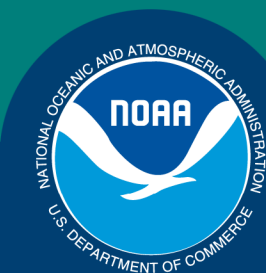


Science, Service, Stewardship

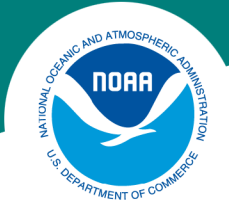


BSAI Shortraker Rockfish

Ingrid Spies

November 16, 2016

**NOAA
FISHERIES
SERVICE**



Changes in the input data:

- 1) Catch data from 2015 and 2016 through October 19, 2016 have been updated.
- 2) The biomass estimates from the 2016 Aleutian Islands (AI) and 2016 Eastern Bering Sea (EBS) slope trawl surveys were added to the model input data.

Changes in the assessment methodology:

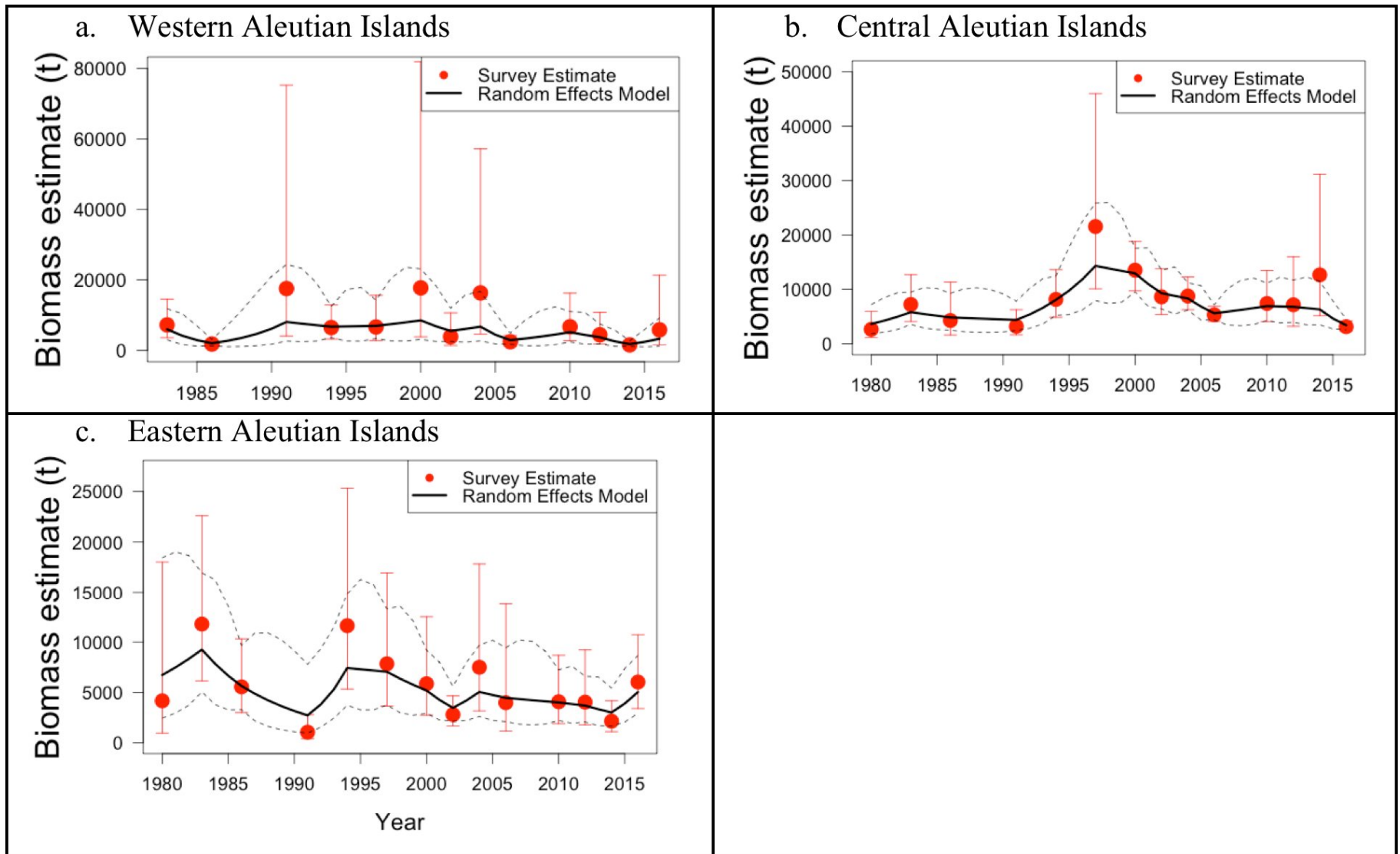
There were no changes in the assessment methodology.



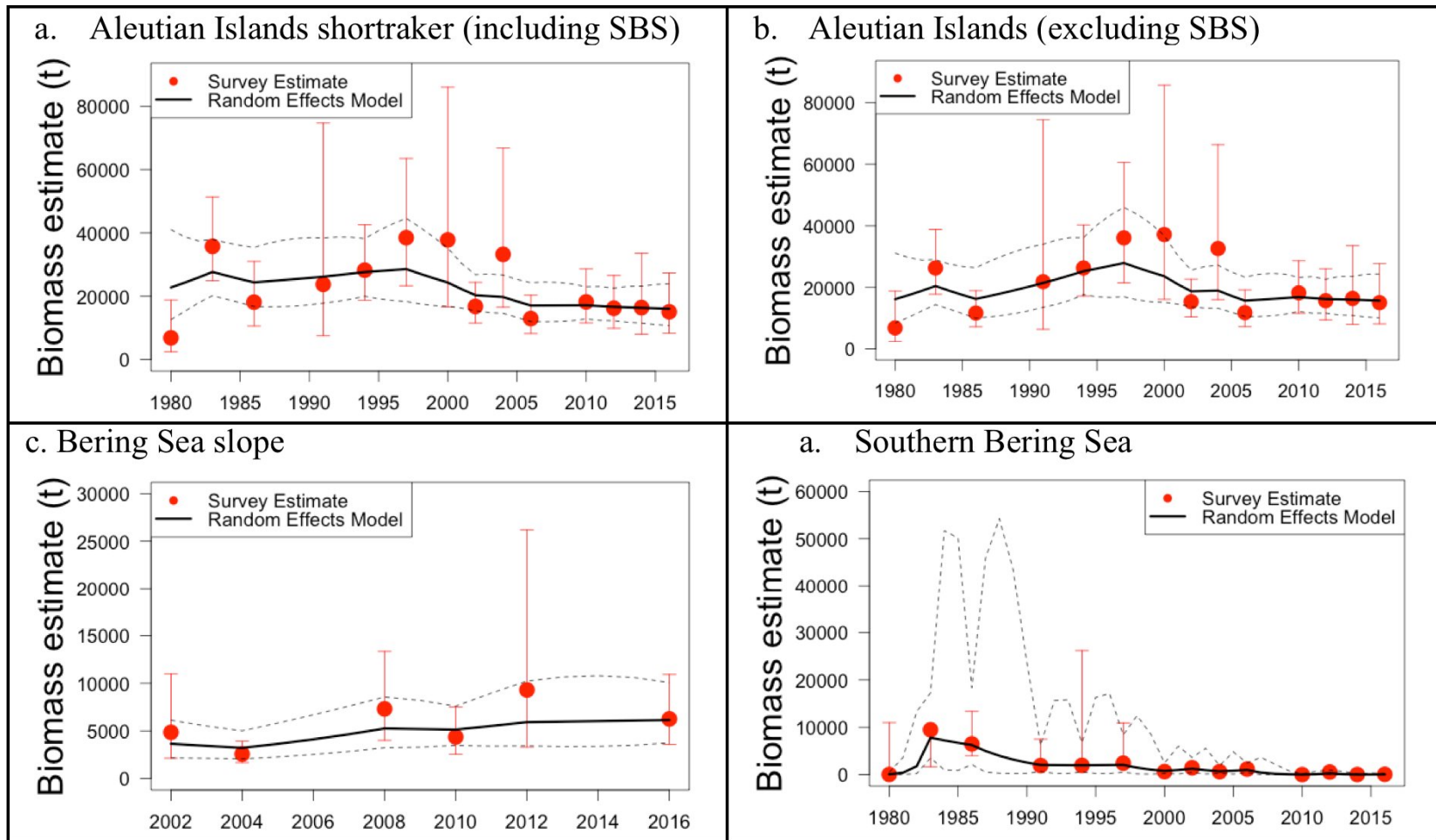
BSAI Shortraker rockfish reference points

Quantity	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2016	2017	2017	2018
M (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)	23,009	23,009	22,191	22,191
F_{OFL}	0.03	0.03	0.03	0.03
$maxF_{ABC}$	0.0225	0.0225	0.0225	0.0225
F_{ABC}	0.0225	0.0225	0.0225	0.0225
OFL (t)	690	690	666	666
maxABC (t)	518	518	499	499
ABC (t)	518	518	499	499
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2014	2015	2015	2016
Overfishing		n/a		n/a

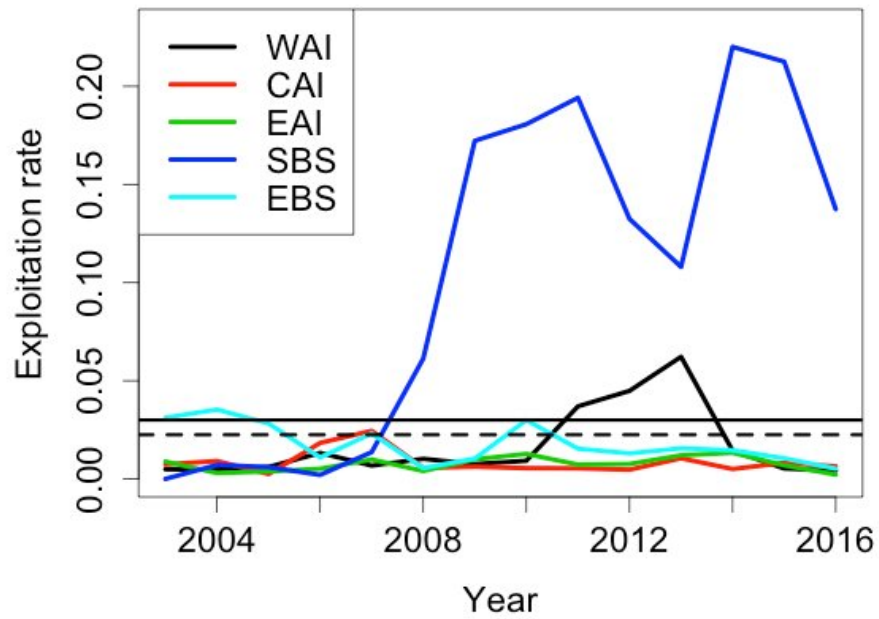
Survey and random effect model estimates of biomass in the Western Aleutian Islands (WAI), Central Aleutian Islands (CAI), and Eastern Aleutian Islands (EAI).



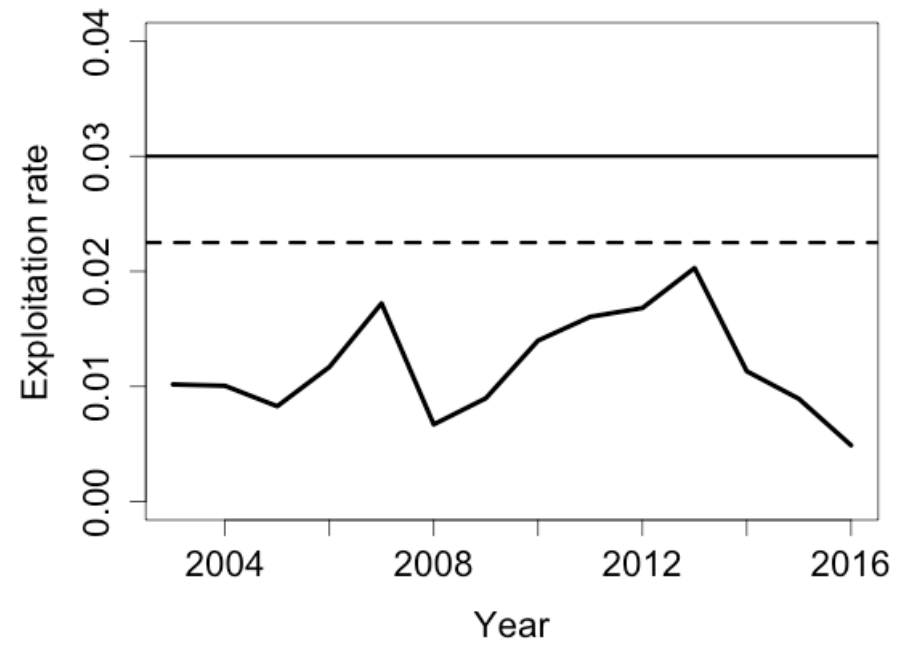
Survey biomass (red data points \pm 2 standard deviations), and predicted survey biomass estimates using the random effects model (black lines with 95% confidence intervals shown as dotted lines).



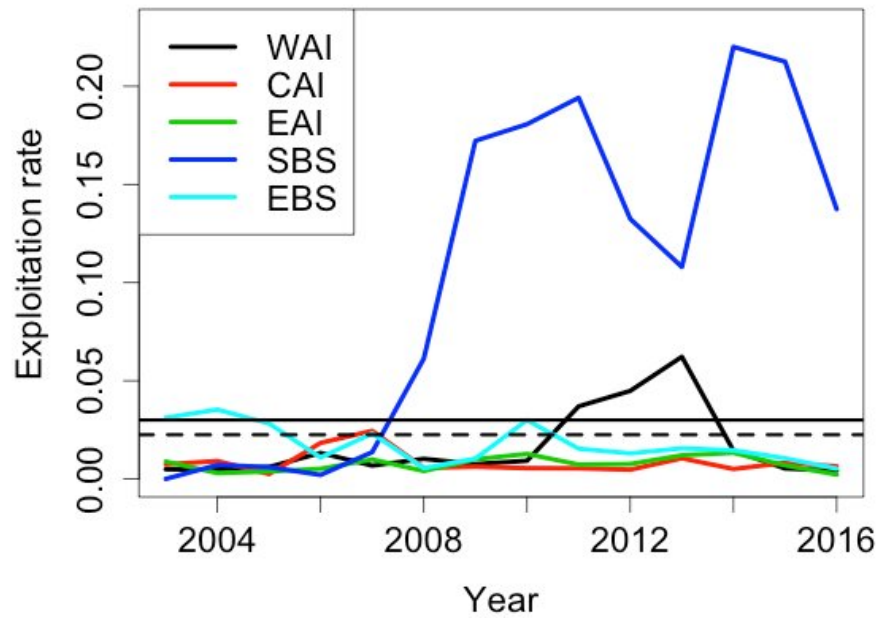
Exploitation rate by region



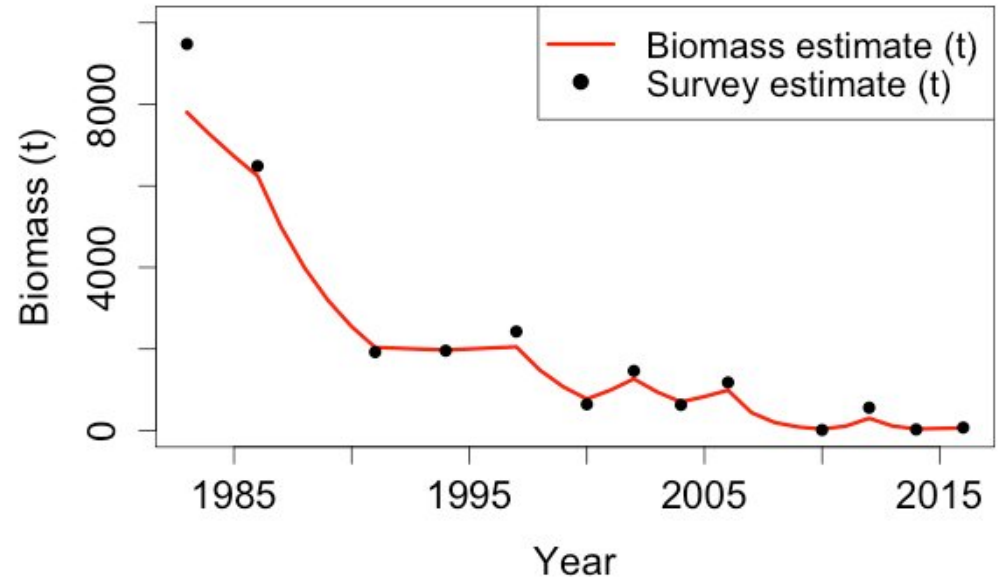
Exploitation rate for entire BSAI



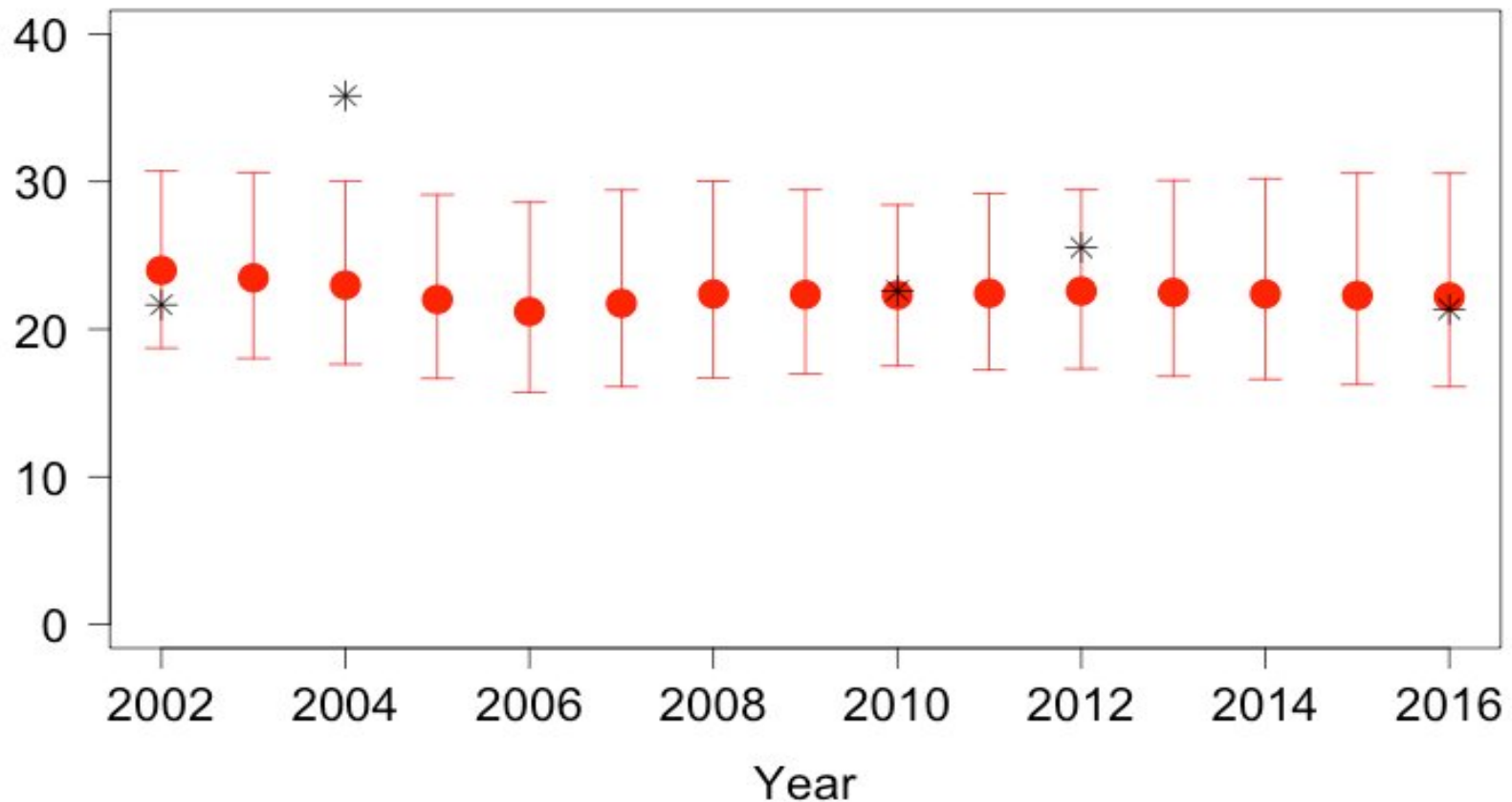
Exploitation rate by region

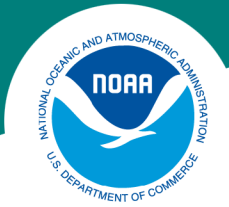


Shortraker biomass in the SBS

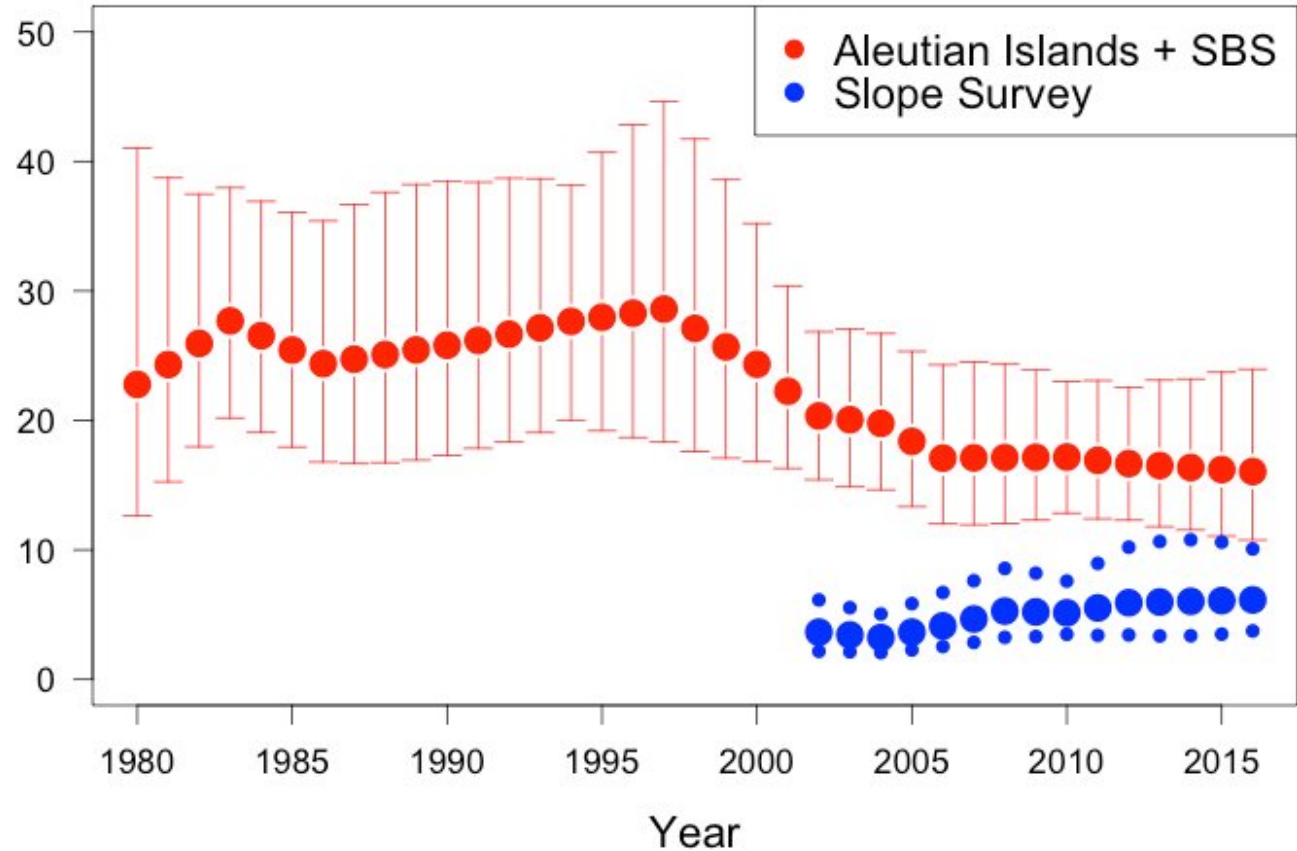


BSAI shortraker biomass based on the random effects model, (95% CIs in red). Survey estimates for the most recent six years that the EBS slope and the AI survey were run in the same year are shown as black asterisks.





Random effect biomass estimates for Aleutian Islands + SBS, EBS slope surveys





BSAI Shortraker rockfish reference points

Quantity	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2016	2017	2017	2018
M (natural mortality rate)	0.03	0.03	0.03	0.03
Tier	5	5	5	5
Biomass (t)	23,009	23,009	22,191	22,191
F_{OFL}	0.03	0.03	0.03	0.03
$maxF_{ABC}$	0.0225	0.0225	0.0225	0.0225
F_{ABC}	0.0225	0.0225	0.0225	0.0225
OFL (t)	690	690	666	666
maxABC (t)	518	518	499	499
ABC (t)	518	518	499	499
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2014	2015	2015	2016
Overfishing		n/a		n/a