

Science, Service, Stewardship



2017 Gulf of Alaska Bottom Trawl Survey Metadata and Preliminary Results

Wayne Palsson
GOA/AI Survey Leader

September 12, 2017

**NOAA
FISHERIES
SERVICE**



General Survey Design



- Chartered commercial vessels: *Sea Storm*, *Ocean Explorer*
- Vessels must be at least 30.6 m in length, 1000 HP
- 5-6 crew + 6 scientists



Poly Nor'eastern Net Characteristics

- 12.7 cm mesh with
- 3.2 cm liner
- 4 seams/panels
- 3 bridles
- 36 cm bobbins
- 10 disks
- Net width 8 to 20 m
- Height ~ 7 m





Mensuration



- Spread Sensors at the wings
- Height Sensor at center headrope
- Bathythermograph on headrope (gear depth)
- Bottom Contact Sensor on Footrope (on/off bottom)
- GPS integrated wheelhouse program
- Separate Navigation Software (Globe)

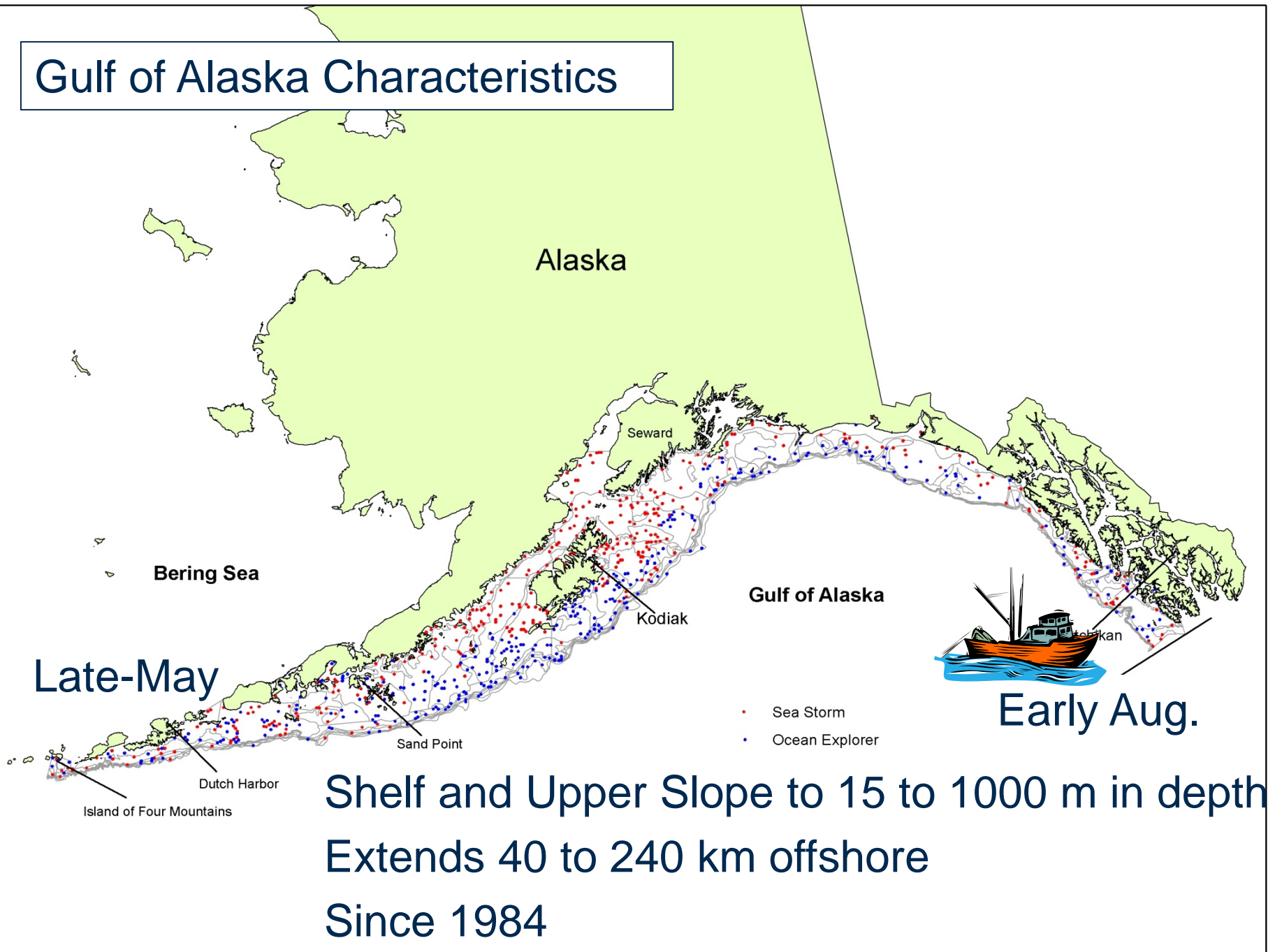
Catch Processing



- All living specimens are sorted to lowest possible taxon, weighed and counted
- Sub-sampling at various levels of catch and specimen numbers

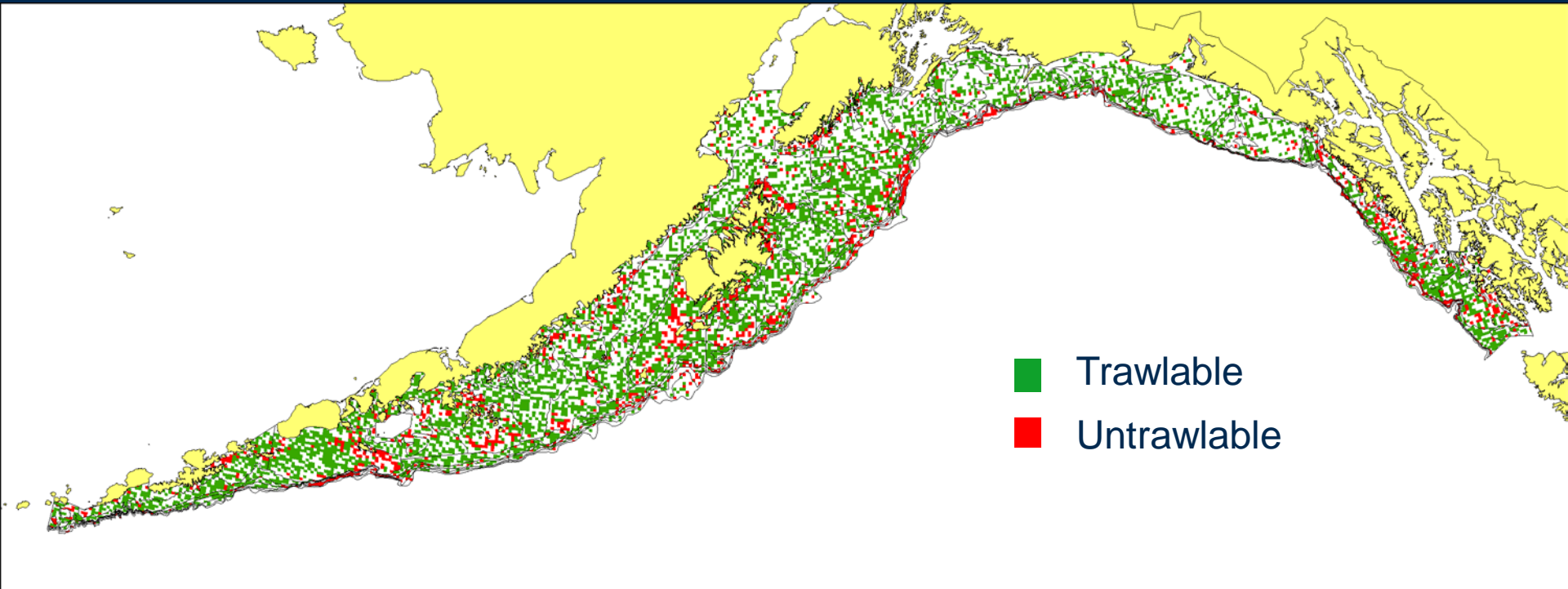


Gulf of Alaska Characteristics



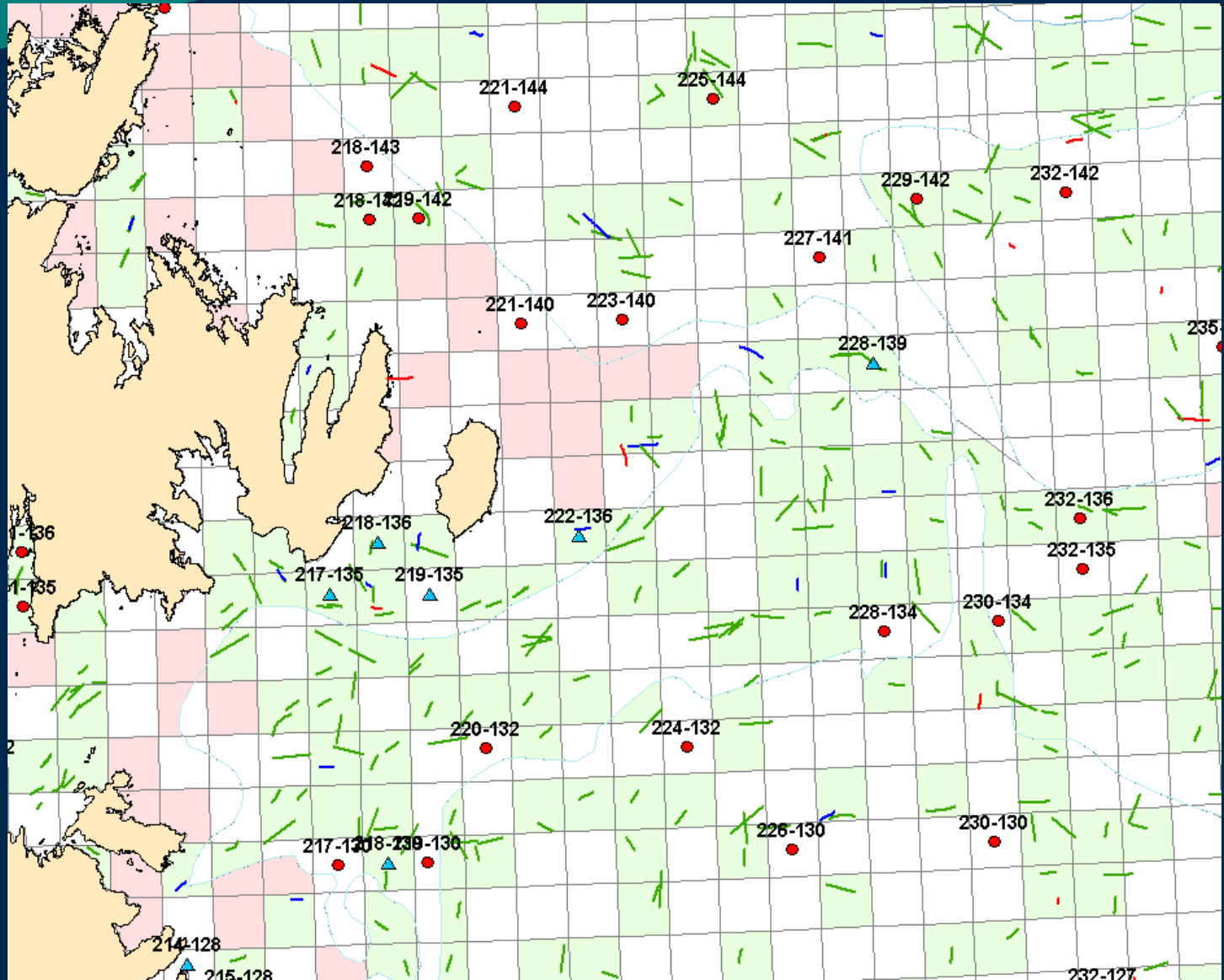
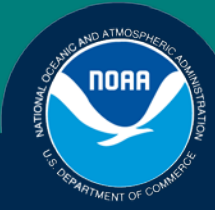


GOA Trawlable Habitat



- Trawlable
- Untrawlable

Overlaid 5x5 km grids = stations





General Survey Design

- Stratified-random survey of trawlable habitat
- 59 Strata based on geography, habitat, and depth
- Station allocation based upon abundance, variance, survey area, and economic value
- 15 minute trawl, usually 1.5 km distance
- Poly Nor 'Eastern net with rollers & bobbins
- Estimate catch per unit effort (kg/km²)
- Length, age, and other biological samples



GOA Survey Start Dates

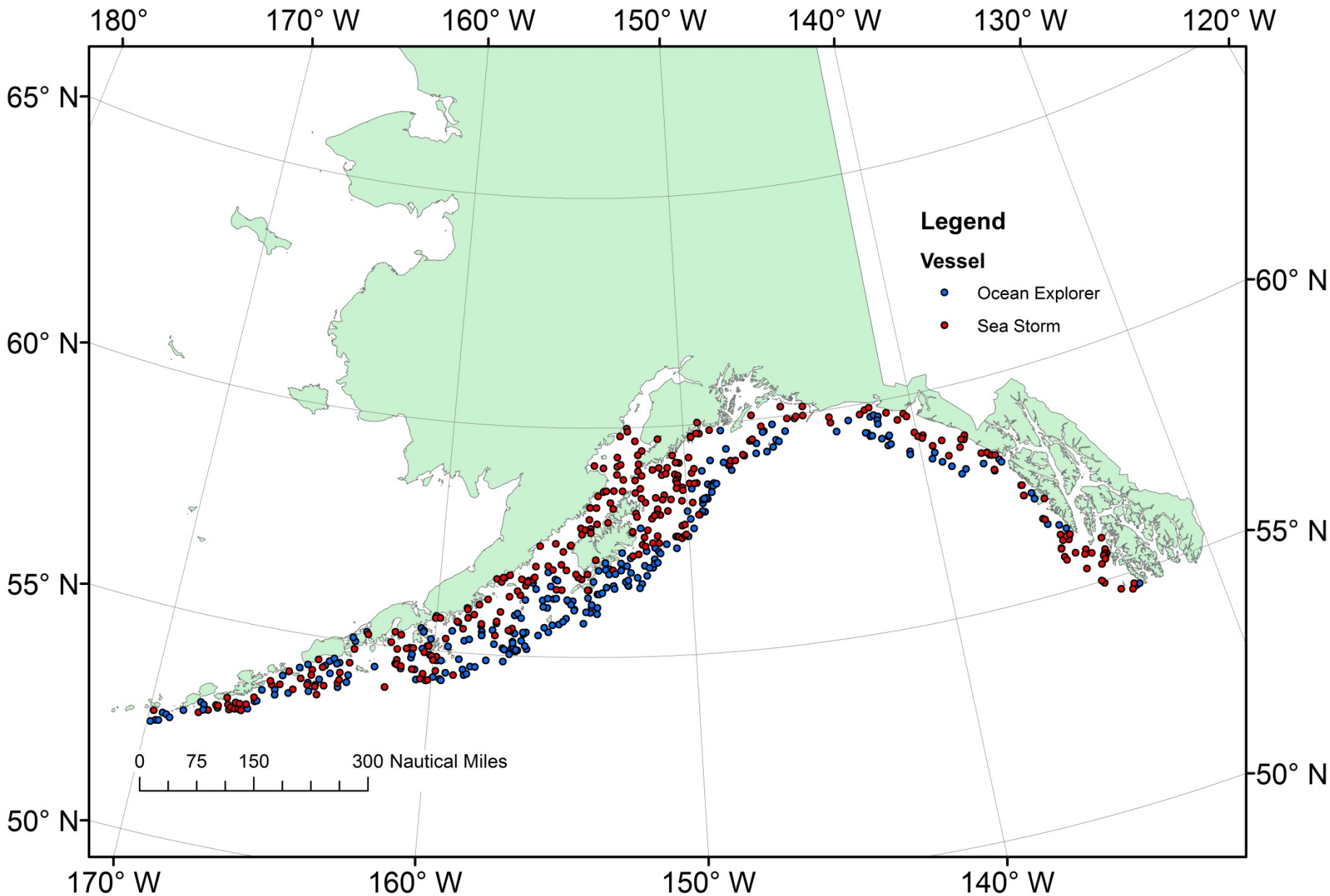
Year	Start Date	Vessel-Days	Boats
1984	3 June	235	4
1987	22 May	252	3
1990	4 June	204	3
1993	5 June	202	4
1996	22 May	210	3
1999	16 May	209	3
2001	20 May	129	2
2003	24 May	202	3
2005	21 May	210	3
2007	28 May	202	3
2009	21 May	212	3
2011	22 May	162	2
2013	29 May	132	2
2015	26 May	192	3
2017	27 May	138	2

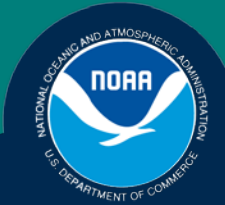


GOA Survey Characteristics

<u>Year</u>	<u>Stations</u>	<u>Max Depth (m)</u>	<u>Comment</u>
1984	929	1000	Duration 30 min
1987	783	1000	
1990	708	500	
1993	775	500	
1996	807	500	15 min duration
1999	764	1000	
2001	489	500	Not in SE AK
2003	809	700	
2005	835	1000	
2007	820	1000	
2009	823	1000	
2011	670	700	
2013	548	700	
2015	772	1000	
2017	536	700	

Successful 2017 Haul Locations





Depth Allocation

<u>Stratum Depth (m)</u>	<u>2017 Tows</u>	<u>2017 %</u>	<u>Mean %</u>
1-100	200	37.3	40.9
101-200	223	41.6	37.4
201-300	76	14.2	13.1
301-500	26	4.9	5.4
501-700	11	2.1	2.3
701-1000			0.9

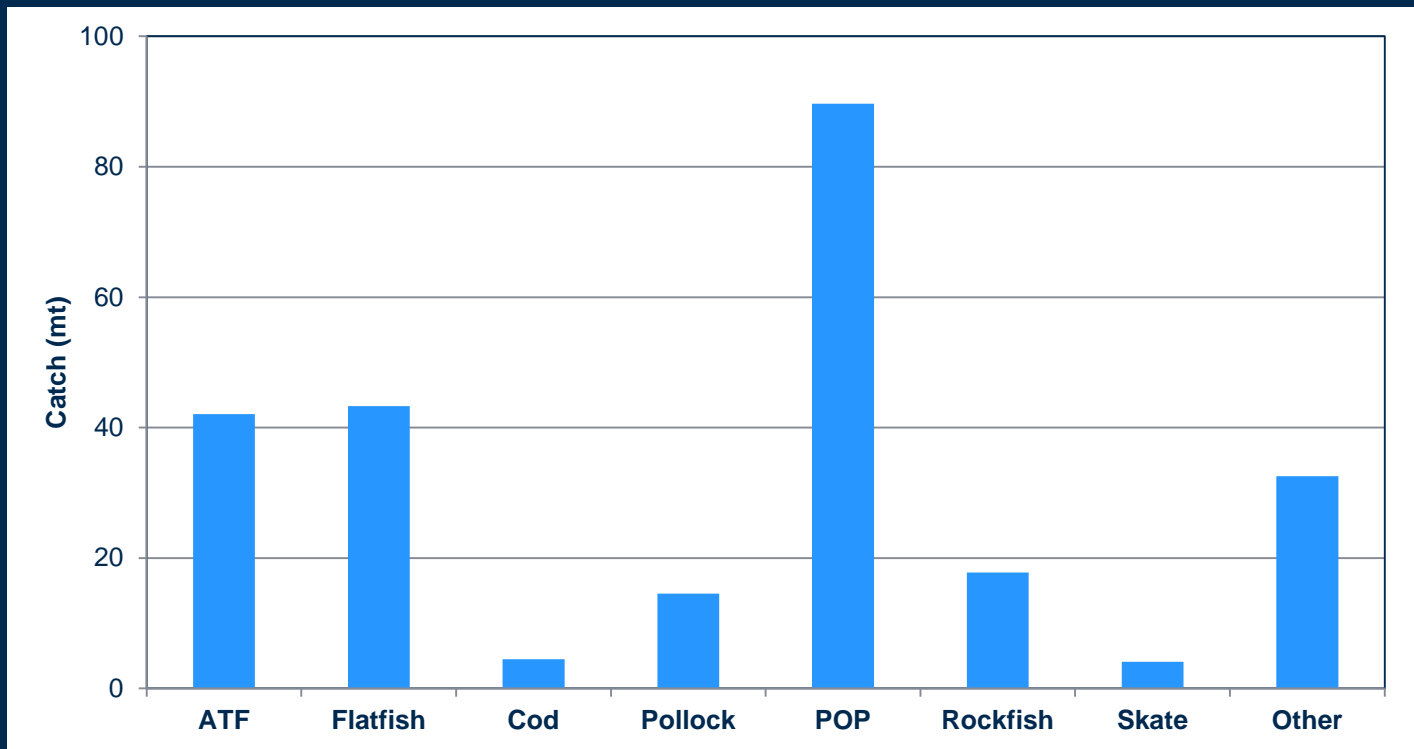


Area Allocation

<u>Survey Area</u>	<u>2017 Tows</u>	<u>2017%</u>	<u>Mean%</u>
Shumagin	125	23.3	24.6
Chirikof	118	22.0	22.7
Kodiak	178	33.2	33.5
Yakutat	70	13.1	10.3
Southeastern	45	8.4	8.9

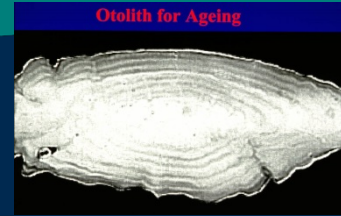


2017 GOA Catch Composition





Otolith Collections



<u>Species</u>	<u>Collection Type</u>	<u>2017</u>	<u>Target</u>	<u>2015</u>
Arrowtooth flounder	Random	943	900	831
Flathead sole	Random	678	700	693
Dover sole	Random	347	500	741
Rex sole	Random	598	500	234
Northern rock sole	Stratified	625	560	458
Southern rock sole	Stratified	765	380	399
Atka mackerel	Stratified	148	400	415
Walleye pollock	Random	928	1,500	1,169
Pacific cod	Random	351	1,000	776
Shortspine thornyhead	Random	441	350	692
Sablefish	Random	1,172	600	1,060
Rougheye rockfish	Stratified	769	400	457
Blackspotted rockfish	Stratified	515	500	596
Pacific Ocean Perch	Stratified	1,090	1,000	1,143
Northern rockfish	Stratified	755	700	620
Shorthead rockfish	Stratified	340	400	341
Dusky rockfish	Stratified	654	500	950
Sharpchin rockfish	Stratified	519	350	0
Redstripe rockfish	Stratified	258	200	0
Total		11,896	11,440	12,799



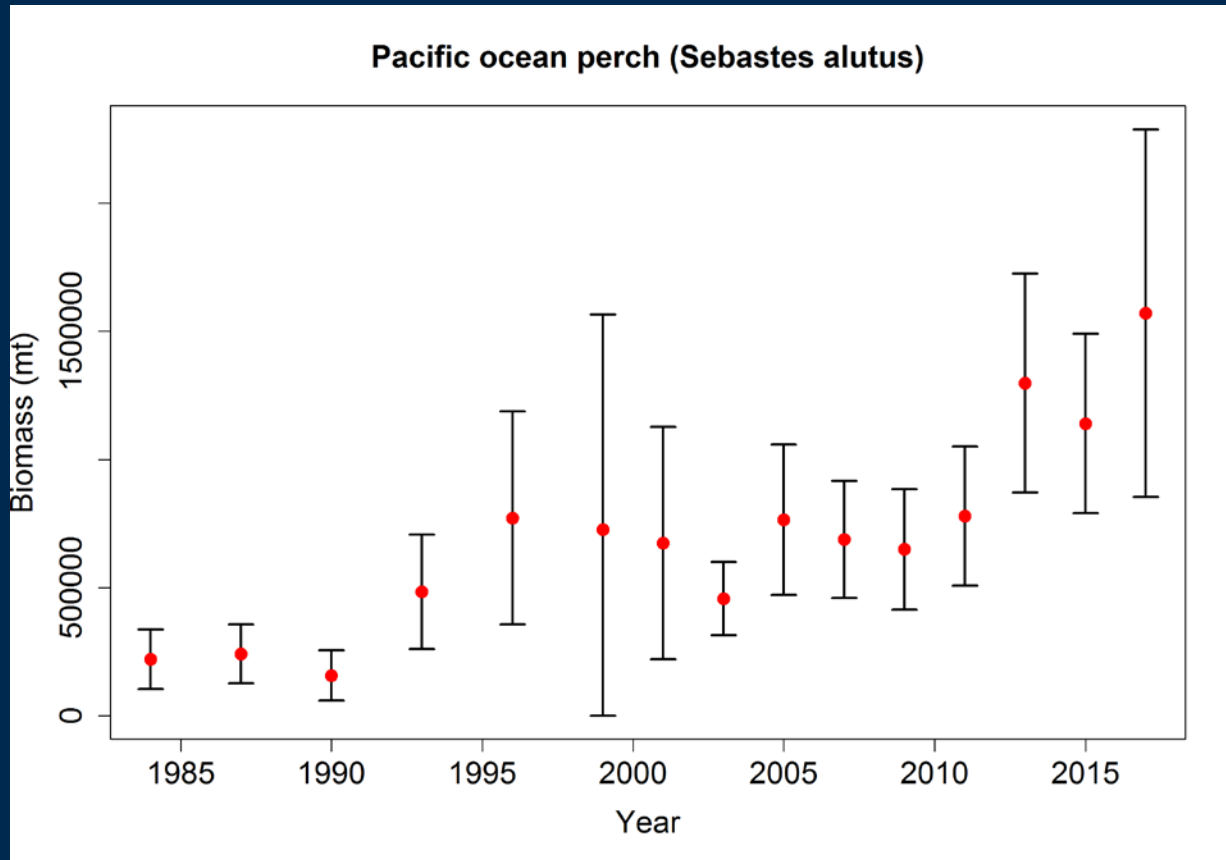
Length Collections



<u>Species</u>	<u>Number</u>
Arrowtooth flounder	35,219
Flathead sole	16,086
Dover sole	2,760
Rex sole	10,374
Northern rock sole	4,776
Southern rock sole	5,986
Atka mackerel	646
Walleye pollock	12,790
Pacific cod	2,601
Shortspine thornyhead	10,376
Sablefish	4,599
Rougeye rockfish	1,362
Blackspotted rockfish	798
Pacific Ocean Perch	20,710
Northern rockfish	2,570
Shortraker rockfish	418
Dusky rockfish	1,857
Sharpchin rockfish	856
Redstripe rockfish	801
Other	24,788
Total	160,373



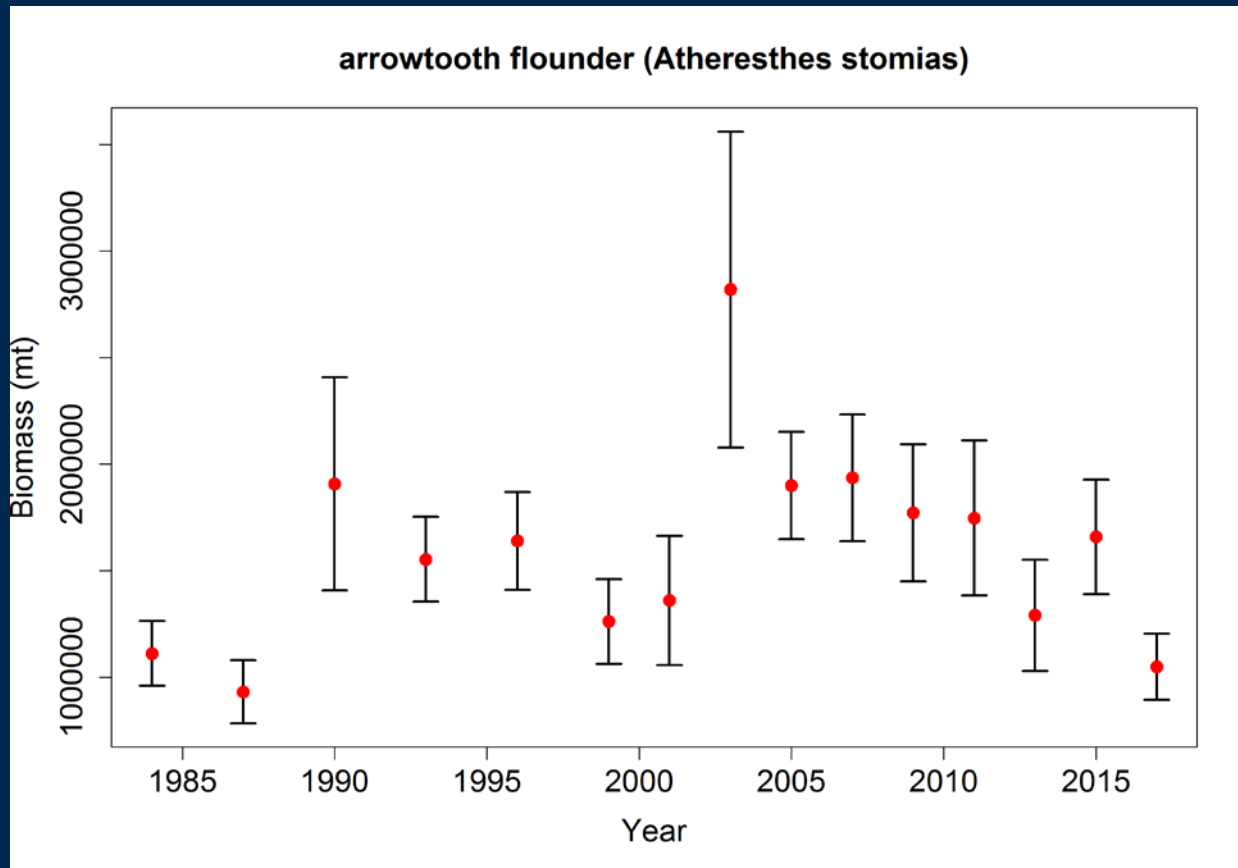
PRELIMINARY RESULTS- Pacific Ocean Perch



Survey Biomass does not necessarily reflect stock assessment results



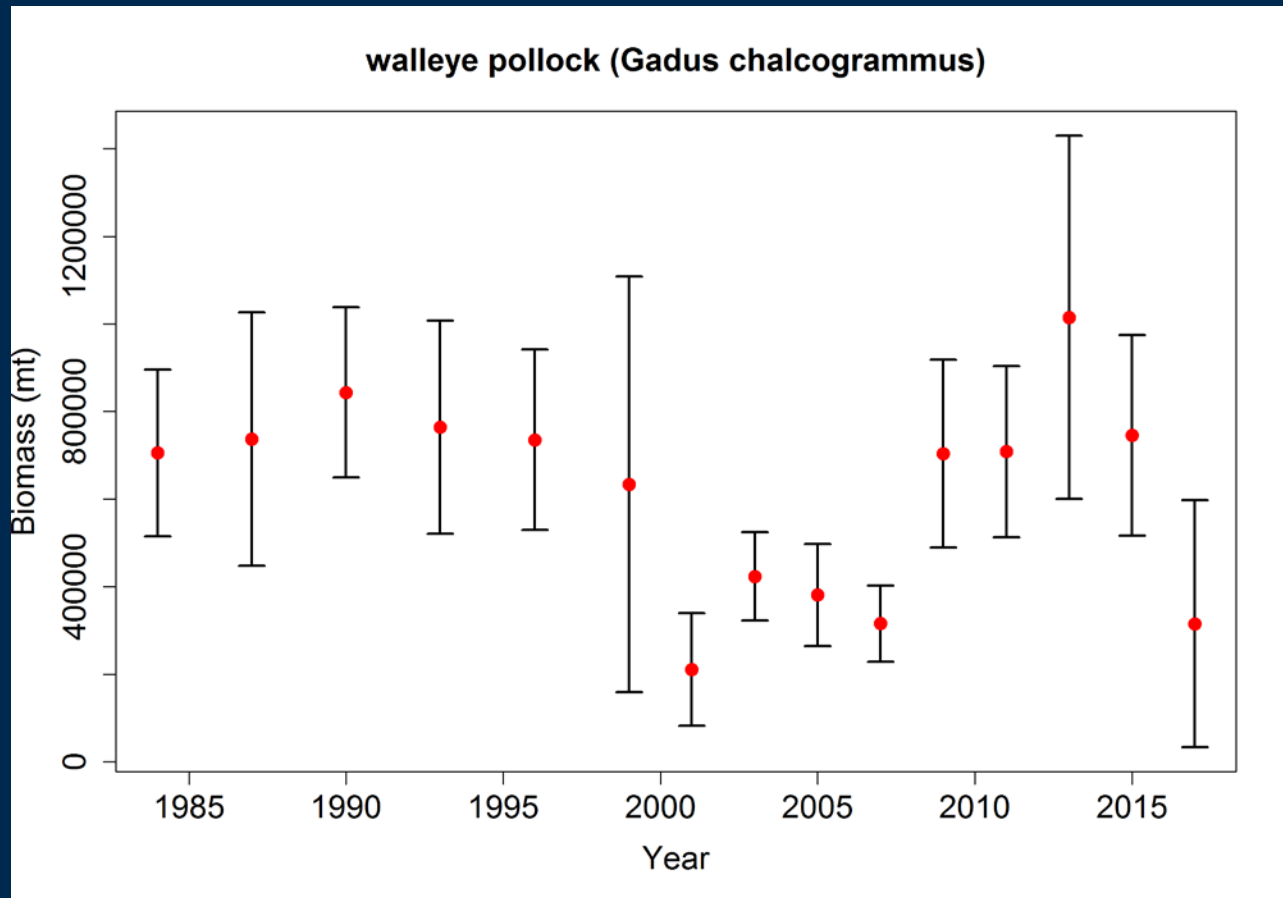
PRELIMINARY RESULTS- Arrowtooth Flounder



Survey Biomass does not necessarily reflect stock assessment results



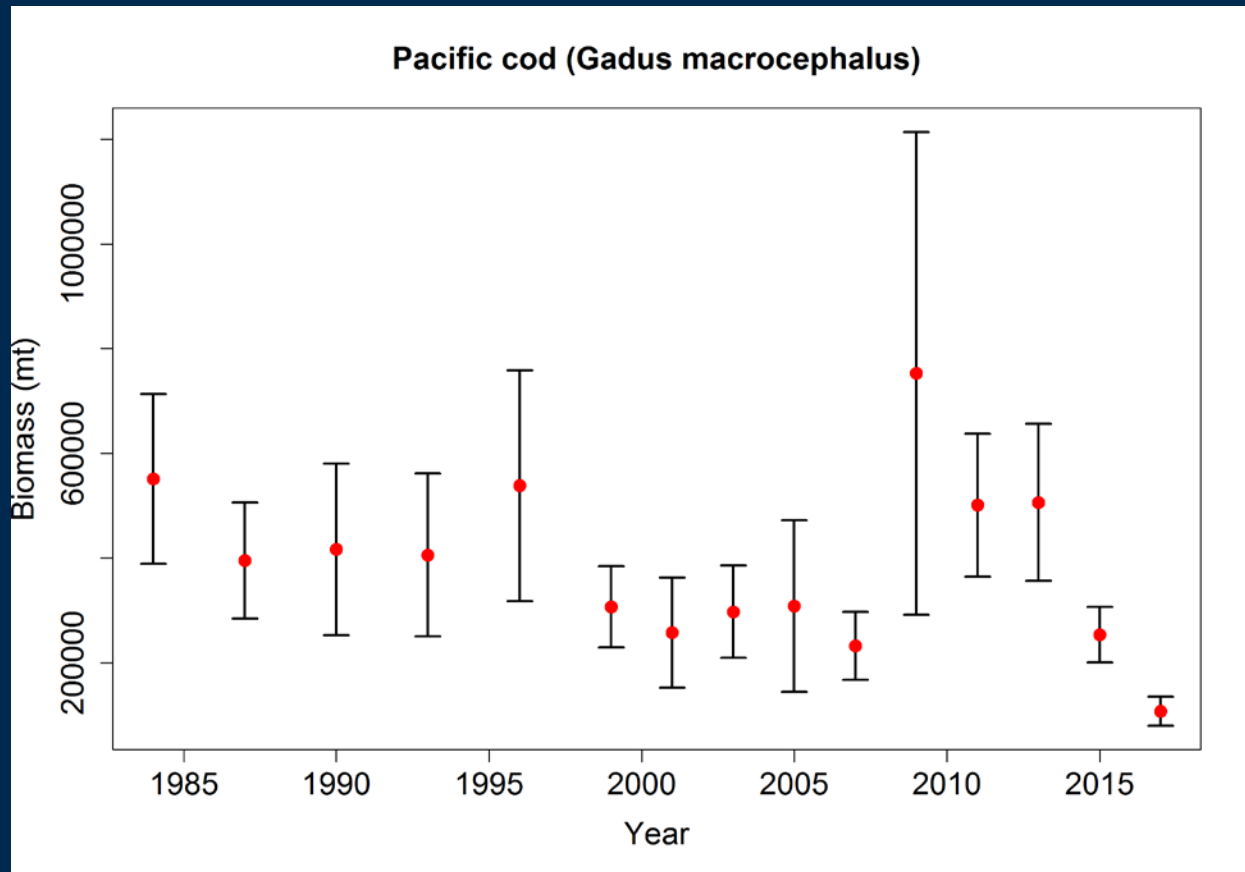
PRELIMINARY RESULTS- Walleye Pollock



Survey Biomass does not necessarily reflect stock assessment results



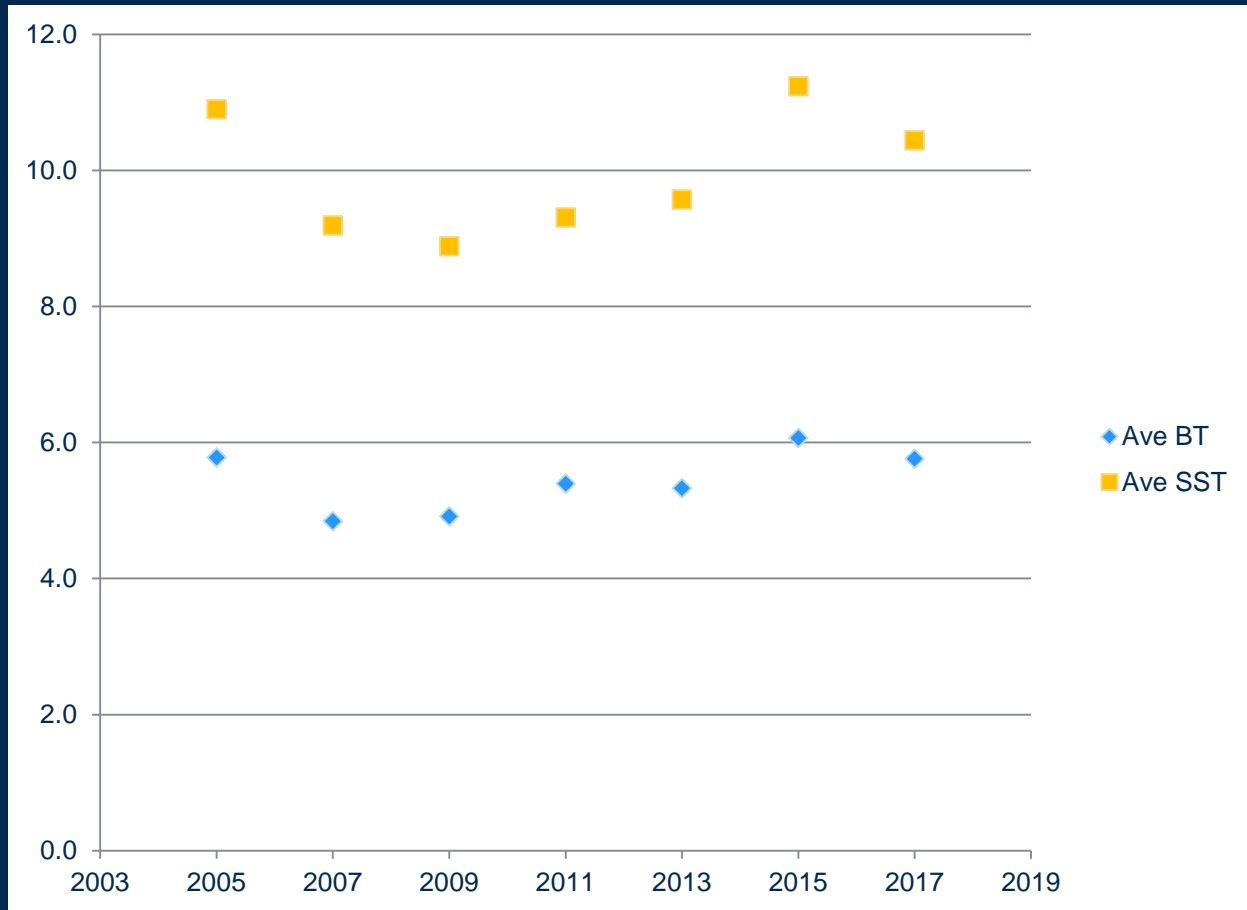
PRELIMINARY RESULTS- Pacific Cod



Survey Biomass does not necessarily reflect stock assessment results



Mean SST and Bottom Temp (°C)





Field Notes

- Ubiquitous juvenile sablefish on the shelf
- Commonly observed young-of-year pollock
- Pyrosomes (sea pickles) never been seen before
- Market squid also more frequent than past surveys
- Observed large ocean sunfish off Sitka





Next Steps

- Complete effort review
- Finalize data base
- Re-estimate survey biomass, size, split-factor, etc.
- Update age composition
- Upload data to AKFIN
- End of next week (9/22)