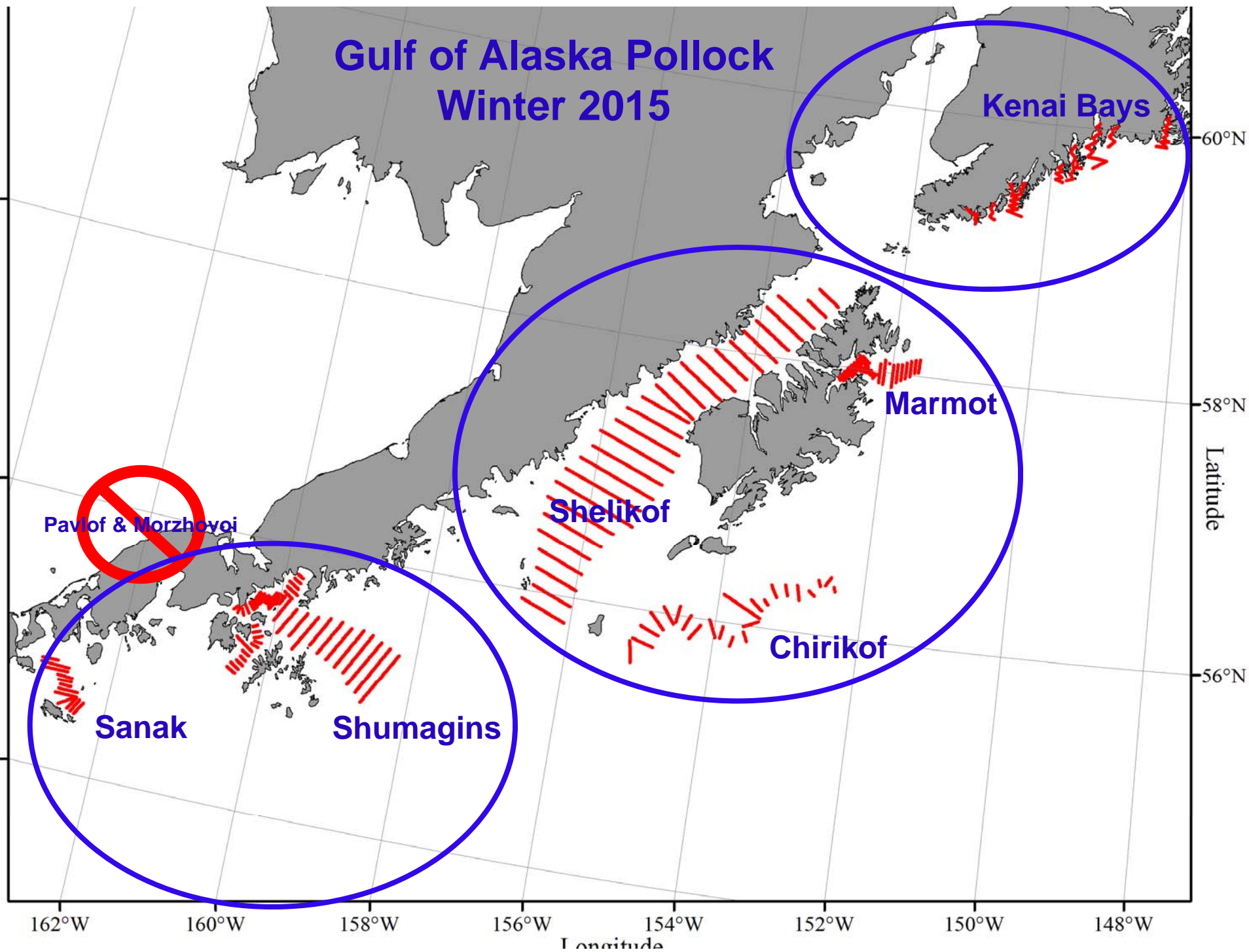


**Results of the winter 2015  
Acoustic-Trawl Surveys of Walleye  
Pollock in the Gulf of Alaska**

**Abigail McCarthy & MACE Staff  
Midwater Assessment and Conservation Engineering  
Alaska Fisheries Science Center**

# Gulf of Alaska Pollock Winter 2015



# Shumagins and Sanak

Alaska Peninsula

Stepovak Bay

Renshaw Point

Morzhovi Bay

Unga Strait

Unga Island

Shumagin Trough

W. Nagai Strait

Sanak Trough

Feb 24

Feb 20-24

Latitude

162°W

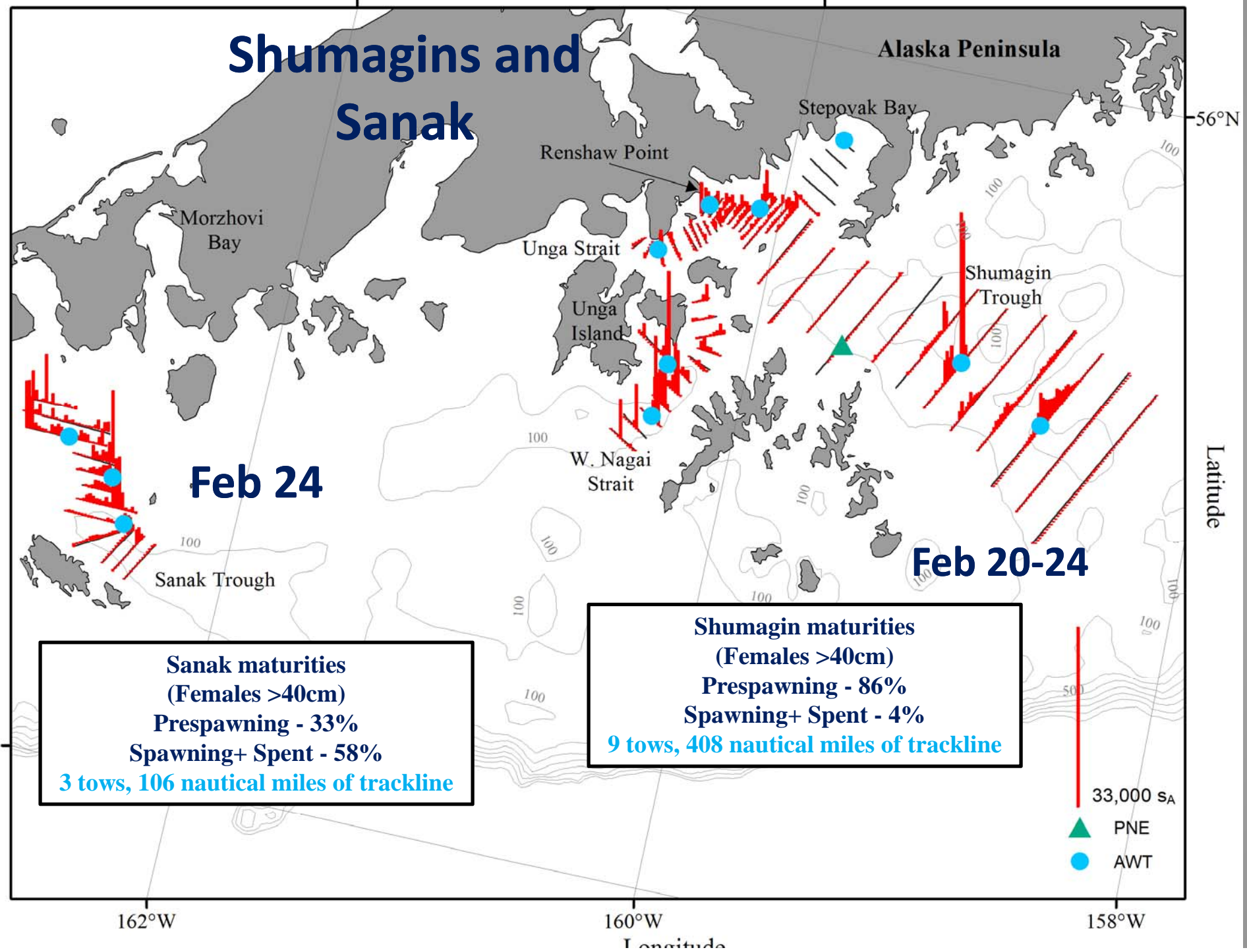
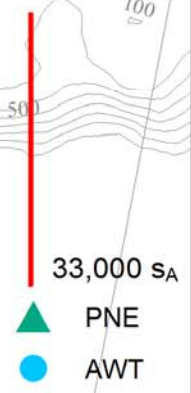
160°W

158°W

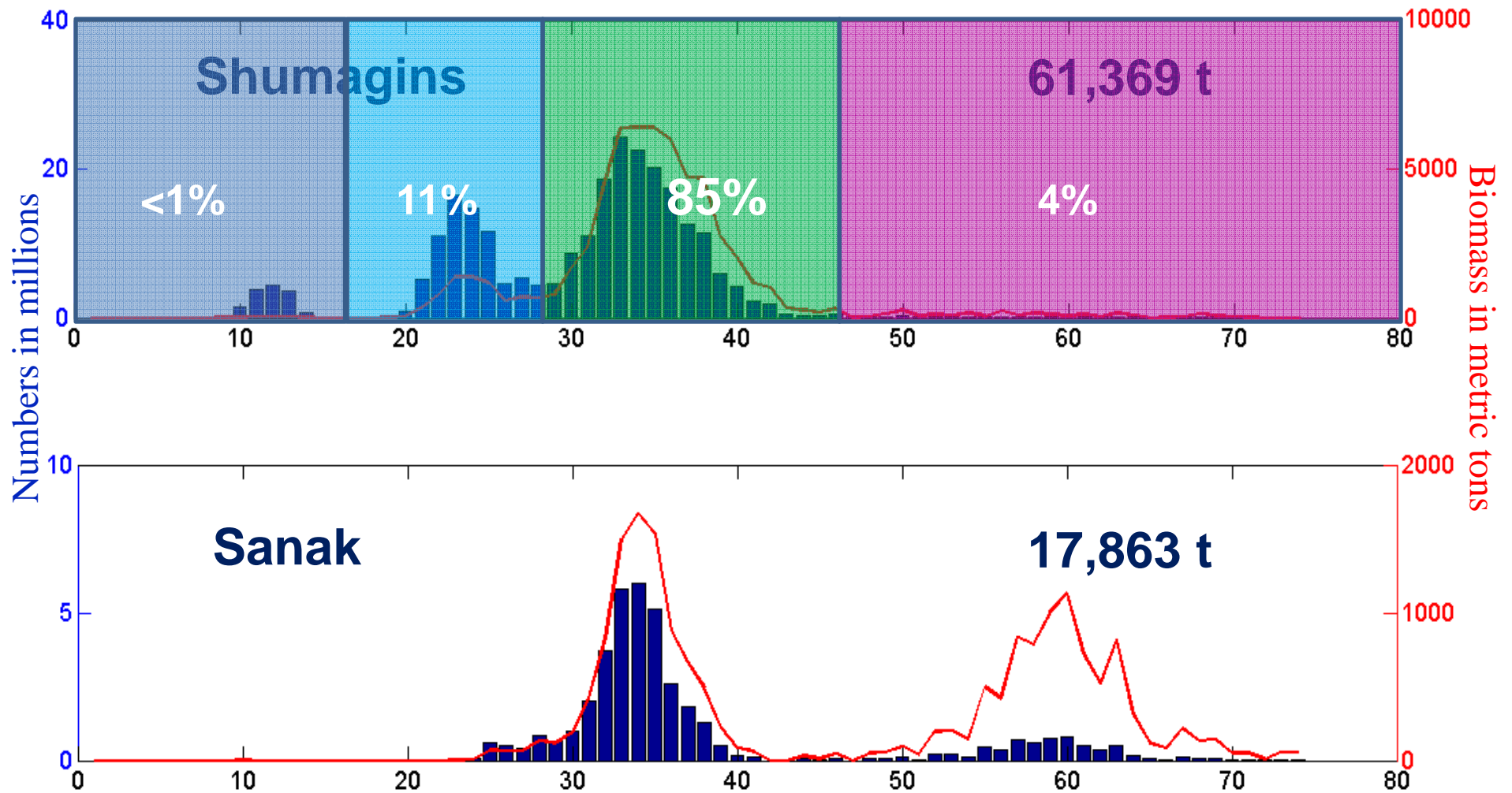
Longitude

**Sanak maturities  
(Females >40cm)  
Prespawning - 33%  
Spawning+ Spent - 58%  
3 tows, 106 nautical miles of trackline**

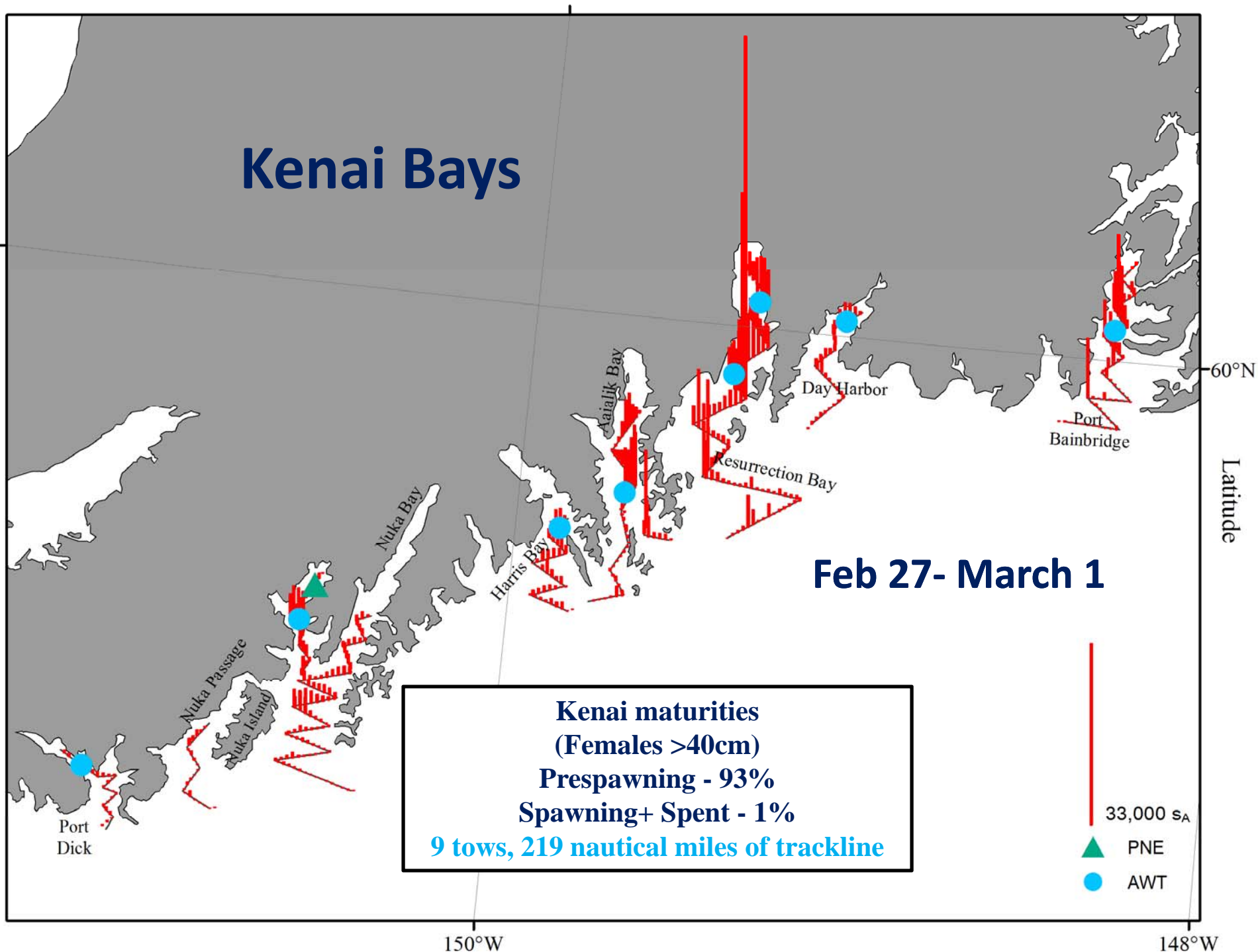
**Shumagin maturities  
(Females >40cm)  
Prespawning - 86%  
Spawning+ Spent - 4%  
9 tows, 408 nautical miles of trackline**



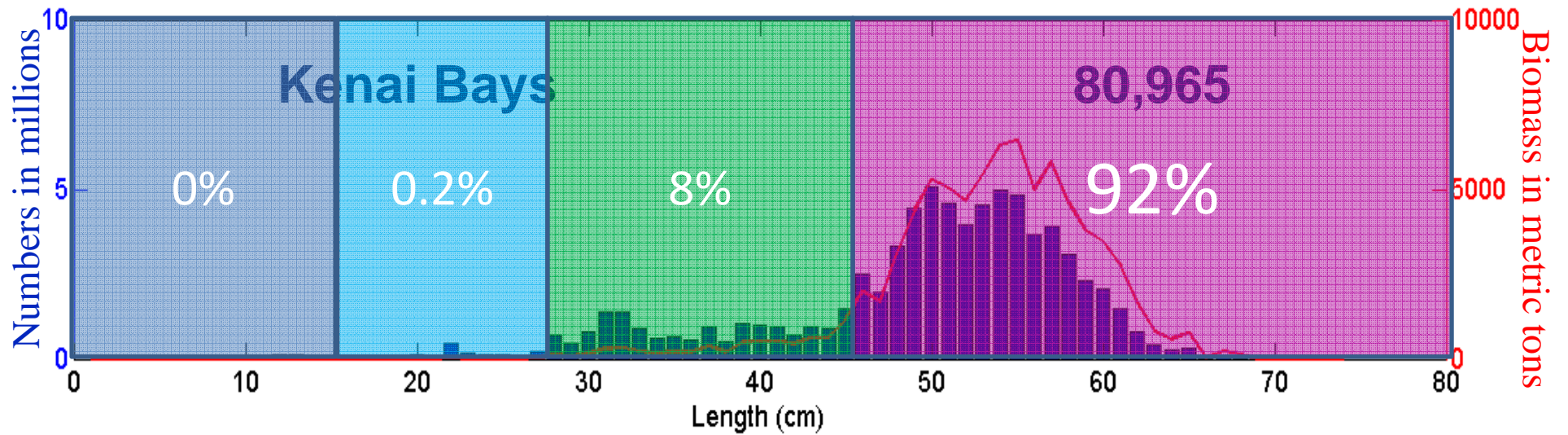
# Length Distributions



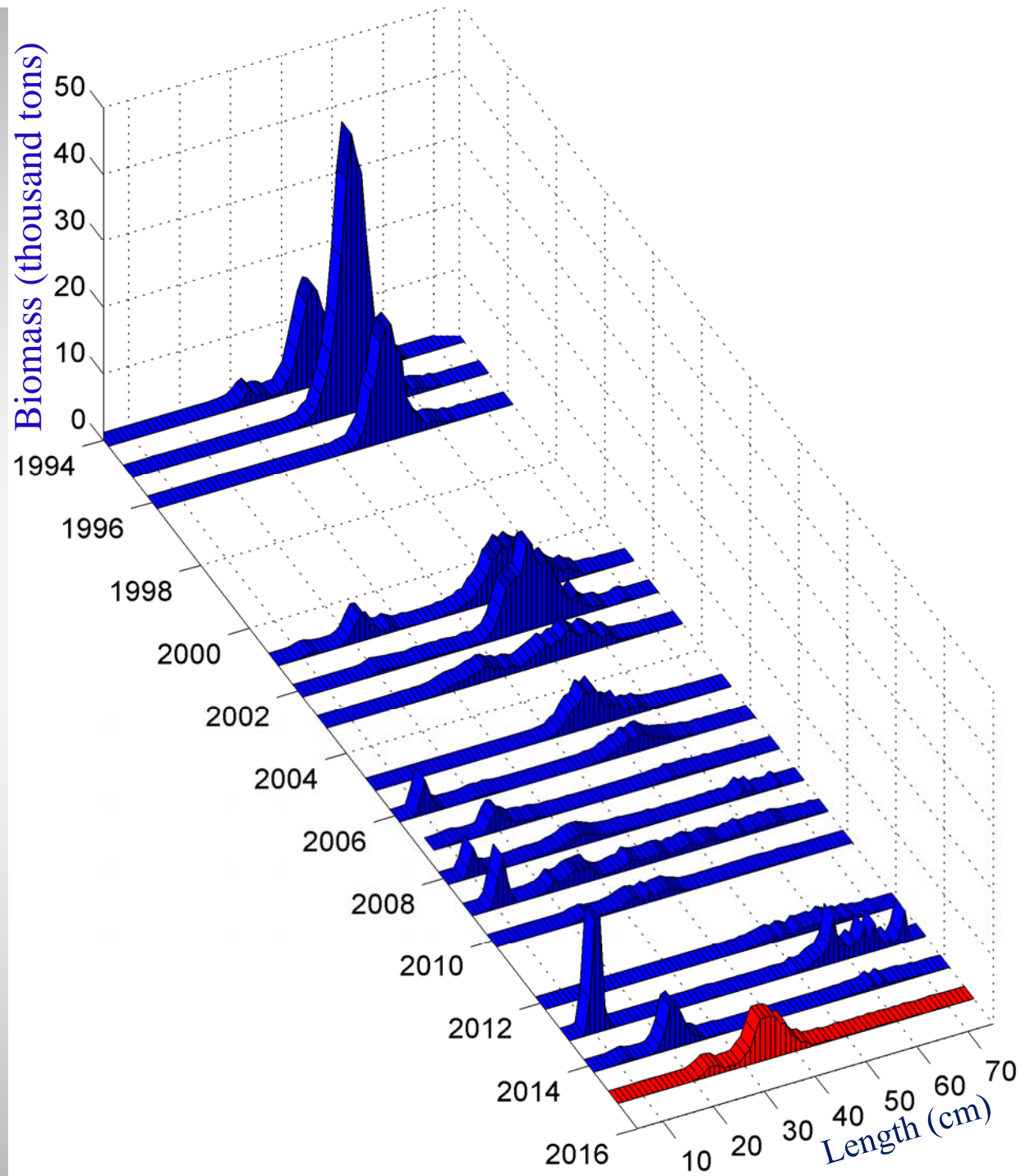
# Kenai Bays



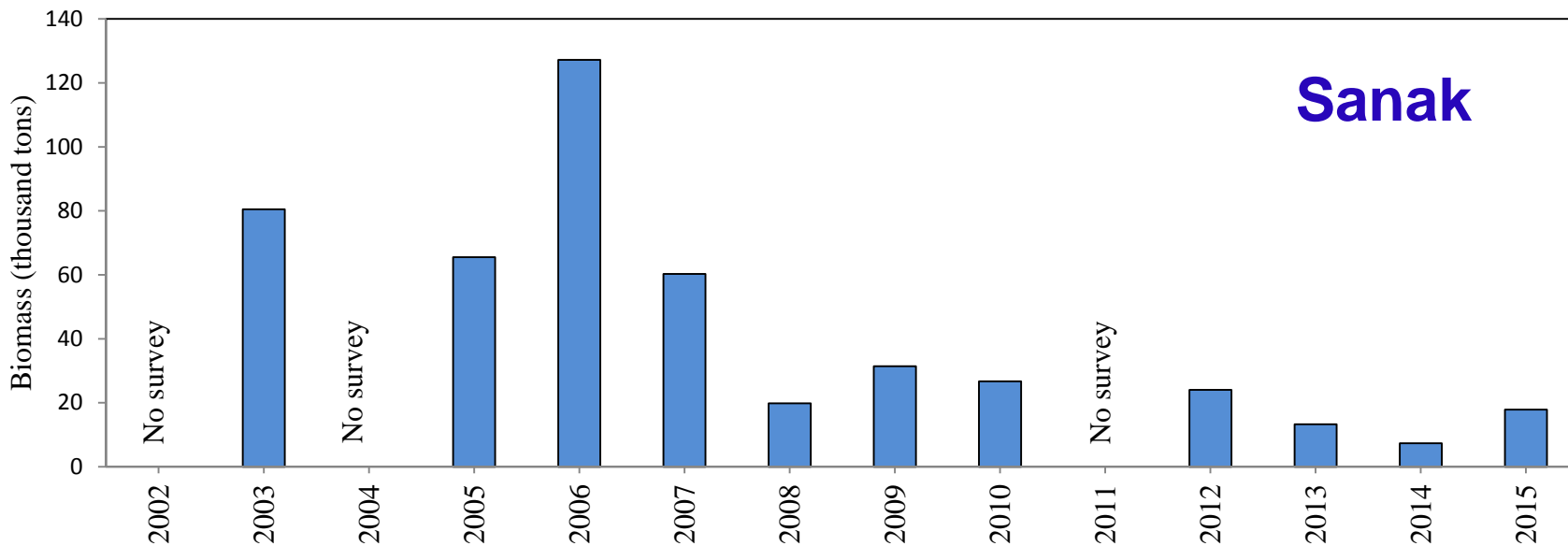
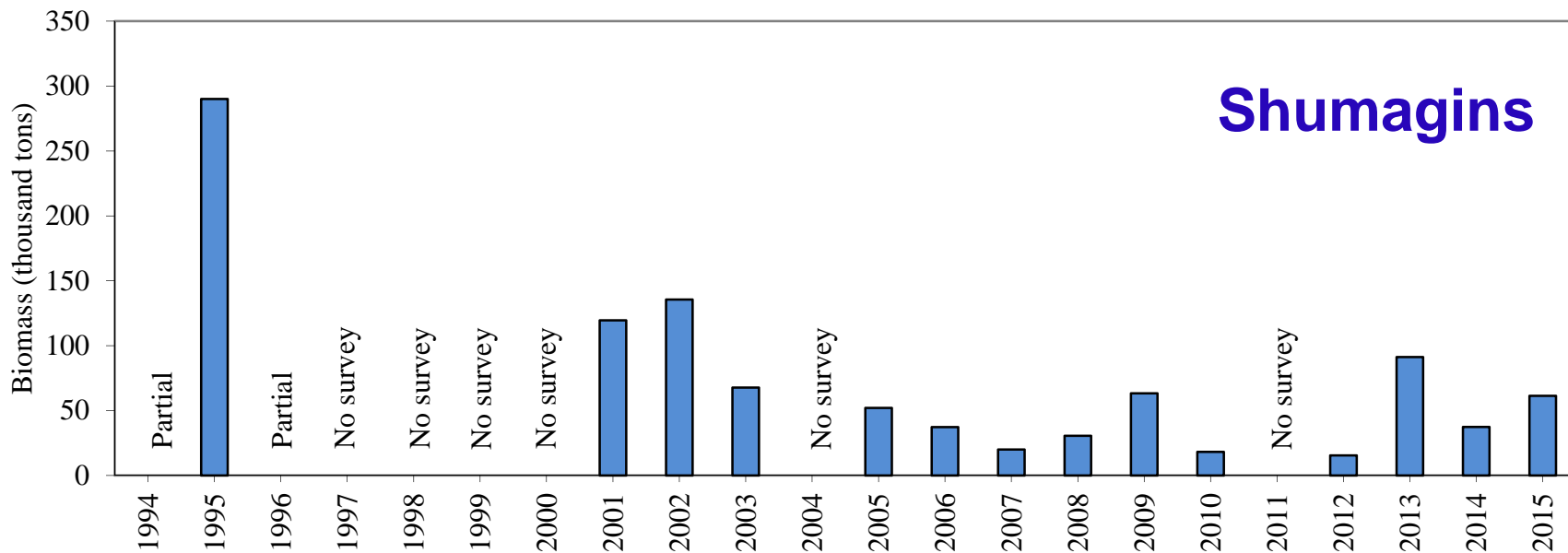
# Length Distributions



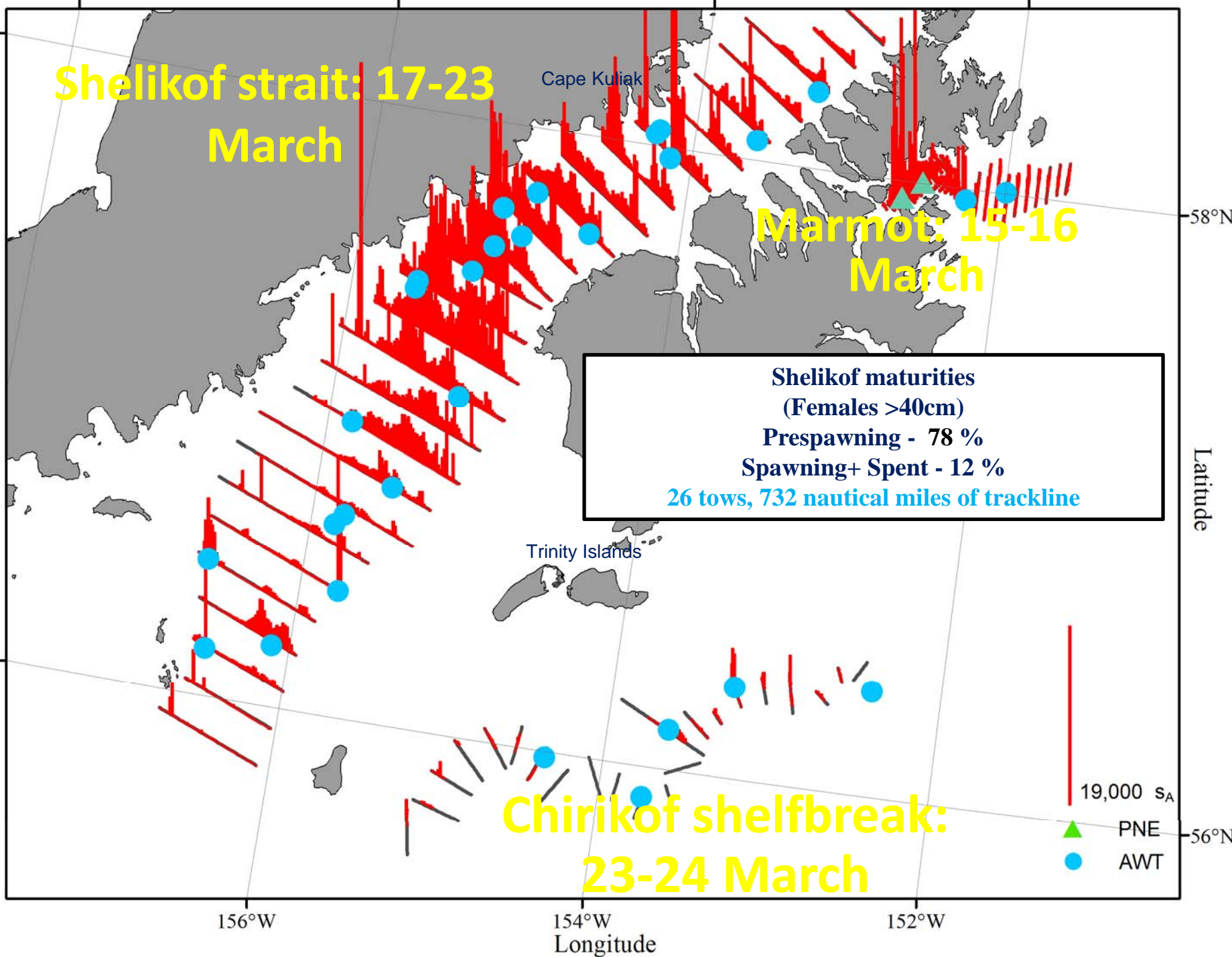
# Shumagin Islands Historical Pollock Size Composition



# Pollock Biomass Estimates for Winter Shumagin/Sanak Surveys







**Shelikof strait: 17-23  
March**

Cape Kuliak

**Marmot: 15-16  
March**

58°N

Latitude

Trinity Islands

**Shelikof maturities  
(Females >40cm)  
Prespawning - 78 %  
Spawning+ Spent - 12 %  
26 tows, 732 nautical miles of trackline**

**Chirikof shelfbreak:  
23-24 March**

19,000 s<sub>A</sub>

▲ PNE

● AWT

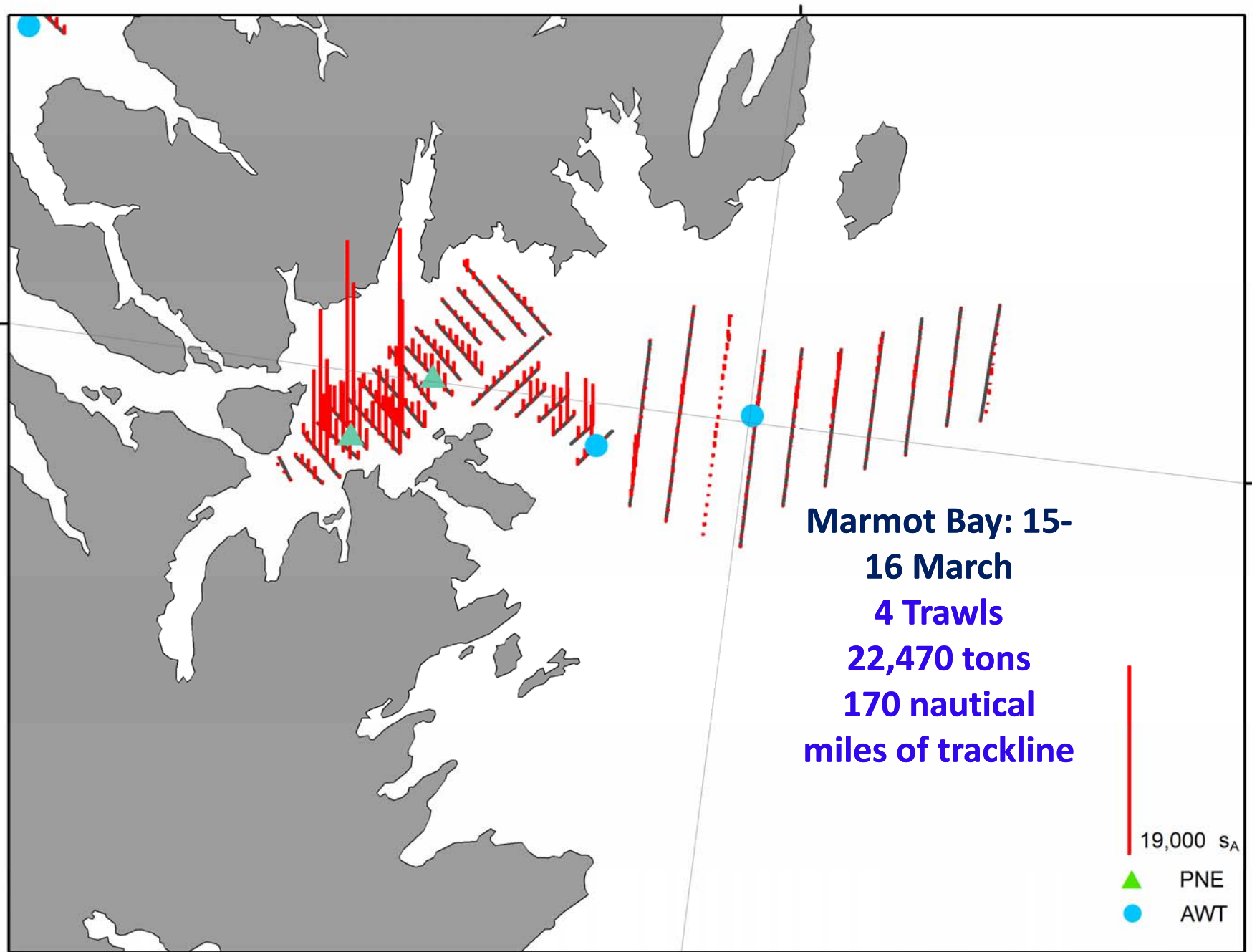
56°N

156°W

154°W

152°W

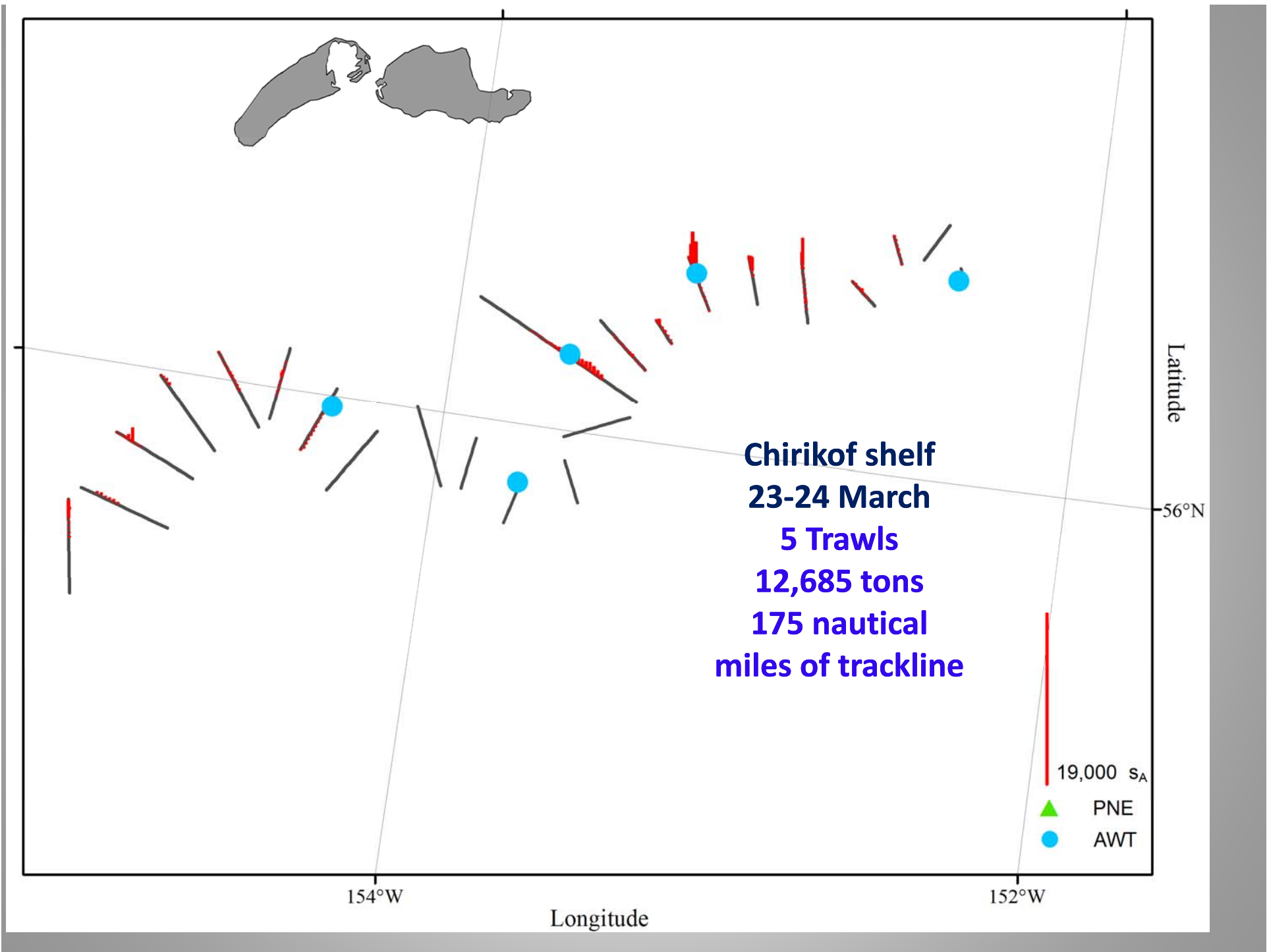
Longitude



**Marmot Bay: 15-  
16 March  
4 Trawls  
22,470 tons  
170 nautical  
miles of trackline**

- 19,000 s<sub>A</sub>
- ▲ PNE
- AWT

152°W  
Longitude



**Chirikof shelf**  
**23-24 March**  
**5 Trawls**  
**12,685 tons**  
**175 nautical miles of trackline**

19,000 s<sub>A</sub>  
▲ PNE  
● AWT

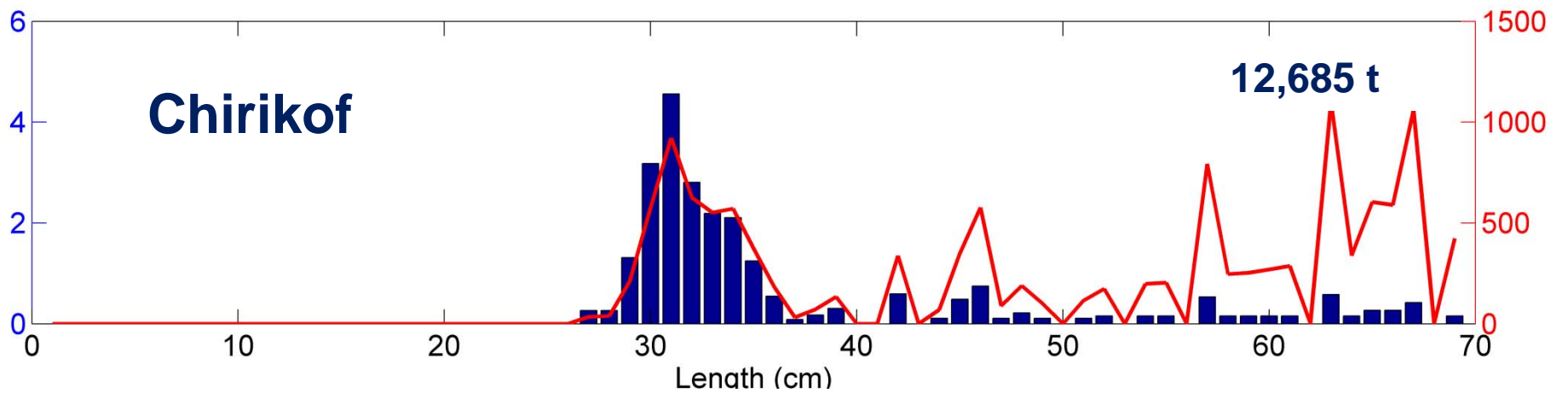
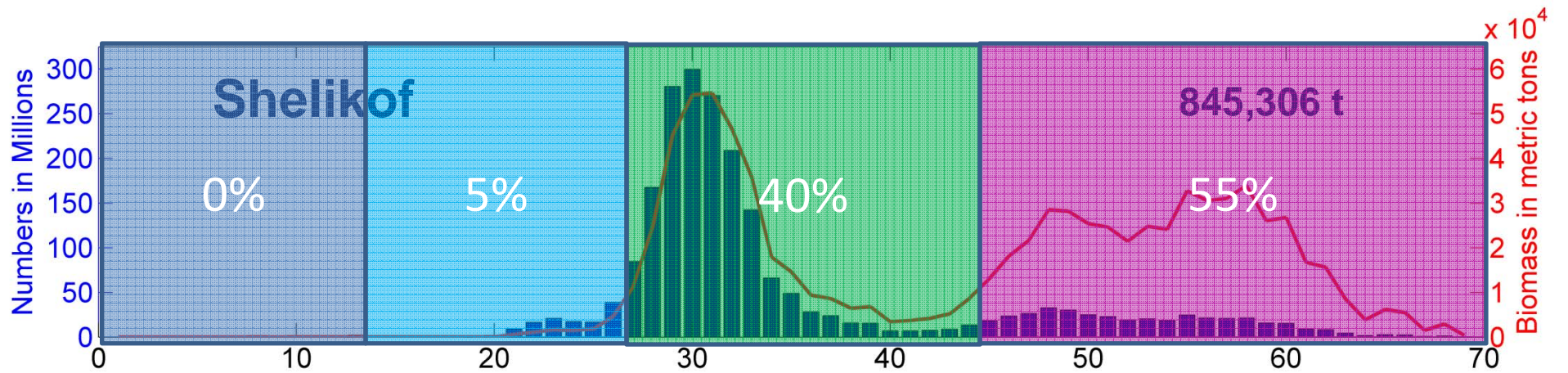
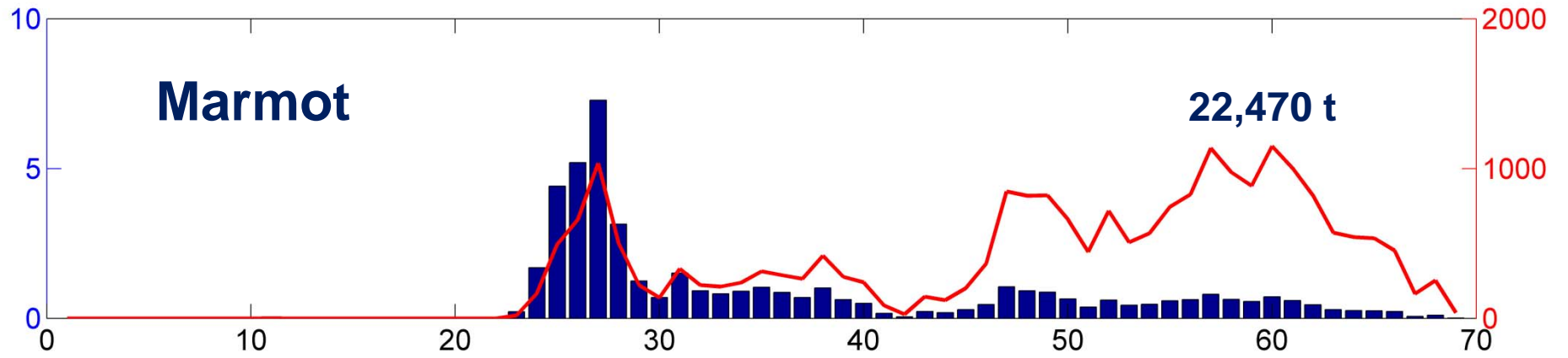
154°W

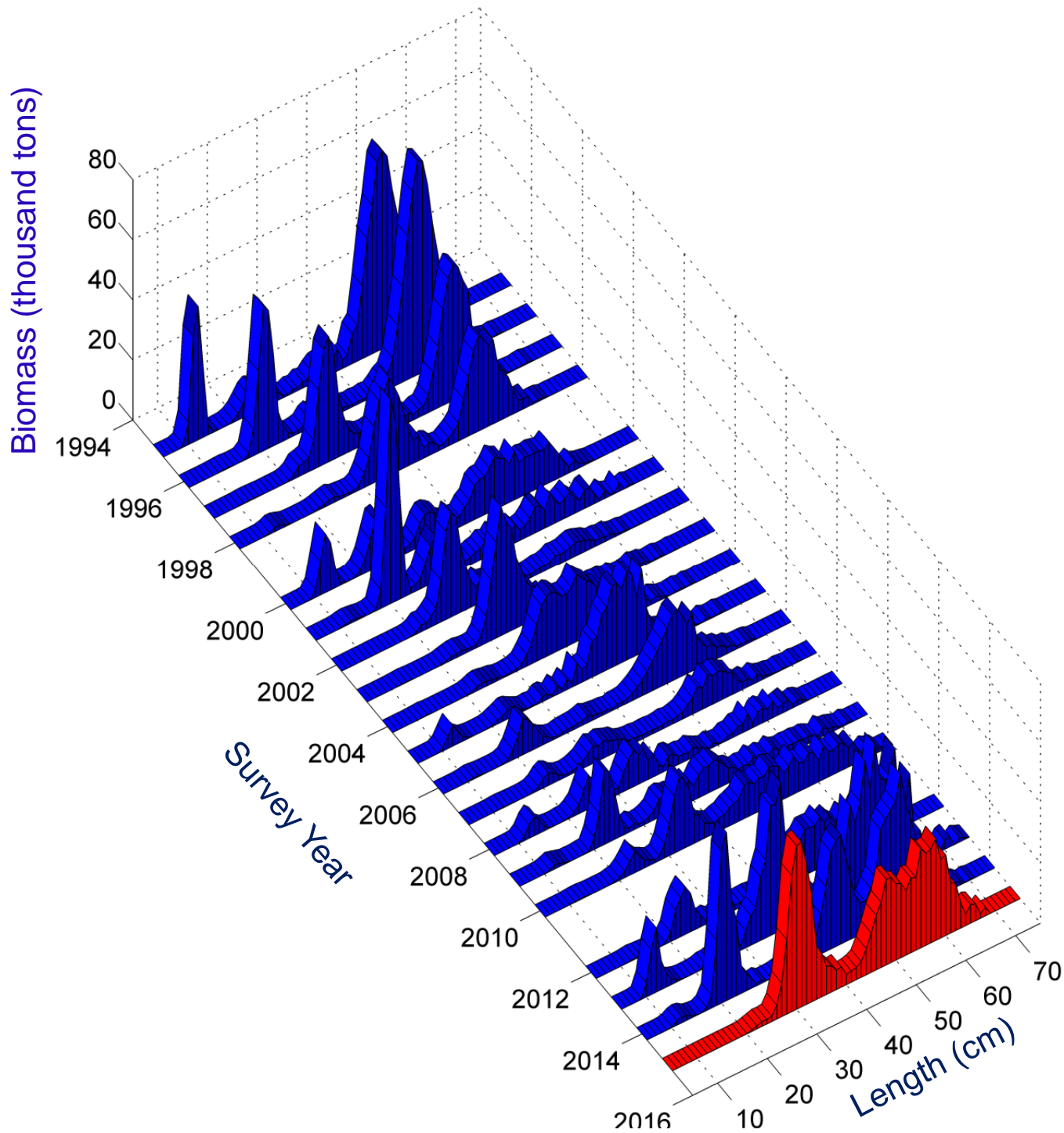
152°W

Longitude

Latitude

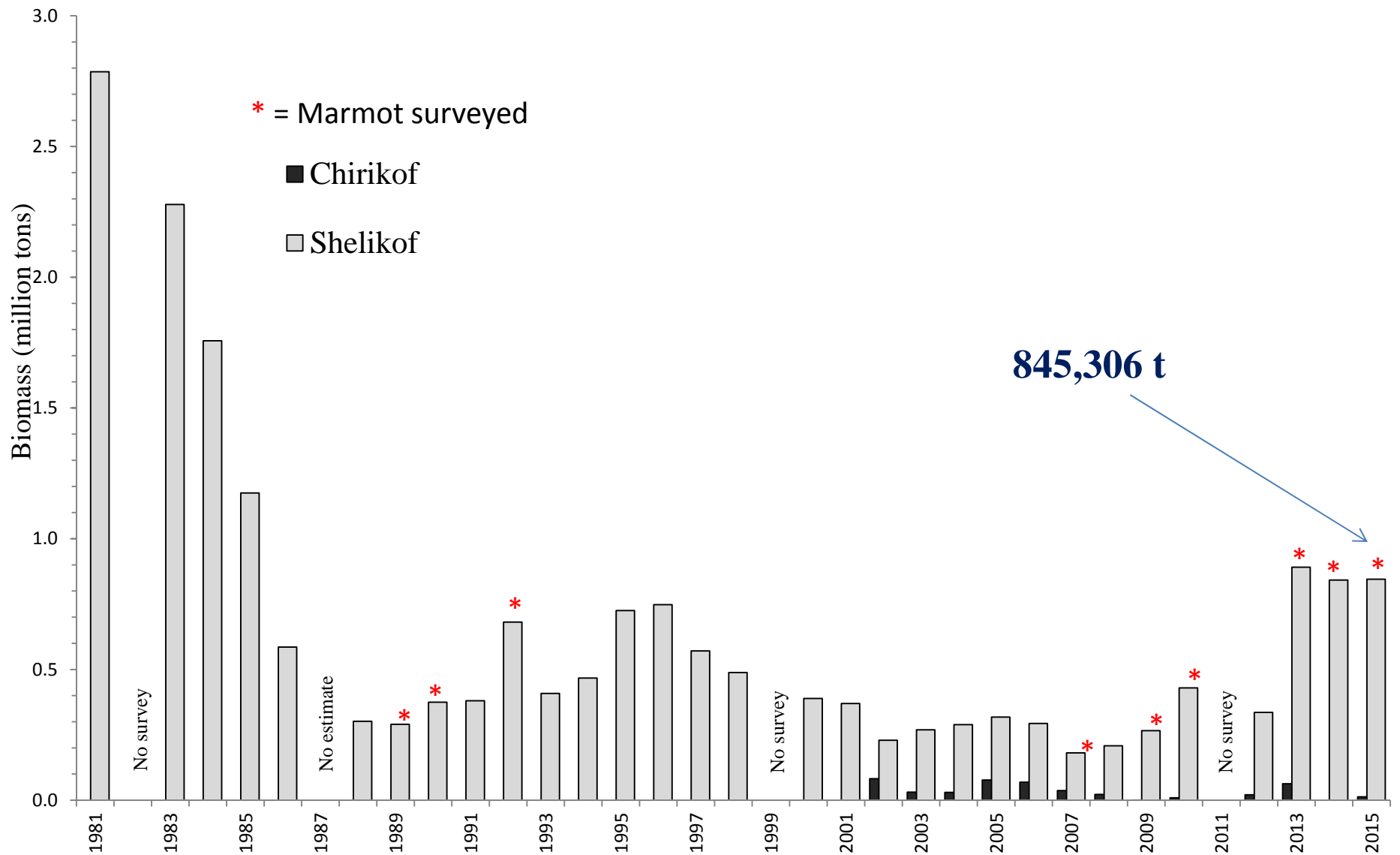
56°N



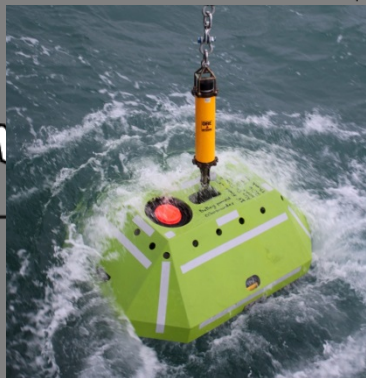


**Shelikof Strait  
Historic  
Pollock  
Size  
Composition**

# Pollock Biomass Estimates for Winter Shelikof Survey



# Trawl-resistant Bottom-moored echosounder (Feb 5 - May 10 2015)



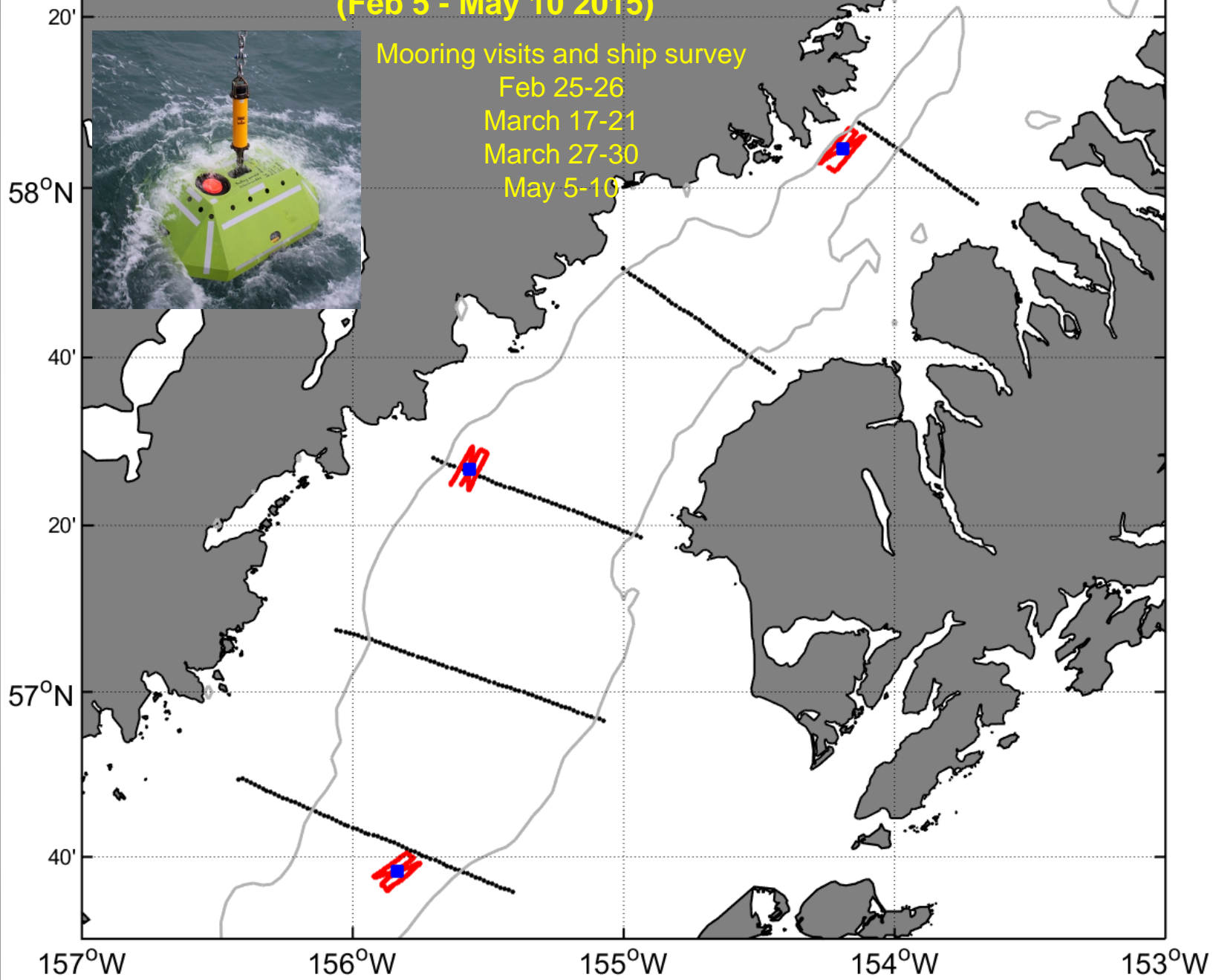
Mooring visits and ship survey

Feb 25-26

March 17-21

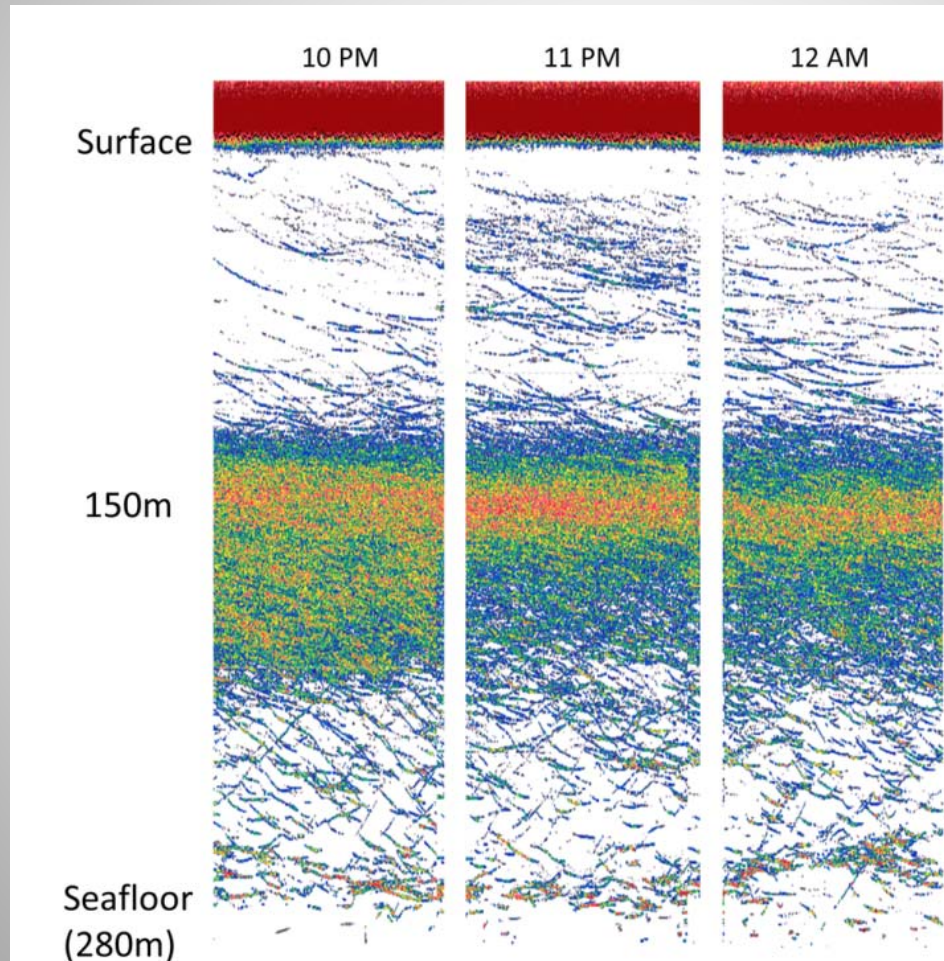
March 27-30

May 5-10



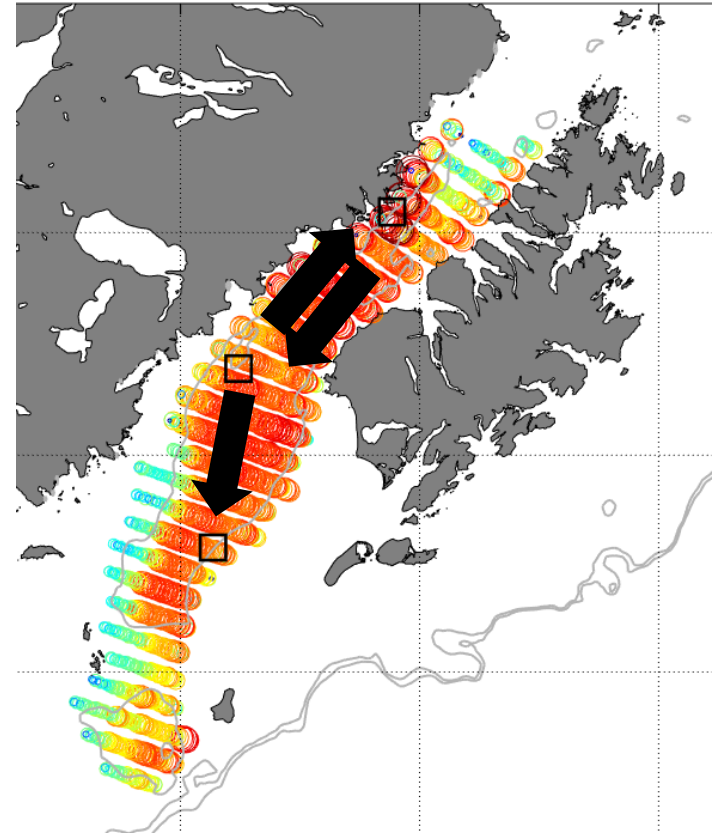
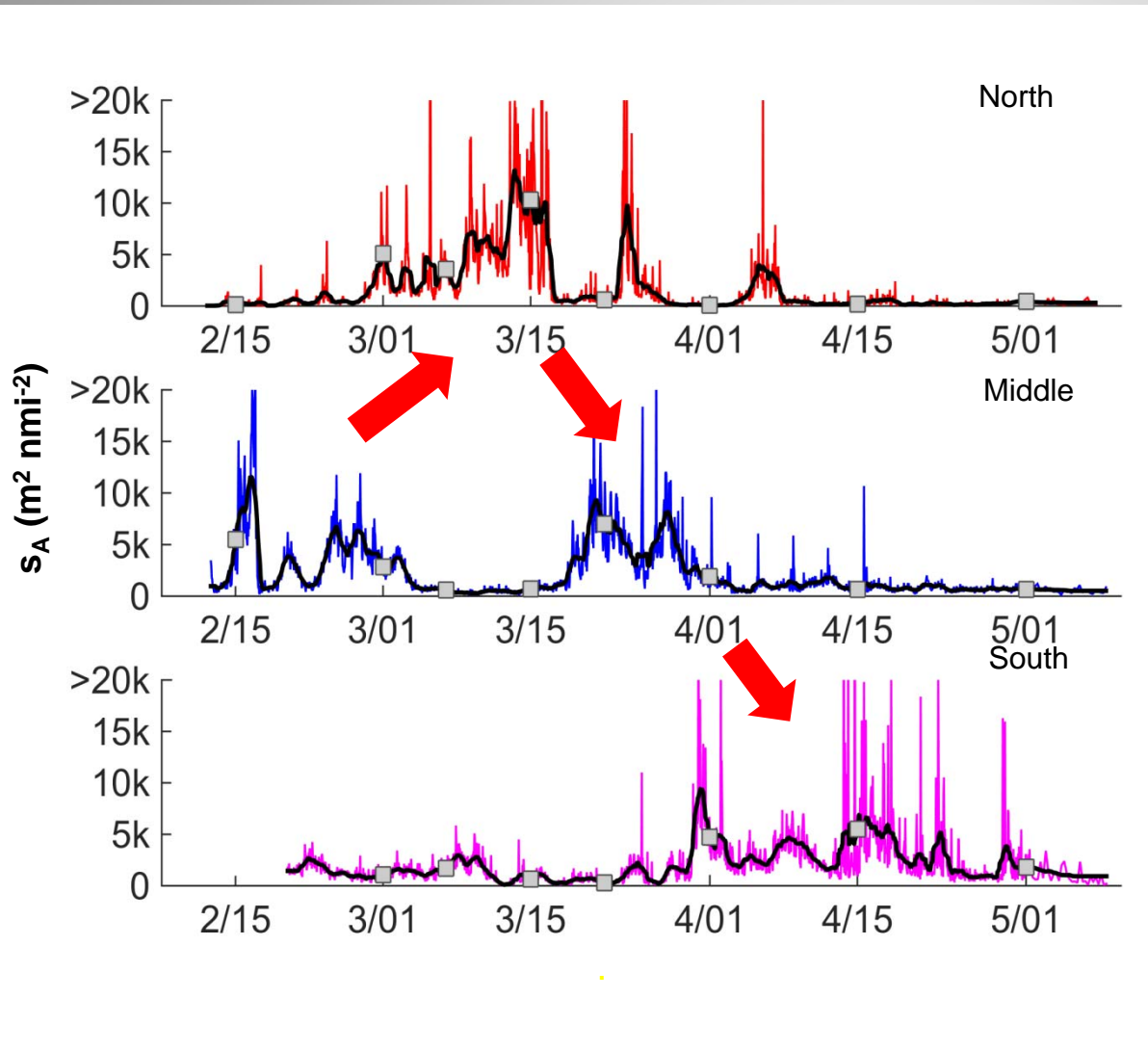
# Moorings worked as we had hoped

Sample data

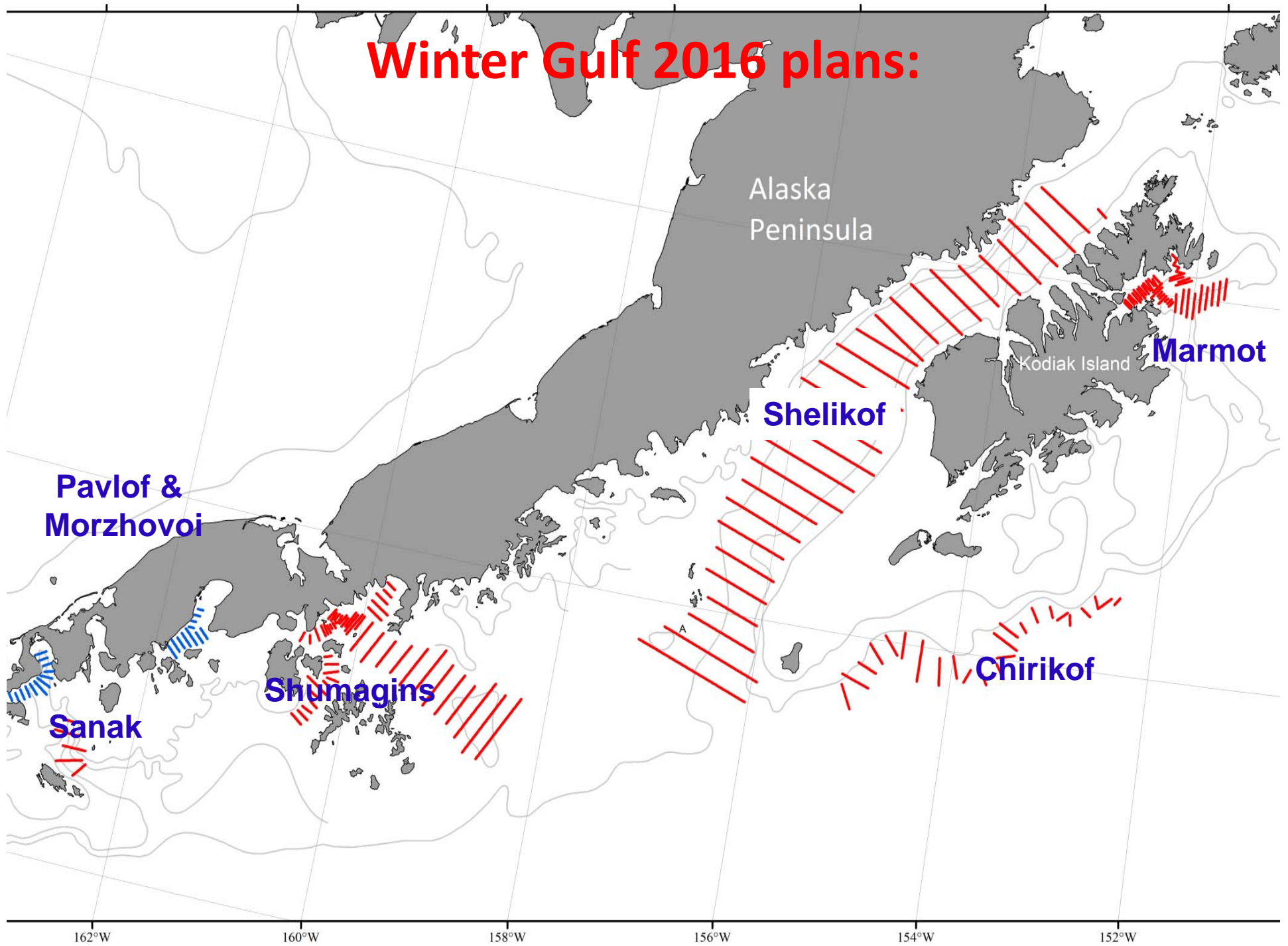




Fish appear to move northward up Strait and then southward during Feb-Apr,  
Further analyses of surveys and moorings underway now.



# Winter Gulf 2016 plans:



**Questions?**



Year	<u>Shelikof Strait</u>		<u>Shumagin Islands</u>		<u>Chirikof shelf break</u>		<u>Sanak Trough</u>		<u>Marmot Bay</u>	
	Biomass	Est. error	Biomass	Est. error	Biomass	Est. error	Biomass	Est. error	Biomass	Est. error
1981	2,785,800									
1982	no survey									
1983	2,278,200									
1984	1,757,200									
1985	1,175,300									
1986	585,800									
1987	no estimate <sup>1</sup>									
1988	301,700									
1989	290,500								2,400	no est.
1990	374,700								no estimate	--
1991	380,300								no survey	--
1992	713,400	3.6%							no estimate	--
1993	435,800	4.6%							no survey	--
1994	492,600	4.5%	112,000 <sup>2</sup>						no survey	--
1995	763,600	4.5%	290,100						no survey	--
1996	777,200	3.7%	117,700 <sup>3</sup>						no survey	--
1997	583,000	3.7%	no survey						no survey	--
1998	504,800	3.8%	no survey						no survey	--
1999	no survey	--	no survey						no survey	--
2000	448,600	4.6%	no survey						no survey	--
2001	432,800	4.5%	119,600						no survey	--
2002	256,700	6.9%	135,600	27.1%	82,100	12.2%			no survey	--
2003	316,500	5.2%	67,700	17.2%	30,900	20.7%	80,500	21.6%	no survey	--
2004	326,800	9.2%	no survey	--	30,400	20.4%	no survey	--	no survey	--
2005	356,100	4.1%	52,000	11.4%	77,000	20.7%	65,500	7.4%	no survey	--
2006	293,600	4.0%	37,300	10.1%	69,000	11.0%	127,200	10.4%	no survey	--
2007	180,900	5.8%	20,000	8.6%	36,600	6.7%	60,300	5.7%	3,600	5.0%
2008	208,000	5.6%	30,600	9.8%	22,100	9.6%	19,800	6.7%	no survey	--
2009	266,000	5.9%	63,300	10.8%	400	32.3%	31,400	17.4%	19,800	no est.
2010	429,700	2.6%	18,200	11.6%	9,300	15.0%	26,700	11.6%	5,600	no est.
2011	no survey	--	no survey	--	no survey	--	no survey	--	no survey	--
2012	335,800	7.9%	15,500	5.2%	21,200	16.4%	24,300	15.6%	no survey	--
2013	891,261	5.3%	91,300	17.3%	63,000	31.4%	13,300	5.1%	19,900	4.1%
2014	842,138	4.7%	37,346	18.2%	no survey	--	7,319	9.0%	14,992	9.4%
2015	845,306	4.3%	61,369	17.1%	12,685	14.2%	17,863	10.0%	22,470	3.1%

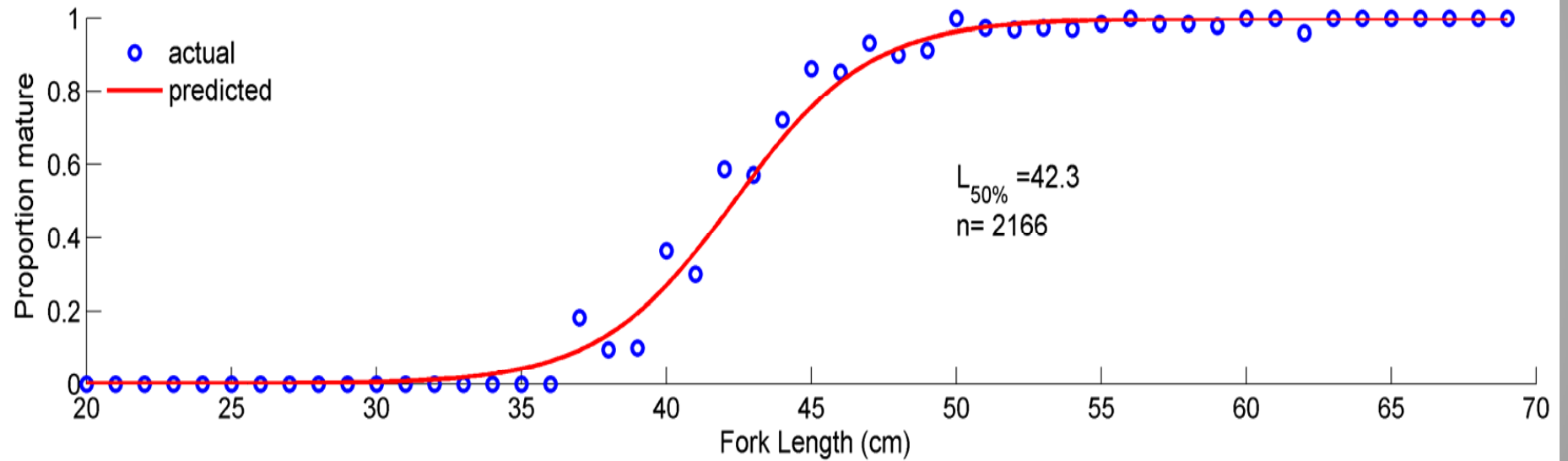
Estimates of walleye pollock biomass (in metric tons) and relative estimation error for the Shelikof Strait, Shumagin Islands, Sanak Trough, and Marmot Bay acoustic-trawl surveys.

<sup>1</sup>Shelikof Strait surveyed in 1987, but no estimate was made due to an equipment malfunction.

<sup>2</sup>Survey conducted after peak spawning had occurred.

<sup>3</sup>Partial survey

# Maturity.



# Length at Age

