

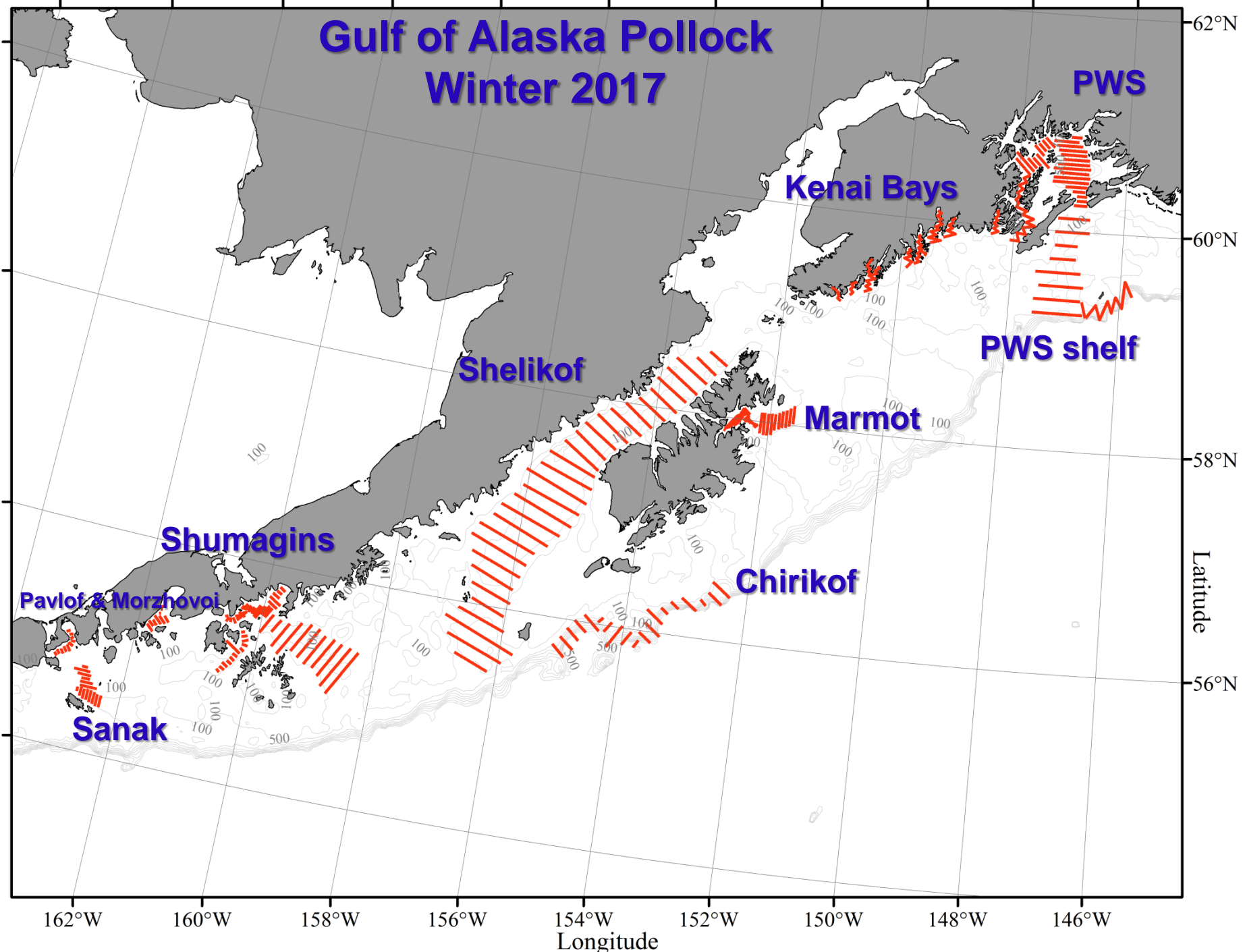
Results of the Winter 2017 Acoustic-Trawl Surveys of Walleye Pollock in the Gulf of Alaska

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Midwater Assessment and Conservation Engineering

Alaska Fisheries Science Center

Gulf of Alaska Pollock Winter 2017



Shumagins, Sanak, Morzhovoi, Pavlov

- 2,100 mt/nm²
- Pollock ≤ 30 cm FL
- Pollock > 30 cm FL
- AWT

Feb 13-14

2 tows, 35 nautical miles of trackline

Feb 12

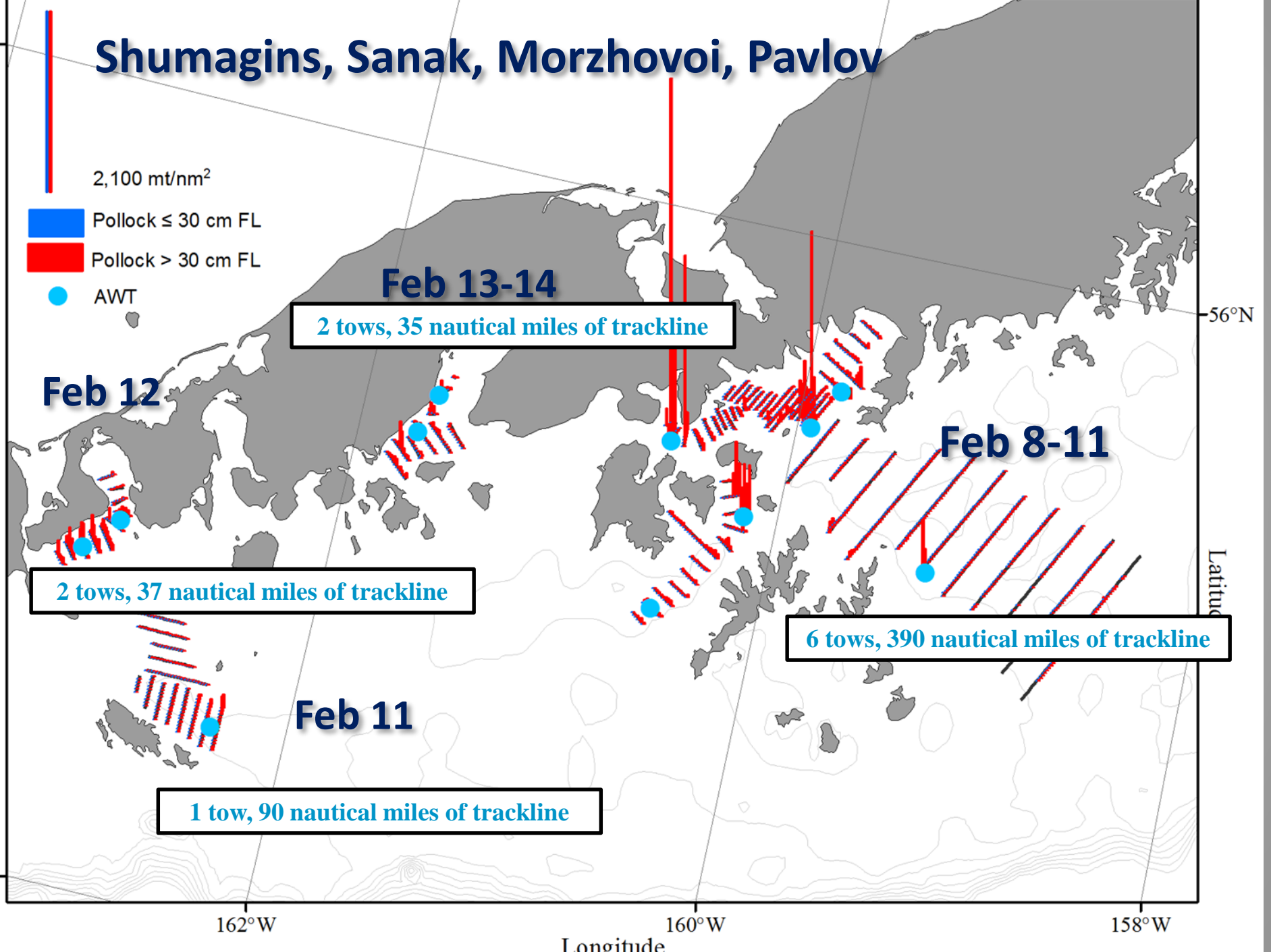
2 tows, 37 nautical miles of trackline

Feb 8-11

6 tows, 390 nautical miles of trackline

Feb 11

1 tow, 90 nautical miles of trackline



Latitude

Longitude

162°W

160°W

158°W

56°N

Shumagins, Sanak, Morzhovoi, Pavlov

2,100 mt/nm²

Pollock ≤ 30 cm FL

Pollock > 30 cm FL

AWT

Feb 13-14

Feb 12

Feb 8-11

Feb 11

56°N

Latitude

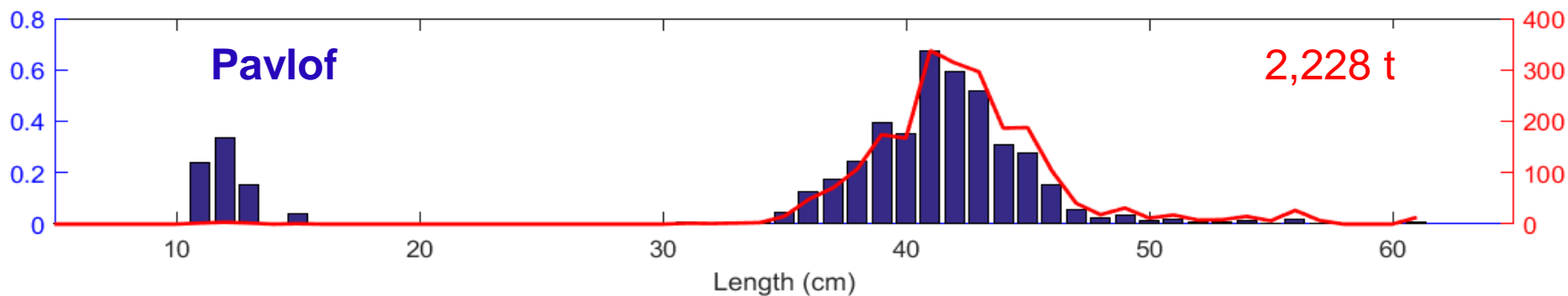
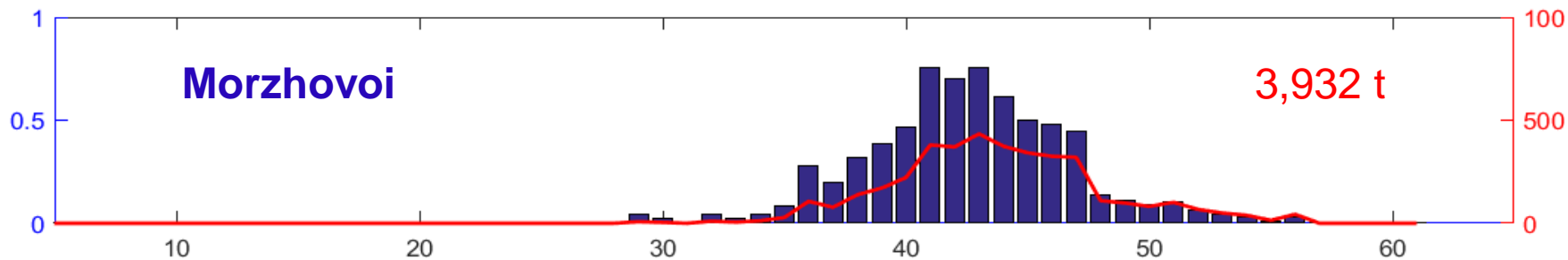
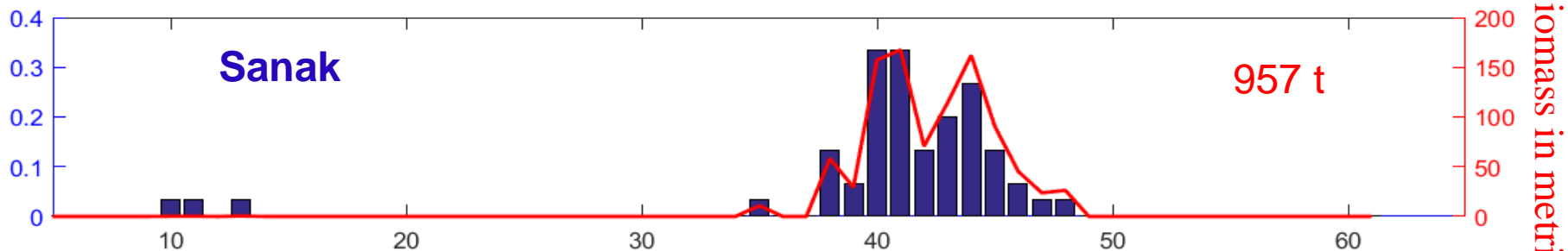
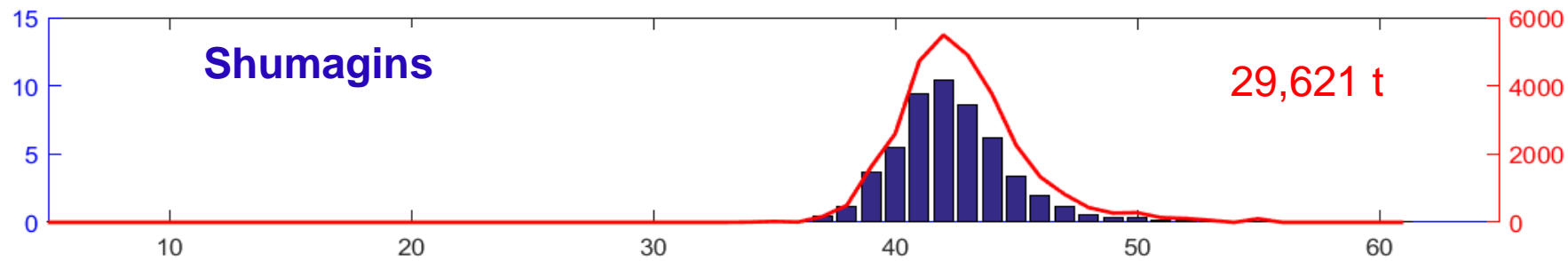
Maturities (females > 40cm)

| | <u>Prespawning</u> | <u>Spawning</u> | <u>Spent</u> | <u>n</u> |
|-----------|--------------------|-----------------|--------------|----------|
| Shumagins | 85% | 4% | 4% | 136 |
| Sanak | 73% | 0% | 18% | 22 |
| Morzhovoi | 58% | 4% | 21% | 24 |
| Pavlof | 77% | 0% | 14% | 22 |

162

158°W

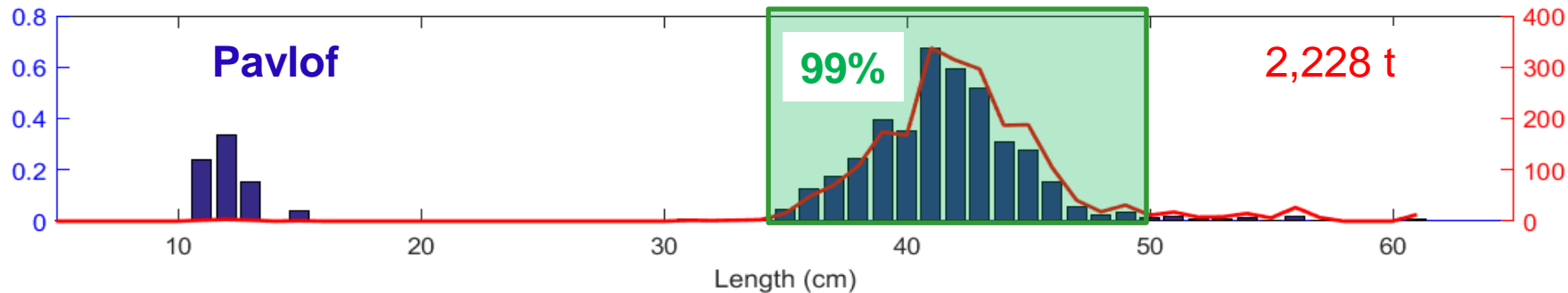
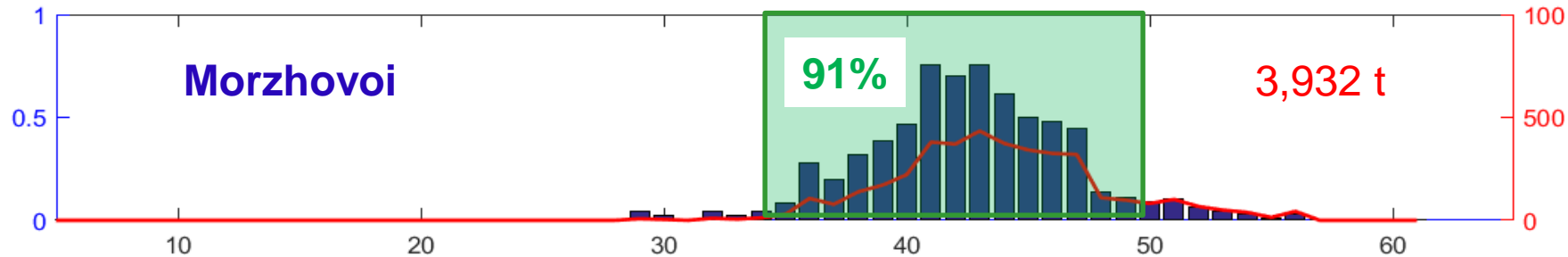
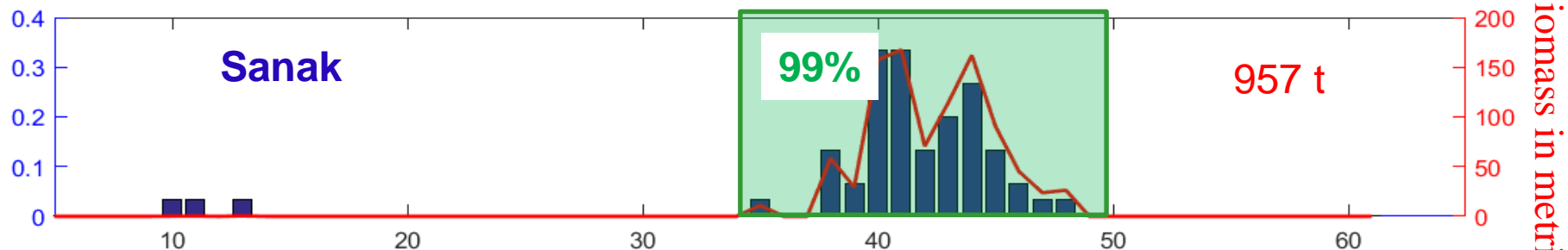
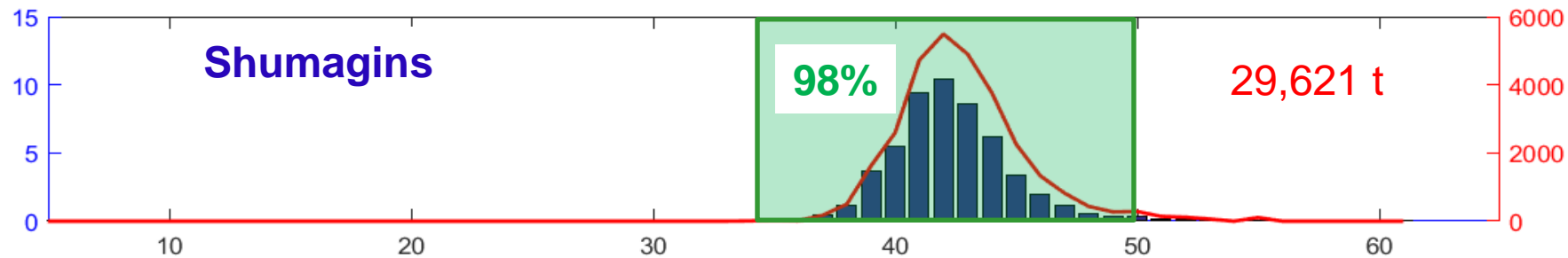
Numbers in millions



Biomass in metric tons

Length (cm)

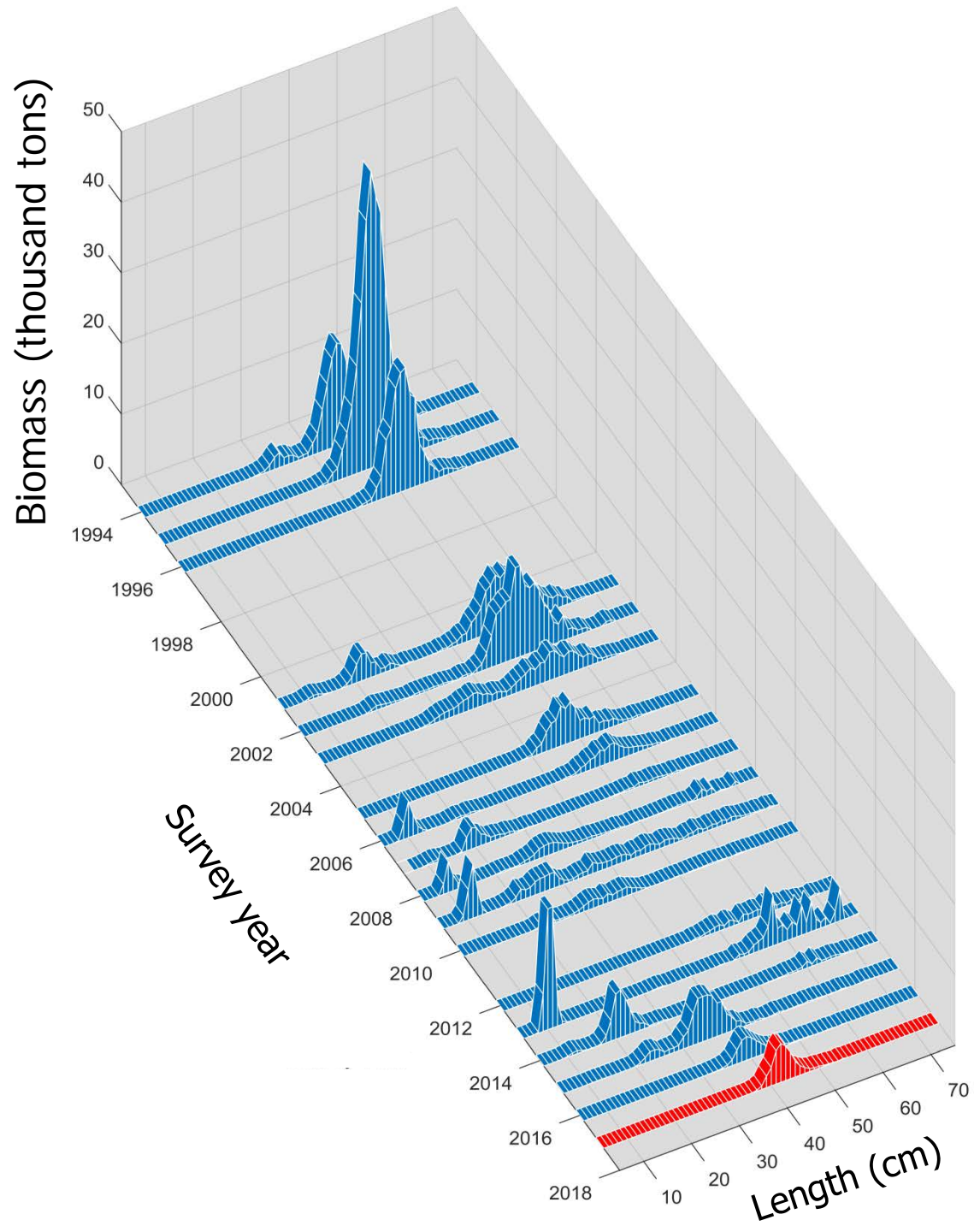
Numbers in millions



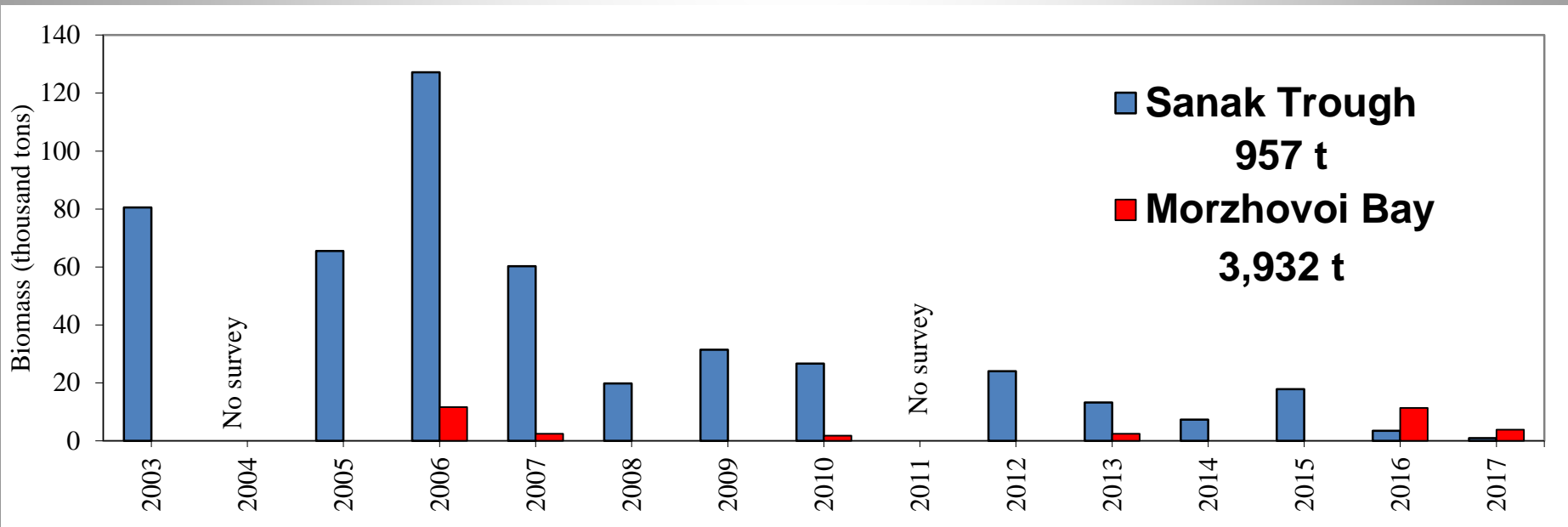
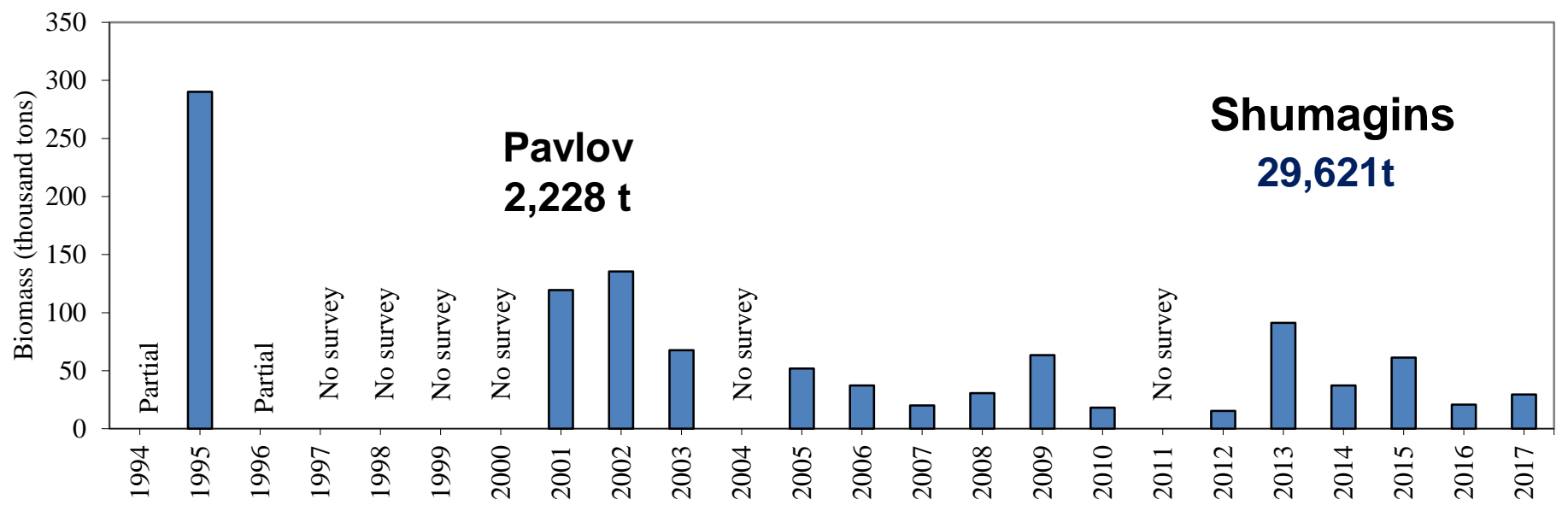
Biomass in metric tons

Length (cm)

Shumagin Islands Historical Pollock Size Composition



Pollock Biomass Estimates for Winter Shumagin/Sanak Surveys



Kenai Bays & PWS

11 tows, 298 nautical miles of trackline

March 2-5

7 tows, 288 nautical miles of trackline

March 5-7

6 tows, 182 nautical miles of trackline

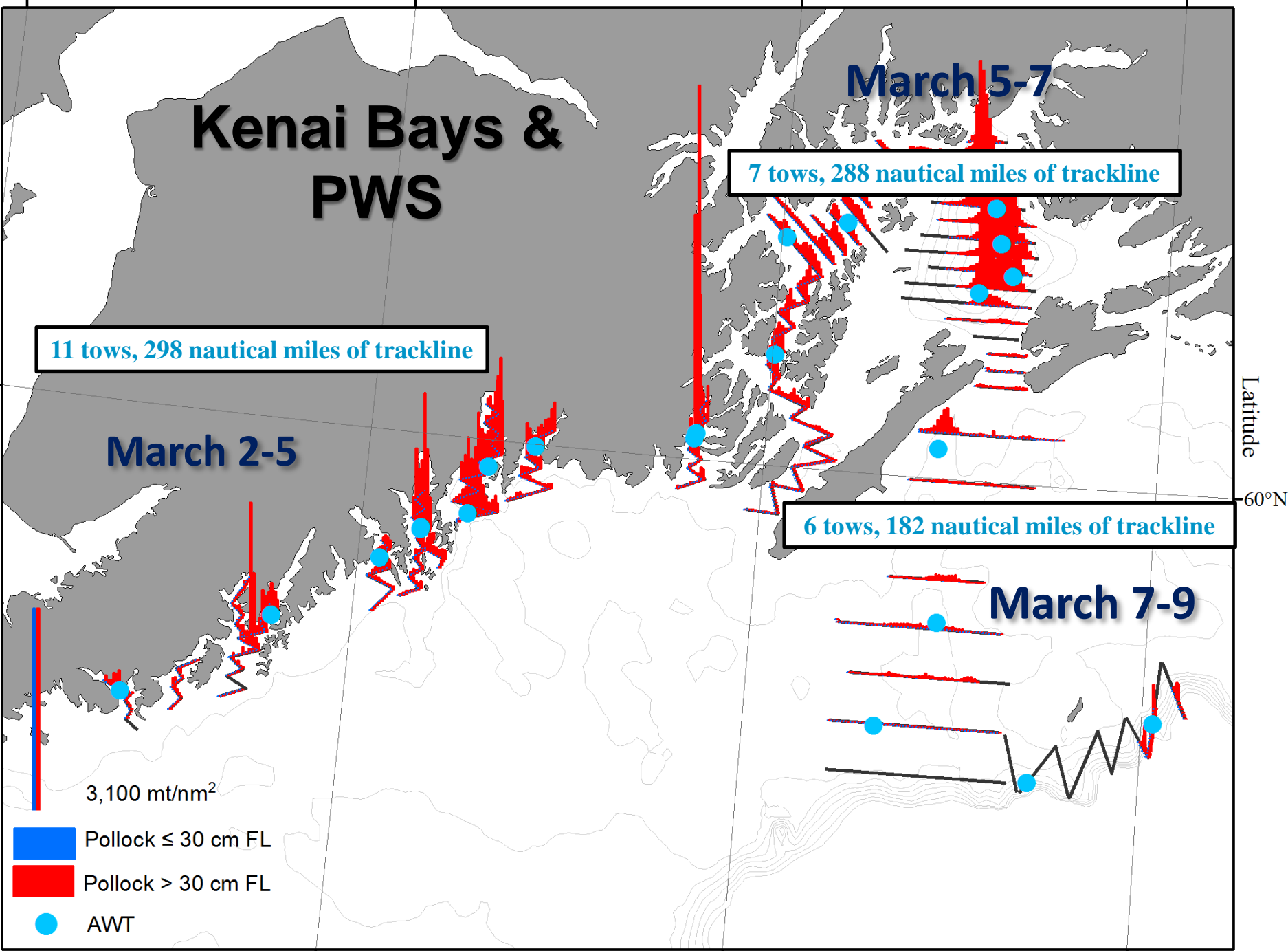
March 7-9

3,100 mt/nm²

Pollock \leq 30 cm FL

Pollock $>$ 30 cm FL

AWT

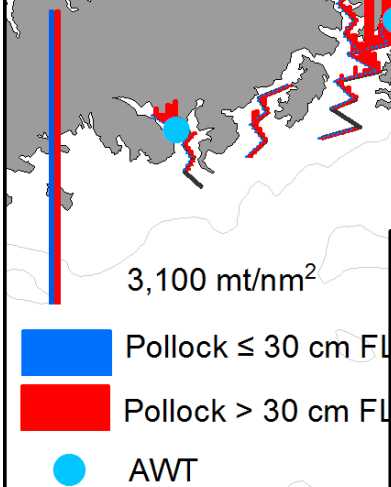


Kenai Bays & PWS

March 2-5

March 5-7

March 7-9

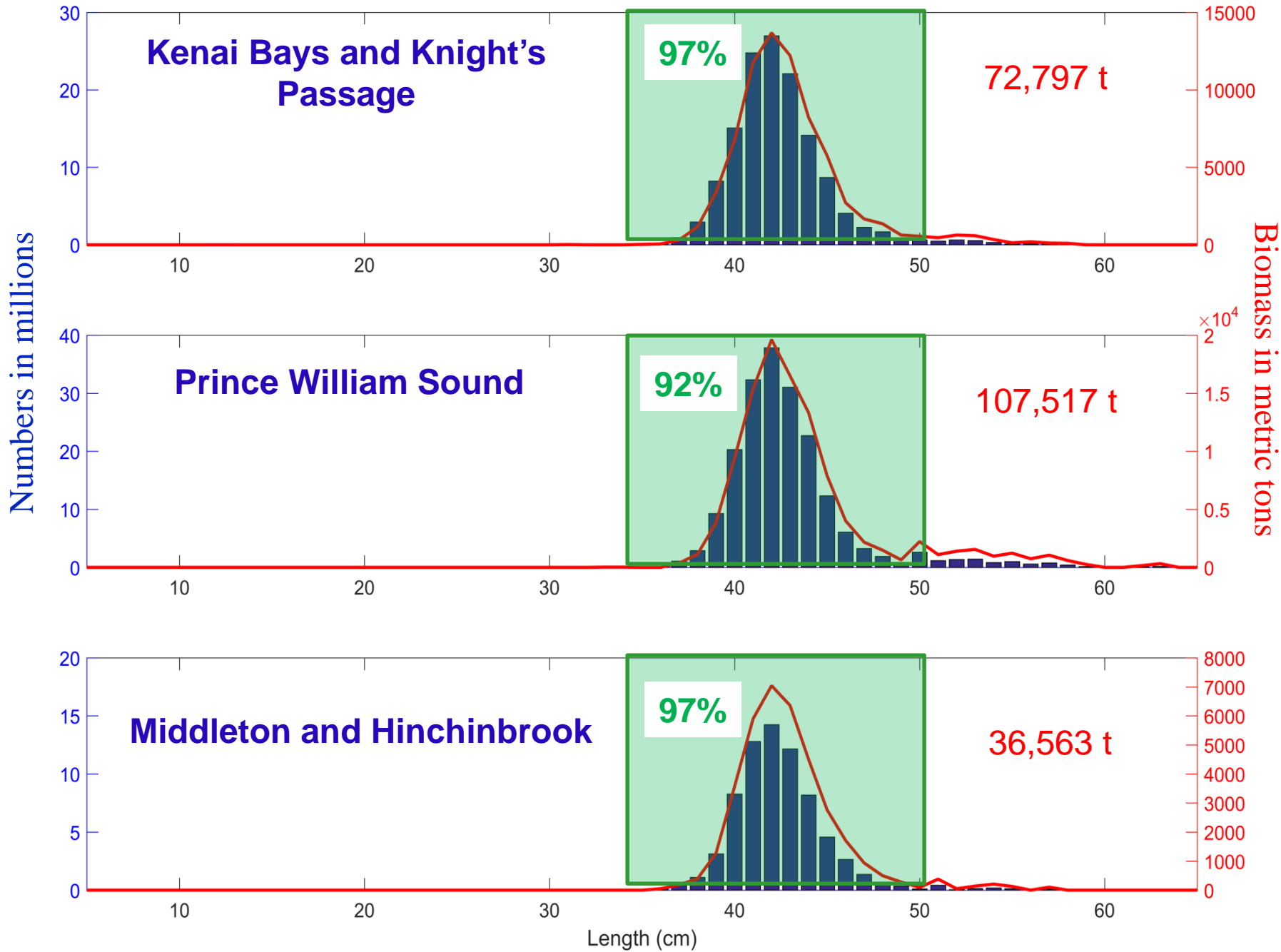


| | Maturities (females > 40cm) | | | |
|-------------------|-----------------------------|-----------------|--------------|------------|
| | <u>Prespawning</u> | <u>Spawning</u> | <u>Spent</u> | <u>n</u> |
| Kenai Bays | 94% | 4% | 0% | 136 |
| PWS | 83% | 15% | 1% | 106 |
| H&M | 95% | 2% | 0% | 100 |

Latitude

60°N

146°W



Shelikof strait, Marmot Bay, Chirikof Shelfbreak

March 18-24

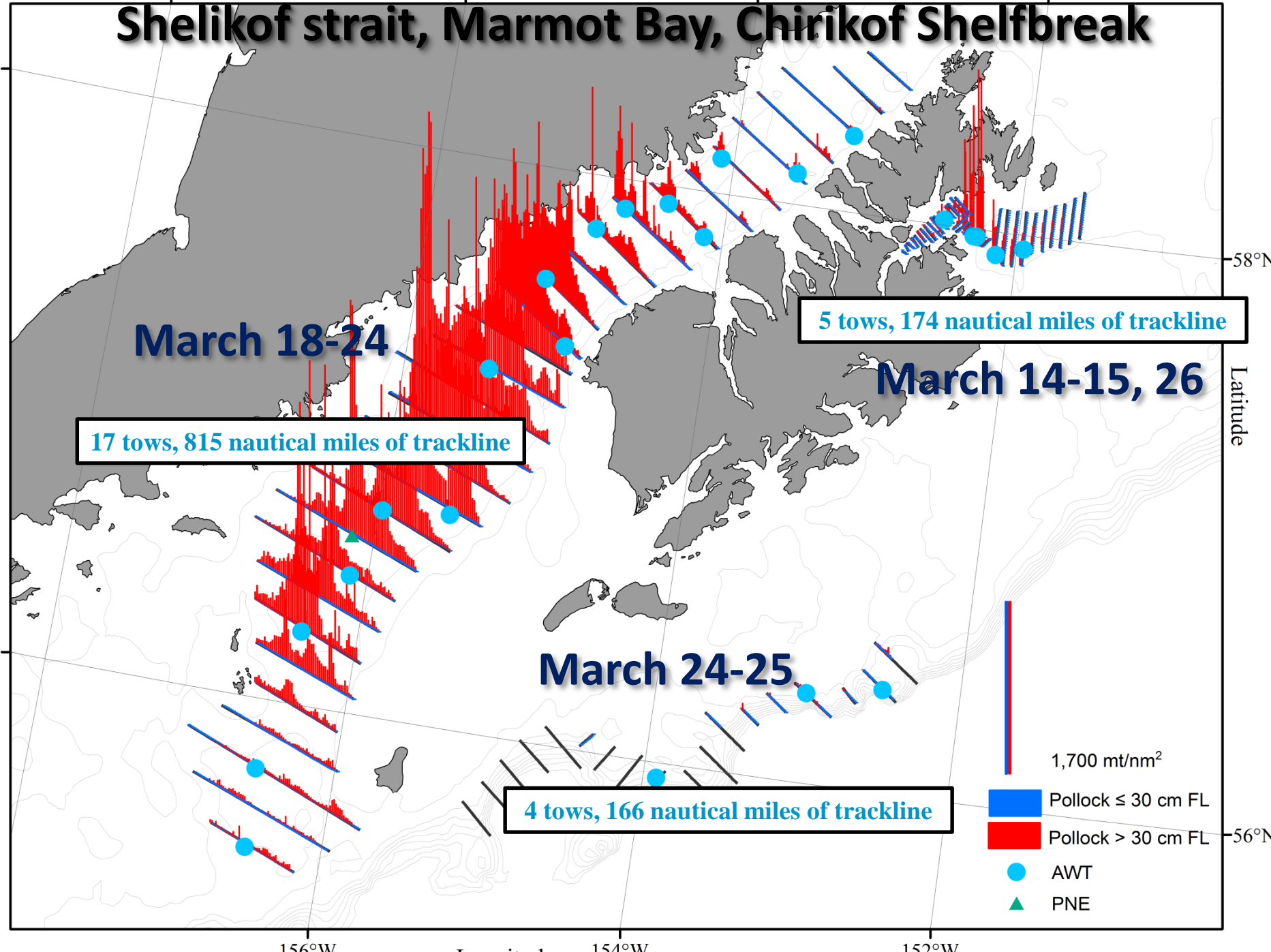
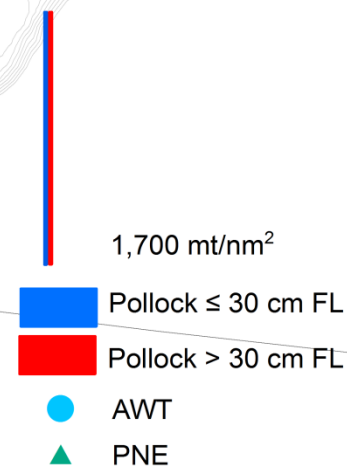
17 tows, 815 nautical miles of trackline

5 tows, 174 nautical miles of trackline

March 14-15, 26

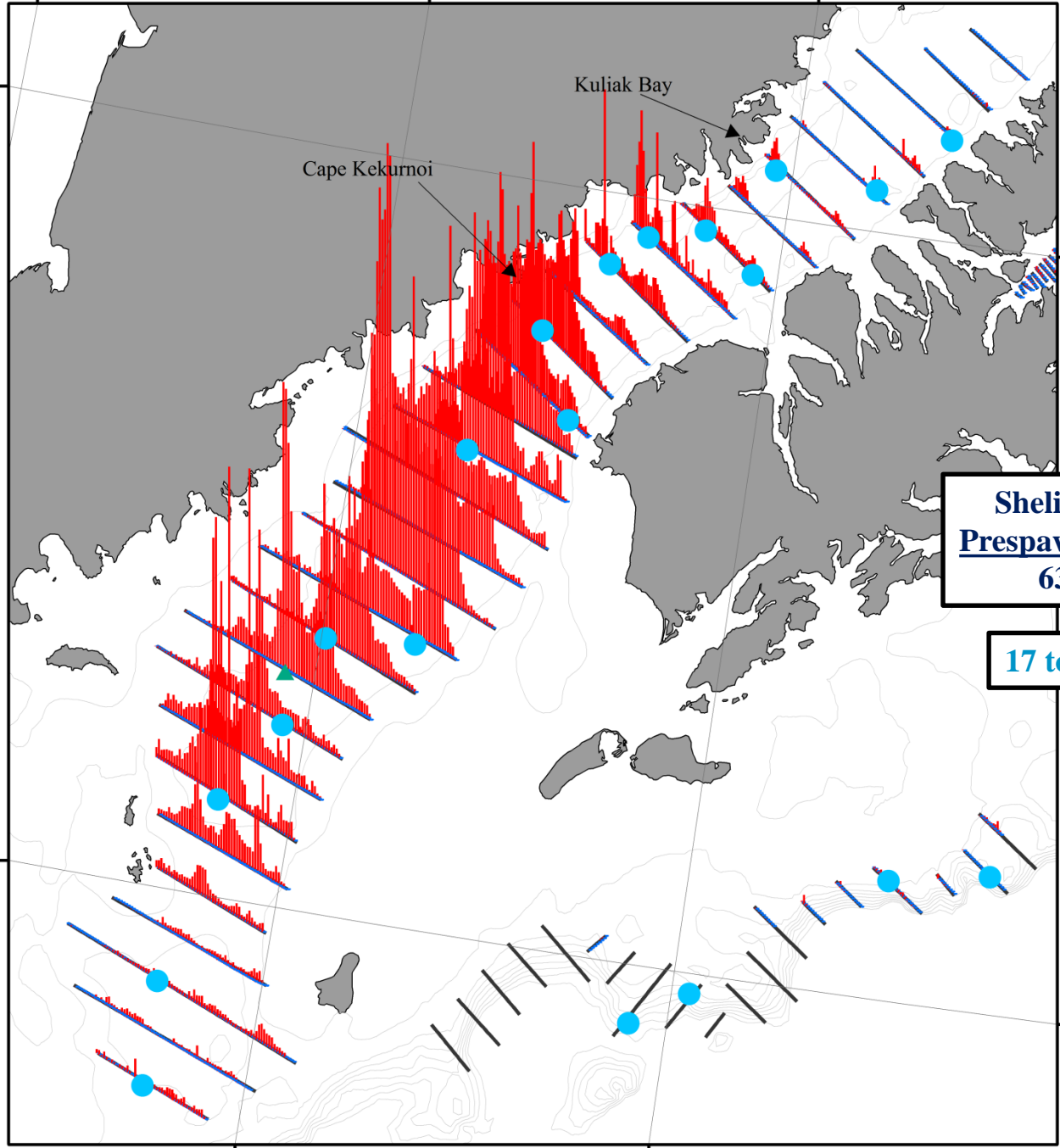
March 24-25

4 tows, 166 nautical miles of trackline



Shelikof Strait March 18-24

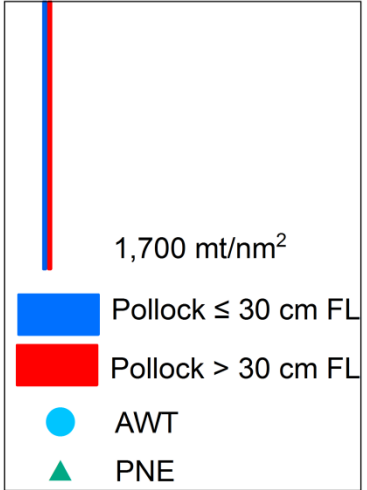
1,489,723 t

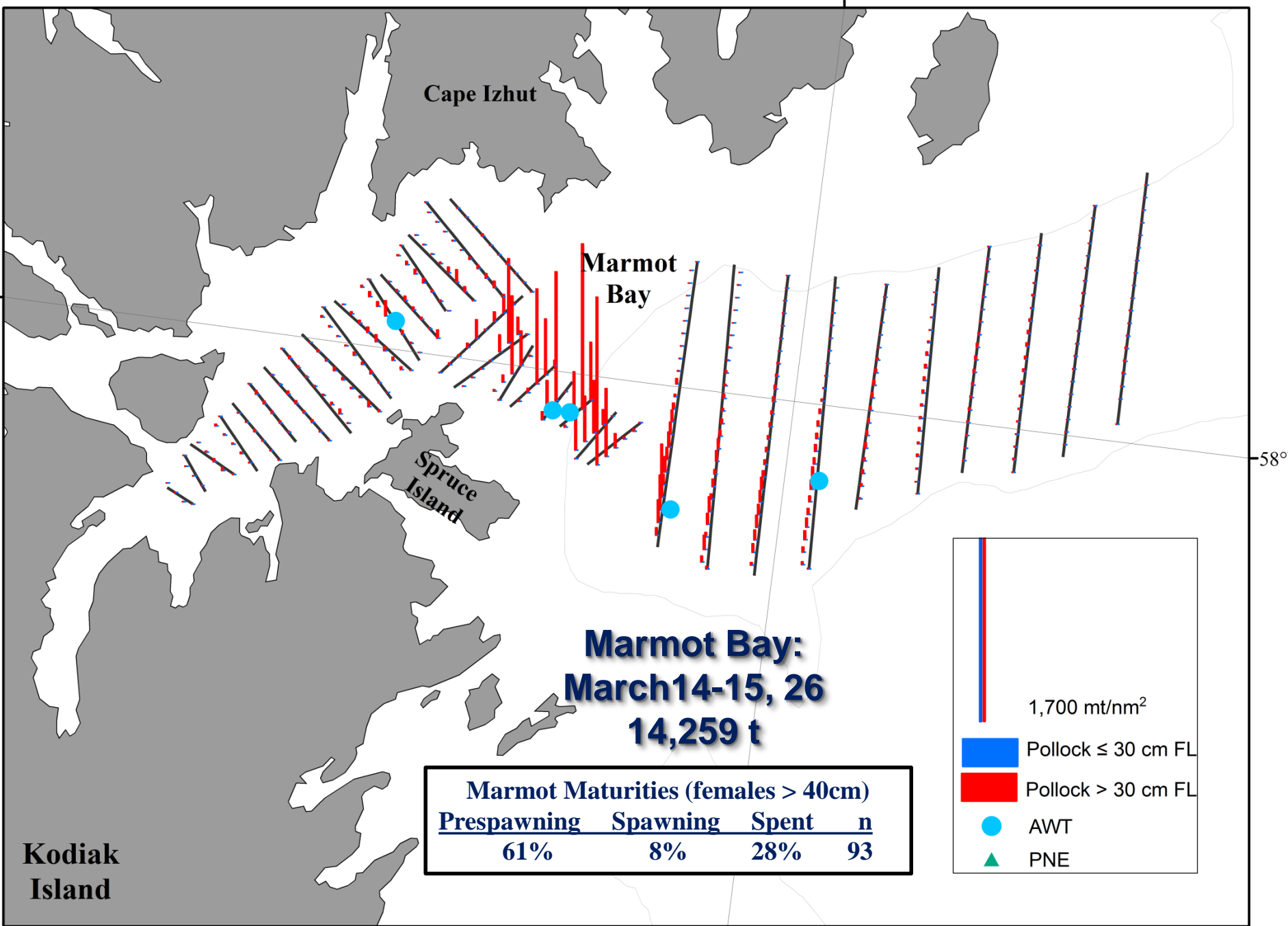


Shelikof Maturities (females > 40cm)

| Prespawning | Spawning | Spent | n |
|-------------|----------|-------|-----|
| 63% | 7% | 26% | 404 |

17 tows, 815 nautical miles of trackline










Marmot Maturities (females > 40cm)

| <u>Prespawning</u> | <u>Spawning</u> | <u>Spent</u> | <u>n</u> |
|--------------------|-----------------|--------------|----------|
| 61% | 8% | 28% | 93 |

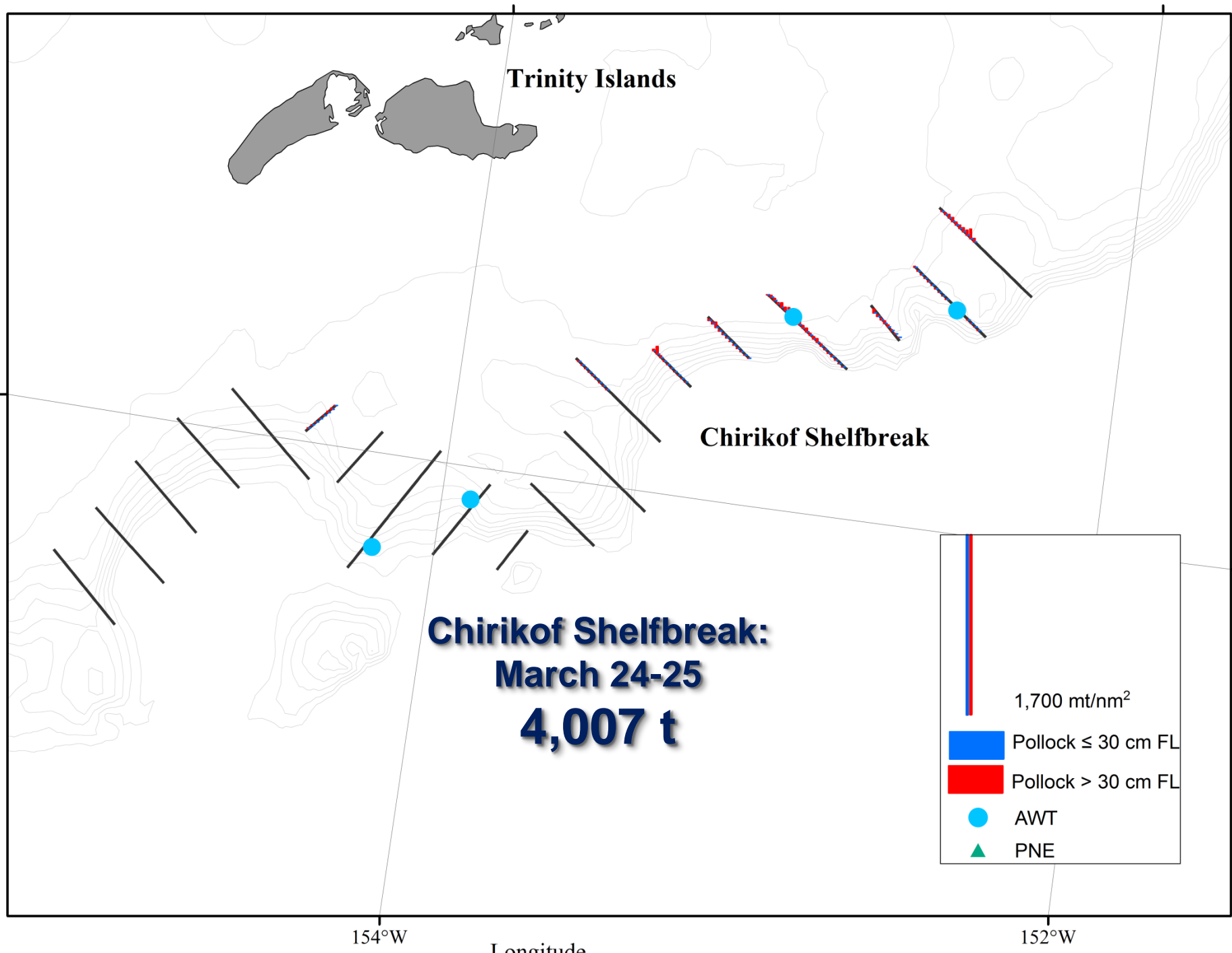
**Marmot Bay:
March 14-15, 26
14,259 t**

 1,700 mt/nm²
 Pollock ≤ 30 cm FL
 Pollock > 30 cm FL
 AWT
 PNE

Longitude

152°W

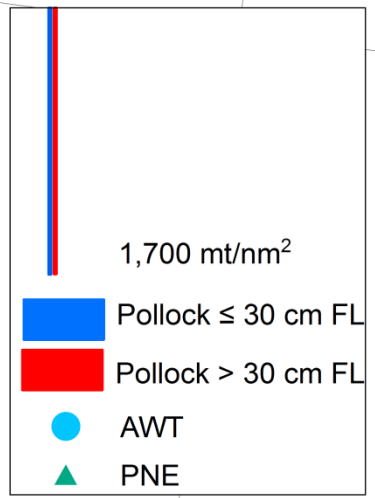
58°N



Trinity Islands

Chirikof Shelfbreak

**Chirikof Shelfbreak:
March 24-25
4,007 t**

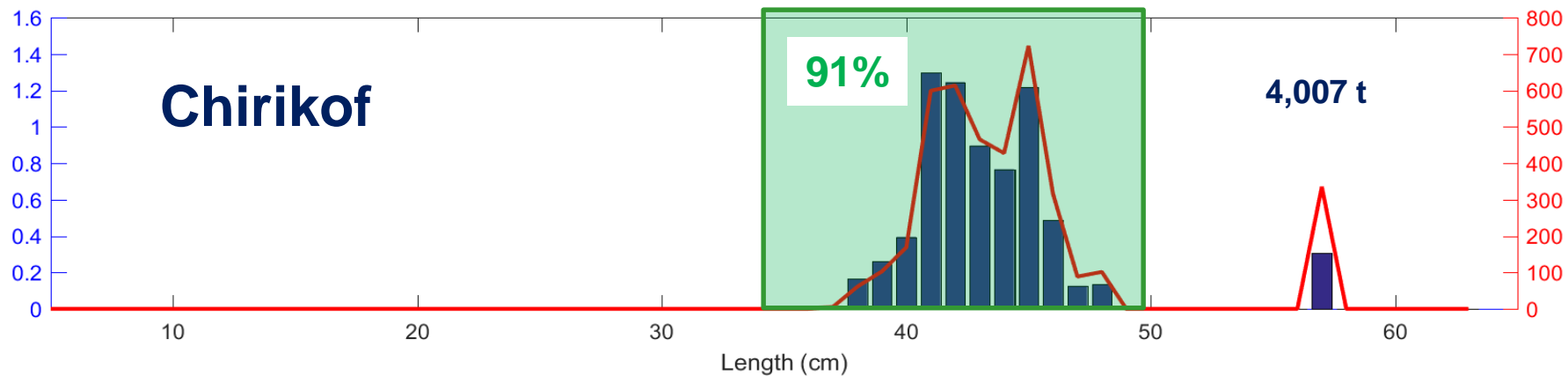
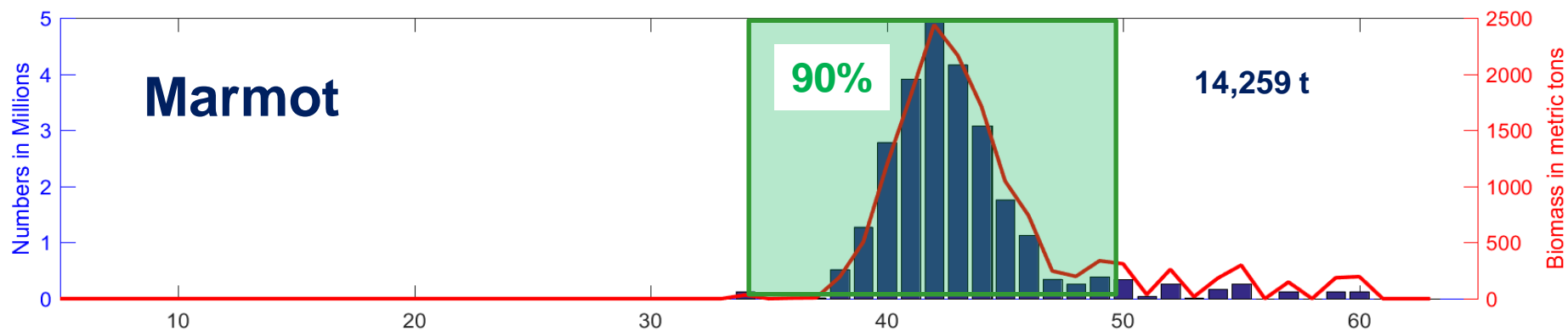
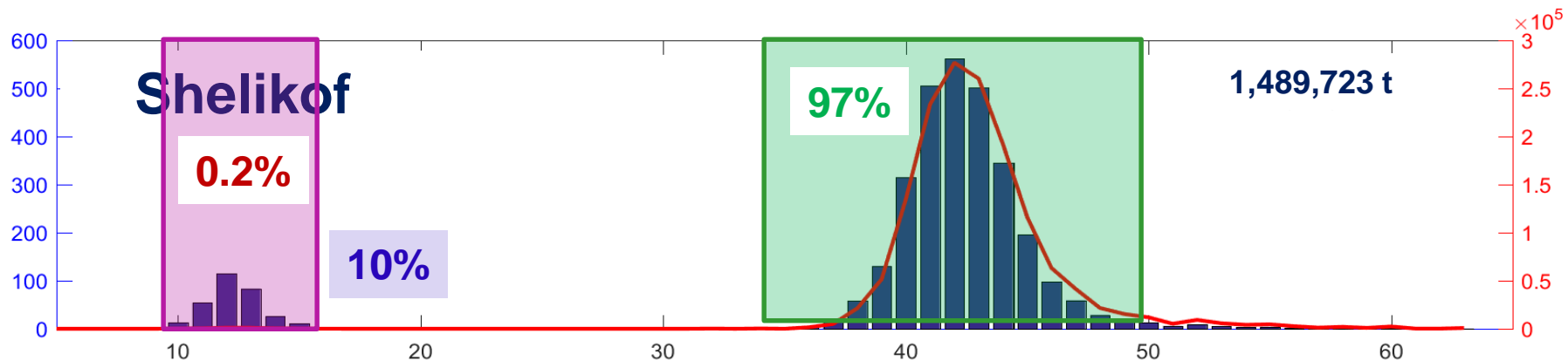


154°W

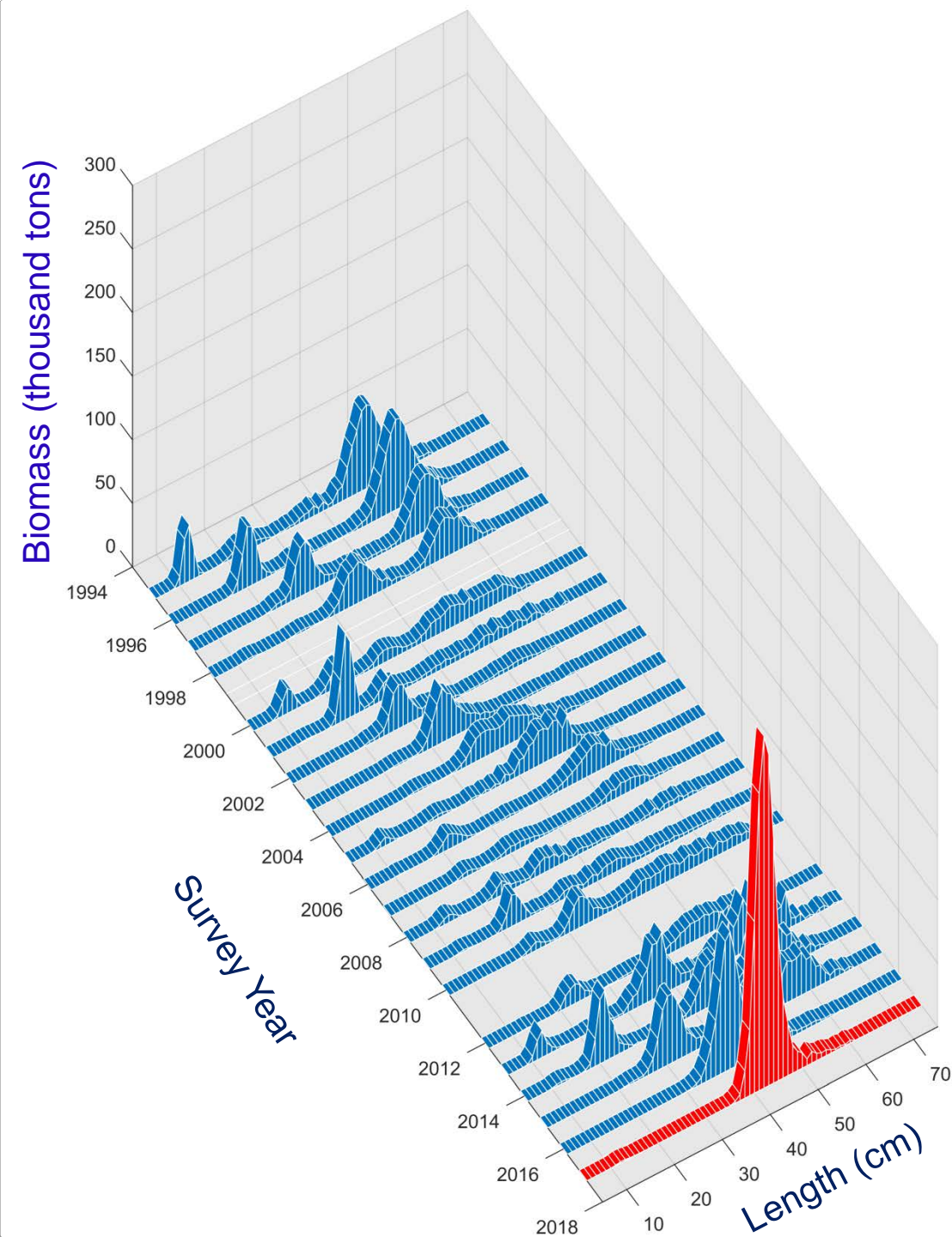
Longitude

152°W

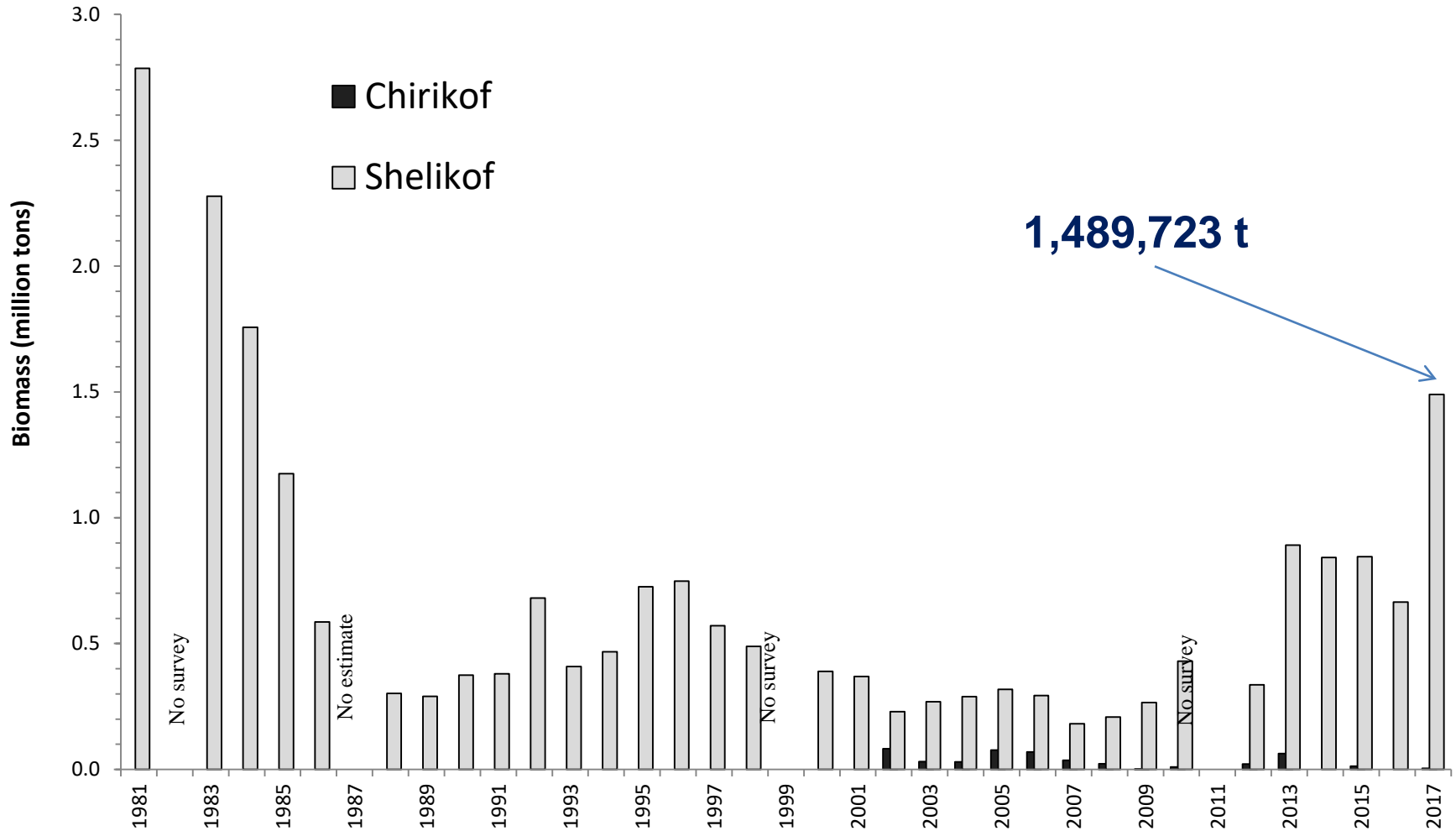
56°N



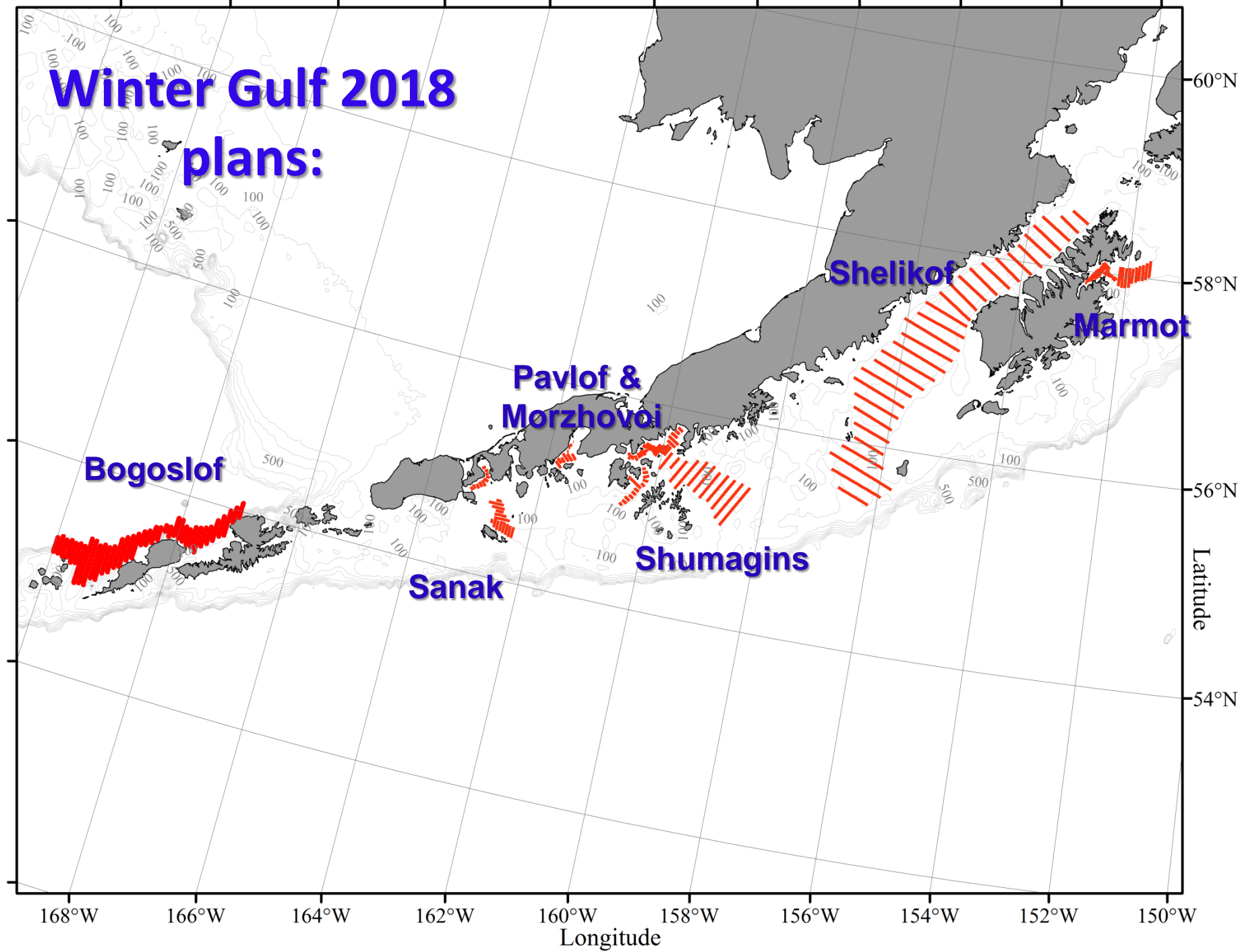
Shelikof Strait Historic Pollock Size Composition



Pollock Biomass Estimates for Winter Shelikof Survey



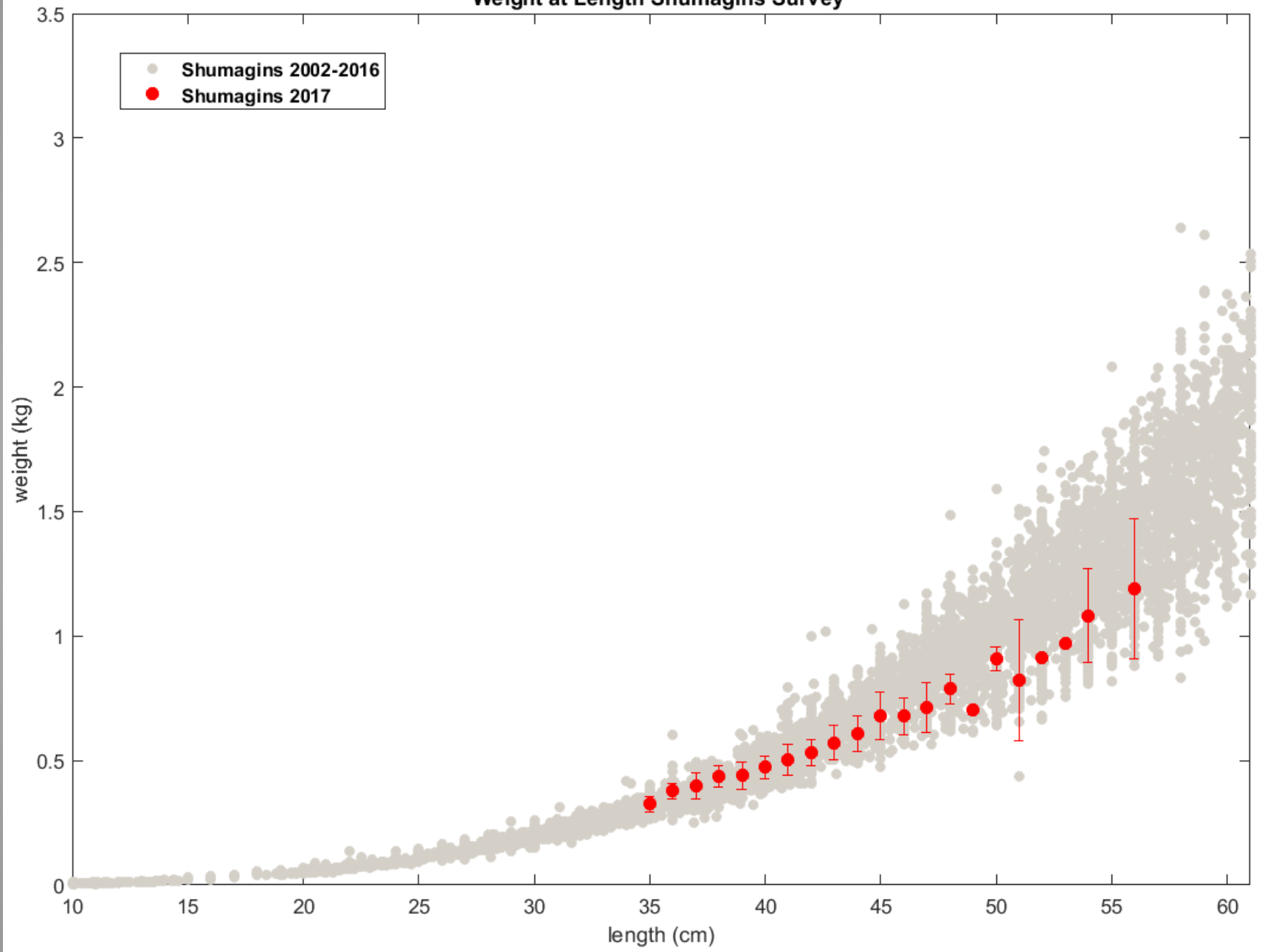
Winter Gulf 2018 plans:



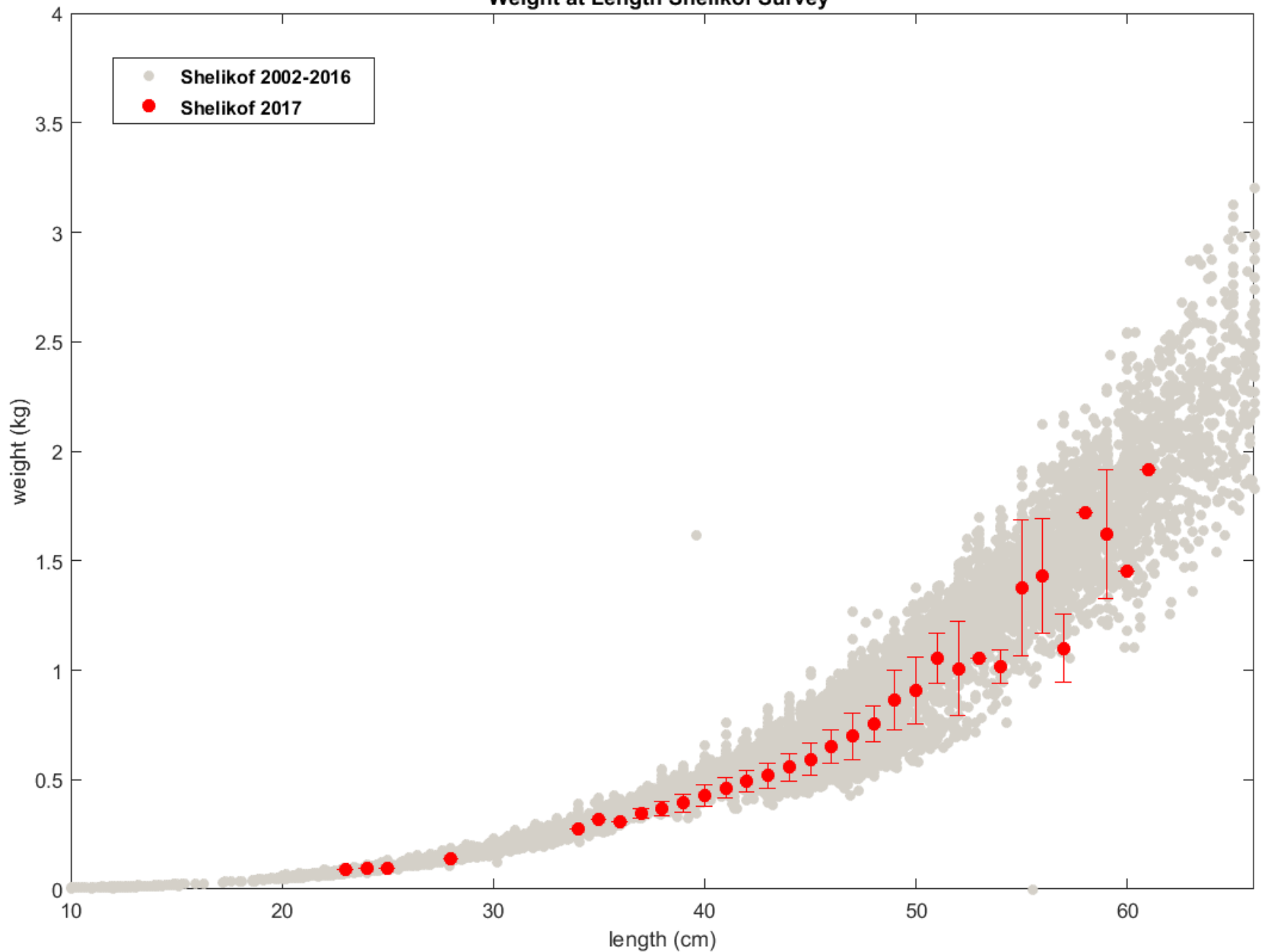
Questions?



Weight at Length Shumagins Survey



Weight at Length Shelikof Survey



| 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 | | 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. | | | | | | | | | | |
| 1985 | 1,175,300 | | | | | | | | | | | | |
| 1986 | 585,800 | | | | | | | | | | | | |
| 1987 | no estimate ¹ | | | | | | | | | | | | |
| 1988 | 301,700 | | | | | | | | | | | | |
| 1989 | 290,500 | | | | | | | | | | | 2,400 | no est. |
| 1990 | 374,700 | | | | | | | | | | | | |
| 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 ² | | | | | | no survey | -- | | | |
| 1995 | 763,600 | 4.5% | 290,100 | | | | | | no survey | -- | | | |
| 1996 | 777,200 | 3.7% | 117,700 ³ | | | | | | 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% | | | |
| 2016 | 665,059 | 6.5% | 20,706 | 7.2% | no survey | -- | 3,556 | 6.9% | 37,161 | 9.9% | | | |
| 2017 | 1,489,723 | 4.3% | 29,621 | 9.8% | 4,007 | 24.0% | 957 | 19.6% | 14,259 | 7.9% | | | |

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

²Survey conducted after peak spawning had occurred.

³Partial survey.

Shelikof 2017 -- Age vs length (cm)

