

C3 Joint Groundfish September Plan Team Report

Steve Barbeaux, Sara Cleaver, Jim Ianelli, Chris Lunsford,
Kalei Shotwell, Diana Stram, Cindy Tribuzio



October 2024, Presentation to the SSC



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Groundfish Plan Team Meeting, Sept 17-19, 2024

BSAI Groundfish Plan Team Members:

Steve Barbeaux	AFSC REFM (co-chair)
Kalei Shotwell	AFSC REFM (co-chair)
Cindy Tribuzio	AFSC ABL (vice chair)
Diana Stram	NPFMC (coordinator)
Lukas DeFilippo	AFSC
Allan Hicks	IPHC
Lisa Hillier	WDFW
Kirstin Holsman	AFSC REFM
Andy Kingham	AFSC FMA
Beth Matta	AFSC REFM
Andrew Seitz	UAF
Jane Sullivan	AFSC ABL
Steven Whitney	NMFS AKRO

GOA Groundfish Plan Team Members:

Jim Ianelli	AFSC REFM (co-chair)
Chris Lunsford	AFSC ABL (co-chair)
Sara Cleaver	NPFMC (coordinator)
Abby Jahn	NMFS AKRO
Craig Faunce	AFSC FMA
Lisa Hillier	WDFW
Pete Hulson	AFSC ABL
Sandra Lowe	AFSC REFM
Nat Nichols	ADF&G
Jan Rumble	ADF&G
Paul Spencer	AFSC REFM
Ben Williams	AFSC ABL



Joint Teams Presentation Summary

- Met Tuesday, September 17, 2024 at 9:00 am AKDT
 - Virtual meeting only via Zoom, Team's [electronic agenda](#)
 - Presentations are linked in the header (in report)
- Future meetings:
 - November 12-15, 2024
 - Tentative 2025 dates:
 - Week of September 15-19 (4 days TBD)
 - November 2025 date is TBD.

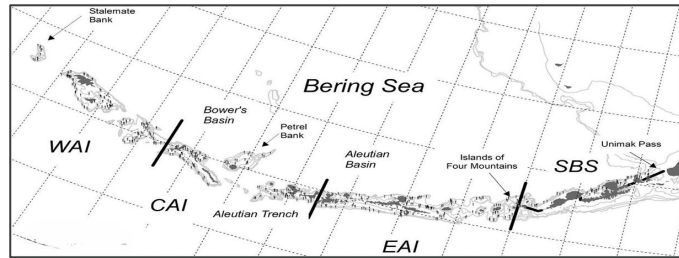
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Issue of Veterans day and Thanksgiving week and proximity of Council meeting in 2025

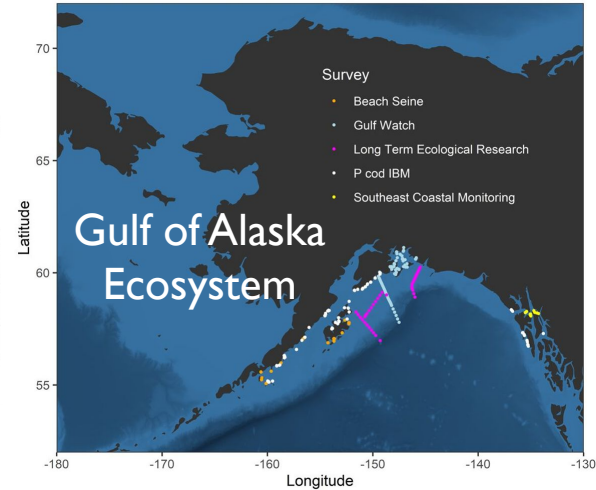
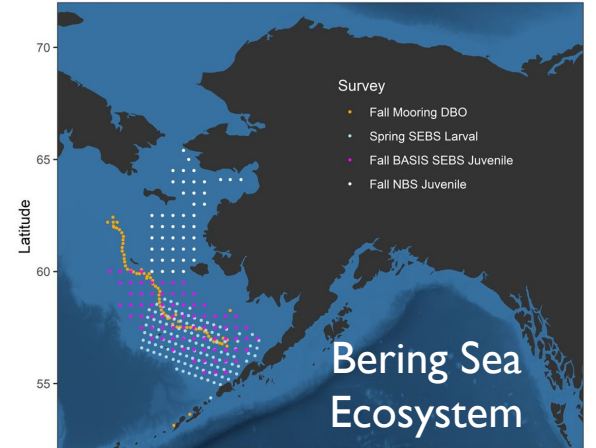
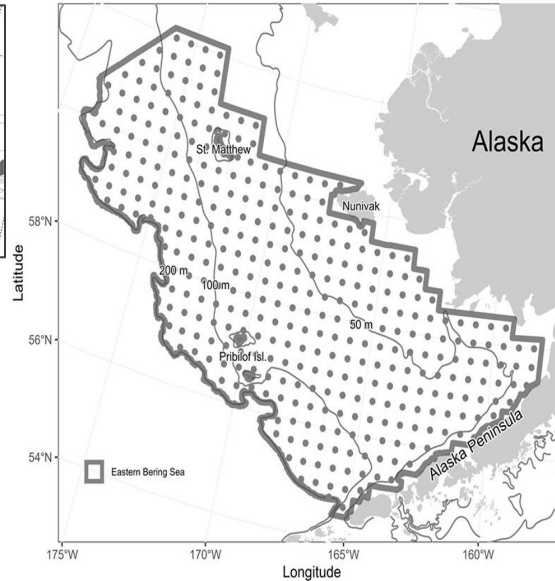


2024 survey previews

AI Bottom Trawl



EBS Bottom Trawl

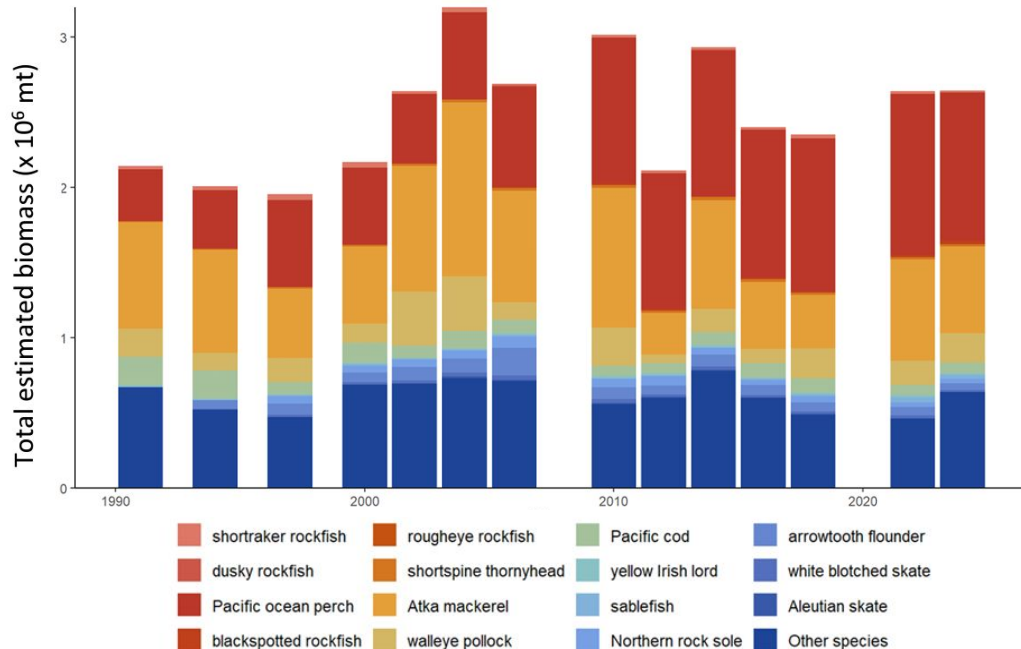


Aleutian Islands Trawl Survey

- 20% reduction in stations, variance in deep strata might have increased
- >76,000 lengths, >6,500 otoliths
- Bottom temp average, surface below average
- Larger changes in biomass in deep water rockfish

Thanks to Susanne McDermott

Catch composition



Eastern Bering Sea Trawl Survey

- 26 corner stations omitted
- 125,265 lengths, 6,070 otoliths, 4,917 stomachs collected
- Bottom temp average, surface temp below average, cold pool area near average
- Biomass increased for most species (pollock and flatfish)

Thanks to Duane Stevenson

EBS			
Common name	Year	Biomass (mt)	Population (x1,000)
walleye pollock	2023	3,154,668	5,685,500
	2024	5,476,067 (74%)	10,307,932 (81%)
Pacific cod	2023	663,075	555,739
	2024	635,840 (-4%)	436,530 (-21%)
yellowfin sole	2023	1,393,379	5,567,596
	2024	1,503,618 (8%)	5,643,105 (1%)
northern rock sole	2023	1,380,684	6,657,558
	2024	1,439,739 (4%)	7,417,950 (11%)
flathead sole	2023	594,851	2,039,623
	2024	723,996 (22%)	2,311,092 (13%)
Bering flounder	2023	6,813	33,736
	2024	10,370 (52%)	48,918 (45%)
Alaska plaice	2023	358,845	617,849
	2024	349,579 (-3%)	634,036 (3%)
arrowtooth flounder	2023	462,575	861,345
	2024	582,469 (26%)	926,415 (8%)
Kamchatka flounder	2023	24,875	40,128
	2024	28,362 (14%)	69,129 (72%)
Pacific halibut	2023	170,238	95,321
	2024	125,145 (-26%)	65,136 (-32%)
Alaska skate	2023	418,483	98,290
	2024	407,133 (-3%)	102,931 (5%)
Greenland turbot	2023	5,857	3,743
	2024	4,959 (-15%)	1,595 (-57%)

Ecosystem Surveys

- Bering Sea Summary (southeastern and northern, SEBS / NBS)
 - Cooler than heatwave years, lower large copepods and avg small copepods in SEBS but increase in NBS, large fall bloom phytoplankton, age-0 pollock high in spring, low in surface in fall, low body condition in SEBS
- Gulf of Alaska (GOA) Summary
 - Western GOA cooler, nearshore eastern GOA warmer, high lipid content in zooplankton, avg age-0 Pcod but above avg age-0 pollock in nearshore, age-0 sablefish avg growth rates
- Highlighted Projects
 - Larval size-at-date sensitivity, earlier spawning / faster growth in warm years

Thanks to Ellen Yasumiishi



Overviews

- ESR Climate Update (one for each region)
 - Overall cooler conditions in EBS and AI, moderate El Nino in GOA
- NMFS Inseason Management
 - First presentation of this kind to Plan Team, flags important fishery changes and Plan Team would like to see in future
- ESP and Socioeconomic Sablefish Indicators
 - Separate agenda item, discussed prior to Plan Team report

Thanks to B. Ferriss, I. Ortiz, E. Siddon, A. Jahn, S. Whitney, R. Dame, K. Shotwell



Other Topics

- Data Limited Methods (DLM) Working Group
 - Requested another DLM progress report at Joint PT in 2025
- Age and Growth Update
 - Recommended that maturity analyses be a priority in near future
- Halibut Discard Mortality Rates (DMRs)
 - Recommended adopting 2025-2026 DMRs from Halibut DMR group
- REMA Diagnostics
 - Encouraged authors to explore new diagnostics at their discretion

Thanks to Cindy Tribuzio, Derek Chamberlin, Michael Fey, Jane Sullivan



Assessment Guidelines

- PT Summary:
 - Teams discussed diagnostics provided in the guidelines and what should be brought forward for full assessments in September
 - Guidelines document is internal guidance for assessment authors and will likely evolve over time
- SSC request:
 - Update and Full assessments described in the Stock Assessment Definitions document, with Guidelines providing details for documentation
 - Type of assessment will be determined early in each calendar year based on previous review outcomes, trends in survey data, and other considerations provided to the AFSC by stakeholders



Thank You!



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C3 Bering Sea Aleutian Islands Groundfish September Plan Team Report

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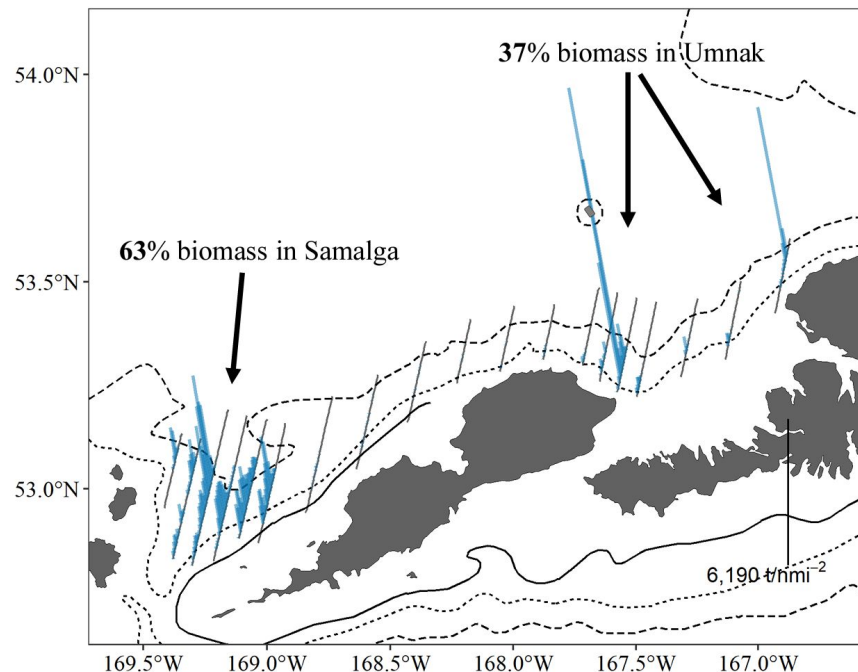
BSAI Presentation Summary

Topic	Presenter	Type	Recommendations
Bogoslof Winter Acoustic Survey	Nathan Lauffenburger	Survey Update	No
EBS Acoustic Survey & AVO Index	Abigail McCarthy, Nathan Lauffenburger	Survey Update	No
EBS Pollock	Jim Ianelli	Full Model	Yes, tier change
EBS Pacific Cod	Steve Barbeaux	Full Model	Yes, 2 models
AI Pacific Cod	Ingrid Spies	Full Model	Yes, 5 models
Alaska Plaice	Lee Cronin-Fine	Full Model	Yes, 2 models
Northern Rock Sole	Carey McGilliard	Full Model	Yes, 2 models
Greenland Turbot	Meaghan Bryan	Full Model	Yes, 3 models
Pacific Ocean Perch	Paul Spencer	Full Model	Yes, 2 models
Rougheye/Blackspotted Rockfish	Paul Spencer	Update Model	Yes, 1 model
Harvest Projections	Melissa Haltuch	Final Models	Yes, biomass trends
Proposed Specifications	Steve Whitney		

Bogoslof Winter Acoustic Survey

- Preliminary results:
 - Weather reduced survey from 4 to 2 days, 19 transects combo spacing
 - Most female were pre-spawning so survey timing was good, surface temp average
 - 2024 pollock estimate is 31% decrease from 2020, next survey 2026

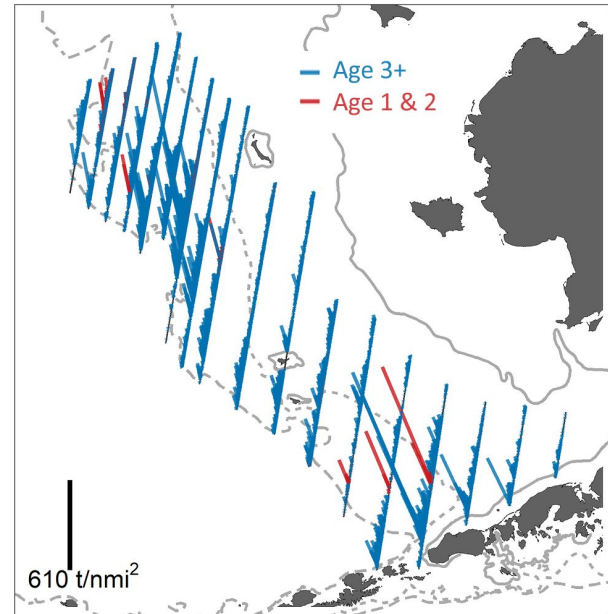
Thanks to Nathan Lauffenburger



Summer Acoustic Survey & AVO Index

- Preliminary results:

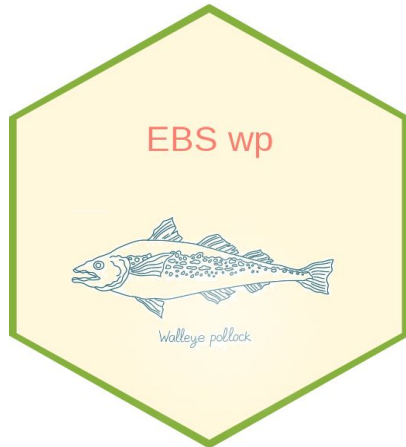
- Wider transect spacing and reduced trawling effort likely increased uncertainty
- Total biomass pollock decreased 25% from 2022 survey
- More age 1-2 in EBS than in recent years, age 4+ fish still dominate
- Acoustic vessel of opportunity (AVO) index is on the way



Thanks to Abigail McCarthy and Nathan Lauffenburger



EBS Pollock



- Executive Summary 2
 - Summary of Changes in Assessment Inputs 2
 - Summary of Results 2
 - Responses to SSC and Plan Team Comments 3
 - From the 2023 SSC minutes: 3
- Stock-recruit relationship sensitivities 5
 - Time series length for the stock-recruitment relationship conditioning..... 6
 - Stock recruitment relationship estimates with different terminal years 8
 - Removing the impact of the prior on the stock-recruitment relationship..... 10
 - Simulation testing the stock recruitment estimation 11
 - Beverton-Holt stock-recruitment relationship..... 12
 - Specified variability about the SRR 14
 - Evaluating the impact of selectivity assumptions on stock recruitment relationships (SRR) 18
 - Conditioning the stock-recruitment relationship to have $FMSY$ equal to $F35\%$ 25
- Incorporating natural mortality-at-age arising from CEATTLE..... 26
- Omitting early CPUE data and foreign fishery data 33
- Pollock movement issues..... 36
- Further considerations of pollock and its role in the ecosystem 37
 - Evaluating patterns in historical TACs relative to stock status 40
- Bayesian diagnostics 46
 - Steps for judging model performance based on the posterior predictive distributions.. 47
- Alternative software platforms..... 49

EBS Pollock model explorations...



- Focussed on SSC concerns and stock recruitment relationships (SRR)
 - Impact on SRR due to selectivity, time series length, temperature, choice of priors on steepness, recruitment curve form, and σ_R
- M-at-age and year matrix from CEATTLE tested
- Evaluated impact of early CPUE and age data, little impact
- Developed options for testing alternative catch advice relative to ecosystem
- Discussed diagnostics through ADNUTS for model evaluation

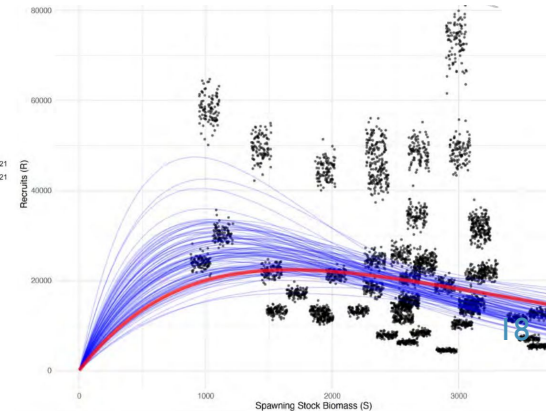
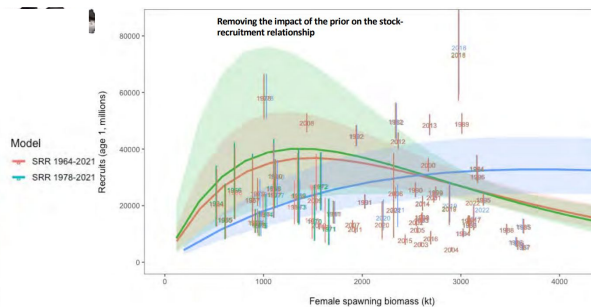
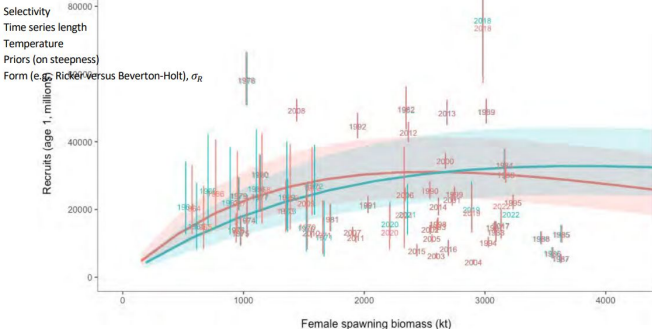


EBS Pollock Tier designation



- SRR highly variable based on initial assumptions and heavily dependent on priors making the reliability of estimates of F_{MSY} questionable
- A well informed F_{MSY} is a prerequisite for Tier I status under the FMP

Stock-recruit relationship sensitivities



EBS Pollock discussions & recommendations:

- Extensive presentation on responses to SSC comments
- SSC reconsider Tier designation
 - *Reliance on SRR problematic for Tier 1*
- Examine early age data and evaluate possible ageing bias and impacts
- Continued development of consistent and standardized reporting of the Bayesian integration methods, including diagnostics and results



EBS Pacific Cod



- **Model Explorations:**

- Focused on improvements to model efficiency and responding to SSC
- Changing length composition bin size from 1 cm to 5 cm
- Impact of static versus time varying survey selectivity
- Adding conditional age at length (CAAL) data for survey and fishery and alternative (Richard's) growth model
- Updating the ageing error matrix with the most recent age data

Thanks to Steve Barbeaux



EBS Pacific Cod



- Discussion & Recommendations:
 - Consider the effect of increasing length bins on SSB and derived management quantities (reference Monnahan et al., 2016)
 - Recommended continued development of CAAL models, suggested future explorations with empirical w-at-age or time varying length/weight
 - Team supported two models for November:
 - 23.1.0.d: base with updated data, updated aging error and pre-07 bias
 - 24.1: as 23.1.0.d + 5 cm length bins, static survey selectivity, and spline ageing error for all years



AI Pacific Cod



- Model Explorations:

- Focused on models to address Plan Team and SSC comments
- Two time block structure on natural mortality, pre/post marine heatwave starting in 2016
- Replacement of von Bertalanffy with Richard's growth curve
- Other model improvements included in bridging analysis:
 - Increase in maximum age, no plus group for fishery length
 - Time of settlement same year as spawning
 - Initial F based on average catch from 1981-1990

Thanks to Ingrid Spies



AI Pacific Cod



- Discussion & Recommendations:
 - Present an additional bridging model (24.1a) with time block but uses von Bertalanffy instead of Richard's growth curve
 - Description of why Richard's shows large improvement if consistent with September model runs
 - Team recommended five models for November:
 - 24.0 (Tier 3): bridging improvements + Richard's growth
 - 24.1 (Tier 3): same as 24.0 + time block on natural mortality
 - 24.1a (Tier 3): same as 24.0 but vonBertalanffy instead of Richard's
 - 2 Tier 5 Models: I 3.4 base model, 24.2 base with new M (0.417)



Alaska Plaice



- **Model Explorations:**

- Focused on converting existing ADMB model to Stock Synthesis
- 4 base models, sequentially updating growth parameters, estimating mean recruitment, recruitment deviations, fishing mortality, selectivity, estimating growth
- 24.0 updated survey age and length comps input sample sizes using bootstrap method (surveyISS), add age-1,2 comp data, estimate growth parameters, update length-weight relationship, update old age growth CVs
- 24.1 same as 24.0 except weight-at-age internally estimated

Thanks to Lee Cronin-Fine



Alaska Plaice



- Discussion & Recommendations:
 - Need additional diagnostics to consistently evaluate models, noted that differences between models were minor
 - Include control files used, retrospective analysis, and diagnostics as outlined in assessment protocols
 - At author's discretion use the bootstrap method to determine input sample size followed by Francis re-weighting
 - Team recommended 2 models for November:
 - Base 3: SS3 model that most mimics previous ADMB model
 - 24.1: allows consistency with calculation of weight-at-age



Northern Rock Sole



- **Model Explorations:**

- Focused on models to address Plan Team and SSC comments
- Two minor modifications from models presented in the appendix of the 2022 assessment and for a risk table adjustment to ABC
 - Francis data weighting combined with afscISS input sample sizes
 - Estimating female natural mortality (male already estimated)
- Much improved fits to survey biomass index in recent years and estimates of catchability reflecting previous research on herding

Thanks to Carey McGilliard



Northern Rock Sole



- Discussion & Recommendations:
 - Pre-1979 fishery selectivity is unreasonable (lack of data), bimodality in trace plots of some parameters (but convergence)
 - Environmental conditions not incorporated but some projection model work and research priority for next assessment
 - Fishery age data from special projects may be acceptable for conditional data but not fishery comp data (evaluate case-by-case)
 - Team recommended 2 models for November:
 - 18.3: base model with new data
 - 24.2: 18.3 + Francis data weighting + afscISS + estimate female M



Greenland Turbot



- **Model Explorations:**

- Focused on data updates, new methods, and model assumptions
- Slope survey strata areas updated, corrected length distributions
- New methods for longline survey interpolation in BSAI
- Bootstrapping approach to input sample size (afscISS) for surveys
- Evaluated autocorrelation in recruitment (none/fixed), selectivity time blocks by center of gravity
- Evaluated analytical solution for estimating catchability (float q), and variance adjustment of length composition data

Thanks to Meaghan Bryan



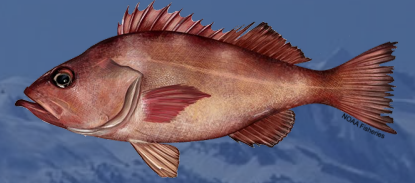
Greenland Turbot



- Discussion & Recommendations:
 - Concerns regarding lack of slope data, model start time, assumptions about spawner / recruit relationship (SRR) autocorrelation, and lack of reweighting
 - Consider temperature covariate and floating versus fixing catchability
 - Team recommended 3 models for November:
 - M1: updated slope data
 - M19: M1 + linear longine + q float + afscISS + no slope blocks
 - M20: M19 + fixed autocorrelation in recruitment



Pacific Ocean Perch



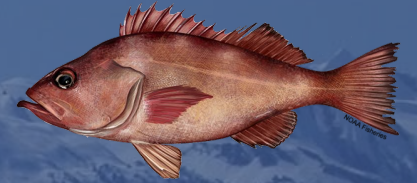
- **Model Explorations:**

- Focused on CIE and SSC/Plan Team recommendations
- Exploratory model runs included stochastic initial age comps, time-varying survey selectivity
- Increased penalty for dome-shapedness for fishery selectivity and lognormal prior on AI survey catchability

Thanks to Paul Spencer



Pacific Ocean Perch



- Discussion & Recommendations:
 - Discussed trawlable habitats in different regions for survey selectivity and catchability, but difficult to combine surveys
 - Multimodal pattern in recent fishery selectivity and Team discussed reasons such as changes in fleet and performance, SSL restrictions
 - Team recommended exploring size distribution of POP over time related to changes in the fishing fleet
 - Team supported 2 models for November:
 - 16.3: last year's accepted model
 - 24.2: 16.3 + penalty for dome-shapedness fishery selectivity + lognormal prior on AI survey catchability



Blackspotted Rougheye Rockfish



- Model Explorations:

- Focused on responses to SSC/Plan Team recommendations
- Incorporation of IPHC data into the assessment, fits/diagnostics degraded with this addition
- Comparison of size compositions between survey and fishery data indicated largest fish similar, summary stats could be useful
- Comparison of BS/RE to POP ratio in the AI survey suggest decline in bycatch rate not due to increasing POP tows with no BS/RE, rather smaller sizes of BS/RE in survey, #s might better support

Thanks to Paul Spencer



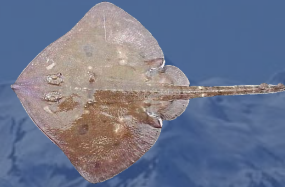
Blackspotted Rougheye Rockfish



- Discussion & Recommendations:
 - Discussed borrowing selectivity from another survey, but none similar enough and IPHC uses different hooks
 - Team agreed with author to not include IPHC survey due to lack of length comp data, selectivity difficult to determine, and poor fit
 - Team recommended bringing forward previously accepted model (20) for November (update assessment)



Harvest Projections

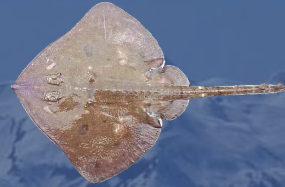


- **New!** Reviewed in September instead of November
- Stocks Evaluated (lead author):
 - Northern Rockfish (Paul Spencer), high catch in 2023, expected to be smaller in 2024, next full assessment 2025
 - Alaska Skate (Cindy Tribuzio), catch decreased in 2024 for both Alaska skate and other skates, next full assessment 2025
 - Arrowtooth Flounder (Kalei Shotwell), BS catch lowest in time series, AI low but increased from 2023, next full assessment 2026

Thanks to Melissa Haltuch, Kalei Shotwell, Paul Spencer, Cindy Tribuzio



Harvest Projections



- Discussion & Recommendations:
 - Discussed lack of current survey information due to change in schedule and recommended coordination with survey presentations to include HP stocks
 - Team supported potential AFSC evaluation of sensitivity to earlier catch dates and subsequent catch advice
 - Discussed red-flag potential, although unlikely for these stocks, no formal process to revisit in November, adjustment could be made
 - Team agreed with the authors' OFL and ABC recommendations



Proposed Specifications Team recommended (1 of 2)

Table 1. Plan Team Proposed recommended OFL, ABC for Groundfish in the Bering Sea and Aleutian Islands (metric tons) for 2024-2025

9/16/2024

Species	Area	2023			Catch as of 12/31/2023	2024			Catch as of 9/16/2024	Plan Team Proposed 2025/2026		
		OFL	ABC	TAC		OFL	ABC	TAC		OFL	ABC	TAC
Pollock	EBS	3,381,000	1,910,000	1,300,000	1,310,591	3,162,000	2,313,000	1,300,000	1,229,404	3,449,000	2,401,000	1,325,000
	AI	52,383	43,413	19,000	3,744	51,516	42,654	19,000	4,431	53,030	43,863	19,000
	Bogoslof	115,146	86,360	300	125	115,146	86,360	250	23	115,146	86,360	250
Pacific cod	BS	172,495	144,834	127,409	126,458	200,995	167,952	147,753	104,170	180,798	150,876	131,262
	AI	18,416	13,812	8,425	3,398	18,416	12,431	8,080	3,570	18,416	12,431	8,080
Sablefish	BSAI/GOA	47,390	40,502	n/a		55,084	47,146	n/a		55,317	47,350	n/a
	BS	n/a	8,417	7,996	5,418	n/a	11,450	7,996	3,579	n/a	11,499	9,500
	AI	n/a	8,884	8,440	2,463	n/a	13,100	8,440	1,262	n/a	13,156	8,440
Yellowfin sole	BSAI	404,882	378,499	230,000	112,889	305,298	265,913	195,000	56,775	317,932	276,917	195,000
Greenland turbot	BSAI	4,645	3,960	3,960	1,276	3,705	3,188	3,188	736	3,185	2,740	2,740
	BS	n/a	3,338	3,338	795	n/a	2,687	2,687	436	n/a	2,310	2,310
	AI	n/a	622	622	481	n/a	501	501	300	n/a	430	430
Arrowtooth flounder	BSAI	98,787	83,852	15,000	7,276	103,280	87,690	14,000	8,030	104,270	88,548	14,000
Kamchatka flounder	BSAI	8,946	7,579	7,579	6,949	8,850	7,498	7,498	4,748	8,687	7,360	7,360
Northern rock sole	BSAI	166,034	121,719	66,000	27,212	197,828	122,091	66,000	25,411	264,789	122,535	66,000
Flathead sole	BSAI	79,256	65,344	35,500	8,991	81,605	67,289	35,500	10,764	82,699	68,203	35,500
Alaska plaice	BSAI	40,823	33,946	17,500	15,252	42,695	35,494	21,752	8,293	45,182	37,560	20,000
Other flatfish	BSAI	22,919	17,189	4,500	3,020	22,919	17,189	4,500	2,855	22,919	17,189	4,500

Sources: 2023 OFLs, ABCs, and TACs and 2024 OFLs and ABCs are from harvest specifications adopted by the Council in December 2022 and December 2023 respectively; 2023 catches through December 31, and 2023 catches through September 16, 2024 from AKR Catch Accounting.

Proposed Specifications Team recommended (2 of 2)

Table 1. Plan Team Proposed recommended OFL, ABC for Groundfish in the Bering Sea and Aleutian Islands (metric tons) for 2024-2025

9/16/2024

Pacific Ocean perch	BSAI	50,133	42,038	37,703	35,951	49,010	41,096	37,626	23,647	48,139	40,366	37,181
	BS	n/a	11,903	11,903	10,892	n/a	11,636	11,636	6,678	n/a	11,430	11,430
	EAI	n/a	8,152	8,152	7,791	n/a	7,969	7,969	6,723	n/a	7,828	7,828
	CAI	n/a	5,648	5,648	5,461	n/a	5,521	5,521	3,497	n/a	5,423	5,423
	WAI	n/a	16,335	12,000	11,807	n/a	15,970	12,500	6,749	n/a	15,685	12,500
Northern rockfish	BSAI	22,776	18,687	11,000	10,433	23,556	19,274	16,752	7,647	22,838	18,685	15,000
Blackspotted/Rougeye Rockfish	BSAI	703	525	525	607	761	569	569	414	813	607	607
	EBS/EAI	n/a	359	359	291	n/a	388	388	167	n/a	412	412
	CAI/WAI	n/a	166	166	316	n/a	181	181	248	n/a	195	195
Shortraker rockfish	BSAI	706	530	530	243	706	530	530	102	706	530	530
Other rockfish	BSAI	1,680	1,260	1,260	1,220	1,680	1,260	1,260	1,101	1,680	1,260	1,260
	BS	n/a	880	880	652	n/a	880	880	693	n/a	880	880
	AI	n/a	380	380	568	n/a	380	380	408	n/a	380	380
Atka mackerel	BSAI	118,787	98,588	69,282	66,613	111,684	95,358	72,987	59,475	99,723	84,676	66,165
	EAI/BS	n/a	43,281	27,260	24,862	n/a	41,723	32,260	27,247	n/a	37,049	30,000
	CAI	n/a	17,351	17,351	17,210	n/a	16,754	16,754	13,901	n/a	14,877	14,877
	WAI	n/a	37,956	24,671	24,541	n/a	36,882	23,973	18,326	n/a	32,750	21,288
Skates	BSAI	46,220	38,605	27,441	25,866	45,574	37,808	30,519	21,451	44,203	36,625	30,361
Sharks	BSAI	689	450	250	325	689	450	400	159	689	450	400
Octopuses	BSAI	4,769	3,576	400	148	6,080	4,560	400	163	6,080	4,560	400
Total	BSAI	4,859,585	3,132,067	2,000,000	1,776,469	4,609,077	3,476,801	2,000,000	1,578,210	4,946,241	3,550,691	1,998,536

Sources: 2023 OFLs, ABCs, and TACs and 2024 OFLs and ABCs are from harvest specifications adopted by the Council in December 2022 and December 2023 respectively; 2023 catches through December 31, and 2023 catches through September 16, 2024 from AKR Catch Accounting.

BSAI Halibut Discard Mortality Rates (DMRs)

Table 12—Proposed 2024 and 2025 Pacific Halibut Discard Mortality Rates (DMR) for the BSAI

Gear	Sector	Halibut discard mortality rate (percent)
Pelagic trawl	All	100
Non-pelagic trawl	Mothership and catcher/processor	86
Non-pelagic trawl	Catcher vessel	67
Hook-and-line	Catcher vessel	9
Hook-and-line	Catcher/processor	9
Pot	All	21

Thanks to Michael Fey (AKFIN) and other Halibut DMR Working Group members: Jen Cahalan (PSMFC), Jennifer Ferdinand (NMFS AFSC), Krista Melani (NMFS AKRO), Jason Gasper (NMFS AKRO), Ian Stewart (IPHC)





Thank You!

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C3 Gulf of Alaska Groundfish September 2024 Plan Team Report

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



October 2024
Presentation to the SSC



NOAA
FISHERIES

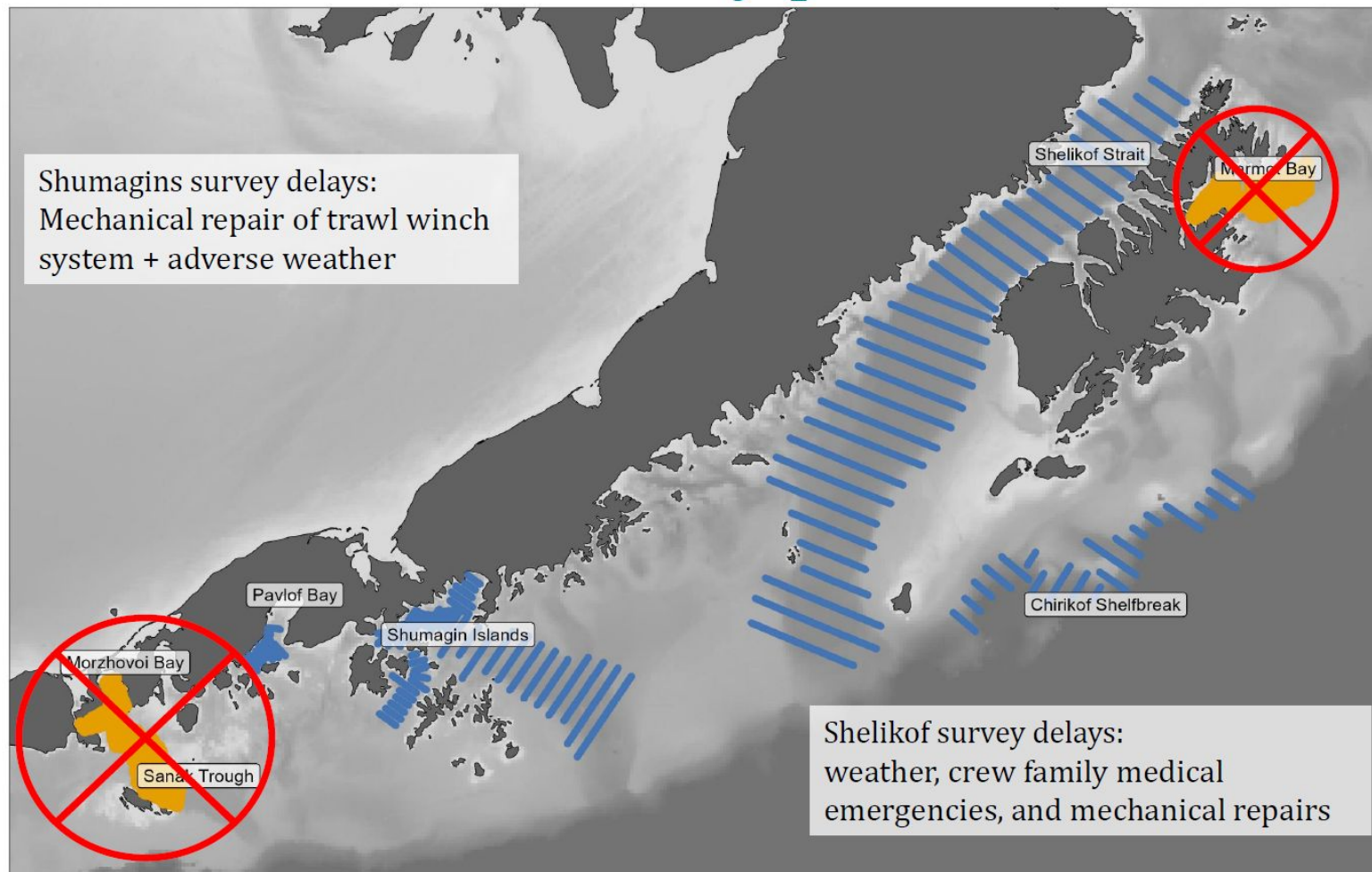
GOA Presentation Summary

Topic	Presenter at Plan Team	Type	Recommendations
Winter Acoustic Survey	Mike Levine	Survey Update	No
GOA Pollock	Cole Monnahan	Full Model	Yes
GOA Pacific Cod	Pete Hulson	Full Model	Yes
Dusky and Northern Rockfish	Kristen Omori, Ben Williams	Full Models	Yes
Thornyhead Rockfish	Kevin Siwicke	Full Model	Yes
GOA DSR	Phil Joy, Jan Rumble	CIE Response, Model, Updates	Yes
Arrowtooth Model Bridging	Kalei Shotwell, Grant Adams	Research model	Yes
Harvest Projections	Chris Lunsford	Harvest projection final review	Yes
FY25 Acoustic Survey Planning	Lyle Britt	Survey planning	No
GOA Rockfish Spatial Management	Sara Cleaver	Discussion paper	No
Proposed Specifications (including DMRs)	Abby Jahn	Proposed specs	Yes



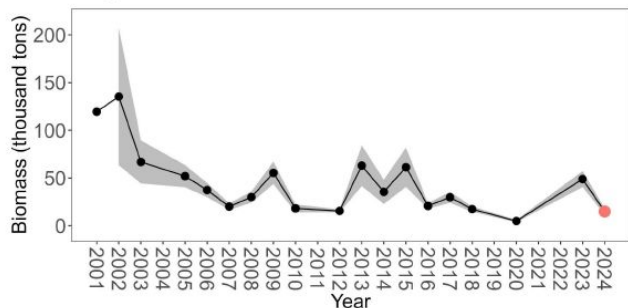
2024 winter GOA AT survey plan

Thanks to Mike Levine

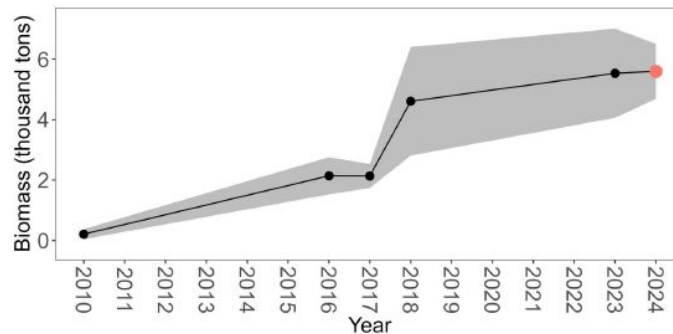


2024 Winter Acoustic Survey: Biomass/Abundance

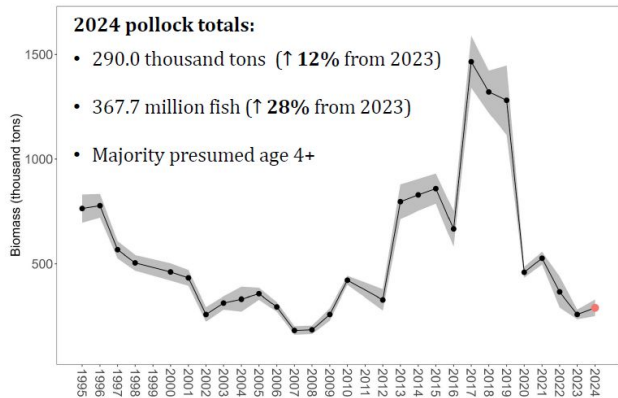
Shumagin



Pavlov Bay

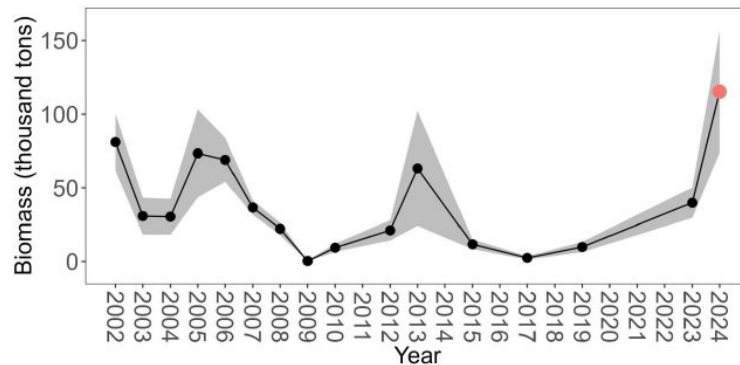


Shelikof



Chirikof shelfbreak

- Majority presumed age 4+



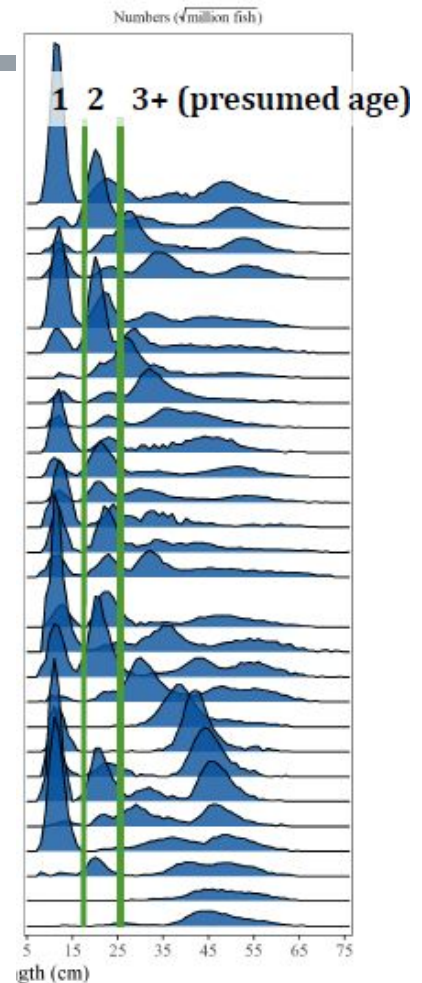
GOA Pollock

- Responded to CIE review (May 2024): 4 changes
- Model 23 in TMB
- Models 23c and 23d put forward by author (in addition to base Model 23)
 - 23c: Includes all changes except Dirichlet-multinomial
 - 23d:+Dirichlet-Mult



GOA pollock

- Previous assessments missed reporting sample sizes
 - Francis weighting gave unacceptably low values
 - Rectified by new Dirichlet Multinomial option
- **The Team**
 - **requested that the report always include the *actual* (effective or fixed) sample size be reported**
 - **requested that the RW q penalty be dropped**
 - **Recommended Model 23d and base for November**
- Team supported other decisions including dropping age-1 and -2 juveniles from the pre-spawner acoustic-trawl survey (also in accord w/ CIE review)



GOA Pacific Cod, discussions and recommendations

- Changes to input data files and data processing
 - Models 2019.1c-e described in report
 - Model 2019.1e.5cm combined all changes (author's recommended)
- **The Team recommended the author only bring forward their preferred model (Model 2019.1e.5cm) as “2024” along with “base” in November**
- **Other minor comments:**
 - Use Akaike Information Criterion (AIC) aging error model selection
 - Examine weight-at-age output from SS3 to compare with empirical data on weight-at-age
 - For now, Team agreed with using recommended status quo apportionment



GOA Thornyhead rockfish

The two-survey random effects models presented use the following naming conventions:

Model	Process Errors	Additional Observation Error
22	Area-specific (3)	LLS & BTS
24.1	Area-specific (3)	LLS & BTS (updated <i>rema</i>)
24.2	Shared (1)	LLS & BTS (updated <i>rema</i>)

The Team recommended

- bringing Model 24.2 (additional observation error and single process error) and base model forward for November.
- further evaluation of adding additional observation errors, and to provide information on the mechanisms that might justify additional observation errors.



Dusky and northern rockfish: Apportionments

The Team recommended

- using VAST approach for dusky and northern rockfish apportionment
 - further exploration of the dusky EGOA apportionment
- re-examine single shared process error by region for northern rockfish



GOA Dusky Rockfish: Model Changes

- 1) Trawl survey biomass correction to use a lognormal error structure.
- 2) Recruitment starting year correction in population projection model (impacts spawning biomass reference points)

Dusky model comparisons between the currently accepted 'base' model, m22.3a, and the two updated models, m22.4a and m22.5a.

The Team agreed with the author, recommended model 22.5a with both model changes described above and base model (22.3a) for November.

Thanks to Kristen Omori



GOA Northern Rockfish: Model Changes

- Trawl survey biomass changed to use a lognormal error structure (same as dusky)
 - introduced as M22.1a.
- Model 22.1b used input sample sizes (ISS) that incorporated growth variability and aging error.
- **The Team accepted these changes as improvements to the base model.**
- ADMB model to RTMB (M24)

The Team recommended:

- **moving forward with RTMB, and Model M24.a (estimated M and selectivity priors) & base model (M24) for November**
- **further evaluation of small differences in the bridging between ADMB and RTMB**

GOA Demersal shelf rockfish (DSR)

- Response to CIE review of Bayesian surplus production model for yelloweye
- Update on future of ROV survey
- Update on DSR authorship changes
- **The Team recommended that ADF&G get DSR and yelloweye lengths from the IPHC survey as there are limited data available from the state and the IPHC has some stations in SEO.** Afterward learned the IPHC does not measure fish other than halibut unless there is a special project request.



GOA Arrowtooth flounder CEATTLE model bridging

Research track model using CEATTLE compared to the single species ADMB model.

Team recommended that the TMB version of the single species model be used in 2025 and brought forward to the September meeting.

GOA Harvest Projections **NEW**: Reviewed in Sept instead of November meeting

- GOA flathead sole- Maia Kapur
- GOA POP- Ben Williams, Maia Kapur
- GOA RE/BS rockfish- Jane Sullivan
- GOA rock sole- Meaghan Bryan
- GOA shallow-water flatfish (SWF)- Meaghan Bryan
- GOA rex sole- Carey McGilliard
- GOA deepwater flatfish- Carey McGilliard
- GOA arrowtooth flounder (ATF)- Kalei Shotwell

The Team recommended:

- **Authors' OFLs and ABCs as shown in the documents**
- **Evaluation of variability and consequences in extrapolating catches from late August forward**
- **HP documents and slides include subarea apportionments for GOA stocks and clarify that apportionment proportions are rolled over from last full assessment**

Thanks to Chris Lunsford (presentation) & authors



FY25 Summer Acoustic Survey Planning

Dr. Lyle Britt
AFSC-RACE Division Director

Survey Reduction Proposal

Discontinue the Biennial MACE GOA
Acoustic-Trawl Summer Survey (odd years)

Pros

- Secure and fortify vessel days for GOA Winter Acoustic-Trawl surveys
- Better align survey portfolio with staffing capacity
- Free up NOAA Ship days for emergent survey/research needs

Cons

- Halt of a developing time series
- Reduced summer walleye pollock data. Could impact apportionment
- Loss of other ecosystem data/indicators (forage fish index, euphausiid index, etc)



GOA Rockfish Stock Structure & Spatial Management

Sara Cleaver, NPFMC

Presentation to the GOA Groundfish Plan Team, September 2024



- Discussion paper requested by (and being presented to) Council
- Info only for SSC, not asking for in-depth review at this time.
 - Looking for guidance from Council first



GOA Halibut Discard Mortality Rates (DMRs)

Table 12. Proposed 2025 and 2026 Halibut Discard Mortality Rates for Vessels Fishing in the Gulf of Alaska. (Values are in percent of halibut assumed to be dead.)

Gear	Sector	Groundfish fishery	Halibut discard mortality rate (percent)
Pelagic trawl	Catcher vessel	All	100
	Catcher/processor	All	100
Non-pelagic trawl	Catcher vessel	Rockfish Program	56
	Catcher vessel	All others	74
	Mothership and catcher/processor	All	76
Hook-and-line	Catcher/processor	All	10
	Catcher vessel	All	19
Pot	Catcher vessel and catcher/processor	All	32

Thanks to Michael Fey (AKFIN) and other Halibut DMR Working Group members: Jen Cahalan (PSMFC), Jennifer Ferdinand (NMFS AFSC), Krista Melani (NMFS AKRO), Jason Gasper (NMFS AKRO), Ian Stewart (IPHC)



GOA Groundfish Proposed Harvest Specifications- PT Recs Table 1 (1 of 2)

Table 1. Plan Team proposed recommended OFL and ABC for Groundfish in the Gulf of Alaska (metric tons) for 2025 and 2026

Species	Area	2023			Catch 9/14/2023	2024			Catch 9/16/2024	Plan Team Proposed 2025/26	
		OFL	ABC	TAC		OFL	ABC	TAC		OFL	ABC
Pollock	State GHL	n/a	3,723	n/a	3,261	n/a	4,769	n/a	3,640	n/a	3,942
	W (610)	n/a	26,958	26,958	6,033	n/a	38,882	38,882	14,598	n/a	32,144
	C (620)	n/a	77,005	77,005	58,327	n/a	90,937	90,937	69,272	n/a	75,179
	C (630)	n/a	33,729	33,729	13,052	n/a	50,587	50,587	16,296	n/a	41,821
	WYAK	n/a	7,523	7,523	6,888	n/a	5,565	5,565	1,382	n/a	4,601
	Subtotal	173,470	148,938	145,215	84,300	269,916	190,740	185,971	101,547	182,891	157,687
	SEO	15,150	11,363	11,363	1	12,998	9,749	9,749	-	12,998	9,749
Total	188,620	160,301	156,578	84,300	282,914	200,489	195,720	101,547	195,889	167,436	
Pacific Cod	W	n/a	7,464	5,225	3,233	n/a	8,745	6,121	3,289	n/a	7,638
	C	n/a	14,830	11,123	8,501	n/a	20,590	15,442	11,645	n/a	17,981
	E	n/a	2,340	1,755	510	n/a	2,937	2,203	150	n/a	2,565
	Total	29,737	24,634	18,103	12,245	38,712	32,272	23,766	15,085	33,970	28,184
Sablefish	W	n/a	4,473	4,473	2,313	n/a	4,699	4,699	1,943	n/a	4,719
	C	n/a	9,921	9,921	5,456	n/a	9,651	9,651	5,521	n/a	9,693
	WYAK	n/a	3,205	3,205	2,043	n/a	2,926	2,926	2,116	n/a	2,940
	SEO	n/a	5,602	5,602	3,596	n/a	5,320	5,320	3,358	n/a	5,343
	GOA Total	n/a	n/a	23,201	13,409	n/a	n/a	22,596	12,938	n/a	n/a
Alaska-wide OFL and ABC	AK Total	47,390	40,502	n/a		55,084	47,146	n/a		55,317	47,350
Shallow-Water Flatfish	W	n/a	22,485	13,250	33	n/a	23,337	13,250	61	n/a	23,782
	C	n/a	26,769	26,769	589	n/a	27,783	27,783	2,448	n/a	28,311
	WYAK	n/a	2,677	2,677	6	n/a	2,778	2,778	1	n/a	2,831
	SEO	n/a	1,606	1,606	1	n/a	1,667	1,667	1	n/a	1,699
	Total	65,736	53,537	44,302	630	68,121	55,565	45,478	2,510	69,354	56,623
Deep-Water Flatfish	W	n/a	256	256	11	n/a	237	237	8	n/a	234
	C	n/a	2,105	2,105	68	n/a	2,655	2,655	58	n/a	2,614
	WYAK	n/a	1,407	1,407	3	n/a	1,856	1,856	3	n/a	1,827
	SEO	n/a	2,048	2,048	2	n/a	2,314	2,314	2	n/a	2,278
	Total	6,918	5,816	5,816	84	8,387	7,062	7,062	71	8,257	6,953
Rex Sole	W	n/a	3,236	3,236	21	n/a	3,367	3,367	21	n/a	3,363
	C	n/a	13,110	13,110	355	n/a	13,639	13,639	366	n/a	13,624
	WYAK	n/a	1,439	1,439	-	n/a	1,453	1,453	1	n/a	1,439
	SEO	n/a	2,879	2,879	-	n/a	2,905	2,905	-	n/a	2,877
	Total	25,135	20,664	20,664	376	25,978	21,364	21,364	388	25,900	21,303
Arrowtooth Flounder	W	n/a	30,469	14,500	133	n/a	30,409	14,500	177	n/a	30,323
	C	n/a	65,000	65,000	8,102	n/a	64,871	64,871	12,283	n/a	64,688
	WYAK	n/a	7,886	7,886	28	n/a	7,870	7,870	27	n/a	7,848
	SEO	n/a	16,130	6,900	25	n/a	16,099	6,900	20	n/a	16,053
	Total	142,749	119,485	94,286	8,287	142,485	119,249	94,141	12,507	142,074	118,912



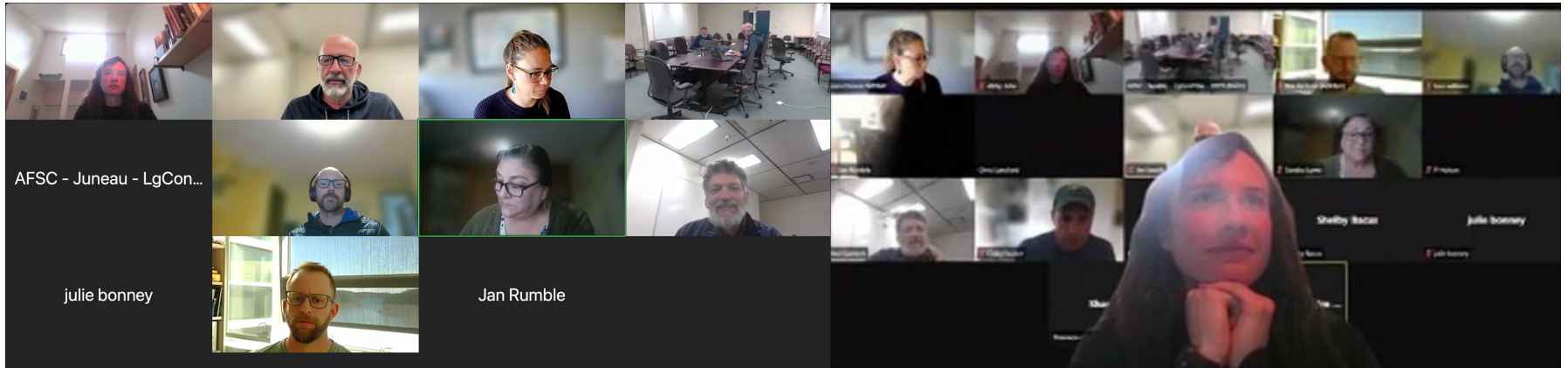
GOA Groundfish Proposed Harvest Specifications- PT Recs Table 1 (1 of 2)

Flathead Sole	W	n/a	12,793	8,650	12	n/a	13,273	8,650	89	n/a	13,521	
	C	n/a	21,487	21,487	364	n/a	21,307	21,307	606	n/a	21,702	
	WYAK	n/a	2,320	2,320	-	n/a	3,876	3,876	0	n/a	3,949	
	SEO	n/a	2,880	2,880	-	n/a	2,047	2,047	0	n/a	2,086	
	Total	48,161	39,480	35,337	376	49,414	40,503	35,880	695	50,322	41,258	
Pacific ocean perch	W	n/a	2,529	2,529	2,312	n/a	1,787	1,787	1,571	n/a	1,726	
	C	n/a	29,940	29,940	23,288	n/a	28,757	28,757	18,177	n/a	27,768	
	WYAK	n/a	1,370	1,370	1,366	n/a	2,110	2,110	1,946	n/a	2,038	
	W/CWYAK	40,308	33,839	33,839	26,967	n/a	n/a	n/a	n/a	n/a	n/a	
	SEO	3,994	3,354	3,354	-	n/a	7,065	7,065	-	n/a	6,822	
Total	44,302	37,193	37,193	28,967	47,466	39,719	39,719	21,694	45,835	38,354		
Northern Rockfish	W	n/a	2,614	2,614	360	n/a	2,535	2,535	314	n/a	2,446	
	C	n/a	2,350	2,350	934	n/a	2,280	2,280	815	n/a	2,200	
	E	n/a	-	-	-	n/a	-	-	-	n/a	0	
	Total	5,927	4,964	4,964	1,295	5,750	4,815	4,815	1,129	5,548	4,646	
	C	n/a	280	280	133	n/a	189	189	121	n/a	189	
Shortraker Rockfish	W	n/a	51	51	6	n/a	34	34	15	n/a	34	
	C	n/a	280	280	133	n/a	189	189	121	n/a	189	
	E	n/a	374	374	186	n/a	424	424	185	n/a	424	
	Total	940	705	705	325	863	647	647	320	863	647	
	C	n/a	149	149	56	n/a	145	145	66	n/a	137	
Dusky Rockfish	W	n/a	149	149	56	n/a	145	145	66	n/a	137	
	C	n/a	7,647	7,647	3,376	n/a	7,365	7,365	2,089	n/a	6,979	
	WYAK	n/a	90	90	1	n/a	84	84	5	n/a	81	
	SEO	n/a	31	31	-	n/a	30	30	-	n/a	28	
	Total	9,638	7,917	7,917	3,433	9,281	7,624	7,624	2,170	8,796	7,225	
Rougheye and Blackspotted Rockfish	W	n/a	180	180	101	n/a	197	197	49	n/a	198	
	C	n/a	232	232	133	n/a	315	315	116	n/a	317	
	E	n/a	363	363	146	n/a	525	525	88	n/a	526	
	Total	930	775	775	381	1,555	1,037	1,037	253	1,566	1,041	
	Total	376	283	283	197	376	283	283	144	376	283	
Demersal shell rockfish	W	n/a	314	314	49	n/a	314	314	33	n/a	314	
	C	n/a	693	693	87	n/a	693	693	62	n/a	693	
	E	n/a	621	621	44	n/a	621	621	60	n/a	621	
	Total	2,170	1,628	1,628	179	2,170	1,628	1,628	155	2,170	1,628	
	W/CWYK combined (starting in 2024)	n/a	940	940	868	n/a	1,353	1,353	454	n/a	1,353	
Other Rockfish	WYAK	n/a	370	370	46	n/a	-	-	-	n/a	n/a	
	SEO	n/a	2,744	300	24	n/a	2,421	300	26	n/a	2,421	
	Total	5,320	4,054	1,610	938	4,977	3,774	1,653	480	4,977	3,774	
	Total	6,200	4,700	3,000	435	6,200	4,700	4,700	380	6,200	4,700	
	W	n/a	591	591	47	n/a	745	745	97	n/a	745	
Big Skate	C	n/a	1,482	1,482	619	n/a	1,749	1,749	613	n/a	1,749	
	E	n/a	794	794	117	n/a	341	341	72	n/a	341	
	Total	3,822	2,867	2,867	783	3,780	2,835	2,835	782	3,780	2,835	
	W	n/a	151	151	58	n/a	104	104	22	n/a	104	
	Longnose Skate	C	n/a	2,044	2,044	405	n/a	1,894	1,894	422	n/a	1,894
E		n/a	517	517	605	n/a	538	538	160	n/a	538	
Total		3,616	2,712	2,712	1,068	3,380	2,536	2,536	604	3,380	2,536	
Other Skates		GOA-wide	1,311	984	984	318	887	665	665	437	887	665
Sharks		GOA-wide	6,521	4,891	4,891	1,344	6,521	4,891	4,891	842	6,521	4,891
Octopuses	GOA-wide	1,307	980	980	139	1,307	980	980	127	1,307	980	
TOTAL		646,826	539,072	468,796	157,510	765,608	599,784	520,020	175,259	673,289	562,224	

Source: 2023 and 2024 Final GOA Harvest Specifications; 2024 and 2025 Final GOA Harvest Specifications; Catch Accounting System



Thanks to ... GOA GFPT and Presenters



Assessment Type	GOA Stocks for 2024
Operational Full	Pollock Pacific cod <u>Thornyhead rockfish</u> Dusky rockfish Northern rockfish
Operational Update	Sablefish DSR Other rockfish
Harvest Projections (review in Sept/Oct)	GOA flathead sole GOA POP GOA <u>rougheye/blackspotted rockfish (RE/BS)</u> GOA rock sole GOA shallow-water flatfish (SWF) GOA rex sole GOA deepwater flatfish GOA arrowtooth flounder (ATF)
Catch Reports	Skates <u>Shortraker rockfish</u> Atka mackerel Octopus Sharks
Other	Forage fish & squid (eco report) Grenadiers (eco report)

