

ROUNDFISHES

Walleye pollock (*Theragra chalcogramma*)

Walleye pollock was the fifth most abundant species caught in the 2007 survey (Table 2). Pollock were caught throughout the survey area in 52 of the 59 survey strata and at all depths less than 700 m (Fig. 17, Table 27). They were most abundant at depths less than 300 m, where they occurred in 73% of the tows, including 92% of the tows at depths between 201 and 300 m (Table 27). The highest densities occurred in bays around Kodiak Island and the Alaska Peninsula, with particularly high CPUEs recorded in the Albatross Shallows (Table 28). Mean weight increased with depth to 500 m in three of the five INPFC areas (Shumagin, Yakutat, Southeastern), but there was no consistent trend in mean weight with depth in the Chirikof and Kodiak areas. A distinct length mode of juveniles (both males and females) occurred around 20 cm at depths less than 200 m in the Yakutat INPFC area and at approximately 15 cm in the Shumagin, Chirikof, and Kodiak INPFC areas. The corresponding mode in the Southeastern area was not as well-defined as in the other areas but occurred at approximately 20 cm (Fig. 18).

Other notable length modes occurred at approximately 40 to 45 cm (females at the higher end of the range) in the 201 to 300 m depth range of the Yakutat and Southeastern areas and at approximately 50 to 55 cm (again, with females at the higher end of the range) in the Shumagin area. There were no prominent length modes at this depth range the Chirikof and Kodiak INPFC areas. The sex ratio of the walleye pollock population in the survey area was relatively even, with females comprising approximately 54% of the total estimated population.

Table 27. -- Number of survey hauls, number of hauls with walleye pollock, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

INPFC area	Depth (m)	Number of hauls	Hauls with catch	Mean CPUE (kg/ha)	Estimated biomass (t)	Lower 95% biomass CI (t)	Upper 95% biomass CI (t)	Mean weight (kg)
Shumagin	1 - 100	133	97	13.304	54,933	20,435	89,430	0.470
	101 - 200	39	29	26.780	39,305	9,991	68,619	0.931
	201 - 300	17	15	11.844	3,302	1,263	5,341	1.113
	301 - 500	9	1	0.283	72	0	234	1.546
	501 - 700	5	1	0.075	15	0	54	0.974
	701 - 1000	2	0	---	---	---	---	---
	All depths		205	143	14.967	97,627	52,703	142,551
Chirikof	1 - 100	82	51	20.339	52,953	6,696	99,209	0.863
	101 - 200	69	47	8.121	19,369	0	53,051	0.907
	201 - 300	26	24	15.639	18,056	10,119	25,994	0.457
	301 - 500	10	2	1.202	193	0	589	1.280
	501 - 700	7	1	0.044	9	0	29	1.000
	701 - 1000	5	0	---	---	---	---	---
	All depths		199	125	13.310	90,580	33,668	147,491
Kodiak	1 - 100	97	53	13.891	53,502	14,860	92,143	0.262
	101 - 200	127	97	4.086	17,705	8,188	27,221	0.622
	201 - 300	30	29	8.553	9,828	6,365	13,291	0.503
	301 - 500	10	4	0.387	113	0	252	1.407
	501 - 700	6	1	0.029	5	0	17	0.240
	701 - 1000	4	1	0.101	35	0	134	1.603
	All depths		274	185	7.999	81,187	41,654	120,721
Yakutat	1 - 100	11	9	2.483	4,137	807	7,467	0.090
	101 - 200	33	31	2.928	8,603	4,730	12,476	0.274
	201 - 300	17	15	13.048	6,746	3,227	10,265	0.570
	301 - 500	9	5	1.057	278	0	706	0.914
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths		76	60	3.455	19,763	13,850	25,677
Southeastern	1 - 100	11	7	24.526	16,055	0	48,791	0.336
	101 - 200	22	17	5.780	6,406	2,196	10,617	0.413
	201 - 300	17	15	5.477	2,767	883	4,652	0.616
	301 - 500	11	2	5.900	1,839	0	6,185	0.804
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths		66	41	9.654	27,068	0	60,396
All areas	1 - 100	334	217	14.071	181,579	106,675	256,483	0.381
	101 - 200	290	221	7.471	91,388	46,184	136,592	0.657
	201 - 300	107	98	11.291	40,700	31,112	50,288	0.519
	301 - 500	49	14	1.950	2,494	0	6,872	0.870
	501 - 700	24	3	0.035	29	0	72	0.636
	701 - 1000	16	1	0.030	35	0	134	1.603
	All depths		820	554	9.882	316,225	229,522	402,927

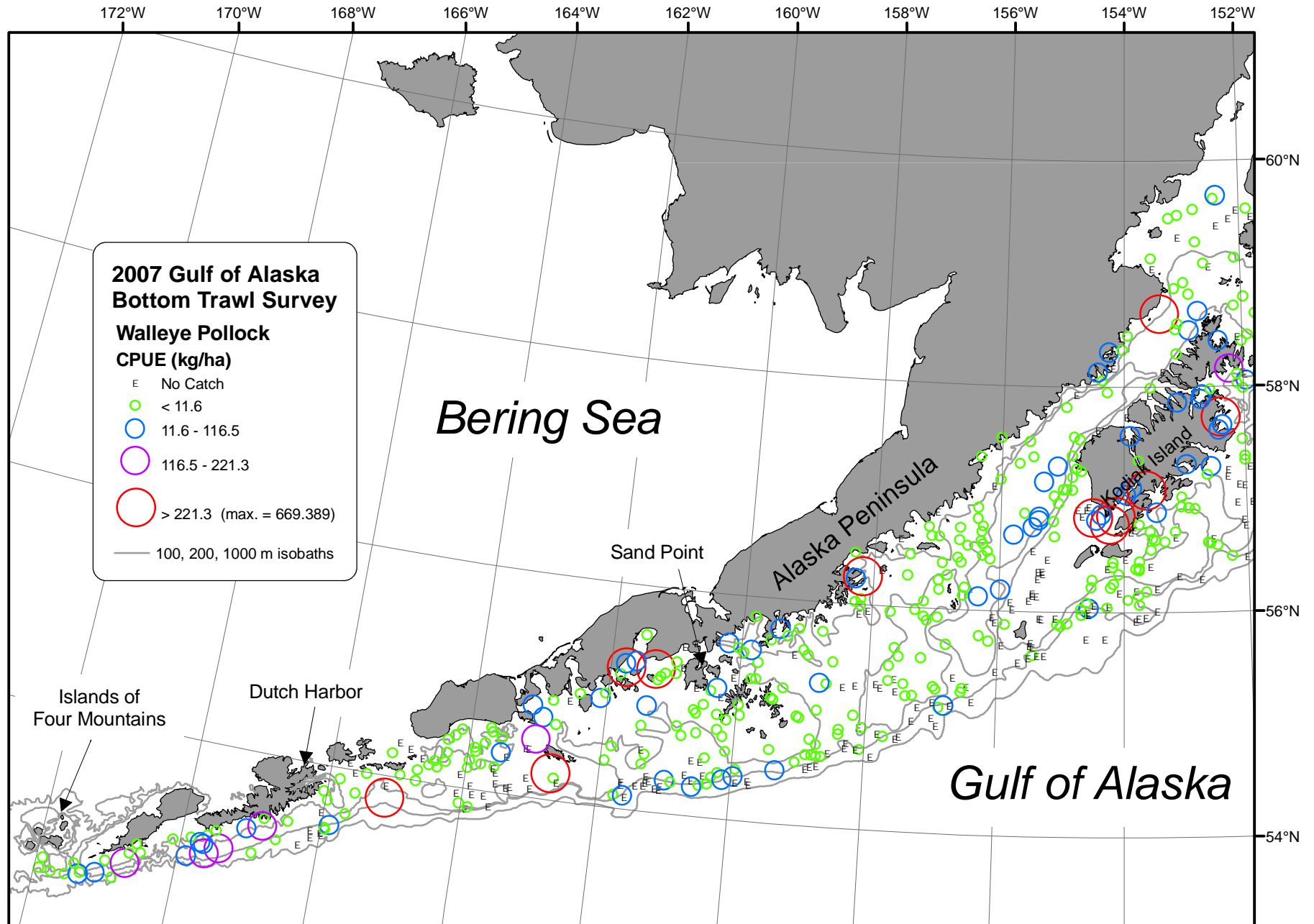


Figure 17. -- Distribution and relative abundance of walleye pollock from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

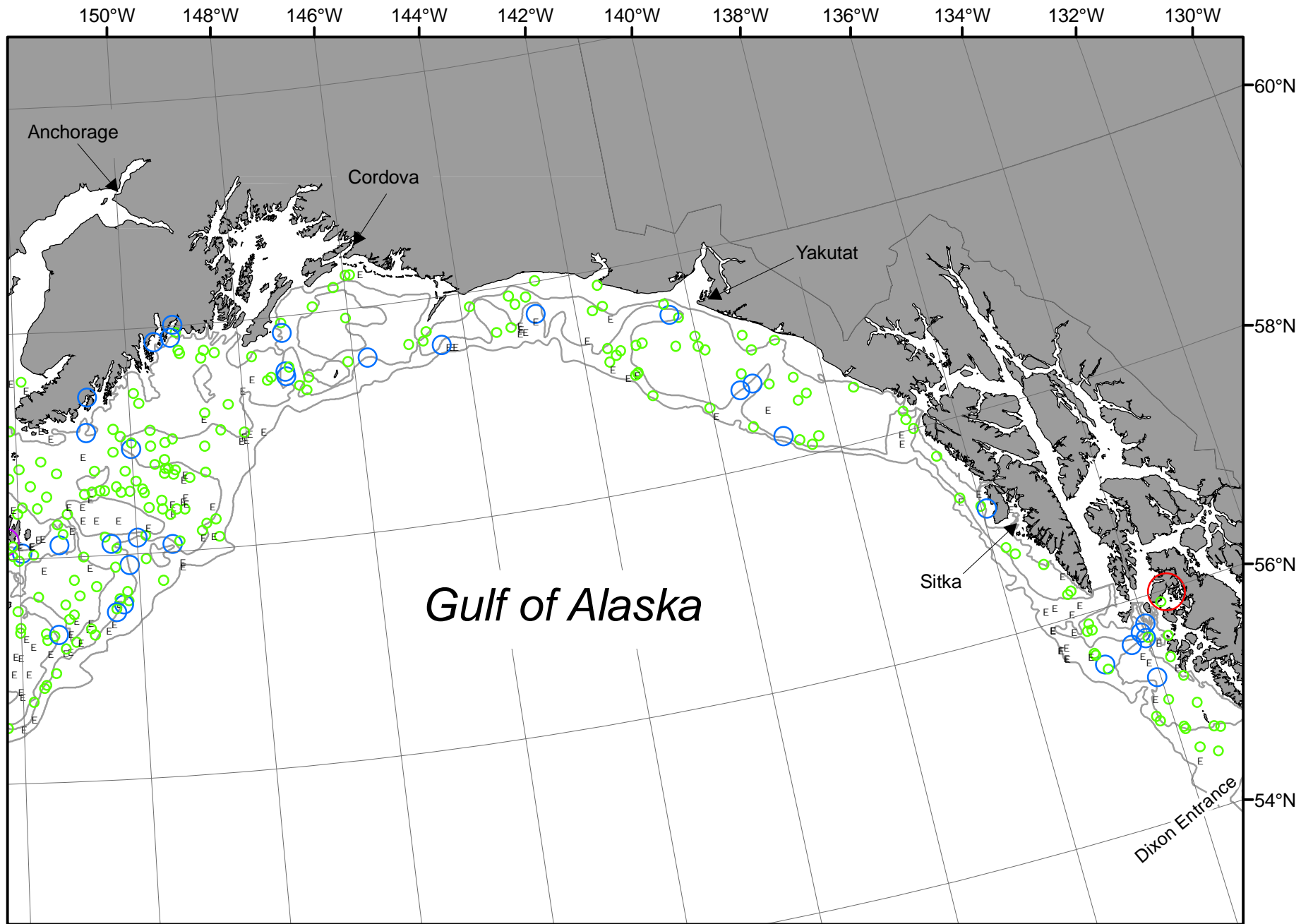


Figure 17. -- Continued (walleye pollock 2007).

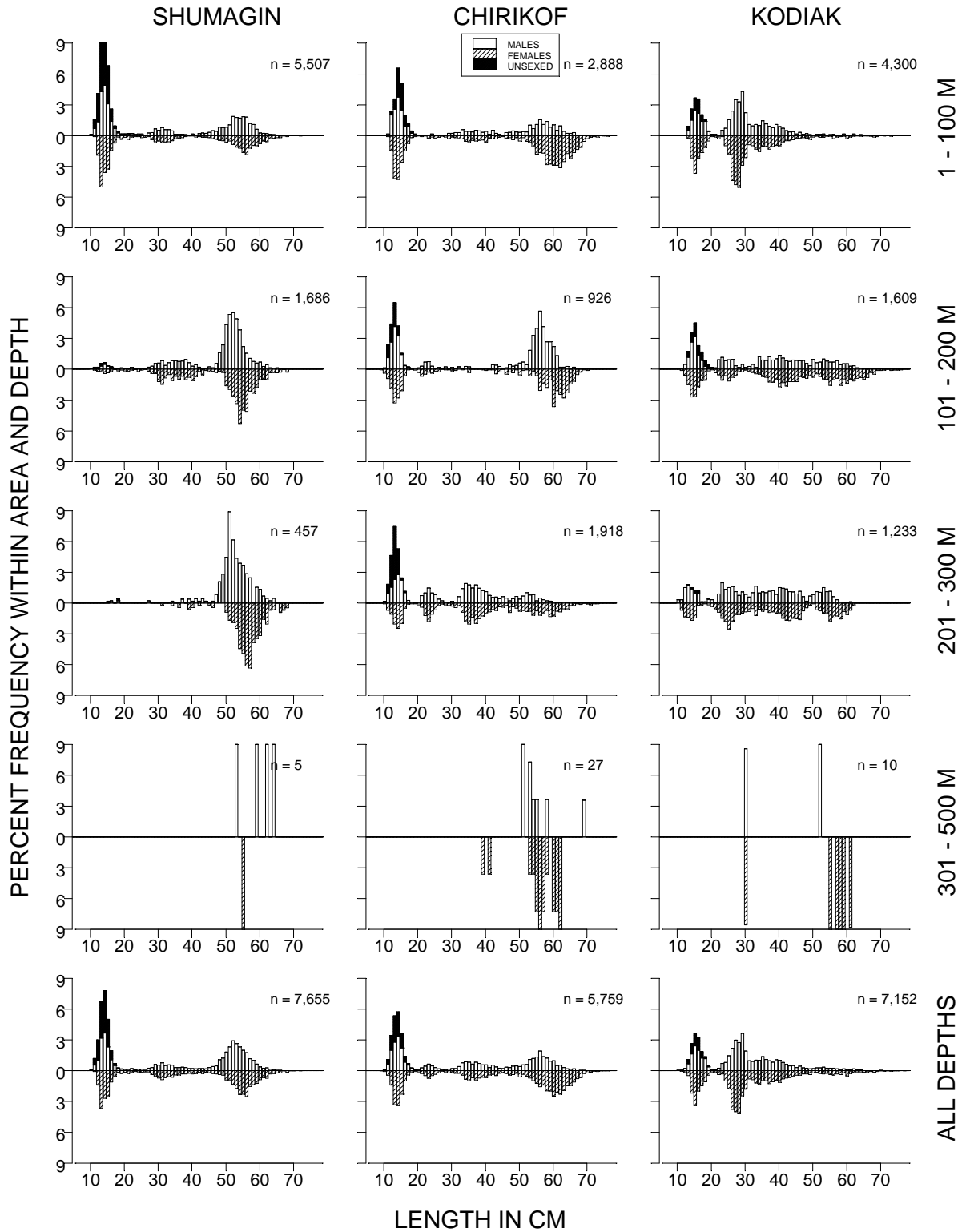


Figure 18. -- Size composition of walleye pollock from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

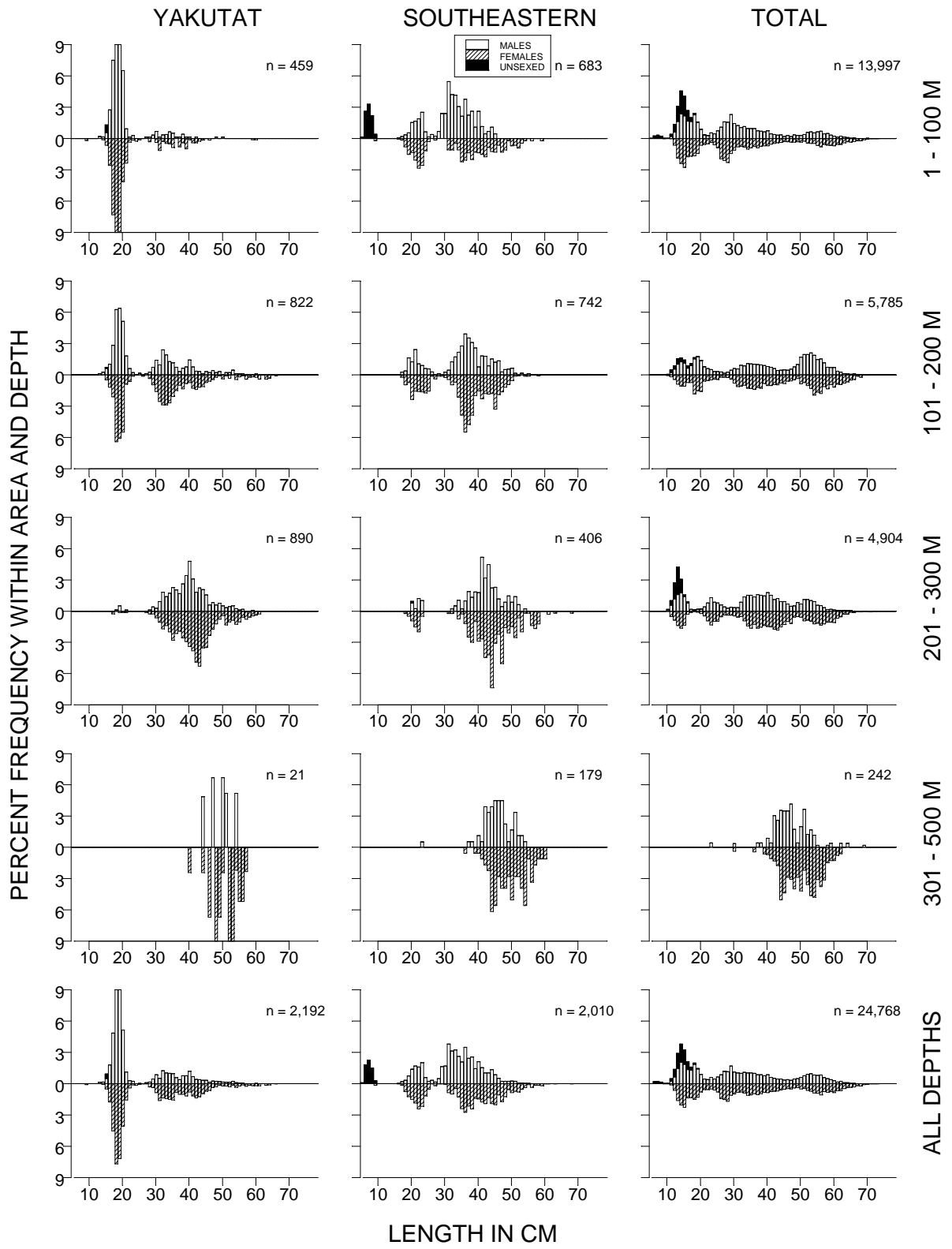


Figure 18. -- (continued).

Table 28. -- Catch per unit of effort by stratum for walleye pollock sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

INPFC area	Depth range	Stratum name	Number	Hauls	CPUE (kg/ha)	Biomass (t)	Lower	Upper
			of hauls	with catch			CI biomass	CI biomass
Kodiak	1 - 100	Albatross Shallows	28	18	64.62	37,259	0	74,802
Shumagin	101 - 200	Shumagin Outer Shelf	28	21	39.31	32,055	3,546	60,564
Shumagin	1 - 100	Lower Alaska Peninsula	28	22	37.52	25,795	2,363	49,227
Chirikof	1 - 100	Chirikof Bank	40	19	31.65	34,154	0	70,846
Shumagin	101 - 200	West Shumagin Gully	4	3	29.45	6,708	0	18,162
Southeastern	1 - 100	Southeastern Shallows	11	7	24.53	16,055	0	49,192
Chirikof	1 - 100	Upper Alaska Peninsula	19	14	23.27	18,478	0	48,263
Kodiak	1 - 100	Kenai Peninsula	7	5	20.38	10,721	29	21,413
Chirikof	201 - 300	Lower Shelikof Gully	18	18	17.02	17,045	9,114	24,976
Chirikof	101 - 200	East Shumagin Gully	17	13	16.34	18,142	0	51,973
Yakutat	201 - 300	Yakutat Gullies	8	8	15.40	4,686	1,599	7,773
Shumagin	1 - 100	Davidson Bank	48	28	12.47	17,056	0	40,234
Shumagin	201 - 300	Shumagin Slope	17	15	11.84	3,302	1,254	5,351
Kodiak	201 - 300	Kodiak Slope	7	6	11.50	1,867	0	4,067
Shumagin	1 - 100	Fox Islands	21	16	10.35	8,625	0	20,487
Kodiak	201 - 300	Kenai Gullies	19	19	10.13	6,743	3,954	9,532
Yakutat	201 - 300	Yakutat Slope	9	7	9.68	2,060	0	4,189
Kodiak	101 - 200	Albatross Gullies	28	25	8.72	6,901	1,051	12,751
Southeastern	301 - 500	Southeastern Deep Gullies	7	2	7.84	1,839	0	6,336
Southeastern	101 - 200	Prince of Wales Shelf	14	10	6.96	4,796	714	8,879
Chirikof	201 - 300	Chirikof Slope	8	6	6.62	1,011	115	1,908
Kodiak	1 - 100	Northern Kodiak Shallows	9	5	6.40	1,407	0	3,502
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	12	6.39	2,510	613	4,406
Yakutat	101 - 200	Middleton Shelf	9	9	5.27	3,869	642	7,095
Kodiak	101 - 200	Barren Islands	18	17	4.88	5,358	0	12,121
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	7	3.84	1,610	165	3,054
Kodiak	201 - 300	Upper Shelikof Gully	4	4	3.80	1,218	0	2,861
Kodiak	101 - 200	Kenai Flats	18	15	3.59	4,336	532	8,140
Yakutat	101 - 200	Fairweather Shelf	8	8	3.44	2,658	179	5,137
Kodiak	1 - 100	Lower Cook Inlet	14	8	3.05	3,015	0	6,893
Shumagin	1 - 100	Shumagin Bank	36	31	2.79	3,458	0	7,139
Yakutat	1 - 100	Yakutat Shallows	6	5	2.74	2,727	0	6,081
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	2.29	258	125	390
Yakutat	1 - 100	Middleton Shallows	5	4	2.10	1,410	0	2,880
Yakutat	301 - 500	Yakutat Gullies	2	2	2.08	230	0	1,433
Yakutat	101 - 200	Yakutat Flats	8	8	1.92	1,733	205	3,262
Chirikof	101 - 200	Shelikof Edge	27	22	1.50	1,162	383	1,941
Kodiak	101 - 200	Portlock Flats	35	26	1.42	1,044	512	1,577
Shumagin	101 - 200	Sanak Gully	7	5	1.28	542	0	1,322
Chirikof	301 - 500	Chirikof Slope	10	2	1.20	193	0	595
Kodiak	1 - 100	Albatross Banks	39	17	0.71	1,099	117	2,081
Yakutat	101 - 200	Yakataga Shelf	8	6	0.65	343	76	610
Chirikof	1 - 100	Semidi Bank	23	18	0.44	320	13	627
Kodiak	301 - 500	Kodiak Slope	10	4	0.39	113	0	254
Yakutat	301 - 500	Yakutat Slope	7	3	0.31	48	0	123
Shumagin	301 - 500	Shumagin Slope	9	1	0.28	72	0	237
Kodiak	101 - 200	Kodiak Outer Shelf	28	14	0.13	66	6	126
Chirikof	101 - 200	Chirikof Outer Shelf	25	12	0.13	66	0	137
Kodiak	701 - 1000	Kodiak Slope	4	1	0.10	35	0	148
Shumagin	501 - 700	Shumagin Slope	5	1	0.08	15	0	57
Chirikof	501 - 700	Chirikof Slope	7	1	0.04	9	0	30
Kodiak	501 - 700	Kodiak Slope	6	1	0.03	5	0	18

Pacific cod (*Gadus macrocephalus*)

Pacific cod was the seventh most abundant species caught in the 2007 survey (Table 2). Cod were caught throughout the survey area in 40 of the 59 survey strata at depths less than 300 m, although CPUEs were low at depths greater than 200 m (Fig. 19, Table 30). Approximately 63% of the survey-wide biomass was estimated to be at depths less than 100 m. Cod occurred in about 74% of the tows at this depth range. Ninety-six percent of the total Pacific cod biomass was estimated to be in the central and western Gulf of Alaska with very low densities in the Yakutat and Southeastern INPFC areas (Table 29). The highest densities were recorded around the Shumagin Islands and near the western end of the Alaska Peninsula (Fig. 19). Mean weight generally increased with depth in all areas. Distinct length modes (both males and females) at depths less than 100 m occurred around 20 cm in the Kodiak area and at approximately 30 and 40 cm in the Southeastern and Shumagin areas, respectively (Fig. 20). The sex ratio of the Pacific cod population in the survey area was even with males and females each accounting for approximately 50% of the total estimated population.

Table 29. -- Number of survey hauls, number of hauls with Pacific cod, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

INPFC area	Depth (m)	Number of hauls	Hauls with catch	Mean CPUE (kg/ha)	Estimated biomass (t)	Lower 95% biomass CI (t)	Upper 95% biomass CI (t)	Mean weight (kg)
Shumagin	1 - 100	133	120	23.713	97,909	42,513	153,304	1.302
	101 - 200	39	35	10.895	15,991	8,007	23,975	2.889
	201 - 300	17	4	1.100	307	0	704	2.957
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths		205	159	17.509	114,207	58,260	170,153
Chirikof	1 - 100	82	48	5.255	13,683	6,426	20,939	1.311
	101 - 200	69	48	5.607	13,372	7,523	19,220	2.201
	201 - 300	26	13	3.159	3,647	54	7,240	2.545
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths		199	109	4.511	30,701	20,864	40,538
Kodiak	1 - 100	97	67	8.614	33,176	22,070	44,281	0.534
	101 - 200	127	93	10.082	43,687	14,754	72,620	1.961
	201 - 300	30	10	2.473	2,842	0	5,705	2.354
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths		274	170	7.854	79,705	48,911	110,498
Yakutat	1 - 100	11	4	0.473	788	0	1,869	0.793
	101 - 200	33	4	0.298	876	0	1,912	3.246
	201 - 300	17	0	---	---	---	---	---
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths		76	8	0.291	1,664	247	3,082
Southeastern	1 - 100	11	8	1.226	803	0	2,205	0.327
	101 - 200	22	19	4.001	4,434	2,285	6,583	1.494
	201 - 300	17	9	3.515	1,776	0	3,684	1.871
	301 - 500	11	1	0.064	20	0	75	2.932
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths		66	37	2.508	7,033	3,990	10,075
All areas	1 - 100	334	247	11.341	146,358	89,405	203,310	0.968
	101 - 200	290	199	6.406	78,361	48,035	108,686	2.111
	201 - 300	107	36	2.378	8,571	3,710	13,432	2.321
	301 - 500	49	1	0.016	20	0	75	2.932
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths		820	483	7.291	233,310	168,611	298,008

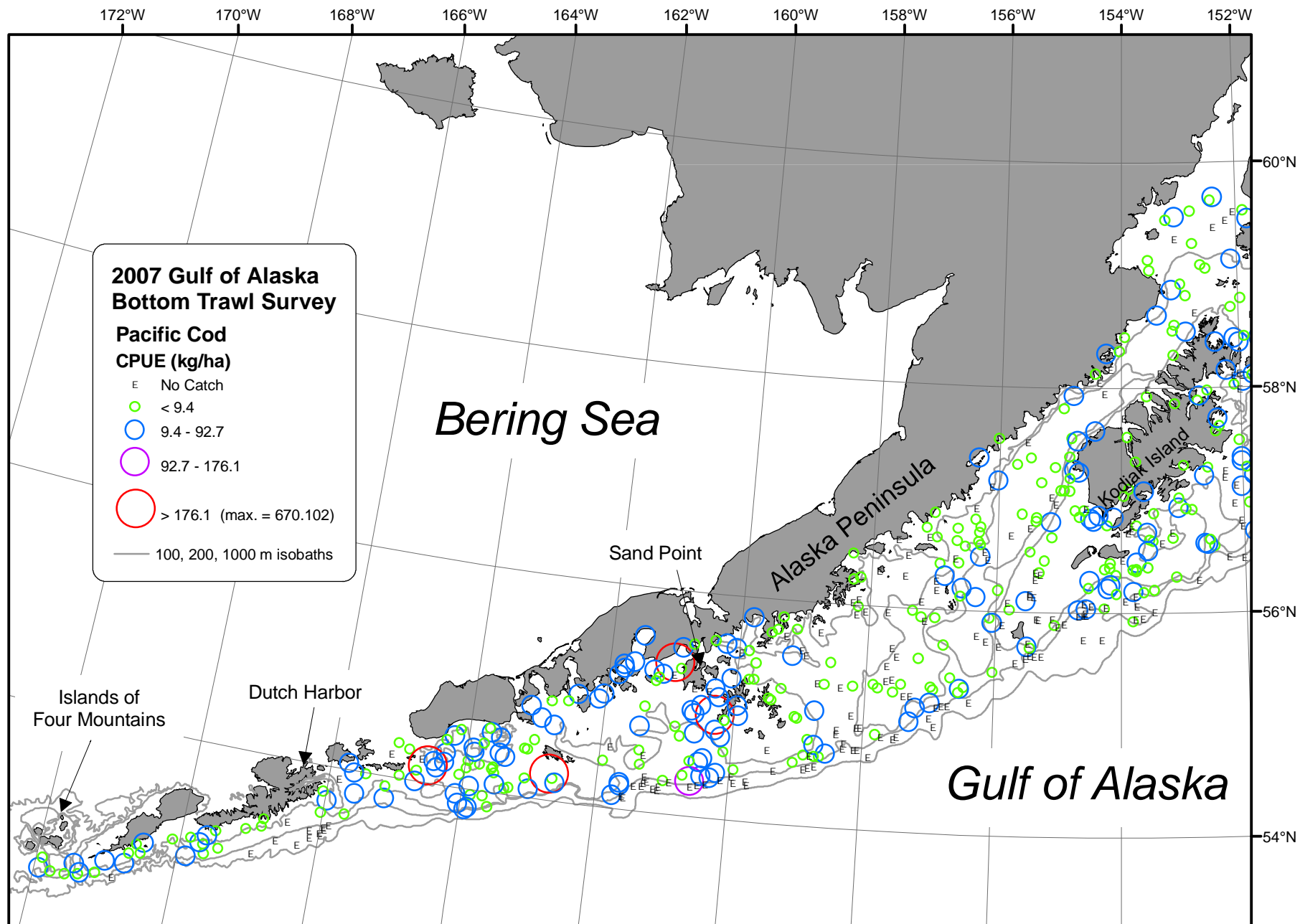


Figure 19. -- Distribution and relative abundance of Pacific cod from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

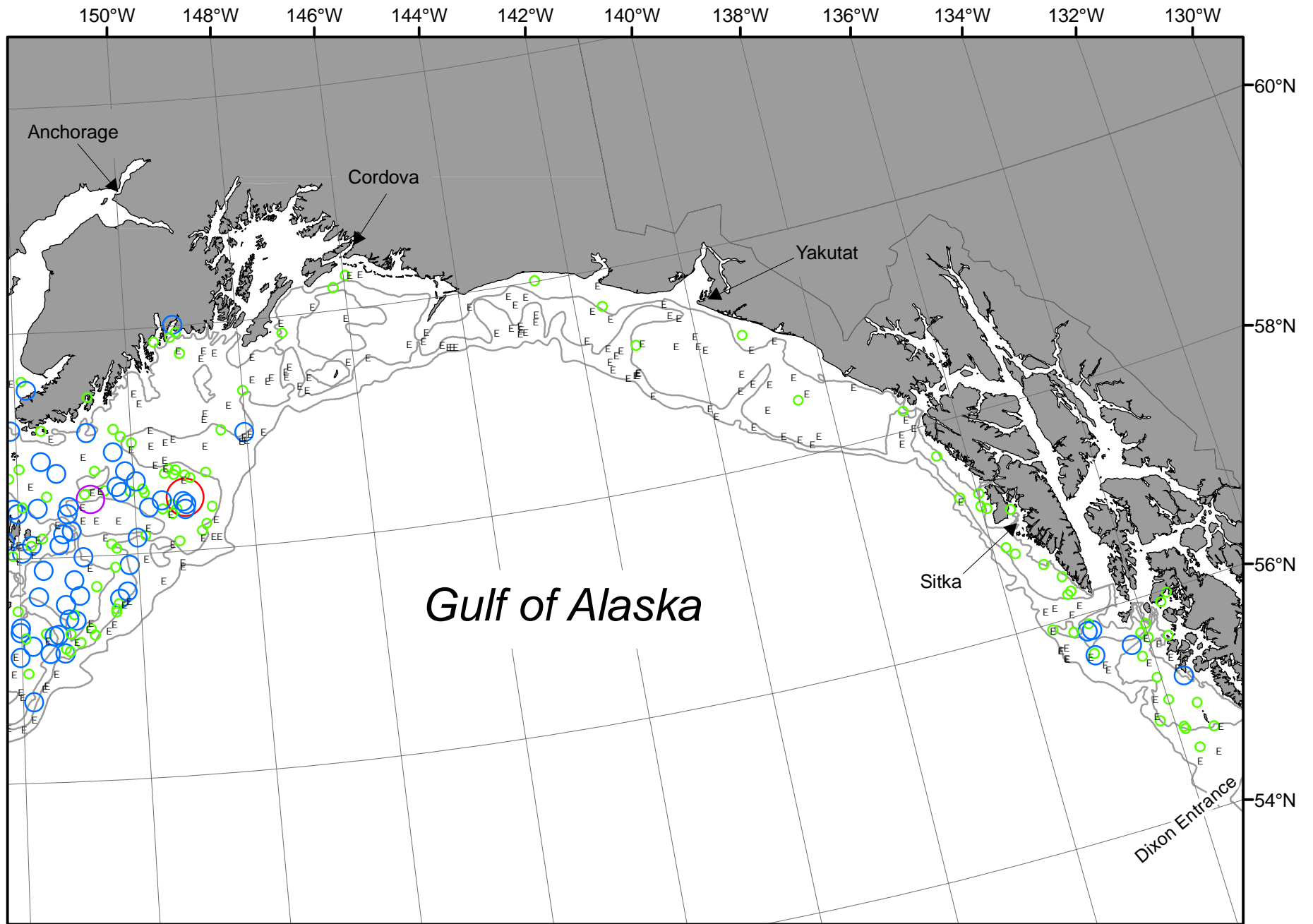


Figure 19. -- Continued (Pacific cod 2007).

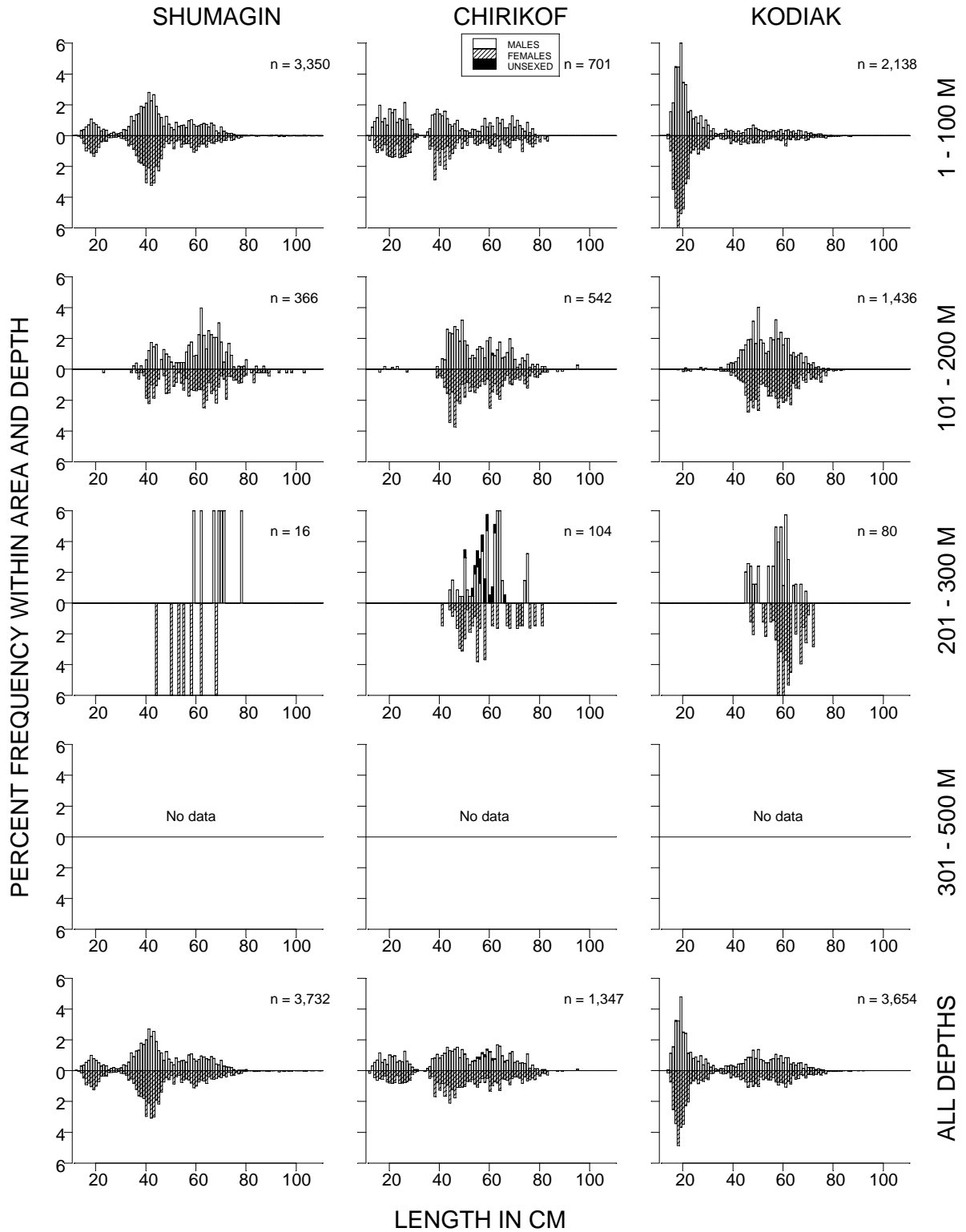


Figure 20. -- Size composition of Pacific cod from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

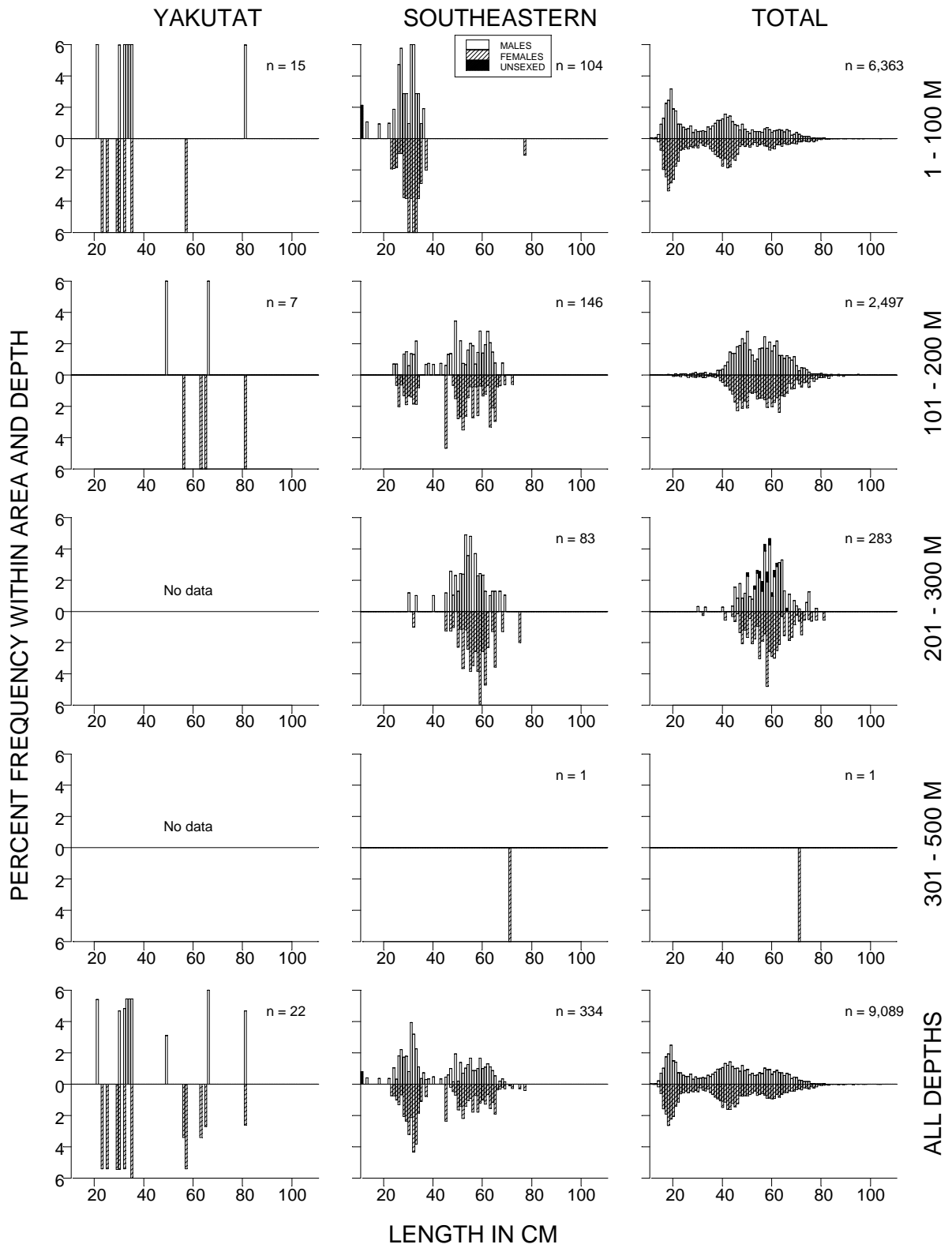


Figure 20. -- (continued).

Table 30. -- Catch per unit of effort by stratum for Pacific cod sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

INPFC area	Depth range	Stratum name	Number of hauls	Hauls with catch	CPUE (kg/ha)	Biomass (t)	Lower CI biomass	Upper CI biomass
Shumagin	1 - 100	Lower Alaska Peninsula	28	23	33.08	22,747	0	52,279
Kodiak	101 - 200	Portlock Flats	35	29	29.53	21,665	0	50,294
Shumagin	1 - 100	Shumagin Bank	36	31	27.83	34,504	0	76,882
Shumagin	1 - 100	Davidson Bank	48	47	24.88	34,034	11,371	56,698
Shumagin	101 - 200	Shumagin Outer Shelf	28	25	13.03	10,622	3,263	17,982
Chirikof	101 - 200	Chirikof Outer Shelf	25	19	11.96	5,993	1,960	10,026
Kodiak	1 - 100	Albatross Shallows	28	20	11.67	6,732	2,818	10,645
Kodiak	1 - 100	Albatross Banks	39	25	10.61	16,349	7,757	24,940
Kodiak	101 - 200	Albatross Gullies	28	23	10.30	8,147	4,497	11,798
Shumagin	101 - 200	West Shumagin Gully	4	4	9.26	2,110	0	4,930
Kodiak	101 - 200	Kodiak Outer Shelf	28	20	8.33	4,189	1,717	6,660
Shumagin	1 - 100	Fox Islands	21	19	7.95	6,623	2,663	10,584
Shumagin	101 - 200	Sanak Gully	7	6	7.68	3,259	126	6,393
Kodiak	101 - 200	Barren Islands	18	16	7.48	8,217	4,449	11,984
Chirikof	101 - 200	Shelikof Edge	27	22	6.63	5,127	1,327	8,927
Kodiak	1 - 100	Lower Cook Inlet	14	10	6.48	6,408	792	12,024
Chirikof	1 - 100	Upper Alaska Peninsula	19	11	6.47	5,135	0	10,828
Chirikof	1 - 100	Chirikof Bank	40	27	5.73	6,187	2,926	9,448
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	8	5.06	2,124	804	3,443
Kodiak	1 - 100	Northern Kodiak Shallows	9	6	4.96	1,091	0	2,934
Kodiak	1 - 100	Kenai Peninsula	7	6	4.94	2,596	0	5,550
Chirikof	201 - 300	Chirikof Slope	8	2	4.33	662	0	1,687
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	8	4.30	1,690	0	3,603
Southeastern	101 - 200	Prince of Wales Shelf	14	11	3.36	2,311	432	4,189
Chirikof	1 - 100	Semidi Bank	23	10	3.23	2,360	0	5,954
Chirikof	201 - 300	Lower Shelikof Gully	18	11	2.98	2,985	0	6,476
Kodiak	201 - 300	Kenai Gullies	19	5	2.83	1,884	0	4,615
Chirikof	101 - 200	East Shumagin Gully	17	7	2.03	2,252	0	4,516
Kodiak	201 - 300	Kodiak Slope	7	3	1.99	323	0	792
Kodiak	201 - 300	Upper Shelikof Gully	4	2	1.98	635	0	2,018
Southeastern	1 - 100	Southeastern Shallows	11	8	1.23	803	0	2,223
Kodiak	101 - 200	Kenai Flats	18	5	1.22	1,470	0	3,066
Shumagin	201 - 300	Shumagin Slope	17	4	1.10	307	0	706
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	0.76	86	0	453
Yakutat	1 - 100	Middleton Shallows	5	1	0.62	417	0	1,575
Yakutat	101 - 200	Middleton Shelf	9	2	0.61	445	0	1,124
Yakutat	101 - 200	Yakutat Flats	8	1	0.42	379	0	1,276
Yakutat	1 - 100	Yakutat Shallows	6	3	0.37	371	0	972
Southeastern	301 - 500	Southeastern Slope	4	1	0.26	20	0	83
Yakutat	101 - 200	Fairweather Shelf	8	1	0.07	52	0	175

Atka mackerel (*Pleurogrammus monopterygius*)

Approximately 98% of the estimated Atka mackerel population was caught in the Shumagin INPFC area where local abundance was relatively high near the Islands of Four Mountains and around the western end of the Alaska Peninsula (Fig. 21 and Tables 31- 32). Almost the entire population was confined to depths less than 200 m with about 86% in waters less than 100 m. Atka mackerel were caught in about 23% of tows at depths less than 200 m in the Shumagin INPFC area. No Atka mackerel were caught east of the Kenai Peninsula. It appears that Atka mackerel segregated by depth with males dominant at depths less than 100 m and females dominant at depths between 101 and 200 m. Most of the fish captured were longer than 40 cm FL (Fig. 22). The sex ratio of the Atka mackerel population in the survey area was dominated by males, which comprised approximately 58% of the total estimated population.

Table 31. -- Number of survey hauls, number of hauls with Atka mackerel, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

INPFC area	Depth (m)	Number of hauls	Hauls with catch	Mean CPUE (kg/ha)	Estimated biomass (t)	Lower 95% biomass CI (t)	Upper 95% biomass CI (t)	Mean weight (kg)
Shumagin	1 - 100	133	29	16.891	69,741	0	142,328	1.325
	101 - 200	39	11	7.336	10,768	0	30,747	0.951
	201 - 300	17	2	0.138	38	0	105	1.000
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths		205	42	12.348	80,546	5,383	155,710
Chirikof	1 - 100	82	6	0.354	922	0	2,532	1.247
	101 - 200	69	9	0.200	478	98	857	1.192
	201 - 300	26	3	0.141	163	0	375	1.156
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths		199	18	0.230	1,563	0	3,214
Kodiak	1 - 100	97	4	0.009	35	0	73	0.458
	101 - 200	127	6	0.038	163	14	313	1.233
	201 - 300	30	1	0.018	20	0	69	1.096
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths		274	11	0.022	219	61	377
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	0	---	---	---	---	---
	201 - 300	17	0	---	---	---	---	---
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths		76	0	---	---	---	---
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	0	---	---	---	---	---
	201 - 300	17	0	---	---	---	---	---
	301 - 500	11	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths		66	0	---	---	---	---
All areas	1 - 100	334	39	5.478	70,697	0	143,301	1.323
	101 - 200	290	26	0.933	11,409	0	31,392	0.962
	201 - 300	107	6	0.062	222	0	448	1.120
	301 - 500	49	0	---	---	---	---	---
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths		820	71	2.573	82,328	7,147	157,509

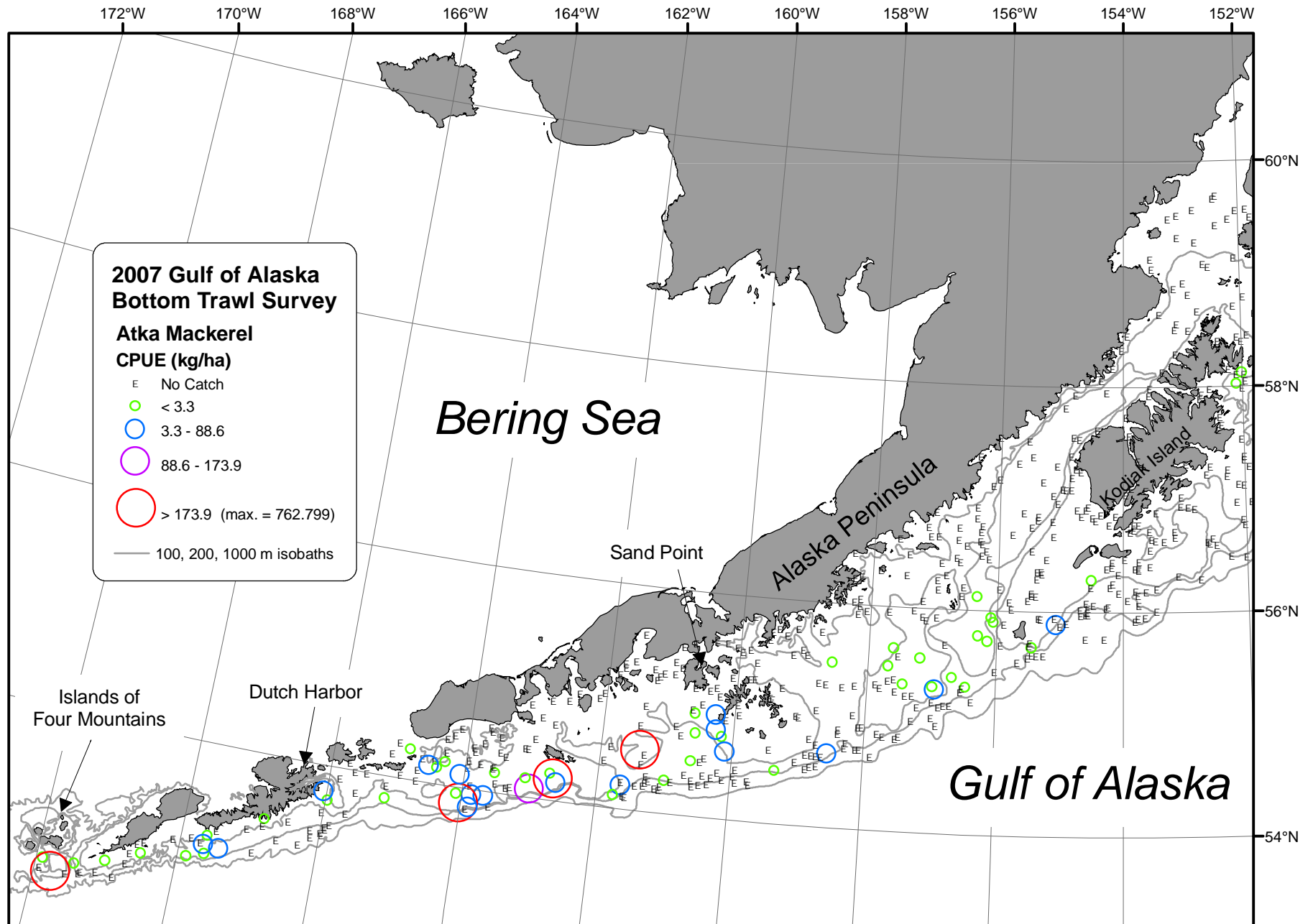


Figure 21. -- Distribution and relative abundance of Atka mackerel from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

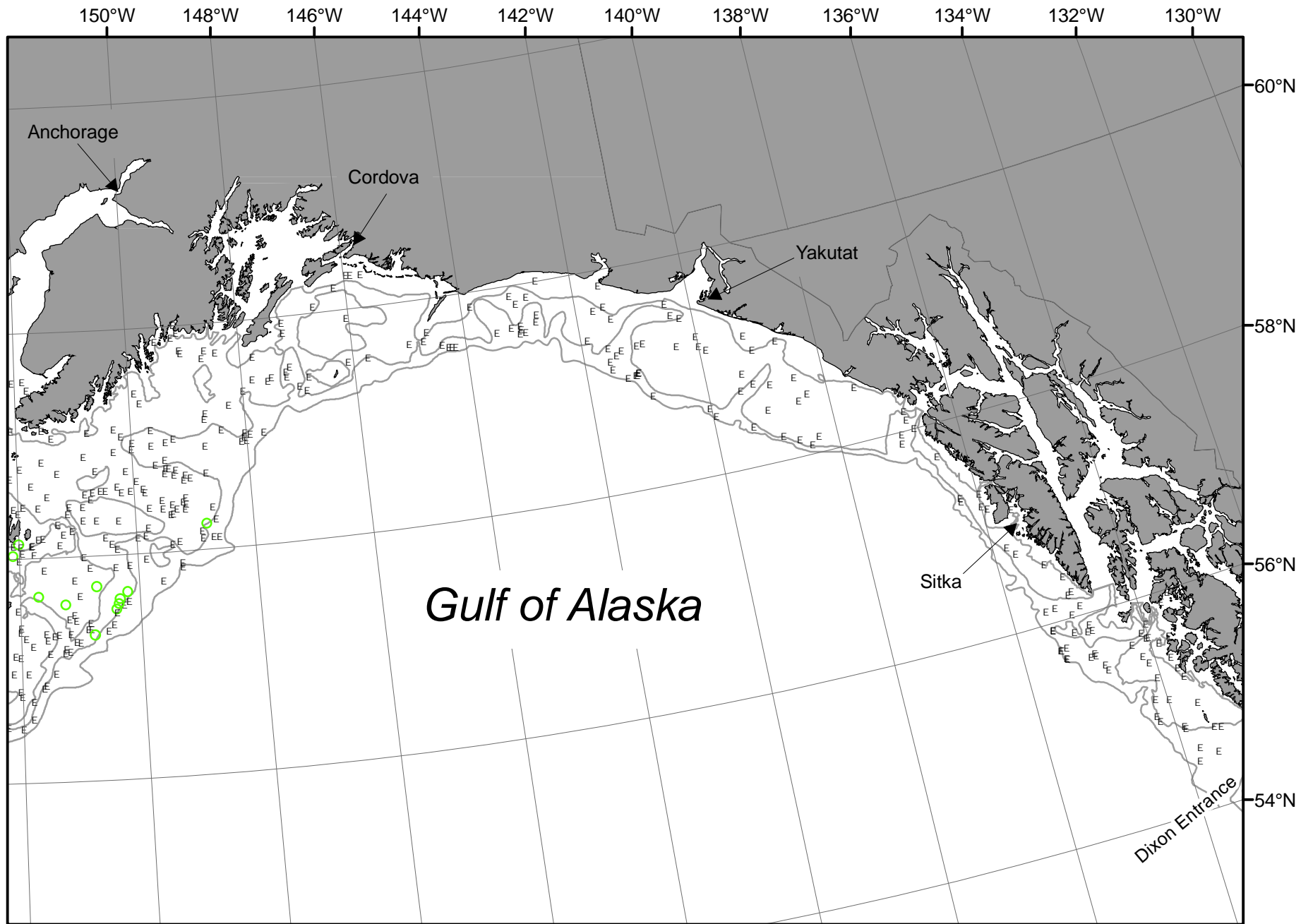


Figure 21. -- Continued (Atka mackerel 2007).

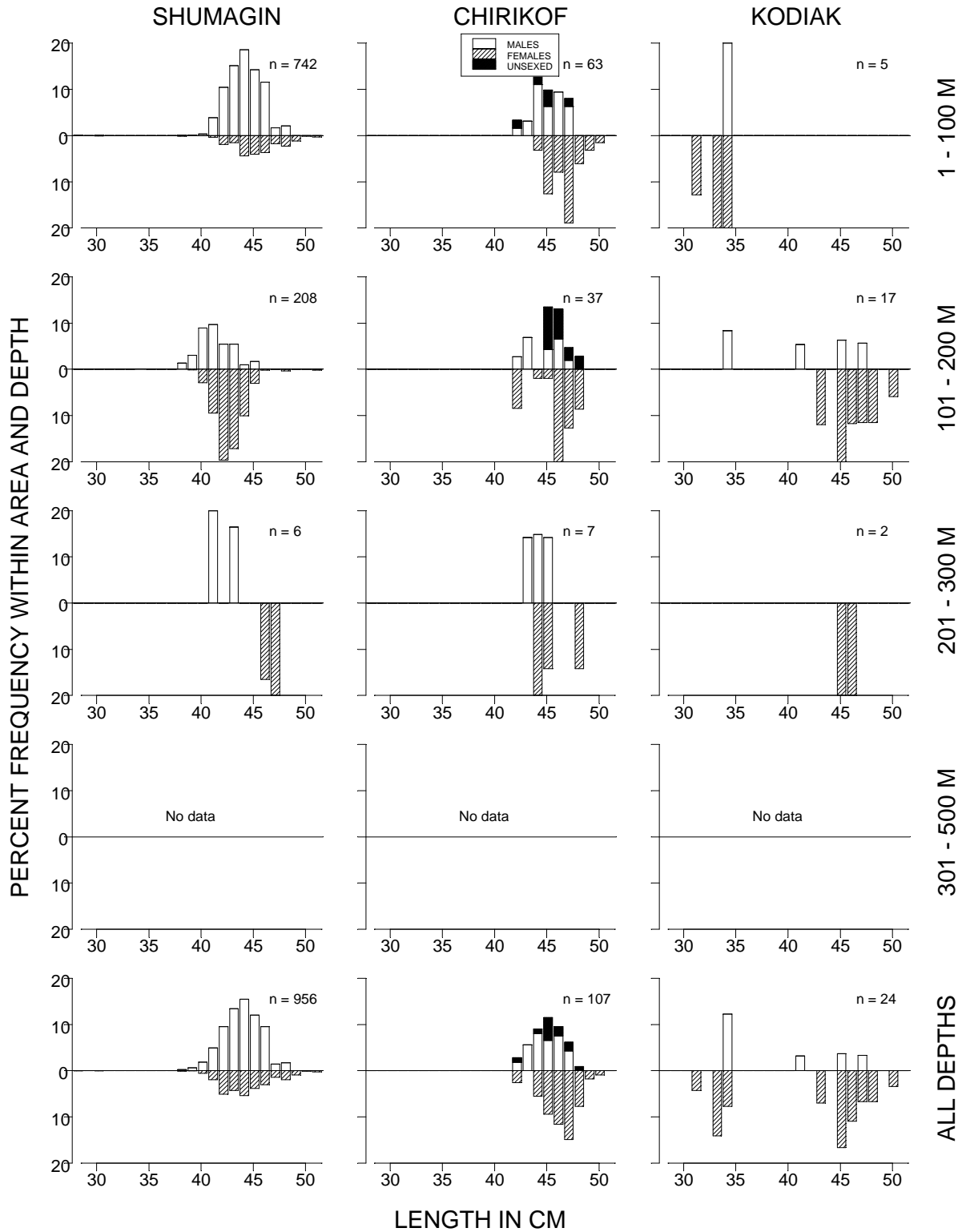


Figure 22. -- Size composition of Atka mackerel from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

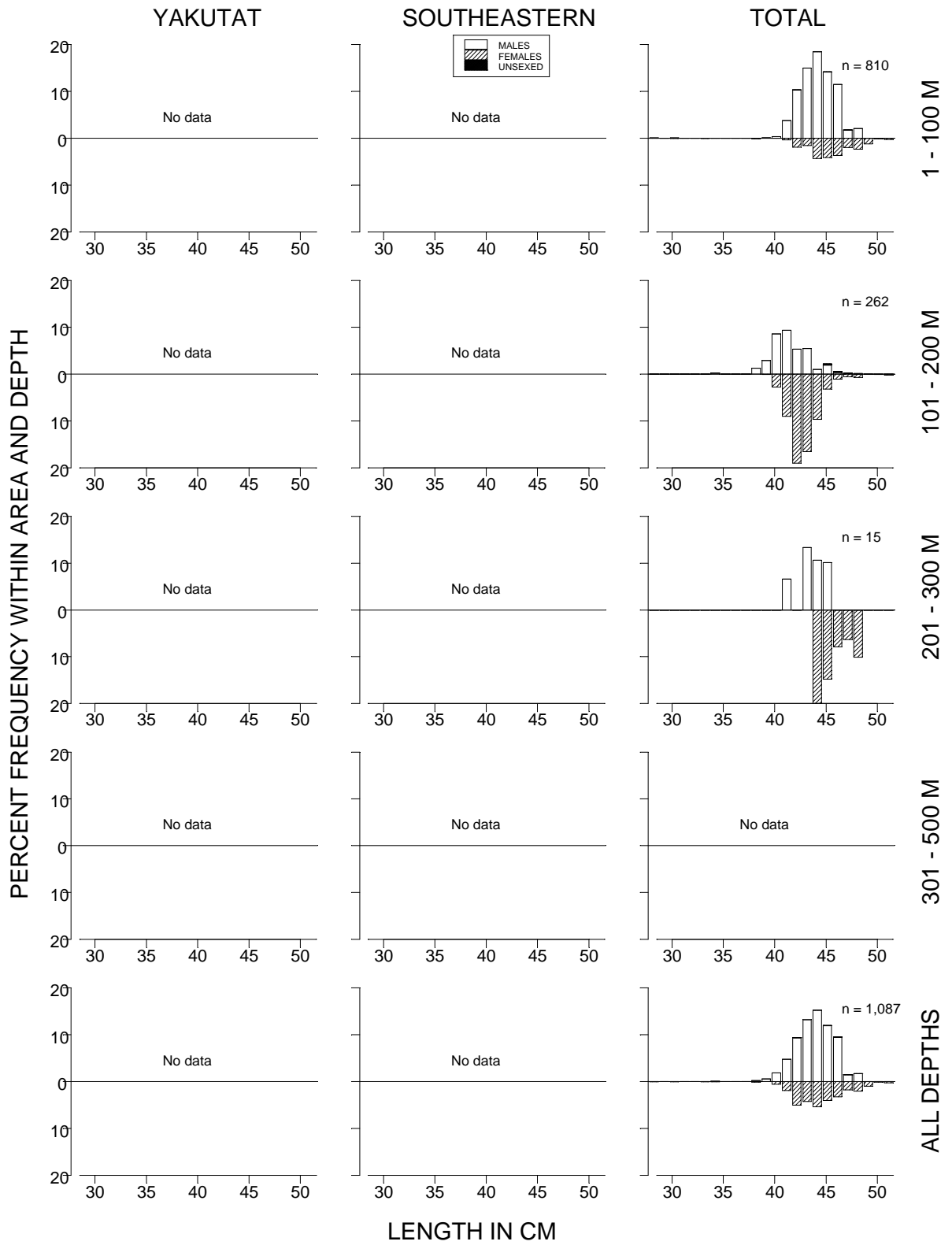


Figure 22. -- (continued).

Table 32. -- Catch per unit of effort by stratum for Atka mackerel sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

INPFC area	Depth range	Stratum name	Number of hauls	Hauls with catch	CPUE (kg/ha)	Biomass (t)	Lower CI biomass	Upper CI biomass
Shumagin	1 - 100	Davidson Bank	48	17	30.95	42,344	0	92,980
Shumagin	1 - 100	Shumagin Bank	36	6	21.67	26,871	0	80,486
Shumagin	101 - 200	Shumagin Outer Shelf	28	9	13.05	10,644	0	30,661
Chirikof	1 - 100	Semidi Bank	23	5	1.25	909	0	2,523
Shumagin	1 - 100	Fox Islands	21	6	0.63	526	0	1,128
Chirikof	101 - 200	Chirikof Outer Shelf	25	4	0.50	248	0	526
Kodiak	101 - 200	Kodiak Outer Shelf	28	5	0.31	157	8	307
Shumagin	101 - 200	Sanak Gully	7	2	0.29	123	0	355
Chirikof	201 - 300	Lower Shelikof Gully	18	3	0.16	163	0	376
Shumagin	201 - 300	Shumagin Slope	17	2	0.14	38	0	106
Chirikof	101 - 200	Shelikof Edge	27	3	0.13	100	0	261
Kodiak	201 - 300	Kodiak Slope	7	1	0.13	20	0	71
Chirikof	101 - 200	East Shumagin Gully	17	2	0.12	130	0	345
Kodiak	1 - 100	Albatross Banks	39	3	0.02	31	0	69
Chirikof	1 - 100	Chirikof Bank	40	1	0.01	13	0	38
Kodiak	101 - 200	Albatross Gullies	28	1	0.01	6	0	18
Kodiak	1 - 100	Albatross Shallows	28	1	0.01	4	0	12

Sablefish (*Anoplopoma fimbria*)

Sablefish was the ninth most abundant species caught in the 2007 survey (Table 2). They were caught throughout the survey area in 54 of the 59 survey strata and at all depths. Sablefish occurred in 90% of tows in waters deeper than 200 m, including all tows deeper than 500 m, and 91% of the estimated biomass was recorded at depths deeper than 200 m (Fig. 23, Table 33). CPUEs were consistently highest in the slope strata of all INPFC areas (Table 34). Mean weight generally increased with depth in all areas to 500 m and then remained relatively constant between 501 and 1,000 m (Table 33). A distinct length mode occurred around 65 cm FL at depths greater than 300 m in the Chirikof, Kodiak, and Yakutat INPFC areas, whereas the corresponding length mode occurred at somewhat shorter lengths in the Shumagin and Southeastern areas (55-60 cm, Fig. 24). Small fish (less than 50 cm FL) were almost exclusively confined to depths less than 300 m in all areas. The sex ratio of the sablefish population in the survey area was dominated by males in all INPFC areas and depth ranges. Overall, males comprised approximately 64% of the total estimated population.

Table 33. -- Number of survey hauls, number of hauls with sablefish, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

INPFC area	Depth (m)	Number of hauls	Hauls with catch	Mean CPUE (kg/ha)	Estimated biomass (t)	Lower 95% biomass CI (t)	Upper 95% biomass CI (t)	Mean weight (kg)
Shumagin	1 - 100	133	13	0.045	186	36	336	0.259
	101 - 200	39	2	0.072	105	0	365	0.809
	201 - 300	17	12	12.026	3,353	370	6,336	1.522
	301 - 500	9	9	21.569	5,459	462	10,457	2.015
	501 - 700	5	5	28.018	5,619	1,784	9,455	2.686
	701 - 1000	2	2	31.415	6,086	1,363	10,808	3.674
	All depths		205	43	3.190	20,808	13,996	27,620
Chirikof	1 - 100	82	6	0.047	122	1	243	0.410
	101 - 200	69	13	0.407	972	389	1,554	1.515
	201 - 300	26	26	10.630	12,274	7,348	17,200	2.228
	301 - 500	10	10	33.043	5,300	0	10,757	2.059
	501 - 700	7	7	72.876	14,234	8,100	20,368	3.306
	701 - 1000	5	5	28.657	8,785	2,949	14,622	3.308
	All depths		199	67	6.126	41,687	31,782	51,591
Kodiak	1 - 100	97	13	0.661	2,545	0	5,532	1.050
	101 - 200	127	65	2.498	10,823	6,544	15,101	1.763
	201 - 300	30	29	25.516	29,319	10,289	48,349	2.523
	301 - 500	10	10	66.064	19,236	7,069	31,403	3.046
	501 - 700	6	6	75.019	13,090	4,648	21,531	3.477
	701 - 1000	4	4	56.950	19,898	10,854	28,942	3.559
	All depths		274	127	9.352	94,910	70,651	119,169
Yakutat	1 - 100	11	4	0.363	606	0	1,498	0.536
	101 - 200	33	13	0.512	1,504	72	2,935	0.886
	201 - 300	17	12	4.015	2,076	852	3,299	2.133
	301 - 500	9	7	14.202	3,732	0	9,080	3.112
	501 - 700	3	3	31.260	4,593	382	8,804	3.292
	701 - 1000	3	3	83.966	15,848	12,125	19,571	3.293
	All depths		76	42	4.958	28,358	22,196	34,519
Southeastern	1 - 100	11	2	0.266	174	0	432	0.512
	101 - 200	22	5	0.272	302	3	600	1.657
	201 - 300	17	10	10.608	5,359	0	15,836	3.311
	301 - 500	11	11	23.079	7,194	0	14,492	3.028
	501 - 700	3	3	9.559	988	506	1,470	2.257
	701 - 1000	2	2	24.510	2,957	2,656	3,258	2.452
	All depths		66	33	6.053	16,973	6,750	27,196
All areas	1 - 100	334	38	0.282	3,633	720	6,545	0.740
	101 - 200	290	98	1.120	13,705	9,218	18,191	1.559
	201 - 300	107	89	14.531	52,380	31,740	73,021	2.389
	301 - 500	49	47	31.991	40,921	25,447	56,394	2.697
	501 - 700	24	24	46.944	38,524	28,440	48,609	3.212
	701 - 1000	16	16	46.222	53,573	43,443	63,703	3.365
	All depths		820	312	6.335	202,736	173,933	231,538

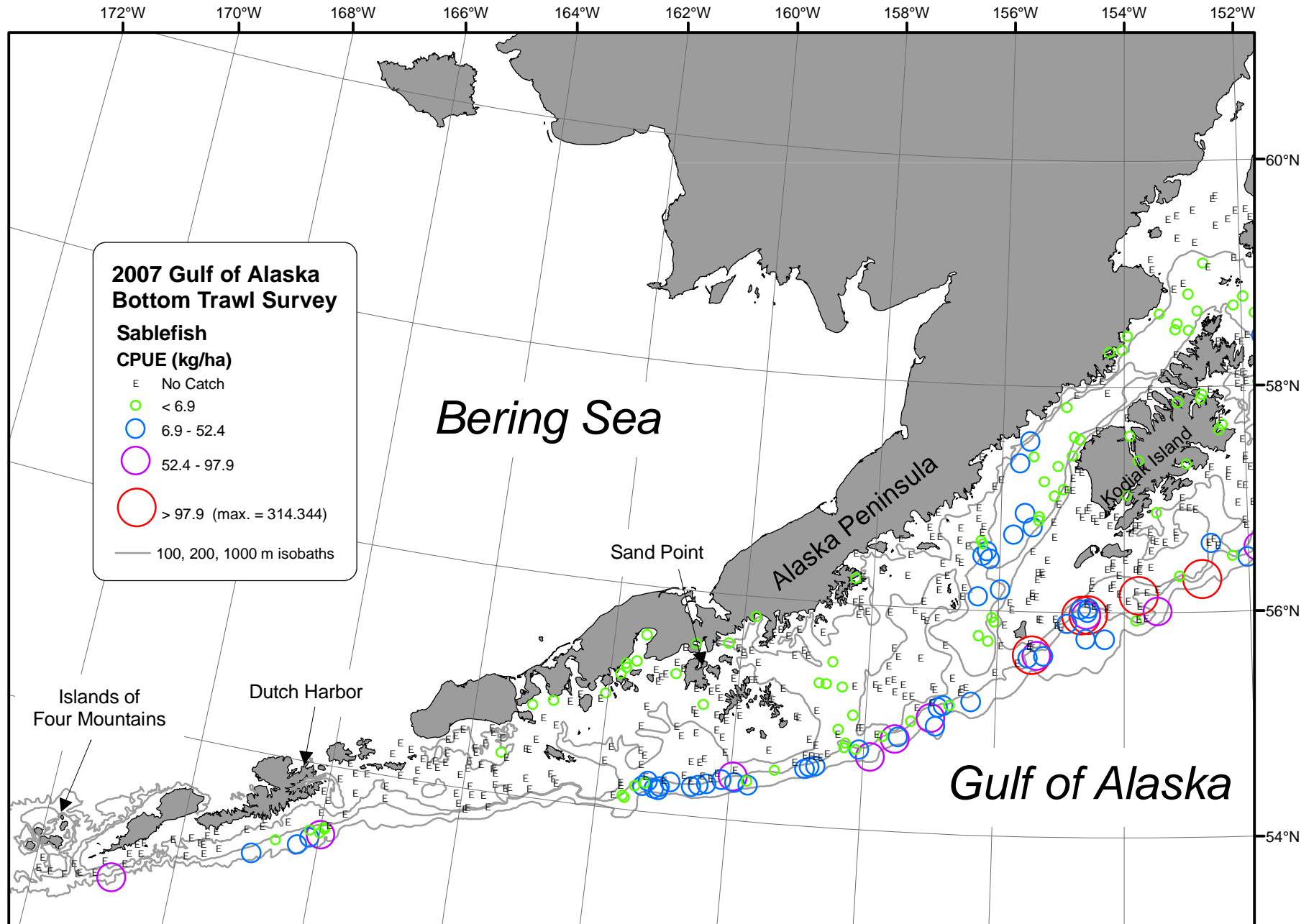


Figure 23. -- Distribution and relative abundance of sablefish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

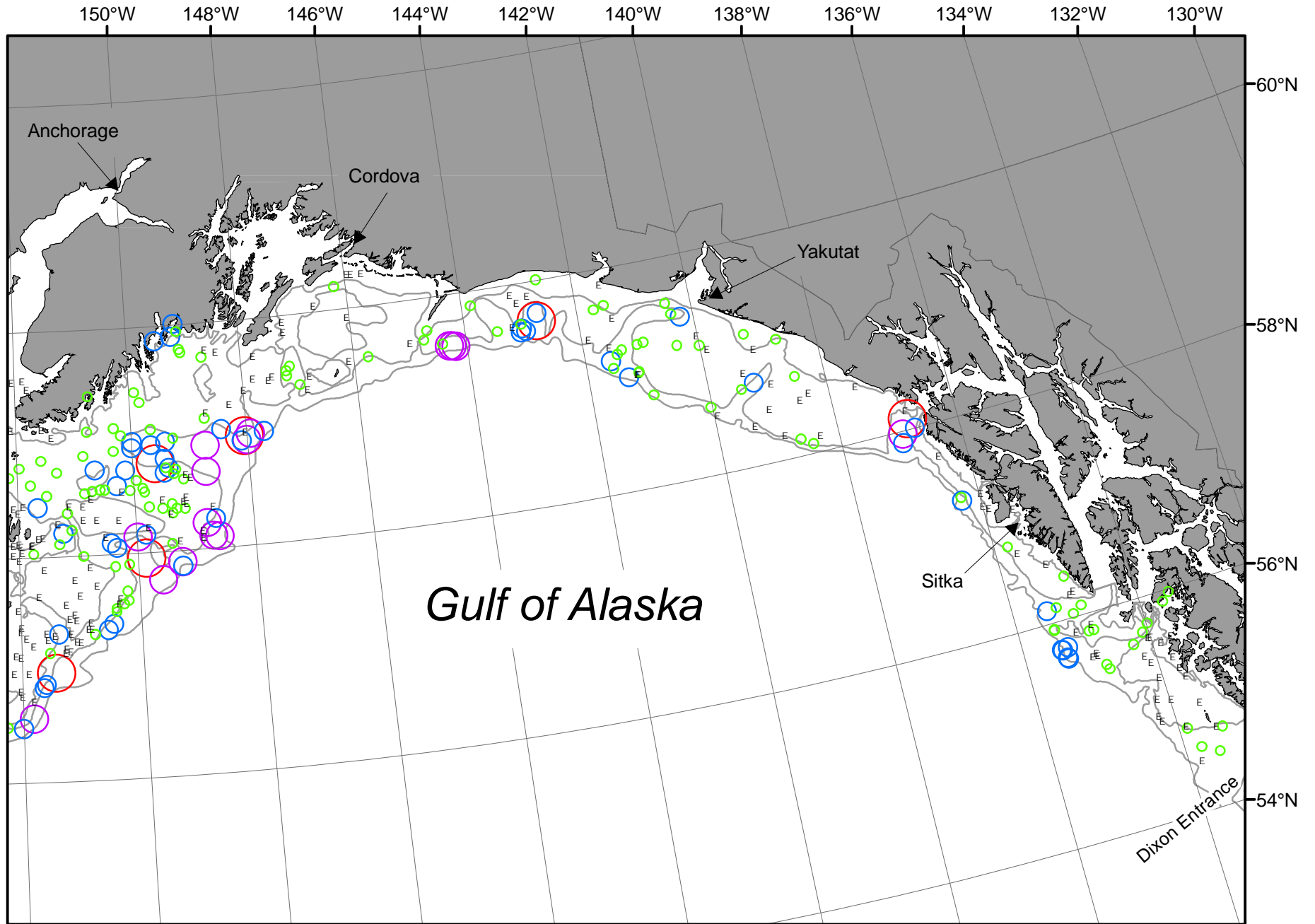


Figure 23. -- Continued (sablefish 2007).

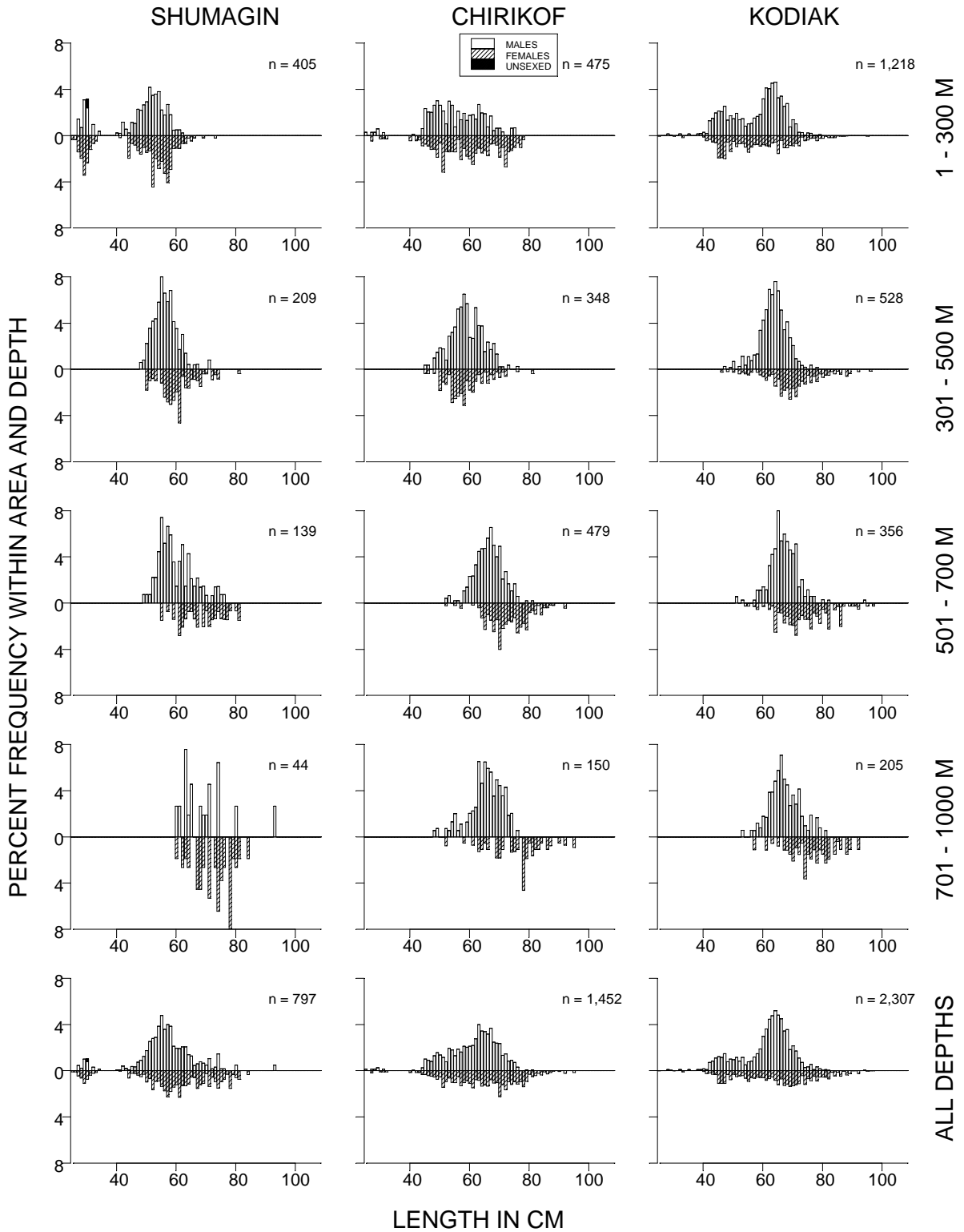


Figure 24. -- Size composition of sablefish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

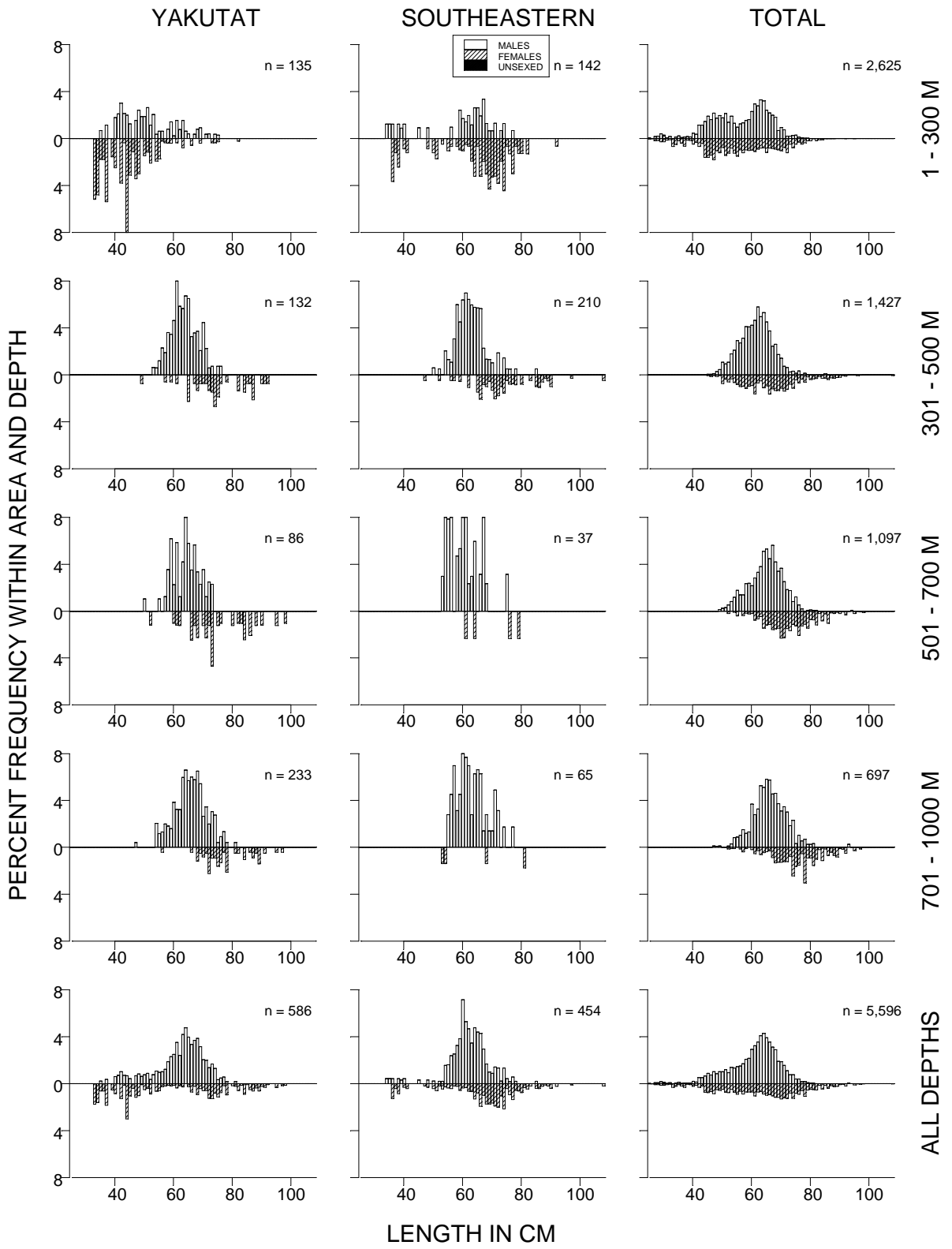


Figure 24. -- (continued).

Table 34. -- Catch per unit of effort by stratum for sablefish sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

INPFC area	Depth range	Stratum name	Number	Hauls	CPUE (kg/ha)	Biomass (t)	Lower	Upper
			of hauls	with catch			CI biomass	CI biomass
Yakutat	701 - 1000	Yakutat Slope	3	3	83.97	15,848	10,814	20,882
Kodiak	501 - 700	Kodiak Slope	6	6	75.02	13,090	4,221	21,959
Chirikof	501 - 700	Chirikof Slope	7	7	72.88	14,234	7,888	20,581
Kodiak	301 - 500	Kodiak Slope	10	10	66.06	19,236	6,884	31,589
Kodiak	701 - 1000	Kodiak Slope	4	4	56.95	19,898	9,531	30,264
Kodiak	201 - 300	Kodiak Slope	7	7	55.41	8,991	0	26,385
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	43.63	4,909	0	19,062
Chirikof	301 - 500	Chirikof Slope	10	10	33.04	5,300	0	10,841
Shumagin	701 - 1000	Shumagin Slope	2	2	31.42	6,086	0	20,030
Yakutat	501 - 700	Yakutat Slope	3	3	31.26	4,593	0	10,287
Chirikof	701 - 1000	Chirikof Slope	5	5	28.66	8,785	2,483	15,087
Shumagin	501 - 700	Shumagin Slope	5	5	28.02	5,619	1,478	9,761
Kodiak	201 - 300	Kenai Gullies	19	19	28.00	18,649	6,318	30,979
Southeastern	301 - 500	Southeastern Deep Gullies	7	7	26.57	6,229	0	13,644
Southeastern	701 - 1000	Southeastern Slope	2	2	24.51	2,957	2,068	3,845
Shumagin	301 - 500	Shumagin Slope	9	9	21.57	5,459	365	10,554
Yakutat	301 - 500	Yakutat Slope	7	5	21.52	3,272	0	8,782
Chirikof	201 - 300	Chirikof Slope	8	8	17.34	2,650	684	4,617
Southeastern	301 - 500	Southeastern Slope	4	4	12.49	965	0	2,818
Shumagin	201 - 300	Shumagin Slope	17	12	12.03	3,353	356	6,350
Chirikof	201 - 300	Lower Shelikof Gully	18	18	9.61	9,623	4,998	14,249
Southeastern	501 - 700	Southeastern Slope	3	3	9.56	988	336	1,640
Yakutat	201 - 300	Yakutat Gullies	8	7	5.52	1,678	454	2,903
Kodiak	201 - 300	Upper Shelikof Gully	4	3	5.24	1,680	0	4,344
Kodiak	101 - 200	Albatross Gullies	28	12	5.12	4,050	880	7,220
Kodiak	1 - 100	Kenai Peninsula	7	5	4.62	2,430	0	5,515
Yakutat	301 - 500	Yakutat Gullies	2	2	4.16	460	0	3,140
Kodiak	101 - 200	Portlock Flats	35	25	2.94	2,159	922	3,396
Kodiak	101 - 200	Barren Islands	18	14	2.05	2,246	711	3,781
Yakutat	201 - 300	Yakutat Slope	9	5	1.87	397	36	759
Kodiak	101 - 200	Kenai Flats	18	9	1.73	2,092	0	4,383
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	7	1.15	450	121	779
Yakutat	101 - 200	Yakutat Flats	8	5	0.80	722	0	1,971
Yakutat	101 - 200	Fairweather Shelf	8	3	0.71	547	0	1,454
Chirikof	101 - 200	East Shumagin Gully	17	6	0.57	629	115	1,144
Yakutat	1 - 100	Yakutat Shallows	6	3	0.55	547	0	1,472
Kodiak	101 - 200	Kodiak Outer Shelf	28	5	0.55	277	0	560
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	2	0.44	186	0	478
Shumagin	101 - 200	West Shumagin Gully	4	1	0.41	93	0	389
Chirikof	101 - 200	Shelikof Edge	27	6	0.38	290	27	554
Yakutat	101 - 200	Yakataga Shelf	8	3	0.31	164	0	470
Southeastern	1 - 100	Southeastern Shallows	11	2	0.27	174	0	436
Southeastern	101 - 200	Prince of Wales Shelf	14	3	0.17	115	0	255
Shumagin	1 - 100	Lower Alaska Peninsula	28	10	0.16	113	16	210
Kodiak	1 - 100	Albatross Shallows	28	5	0.16	94	0	237
Chirikof	1 - 100	Upper Alaska Peninsula	19	5	0.14	114	0	235
Chirikof	101 - 200	Chirikof Outer Shelf	25	1	0.10	52	0	159
Yakutat	101 - 200	Middleton Shelf	9	2	0.10	71	0	182
Kodiak	1 - 100	Northern Kodiak Shallows	9	3	0.10	21	0	60
Yakutat	1 - 100	Middleton Shallows	5	1	0.09	59	0	221
Shumagin	1 - 100	Shumagin Bank	36	2	0.05	59	0	173
Shumagin	101 - 200	Shumagin Outer Shelf	28	1	0.02	12	0	36
Shumagin	1 - 100	Davidson Bank	48	1	0.011	15	0	44
Chirikof	1 - 100	Chirikof Bank	40	1	0.008	8	0	25

Giant grenadier (*Albatrossia pectoralis*)

Giant grenadier was the third most abundant species caught in the 2007 survey (Table 2). They were caught throughout the survey area, although almost exclusively in slope strata at depths exceeding 300 m (Fig. 25, Tables 35-36). Approximately 93% of the biomass was found in the Shumagin, Chirikof, and Kodiak INPFC areas with most of the remainder in the Yakutat INPFC area. Giant grenadier occurred in 70% of tows in waters deeper than 300 m, including all tows deeper than 500 m, and over 99% of the estimated biomass was recorded at depths deeper than 300 m (Table 35). Mean CPUEs were very high in most of the strata where giant grenadier occurred. Mean weight generally declined somewhat with depth as the smaller males made up a larger fraction of the total population at deeper depths (Fig. 26, Table 35). A relatively distinct length mode occurred around 25-30 cm (snout to anal fin insertion) at all depths and INPFC areas for females, whereas males exhibited no discernable length mode. The sex ratio of the sablefish population in the survey area was dominated by females who comprised approximately 86% of the total estimated population.

Table 35. -- Number of survey hauls, number of hauls with giant grenadier, mean CPUE, biomass, and mean weight based on the 2007 Gulf of Alaska biennial bottom trawl survey, by International North Pacific Fisheries Commission statistical areas and depth intervals.

INPFC area	Depth (m)	Number of hauls	Hauls with catch	Mean CPUE (kg/ha)	Estimated biomass (t)	Lower 95% biomass CI (t)	Upper 95% biomass CI (t)	Mean weight (kg)
Shumagin	1 - 100	133	0	---	---	---	---	---
	101 - 200	39	0	---	---	---	---	---
	201 - 300	17	2	13.753	3,834	0	10,965	3.192
	301 - 500	9	7	276.622	70,016	9,550	130,482	3.266
	501 - 700	5	5	319.515	64,082	4,480	123,684	2.736
	701 - 1000	2	2	210.171	40,715	12,256	69,174	2.626
	All depths		205	16	27.388	178,647	101,999	255,294
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	0	---	---	---	---	---
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	4	83.374	13,373	0	34,176	2.887
	501 - 700	7	7	345.557	67,495	44,240	90,749	2.639
	701 - 1000	5	5	208.389	63,883	0	175,317	2.760
	All depths		199	16	21.270	144,750	27,990	261,510
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	0	---	---	---	---	---
	201 - 300	30	0	---	---	---	---	---
	301 - 500	10	7	66.843	19,463	0	39,519	3.282
	501 - 700	6	6	430.973	75,198	10,773	139,623	2.775
	701 - 1000	4	4	102.446	35,793	19,334	52,253	2.193
	All depths		274	17	12.854	130,454	67,838	193,071
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	0	---	---	---	---	---
	201 - 300	17	0	---	---	---	---	---
	301 - 500	9	1	8.657	2,275	0	7,655	2.660
	501 - 700	3	3	148.193	21,773	0	60,157	2.938
	701 - 1000	3	3	38.008	7,174	2,928	11,419	2.183
	All depths		76	7	5.459	31,222	0	70,513
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	0	---	---	---	---	---
	201 - 300	17	0	---	---	---	---	---
	301 - 500	11	3	2.995	933	0	2,358	2.776
	501 - 700	3	3	4.473	462	135	789	2.458
	701 - 1000	2	2	12.587	1,518	0	4,764	1.130
	All depths		66	8	1.039	2,914	539	5,289
All areas	1 - 100	334	0	---	---	---	---	---
	101 - 200	290	0	---	---	---	---	---
	201 - 300	107	2	1.064	3,834	0	10,965	3.192
	301 - 500	49	22	82.914	106,060	41,116	171,004	3.195
	501 - 700	24	24	279.064	229,010	146,691	311,329	2.736
	701 - 1000	16	16	128.626	149,083	40,754	257,411	2.501
	All depths		820	64	15.249	487,987	346,802	629,173

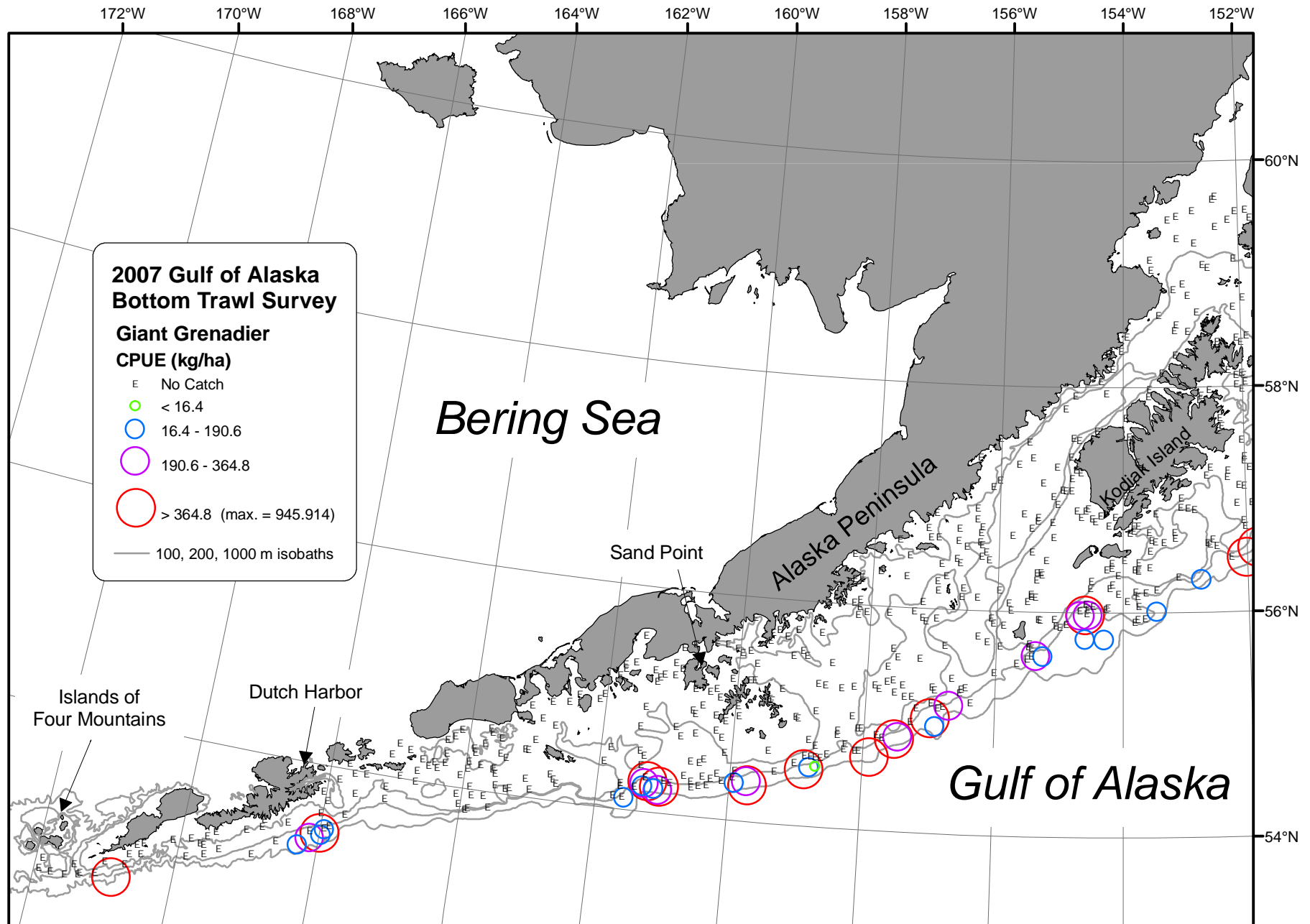


Figure 25. -- Distribution and relative abundance of giant grenadier from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

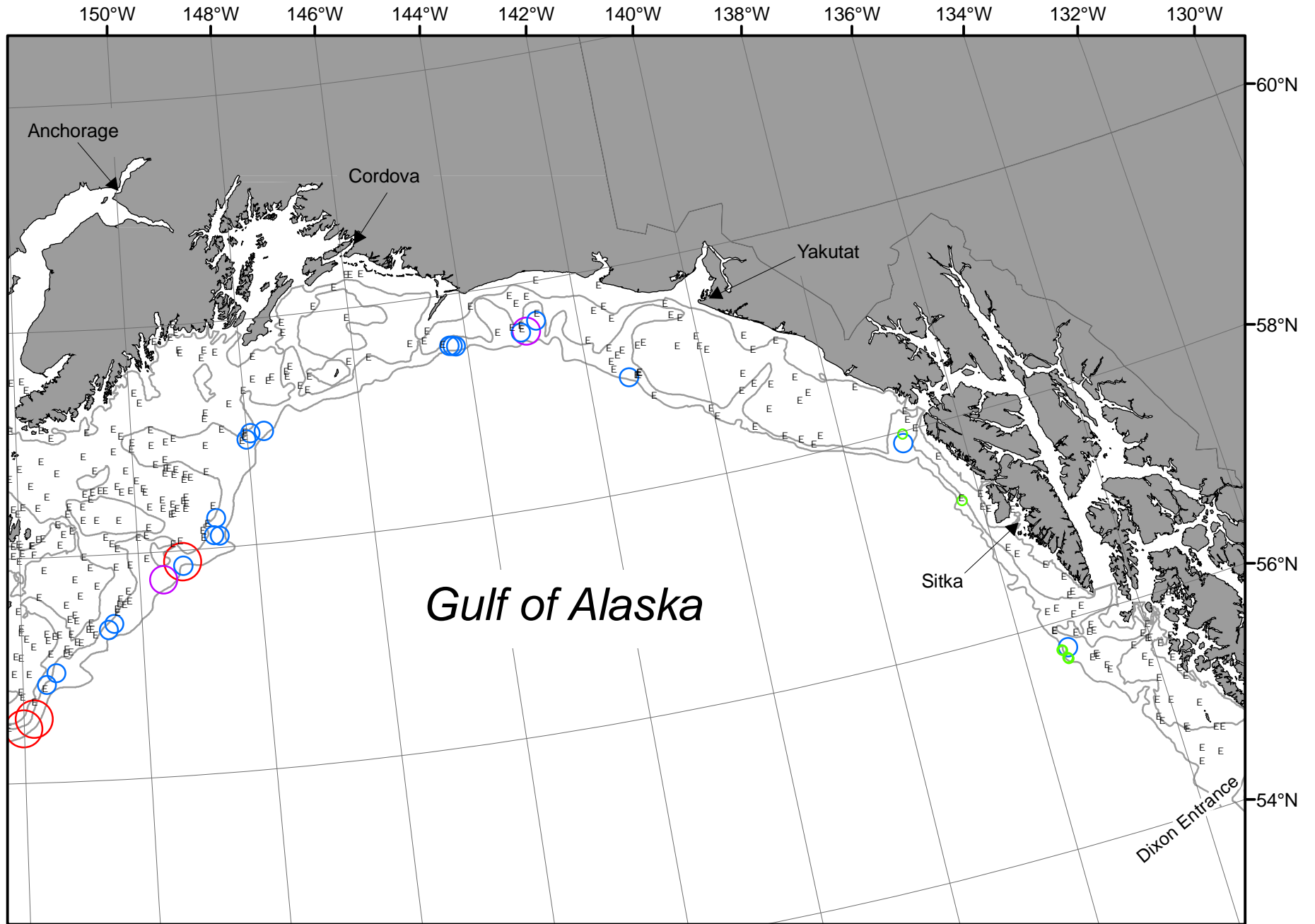


Figure 25. -- Continued (giant grenadier 2007).

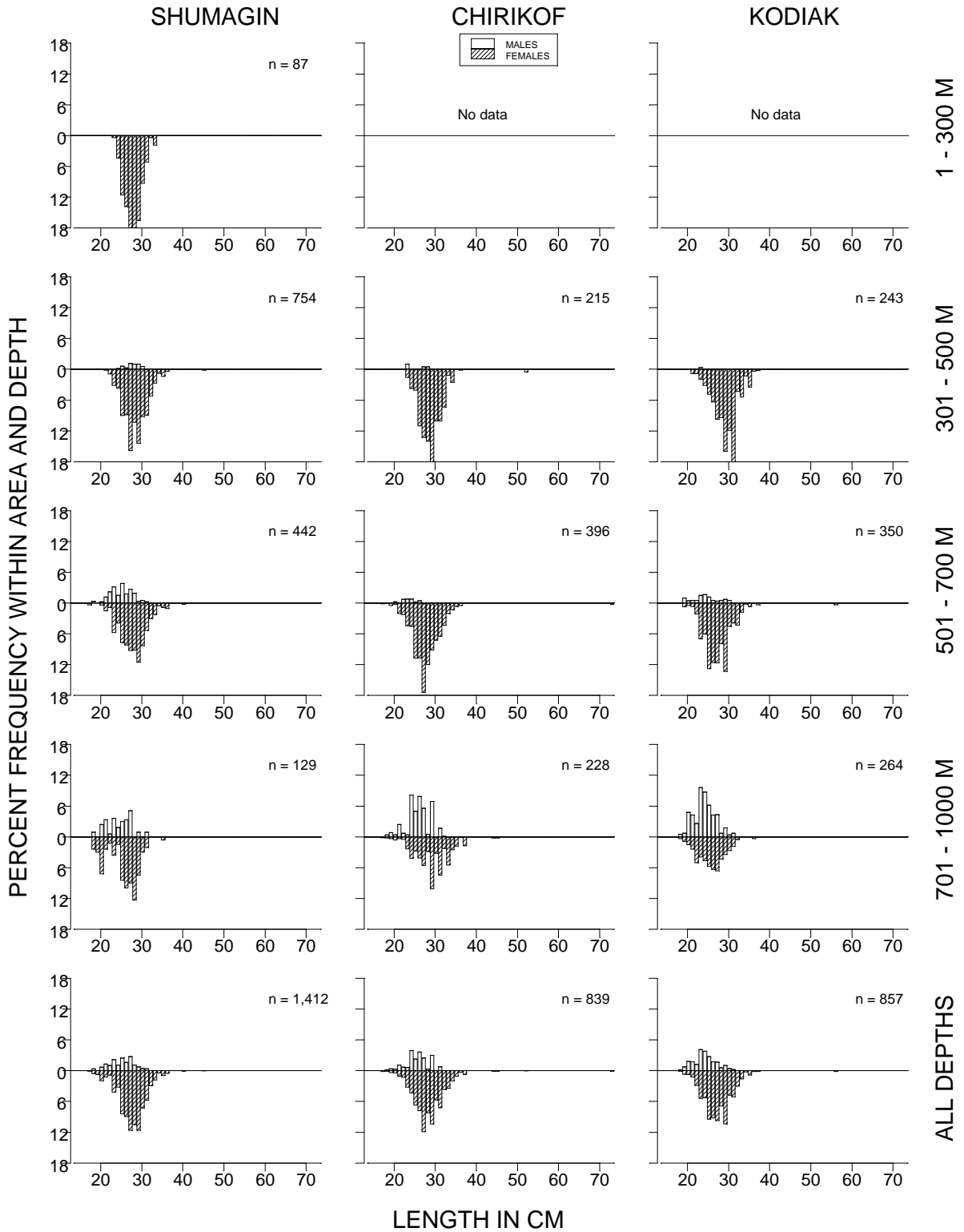


Figure 26. -- Size composition of giant grenadier from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals. Length measured from snout to anal fin insertion.

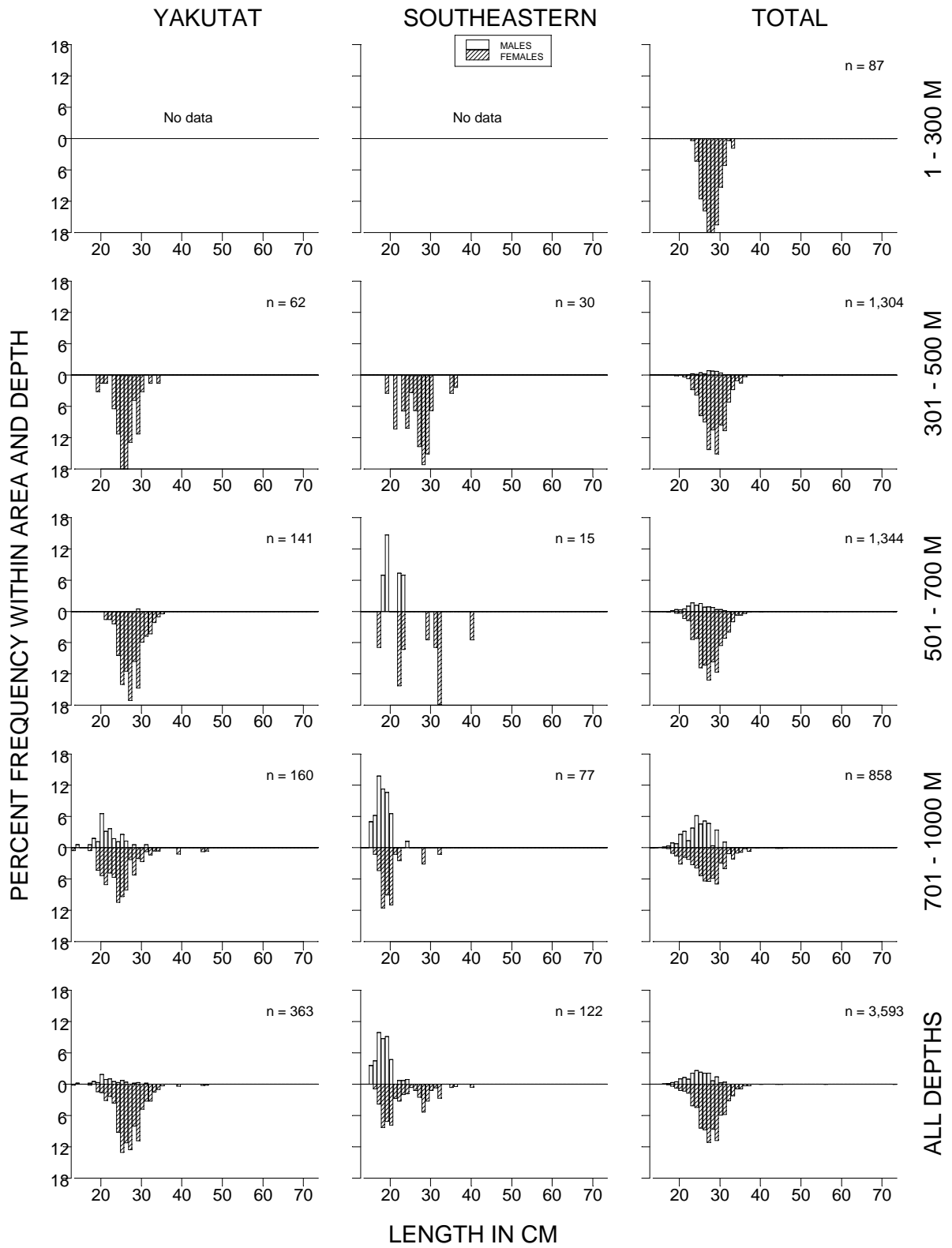


Figure 26. -- (continued).

Table 36. -- Catch per unit of effort by stratum for giant grenadier sorted by descending CPUE for the 2007 Gulf of Alaska bottom trawl survey.

INPFC area	Depth range	Stratum name	Number of hauls	Hauls with catch	CPUE (kg/ha)	Biomass (t)	Lower CI biomass	Upper CI biomass
Kodiak	501 - 700	Kodiak Slope	6	6	430.97	75,198	7,508	142,887
Chirikof	501 - 700	Chirikof Slope	7	7	345.56	67,495	43,434	91,555
Shumagin	501 - 700	Shumagin Slope	5	5	319.52	64,082	0	128,436
Shumagin	301 - 500	Shumagin Slope	9	7	276.62	70,016	8,374	131,658
Shumagin	701 - 1000	Shumagin Slope	2	2	210.17	40,715	0	124,749
Chirikof	701 - 1000	Chirikof Slope	5	5	208.39	63,883	0	184,202
Yakutat	501 - 700	Yakutat Slope	3	3	148.19	21,773	0	73,680
Kodiak	701 - 1000	Kodiak Slope	4	4	102.45	35,793	16,926	54,660
Chirikof	301 - 500	Chirikof Slope	10	4	83.37	13,373	0	34,494
Kodiak	301 - 500	Kodiak Slope	10	7	66.84	19,463	0	39,825
Yakutat	701 - 1000	Yakutat Slope	3	3	38.01	7,174	1,433	12,915
Yakutat	301 - 500	Yakutat Slope	7	1	14.96	2,275	0	7,841
Shumagin	201 - 300	Shumagin Slope	17	2	13.75	3,834	0	10,999
Southeastern	701 - 1000	Southeastern Slope	2	2	12.59	1,518	0	11,103
Southeastern	501 - 700	Southeastern Slope	3	3	4.47	462	20	905
Southeastern	301 - 500	Southeastern Deep Gullies	7	2	3.57	837	0	2,292
Southeastern	301 - 500	Southeastern Slope	4	1	1.24	96	0	402