

Gulf of Alaska Groundfish Plan Team

September 10–11, 2026 meeting report and recommendations



Presentation to the SSC, October 2026

Jim Ianelli (AFSC), Chris Lunsford (AFSC), Sara Cleaver (NPFMC)

GOA Groundfish Plan Team Members

Jim Ianelli	AFSC REFM (co-chair)	Pete Hulson	AFSC ABL
Chris Lunsford	AFSC ABL (co-chair)	Nat Nichols	ADF&G
Sara Cleaver	NPFMC (coordinator)	Paul Spencer	AFSC REFM
Meaghan Bryan	AFSC REFM	James Thorson	AFSC REFM
Abby Jahn	NMFS AKRO	Sophia Wassermann	AFSC RACE
Craig Faunce	AFSC FMA	Ben Williams	AFSC ABL
Lisa Hillier	WDFW		

Topics at the GOA GFPT Meeting; SSC Presentation Order

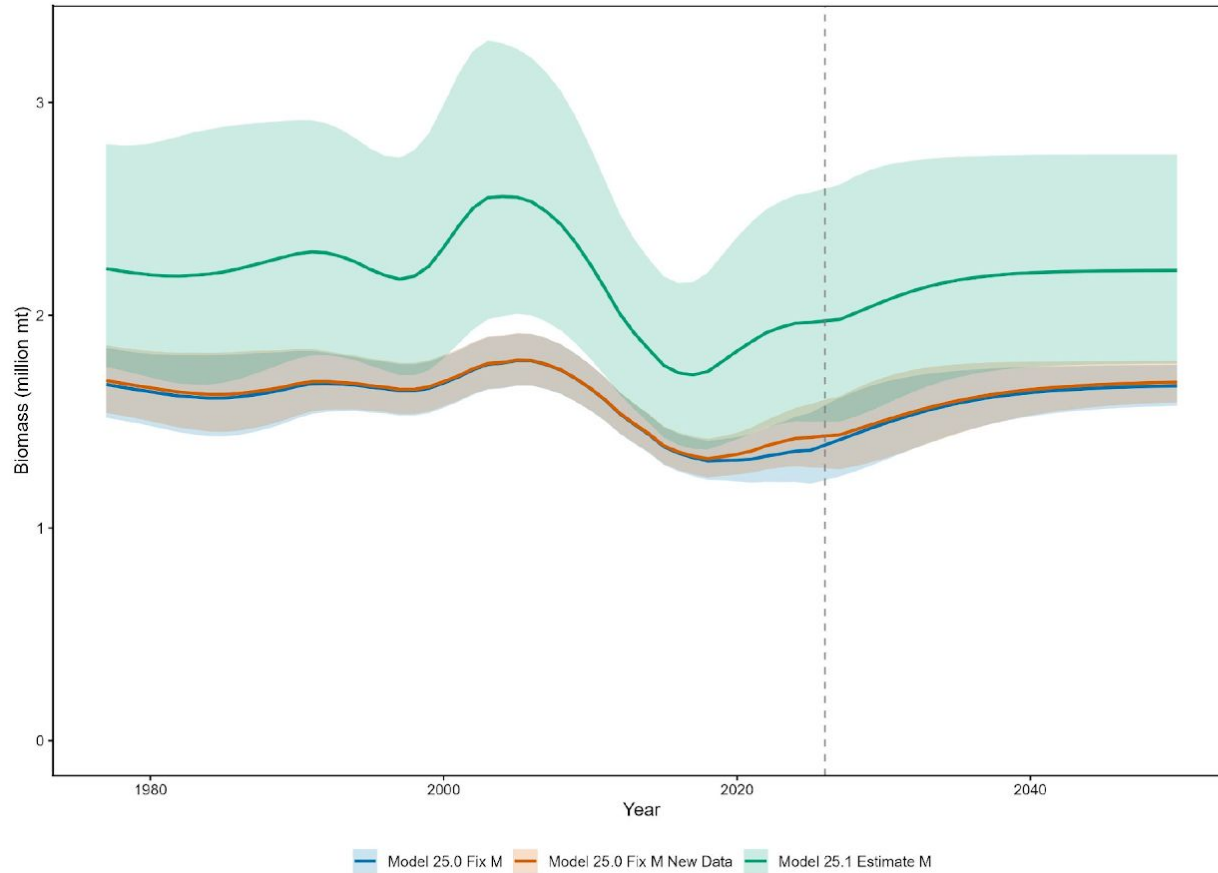
Topic	Presenter	Type	Recommendations
Arrowtooth flounder	Kalei Shotwell	Final, full	Yes, final approved
Rex sole	Carey McGilliard	Final, full	Yes, final approved
Skates, BRDs	Lee Cronin-Fine	Final, update	Yes, final approved
Harvest projections	Chris Lunsford	Final HPs	Yes, 4 finals approved
Demersal shelf rockfish	Aaron Lambert	Proposed models (full in Nov)	Yes, 1 model + alternatives
Thornyheads	Kevin Siwicke	Proposed models (full in Nov)	Yes, 1 model + continuity
Shelikof acoustic survey	Denise McKelvey	Survey update	No
Walleye pollock	Cole Monnahan	Proposed models (full in Nov)	Yes, 2 models
BRDs	Sara Cleaver	Informational	No
Halibut DMR	Mike Fey (Joint mtg)	Final recommendations	Yes, approved

Arrowtooth flounder and ESP (Full assessment, **final**)

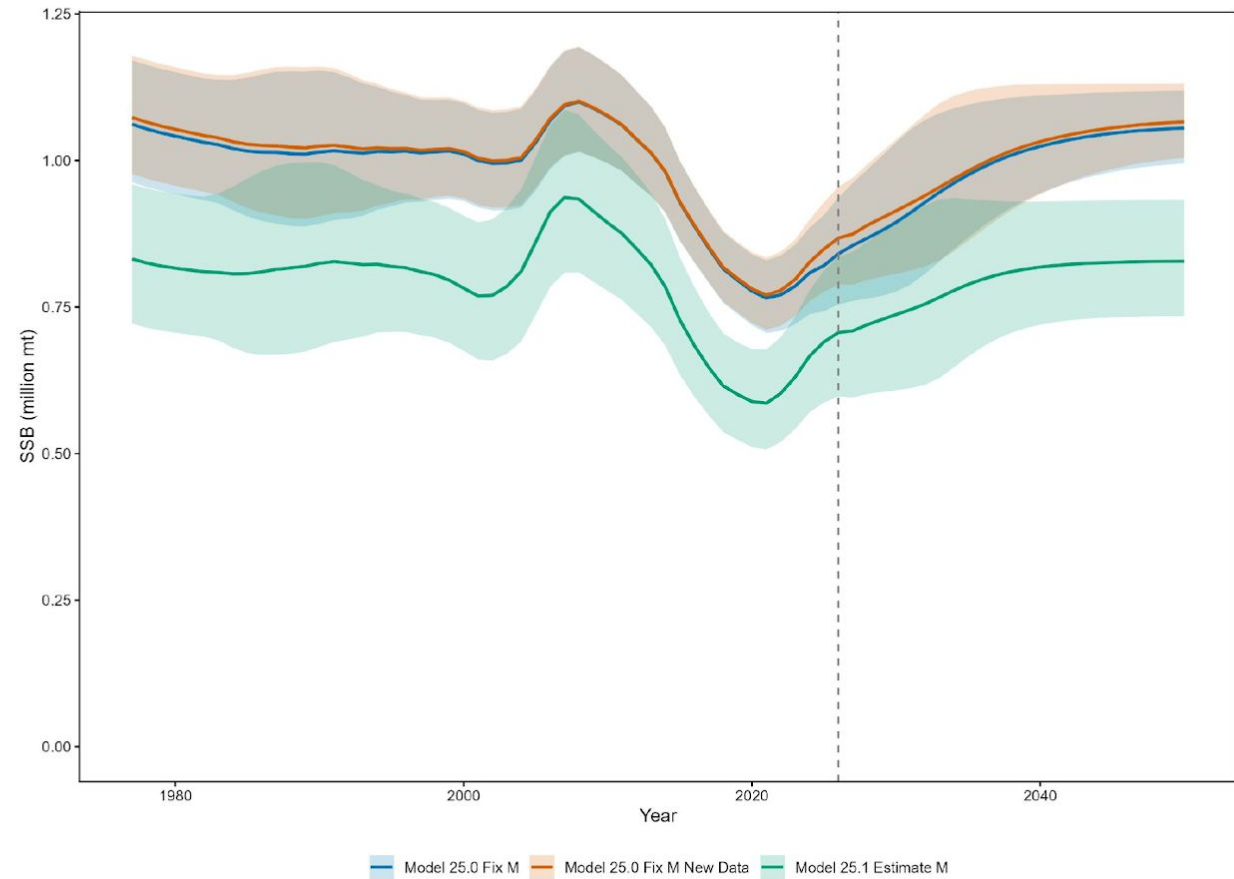
- Model explorations (FINAL assessment)
 - Original bridging exercise to Rceattle completed in 2024
 - Stepwise comparison presented in September 2025 (Base)
 - Extensive data improvements similar trends to 2021 model
 - Model 25.0 fixed sex-specific natural mortality
 - Updated with most recent data
 - Model 25.1 estimated sex-specific natural mortality
 - Higher mortality rates estimated
 - Confounds M with other processes and shifts stock scale

Arrowtooth model comparison

Total Biomass



Spawning Stock Biomass



Green (estimated M) raises total biomass and lowers SSB

Blue/orange: fixed M. Projections begin to right of vertical dashed lines

Arrowtooth flounder and ESP (Full assessment, **final**)

Discussion and recommendations:

- **Team agreed w author and recommended Model 25.0 with fixed sex-specific natural mortality**
 - Extensive data updates done in 2025
 - Diagnostics supported model specification and stability
 - 2027 ABC: 134,083 t, up 12%
 - Lightly exploited stock, catch/abc 11%

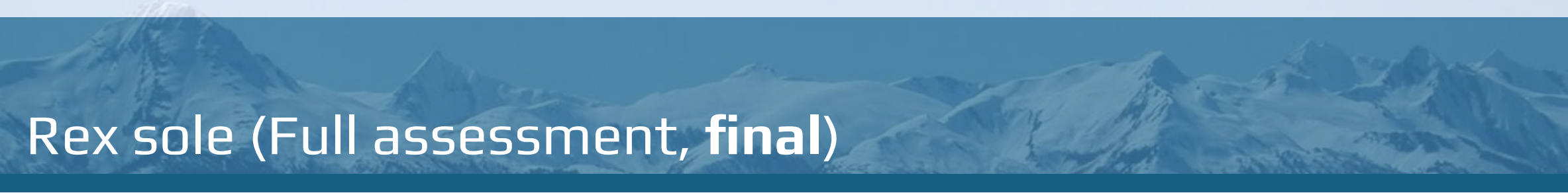
Arrowtooth flounder and ESP (Full assessment, **final**)

- ESP explorations
 - Initiated in 2024, full draft in 2025
 - For 2026:
 - Publication in review w ATF example DSEM
 - Diverse portfolio of predictive and contextual indicators
 - 19 ecosystem, 5 socioeconomic indicators
 - Spring SST, spring ATF larvae, Summer/fall YOY prey, ATF biomass consumed indicators are predictive
 - DSEM can be integrated into Rceattle framework
 - Could be used as projection model in off-years to better estimate recruitment

Arrowtooth flounder and ESP (Full assessment, **final**)

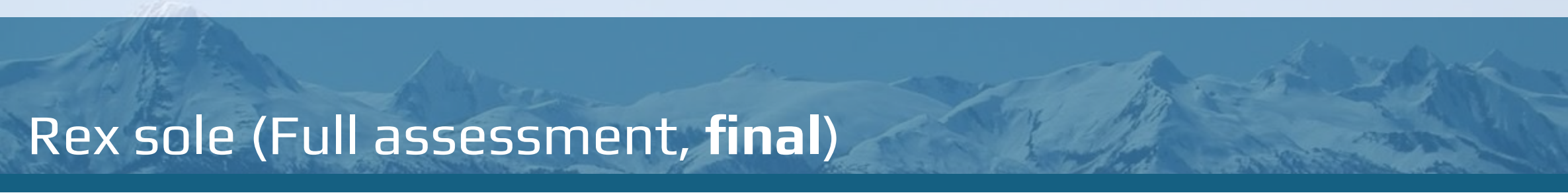
ESP discussion and recommendations

- ESP analysis indicates potentially low age 0 survival
 - warm water, reduced copepods, near-record low larval abundance
- Recruitment time series flat except for 2000
 - Discussed investigating relationships underlying that year class
- Broader discussion of DSEM applications provided in general recommendations



Rex sole (Full assessment, **final**)

- Model explorations (last full 2021)
 - Model 25.0
 - Presented to CIE review and PT/SSC in 2025
 - Updated w most recent data
 - Model 25.1
 - Ageing error matrix added specific to rex sole
 - Methods introduced in Sept. 2025
 - Similar results to 25.0



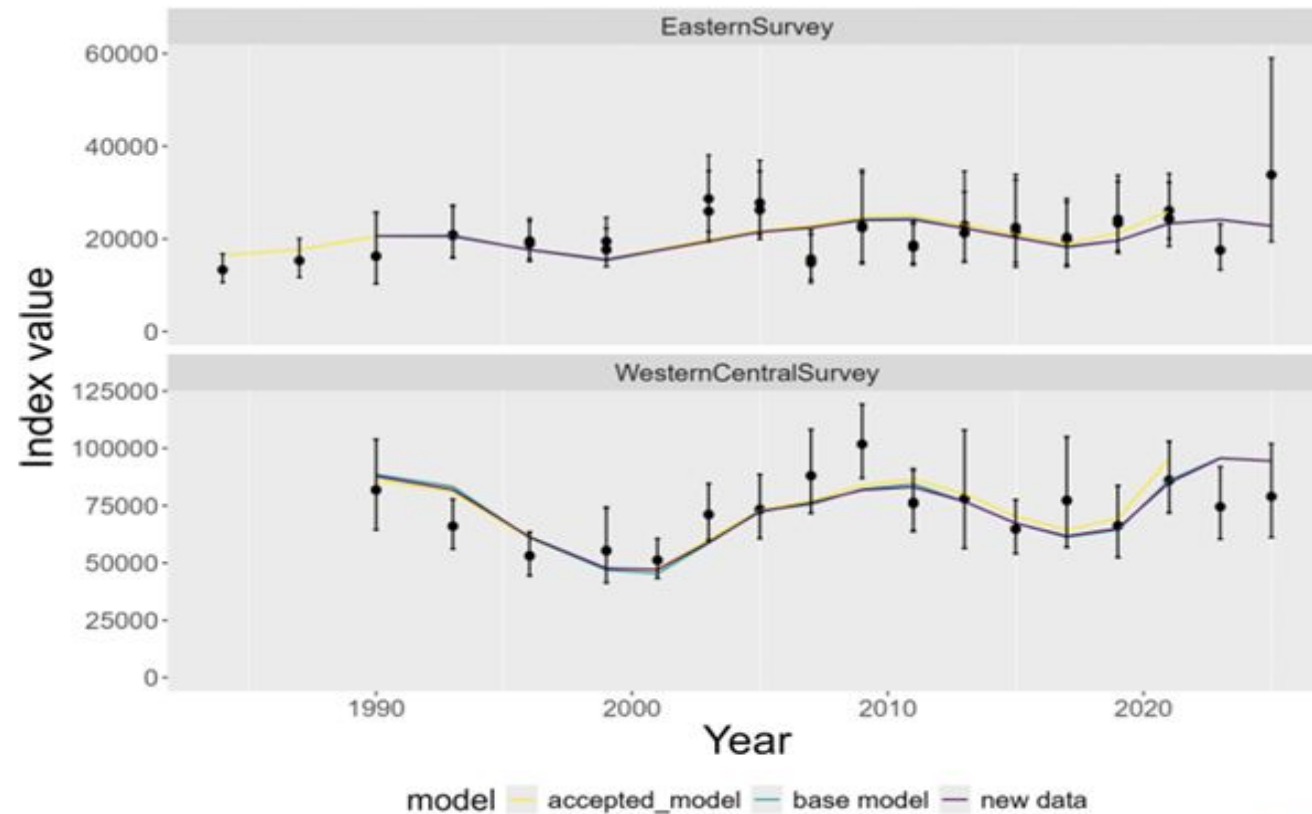
Rex sole (Full assessment, **final**)

Discussion and recommendations:

- Recent survey and composition fits remain a concern
- Models don't fully explain recent population dynamics but captured historical dynamics
- Movement and/or growth among areas may not be represented
 - Moving to a 2 area model was improvement over 1 area model

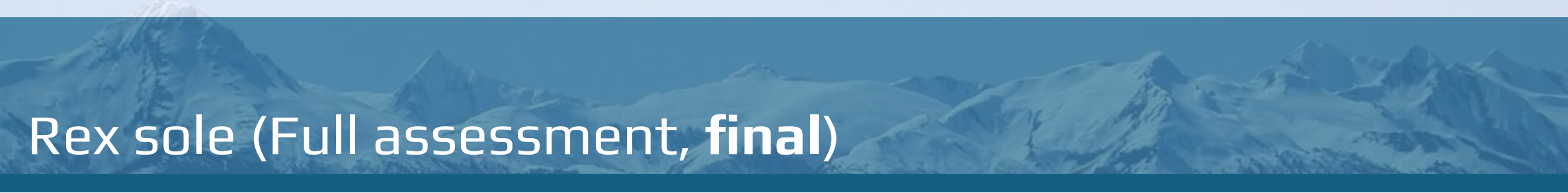
Rex sole (Full assessment, **final**)

Fits to survey biomass



2023/2025 survey observed
vs model estimated

EGOA 2025 survey
exceptionally high



Rex sole (Full assessment, **final**)

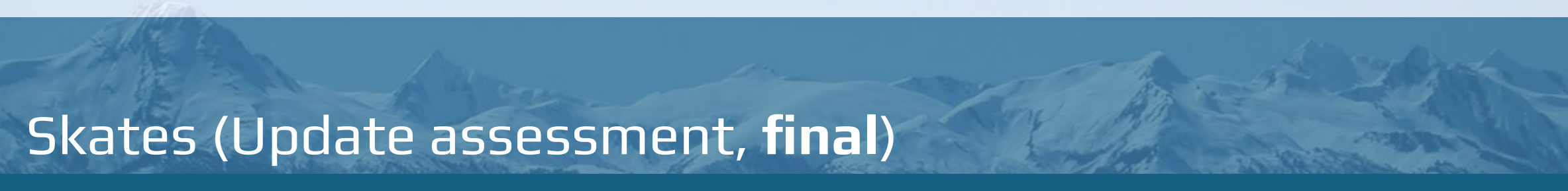
Discussion and recommendations:

Team recommended Model 25.1, which includes ageing error

- Spawning biomass remains above B40% and is projected to decline slightly

Team recommended SPoRC for the next operational assessment (Bridge Model 25.1)

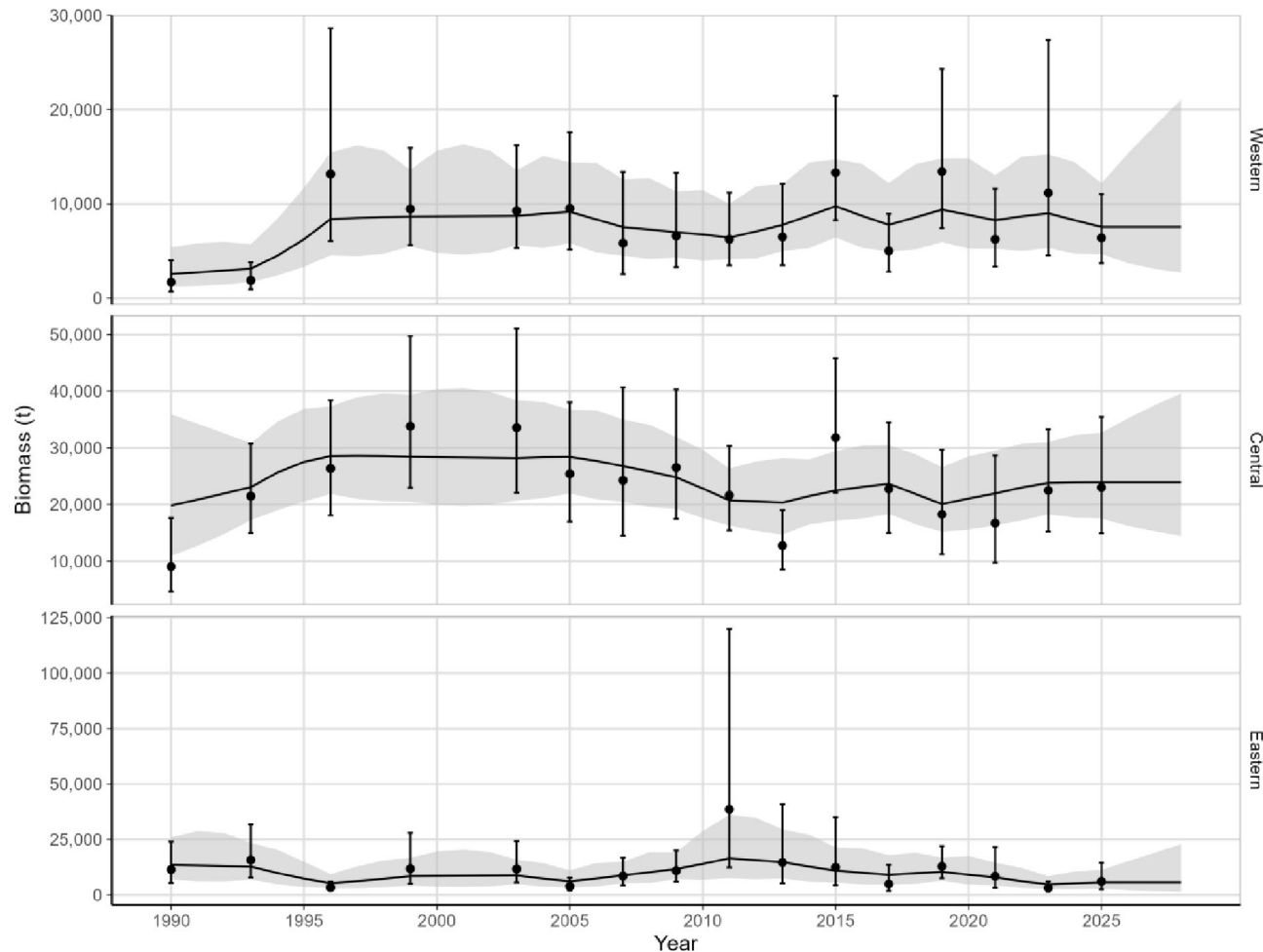
- Noted spatial components and research goals for next full assessment cycle



Skates (Update assessment, **final**)

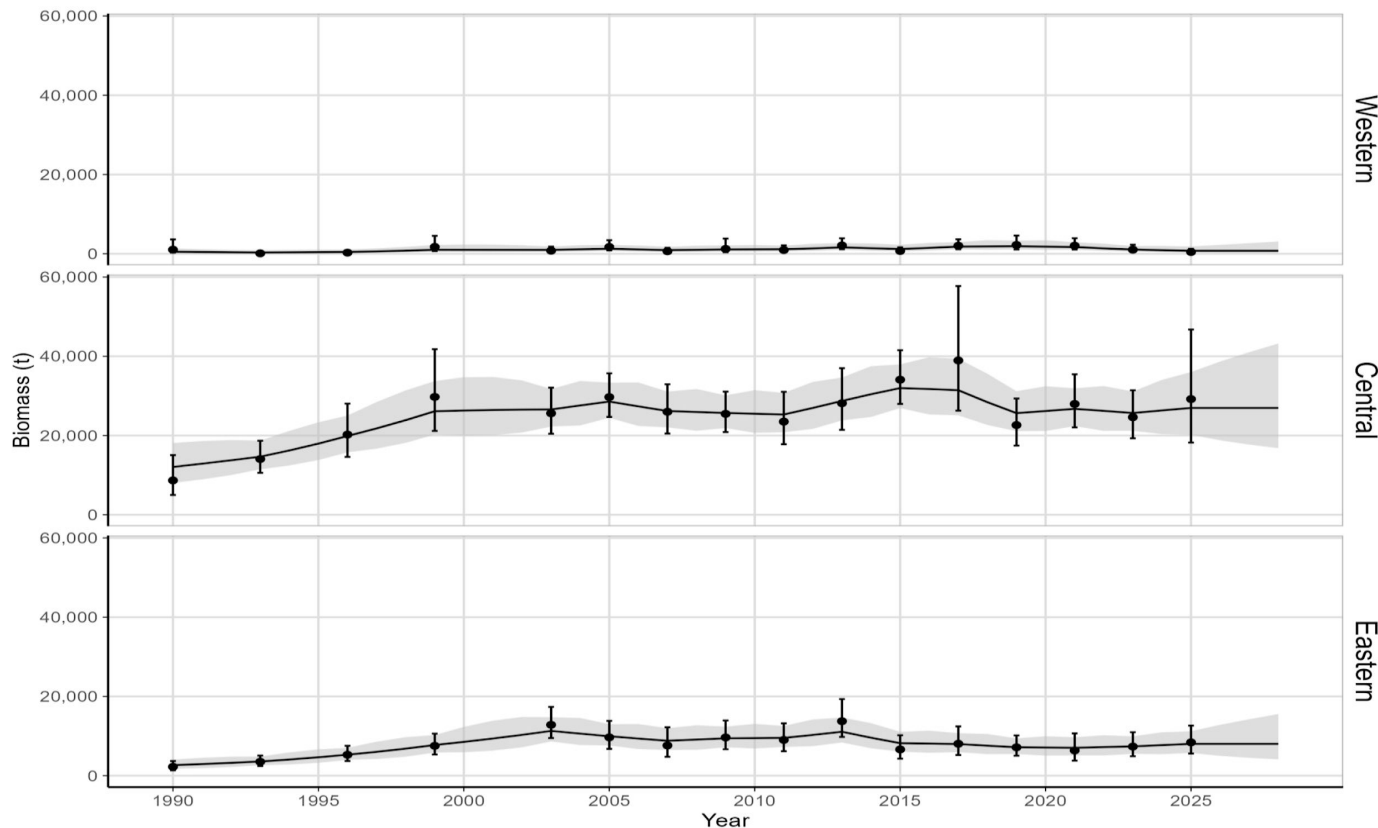
- Model Explorations
 - Last update in 2023, last full 2021
 - Tier 5 REMA, $M=0.1$
 - Big/longnose assessed WGGOA, CGGOA, EGGOA
 - Other skates assessed GOA-wide

Big skate regional trends

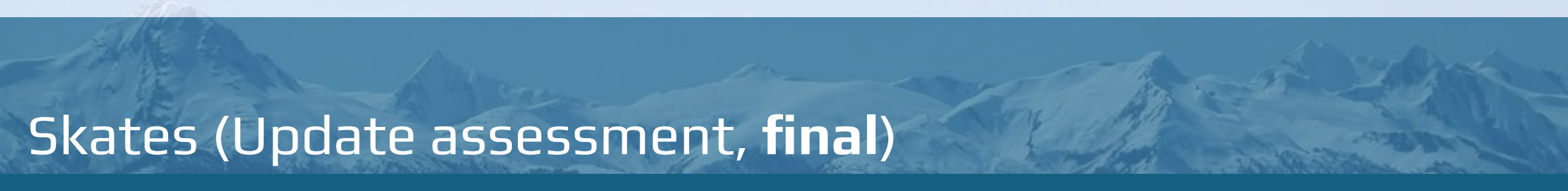


- Survey trends stable
- Current catch below ABC, OFL
- CGOA BRD nearly exceeded in 2025

Longnose skate regional trends



- Most biomass is in the central GOA.
- Stable GOA-wide since 2003
- 2026 EGOA catch may exceed BRD
- WGOA longnose BRD
 - 2026: 104 t
 - 2027: 55 t recommended



Skates (Update assessment, **final**)

Discussion and recommendations:

- **Investigate survey biomass error and implement additional observation error option in REMA**
 - Other skates CV - check design-based SE
 - Smooth uncertainty bands for all species using observation error option
- **Recommended authors OFL, ABC, and BRDs for 2027**
- **Continue to recommend 2023 SSC/Team recommendations**
 - Reevaluation of M
 - Stock structure template

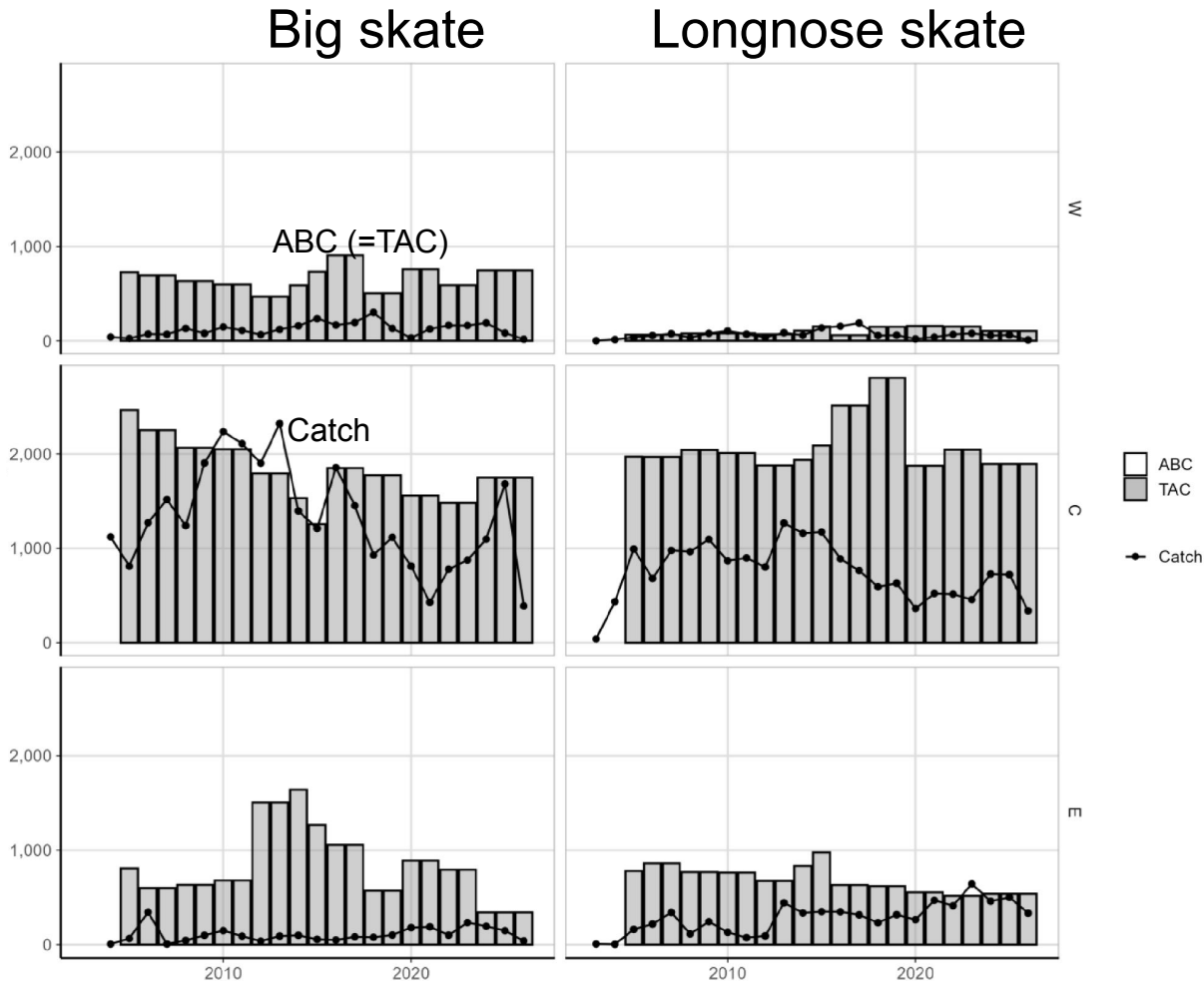
BRDs for skates–Council 2025 motion

*Regarding spatial apportionment, Council is interested in SSC advice as to whether there is flexibility in the survey-based spatial apportionments recommended by the SSC for GOA shortraker rockfish, GOA rougheye and blackspotted rockfish complex, GOA thornyhead rockfish, and **GOA skates (big and longnose)**.*

Useful information from the SSC could include whether the previous year's BRDs, or small changes from the current SSC-recommended BRDs, would be likely to result in biological impacts to the stock or stock complex.

from Council motion, Oct 2025

Skates: regional trends



- Most biomass is in the CGOA
- Overall big/longnose biomass trends stable
- Area-specific BRDs legacy from 2005 to address disproportionate harvest of skates
- BRDs occasionally exceeded/approached
- Survey biomass decrease WGOA longnose and lowest since 1990s
- Little is known about stock structure, connectivity, or extent of range



Skates BRDs and TAC flexibility

- The Team cautioned against carrying 2026 BRDs into 2027–2028 given updated survey information estimates of longnose skates in the WGOA
- Team noted the high uncertainty and 50% decrease for this species and:
 - Requested more information on stock structure
 - Noted that excess area catch could result in localized depletion



Skates BRDs and TAC flexibility

- **Team supported the idea of using uncertainty in survey estimates to develop a range around the sub-region proportions**
 - Legacy area-specific BRDs could be revisited
 - Methods to provide max amount of catch that can be redistributed are possible, Team had some ideas that could be explored at a later meeting.

Team had remaining questions about process; would benefit from Council guidance.

Harvest projections (**final** recs for 2027 2028)

Plan Team recommendations (t)

Stock	2027 ABC	2028 ABC
Shallow-water flatfish	56,519	56,236
Deepwater flatfish	6,702	6,555
Flathead sole	41,975	41,639
Dusky rockfish	5,693	5,411

- Team supported authors' OFLs, ABCs, and BRDs for all four stocks (and N&S rock sole—part of shallow-water flatfish)
- Shallow-water flatfish: operational assessment in 2027

Thanks to Meaghan Bryan, Carey McGilliard, Lee Cronin-Fine, Kristen Omori



Demersal shelf rockfish (Proposed models, full in Nov)

- 1) Aaron Lambert, author (ADFG)
- 2) PT discussion & recommendations

Demersal shelf rockfish (Proposed models, full in Nov)

Model exploration

- Proposed sdmTMB IPHC index for yelloweye 7 candidate models
 - M2 selected - lowest AIC, AR(1) structure consistent for YE
 - Correlated with GAM w less variation
 - Weaker agreement NSEO, EYKT GAM goes to 0
- Bridging analysis relative to 2024 assessment
 - 8-step bridge from model 22.2
 - Largest changes due to hook adjustment + CPUE weight/hook
 - Biomass increases lower CV
- Tier 5 and Tier 6 methods discussed
 - No ROV survey since 2023, IPHC effort reduced



Demersal shelf rockfish (Proposed models, full in Nov)

Discussion and recommendations:

- sdmTMB spatiotemporal model and bridging well documented
- **Team recommended bringing forward in November:**
 - **Previously accepted model for continuity in bridging (22.2)**
 - **Author recommended sdmTMB model**
 - **New model using bootstrapped IPHC CVs as input to REMA**
 - **Additional Tier 6 calculations evaluating time periods for averaging catch or ABC**

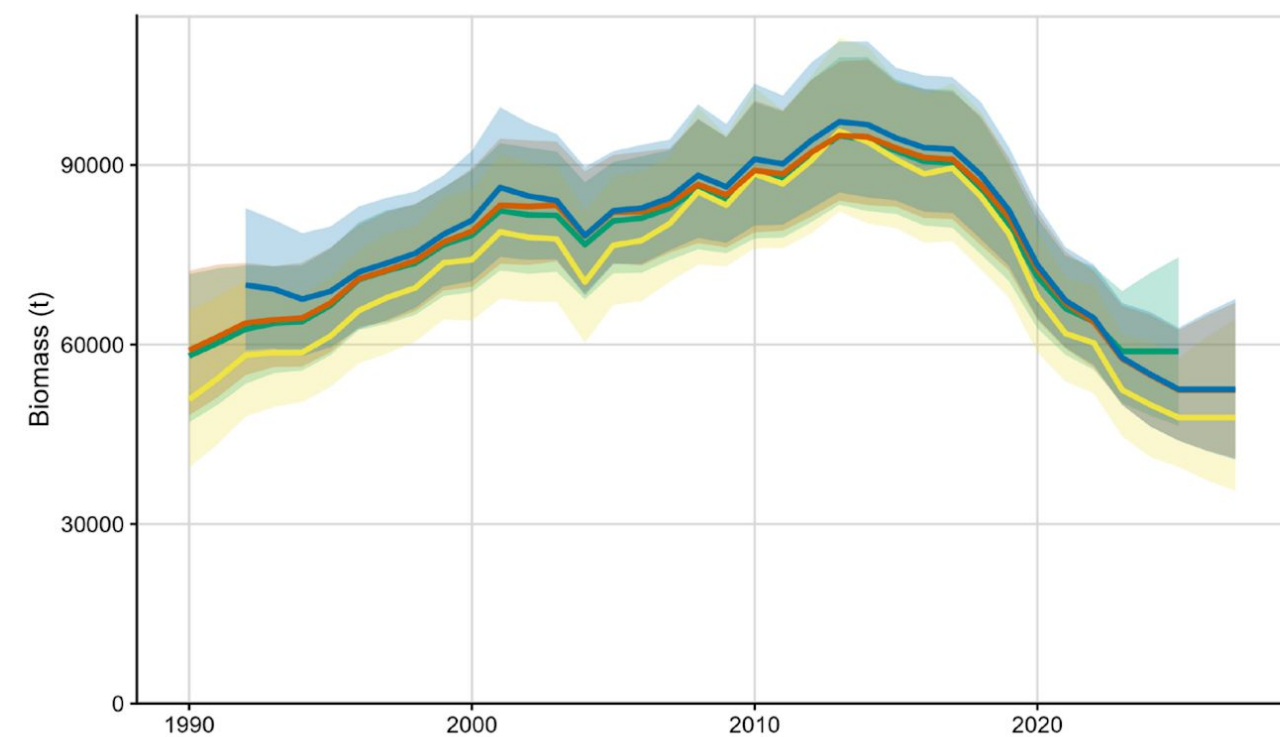
Thornyhead rockfish (Proposed models, full in Nov)

Model Explorations

- Planned to be an update assessment in 2026, but
- 2025 Survey restratification required new depth groupings and model alternatives (no longer depth breaks at 500m)
 - 3 options presented for combining 0-500m and 501-700m to 0-700m (i.e., 3 depth strata to 2 depth strata)
 - Model 24.2d - ignore missing data
 - Model 24.2e - impute missing data using mean
 - Model 24.2f - drop years w missing data

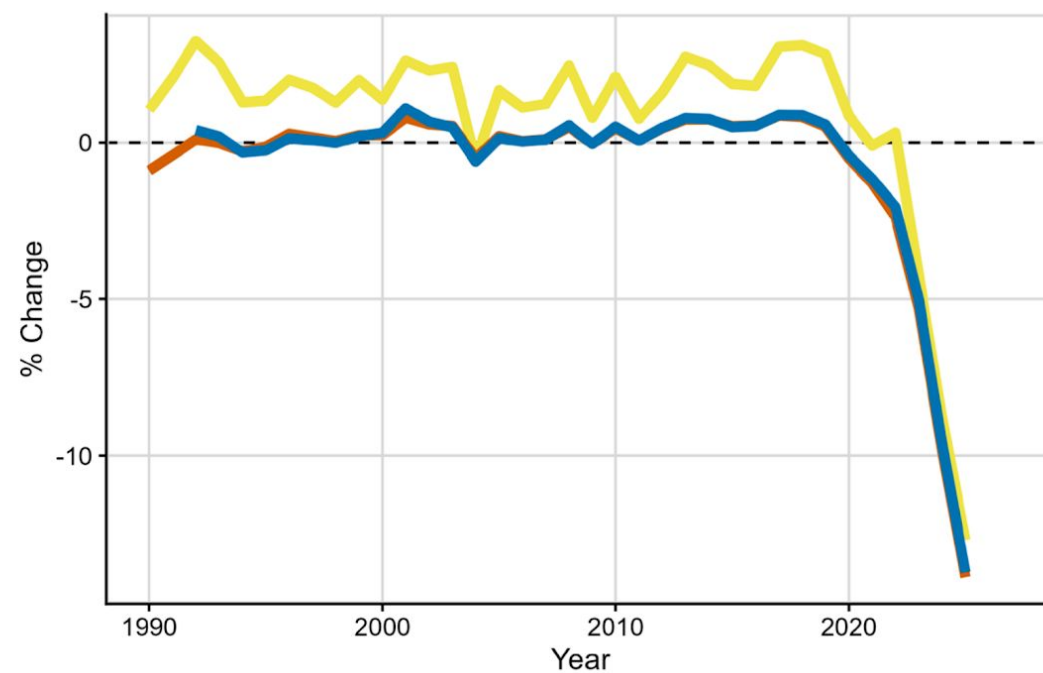
Thornyhead model comparison

M24.2a_3Base M24.2d_25_2Naive M24.2e_25_2Impute M24.2f_25_2Drop



From '23 to '25, 2 trawl depth strata

Option M24.2d_Naive M24.2e_Impute M24.2f_Drop



Imputing or dropping missing-depth years gives similar recent biomass.
With 2025 data, estimates fall >10% versus runs through 2023.

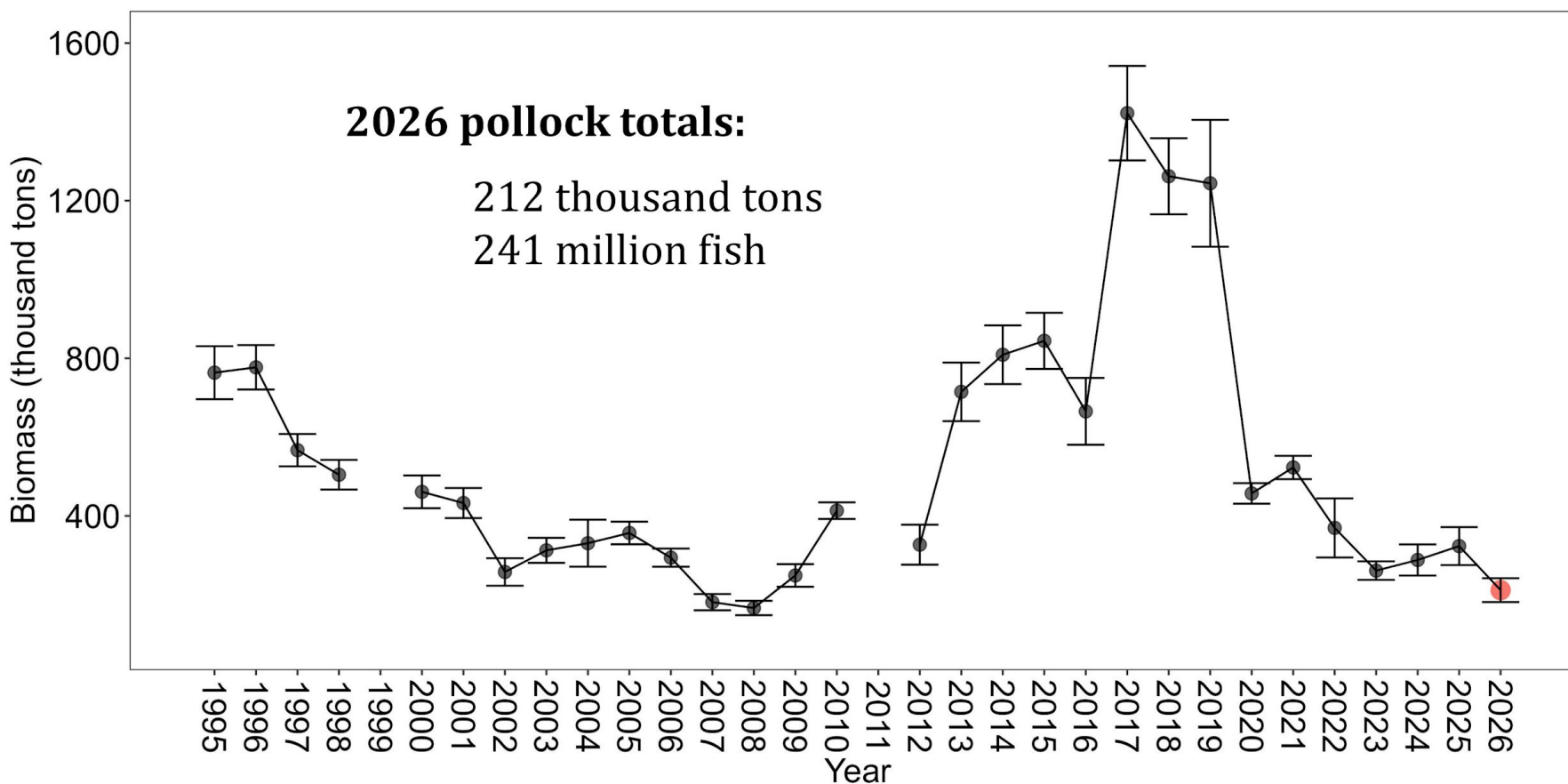


Thornyhead rockfish (Proposed models, full in Nov)

Discussion and recommendations:

- **Team recommended Model 24.2F, omitting early years with missing 500-700m data**
 - Years are at beginning of time series less influence
 - Represent exceptionally low biomass estimates
 - Future surveys unlikely to sample >700m
- **Recommended bringing Models 24 A–F (through 2023) as continuity models in November**
- 2025 central GOA survey biomass was the lowest in the time series

Pollock: Winter Shelikof survey



11 southern transects were missed due to weather

No females >40 cm spawning/spent indicating survey timing was adequate

Adjustments are being made to account for missed transects and will be reviewed in November.

Thanks to Denise McKelvey



Pollock (Proposed models, full in Nov)

- 1) Cole Monnahan, author
- 2) PT discussion & recommendations



Pollock model alternatives (full in Nov)

Discussion and recommendations:

- **The Team recommended transitioning to Rceattle from Model 23e**
- **Team requested both models (26a, 26b) for November consideration**
 - Model 26a estimates recruitment variability
 - Model 26b adds DSEM with eight ESP variables
 - Both retain mean recruitment for projections and reference points
- The Team noted poor fits to GOA bottom trawl survey and high 2025 biomass
 - supported examining movement, vertical availability



Pollock model alternatives (full in Nov)

Discussion and recommendations:

- DSEM diagnostics
 - Retrospective analysis to assess stability of parameter estimates
 - Sensitivity analyses to inform influence on DAG
 - Test DSEM recruitment predictive skill over time
 - Quantify contribution to projected biomass and SSB



General Team recommendations

- DSEM: consider multiple supported models and ecological hypotheses
- SAFE reports: use BRD wording consistently in place of historical subarea ABCs, adjust tables as appropriate
- Team agreed with the Halibut DMR Working Group recommendations

November BRD flexibility

*Regarding spatial apportionment, Council is interested in SSC advice as to whether there is flexibility in the survey-based spatial apportionments recommended by the SSC for **GOA shortraker rockfish, GOA rougheye and blackspotted rockfish complex, GOA thornyhead rockfish, and** ~~GOA skates (big and longnose)~~.*

Useful information from the SSC could include whether the previous year's BRDs, or small changes from the current SSC-recommended BRDs, would be likely to result in biological impacts to the stock or stock complex.

from Council motion, Oct 2025

To be included in
Final Specs Tables
in Nov/Dec

typo- rex sole 2028
OFL should be 18,683

Table 1. Plan Team OFL, ABC, and BRD recommendations (metric tons) for GOA Final Harvest Specifications for stocks reviewed in September 2026

Stock	Area	2026			Catch 9/8/2026	Plan Team Recommended 2027			Plan Team Recommended 2028		
		OFL	ABC	TAC		OFL	ABC	BRD	OFL	ABC	BRD
Shallow-Water Flatfish	W	n/a	23,902	13,250	44	n/a		23,738	n/a		23,619
	C	n/a	28,455	28,455	1,523	n/a		28,259	n/a		28,118
	WYAK	n/a	2,846	2,846	3	n/a		2,826	n/a		2,812
	SEO	n/a	1,707	1,707	-	n/a		1,696	n/a		1,687
	Total	69,277	56,910	46,258	1,570	69,206	56,519		68,867	56,236	
Deep-Water Flatfish	W	n/a	231	231	2	n/a		228	n/a		224
	C	n/a	2,570	2,570	111	n/a		2,519	n/a		2,464
	WYAK	n/a	1,796	1,796	3	n/a		1,760	n/a		1,721
	SEO	n/a	2,239	2,239	1	n/a		2,195	n/a		2,146
	Total	8,118	6,836	6,836	117	7,959	6,702		7,784	6,555	
Rex Sole	W		3,353	3,353	15	n/a		2,786	n/a		2,669
	C		13,582	13,582	1,139	n/a		10,053	n/a		9,631
	WYAK		1,413	1,413	-	n/a		1,532	n/a		1,457
	SEO		2,825	2,825	-	n/a		1,708	n/a		1,624
	Total	25,743	21,173	21,173	1,154	19,523	16,077		186,883	15,381	
Arrowtooth Flounder	W		33,716	14,500	84	n/a		25,572	n/a		25,537
	C		68,511	68,511	16,872	n/a		80,318	n/a		80,209
	WYAK		6,719	6,719	28	n/a		9,692	n/a		9,679
	SEO		11,039	11,039	15	n/a		18,501	n/a		18,476
	Total	143,347	119,985	100,769	16,997	157,261	134,083		157,060	133,091	
Flathead Sole	W		13,757	8,650	21	n/a		13,208	n/a		13,103
	C		22,083	22,083	900	n/a		21,421	n/a		21,250
	WYAK		4,018	4,018	-	n/a		4,807	n/a		4,768
	SEO		2,122	2,122	-	n/a		2,539	n/a		2,518
	Total	51,176	41,980	36,873	921	51,152	41,975		50,740	41,639	
Dusky Rockfish	W		199	199	38	n/a		188	n/a		178
	C		5,527	5,527	3,091	n/a		5,225	n/a		4,967
	WYAK		204	204	40	n/a		193	n/a		184
	SEO		91	91	-	n/a		87	n/a		82
	Total	7,319	6,021	6,021	3,169	6,920	5,693		6,577	5,411	
Big Skate	W		745	745	72	n/a		567	n/a		567
	C		1,749	1,749	654	n/a		1,796	n/a		1,796
	E		341	341	129	n/a		428	n/a		428
	Total	3,780	2,835	2,835	855	3,721	2,791		3,721	2,791	
Longnose Skate	W		104	104	41	n/a		55	n/a		55
	C		1,894	1,894	527	n/a		2,021	n/a		2,021
	E		538	538	380	n/a		602	n/a		602
	Total	3,380	2,536	2,536	948	3,572	2,678		3,572	2,678	
Other Skates	GOA-wide	887	665	665	369	1,111	833		1,111	833	

Beginning in 2026, the Groundfish Plan Teams and Council bodies will use new terminology for groundfish harvest specifications. The purpose of this endeavor is to make the following distinction: the ABC (ACL) is specified at the stock or stock complex level, and the overall TAC for a stock or stock complex cannot be set above ABC. ABC is tied to MSA requirements and accountability measures (AMs). Spatial apportionments are based on survey data, fishery data, or a combination of the two data types, and are meant to inform distribution of the TAC across areas. These spatial apportionments will be referred to as Biologically-informed Recommended Distributions (BRD).

Table 1. Plan Team OFL, ABC, and BRD recommendations (metric tons) for GOA Groundfish
Proposed Harvest Specifications for 2027 and 2028

Stock	Area	2026			Catch 9/8/2026	Plan Team Recommended 27/28		
		OFL	ABC	TAC		OFL	ABC	BRD
Pollock	State GHL	n/a	3,326			n/a	3,326	
	W (610)	n/a	27,453	27,453	4,788	n/a		27,453
	C (620)	n/a	60,477	60,477	47,143	n/a		60,477
	C (630)	n/a	37,936	37,936	14,941	n/a		37,936
	WYAK	n/a	3,883	3,883	2,097	n/a		3,883
	Subtotal	153,971	133,075	129,749	68,969	153,971	133,075	
	SEO	12,998	9,749	9,749	1	12,998	9,749	
	Total	166,969	142,824	139,498	68,970	166,969	142,824	
Pacific Cod	W		10,297	6,693	4,131			7,987
	C		28,732	21,549	17,133			22,289
	E		2,491	1,811	682			1,933
	Total	49,782	41,520	30,053	21,946	38,812	32,209	
Sablefish	W		4,687	4,687	2,898			4,687
	C		9,622	9,622	6,389			9,622
	WYAK		2,652	2,652	2,096			2,652
	SEO		5,589	5,589	3,887			5,589
	GOA Total			22,550	15,270			22,550
	AK Total	57,797	47,008			57,797	47,008	n/a
Shallow-Water Flatfish	W		23,902	13,250	44			13,250
	C		28,455	28,455	1,523			28,455
	WYAK		2,846	2,846	3			2,846
	SEO		1,707	1,707	-			1,707
	Total	69,610	56,910	46,258	1,570	69,610	56,910	
Deep-Water Flatfish	W		231	231	2			227
	C		2,570	2,570	111			2,518
	WYAK		1,796	1,796	3			1,759
	SEO		2,239	2,239	1			2,193
	Total	8,118	6,836	6,836	117	7,954	6,697	
Rex Sole	W		3,353	3,353	15			3,353
	C		13,582	13,582	1,139			13,582
	WYAK		1,413	1,413	-			1,413
	SEO		2,825	2,825	-			2,825
	Total	25,743	21,173	21,173	1,154	25,743	21,173	
Arrowtooth Flounder	W		33,716	14,500	84			14,500
	C		68,511	68,511	16,872			68,511
	WYAK		6,719	6,719	26			6,719
	SEO		11,039	11,039	15			11,039
	Total	143,347	119,985	100,769	16,997	143,347	119,985	
Flathead Sole	W		13,757	8,650	21			8,650
	C		22,083	22,083	900			22,083
	WYAK		4,018	4,018	-			4,018
	SEO		2,122	2,122	-			2,122

Pacific ocean perch	W		1,688	1,688	1,494			1,688
	C		27,156	27,156	23,875			27,156
	WYAK		1,993	1,993	1,825			1,993
	SEO		6,672	6,672	-			6,672
	Total	44,826	37,509	37,509	27,194	44,826	37,509	
Northern Rockfish	W		1,346	1,346	225			1,346
	C		3,549	3,549	599			3,549
	E			-	n/a			
	Total	5,848	4,895	4,895	824	5,848	4,895	
Shortraker Rockfish	W		34	34	1			34
	C		189	189	78			189
	E		424	424	207			424
	Total	863	647	647	286	863	647	
Dusky Rockfish	W		199	199	38			199
	C		5,527	5,527	3,091			5,527
	WYAK		204	204	40			204
	SEO		91	91	-			91
	Total	7,319	6,021	6,021	3,169	7,319	6,021	
Rougheye and Blackspotted Rockfish	W		229	229	80			224
	C		366	366	83			359
	E		608	608	62			597
	Total	1,631	1,203	1,203	225	1,631	1,203	
Demersal shelf rockfish	W/C/WYAK	361	271	271	186	361	271	
	SEO	524	394	394	166	524	394	
Thornyhead Rockfish	W		206	206	26			206
	C		590	590	86			590
	E		542	542	31			542
	Total	1,784	1,338	1,338	495	1,784	1,338	
Other Rockfish	W/C/WYAK		1,084	1,084	670			1,084
	SEO		2,421	300	17			2,421
	Total	4,618	3,505	1,384	687	4,618	3,505	
Atka mackerel	Total	6,200	4,700	3,000	493	6,200	4,700	
Big Skate	W		745	745	72			745
	C		1,749	1,749	654			1,749
	E		341	341	129			341
	Total	3,780	2,835	2,835	855	3,780	2,835	
Longnose Skate	W		104	104	41			104
	C		1,894	1,894	527			1,894
	E		538	538	380			538
	Total	3,380	2,536	2,536	948	3,380	2,536	
Other Skates	GOA-wide	887	665	665	369	887	665	
Sharks	GOA-wide	6,521	4,891	4,891	949	6,521	4,891	
Octopuses	GOA-wide	1,307	980	932	89	1,307	980	
TOTAL		662,391	550,626	472,531	394,125	651,257	541,176	