

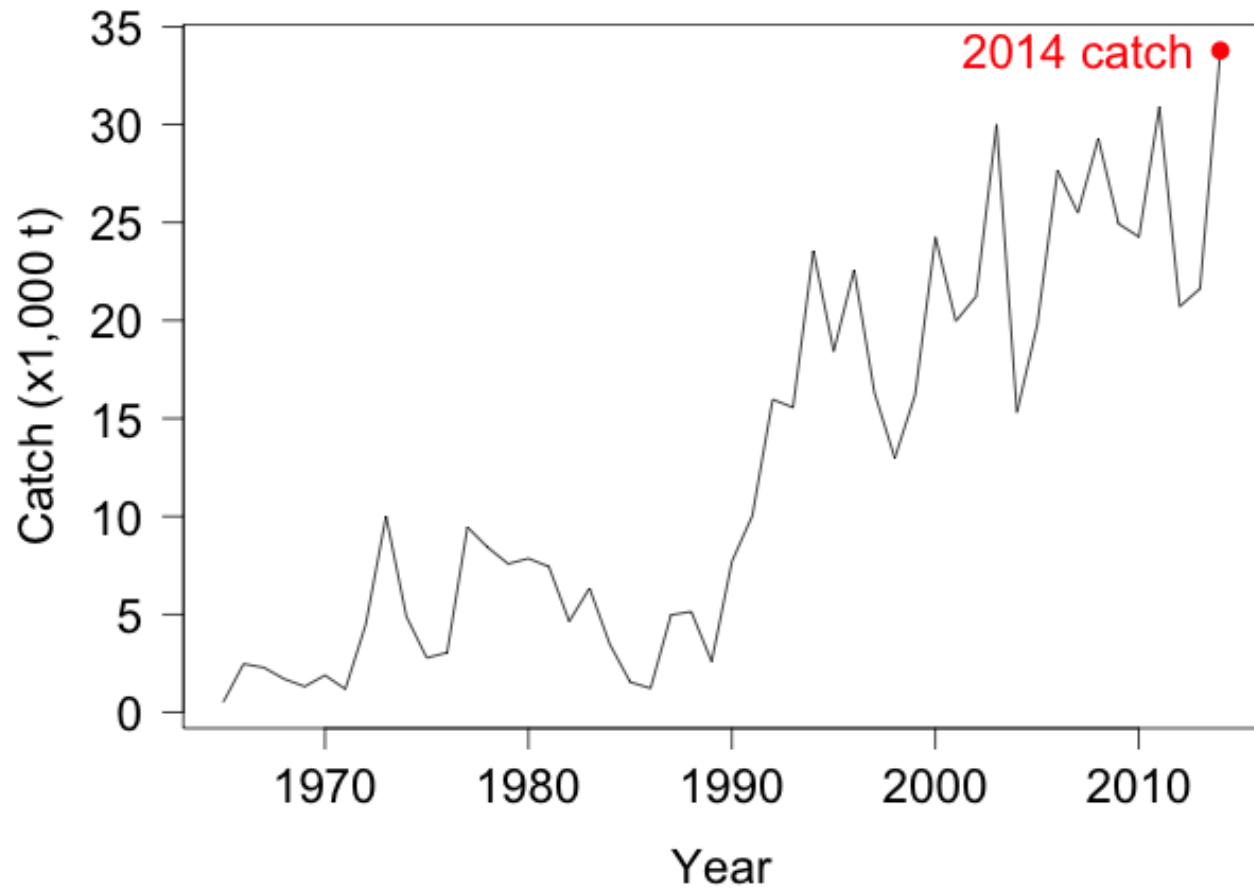
Gulf of Alaska arrowtooth flounder

Ingrid Spies and Benjamin J. Turnock

2014 GOA arrowtooth

- Catch Estimates
- Projection Results
- Planned changes to model

2014 catch is highest on record



Catch estimates

- ***Responses to SSC and Plan Team Comments on Assessments in General***
- December 2013 SSC Comments: Different methods for estimating catches between late October and December 31 of the current assessment year.

Catch estimate of 39,744 t used in place of maximum permissible ABC for 2015 and 2016. This value was extrapolated from the proportion of the total 2013 catch caught by October 25 of that year, and the total catch through October 25, 2014.

2014 catch is highest on record – WHY?

- Recent changes to halibut trawl prohibited species catch (PSC) limits.
- Unused halibut PSC limits (Amendment 80 fleet) can be rolled from one season to the next (more time targeting arrowtooth flounder).
- Deep-water flatfish trawl fishery closure date later.
- Continued higher ATF catches.

Quantity	As estimated or <i>specified last year for:</i>		<i>*As estimated or recommended this year for:</i>	
	2014	2015	2015	2016
<i>M</i> (natural mortality rate)	0.2 females, 0.35 males	0.2 females, 0.35 males	0.2 females, 0.35 males	0.2 females, 0.35 males
Tier	3a	3a	3a	3a
Projected total (age 3+) biomass (t)	1,978,340	1,949,990	1,957,970	1,915,170
Projected Female spawning biomass	1,205,440	1,176,280	1,189,120	1,147,450
$B_{100\%}$	1,155,170	1,155,170	1,155,170	1,155,170
$B_{40\%}$	462,067	462,067	462,067	462,067
$B_{35\%}$	404,309	404,309	404,309	404,309
F_{OFL}	0.204	0.204	0.204	0.204
$maxF_{ABC}$	0.172	0.172	0.172	0.172
F_{ABC}	0.172	0.172	0.172	0.172
OFL (t)	229,248	222,160	226,390	217,522
maxABC (t)	195,358	189,556	192,921	185,352
ABC (t)	195,358	189,556	192,921	185,352
Status	As determined <i>last</i> year for: current year		As determined <i>this</i> year for: current year	
	2012	2013	2013	2014
Overfishing		No		No
Overfished	No		No	
Approaching overfished	No		No	

ABC by INPFC Area

Arrowtooth ABC by INPFC area

	Western	Central	West Yakutat	East Yakutat/SE	Total
2013 survey biomass					
percent by area	15.94	59.18	19.06	5.82	100
<i>ABC (based on 2013 proportions and biomass estimates)</i>					
ABC 2014	31,142	115,612	37,232	11,372	195,358
ABC 2015	30,752	114,171	36,771	11,228	192,921
ABC 2016	29,545	109,691	35,328	10,787	185,352

Summary

Year	Age 3+ Biomass (t) ¹	Female spawning biomass (t) ¹	OFL	ABC	TAC	Catch ²
2013	2,055,560	1,274,290	247,196	210,451	130,300	21,625
2014	1,978,340	1,205,440	229,248	195,358	130,300	33,782
2015	1,957,970	1,189,120	226,390	192,921	130,300	
2016	1,915,170	1,147,450	217,522	185,352		

¹ Results from age-structured projection model.

² Catch as of October 25, 2014.

Potential changes to model

- Different male and female natural mortality, due to observation of very old males in Aleutians.
- Include more ages in model (BSAI: 1-21+), GOA: 3-15+).

ATF in the Aleutian Islands are older than ever observed, similar to halibut

Age-weight relationship in arrowtooth flounder collected on the 2010 Aleutian Islands survey

