6,138	5,165	
	Total	37,092	31,238	31,238	25,191	42,977	38,177	36,177	24,426	41,110	34,602	-
***											1000	

Species	Area		OFL	ABC	TAC	12/31/2020	OFL	ABC	TAC	9/11/2021	OFL	ABC	TAC
Northern Rockfish	W		n/a	1,133	1,133	770	n/a	2,023	2,023	332	n/a	1,928	
	C		n/a	3,178	3,178	1,615	n/a	3,334	3,334	1,656	n/a	3,173	
Northern Rocklish	E		n/a	1	-	-	n/a	1	-	-	n/a	1	-
		Total	5,143	4,312	4,311	2,385	6,396	5,358	5,357	1,988	6,088	5,100	-
	W		n/a	52	52	6	n/a	52	52	2	n/a	52	
Shortraker Rockfish	C		n/a	284	284	188	n/a	284	284	152	n/a	284	
	E		n/a	372	372	299	n/a	372	372	243	n/a	372	
		Total	944	708	708	491	944	708	708	397	944	708	-
	W		n/a	776	776	231	n/a	270	270	91	n/a	265	
	C		n/a	2,748	2,748	1,883	n/a	4,548	4,548	2,656	n/a	4,469	
Dusky Rockfish	WYAK		n/a	115	115	83	n/a	468	468	30	n/a	460	
	EYAK/SEO		n/a	39	39	1	n/a	103	103	-	n/a	101	
		Total	4,492	3,676	3,676	2,198	8,655	5,389	5,389	2,777	8,423	5,295	-
	W		n/a	168	168	4	n/a	168	168	20	n/a	170	
Rougheye and Blackspotted	C		n/a	455	455	185	n/a	456	456	130	n/a	459	
Rockfish	E		n/a	586	586	194	n/a	588	588	159	n/a	592	
		Total	1,452	1,209	1,209	383	1,458	1,212	1,212	309	1,467	1,221	-
Demersal shelf rockfish	Total		375	238	238	105	405	257	257	84	405	257	
Thornyhead Rockfish	W		n/a	326	326	50	n/a	352	352	35	n/a	352	
	C		n/a	911	911	208	n/a	910	910	82	n/a	910	
	E		n/a	779	779	204	n/a	691	691	114	n/a	691	
		Total	2,688	2,016	2,016	462	2,604	1,953	1,953	231	2,604	1,953	-
	W/C		n/a	940	940	663	n/a	940	940	989	n/a	940	
Other Rockfish	WYAK		n/a	369	389	109	n/a	369	369	114	n/a	369	
Other Rockiish	EYAK/SEO		n/a	2,744	2,744	110	n/a	2,744	300	24	n/a	2,744	
		Total	5,320	4,053	4,053	882	5,320	4,053	1,609	1,127	5,320	4,053	-
Atka mackerel		Total	6,200	4,700	3,000	608	6,200	4,700	3,000	792	6,200	4,700	
Big Skate	W		n/a	758	758	28	n/a	758	758	121	n/a	758	
	C		n/a	1,580	1,580	785	n/a	1,580	1,580	335	n/a	1,580	
	E		n/a	890	890	148	n/a	890	890	97	n/a	890	
		Total	4,278	3,208	3,208	961	4,278	3,208	3,208	553	4,278	3,208	-
Longnose Skate	W		n/a	158	158	20	n/a	158	158	28	n/a	158	
	C		n/a	1,875	1,875	348	n/a	1,875	1,875	396	n/a	1,875	
	E		n/a	554	554	248	n/a	554	554	383	n/a	554	
		Total	3,449	2,587	2,587	616	3,449	2,587	2,587	807	3,449	2,587	-
Other Skates	GOA-wide		1,166	875	875	461	1,166	875	875	487	1,166	875	
Sculpins	GOA-wide		6,932	5,199	5,199	535	-		-			-	
Sharks	GOA-wide		10,913	8,184	8,184	1,481	5,008	3,755	3,755	821	5,008	3,755	
Octopuses	GOA-wide		1,307	980	980	79	1,307	980	980	22	1,307	980	
TOTAL			607,120	465,956	399,239	187,171	610,917	476,037	407,976	133,344	616,921	476,269	-
Sources: 2020 OFLs, ABCs, and TACs are from harvest specifications adopted by the Council in December 2019, and 2020 catches through December 31 from AKR Catch Accounting.													

Catch as of

2020

2021

Catch as of Plan Team Proposed 2022/23

2021 OFLs, ABCs, and TACs, as well as 2022 OFLs and ABCs, are from harvest specifications adopted by the Council in December 2020. 2020 catches through September 11, 2021 from AKR Catch Accounting.



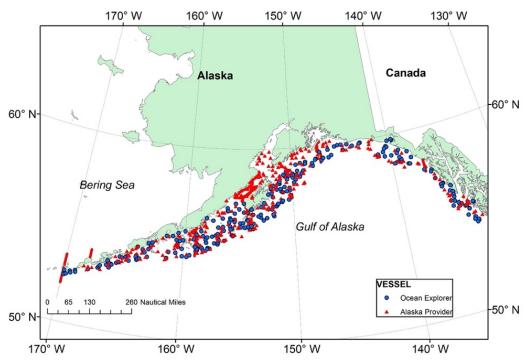
# Additional slides



#### Wayne Palsson

- Nate Raring, co-ord.
- Christina Conrath
- Ned Laman
- Susanne McDermott
- Cecilia O'Leary
- Sean Rooney
- Lou Rugolo
- Margaret Siple
- Paul von Szalay
- Mark Zimmermann

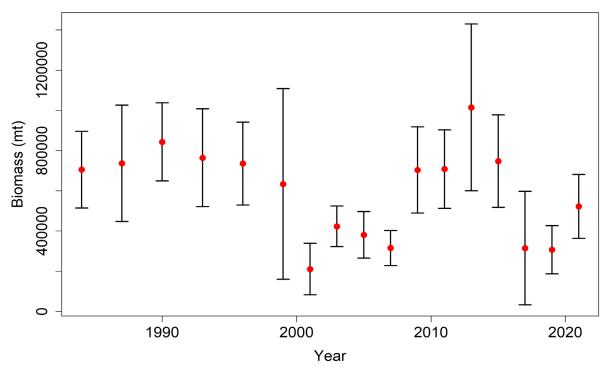








#### walleye pollock (Gadus chalcogrammus)

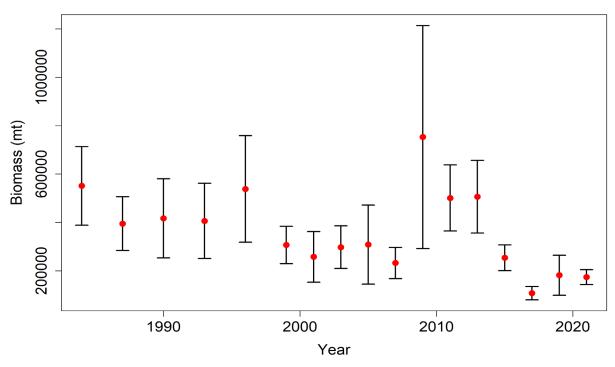




Preliminary, survey designed-based estimates



#### Pacific cod (Gadus macrocephalus)

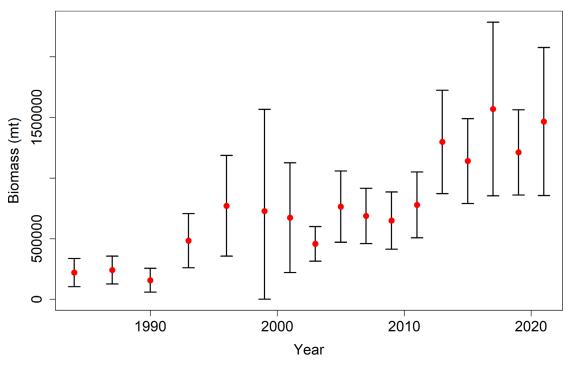




Preliminary, survey designed-based estimates



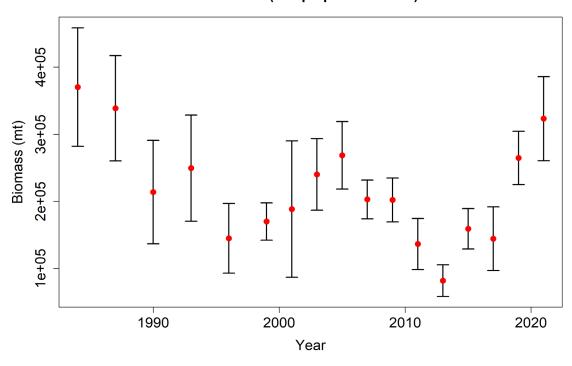
#### Pacific ocean perch (Sebastes alutus)





Preliminary, survey designed-based estimates

#### sablefish (Anoplopoma fimbria)



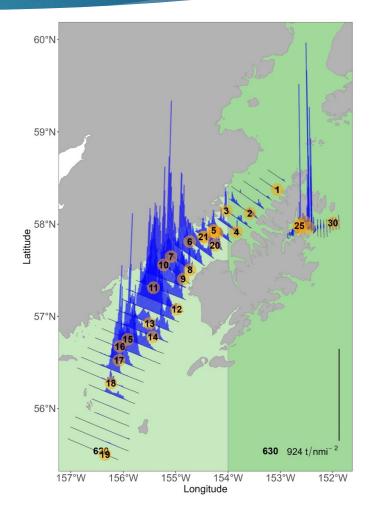


Preliminary, survey designed-based estimates



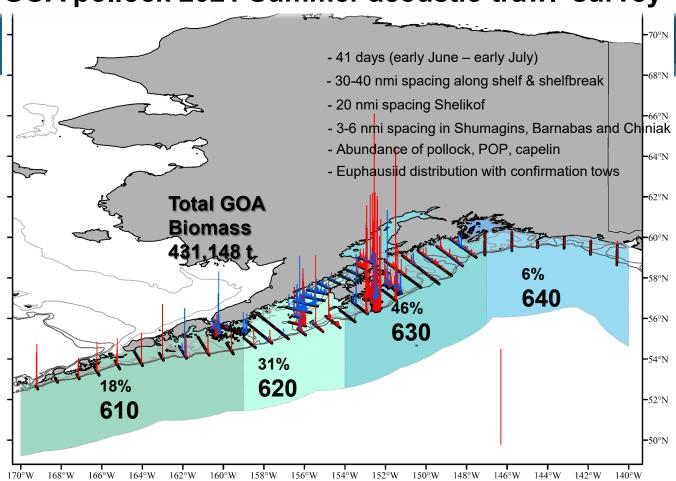
# GOA pollock Winter Survey

- 2021 estimate: 527 kt
- Up from 2020 estimate of 457 kt

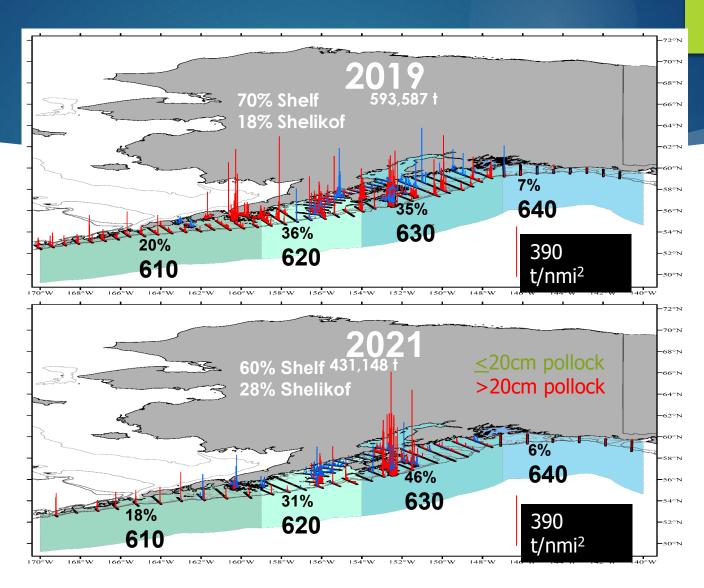




#### GOA pollock 2021 Summer acoustic-trawl survey









The Team noted that the presentation was mainly informational, but the analysts sought feedback. Consequently the Team:

- Agreed that this general approach is acceptable.
- Supported the authors recommendation to focus on area level solutions as they provide unbiased estimates for each management area, whereas the gulf-wide design results in some bias for certain management areas.
- f Suggested that the authors explore area-specific species prioritizations.
- Indicated that it would be a potential concern if changes to survey design would affect interpretation and consistency of the survey time series.
- Supports the author's conclusion that the two vessels, 550 stations, and survey design likely provide adequate abundance estimates (outlined in a Technical Memorandum currently in revision).



### GOA Pollock

Administrative	ĺ
GOA Regional Action Plan (RAP)	l
GOA CLIM	2
GOA Bottom Trawl Survey (BTS) results	3
GOA Bottom Trawl Survey Design	1
Shelikof Survey	1
Shelikof Strait	5
Marmot Pass	5
2022 Surveys6	5
Shelikof Time Series/Summer Acoustics	5
Shelikof survey time series	5
Gulf of Alaska summer acoustic survey	7
GOA Pollock	3
Model	3
GOA Other Rockfish	)
Pacific Ocean Perch (POP)	)
GOA Flathead Sole	)
Northern and Southern Rock Sole	l
GOA Pacific Cod ESP	l
GOA Pacific Cod Model Updates	3
2022 and 2023 Harvest Specification Recommendations and Halibut Discard Mortality Rates 15	5
Adjourn	5

- 1. EM concerns
- 2. Fishery selectivity
- 3. Shelikof survey catchability/availability
- 4. Sensitivities to survey data
  - Impacts on population scale
- Selectivity impacts w/ survey timing
- 6. Combine acoustic and bottom trawl survey data
- 7. Maturity estimates





## GOA Pacific ocean perch

The Team recommended the author include the table provided in the November assessment as an appendix and include a column that provides author responses to reviewers.





### All the Sole

#### Flathead sole

- New Author: Maia Kapur
- Last full assessment for GOA was 2017
- Catches consistently ~10% of TACs since 2010
- The Team supported the author's recommendation in continuing with a partial update this cycle, agrees there is no major conservation concern, and looks forward to the updated model using the latest version of SS in the next full assessment.

# Northern and southern rock sole

- Extensive presentation from Meaghan Bryan
- Digging into CIE review mainly regarding how growth is treated in the assessment





### GOA Pacific cod ESP

The Team recommended that the SSC provide clarity about how the incorporation of socioeconomic information should be used to meet the objectives of the ESPs.

The Team recommended ESP authors provide clarity around the terminology for socioeconomic indicators given the lack of familiarity of these terms within the Team.

Appendix 2.1. Ecosystem and Socioeconomic Profile of the Pacific cod stock in the Gulf of Alaska

S. Kalei Shotwell, Steven Barbeaux, Bridget Ferriss, Ben Fissel, Ben Laurel, Lauren Rogers September 2021





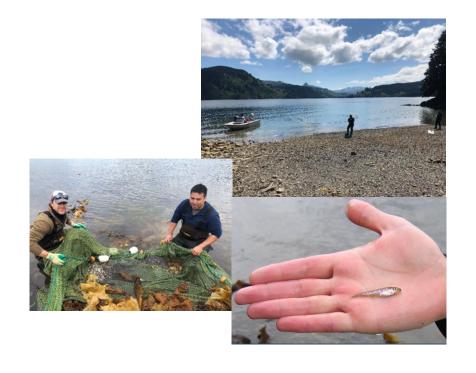
Kerim Aydin, Curry Cunningham, Kirstin Holsman, Carol Ladd, Beth Matta, Sandi Neidetsber, Patrick Ressler, Heather Renner, Sean Rohan, Elizabeth Siddon, Ingrid Spies, Katie Sweeney, Grant Thompson, Mivjin Wang, Jordan Watson, Sarah Wise, Stephanji Zador.





### GOA Pacific cod

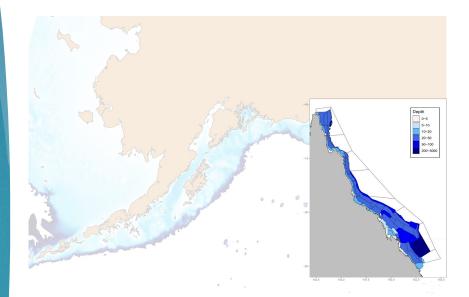
- Several alternate models
- Age-0 beach seine index reduced uncertainty in recent recruitment estimates
- Western Gulf cod tagging study
  - Migration?





### GOA CLIM

The Team recommended that the GOA CLIM project investigators consider increasing their dialogue with assessment authors and other relevant scientists through additional meetings or ad hoc communications in the near future, versus waiting until the 2022 September Plan Team meeting.



#### Contributors

Martin Dorn, Andre Punt, Isaac Kaplan Beth Fulton, Kerim Aydin, Al Hermann Madison Weise, Jamal Moss, Bridget Ferriss Szymon Surma, Gemma Carroll, Owen Liu Alan Haynie, Marysia Szymkowiak, Bob McConnaughey, Sean Anderson, Ned Laman, Jodi Pirtle, Chris Rooper, Stock assessment authors... and others

