BSAI Presentation Summary

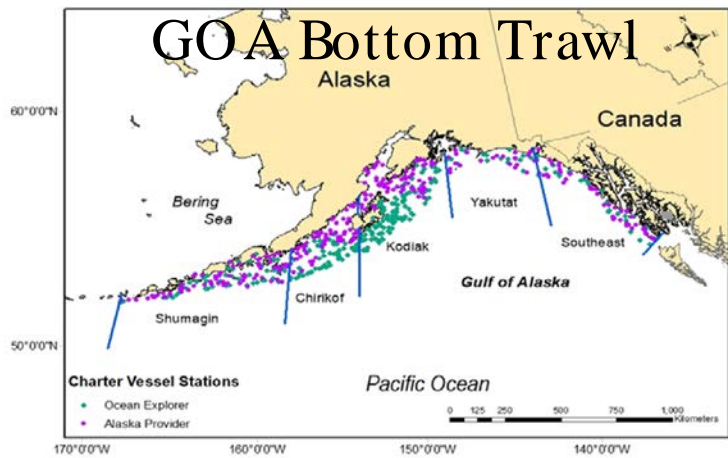| Topic	Presenter	Type	Action
CEATTLE	Kirstin Holsman	Information	No
Pollock AVO Index	Nate Lauffenburger	Information	No
Pollock Movement	Robert Levine	Information	No
EBS Pollock Model	Jim Ianelli	Model Update (recorded)	Yes
Yellowfin Sole Model	Ingrid Spies	Model Update	No
AI Pacific Cod Model	Ingrid Spies	Model Update	Yes
EBS Pacific Cod Model	Steve Barbeaux	Model Update (recorded)	Yes
Northern Rockfish Stock Structure	Paul Spencer	Information/Model Update	Yes
Proposed Specifications	Steve Whitney		
Halibut DMRs	Diana Stram		

Note: Underlined text has a link to presentation

Surveys: covered in JPT minutes

Longline

Summer Acoustic

Bering Sea Ecosystem

GOA Bottom Trawl

EBS Bottom Trawl

Winter Acoustic

GOA Ecosystem
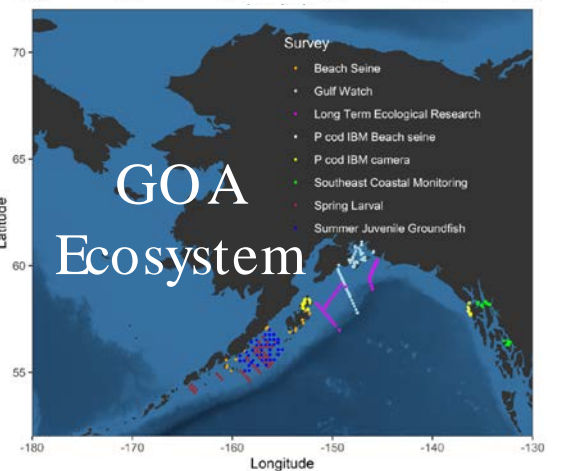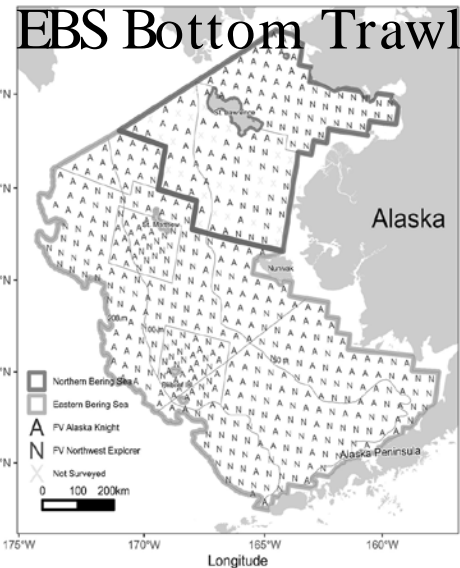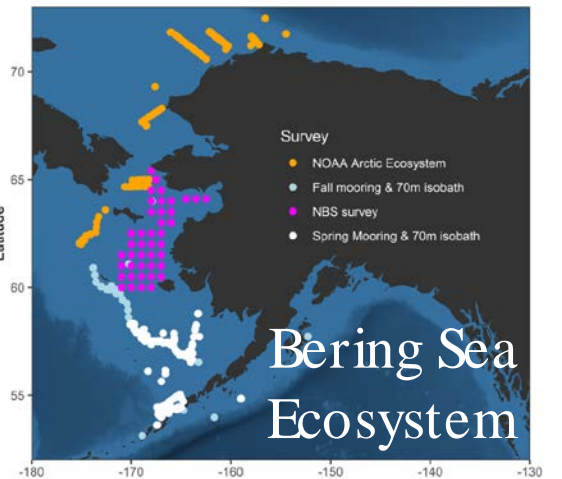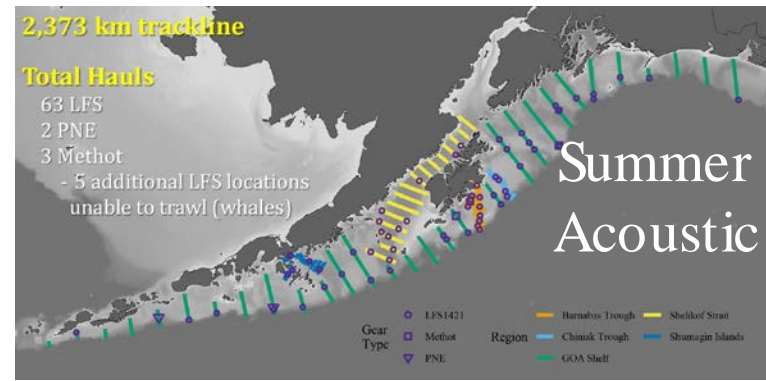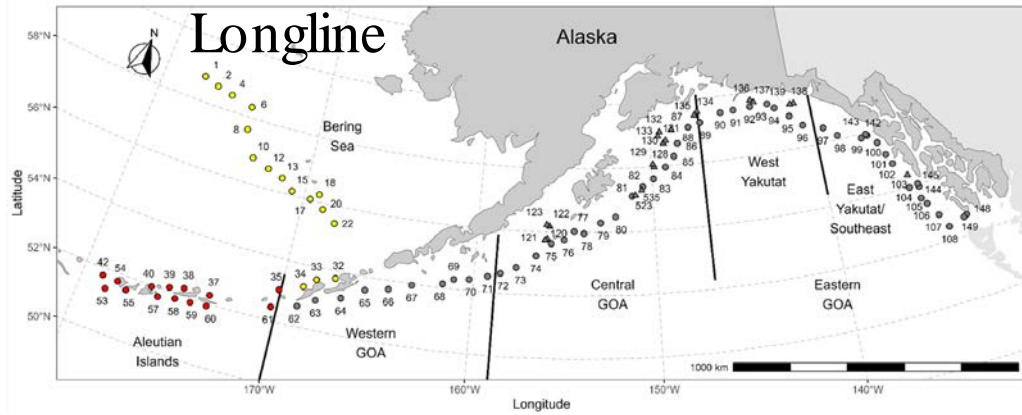
EBS trawl survey

- Highlights:
  - Survey methods update and standard data collections
  - Cold pool similar to 2022 in extent, but colder and below average
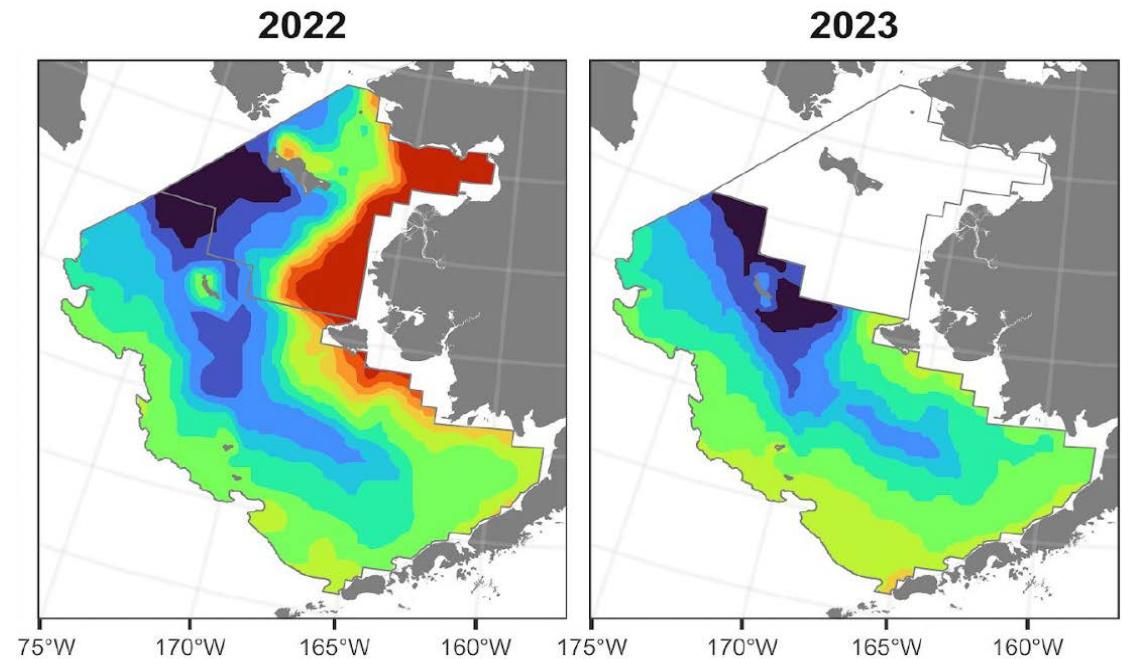 - Fish biomass generally down relative to 2022

- Discussion:
  - NBS survey still being processed at time of this presentation

Thanks to Duane Stevenson

EBS trawl survey

- Notable:
  - Summary table useful for looking at all stocks together
  - Showing biomass and population estimates for 2022 and 2023
  - Color coded for increase (green) or decrease (orange)

Thanks to Duane Stevenson

Biomass/Population Changes

Common name	Year	EBS Biomass (mt)	EBS Population (x1,000)
walleye pollock	2022	4,153,971	7,563,348
	2023	3,154,668 (-24%)	5,685,500 (-25%)
Pacific cod	2022	647,400	425,156
	2023	663,075 (2%)	555,739 (31%)
yellowfin sole	2022	2,039,968	8,660,407
	2023	1,393,379 (-32%)	5,567,596 (-36%)
northern rock sole	2022	1,294,581	7,408,458
	2023	1,380,684 (7%)	6,657,558 (-10%)
flathead sole	2022	703,375	2,442,797
	2023	594,851 (-15%)	2,039,623 (-17%)
Bering flounder	2022	6,237	36,007
	2023	6,813 (9%)	33,736 (-6%)
Alaska plaice	2022	385,294	660,307
	2023	358,845 (-7%)	617,849 (-6%)
arrowtooth flounder	2022	521,615	1,001,554
	2023	462,575 (-11%)	861,345 (-14%)
Kamchatka flounder	2022	29,699	45,293
	2023	24,875 (-16%)	40,128 (-11%)
Pacific halibut	2022	149,064	91,474
	2023	170,238 (14%)	95,321 (4%)
Alaska skate	2022	463,017	102,817
	2023	418,483 (-10%)	98,290 (-4%)
Pacific ocean perch	2022	126,805	242,638
	2023	18,914 (-85%)	23,560 (-90%)

Bering Sea Survey Modernization:

- Need to adapt surveys to the new reality
  - Design one survey for all 3 BS regions (EBS, NBS, Slope)
  - Increase survey efficiency, optimize effort allocation
  - Design flexible survey that will be responsive to assessment data needs and adaptable to new technologies

- Need to redesign gear and change sampling methods
  - Gear is becoming obsolete (doors, floats, nylon mech, bridles, etc)
  - Improve fishing methods (e.g., use autotrawl)
  - Need to decrease towing time from 30 to 15 min to reduce catch volume and number of tows with split catch

Thanks to Stan Kotwicki
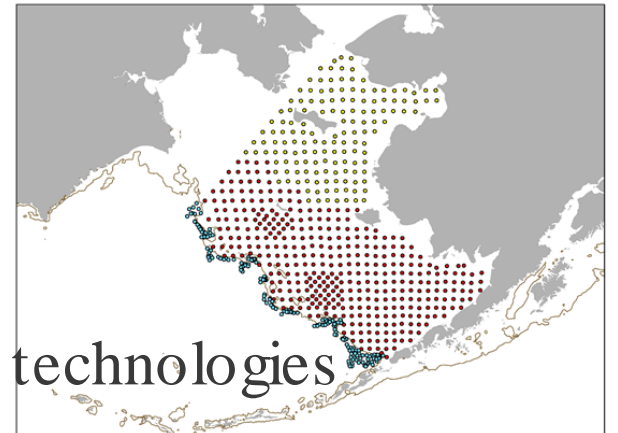
Bering Sea Survey Modernization
project components and timeline

I.   Establishment of the AFSC working group to coordinate all the EBS survey modernization activities (October 2023 ; Stan Kotwicki)

II.   Projects, projects 1-4 can be done in parallel, projects 5-6 can be completed only after 1-4 are done:

1. Sampling design – area, frequency, sampling density (work started in 2023; Lewis Barnett)

2. Determining 15min vs 30min catchability/selectivity correction factors (work started, more data collections needed; no lead)

3. Combining slope/shelf data and determine calibration factors between current slope and shelf gears (work started in 2023; no lead)

4. **Survey bottom trawl gear and fishing methods redesign (workshop with stakeholders planned for October 2023; Shawn Russel, Nicole   Charriere)**

5. New survey gear calibration (no start date yet, no lead)

6. Survey time series calibration, transition design, and transition implementation (no start date yet, no lead)

Bering Sea Survey Modernization: Call for stakeholder engagement in workshops

Interested in participating in initial meeting of Survey Modernization Working Group?

Call for public and industry engagement in all projects, but especially in project on survey bottom trawl gear and fishing methods redesign. Initial workshop is planned in late October. If interested please email:

Workshop coordinator: Nancy Roberson nancy.roberson@noaa.gov

For specific questions about the project you can contact:

Stan Kotwicki stan.kotwicki@noaa.gov

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Shawn Russell shawn.russell@noaa.gov

Thanks to Stan Kotwicki

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Proposed models for November assessments

EBS Pollock, Yellowfin sole, AI cod, EBS cod and stock structure for Northern Rockfish

EBS Pollock Model Summary

- Model Explorations:
  - Use the revised acoustic vessels of opportunity (AVO) index
  - Random effects model for spawning weight-at-age
  - Expanded model capacity for using ageing errors on different data components in preparation for improved pollock ageing technique
  - Compared process and observation error related to acoustic trawl survey
  - Other sensitivities presented but not planned for November
- **Recommendation:**
  - Adopt the new full AVO index, evaluation of process-error weights, and include random effects model estimates

Thanks to Jim Ianelli

Yellowfin Sole Model Considerations
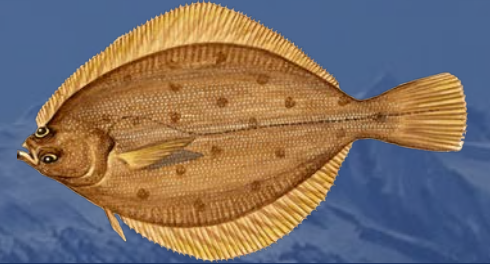
- **Model Explorations:**
  - Change split-sex to single time-varying fishery selectivity
  - Similar change was adopted for survey selectivity last year
- **Motivation and Results:**
  - Little difference between male and female fishery selectivity post 1980s
  - Switching to single-sex reduces number of parameters
  - Little change to model results
- **Recommendation:**
  - Team agreed with author's recommendation to use single-sex selectivity

Thanks to Ingrid Spies

AI Pacific Cod Model Considerations

- **Model Explorations:**
  - Sensitivity tests evaluating conditional age-at-length and bootstrapping input sample sizes to be adopted for future models
  - Several new models including time-varying fishery selectivity, longline survey estimates, and time-varying growth
- Results/Discussion:
  - Modest improvement in retro pattern with time-varying fishery selectivity
  - Large improvement in retro pattern with time-varying growth
  - Longline survey was not recommended for other Aleutian Islands (AI) stocks (only spans eastern to half of central AI)
  - Sensitivity of model to choice of natural mortality, fixing it may improve stability

Thanks to Ingrid Spies

AI Pacific Cod Model Considerations

Fishery Catch by Gear

SSB with time-varying fishery selectivity

Model 23.1 rho = 0.3
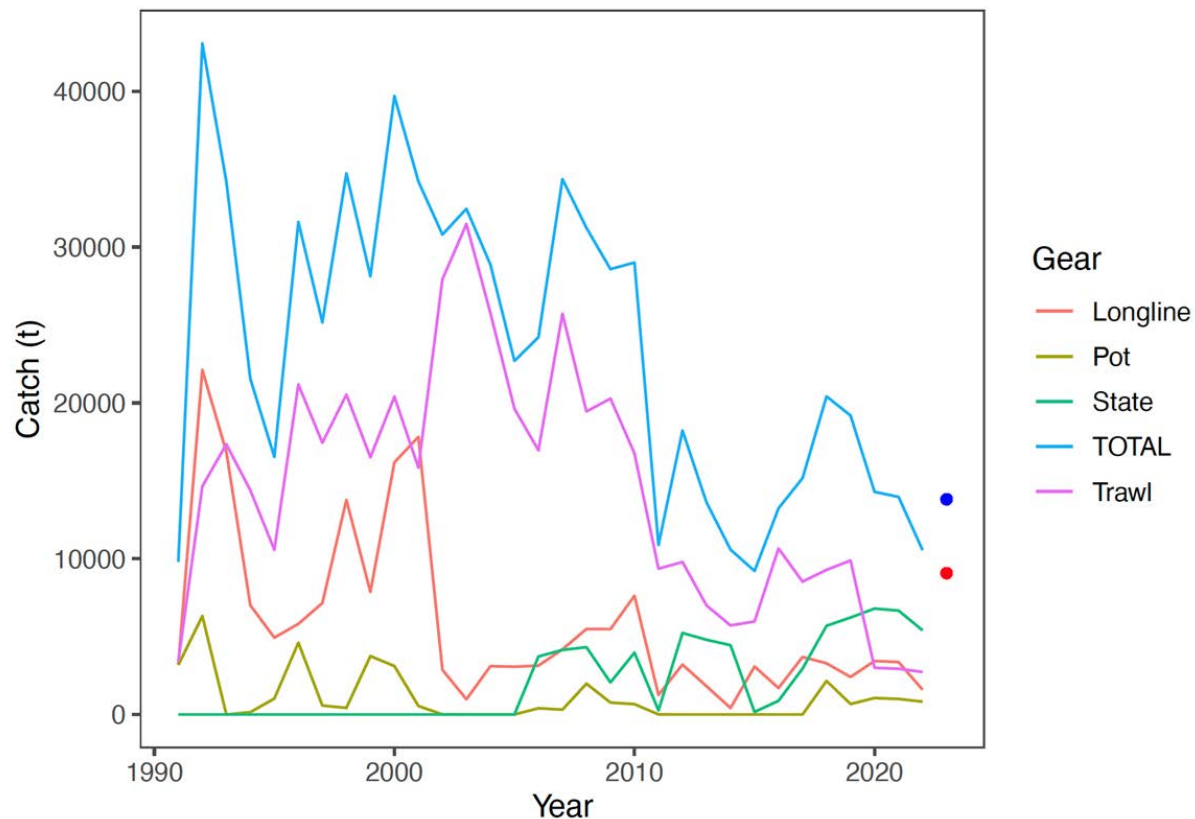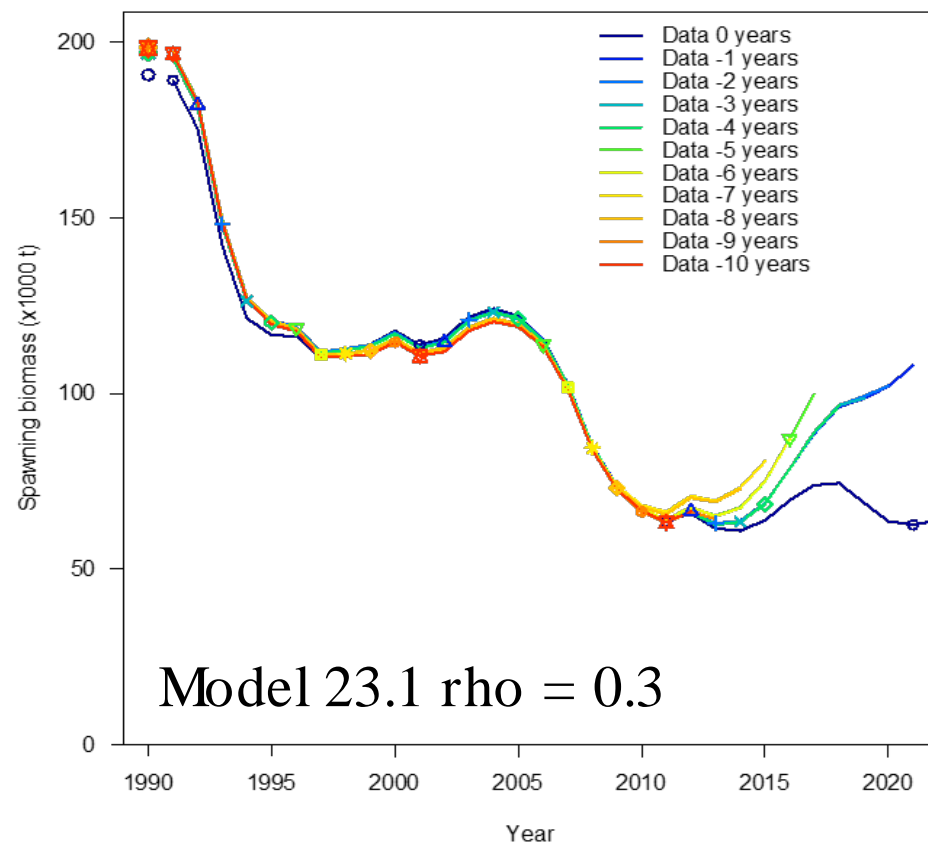
AI Pacific Cod Model Considerations

Survey Index Fit

SSB with time-varying growth

Model 23.3 rho = 0.01
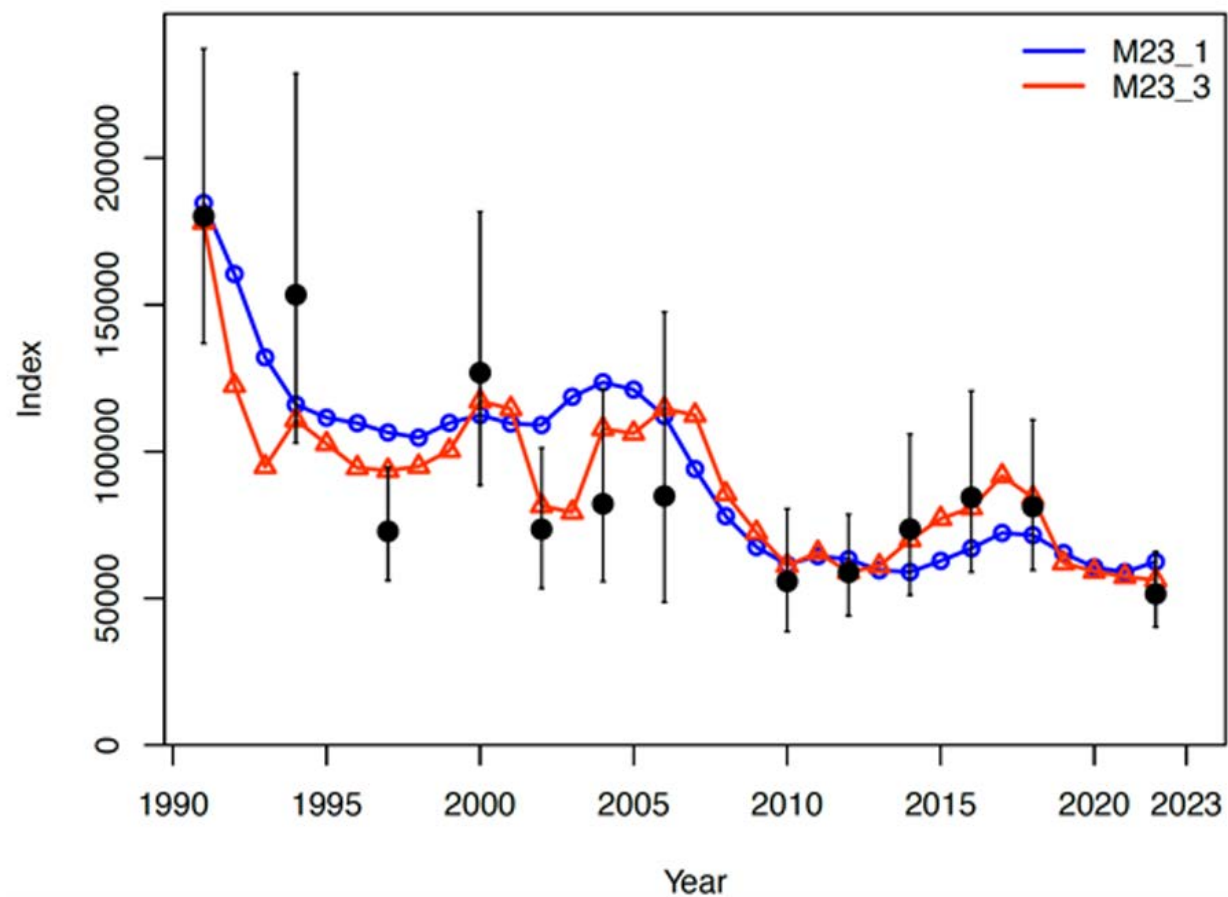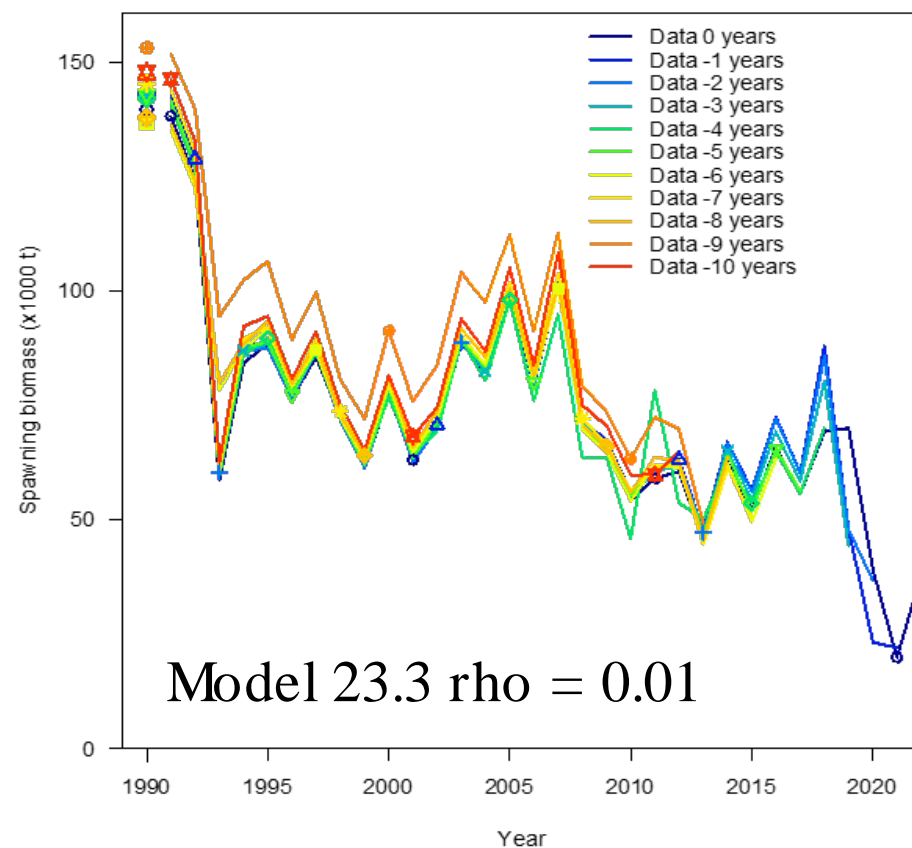
AI Pacific Cod Model Considerations

● **Recommendations:**

  ○ Three models for November: 1) Tier 5 base model, 2) Tier 3 model with time-varying growth using low variability option, and 3) Tier 3 model with time-varying growth and time blocks for fishery selectivity

  ○ Team supported authors recommendation for error tuning on time-varying growth

  ○ AI and EBS Pacific cod authors continue to coordinate on their decisions regarding constraints on natural mortality for consistency

Thanks to Ingrid Spies

Northern Rockfish Stock Structure

- ● Highlights:
  - ○ Overview on re-evaluation (3rd) of stock structure for northern rockfish
  - ○ Number of tows targeting recently increased but could be smaller nets
  - ○ Indications of high stock structure based on [Larson study](#)
  - ○ Author plans to include new aging error matrix in update model
- ● **Recommendation:**
  - ○ Team recommended the stock structure information be included in the risk table for November and to continue to monitor stock for potential spatial concerns

Thanks to Paul Spencer

EBS Pacific Cod Model Summary

● Model Explorations:
  ○ Current ensemble of models are problematic for a suite of reasons
  ○ A series of simpler models were explored with complexity added sequentially
  ○ Natural mortality estimated outside the model using Phylogenetic structural equation model on max age

● Results:
  ○ Simpler models perform well and address issues with ensemble models
  ○ Estimating natural mortality outside the model and using a fixed model greatly stabilizes model results

Thanks to Steve Barbeaux

EBS Pacific Cod Model Summary

- Recommendations:
  - The Team recommended going to a single model approach, away from the ensemble
  - The Team recommended the authors explore a model similar to M23.1.0.d with some changes to age-at-length data, fixing M and CVs on growth
  - The Team recommended that Model 23.1.0.a be brought forward in November as a sensitivity to better understand uncertainty.

Thanks to Steve Barbeaux

BSAI Proposed Harvest Specifications

Area	Gear	Operation	2023 DMRs (specified)	2024/25 DMRs (recommended)
BSAI	Pot	All	26%	26% [b]
	Hook-and-line	CP	9%	7%
	Hook-and-line	CV	9% [a]	7% [a]
	Non-pelagic trawl	Mothership / CP	85%	85%
	Non-pelagic trawl	CV	62%	63%
GOA	Pot	All	27%	26% [b]
	Hook-and-line	CP	13%	11%
	Hook-and-line	CV	9%	10% [b]
	Non-pelagic trawl	Mothership / CP	83%	83%
	Non-pelagic trawl	CV	74%	69%
	Non-pelagic trawl	CV-Rockfish Prog	55%	56% [b]
All	Pelagic trawl	All	100%*	100%*

[a] Based on BSAI HAL CP

[b] 4-year average

*Fixed, not estimated

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

BSAI Proposed Harvest Specifications

Table 1. Plan Team Proposed recommended OFL, ABC for Groundfish in the Bering Sea and Aleutian Islands (metric tons) for 2024-2025 9/14/2023

Species	Area	2022 OFL	2022 ABC	2022 TAC	Catch as of 12/31/2022	2023 OFL	2023 ABC	2023 TAC	Catch as of 9/13/2023	Plan Team Proposed 2024/2025 OFL	Plan Team Proposed 2024/2025 ABC	Plan Team Proposed 2024/2025 TAC
Pollock	EBS	1,469,000	1,111,000	1,111,000	1,105,677	3,381,000	1,910,000	1,300,000	1,250,856	4,639,000	2,275,000	
	AI	61,264	50,752	19,000	3,058	52,383	43,413	19,000	2,694	52,043	43,092	
	Bogoslof	113,479	85,109	250	259	115,146	86,360	300	117	115,146	86,360	
Pacific cod	BS	183,012	153,383	136,466	120,448	172,495	144,834	127,409	82,262	166,814	140,159	
	AI	27,400	20,600	13,796	6,450	18,416	13,812	8,425	2,763	18,416	13,812	
Sablefish	BSAI/GOA	40,432	34,521	n/a		47,390	40,502			48,561	41,539	
	BS	n/a	5,264	5,264	5,514	n/a	8,417	7,996	4,796	n/a	10,185	
	AI	n/a	6,463	6,463	2,230	n/a	8,884	8,440	1,919	n/a	10,308	
Yellowfin sole	BSAI	377,071	354,014	250,000	154,253	404,882	378,499	230,000	71,967	495,155	462,890	
Greenland turbot	BSAI	7,687	6,572	6,572	1,478	4,645	3,960	3,960	1,248	3,947	3,364	
	BS	n/a	5,540	5,540	1,038	n/a	3,338	3,338	771	n/a	2,836	
	AI	n/a	1,032	1,032	440	n/a	622	622	477	n/a	528	
Arrowtooth flounder	BSAI	94,445	80,389	20,000	7,857	98,787	83,852	15,000	5,910	103,070	87,511	
Kamchatka flounder	BSAI	10,903	9,214	9,214	8,369	8,946	7,579	7,579	6,753	8,776	7,435	
Northern rock sole	BSAI	214,084	206,896	66,000	18,399	166,034	121,719	66,000	22,833	196,011	119,969	
Flathead sole	BSAI	77,967	64,288	35,500	14,690	79,256	65,344	35,500	7,522	81,167	66,927	
Alaska plaice	BSAI	39,305	32,697	29,221	11,253	40,823	33,946	17,500	9,489	43,328	36,021	
Other flatfish	BSAI	22,919	17,189	10,000	2,559	22,919	17,189	4,500	2,874	22,919	17,189	

Thanks to Steve Whitney

BSAI Proposed Harvest Specifications

Table 1. Plan Team Proposed recommended OFL, ABC for Groundfish in the Bering Sea and Aleutian Islands (metric tons) for 2024-2025 — 9/14/2023

Species	Area	2022 OFL	2022 ABC	2022 TAC	Catch as of 12/31/2022	2023 OFL	2023 ABC	2023 TAC	Catch as of 9/13/2023	Plan Team Proposed 2024/2025 OFL	Plan Team Proposed 2024/2025 ABC	Plan Team Proposed 2024/2025 TAC
	BSAI	42,605	35,688	35,385	34,782	50,133	42,038	37,703	29,580	49,279	41,322	
	BS	n/a	10,352	10,352	10,066	n/a	11,903	11,903	8,078	n/a	11,700	
Pacific Ocean perch	EAI	n/a	8,083	8,083	7,996	n/a	8,152	8,152	5,494	n/a	8,013	
	CAI	n/a	5,950	5,950	5,837	n/a	5,648	5,648	4,792	n/a	5,551	
	WAI	n/a	11,303	11,000	10,882	n/a	16,335	12,000	11,216	n/a	16,058	
Northern rockfish	BSAI	23,420	19,217	17,000	7,898	22,776	18,687	11,000	9,867	22,105	18,135	
	BSAI	598	503	503	455	703	525	525	489	763	570	
Blackspotted/Roughey e Rockfish	EBS/EAI	n/a	326	326	204		359	359	190	n/a	388	
	CAI/WAI	n/a	177	177	250		166	166	299	n/a	182	
Shortraker rockfish	BSAI	722	541	541	284	706	530	530	199	706	530	
	BSAI	1,751	1,313	1,144	1,308	1,680	1,260	1,260	1,034	1,680	1,260	
Other rockfish	BS	n/a	919	750	651		880	880	576	n/a	880	
	AI	n/a	394	394	657		380	380	458	n/a	380	
	BSAI	91,870	78,510	66,481	58,107	118,787	98,588	69,282	55,903	101,188	86,464	
Atka mackerel	EAI/BS	n/a	27,260	27,260	19,138	n/a	43,281	27,260	15,369	n/a	37,958	
	CAI	n/a	16,880	16,880	16,761	n/a	17,351	17,351	16,601	n/a	15,218	
	WAI	n/a	34,370	22,341	22,208	n/a	37,956	24,671	23,932	n/a	33,288	
Skates	BSAI	47,790	39,958	30,000	29,236	46,220	38,605	27,441	20,205	44,168	36,837	
Sharks	BSAI	689	517	500	127	689	450	250	307	689	450	
Octopuses	BSAI	4,769	3,576	700	251	4,769	3,576	400	119	4,769	3,576	
Total	BSAI	2,953,182	2,383,653	1,871,000	1,594,941	4,859,585	3,155,268	2,000,000	1,591,707	6,219,700	3,590,412	

Thanks to Steve Whitney

Questions?

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