

Results of research cruises – U.S.A.

Bogoslof 2005 review with ages

Plans for 2006 Bogoslof survey

Summer 2004 Bering Sea shelf final results

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Results of the 2005 Bogoslof EIT pollock survey

March 7 –13, 2005
RV Miller Freeman



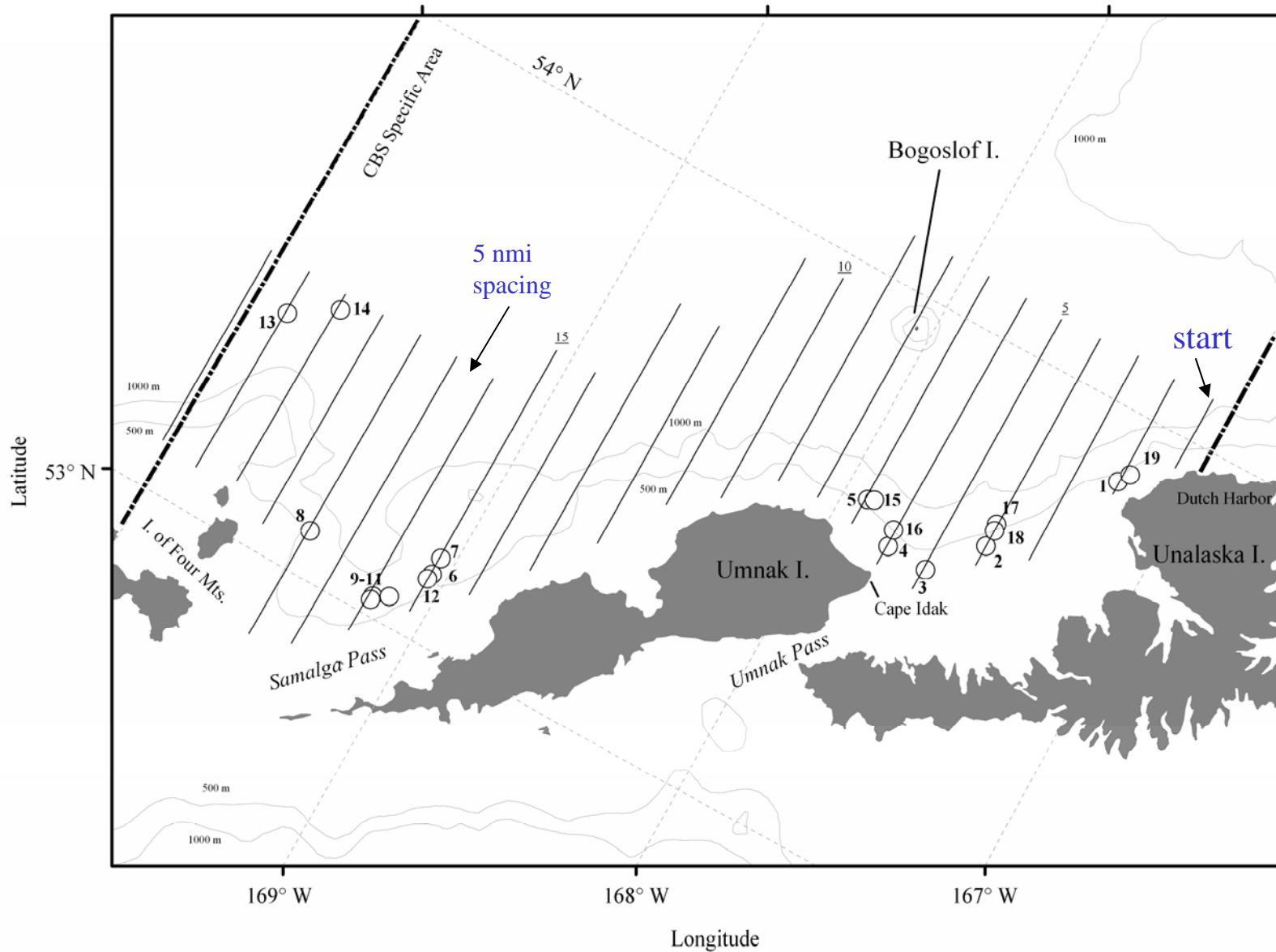


Figure 1. Trackline (22) and haul location (19 circles) from the winter 2005 echo integration-trawl survey in the Bogoslof Island area. Transect numbers are underlined. The dash-dotted line indicates the NPFMC Area 518/Central Bering Sea Specific Area.

Table 1.--Catch by primary species from 19 midwater trawl hauls during the winter 2005 echo integration-trawl survey of walleye pollock in the Bogoslof Island area.

Species Name	Scientific Name	Weight (kg)	Percent by weight	Numbers
walleye pollock	<i>Theragra chalcogramma</i>	14,489.28	94.3	12,009
Pacific ocean perch	<i>Sebastes alutus</i>	616.51	4.0	625
*other		255.45	1.7	13,137
		15361.24		25,771

* mostly lanternfish

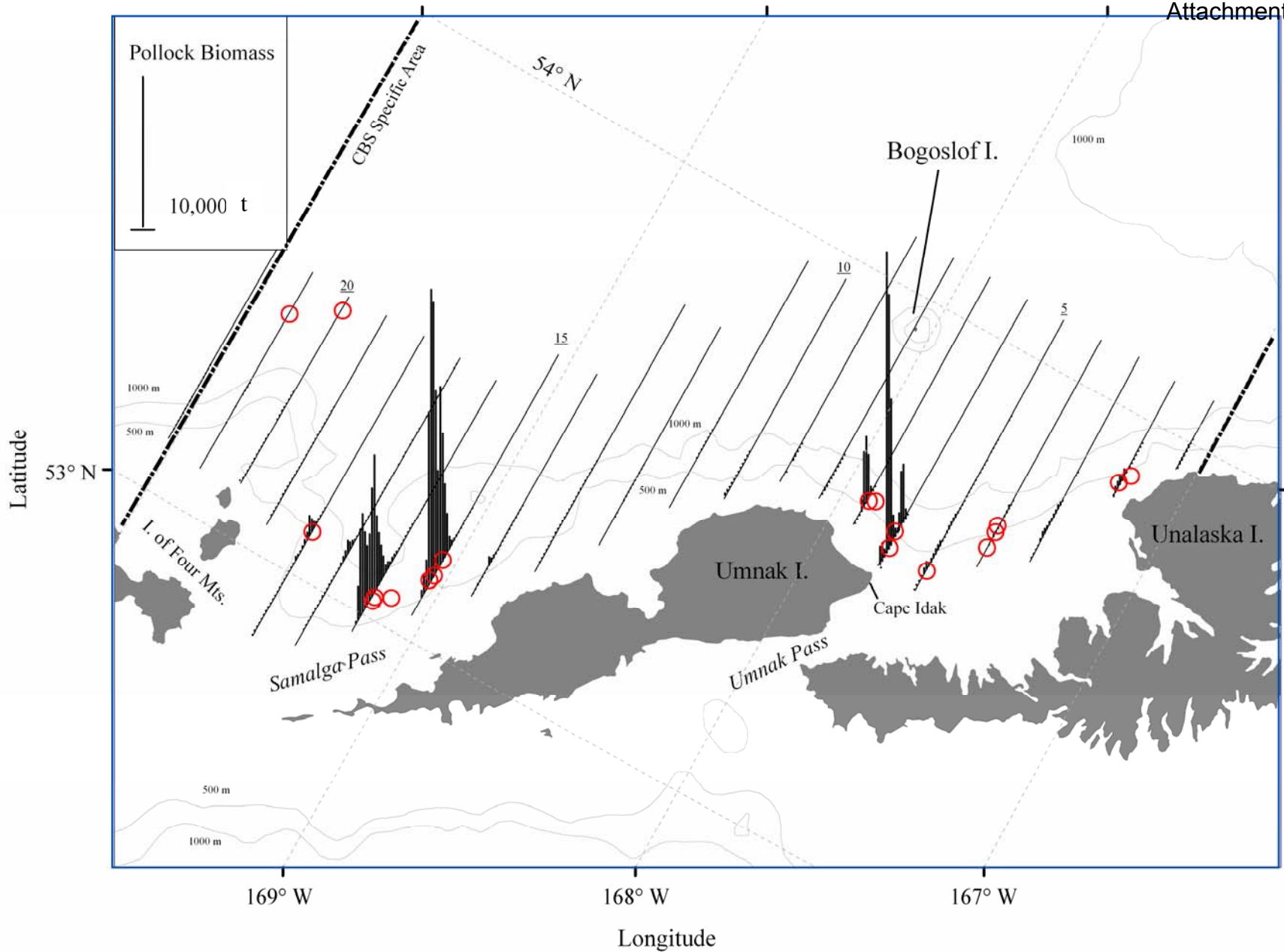


Figure 2. Trawl haul location (circles) and biomass (metric tons) attributed to pollock observed during the winter 2005 echo integration-trawl survey in the Bogoslof Island area.

Echogram of transect 15, Samalga Pass region

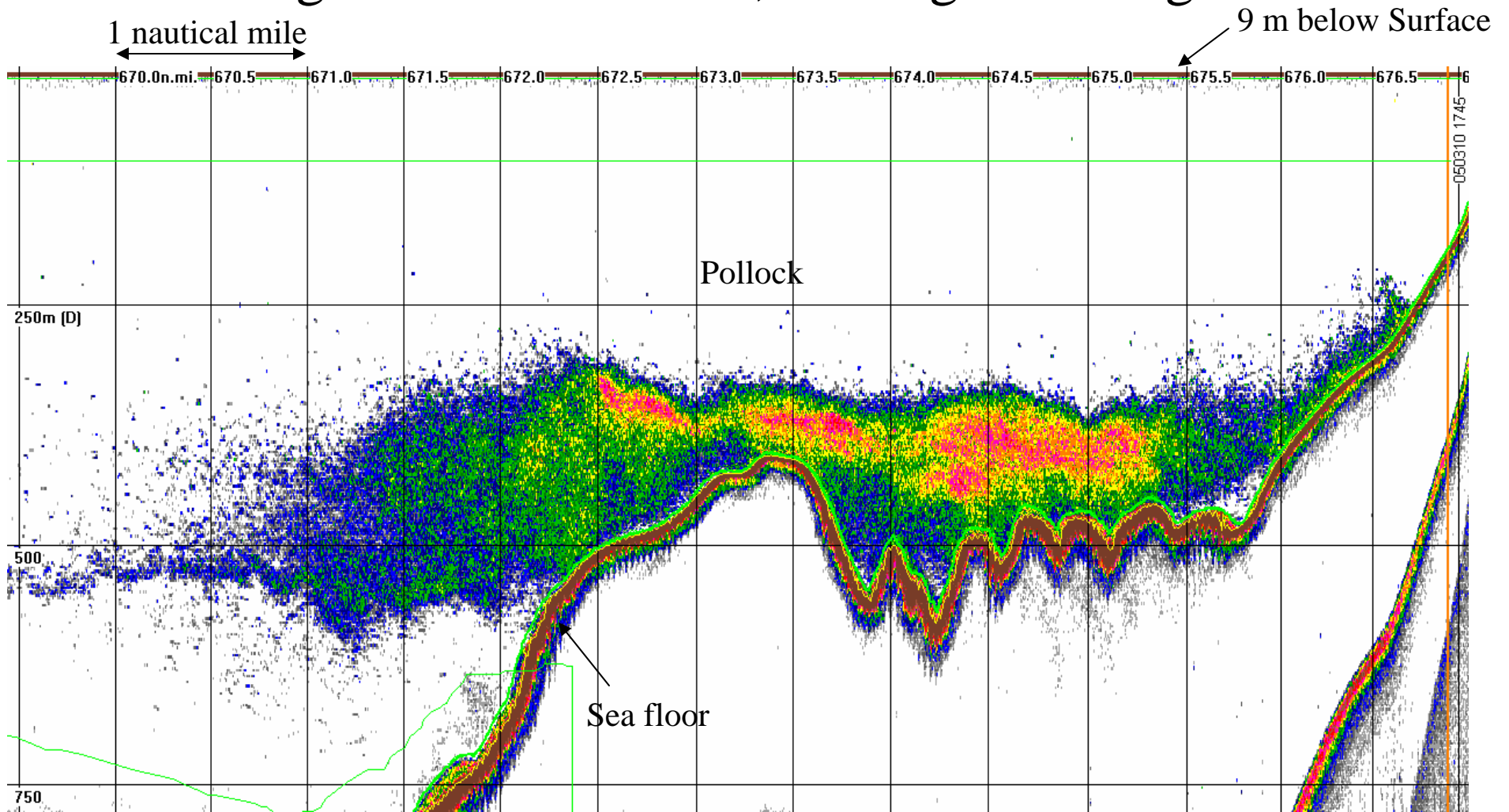


Figure 3. Pollock backscatter along transect 15, Samalga Pass region, where 3 trawl hauls were conducted.

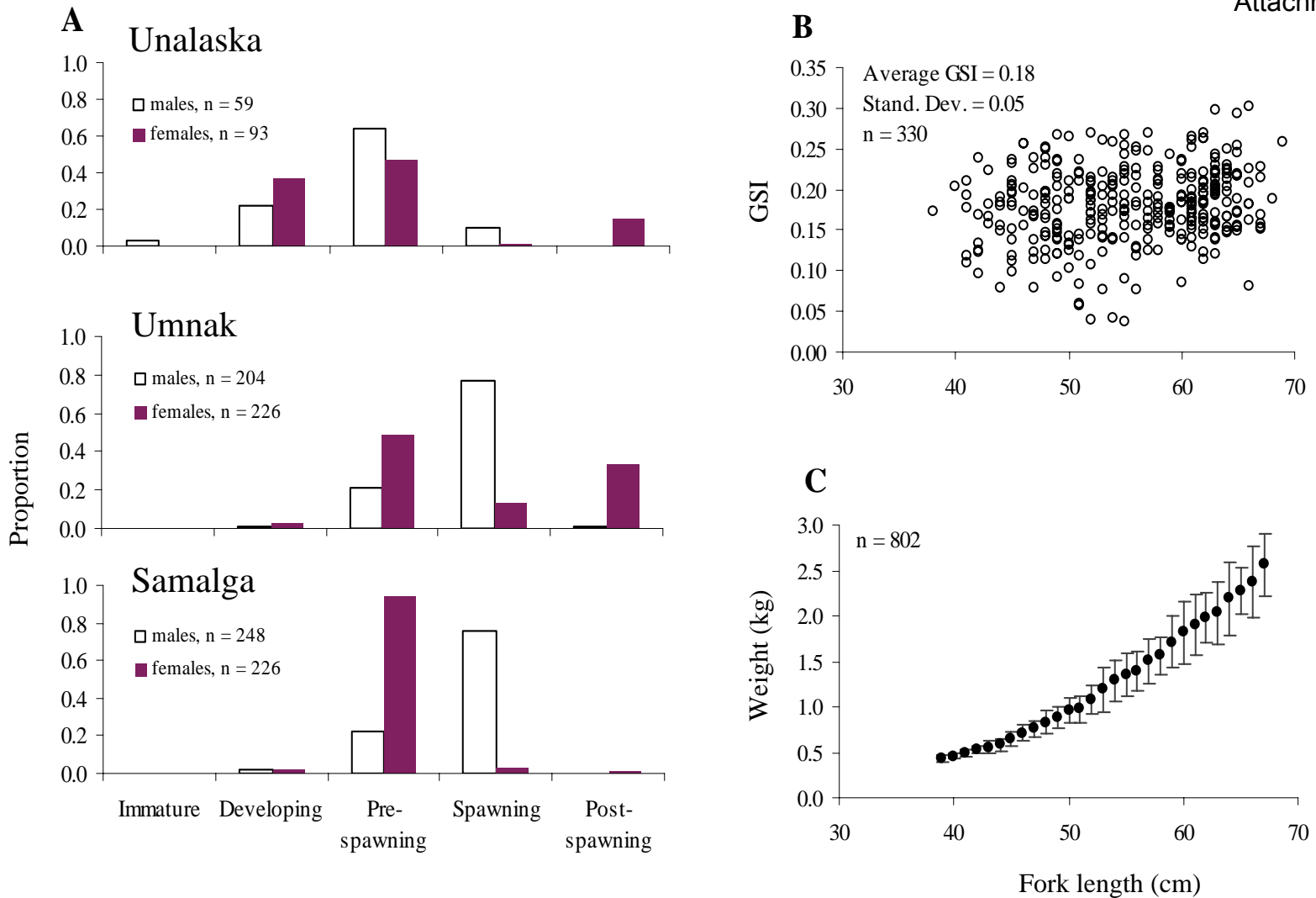


Figure 4. Pollock maturity stages for 3 length strata (A), gonado-somatic index (GSI) for pre-spawning females as a function of fork length (cm) (B), and mean weight at length, where at least 5 fish were measured (sexes combined) (C). Vertical bars indicate one standard deviation.

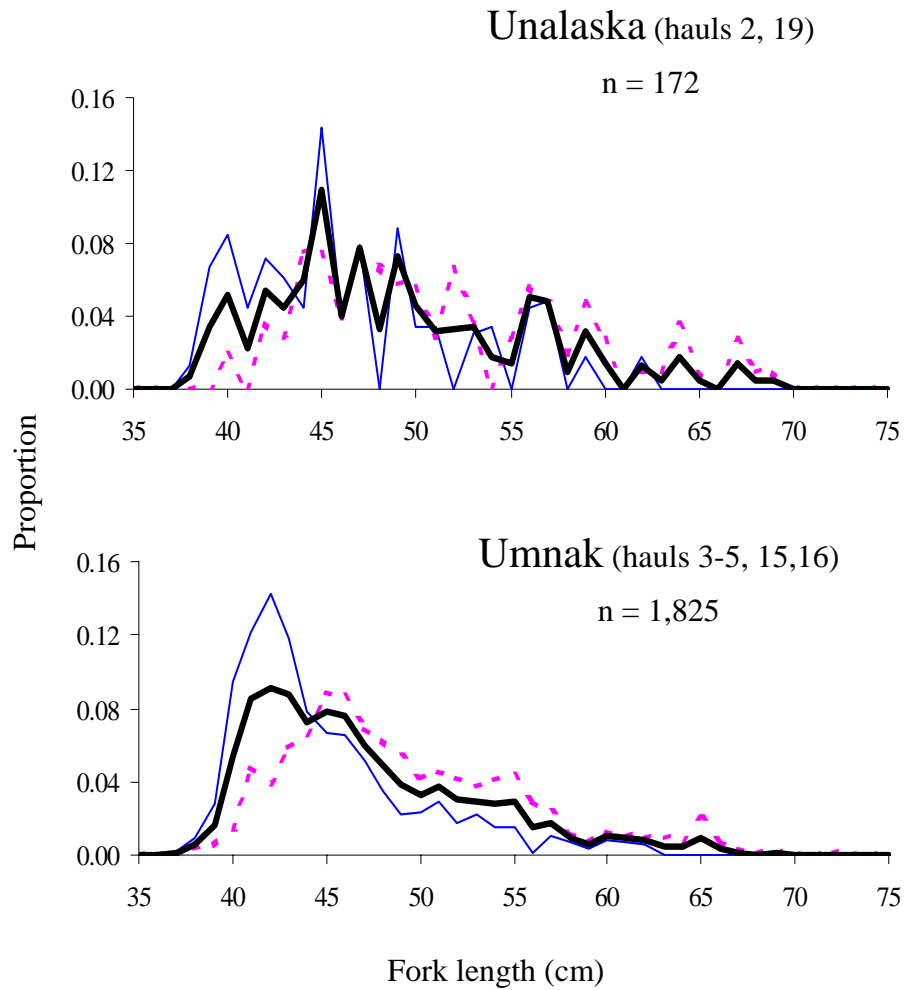


Figure 5. Pollock proportion-at-length for 3 length strata (sexes combined: bold line, males: medium line, females: dashed line)

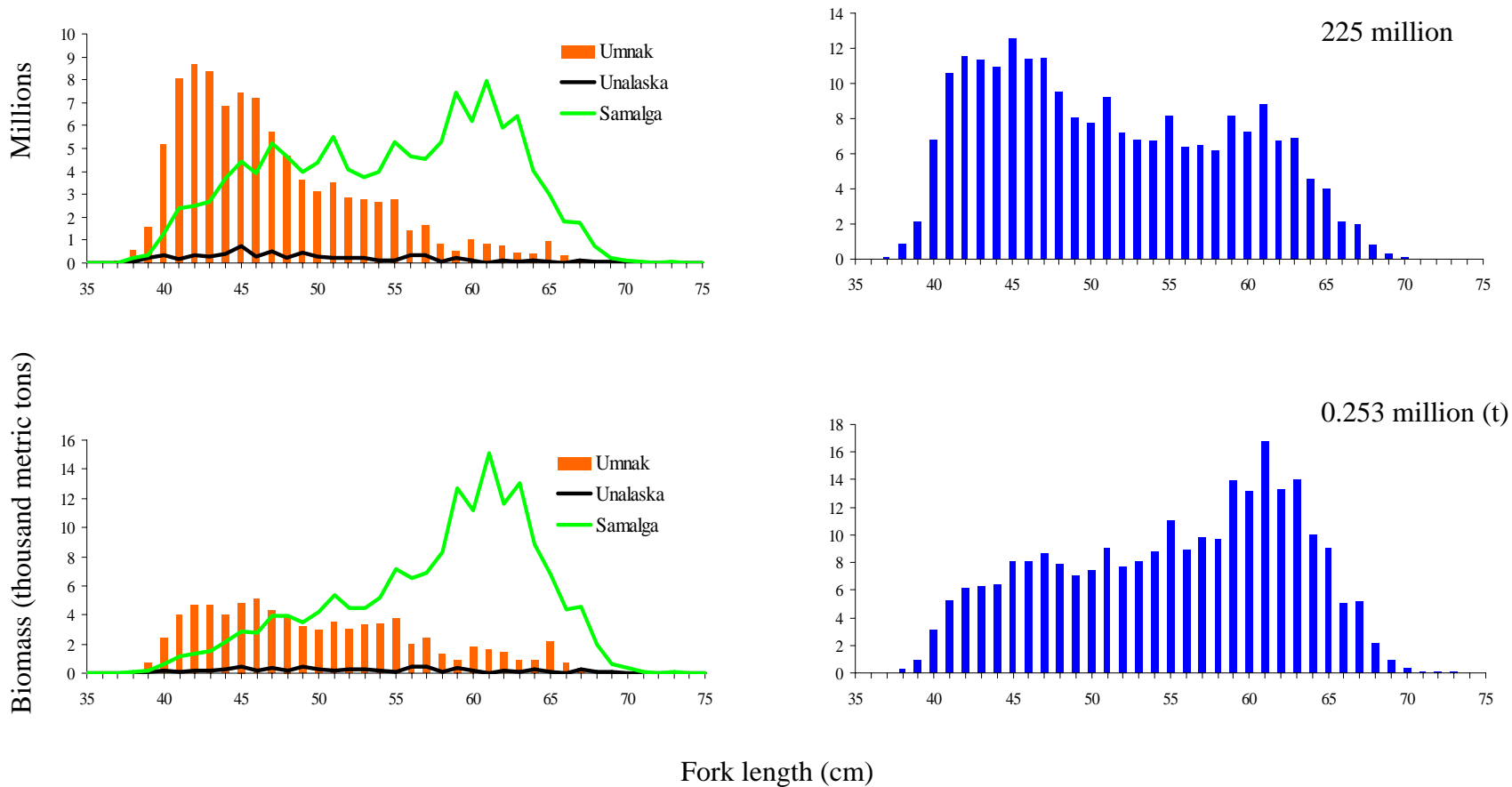


Figure 6. Population-at-length (top) and biomass-at-length (bottom) estimates from the winter 2005 echo integration-trawl survey of walleye pollock in the Bogoslof Island area.

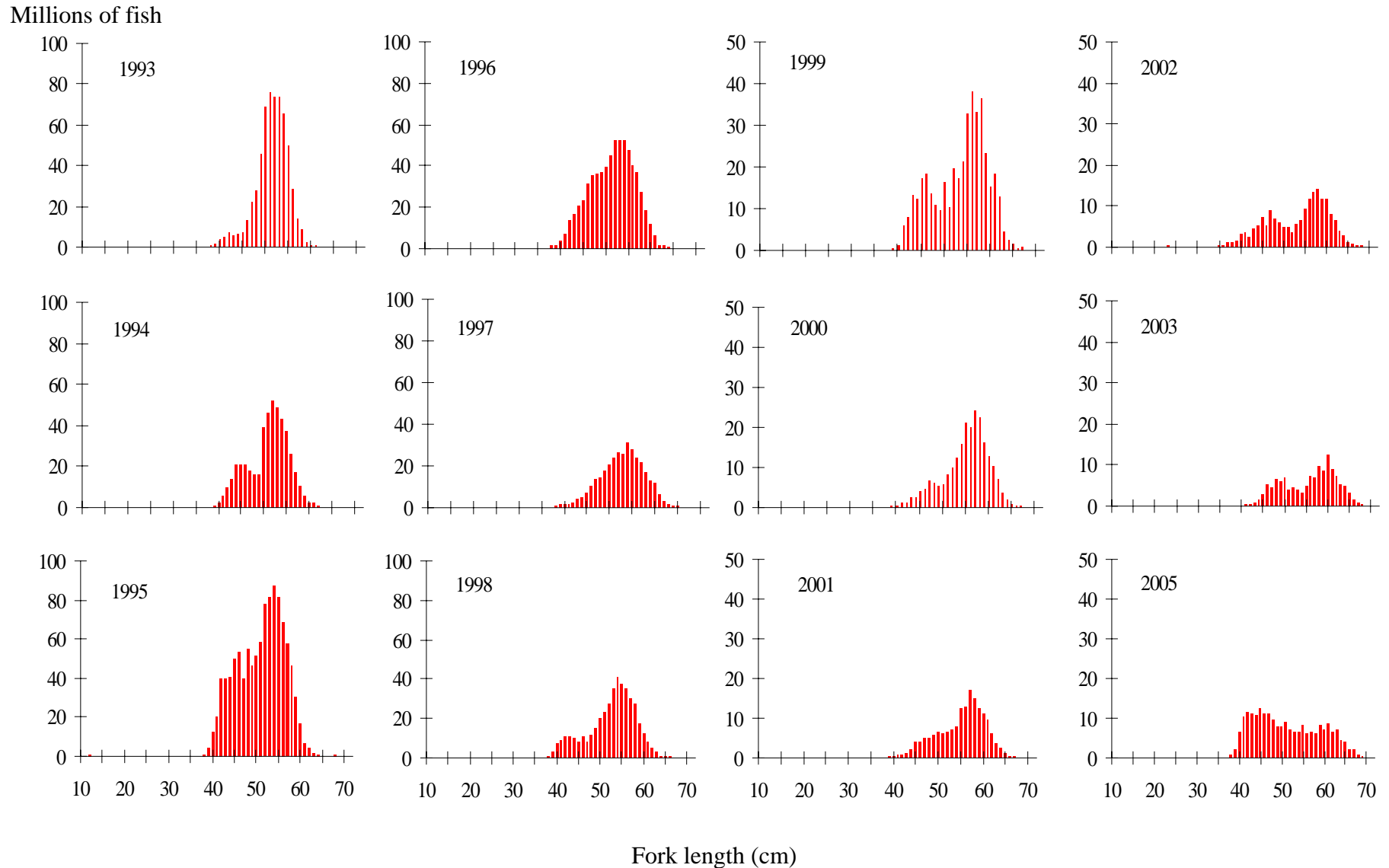


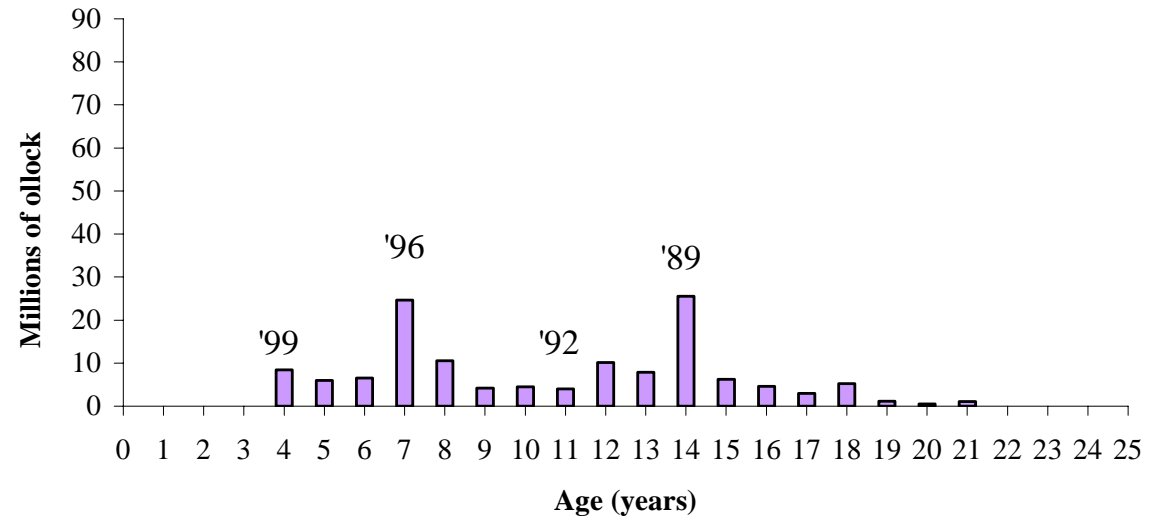
Figure 7. Numbers-at-length estimates (millions) from echo integration-trawl surveys of spawning pollock near Bogoslof Island in winter 1993-2005. The United States conducted all but the 1999 survey, which was conducted by Japan. Note y-axis scales differ.

Bogoslof EIT Numbers at age estimates (millions)

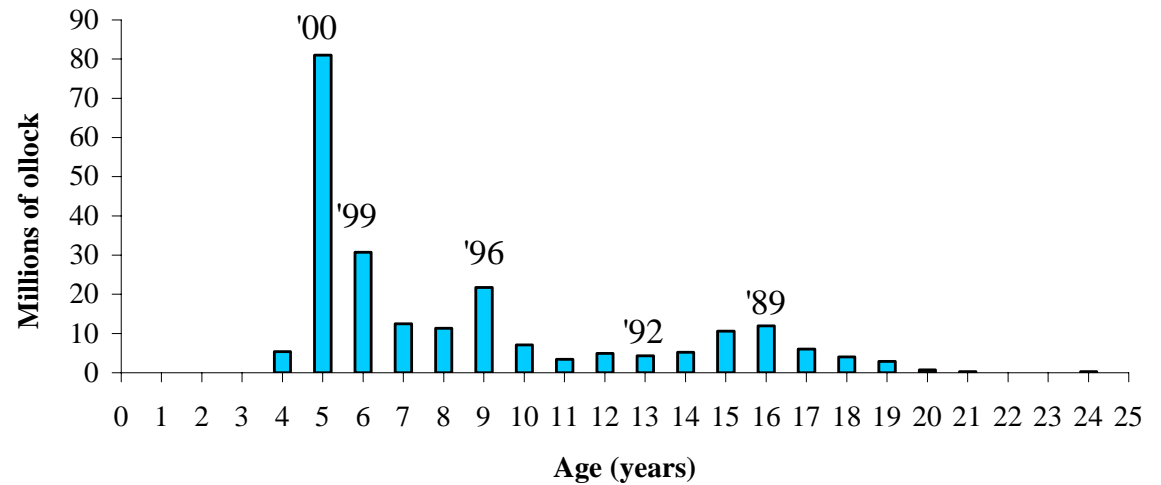
Major year classes are highlighted

Age	2003 Millions	2004 (No survey)	2005 Millions
0	0.00	-	0.00
1	0.00	-	0.00
2	0.00	-	0.00
3	0.02	-	0.00
4	8.41	-	5.38
5	5.96	-	80.99
6	6.54	-	30.73
7	24.66	-	12.52
8	10.59	-	11.32
9	4.14	-	21.78
10	4.53	-	7.14
11	4.02	-	3.42
12	10.12	-	4.95
13	7.87	-	4.35
14	25.54	-	5.25
15	6.23	-	10.63
16	4.60	-	11.96
17	2.96	-	5.99
18	5.25	-	4.07
19	1.18	-	2.83
20	0.46	-	0.75
21	1.10	-	0.23
22	0.00	-	0.00
23	0.00	-	0.00
24	0.00	-	0.26
25	0.00	-	0.00
Totals	134.19	-	224.53

2003



2005



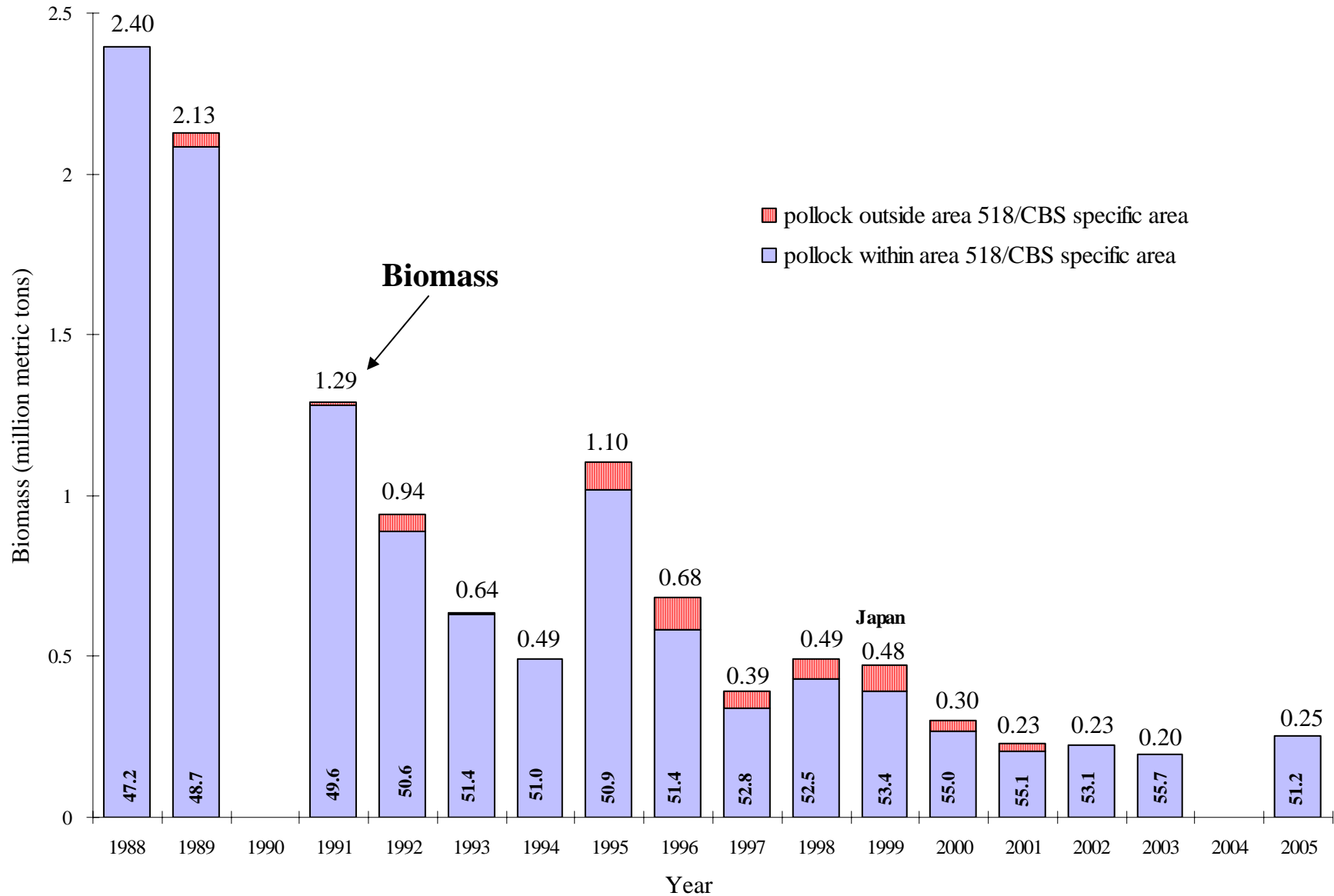
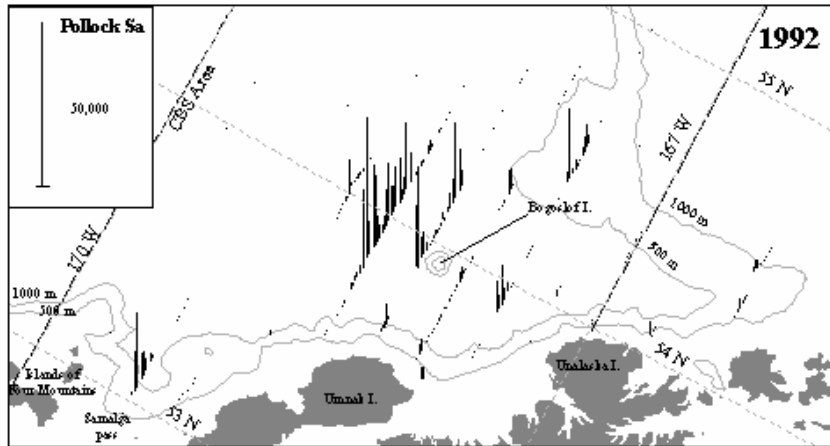


Figure 8. Biomass estimates (top of each bar) and average fork lengths (cm) (inside bar) obtained during winter echo integration-trawl surveys for walleye pollock in the Bogoslof Island area, 1988-2005. The U.S. conducted all but the 1999 survey, which was conducted by Japan.

3 Periods of Bogoslof pollock

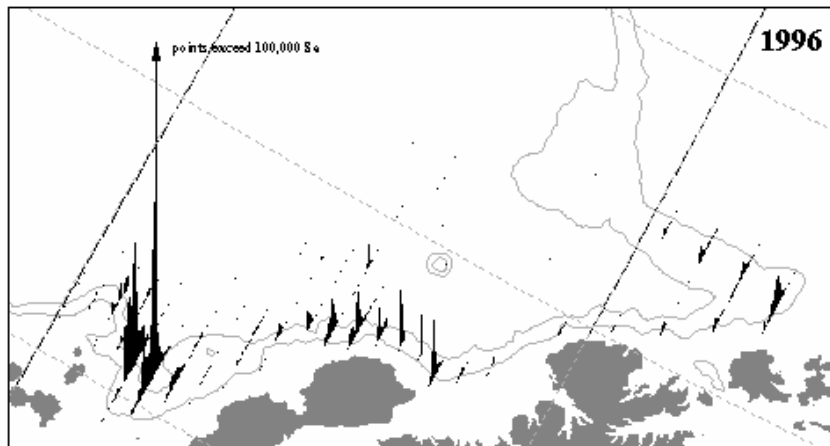


1988 – 1993

Surrounded Bogoslof Island

1978 year class dominated

Avg est. biomass 1.456 million t

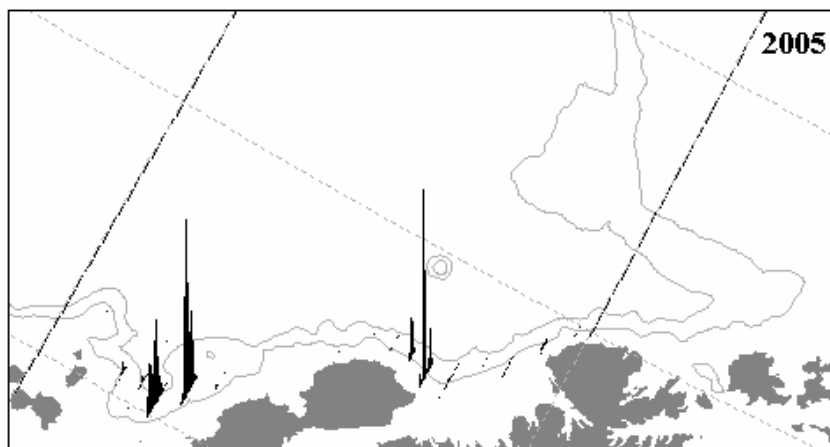


1994 – 1999

Samalga Pass and N Aleutian Is.

1989 year class dominated (1992)

Avg est. biomass 0.543 million t



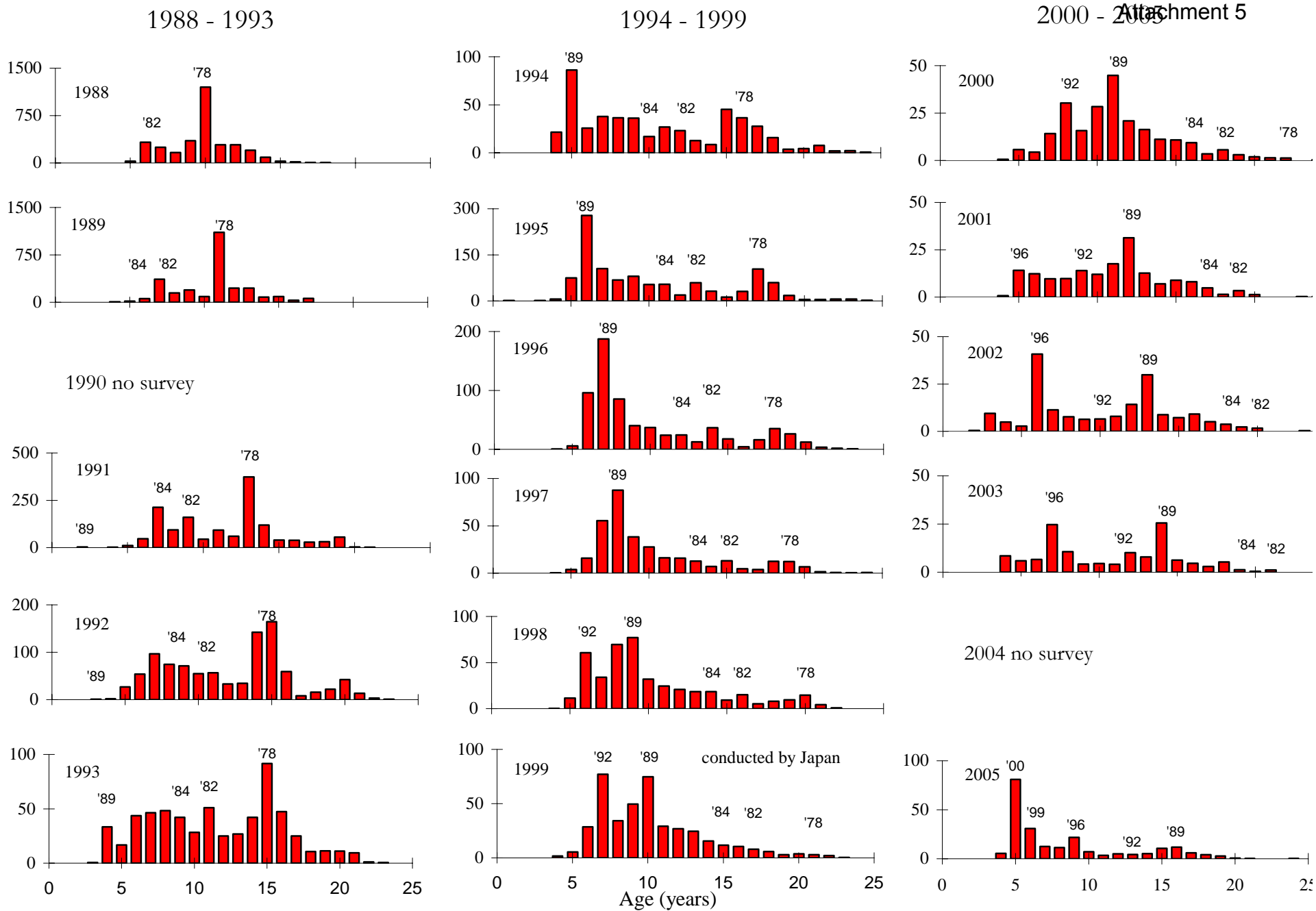
2000 – present

Samalga Pass and NE Umnak

1989 alternates w/ 1996

2000 and 1999 y.c. in 2005

Avg est. biomass 0.231 million t



Numbers-at-age estimates (millions) from EIT surveys of pollock near Bogoslof Island. Major year classes on the EBS shelf are indicated. Y-axes differ.

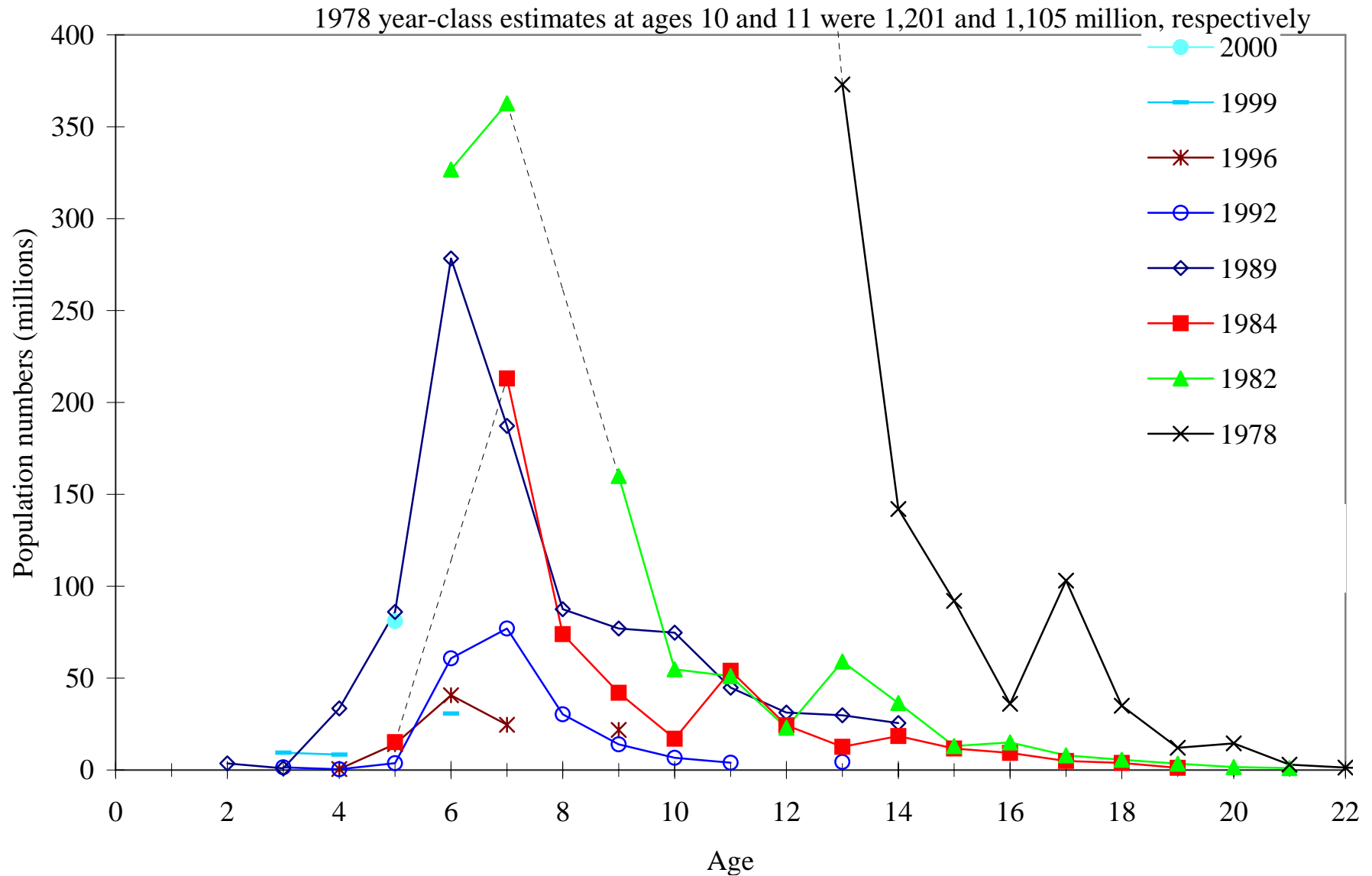


Figure 13.--Estimated population numbers at age for dominant year classes from EIT surveys of Bogoslof Island pollock between 1988 and 2005. The 1999 survey was conducted by Japan. No surveys were conducted in 1990 (dashed lines) or 2004.

2006 Bogoslof EIT survey

Oscar Dyson *Miller Freeman*

~March 4-12 2006

Purpose: tracking recruitment of 2000 year class
intership calibration

CBS Convention nations invited to participate



Results from the 2004 summer Bering Sea shelf pollock EIT^{Attachment 5}
survey



Transect lines and trawl haul stations for the summer 2004 Bering Sea shelf pollock EIT survey.

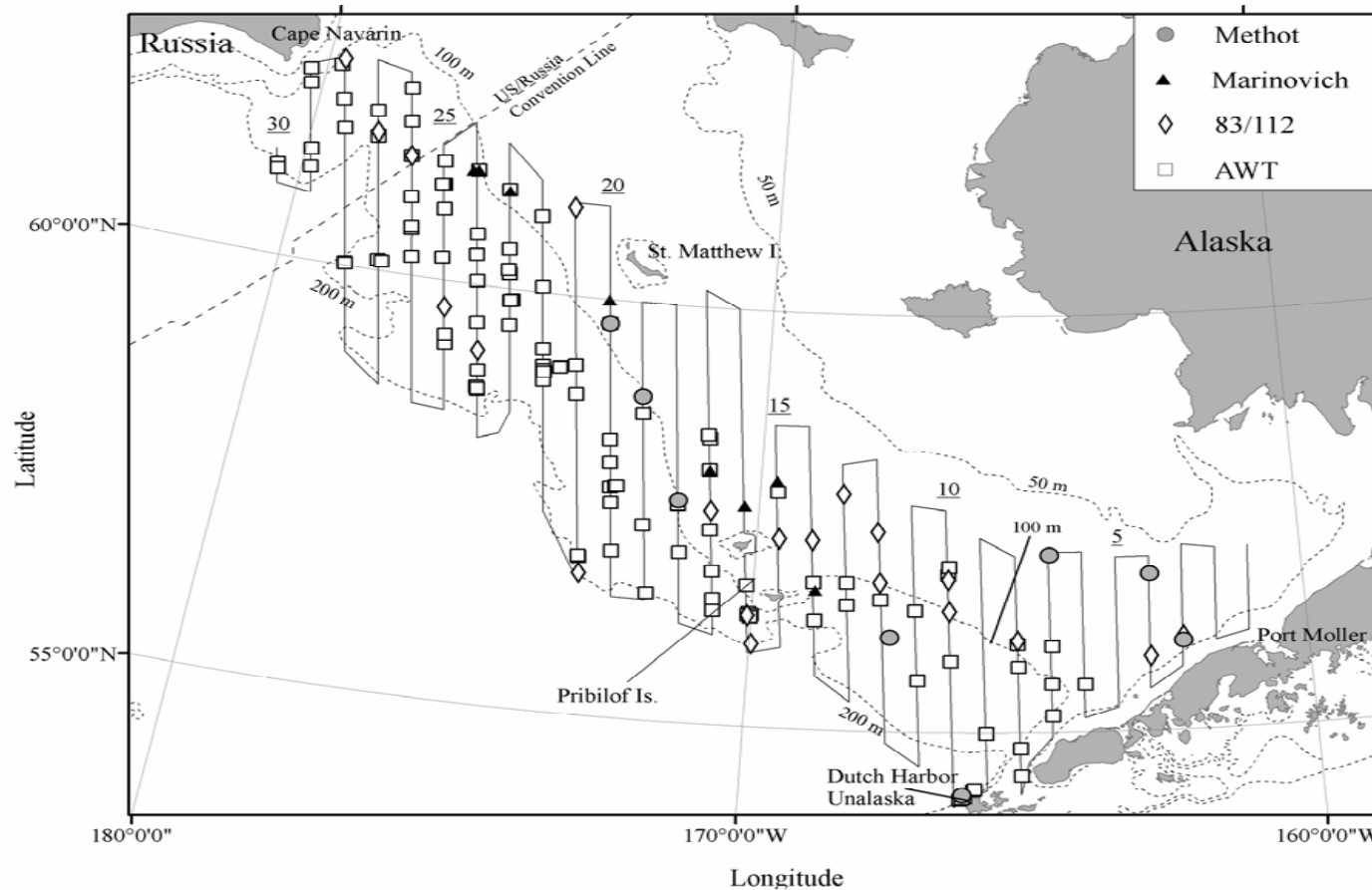
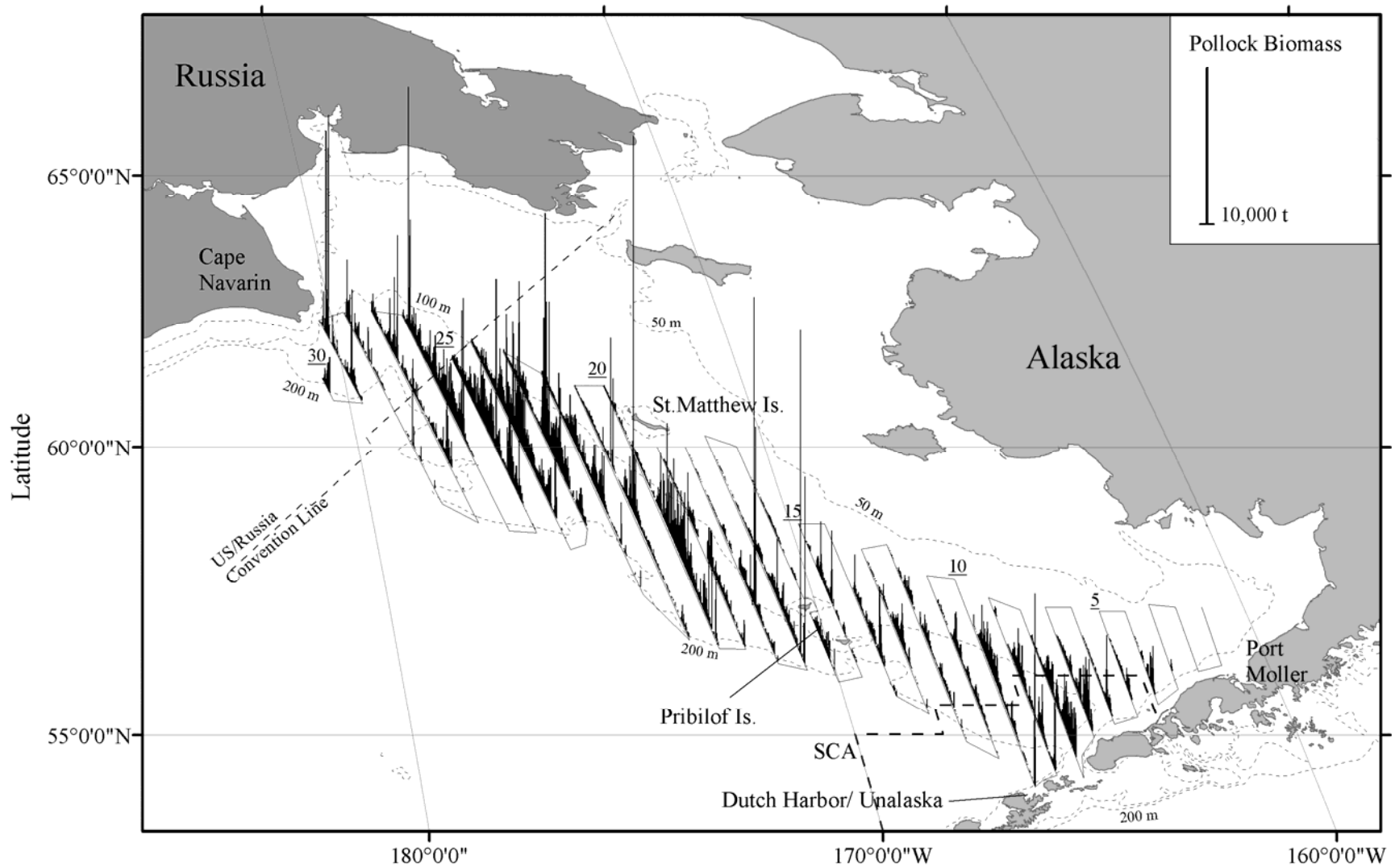
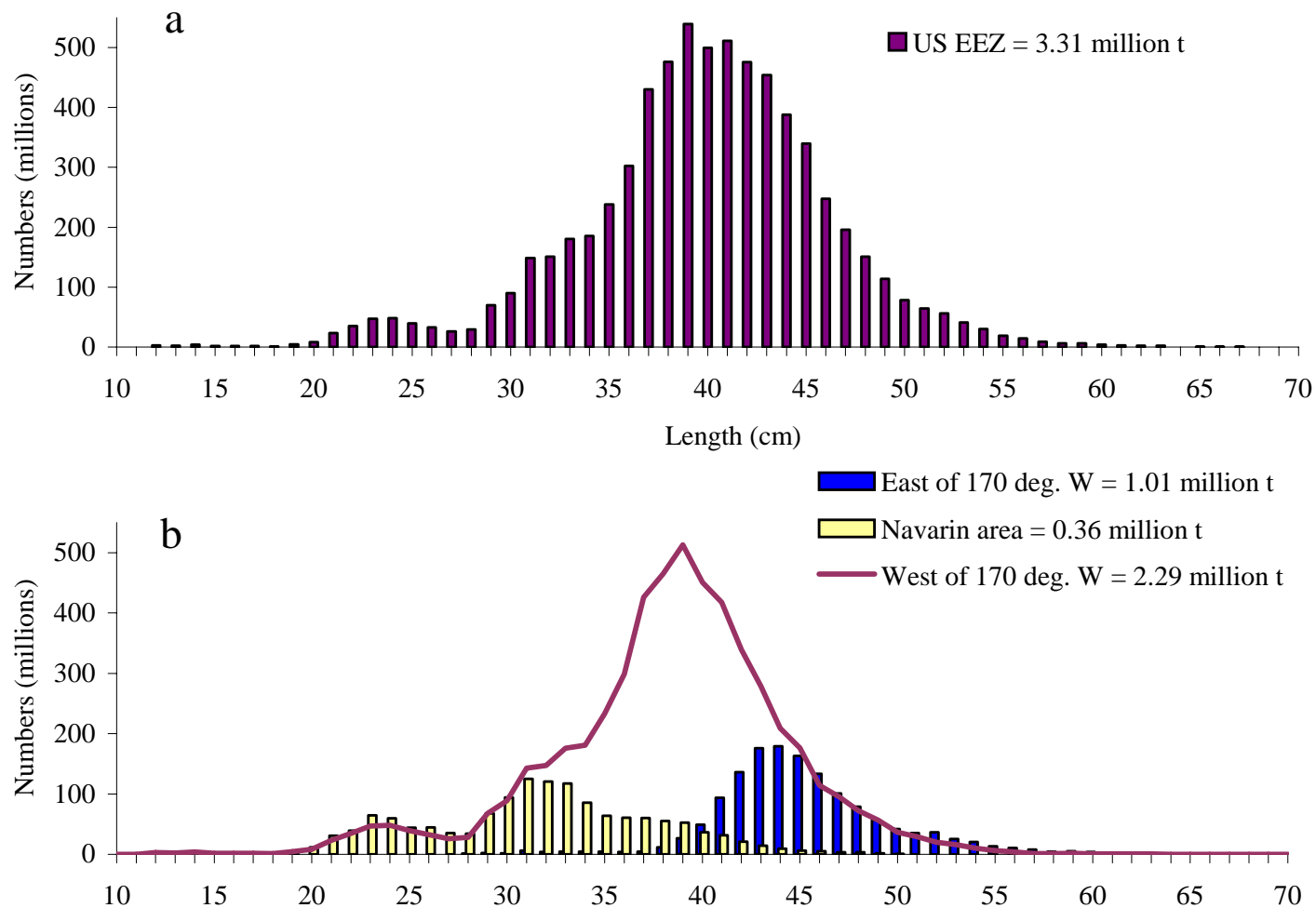


Figure 1. Transect lines with locations of midwater (Aleutian wing trawl), bottom (83/112), Marinovich, and Methot trawl hauls during the summer 2004, echo integration-trawl survey of pollock on the Bering sea shelf, MF2004-08. Transect numbers are underlined.



Pollock biomass along tracklines from the summer 2004
Bering Sea shelf pollock EIT survey.



Estimated pollock length composition in a) the US EEZ and b) east and west of 170 W and in the Cape Navarin area during the summer 2004 EIT survey of the Bering Sea shelf.

Table 8.--Abundance of pollock by area from summer echo integration-trawl surveys on the U.S. EEZ portion of the Bering Sea shelf, 1994-2004. Data are estimated pollock biomass between near surface and 3 m off bottom. Relative estimation error for the acoustic data is indicated.

Date	Area (nmi) ²	Biomass (million metric tons, top) and percent of total (bottom)			Total Biomass (million metric tons)	Relative estimation error	
		SCA	E170-SCA	W170			
Summer 1994	9 Jul-19 Aug	78,251	0.312 10.8	0.399 13.8	2.18 75.4	2.89	0.047
Summer 1996	20 Jul-30 Aug	93,810	0.215 9.3	0.269 11.7	1.83 79.0	2.31	0.039
Summer 1997	17 Jul-4 Sept	102,770	0.246 9.5	0.527 20.3	1.82 70.2	2.59	0.037
Summer 1999	7 Jun-5 Aug	103,670	0.299 9.1	0.579 17.6	2.41 73.2	3.29	0.055
Summer 2000	7 Jun-2 Aug	106,140	0.393 12.9	0.498 16.3	2.16 70.8	3.05	0.032
Summer 2002	4 Jun -30 Jul	99,526	0.647 17.9	0.797 22.0	2.18 60.1	3.62	0.031
Summer 2004	4 Jun -29 Jul	99,659	0.498 15.1	0.516 15.6	2.29 69.3	3.31	0.037

SCA = Sea lion Conservation Area
E170 - SCA = East of 170°W minus SCA
W170 = West of 170°W

RV Oscar Dyson

