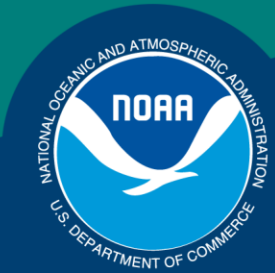


*Science, Service, Stewardship*



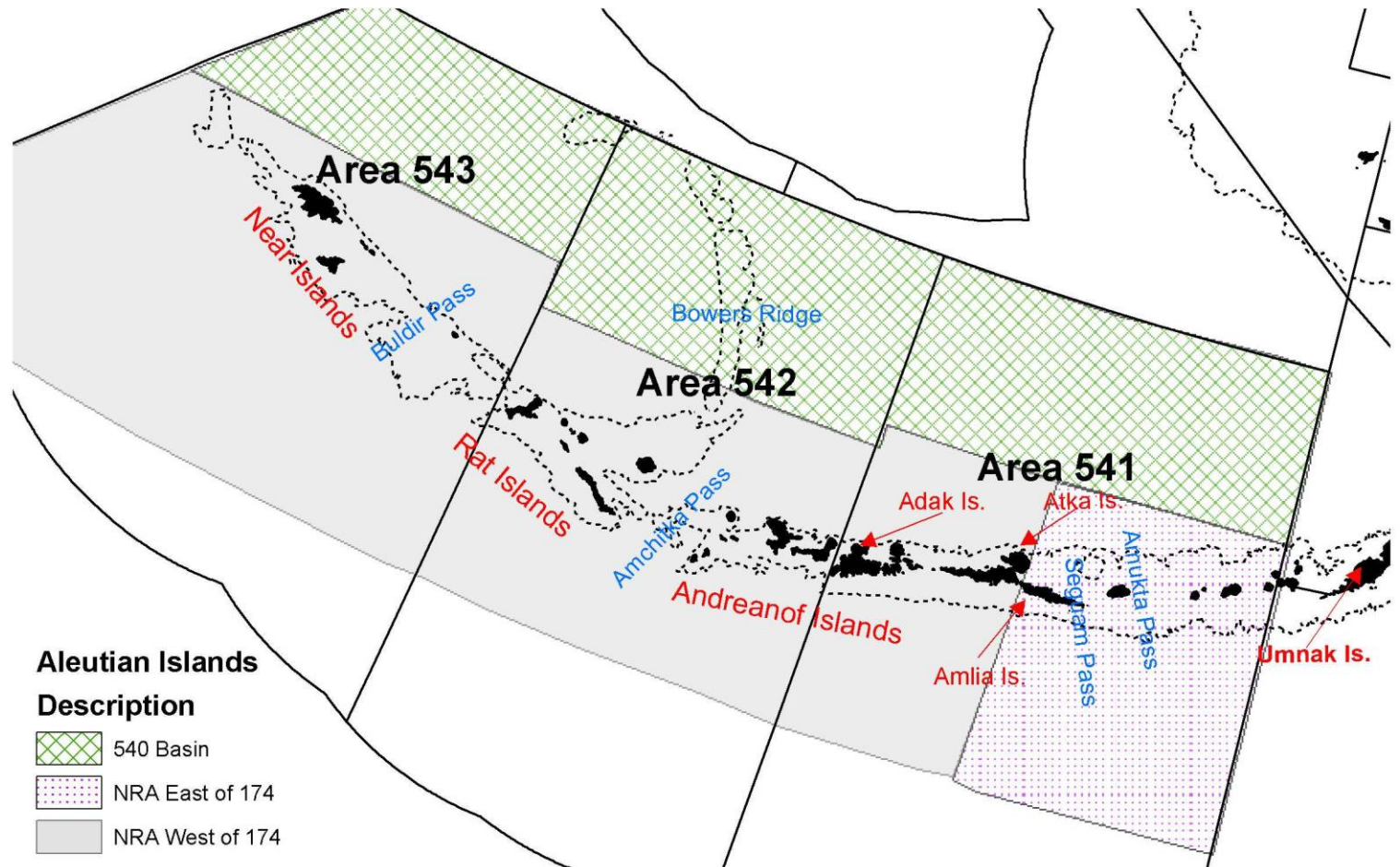
## **Aleutian Islands walleye pollock assessment 2016**

Steve Barbeaux, James Ianelli, and  
Wayne Palsson

**NOAA  
FISHERIES  
SERVICE**



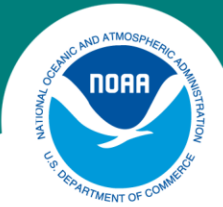
# AI pollock area





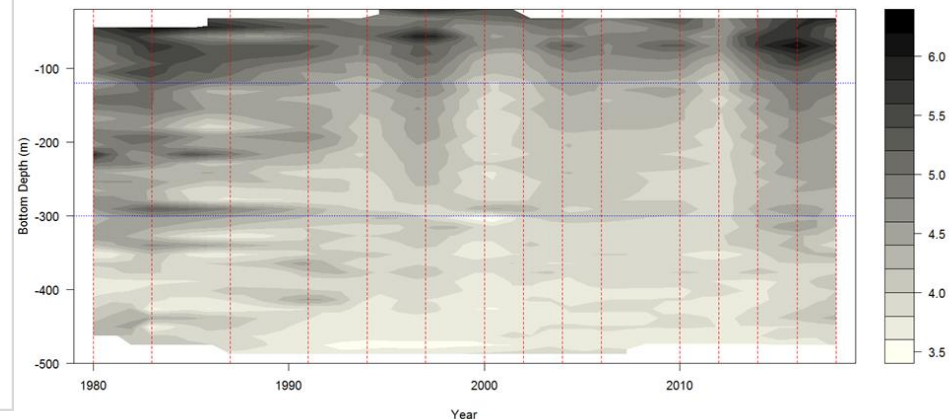
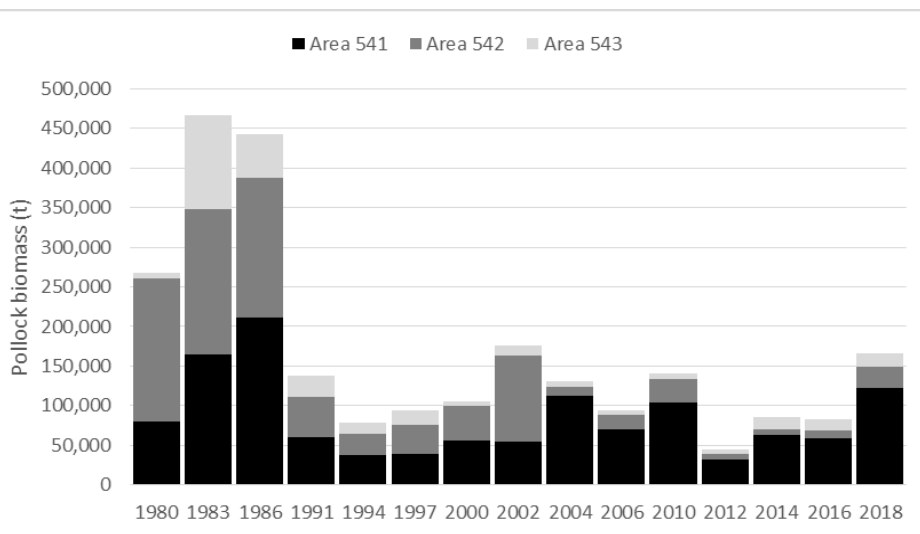
## **Data sources**

- Aleutian Islands bottom trawl survey
  - Triennial
    - 1980-2000
  - Biennial
    - 2000-2018 (missing 2008)
- Aggregated fishery observer data for all gear types
  - 1977-2018
    - Total catch
    - Age composition (through 2008)



## 2018 Bottom trawl survey

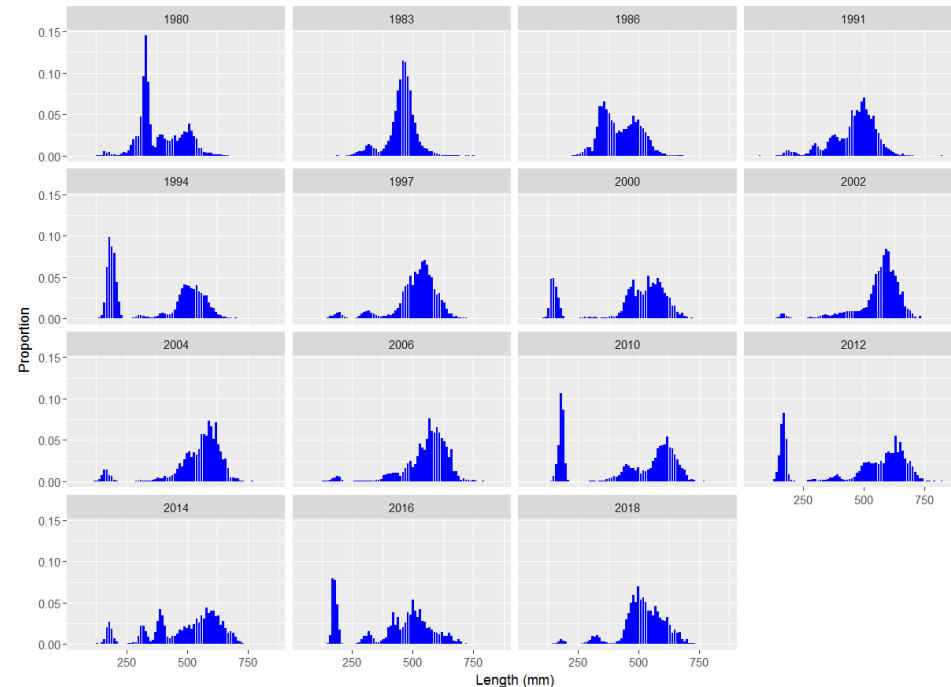
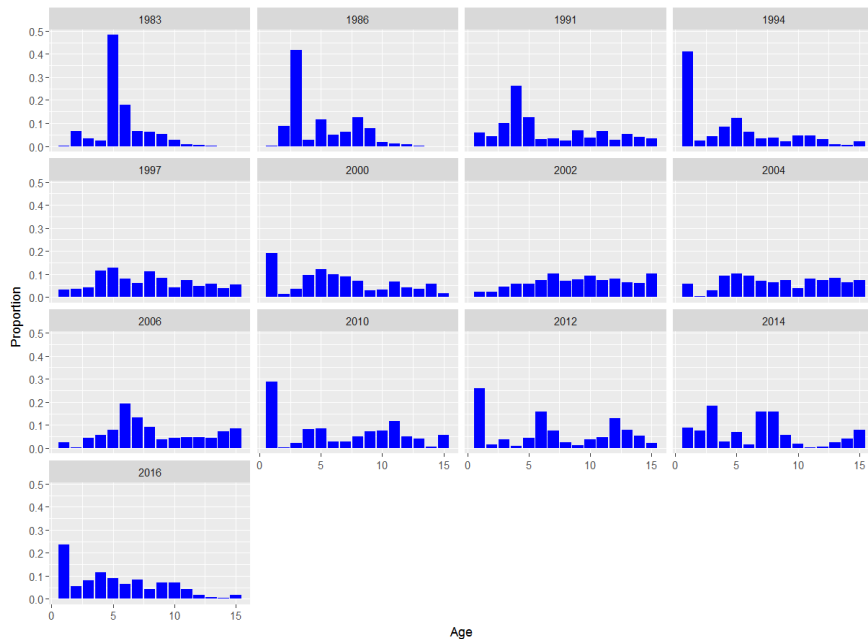
- 165,747 **↑ 99.5%** from 2016
- Distribution approximately the same
- Continued warm bottom temps.

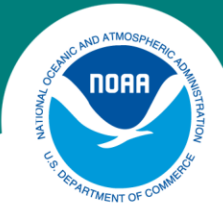




## Survey age and size composition

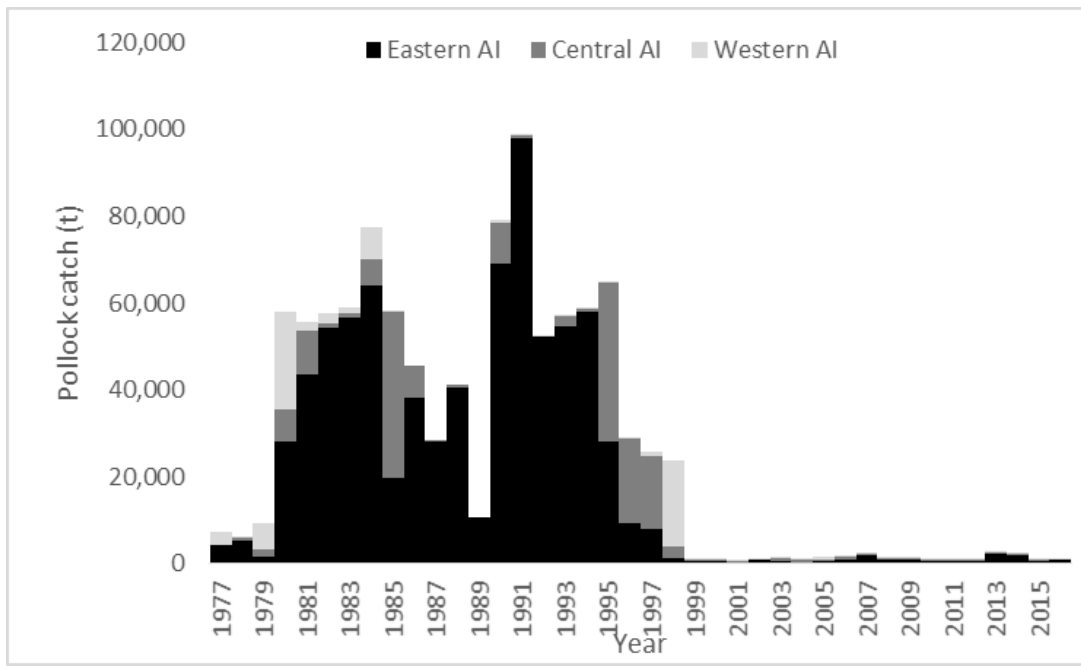
- 2006 year classes strong in 2012, 2014, and 2016
- 2011 year class strong in 2012 and 2014
- 2012 and 2015 year classes strong in 2016





## AI pollock fishery

- 188 t directed fishery in 2018, 0 t in 2016-2017
- Total of 1,507 t in 2017
- Total of 1,778 t in 2018, as of October 5





## Fishery age composition data

- No new fishery age data since 2008
  - No fishery = no new data

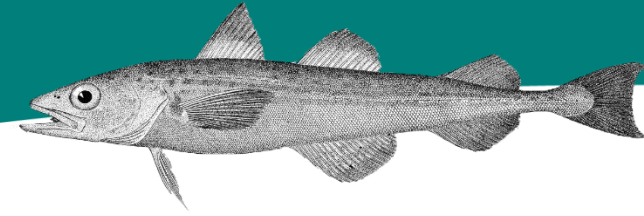




## 2016 Assessment models

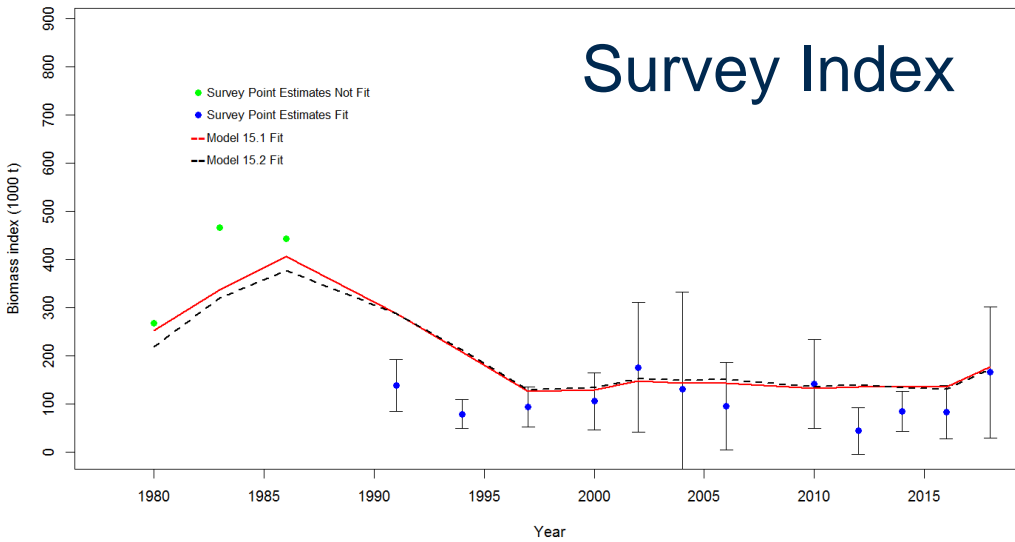
- Same as 2015 models –Tier 3
  - Model 15.1
    - AMAK age-structured model with block selectivity on single fishery
    - Beverton-Holt stock recruitment relationship
    - M estimated in the model prior of 0.2 and CV=0.2
    - Survey Catchability (Q) = 1.0
    - Penalized nonparametric selectivity model
      - Single curve for survey
      - Time block selectivity for fishery
  - Model 15.2
    - Model 15.1 with age specific natural mortality



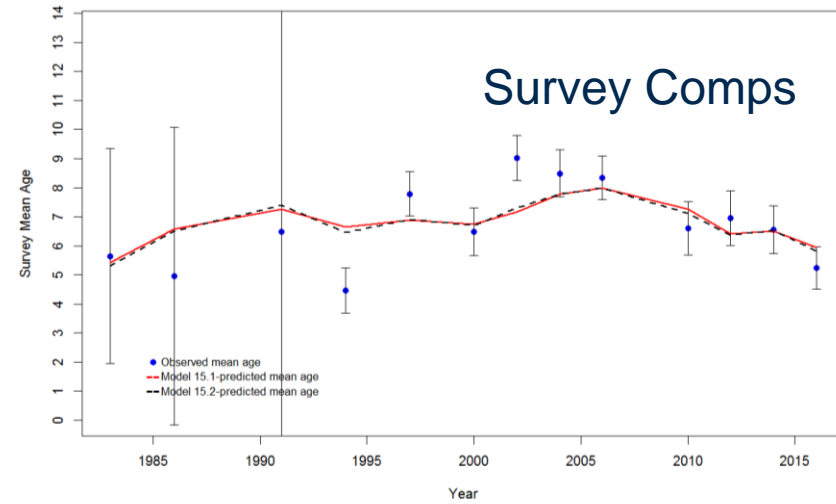


# Fit to survey index and comps

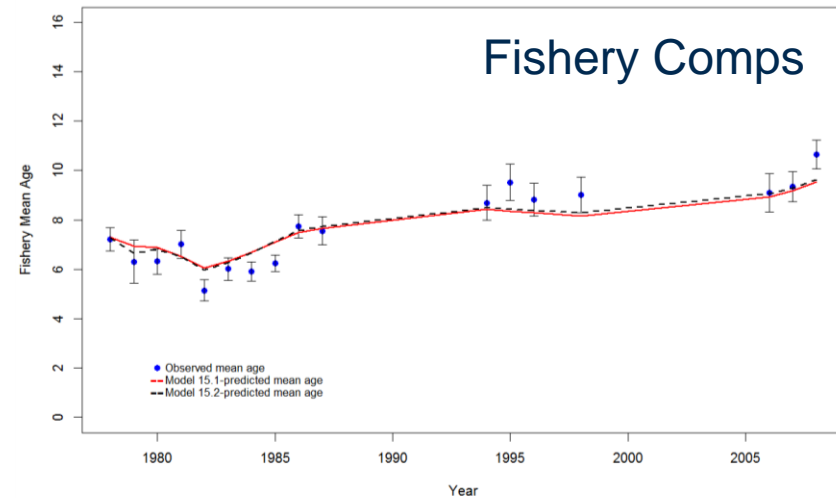
## Survey Index

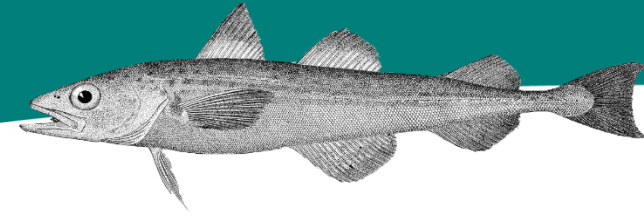


## Survey Comps

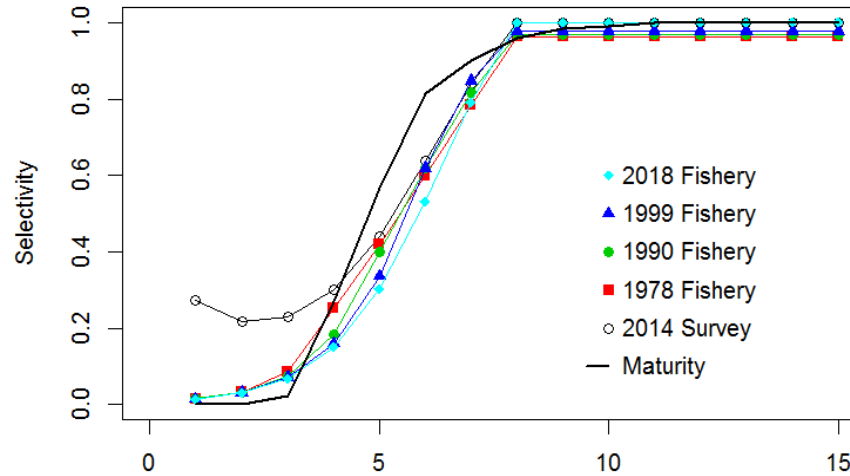


## Fishery Comps

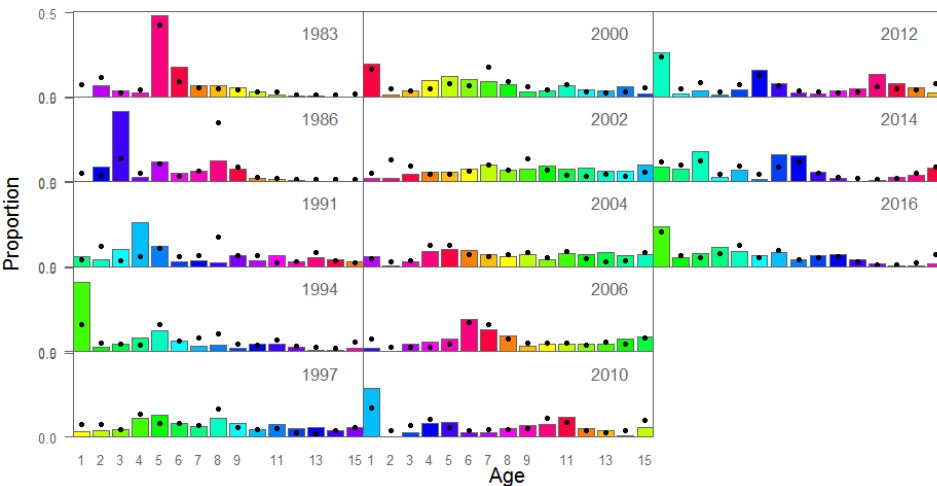




# Selectivity and fits to age composition

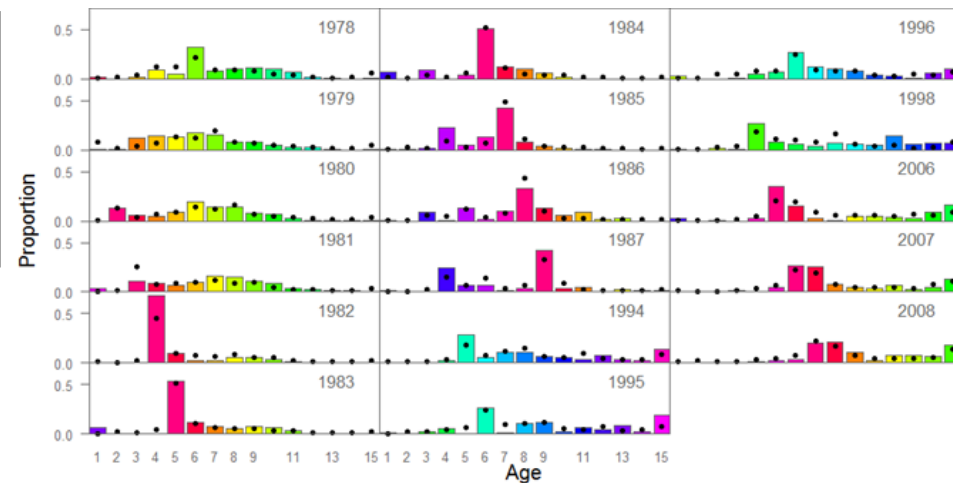


Survey age composition

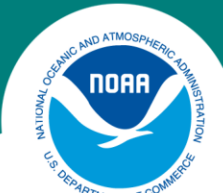
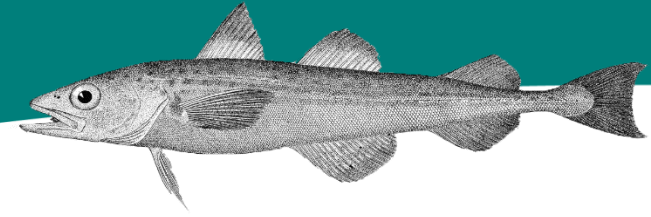


Age

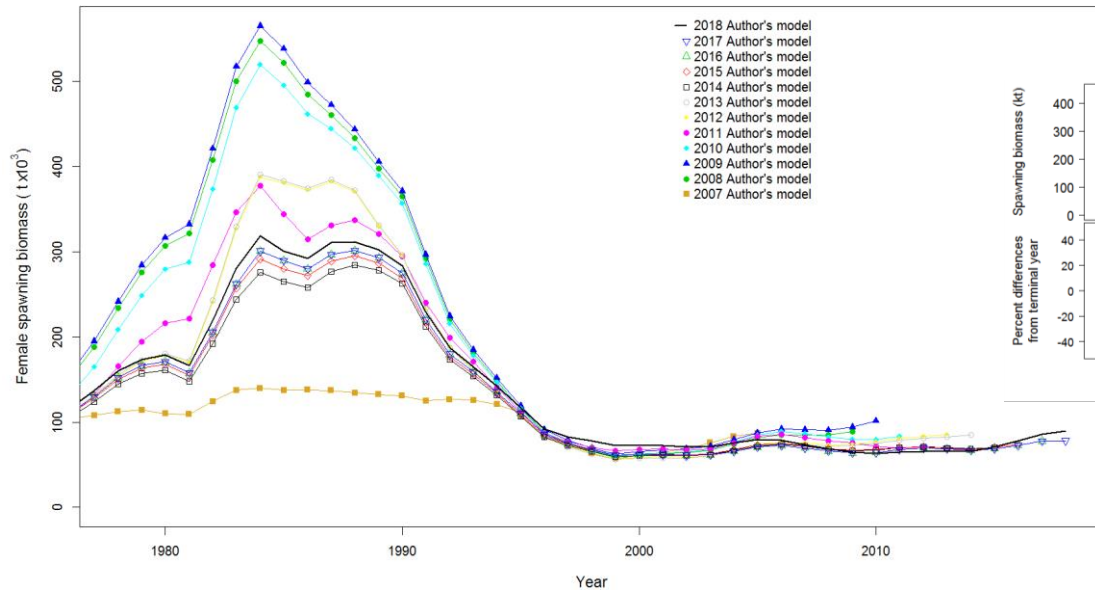
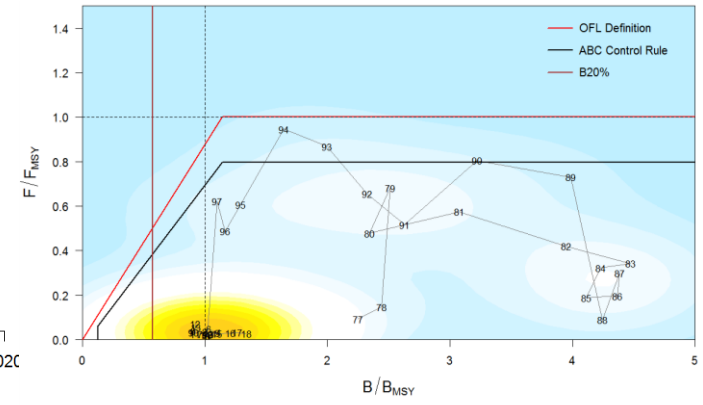
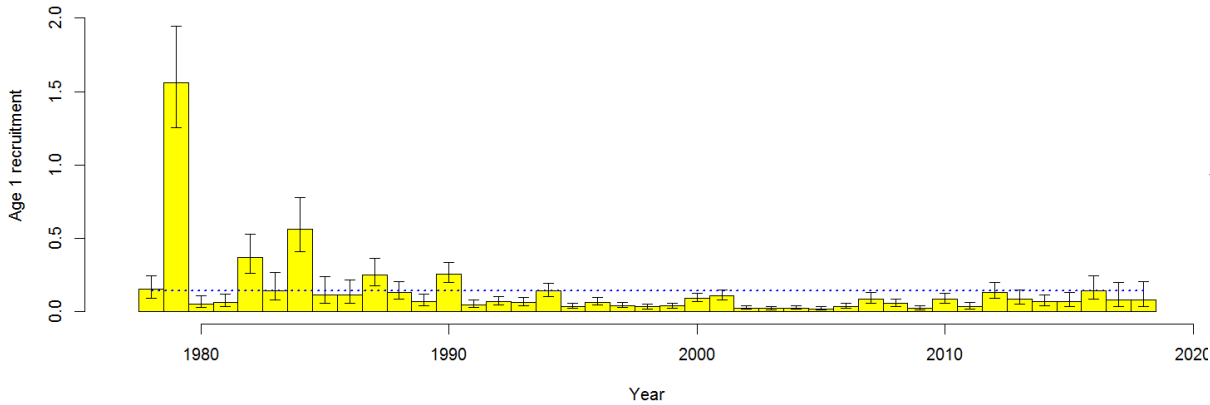
Fishery age composition



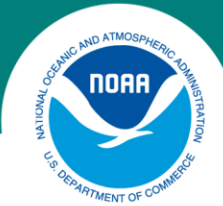
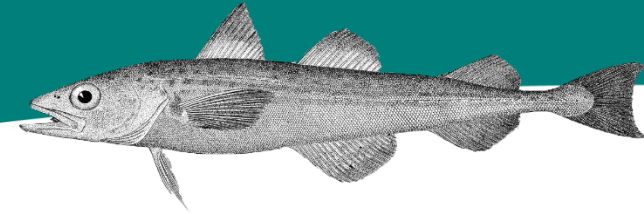
Age



# Model 15.1 Results



Mohn's  $\rho = 0.08$   
Woods Hole  $\rho = -0.007$

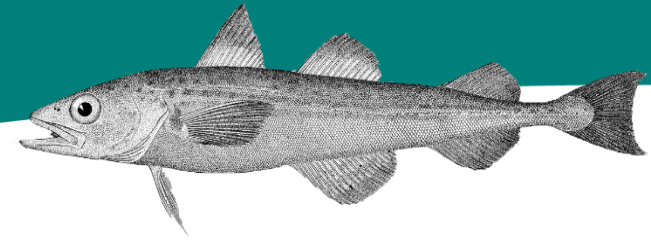


## Recommendations

- Tier 3a at  $SSB_{46.9\%}$
- 19,000t cap

Quantity	As estimated or specified last year for:		As estimated or recommended this year for:	
	2018	2019	2019	2020*
$M$ (natural mortality rate)	0.19		0.20	
Tier	3b		3a	
Total (age 1+) biomass (t)	272,675	262,010	319,892	340,680
Female spawning biomass (t)				
Projected	78,305	67,627	95,253	98,182
$B_{100\%}$	203,100		203,279	
$B_{40\%}$	81,240		81,312	
$B_{35\%}$	71,085		71,147	
$F_{OFL}$	0.397	0.341	0.415	0.415
$\underline{\text{max}F_{ABC}}$	0.319	0.273	0.331	0.331
$F_{ABC}$	0.319	0.273	0.331	0.331
OFL (t)	49,291	49,291	64,240	66,981
$\underline{\text{max}ABC}$ (t)	40,788	30,803	52,887	55,125
ABC (t)	40,788	30,803	52,887	55,125
Status	As determined <i>this</i> year for:		As determined <i>this</i> year for:	
	2016	2017	2017	2018
Overfishing	no	n/a	no	n/a
Overfished	n/a	no	n/a	no
Approaching overfished	n/a	no	n/a	no

\* Projection based on estimated catches of 1,750 t for 2018 and 1,650 t for 2019, the five-year average  $F$  (2013-2017) of 0.009, used in place of maximum permissible ABC .



## Proposed Aleut Corporation 2019 Exempted Fishing Permit

- Exemption from 5% MRA for POP
- Exempted from halibut PSC for POP fishery
- 500 t cap on total POP bycatch in pollock fishery
  - Split 450 t in Area 541 and 50 t for Area 542
- Maximum of 10,361 t of pollock harvest
- 100% observer coverage, full retention of catch
- Supplementary captain's logbook to collect additional data per haul

