ROCKFISHES

Pacific ocean perch (*Sebastes alutus*)

Pacific ocean perch was the second most abundant species caught in the 2007 survey, and was by far the most abundant and widely distributed rockfish species encountered in the survey (Table 2). They were caught throughout the survey area, in 42 of the 59 survey strata at all depths to 500 m, with the highest concentrations on the Shumagin and Chirikof slopes (Fig. 27, Table 38). The CPUEs were by far highest in the 201-300 m depth range in all INPFC areas except the Yakutat area where the densities were higher in the 301-500 m depth range (Table 37). Approximately 53% of the estimated population biomass was recorded in the 201-300 m depth range and over 99% in the 101-500 m range. Mean weight generally increased with depth. The proportion of fish smaller than 30 cm was extremely small at depths greater than 200 m in the Shumagin, Chirikof, and Kodiak INPC areas and at depths greater than 300 m in the Yakutat and Southeastern INPFC areas (Fig. 28, Table 37). The sex ratio of the Pacific ocean perch population in the survey area was very close to even with males comprising approximately 51% of the total estimated population.

Table 37. -- Number of survey hauls, number of hauls with Pacific ocean perch, 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	26	0.442	1,826	0	3,984	0.214
	101 - 200	39	13	11.307	16,596	0	33,374	0.415
	201 - 300	17	17	498.780	139,057	0	284,995	0.588
	301 - 500	9	4	2.421	613	0	1,839	0.815
	501 - 700	5	1	0.041	8	0	29	0.577
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	61	24.238	158,100	12,793	303,407	0.553
Chirikof	1 - 100	82	15	0.101	263	0	538	0.113
	101 - 200	69	31	3.434	8,191	0	17,681	0.429
	201 - 300	26	14	57.781	66,714	0	144,058	0.656
	301 - 500	10	6	11.435	1,834	0	5,391	0.731
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	66	11.315	77,002	323	153,680	0.613
Kodiak	1 - 100	97	5	0.488	1,878	0	6,180	0.585
	101 - 200	127	68	43.685	189,294	71,623	306,966	0.668
	201 - 300	30	25	94.372	108,436	17,434	199,438	0.687
	301 - 500	10	6	7.224	2,104	0	5,622	0.712
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	104	29.729	301,712	156,123	447,301	0.674
Yakutat	1 - 100	11	1	0.042	70	0	241	0.202
	101 - 200	33	20	1.921	5,645	0	12,087	0.198
	201 - 300	17	17	37.597	19,438	9,832	29,044	0.432
	301 - 500	9	8	104.332	27,416	0	57,308	0.700
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	46	9.191	52,569	24,132	81,005	0.465
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	14	51.630	57,227	0	142,246	0.659
	201 - 300	17	17	63.131	31,896	3,182	60,609	0.661
	301 - 500	11	8	31.038	9,675	3,635	15,714	0.783
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	39	35.235	98,798	9,801	187,794	0.670
All areas	1 - 100	334	47	0.313	4,036	0	8,604	0.280
	101 - 200	290	146	22.641	276,953	136,262	417,644	0.605
	201 - 300	107	90	101.408	365,541	184,637	546,445	0.620
	301 - 500	49	32	32.553	41,641	11,957	71,325	0.721
	501 - 700	24	1	0.010	8	0	29	0.577
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	316	21.505	688,180	459,835	916,524	0.615

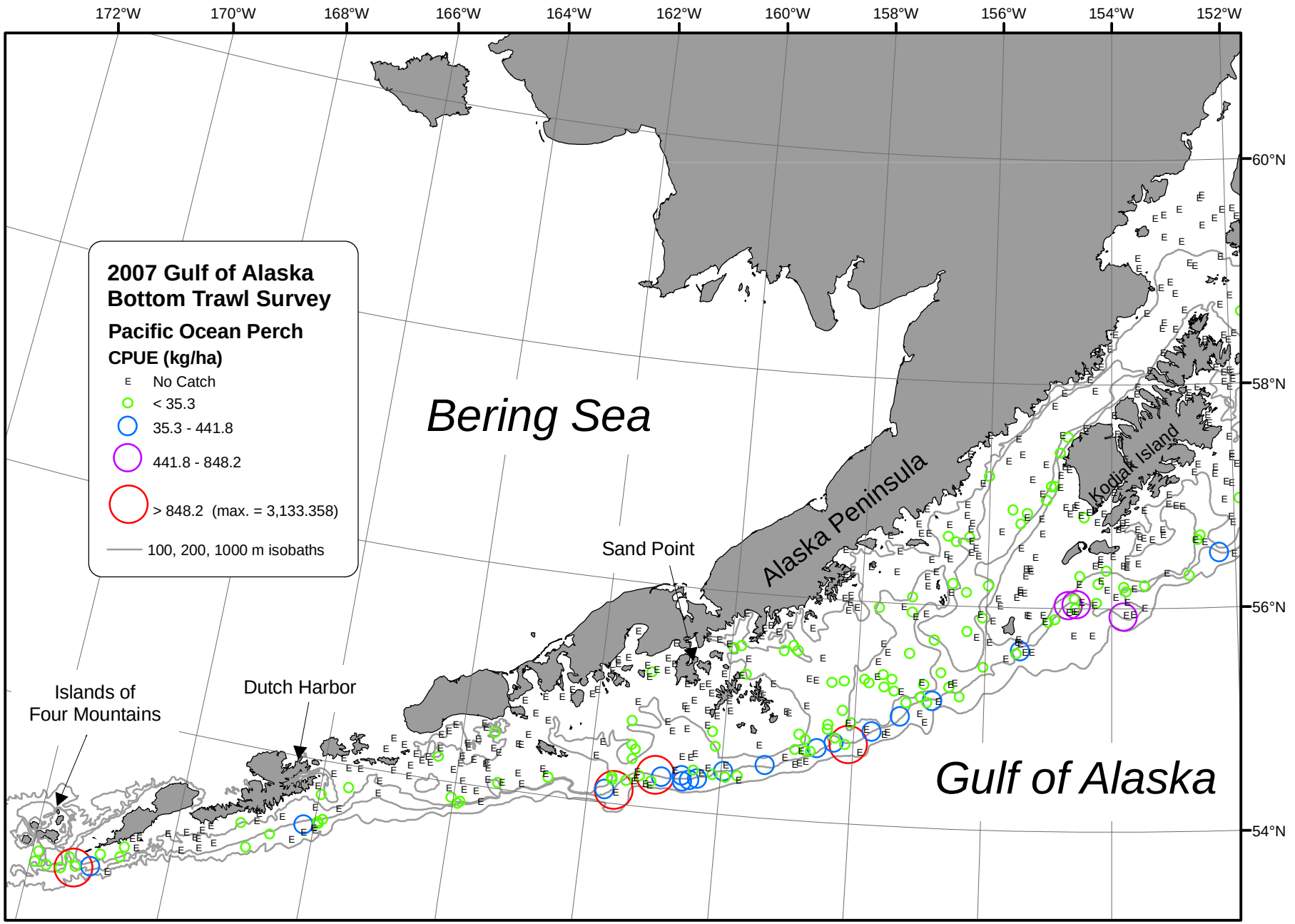

Figure 27. -- Distribution and relative abundance of Pacific ocean perch from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

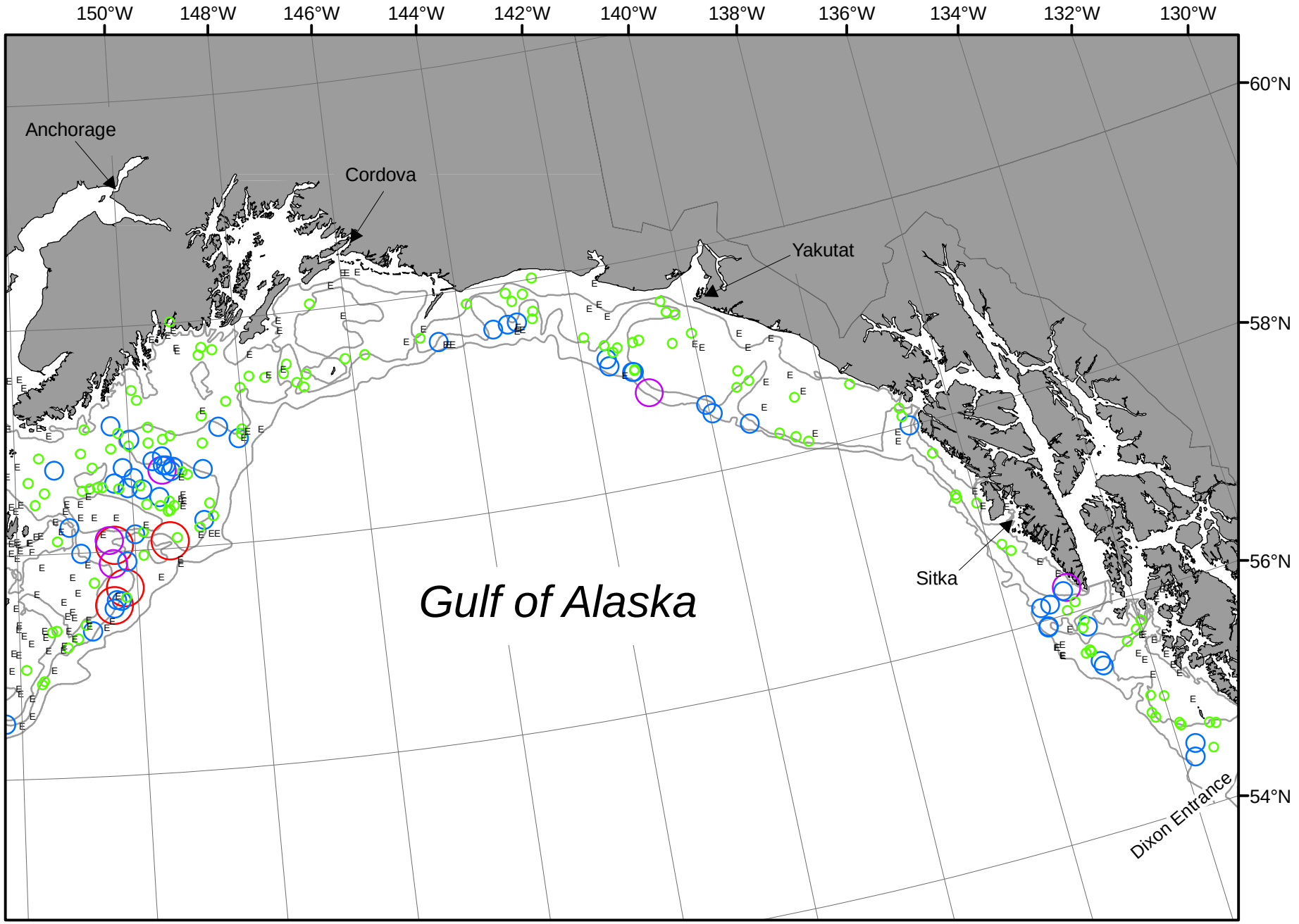

Figure 27. -- Continued (Pacific ocean perch 2007).

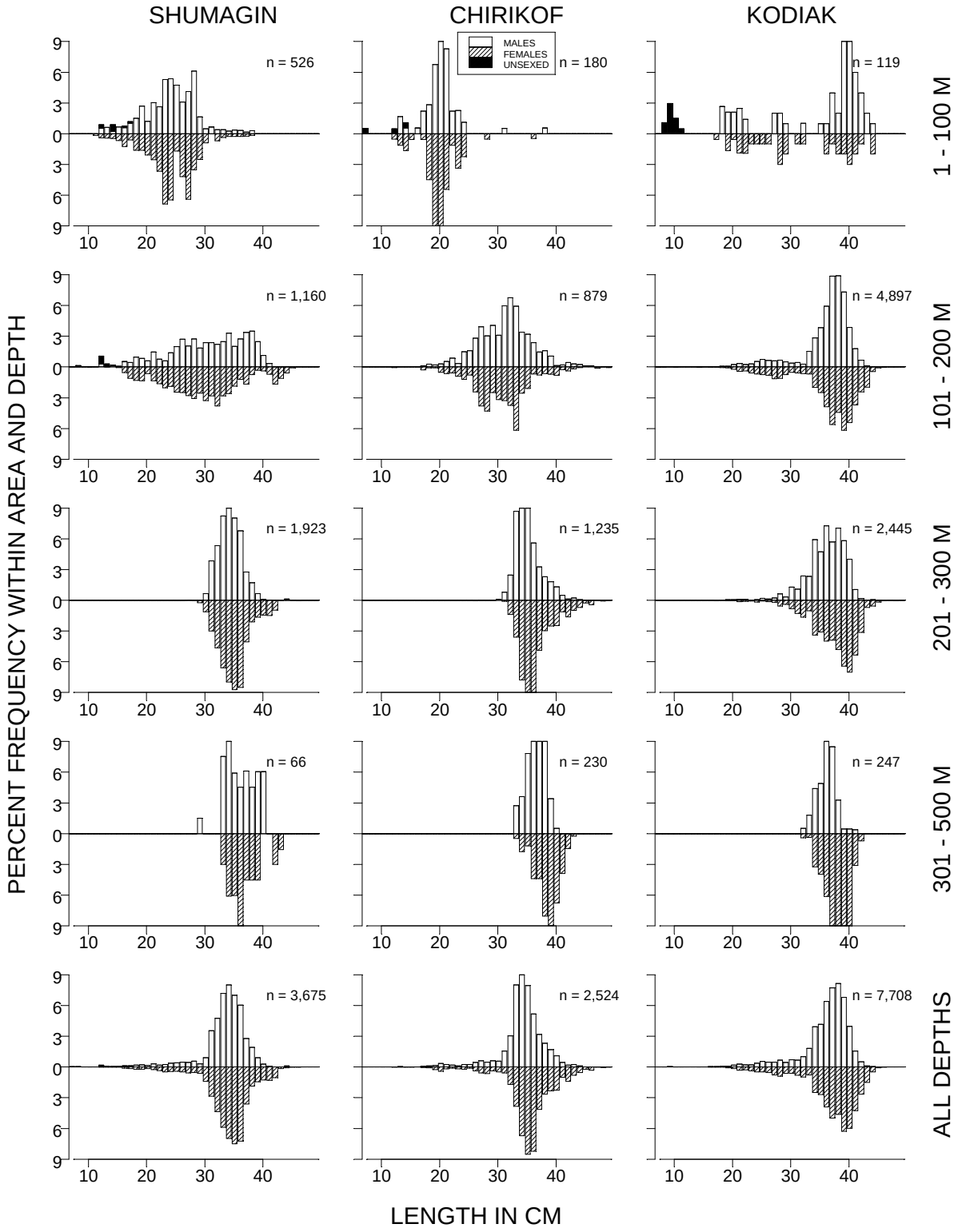

Figure 28. -- Size composition of Pacific ocean perch from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

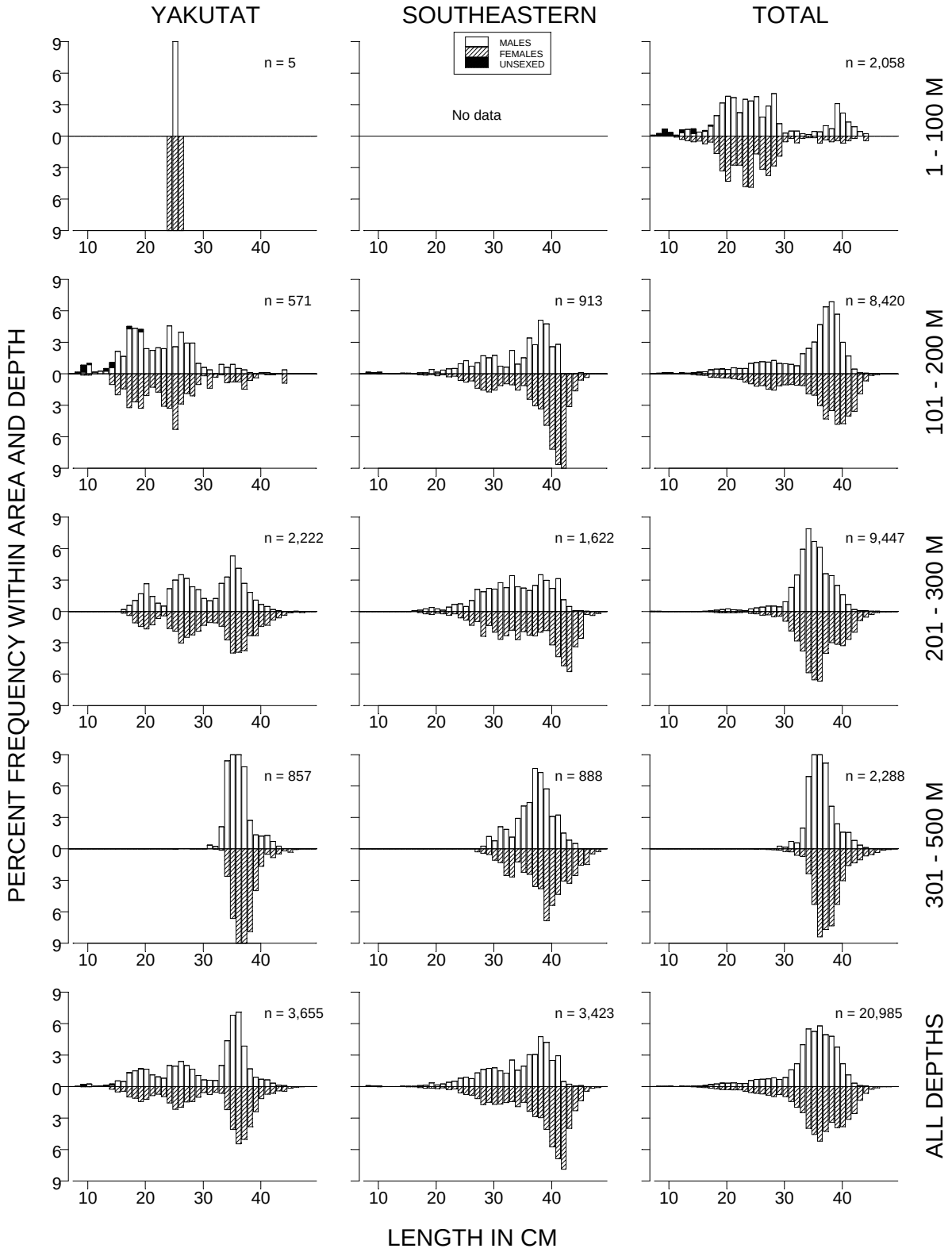

Figure 28. -- (continued).

Table 38. -- Catch per unit of effort by stratum for Pacific ocean perch 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	201 - 300	Shumagin Slope	17	17	498.78	139,057	0	285,686
Chirikof	201 - 300	Chirikof Slope	8	8	435.97	66,630	0	145,952
Yakutat	301 - 500	Yakutat Slope	7	6	178.08	27,079	0	58,005
Kodiak	201 - 300	Kodiak Slope	7	7	177.51	28,804	0	71,567
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	7	127.58	53,538	0	140,495
Kodiak	201 - 300	Kenai Gullies	19	18	119.58	79,632	0	163,613
Kodiak	101 - 200	Albatross Gullies	28	10	114.79	90,819	0	193,626
Kodiak	101 - 200	Kodiak Outer Shelf	28	12	89.28	44,872	0	95,130
Southeastern	301 - 500	Southeastern Slope	4	4	71.25	5,505	0	11,407
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	14	68.01	26,708	0	54,331
Yakutat	201 - 300	Yakutat Slope	9	9	57.51	12,234	6,554	17,915
Kodiak	101 - 200	Portlock Flats	35	29	46.25	33,929	9,128	58,730
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	46.10	5,188	0	23,448
Yakutat	201 - 300	Yakutat Gullies	8	8	23.67	7,203	0	15,723
Shumagin	101 - 200	Shumagin Outer Shelf	28	11	20.30	16,556	0	33,366
Southeastern	301 - 500	Southeastern Deep Gullies	7	4	17.79	4,170	0	8,869
Chirikof	101 - 200	Chirikof Outer Shelf	25	13	13.85	6,941	0	16,461
Chirikof	301 - 500	Chirikof Slope	10	6	11.44	1,834	0	5,445
Kodiak	101 - 200	Kenai Flats	18	12	11.38	13,749	0	35,704
Kodiak	301 - 500	Kodiak Slope	10	6	7.22	2,104	0	5,676
Kodiak	101 - 200	Barren Islands	18	5	5.40	5,926	0	16,337
Southeastern	101 - 200	Prince of Wales Shelf	14	7	5.36	3,690	0	9,557
Yakutat	101 - 200	Fairweather Shelf	8	4	4.53	3,499	0	9,881
Kodiak	1 - 100	Kenai Peninsula	7	2	3.49	1,833	0	6,284
Yakutat	301 - 500	Yakutat Gullies	2	2	3.05	337	0	2,117
Shumagin	301 - 500	Shumagin Slope	9	4	2.42	613	0	1,863
Yakutat	101 - 200	Yakataga Shelf	8	6	2.04	1,078	0	2,864
Yakutat	101 - 200	Middleton Shelf	9	5	1.21	885	0	2,039
Shumagin	1 - 100	Shumagin Bank	36	10	1.00	1,238	0	3,274
Chirikof	101 - 200	East Shumagin Gully	17	5	0.71	784	0	1,833
Chirikof	101 - 200	Shelikof Edge	27	13	0.60	466	0	1,061
Shumagin	1 - 100	Davidson Bank	48	8	0.38	516	0	1,286
Chirikof	1 - 100	Semidi Bank	23	12	0.35	254	0	529
Yakutat	101 - 200	Yakutat Flats	8	5	0.20	182	0	411
Shumagin	101 - 200	West Shumagin Gully	4	2	0.18	41	0	147
Chirikof	201 - 300	Lower Shelikof Gully	18	6	0.09	85	15	155
Yakutat	1 - 100	Yakutat Shallows	6	1	0.07	70	0	249
Shumagin	1 - 100	Lower Alaska Peninsula	28	3	0.05	36	0	80
Shumagin	1 - 100	Fox Islands	21	5	0.04	36	0	91
Shumagin	501 - 700	Shumagin Slope	5	1	0.04	8	0	31
Kodiak	1 - 100	Albatross Banks	39	3	0.03	45	0	107
Chirikof	1 - 100	Chirikof Bank	40	3	0.01	9	0	23

Northern rockfish (*Sebastes polyspinis*)

Northern rockfish was the eighth most abundant species overall and the second most abundant rockfish species caught in the 2007 survey (Table 2). Northern rockfish were found primarily in the western and central Gulf of Alaska with about 91% of the estimated biomass in the Shumagin and Chirikof INPFC areas and almost all of the remainder in the Kodiak area (Fig. 29, Table 39). They were primarily found shallower than 200 m, with less than 1% deeper than 200 m (Table 39). The highest CPUEs of northern rockfish were in the 101-200 m depth range on the Shelikof Edge and the Shumagin Outer Shelf (Table 40). The length distribution of northern rockfish caught during the survey was confined to a relatively narrow range between approximately 30 and 45 cm in all areas and depth ranges with a mode around 35 to 40 cm for both sexes in the three westernmost INPFC areas (Fig. 30). The sex ratio of the northern rockfish population in the survey area was relatively close to even with females comprising approximately 53% of the total estimated population.

Table 39. -- Number of survey hauls, number of hauls with northern rockfish, 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	18	11.775	48,618	0	98,708	0.943
	101 - 200	39	13	44.223	64,908	0	168,261	0.864
	201 - 300	17	11	2.279	635	0	1,419	0.621
	301 - 500	9	1	0.239	60	0	197	1.053
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	43	17.511	114,222	360	228,084	0.894
Chirikof	1 - 100	82	11	4.031	10,494	0	26,975	0.918
	101 - 200	69	21	34.272	81,737	0	209,680	0.798
	201 - 300	26	3	0.016	18	0	45	0.490
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	35	13.555	92,250	0	221,041	0.810
Kodiak	1 - 100	97	5	0.016	60	0	139	0.551
	101 - 200	127	41	4.549	19,710	0	45,146	0.873
	201 - 300	30	12	0.687	789	136	1,442	0.646
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	58	2.026	20,559	0	46,003	0.860
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	2	0.011	31	0	78	0.546
	201 - 300	17	1	0.012	6	0	20	0.644
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	3	0.007	38	0	86	0.560
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	34	4.585	59,172	6,598	111,747	0.938
	101 - 200	290	77	13.602	166,387	2,006	330,768	0.831
	201 - 300	107	27	0.402	1,449	466	2,433	0.632
	301 - 500	49	1	0.047	60	0	197	1.053
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	139	7.096	227,069	56,108	398,029	0.855

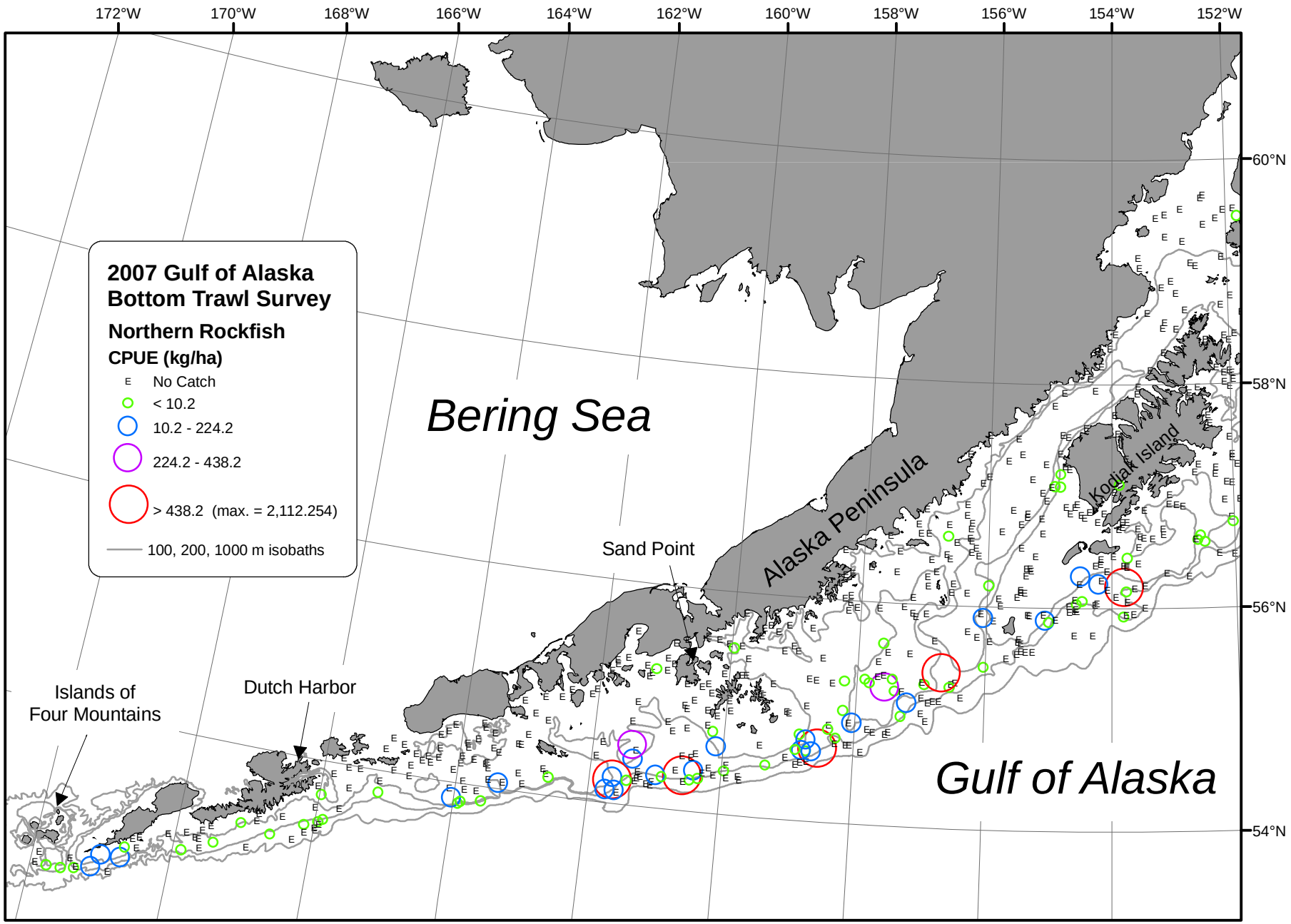

Figure 29. -- Distribution and relative abundance of northern rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

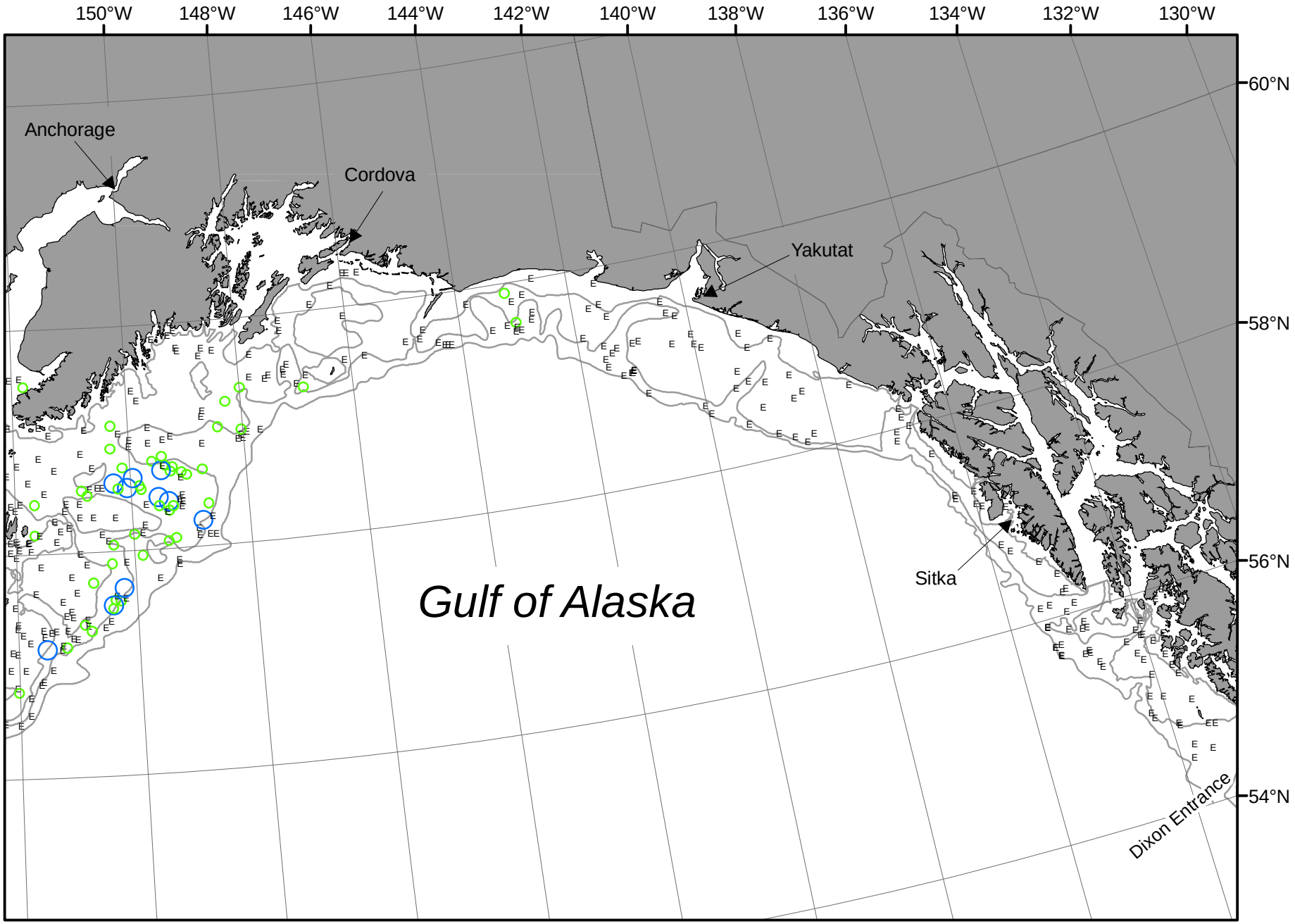

Figure 29. -- Continued (northern rockfish 2007).

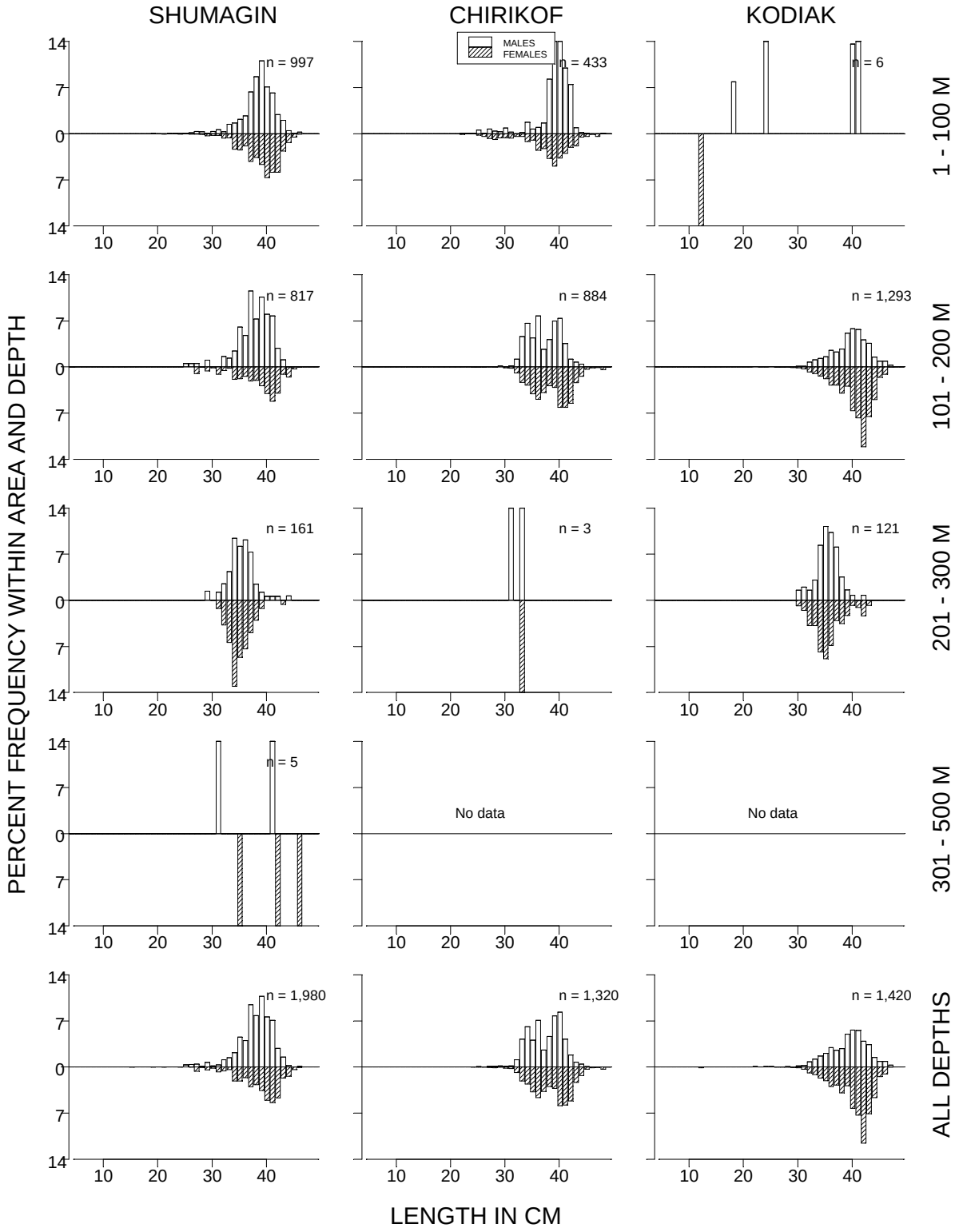

Figure 30. -- Size composition of northern rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

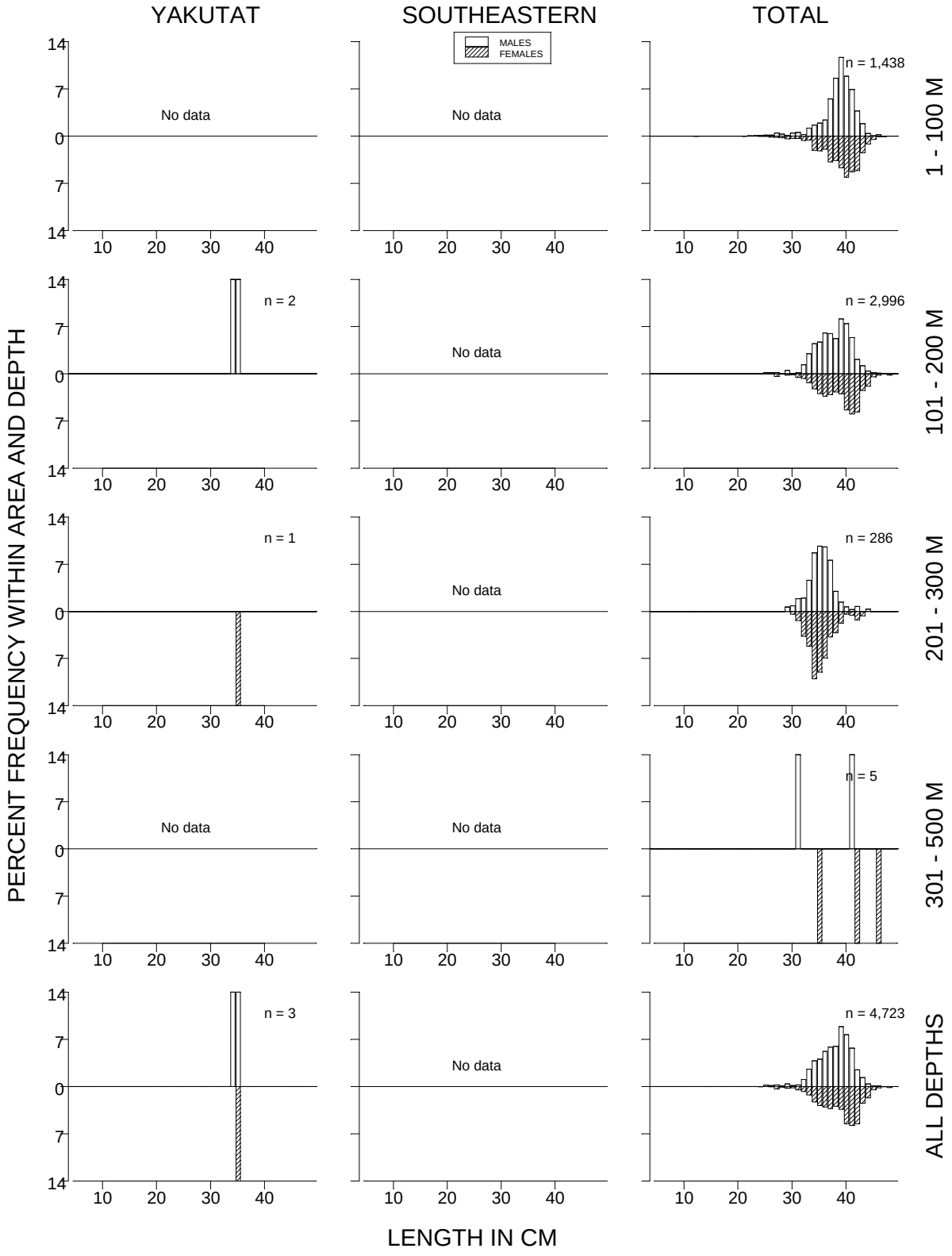

Figure 30. -- (continued).

Table 40. -- Catch per unit of effort by stratum for northern rockfish 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
Chirikof	101 - 200	Shelikof Edge	27	4	80.89	62,569	0	186,883
Shumagin	101 - 200	Shumagin Outer Shelf	28	13	79.61	64,908	0	168,463
Chirikof	101 - 200	Chirikof Outer Shelf	25	13	36.89	18,482	0	51,628
Kodiak	101 - 200	Kodiak Outer Shelf	28	11	29.48	14,815	0	40,180
Shumagin	1 - 100	Davidson Bank	48	6	20.74	28,378	0	71,494
Shumagin	1 - 100	Shumagin Bank	36	7	15.71	19,475	0	46,233
Chirikof	1 - 100	Semidi Bank	23	7	13.08	9,554	0	26,043
Kodiak	101 - 200	Portlock Flats	35	22	6.01	4,408	1,640	7,177
Kodiak	201 - 300	Kodiak Slope	7	5	3.75	609	0	1,324
Shumagin	201 - 300	Shumagin Slope	17	11	2.28	635	0	1,422
Chirikof	1 - 100	Chirikof Bank	40	4	0.87	940	0	2,458
Shumagin	1 - 100	Fox Islands	21	4	0.83	690	0	1,987
Chirikof	101 - 200	East Shumagin Gully	17	4	0.62	687	0	1,953
Kodiak	101 - 200	Albatross Gullies	28	4	0.43	340	0	867
Kodiak	201 - 300	Kenai Gullies	19	7	0.27	181	0	375
Shumagin	301 - 500	Shumagin Slope	9	1	0.24	60	0	200
Shumagin	1 - 100	Lower Alaska Peninsula	28	1	0.11	75	0	230
Kodiak	101 - 200	Kenai Flats	18	3	0.105	127	0	276
Chirikof	201 - 300	Chirikof Slope	8	2	0.041	6	0	16
Kodiak	1 - 100	Albatross Banks	39	3	0.038	59	0	138
Yakutat	101 - 200	Yakataga Shelf	8	1	0.03	16	0	53
Yakutat	201 - 300	Yakutat Slope	9	1	0.029	6	0	21
Yakutat	101 - 200	Middleton Shelf	9	1	0.021	16	0	52
Kodiak	101 - 200	Barren Islands	18	1	0.018	20	0	61
Chirikof	201 - 300	Lower Shelikof Gully	18	1	0.012	12	0	37
Kodiak	1 - 100	Albatross Shallows	28	1	0.001	1	0	2
Kodiak	1 - 100	Lower Cook Inlet	14	1	0.001	1	0	2

Rougheye rockfish (*Sebastes aleutianus*)

Rougheye rockfish were found throughout the survey area primarily on the upper continental slope and in the deeper gullies in the 201-500 m depth range, where approximately 74% of its biomass was estimated to be (Fig. 31, Tables 41-42). The highest CPUEs were generally recorded in the 301-500 m range where rougheye rockfish were caught in approximately 78% of the tows (Table 41). Fish size generally increased with depth (Fig. 32, Table 41). The length mode for fish captured between 101 and 200 m was approximately 22 cm FL, while the mode for fish captured between 301 and 500 m was approximately 48 cm. The sex ratio of the rougheye rockfish population in the survey area was relatively close to even with females comprising approximately 52% of the total estimated population.

Table 41. -- Number of survey hauls, number of hauls with rougheye rockfish, 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	1	0.004	15	0	46	0.478
	101 - 200	39	5	0.064	94	0	194	0.344
	201 - 300	17	5	1.191	332	0	892	1.719
	301 - 500	9	4	0.616	156	0	345	1.232
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	15	0.091	597	17	1,176	0.957
Chirikof	1 - 100	82	5	0.048	125	0	280	0.337
	101 - 200	69	21	0.645	1,539	456	2,621	0.713
	201 - 300	26	15	0.808	933	419	1,447	1.400
	301 - 500	10	6	1.907	306	61	550	1.683
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	47	0.426	2,902	1,692	4,111	0.860
Kodiak	1 - 100	97	4	0.162	625	0	1,445	0.463
	101 - 200	127	28	0.756	3,276	1,534	5,018	0.502
	201 - 300	30	19	4.042	4,644	244	9,044	0.788
	301 - 500	10	8	16.040	4,671	0	10,063	1.430
	501 - 700	6	1	0.065	11	0	39	1.066
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	60	1.303	13,227	6,493	19,960	0.776
Yakutat	1 - 100	11	1	0.012	21	0	74	0.066
	101 - 200	33	14	0.269	791	251	1,331	0.231
	201 - 300	17	10	3.322	1,718	0	3,874	0.639
	301 - 500	9	9	4.127	1,084	664	1,505	0.907
	501 - 700	3	2	0.386	57	0	148	1.771
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	36	0.642	3,671	1,574	5,767	0.479
Southeastern	1 - 100	11	1	0.490	321	0	1,026	0.211
	101 - 200	22	0	---	---	---	---	---
	201 - 300	17	4	4.111	2,077	0	6,658	1.919
	301 - 500	11	11	12.081	3,766	0	7,849	1.629
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	16	2.198	6,163	1,260	11,066	1.255
All areas	1 - 100	334	12	0.086	1,106	93	2,118	0.309
	101 - 200	290	68	0.466	5,699	3,614	7,785	0.460
	201 - 300	107	53	2.692	9,703	4,085	15,322	0.922
	301 - 500	49	38	7.804	9,982	3,656	16,308	1.410
	501 - 700	24	3	0.083	68	0	154	1.595
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	174	0.830	26,559	18,263	34,855	0.790

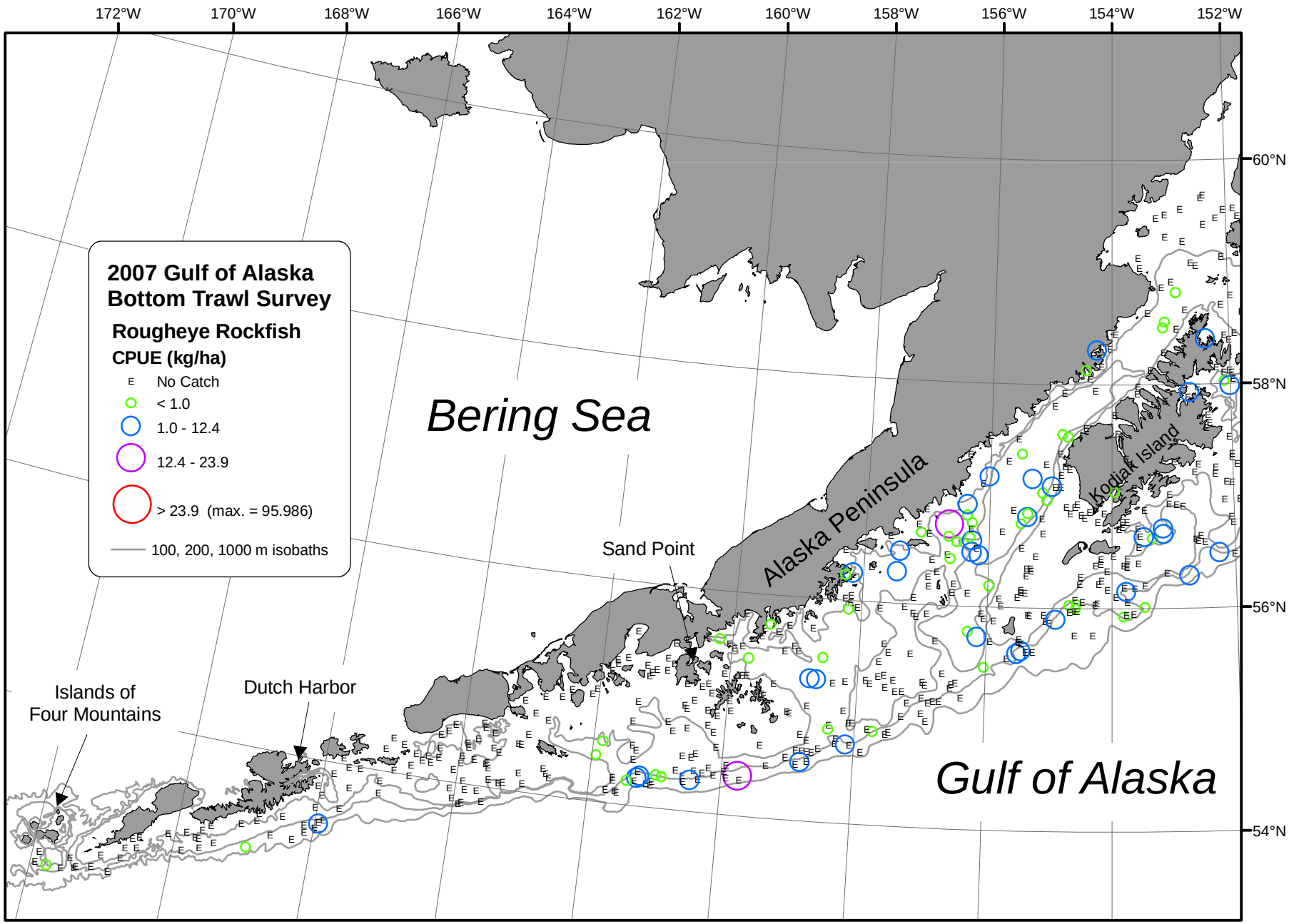

Figure 31. -- Distribution and relative abundance of rougheye rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

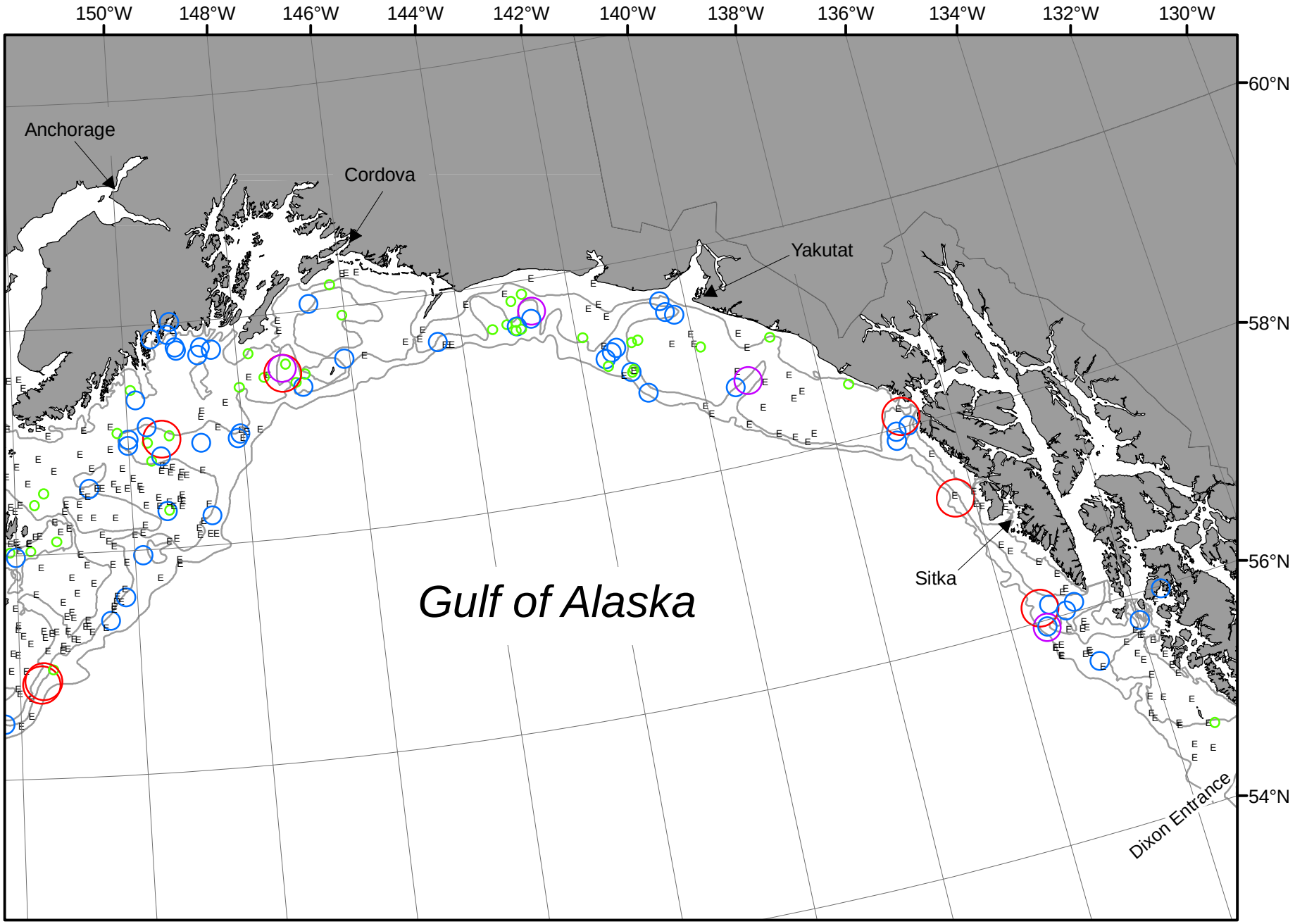

Figure 31. -- Continued (rougheye rockfish 2007).

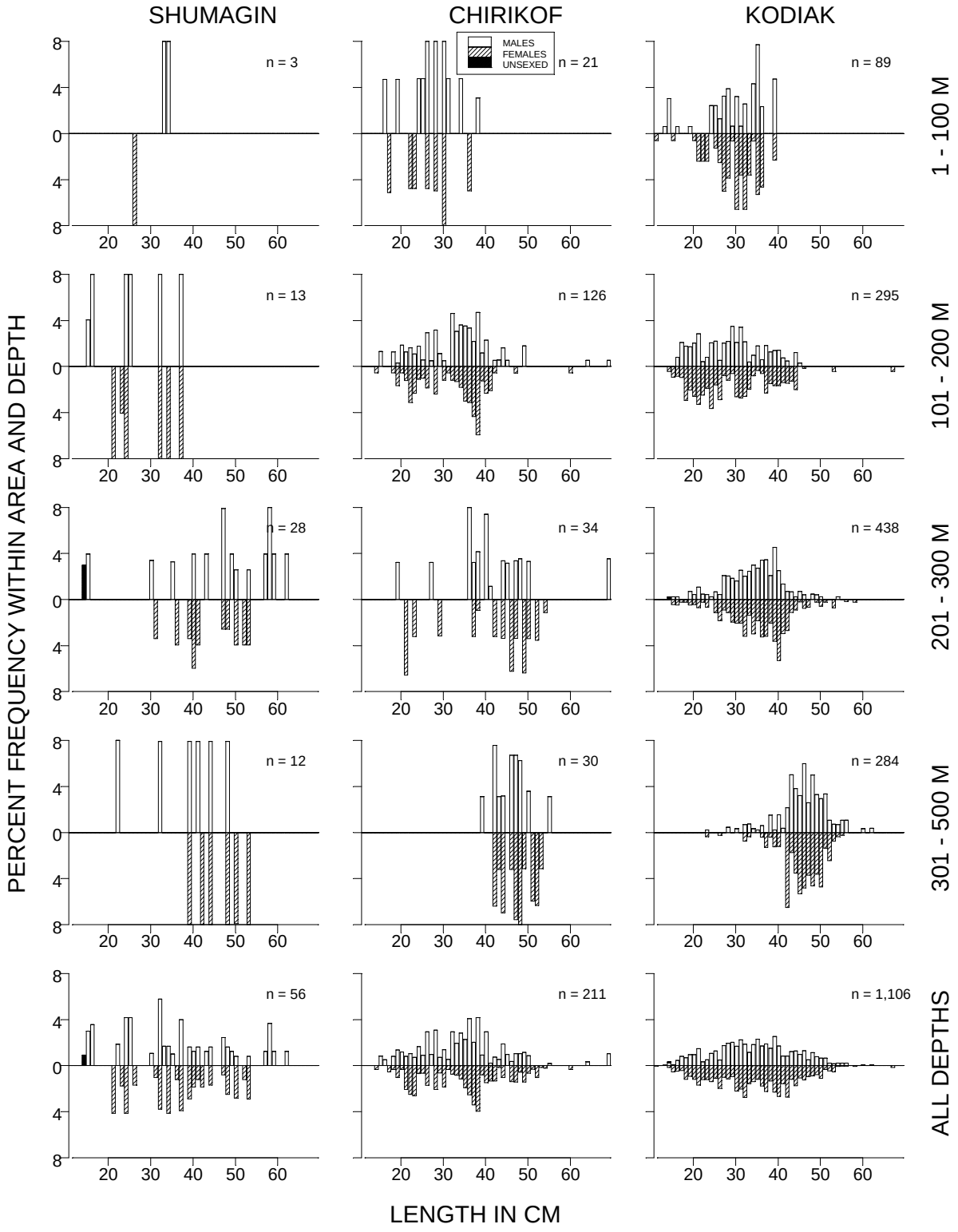

Figure 32. -- Size composition of rougheye rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

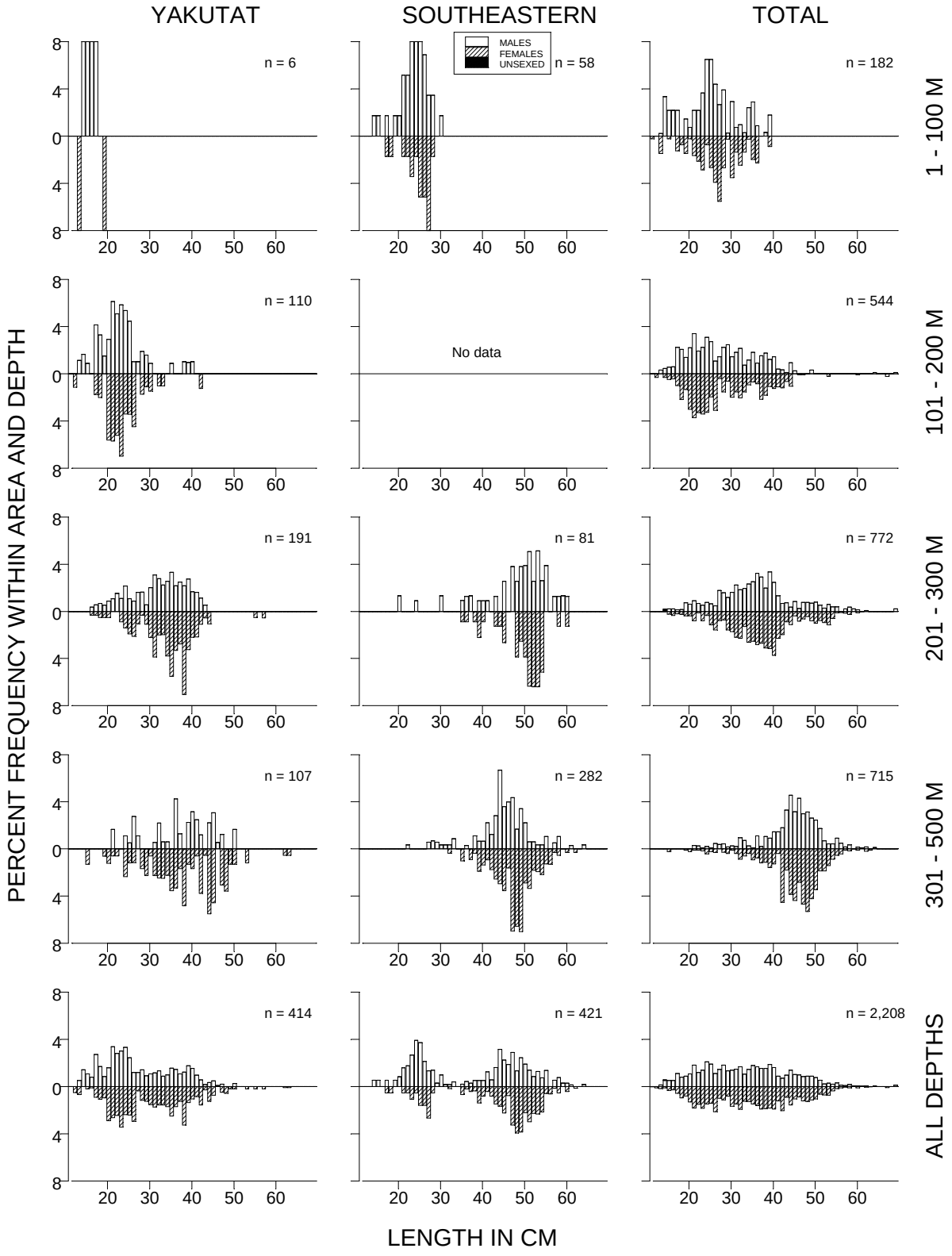

Figure 32. -- (continued).

Table 42. -- Catch per unit of effort by stratum for rougheye rockfish 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
Southeastern	301 - 500	Southeastern Slope	4	4	36.86	2,848	0	7,863
Southeastern	201 - 300	Baranof-Chichagof Slope	3	2	17.74	1,997	0	8,184
Kodiak	301 - 500	Kodiak Slope	10	8	16.04	4,671	0	10,145
Kodiak	201 - 300	Kenai Gullies	19	14	6.45	4,296	0	8,697
Yakutat	301 - 500	Yakutat Gullies	2	2	6.16	682	0	2,024
Yakutat	201 - 300	Yakutat Gullies	8	7	5.48	1,666	0	3,876
Southeastern	301 - 500	Southeastern Deep Gullies	7	7	3.92	918	438	1,398
Yakutat	301 - 500	Yakutat Slope	7	7	2.65	403	71	735
Kodiak	101 - 200	Kenai Flats	18	12	1.94	2,347	725	3,970
Chirikof	301 - 500	Chirikof Slope	10	6	1.91	306	58	554
Kodiak	201 - 300	Kodiak Slope	7	4	1.68	272	0	667
Shumagin	201 - 300	Shumagin Slope	17	5	1.19	332	0	895
Chirikof	101 - 200	Shelikof Edge	27	12	0.93	719	0	1,548
Kodiak	101 - 200	Albatross Gullies	28	8	0.89	705	66	1,345
Chirikof	201 - 300	Lower Shelikof Gully	18	12	0.89	892	378	1,407
Kodiak	1 - 100	Kenai Peninsula	7	2	0.80	421	0	1,171
Chirikof	101 - 200	East Shumagin Gully	17	8	0.73	806	78	1,535
Yakutat	101 - 200	Middleton Shelf	9	5	0.69	503	0	1,019
Shumagin	301 - 500	Shumagin Slope	9	4	0.62	156	0	348
Southeastern	1 - 100	Southeastern Shallows	11	1	0.49	321	0	1,035
Yakutat	501 - 700	Yakutat Slope	3	2	0.39	57	0	180
Kodiak	1 - 100	Albatross Shallows	28	2	0.35	204	0	576
Yakutat	101 - 200	Yakataga Shelf	8	4	0.29	154	0	350
Chirikof	201 - 300	Chirikof Slope	8	3	0.26	40	0	88
Yakutat	201 - 300	Yakutat Slope	9	3	0.24	52	0	134
Kodiak	201 - 300	Upper Shelikof Gully	4	1	0.24	76	0	316
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	2	0.20	80	0	241
Chirikof	1 - 100	Upper Alaska Peninsula	19	4	0.14	114	0	269
Shumagin	101 - 200	West Shumagin Gully	4	2	0.14	32	0	93
Shumagin	101 - 200	Sanak Gully	7	2	0.14	58	0	156
Kodiak	101 - 200	Portlock Flats	35	3	0.14	99	0	252
Kodiak	101 - 200	Barren Islands	18	5	0.11	124	2	247
Yakutat	101 - 200	Yakutat Flats	8	4	0.09	83	0	214
Yakutat	101 - 200	Fairweather Shelf	8	1	0.07	51	0	172
Kodiak	501 - 700	Kodiak Slope	6	1	0.07	11	0	41
Yakutat	1 - 100	Middleton Shallows	5	1	0.03	21	0	78
Chirikof	101 - 200	Chirikof Outer Shelf	25	1	0.03	14	0	42
Shumagin	1 - 100	Lower Alaska Peninsula	28	1	0.02	15	0	46
Chirikof	1 - 100	Chirikof Bank	40	1	0.01	10	0	31
Shumagin	101 - 200	Shumagin Outer Shelf	28	1	0.00	4	0	11

Blackspotted rockfish (*Sebastes melanostictus*)

Blackspotted rockfish were found throughout the survey area primarily on the upper continental slope and in the deeper gullies in the 201-500 m depth range, where approximately 97% of its biomass was estimated to be (Fig. 33, Tables 43-44). The highest CPUEs were recorded in the 301-500 m range in all INPFC areas where blackspotted rockfish were caught in approximately 82% of the tows (Table 43). Fish size increased with depth (Fig. 34, Table 43). The length mode for fish captured between 301 and 500 m was approximately 44 cm FL, whereas the length modes for fish captured at other depths was difficult to discern due to small sample sizes. The sex ratio of the rougheye rockfish population in the survey area was relatively close to even with females comprising approximately 52% of the total estimated population.

Table 43. -- Number of survey hauls, number of hauls with blackspotted rockfish, 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	5	0.189	277	0	647	0.412
	201 - 300	17	10	2.371	661	77	1,245	1.028
	301 - 500	9	9	8.841	2,238	168	4,307	1.391
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	24	0.487	3,176	1,075	5,277	1.086
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	4	0.042	100	0	222	0.785
	201 - 300	26	11	0.301	348	123	572	1.033
	301 - 500	10	9	12.321	1,976	437	3,516	1.505
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	24	0.356	2,423	975	3,872	1.364
Kodiak	1 - 100	97	3	0.009	35	0	79	0.247
	101 - 200	127	21	0.148	642	64	1,219	0.511
	201 - 300	30	15	1.053	1,211	410	2,011	0.706
	301 - 500	10	9	65.153	18,971	0	38,838	1.204
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	48	2.055	20,858	964	40,753	1.105
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	1	0.001	2	0	5	0.048
	201 - 300	17	3	0.477	247	0	769	0.261
	301 - 500	9	6	4.824	1,268	0	2,810	0.956
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	10	0.265	1,516	25	3,007	0.658
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	1	0.007	8	0	25	0.360
	201 - 300	17	3	0.063	32	0	71	0.954
	301 - 500	11	7	17.031	5,308	0	13,584	1.548
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	11	1.907	5,348	0	13,624	1.535
All areas	1 - 100	334	3	0.003	35	0	79	0.247
	101 - 200	290	32	0.084	1,028	341	1,715	0.488
	201 - 300	107	42	0.693	2,497	1,405	3,589	0.680
	301 - 500	49	40	23.266	29,761	8,865	50,658	1.270
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	117	1.041	33,321	12,379	54,264	1.135

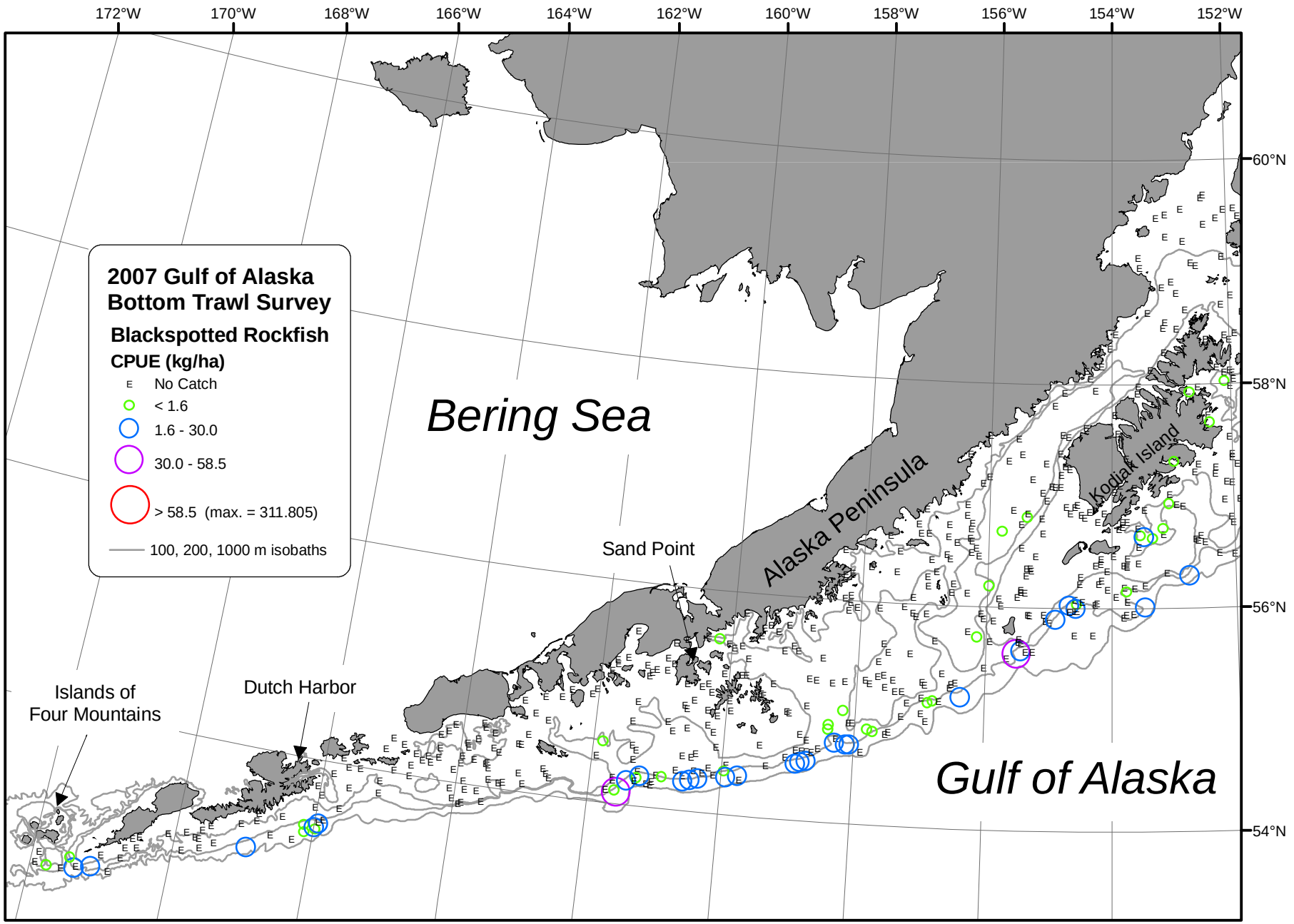

Figure 33. -- Distribution and relative abundance of blackspotted rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

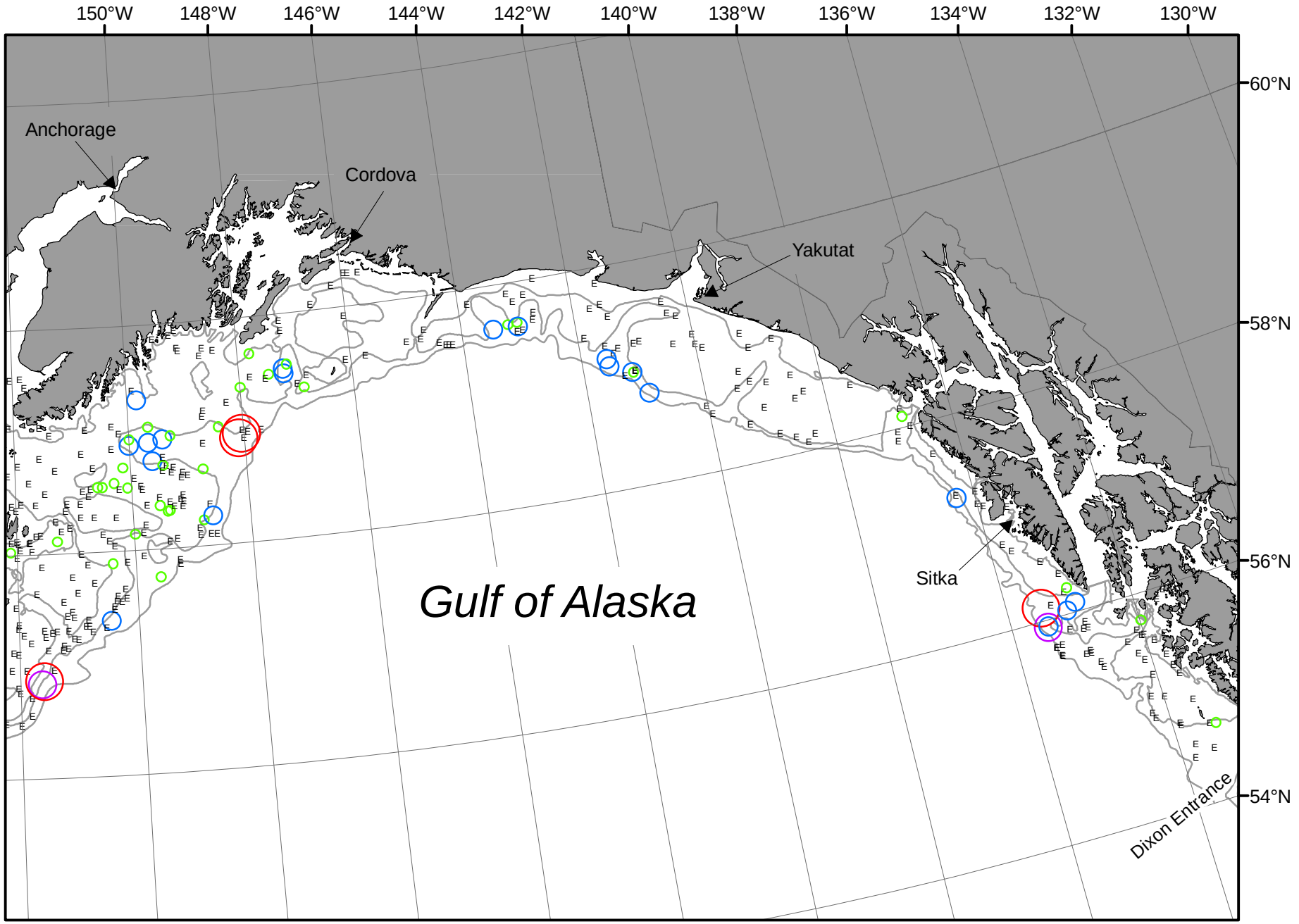

Figure 33. -- Continued (blackspotted rockfish 2007).

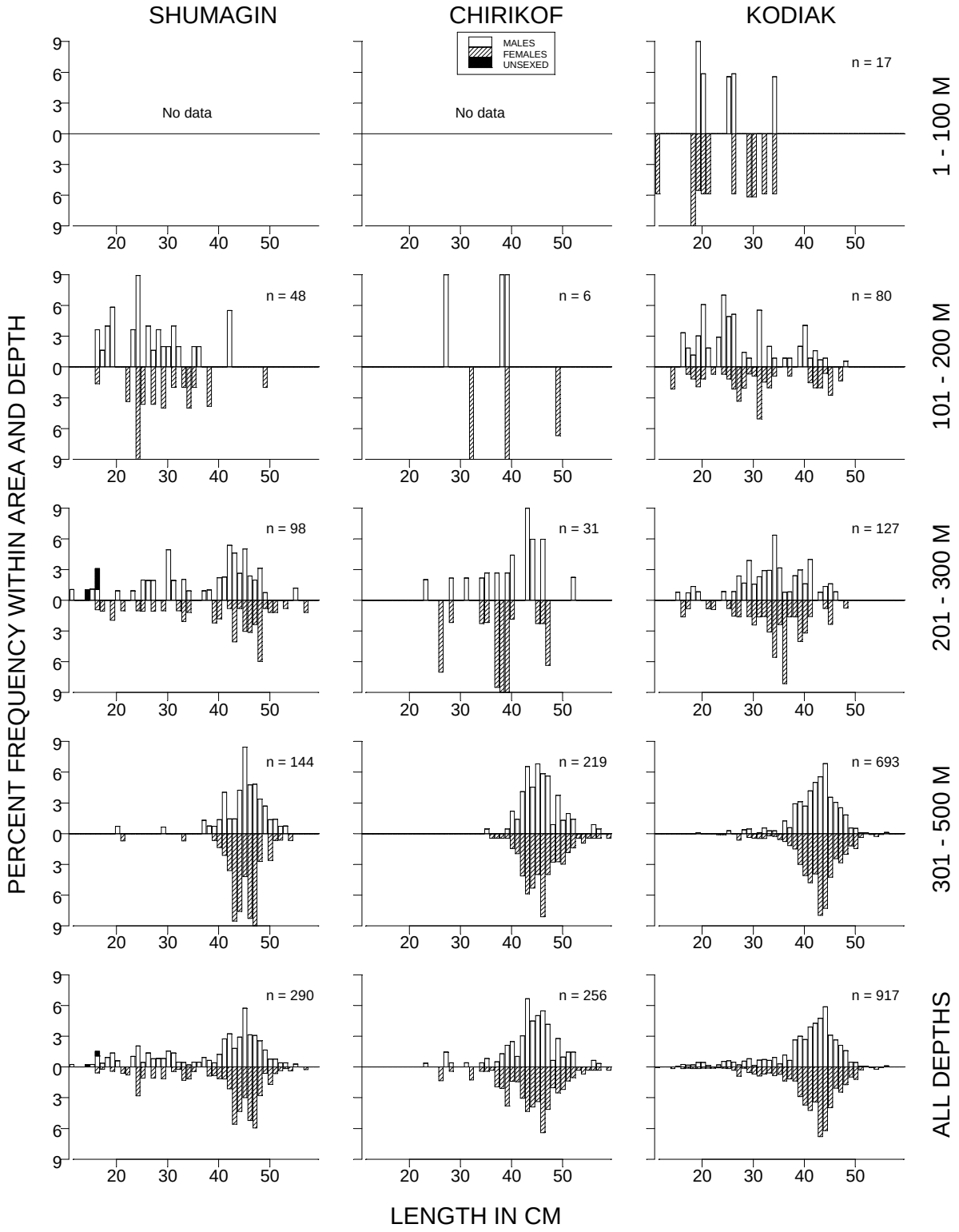

Figure 34. -- Size composition of blackspotted rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

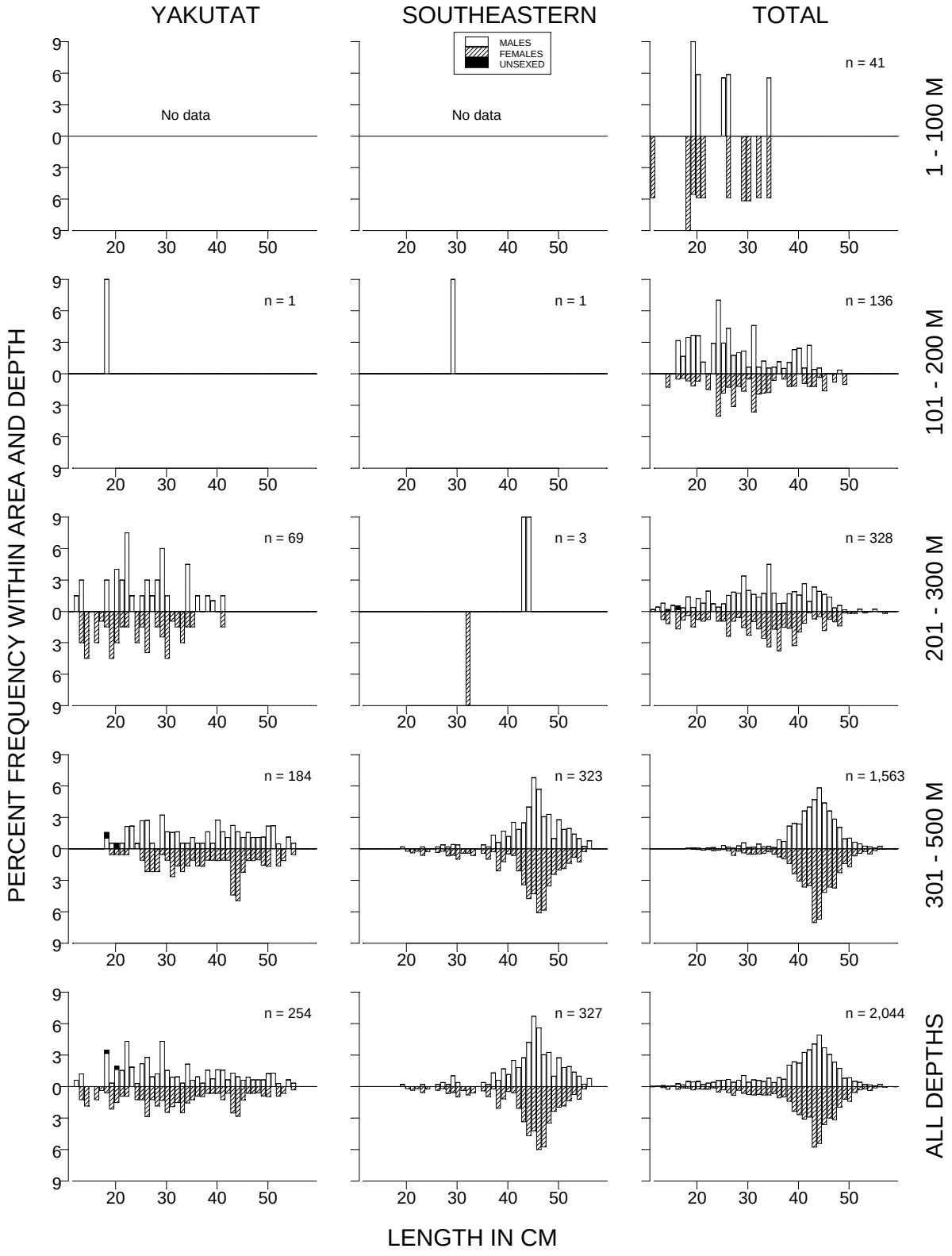

Figure 34. -- (continued).

Table 44. -- Catch per unit of effort by stratum for blackspotted rockfish 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	301 - 500	Kodiak Slope	10	9	65.15	18,971	0	39,141
Southeastern	301 - 500	Southeastern Slope	4	4	64.47	4,981	0	14,452
Chirikof	301 - 500	Chirikof Slope	10	9	12.32	1,976	413	3,539
Shumagin	301 - 500	Shumagin Slope	9	9	8.84	2,238	128	4,347
Yakutat	301 - 500	Yakutat Slope	7	6	8.34	1,268	0	2,863
Shumagin	201 - 300	Shumagin Slope	17	10	2.37	661	75	1,248
Kodiak	201 - 300	Kenai Gullies	19	13	1.78	1,183	382	1,985
Southeastern	301 - 500	Southeastern Deep Gullies	7	3	1.40	328	0	745
Chirikof	201 - 300	Chirikof Slope	8	7	1.08	164	27	302
Yakutat	201 - 300	Yakutat Gullies	8	1	0.74	226	0	761
Kodiak	101 - 200	Albatross Gullies	28	8	0.28	223	3	444
Shumagin	101 - 200	Shumagin Outer Shelf	28	3	0.26	212	0	571
Kodiak	101 - 200	Kenai Flats	18	4	0.25	297	0	827
Chirikof	201 - 300	Lower Shelikof Gully	18	4	0.18	183	0	374
Kodiak	201 - 300	Kodiak Slope	7	2	0.17	27	0	90
Kodiak	101 - 200	Portlock Flats	35	9	0.17	121	33	210
Shumagin	101 - 200	West Shumagin Gully	4	1	0.12	27	0	112
Yakutat	201 - 300	Yakutat Slope	9	2	0.10	20	0	51
Shumagin	101 - 200	Sanak Gully	7	1	0.09	39	0	133
Chirikof	101 - 200	East Shumagin Gully	17	3	0.08	84	0	203
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	2	0.07	25	0	63
Kodiak	1 - 100	Albatross Shallows	28	3	0.06	35	0	79
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	0.06	6	0	34
Chirikof	101 - 200	Chirikof Outer Shelf	25	1	0.03	16	0	48
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	1	0.02	8	0	26
Yakutat	101 - 200	Middleton Shelf	9	1	0.00	2	0	6

Dusky rockfish (*Sebastes variabilis*)

Dusky rockfish was the fourth most abundant rockfish species caught in the 2007 survey (Table 2). Dusky rockfish were found throughout the survey area, almost exclusively in water depths less than 300 m, with approximately 82% of its estimated biomass in the 101 to 200 m depth range (Fig. 35, Table 45). The highest CPUEs were recorded on the Shelikof Edge and the Portlock Flats which, combined, accounted for over 62% of the estimated biomass even though these two strata comprise less than 5% of the survey area (Table 46). There was no general trend in size with depth although fish smaller than about 40 cm FL were almost exclusively confined to depths less than 100 m (Fig. 36). The sex ratio of the dusky rockfish population in the survey area was relatively even with females comprising approximately 55% of the total estimated population.

Table 45. -- Number of survey hauls, number of hauls with dusky rockfish, 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	10	0.581	2,398	0	4,895	1.183
	101 - 200	39	9	1.408	2,067	0	4,560	1.630
	201 - 300	17	6	1.862	519	0	1,155	1.417
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	25	0.764	4,985	1,464	8,505	1.361
Chirikof	1 - 100	82	2	0.070	182	0	523	0.638
	101 - 200	69	15	15.997	38,152	0	105,683	1.405
	201 - 300	26	2	0.014	16	0	39	1.144
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	19	5.635	38,350	0	105,881	1.396
Kodiak	1 - 100	97	8	1.373	5,287	0	15,946	1.067
	101 - 200	127	37	2.985	12,934	0	27,855	1.716
	201 - 300	30	12	1.098	1,261	327	2,196	1.573
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	57	1.920	19,482	1,290	37,674	1.466
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	9	1.112	3,269	0	6,562	1.782
	201 - 300	17	7	4.452	2,302	0	6,455	2.097
	301 - 500	9	1	0.035	9	0	31	1.245
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	17	0.975	5,579	568	10,591	1.898
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	5	3.366	3,731	0	11,456	1.510
	201 - 300	17	3	0.215	109	0	246	1.366
	301 - 500	11	1	0.056	17	0	58	1.480
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	9	1.375	3,857	0	11,584	1.505
All areas	1 - 100	334	20	0.610	7,867	0	18,786	1.083
	101 - 200	290	75	4.917	60,153	0	129,444	1.494
	201 - 300	107	30	1.167	4,206	14	8,399	1.783
	301 - 500	49	2	0.021	27	0	72	1.389
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	127	2.258	72,253	2,071	142,434	1.447

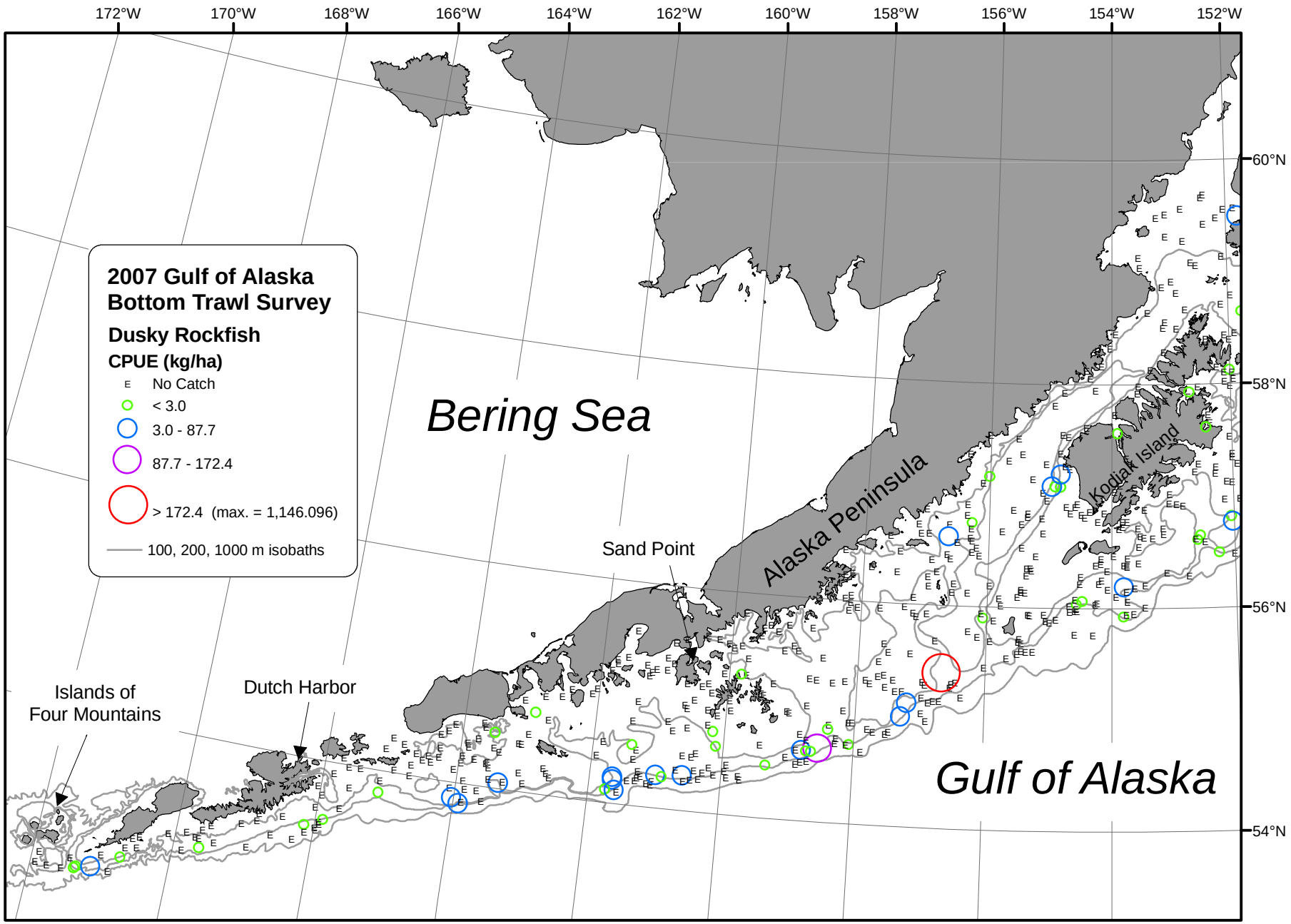

Figure 35. -- Distribution and relative abundance of dusky rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

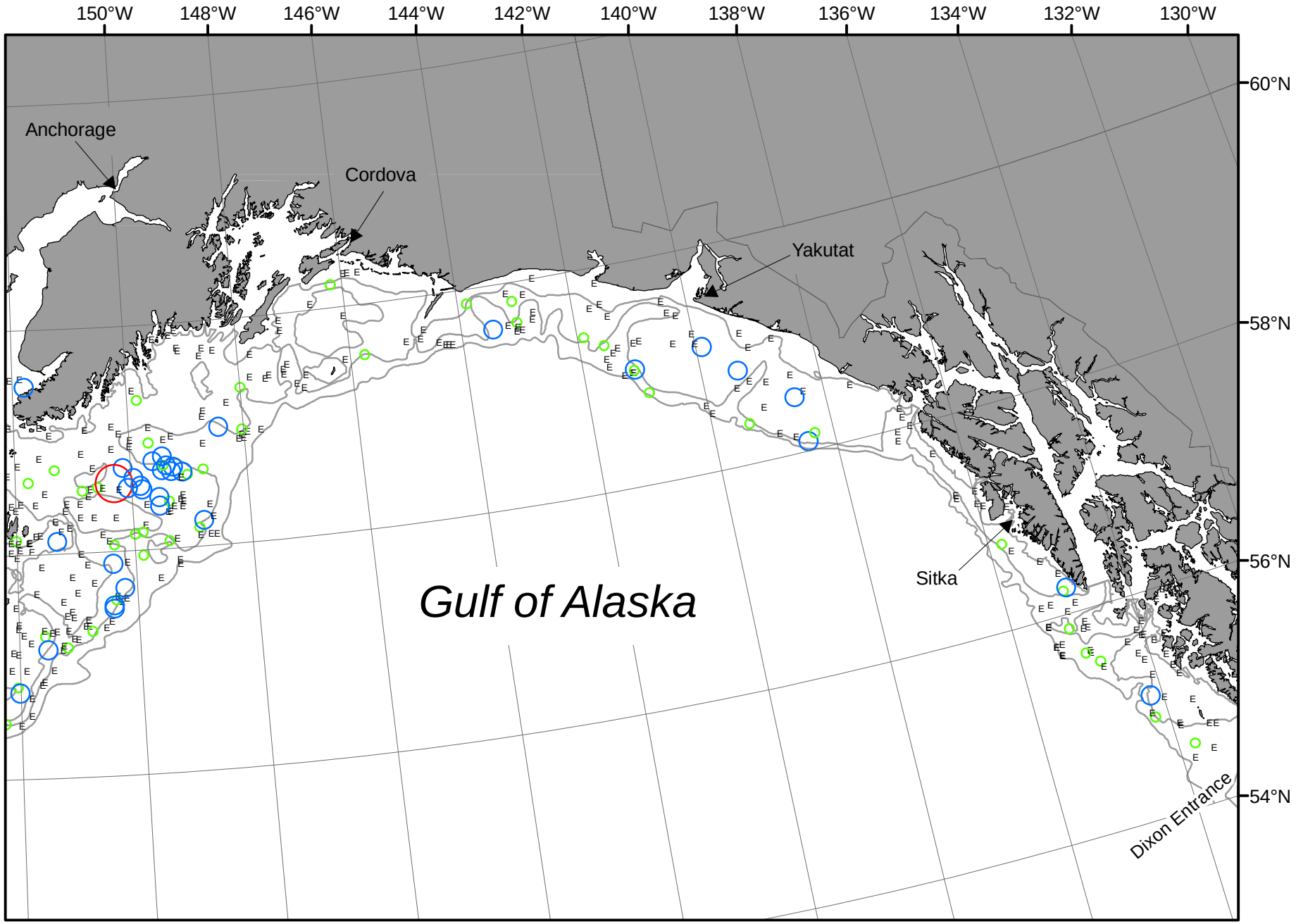

Figure 35. -- Continued (dusky rockfish 2007).

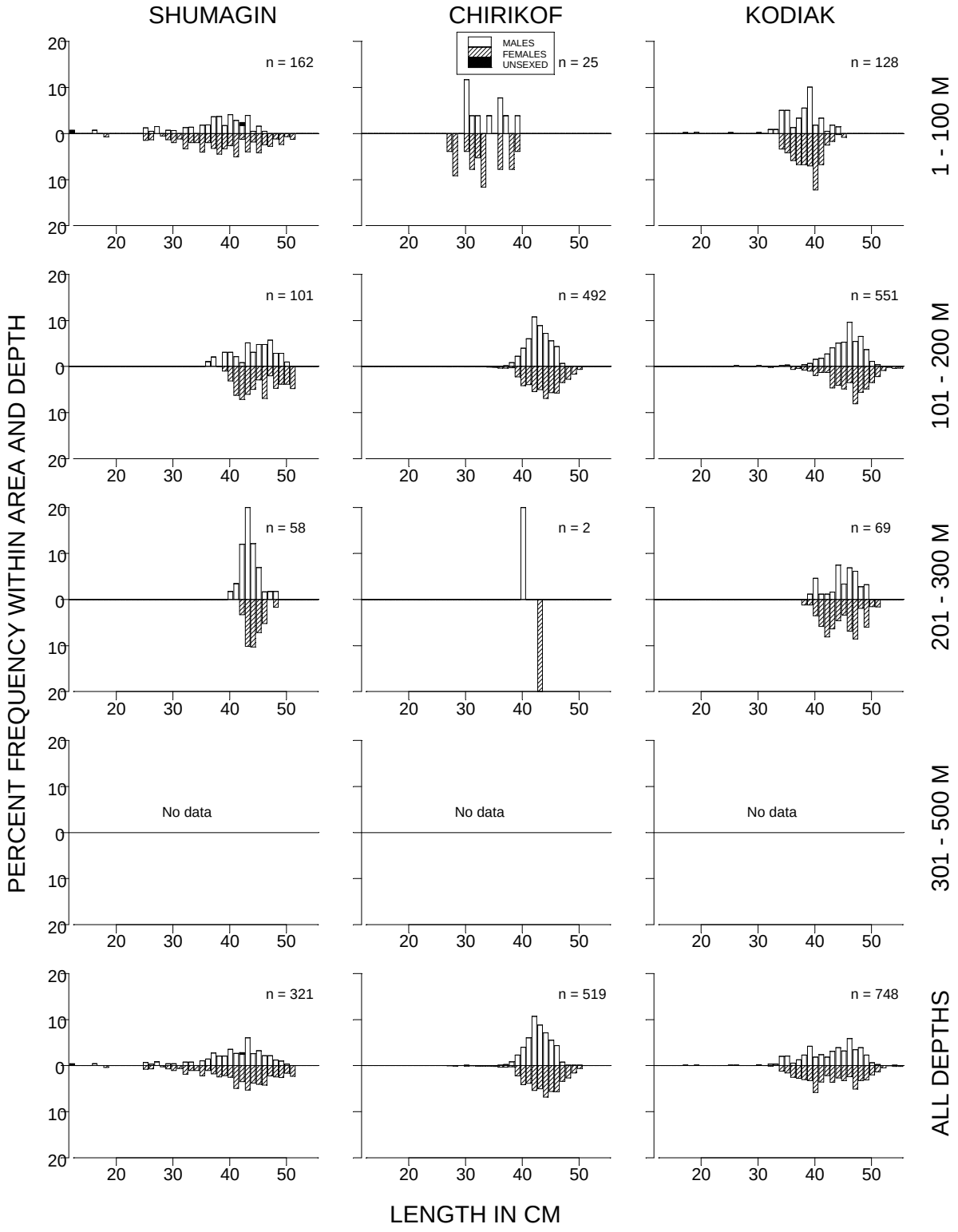

Figure 36. -- Size composition of dusky rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

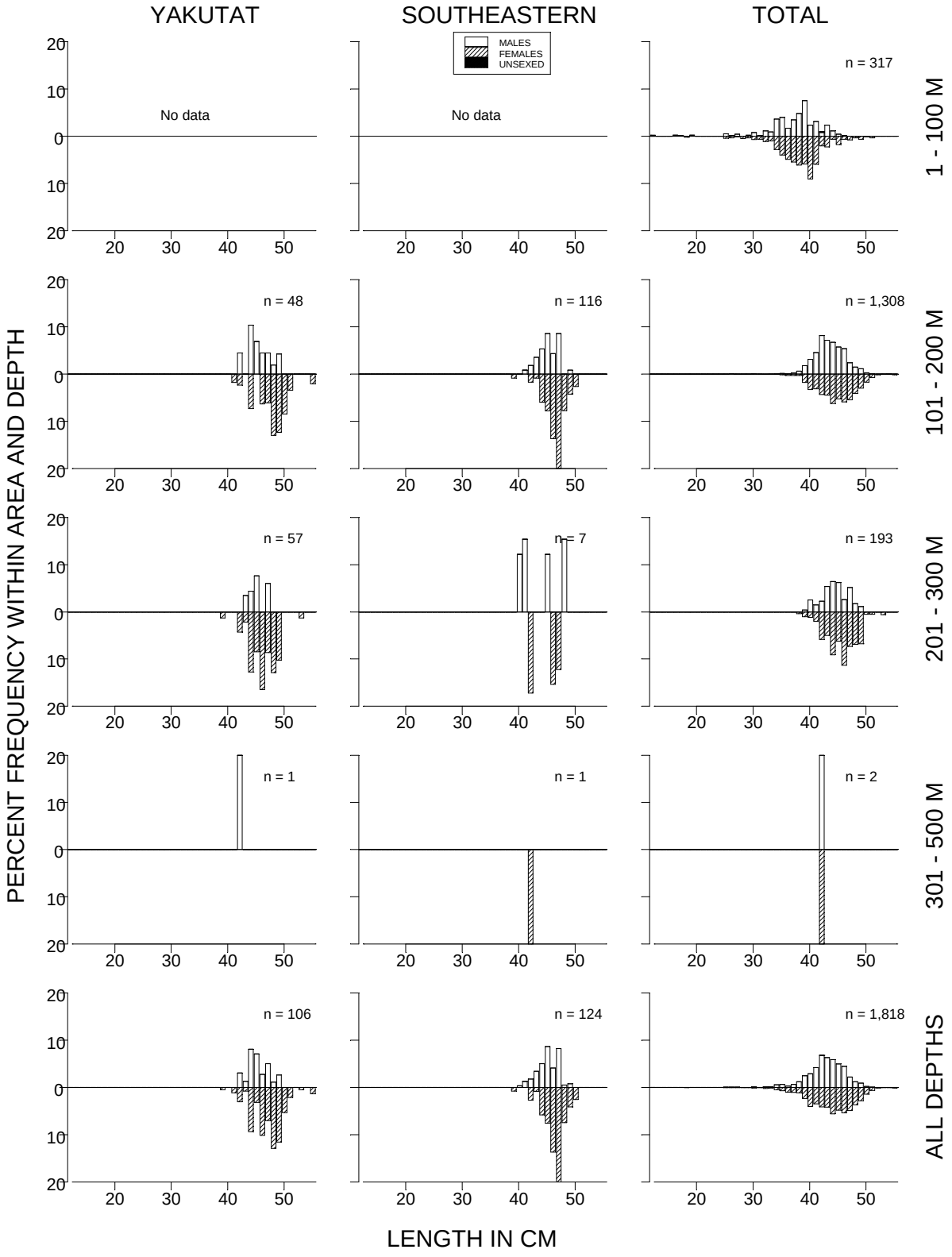

Figure 36. -- (continued).

Table 46. -- Catch per unit of effort by stratum for dusky rockfish 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
Chirikof	101 - 200	Shelikof Edge	27	7	44.22	34,200	0	101,624
Kodiak	101 - 200	Portlock Flats	35	18	14.76	10,829	0	25,590
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	3	8.47	3,555	0	11,469
Chirikof	101 - 200	Chirikof Outer Shelf	25	7	7.79	3,903	0	9,600
Yakutat	201 - 300	Yakutat Gullies	8	3	7.20	2,189	0	6,447
Kodiak	1 - 100	Lower Cook Inlet	14	1	5.02	4,963	0	15,682
Shumagin	101 - 200	Shumagin Outer Shelf	28	9	2.54	2,067	0	4,565
Kodiak	201 - 300	Kodiak Slope	7	4	2.39	388	0	921
Yakutat	101 - 200	Yakutat Flats	8	2	2.18	1,965	0	5,088
Shumagin	201 - 300	Shumagin Slope	17	6	1.86	519	0	1,158
Shumagin	1 - 100	Davidson Bank	48	5	1.65	2,252	0	4,744
Kodiak	101 - 200	Albatross Gullies	28	6	1.56	1,236	0	3,342
Yakutat	101 - 200	Fairweather Shelf	8	3	1.44	1,110	0	2,837
Kodiak	201 - 300	Kenai Gullies	19	8	1.31	874	48	1,699
Kodiak	101 - 200	Kodiak Outer Shelf	28	9	1.23	620	95	1,144
Yakutat	201 - 300	Yakutat Slope	9	4	0.53	113	0	249
Yakutat	101 - 200	Yakataga Shelf	8	3	0.30	157	0	359
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	3	0.28	109	0	247
Southeastern	101 - 200	Prince of Wales Shelf	14	2	0.26	176	0	512
Kodiak	1 - 100	Albatross Banks	39	3	0.18	283	0	819
Chirikof	1 - 100	Chirikof Bank	40	2	0.17	182	0	526
Kodiak	101 - 200	Kenai Flats	18	2	0.16	187	0	516
Chirikof	201 - 300	Chirikof Slope	8	2	0.10	16	0	40
Shumagin	1 - 100	Shumagin Bank	36	4	0.10	126	0	281
Kodiak	1 - 100	Northern Kodiak Shallows	9	1	0.09	19	0	64
Southeastern	301 - 500	Southeastern Deep Gullies	7	1	0.07	17	0	60
Yakutat	301 - 500	Yakutat Slope	7	1	0.06	9	0	32
Kodiak	101 - 200	Barren Islands	18	2	0.06	62	0	165
Yakutat	101 - 200	Middleton Shelf	9	1	0.05	37	0	122
Chirikof	101 - 200	East Shumagin Gully	17	1	0.05	50	0	155
Kodiak	1 - 100	Albatross Shallows	28	3	0.04	22	0	55
Shumagin	1 - 100	Lower Alaska Peninsula	28	1	0.03	20	0	61

Dark rockfish (*Sebastes ciliatus*)

Dark rockfish were rarely caught over the course of the survey (Fig. 37, Table 47). Modest CPUEs were recorded along the Alaska Peninsula and near Kodiak Island at depths less than 200 m but no catches were recorded in the Yakutat and Southeastern INPFC areas. Eighty-eight percent of the estimated biomass was found in the Albatross Banks and Shumagin Bank strata, which combined comprise less than 9% of the survey area (Table 48). This estimate was based on only six hauls out of the 75 conducted in these two strata. The small amount of length data make make it difficult to discern a clear mode in the length distriubtion.

Table 47. -- Number of survey hauls, number of hauls with dark rockfish, 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	5	0.055	229	7	451	1.076
	101 - 200	39	1	0.007	11	0	34	0.867
	201 - 300	17	0	---	---	---	---	---
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	6	0.037	240	17	463	1.065
Chirikof	1 - 100	82	1	0.017	44	0	134	0.911
	101 - 200	69	1	0.006	16	0	48	1.429
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	2	0.009	60	0	155	1.005
Kodiak	1 - 100	97	3	0.237	912	0	2,613	1.227
	101 - 200	127	2	0.006	27	0	71	1.183
	201 - 300	30	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	5	0.092	938	0	2,641	1.226
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	9	0.092	1,185	0	2,886	1.180
	101 - 200	290	4	0.004	53	0	111	1.156
	201 - 300	107	0	---	---	---	---	---
	301 - 500	49	0	---	---	---	---	---
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	13	0.039	1,238	0	2,940	1.180

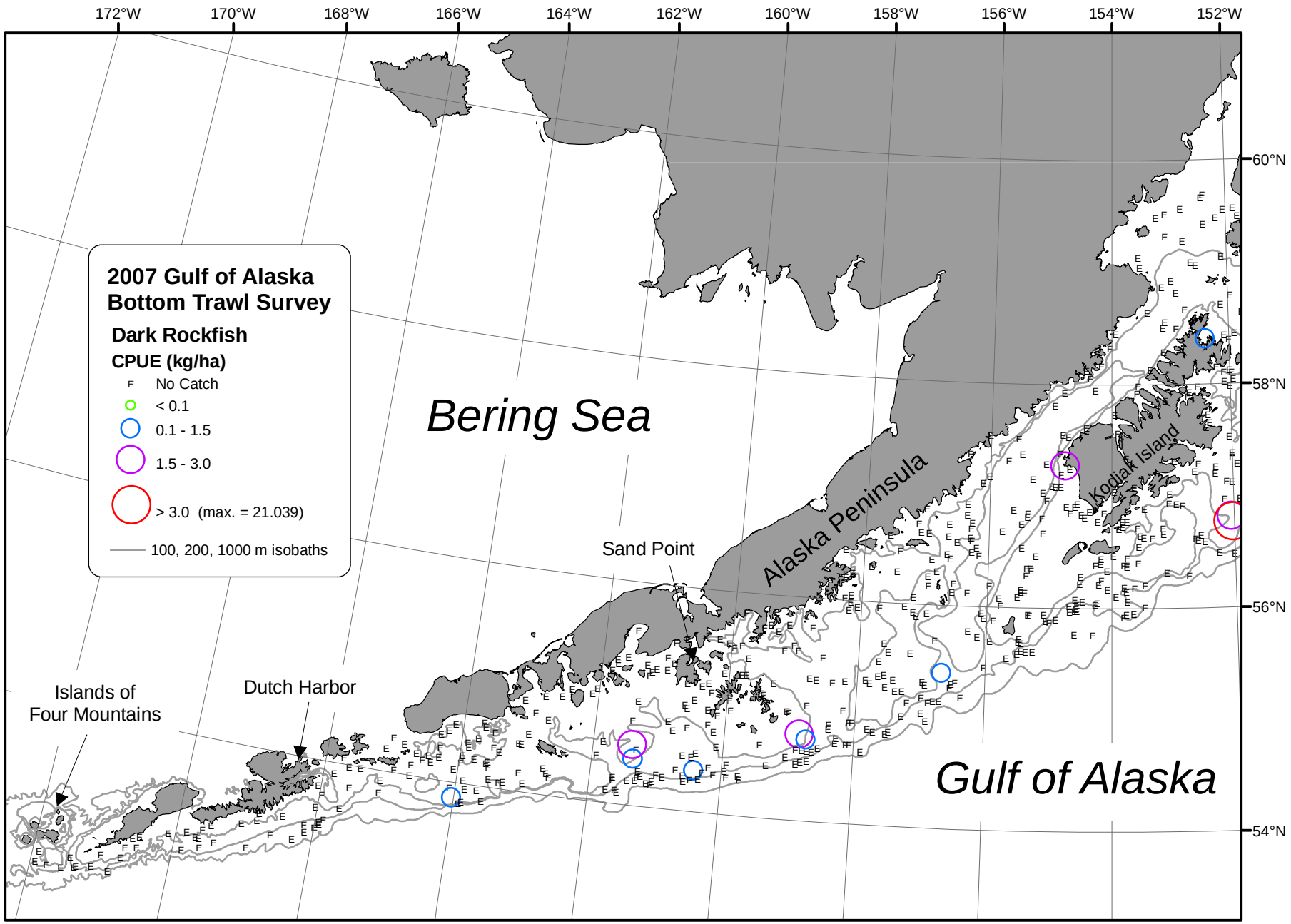

Figure 37. -- Distribution and relative abundance of dark rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

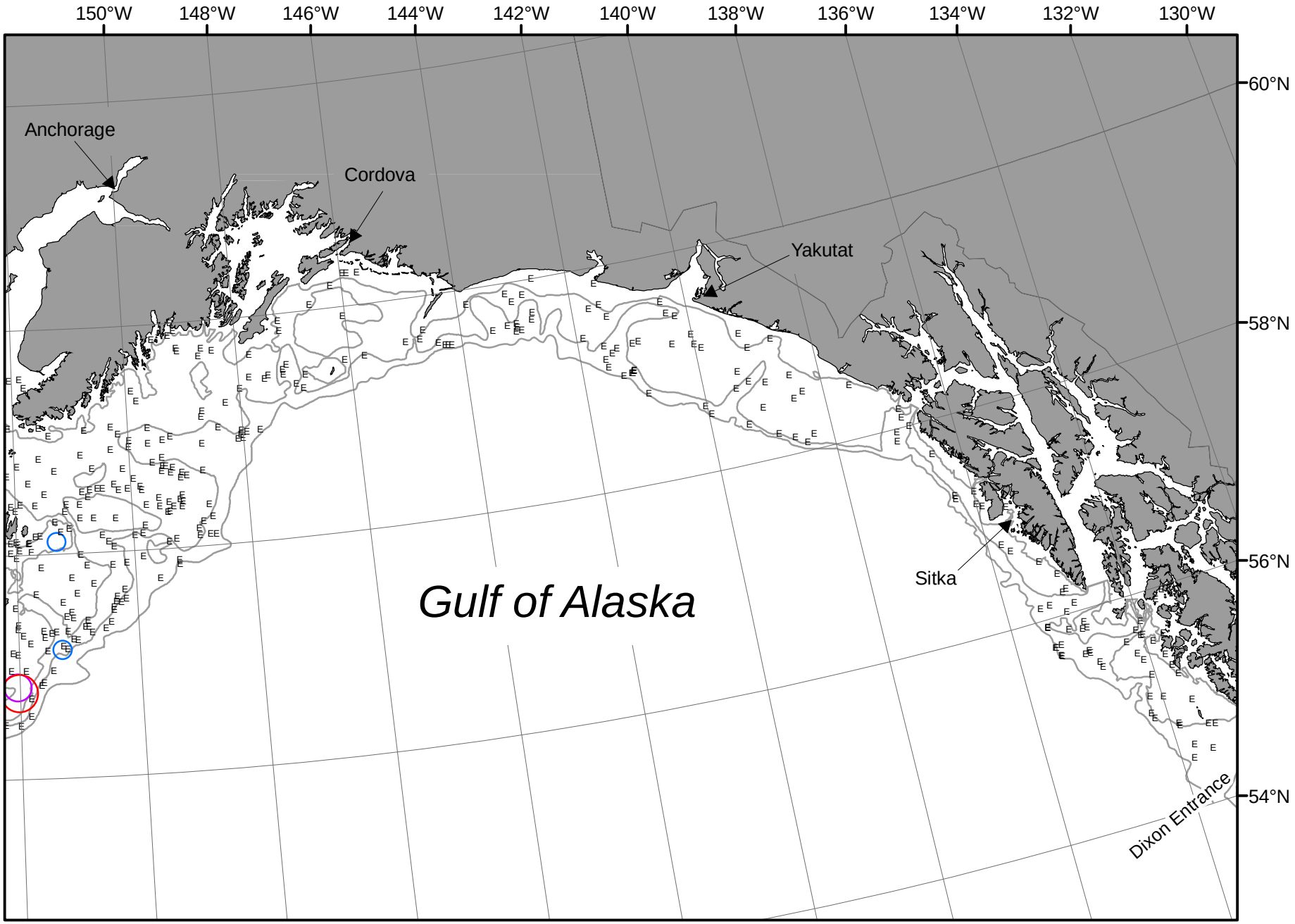

Figure 37. -- Continued (dark rockfish 2007).

Table 48. -- Catch per unit of effort by stratum for dark rockfish 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	1 - 100	Albatross Banks	39	2	0.59	905	0	2,607
Shumagin	1 - 100	Shumagin Bank	36	4	0.15	189	0	397
Chirikof	1 - 100	Chirikof Bank	40	1	0.04	44	0	135
Shumagin	1 - 100	Davidson Bank	48	1	0.03	40	0	121
Kodiak	101 - 200	Albatross Gullies	28	1	0.03	21	0	64
Chirikof	101 - 200	Shelikof Edge	27	1	0.02	16	0	48
Shumagin	101 - 200	Shumagin Outer Shelf	28	1	0.01	11	0	34
Kodiak	1 - 100	Albatross Shallows	28	1	0.01	6	0	19
Kodiak	101 - 200	Kodiak Outer Shelf	28	1	0.01	6	0	18

Sharpchin rockfish (*Sebastes zacentrus*)

Sharpchin rockfish were rarely captured west of Kodiak Island (Fig. 38). Over 99% of its biomass estimate occurred in the Kodiak, Yakutat, and Southeastern INPFC areas (Table 49). The highest CPUEs were recorded in the Kodiak Slope, Baranof-Chichagof Slope, and Prince of Wales Slopes/Gullies strata, which accounted for approximately 62% of the total biomass estimate even though they only comprise about 2% of the survey area (Table 50). Sharpchin rockfish were most abundant at depths between 201 and 300 m with approximately 73% of the estimated biomass in this depth range and most of the remainder between 101 and 200 m (Table 49). Overall, the size composition of female sharpchin rockfish was both broader and larger than that of males throughout the survey area (Fig. 39). The sex ratio of the sharpchin rockfish population in the survey area was even at 50:50.

Table 49. -- Number of survey hauls, number of hauls with sharpchin rockfish, 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	3	0.188	53	0	118	0.428
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	3	0.008	53	0	118	0.428
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	3	0.029	68	0	172	0.371
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	3	0.010	68	0	172	0.371
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	8	0.065	280	0	642	0.270
	201 - 300	30	5	3.219	3,699	0	11,364	0.327
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	13	0.392	3,979	0	11,655	0.322
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	5	0.773	2,272	0	5,809	0.147
	201 - 300	17	11	2.988	1,545	141	2,948	0.238
	301 - 500	9	3	0.034	9	0	19	0.424
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	19	0.669	3,826	0	7,681	0.174
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	13	2.287	2,535	0	5,866	0.219
	201 - 300	17	8	16.960	8,569	0	19,333	0.235
	301 - 500	11	1	0.024	7	0	25	0.152
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	22	3.963	11,111	173	22,049	0.231
All areas	1 - 100	334	0	---	---	---	---	---
	101 - 200	290	29	0.421	5,155	511	9,799	0.183
	201 - 300	107	27	3.846	13,865	1,204	26,527	0.255
	301 - 500	49	4	0.013	16	0	36	0.234
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	60	0.595	19,037	5,792	32,282	0.230

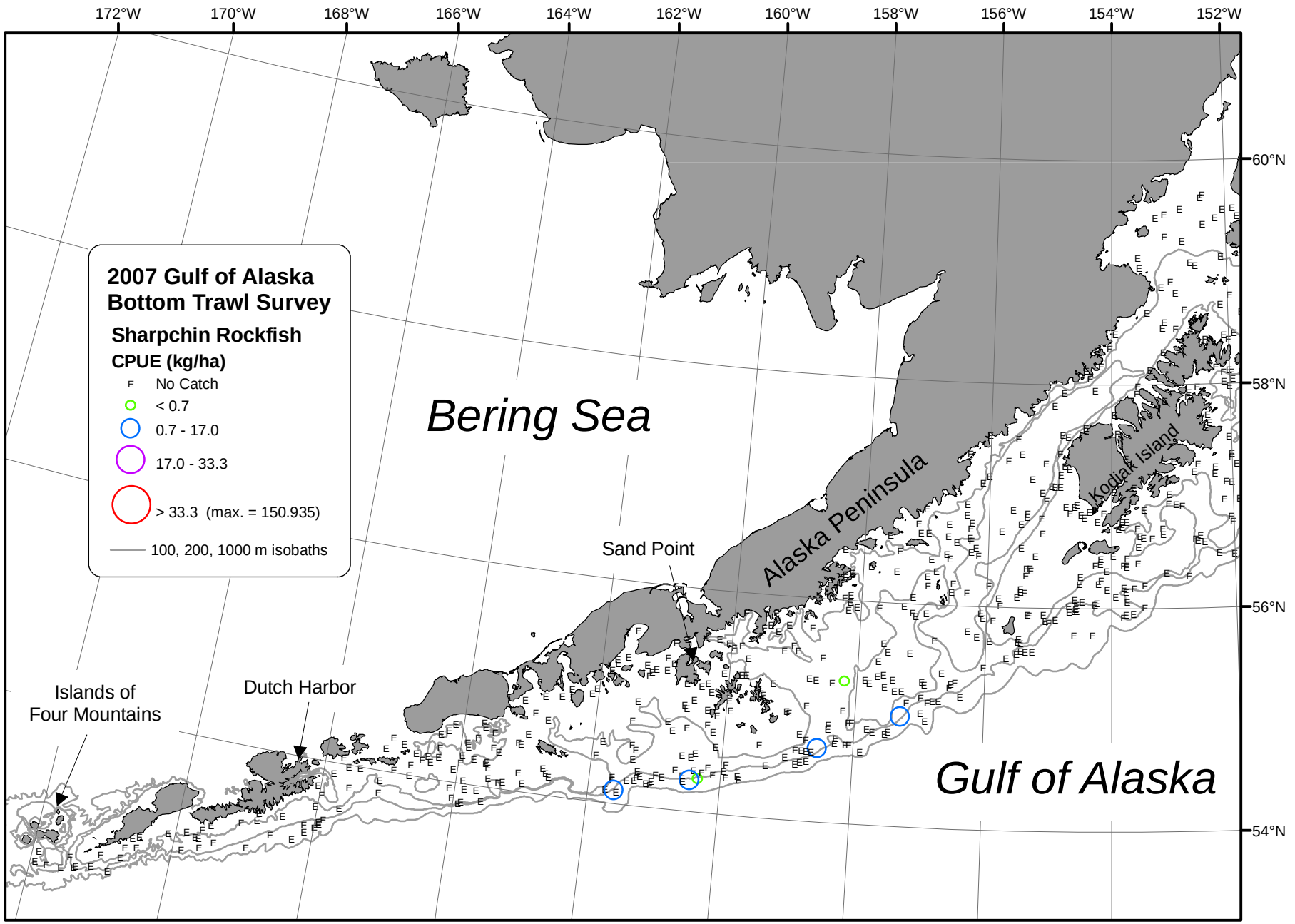

Figure 38. -- Distribution and relative abundance of sharpchin rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

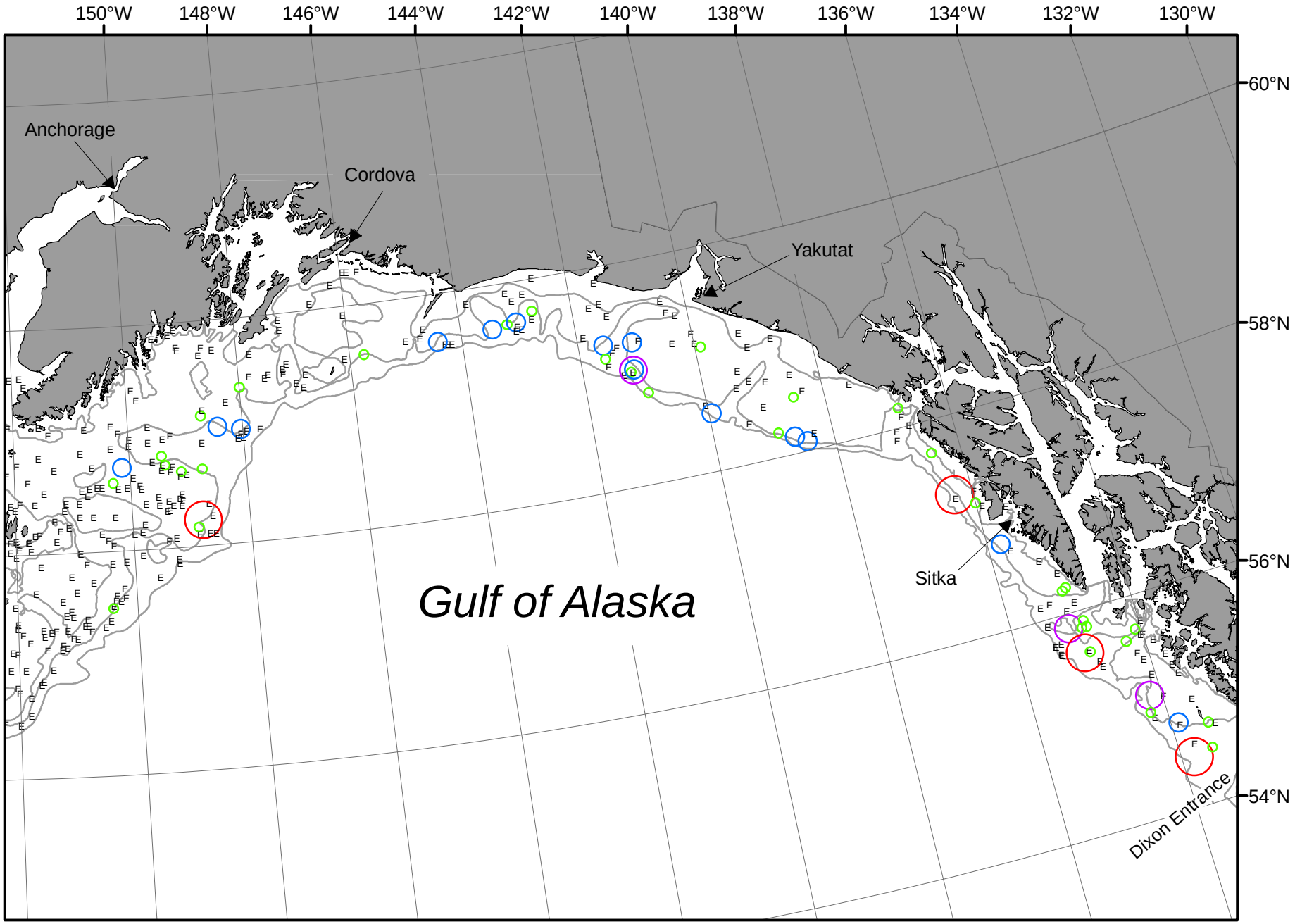

Figure 38. -- Continued (sharpchin rockfish 2007).

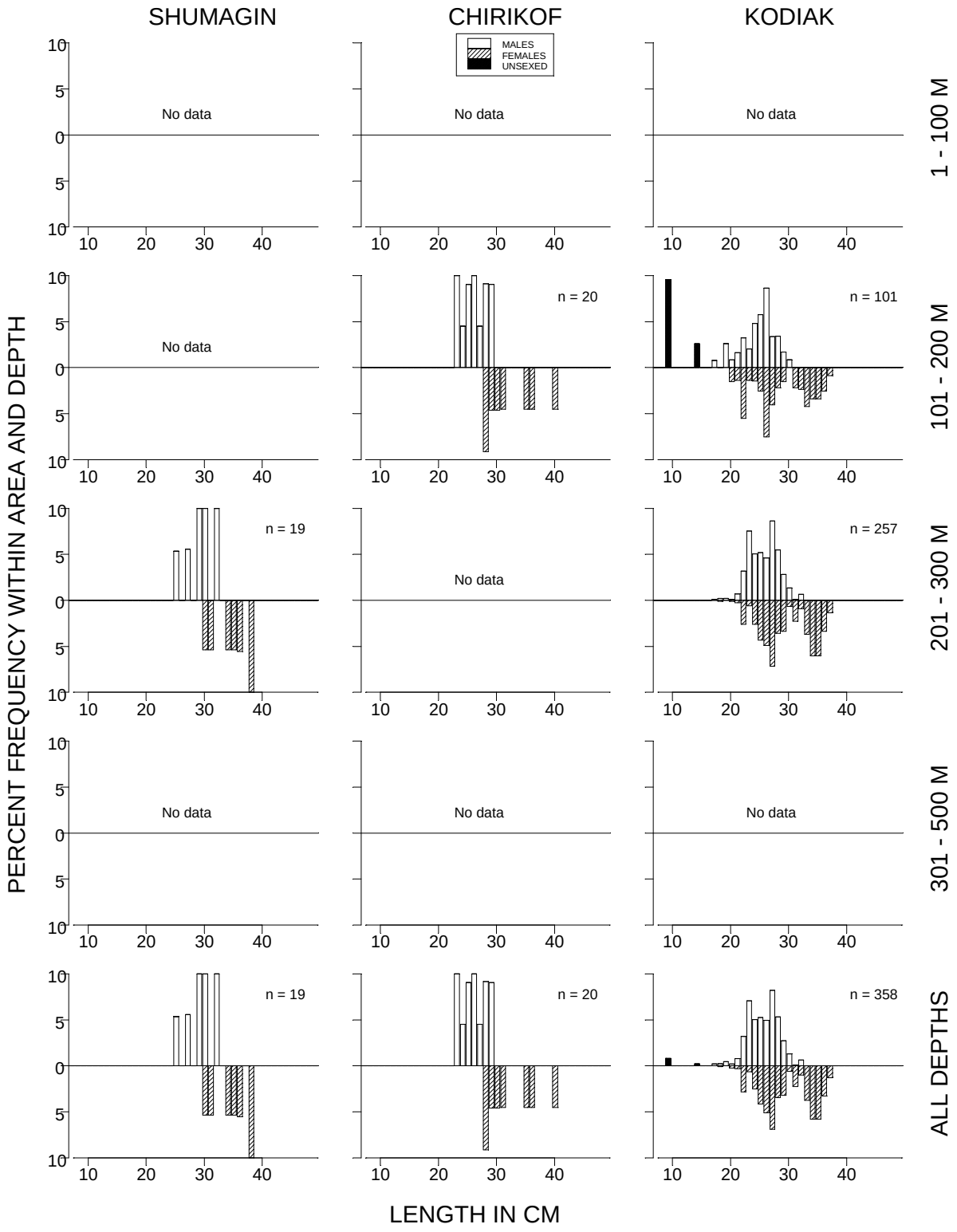

Figure 39. -- Size composition of sharpchin rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

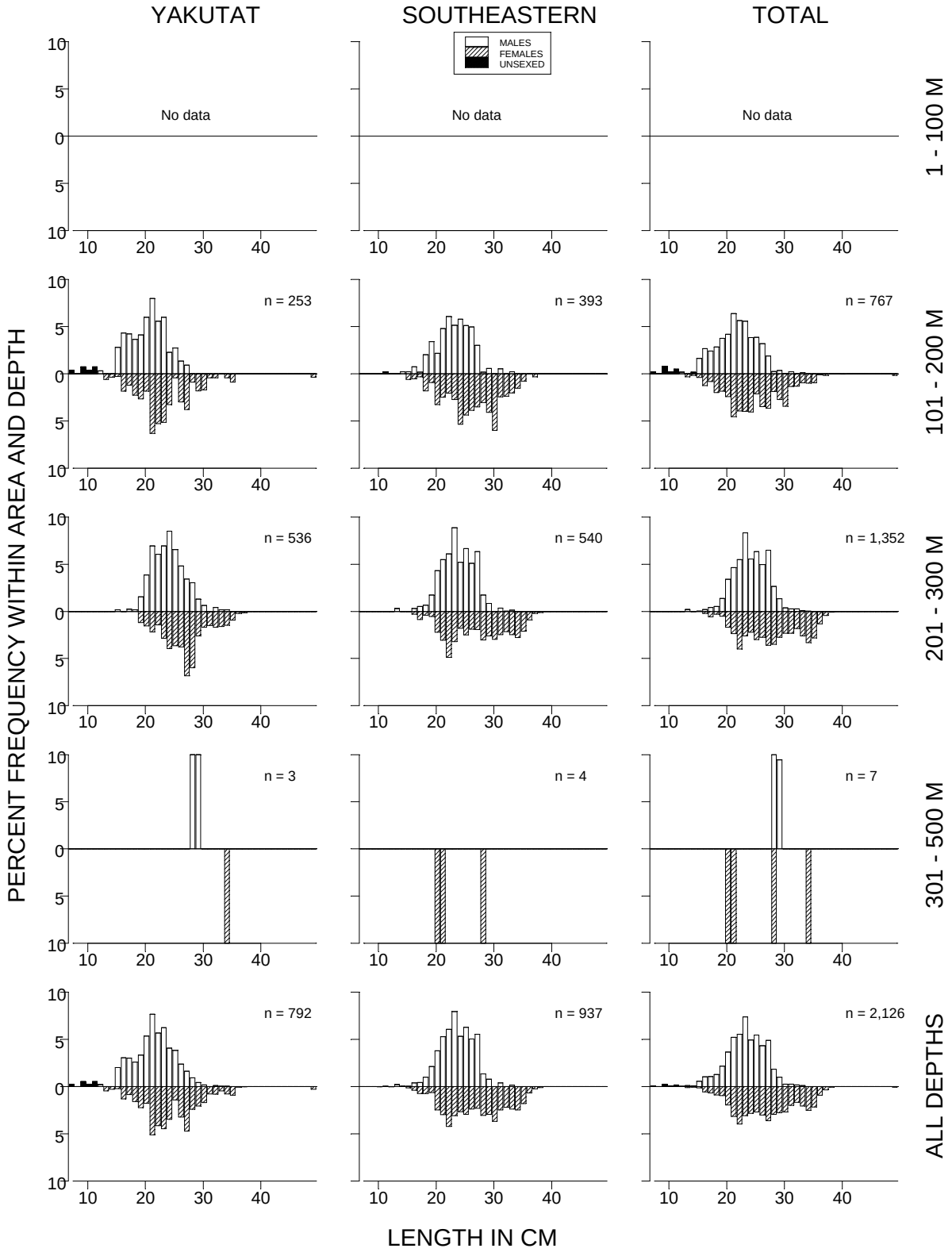

Figure 39. -- (continued).

Table 50. -- Catch per unit of effort by stratum for sharpchin rockfish 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	201 - 300	Kodiak Slope	7	2	20.37	3,305	0	11,383
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	18.99	2,137	0	11,334
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	7	16.38	6,431	0	16,380
Yakutat	201 - 300	Yakutat Slope	9	7	5.16	1,099	0	2,430
Southeastern	101 - 200	Prince of Wales Shelf	14	7	3.52	2,427	0	5,779
Yakutat	101 - 200	Fairweather Shelf	8	3	2.79	2,159	0	5,778
Yakutat	201 - 300	Yakutat Gullies	8	4	1.47	446	0	1,227
Kodiak	201 - 300	Kenai Gullies	19	3	0.59	394	0	1,206
Kodiak	101 - 200	Portlock Flats	35	4	0.26	190	0	537
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	6	0.26	108	0	221
Shumagin	201 - 300	Shumagin Slope	17	3	0.19	53	0	119
Chirikof	101 - 200	Chirikof Outer Shelf	25	2	0.13	64	0	168
Yakutat	101 - 200	Yakutat Flats	8	2	0.124	112	0	373
Kodiak	101 - 200	Kodiak Outer Shelf	28	2	0.105	53	0	154
Yakutat	301 - 500	Yakutat Slope	7	3	0.059	9	0	20
Southeastern	301 - 500	Southeastern Deep Gullies	7	1	0.032	7	0	26
Kodiak	101 - 200	Kenai Flats	18	2	0.031	37	0	99
Chirikof	101 - 200	East Shumagin Gully	17	1	0.004	5	0	14

Shortraker rockfish (*Sebastes borealis*)

Shortraker rockfish were found throughout the survey area although almost exclusively on the continental slope in the 200 to 700 m depth range (Fig. 40, Table 51). The highest CPUEs were consistently recorded in the 301 and 500 m depth range, which accounted for approximately 62% of the total biomass (Table 51). In this depth range, shortraker rockfish were caught in about 88% of the tows. Shortraker rockfish were considerably more abundant in the central and eastern Gulf of Alaska than in the western Gulf of Alaska. Approximately 87% of the estimated biomass was found in the Kodiak, Yakutat, and Southeastern INPFC areas. The highest concentrations of shortraker rockfish were in the Southeastern Slope and Baranof-Chichagof Slope strata, which accounted for 35% of its survey biomass estimate, even though their combined area comprises less than 1% of the survey area (Table 52). Mean weight and length generally increased from west to east (Fig. 41, Table 51). The sex ratio of the shortraker rockfish population in the survey area was relatively even with females comprising approximately 53% of the total estimated population.

Table 51. -- Number of survey hauls, number of hauls with shortraker rockfish, 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	0.942	263	0	752	3.909
	301 - 500	9	8	8.542	2,162	240	4,084	2.282
	501 - 700	5	3	0.337	68	0	150	1.553
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	13	0.382	2,492	529	4,456	2.355
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	0	---	---	---	---	---
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	8	11.201	1,797	569	3,024	2.421
	501 - 700	7	3	0.584	114	0	245	2.272
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	11	0.281	1,911	677	3,145	2.411
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	0	---	---	---	---	---
	201 - 300	30	6	1.844	2,119	0	5,077	4.802
	301 - 500	10	9	19.936	5,805	1,859	9,751	3.510
	501 - 700	6	2	2.013	351	0	1,059	5.162
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	17	0.815	8,275	3,599	12,951	3.825
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	1	0.044	130	0	425	3.933
	201 - 300	17	6	5.676	2,935	0	6,348	4.701
	301 - 500	9	8	15.275	4,014	247	7,781	4.675
	501 - 700	3	2	7.609	1,118	0	4,149	4.131
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	17	1.433	8,197	3,148	13,246	4.588
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	0	---	---	---	---	---
	201 - 300	17	3	12.564	6,348	0	22,769	5.332
	301 - 500	11	10	25.353	7,902	0	21,492	4.668
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	13	5.082	14,250	0	33,243	4.942
All areas	1 - 100	334	0	---	---	---	---	---
	101 - 200	290	1	0.011	130	0	425	3.933
	201 - 300	107	17	3.236	11,664	0	25,354	5.021
	301 - 500	49	43	16.949	21,680	8,968	34,392	3.678
	501 - 700	24	10	2.012	1,651	0	4,420	3.818
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	71	1.098	35,125	17,296	52,954	4.045

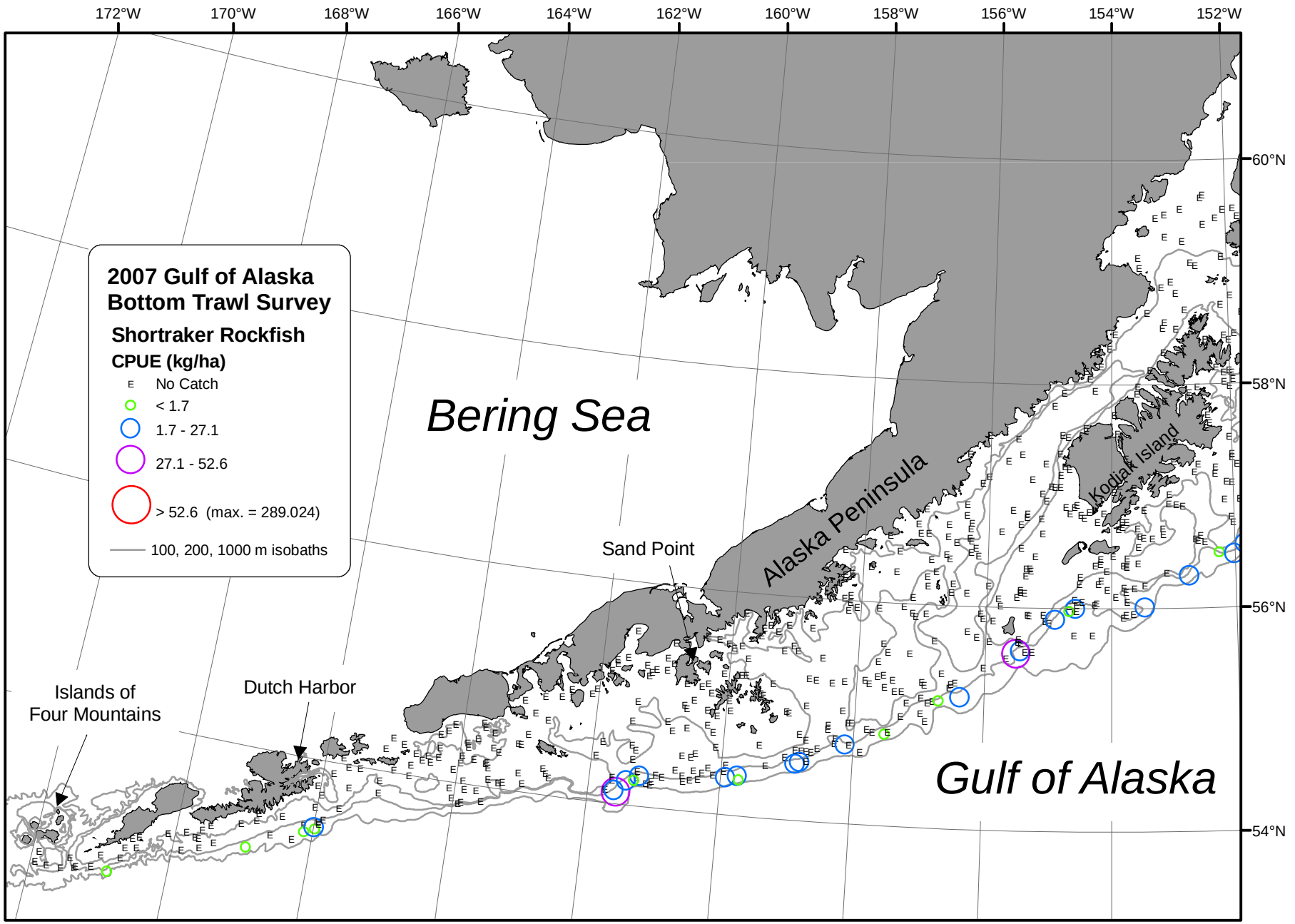

Figure 40. -- Distribution and relative abundance of shortraker rockfish from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

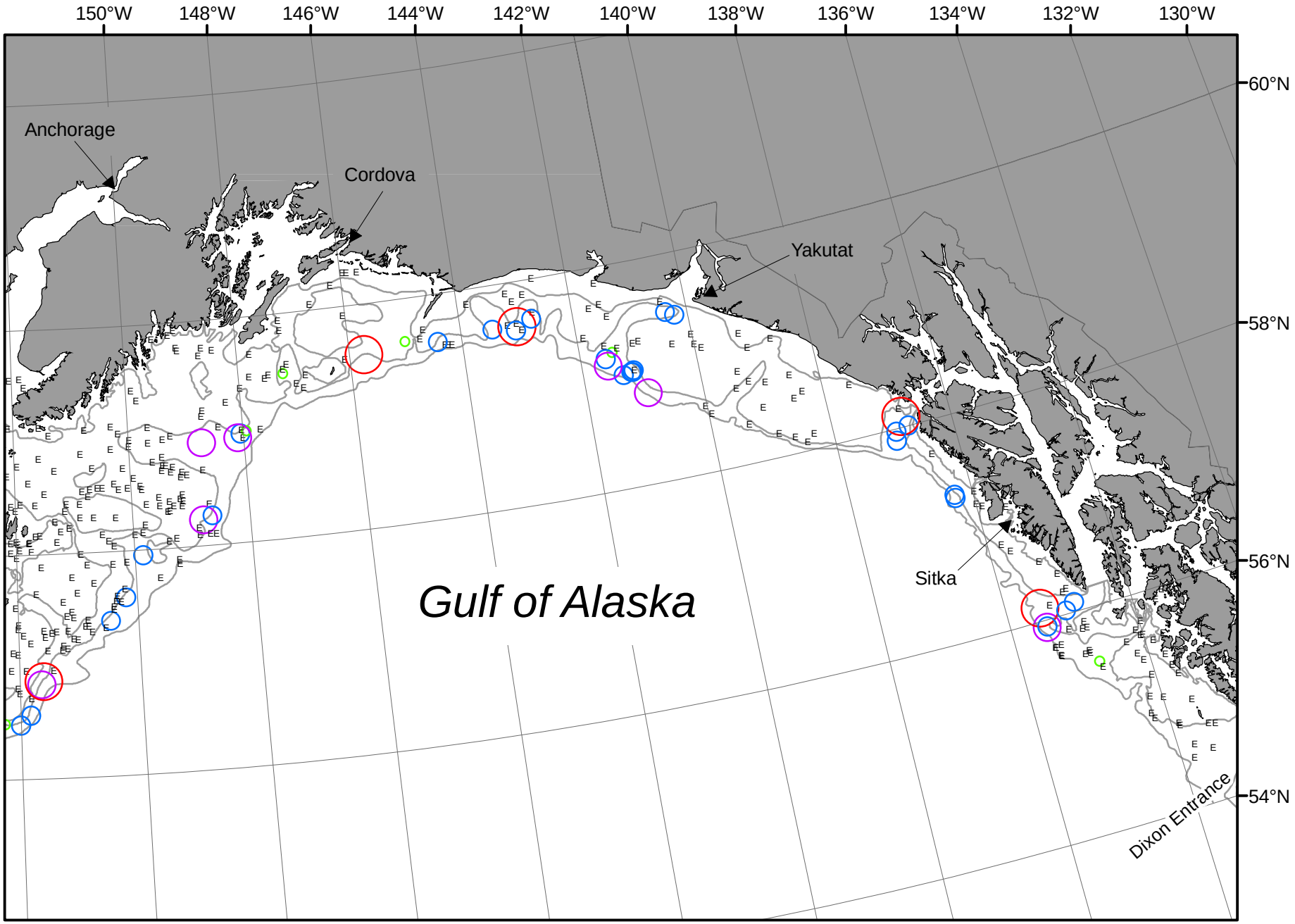

Figure 40. -- Continued (shortraker rockfish 2007).

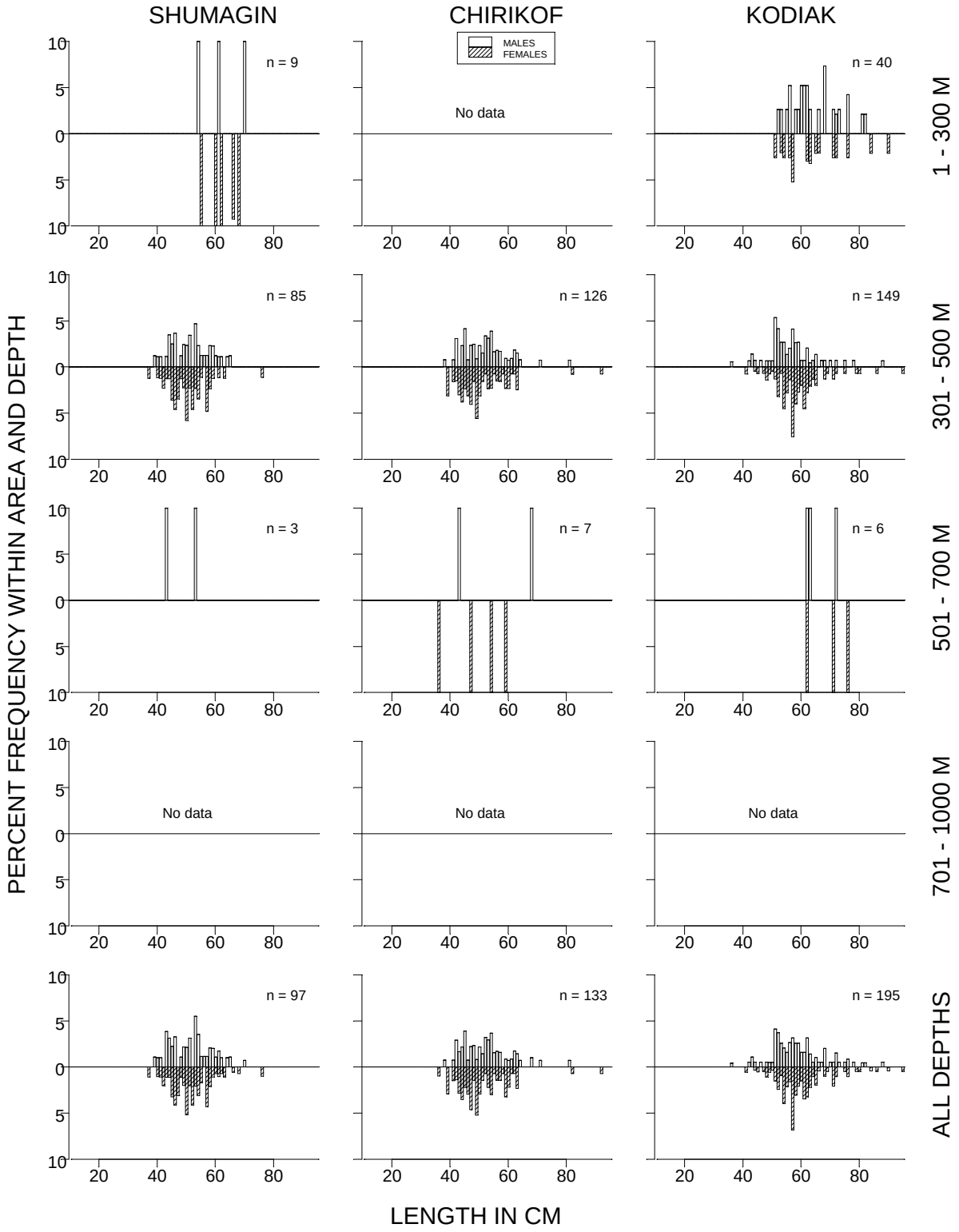

Figure 41. -- Size composition of shortraker rockfish from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

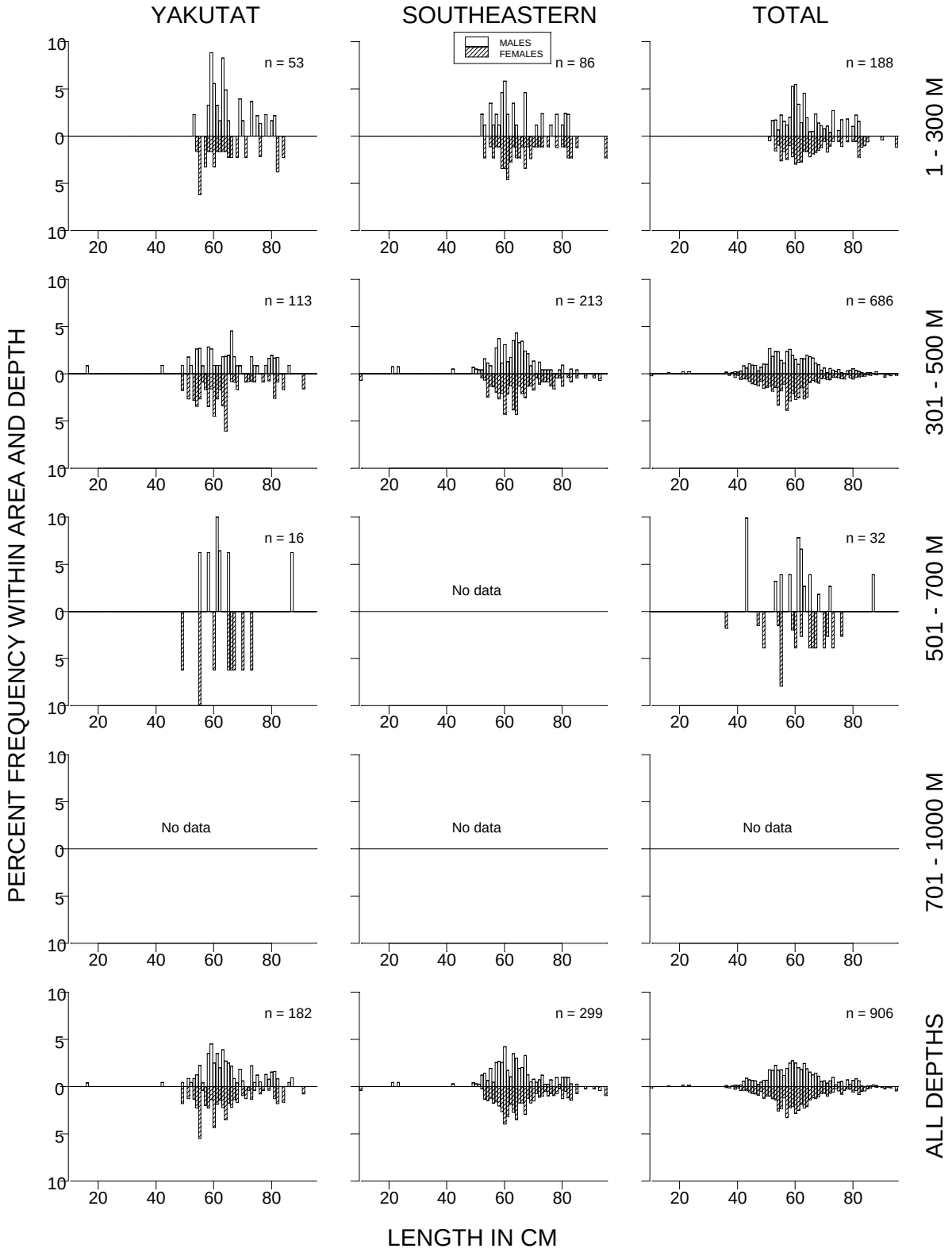

Figure 41. -- (continued).

Table 52. -- Catch per unit of effort by stratum for shortraker rockfish 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
Southeastern	301 - 500	Southeastern Slope	4	4	86.08	6,651	0	23,324
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	56.41	6,348	0	28,554
Yakutat	301 - 500	Yakutat Slope	7	7	25.94	3,945	51	7,839
Kodiak	301 - 500	Kodiak Slope	10	9	19.94	5,805	1,798	9,811
Chirikof	301 - 500	Chirikof Slope	10	8	11.20	1,797	550	3,043
Shumagin	301 - 500	Shumagin Slope	9	8	8.54	2,162	203	4,122
Yakutat	501 - 700	Yakutat Slope	3	2	7.61	1,118	0	5,217
Yakutat	201 - 300	Yakutat Slope	9	3	7.46	1,587	0	4,941
Southeastern	301 - 500	Southeastern Deep Gullies	7	6	5.34	1,251	0	2,949
Kodiak	201 - 300	Kodiak Slope	7	3	4.57	741	0	2,371
Yakutat	201 - 300	Yakutat Gullies	8	3	4.43	1,348	0	2,981
Kodiak	201 - 300	Kenai Gullies	19	3	2.07	1,378	0	4,018
Kodiak	501 - 700	Kodiak Slope	6	2	2.013	351	0	1,095
Shumagin	201 - 300	Shumagin Slope	17	2	0.942	263	0	755
Yakutat	301 - 500	Yakutat Gullies	2	1	0.624	69	0	948
Chirikof	501 - 700	Chirikof Slope	7	3	0.584	114	0	249
Shumagin	501 - 700	Shumagin Slope	5	3	0.337	68	0	156
Yakutat	101 - 200	Middleton Shelf	9	1	0.177	130	0	431

Shortspine thornyhead (*Sebastolobus alascanus*)

Shortspine thornyhead was the third most abundant rockfish species caught in the 2007 survey (Table 2). Shortspine thornyhead were found throughout the survey area at all depths, including all tows greater than 300 m (Fig. 42, Table 53). The highest CPUEs were generally recorded on the continental slope and deeper gullies in the 301 and 700 m depth range, which accounted for approximately 53% of its total biomass (Tables 53 and 54). Population length distributions were similar in all areas and at all depths, with both males and females exhibiting length modes between approximately 24 and 32 cm FL (Fig. 43). The sex ratio of the shortspine thornyhead population in the survey area was about even with males comprising approximately 51% of the total estimated population.

Table 53. -- Number of survey hauls, number of hauls with shortspine thornyhead, 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	2	0.005	7	0	17	0.300
	201 - 300	17	14	10.438	2,910	1,587	4,234	0.228
	301 - 500	9	9	18.578	4,702	2,755	6,650	0.262
	501 - 700	5	5	12.913	2,590	1,624	3,556	0.229
	701 - 1000	2	2	10.029	1,943	1,140	2,746	0.293
	All depths	205	32	1.863	12,152	9,771	14,534	0.250
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	3	0.250	597	0	1,854	0.369
	201 - 300	26	11	0.901	1,040	143	1,937	0.249
	301 - 500	10	10	23.423	3,757	2,830	4,684	0.308
	501 - 700	7	7	25.224	4,927	1,433	8,421	0.358
	701 - 1000	5	5	9.634	2,953	1,505	4,401	0.445
	All depths	199	36	1.951	13,274	9,613	16,936	0.346
Kodiak	1 - 100	97	1	0.034	131	0	439	0.346
	101 - 200	127	12	0.200	867	0	1,799	0.251
	201 - 300	30	26	6.223	7,150	4,949	9,351	0.290
	301 - 500	10	10	25.303	7,368	4,606	10,129	0.221
	501 - 700	6	6	23.124	4,035	2,703	5,367	0.185
	701 - 1000	4	4	13.688	4,782	2,097	7,468	0.355
	All depths	274	59	2.398	24,332	20,181	28,484	0.251
Yakutat	1 - 100	11	2	0.049	81	0	236	0.130
	101 - 200	33	15	0.982	2,885	796	4,973	0.269
	201 - 300	17	16	13.058	6,751	2,340	11,161	0.201
	301 - 500	9	9	19.005	4,994	3,120	6,868	0.197
	501 - 700	3	3	27.913	4,101	1,002	7,200	0.286
	701 - 1000	3	3	19.664	3,711	1,225	6,198	0.372
	All depths	76	48	3.938	22,523	17,000	28,046	0.238
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	6	0.348	386	0	863	0.231
	201 - 300	17	14	6.886	3,479	1,328	5,630	0.215
	301 - 500	11	11	23.237	7,243	4,595	9,891	0.241
	501 - 700	3	3	8.270	855	431	1,279	0.595
	701 - 1000	2	2	4.393	530	0	1,417	0.689
	All depths	66	36	4.455	12,493	9,357	15,629	0.249
All areas	1 - 100	334	3	0.016	212	0	525	0.211
	101 - 200	290	38	0.388	4,742	2,202	7,283	0.271
	201 - 300	107	81	5.917	21,330	16,062	26,598	0.233
	301 - 500	49	49	21.939	28,064	23,813	32,314	0.236
	501 - 700	24	24	20.115	16,507	12,417	20,598	0.263
	701 - 1000	16	16	12.010	13,920	10,707	17,132	0.371
	All depths	820	211	2.649	84,774	76,232	93,317	0.258

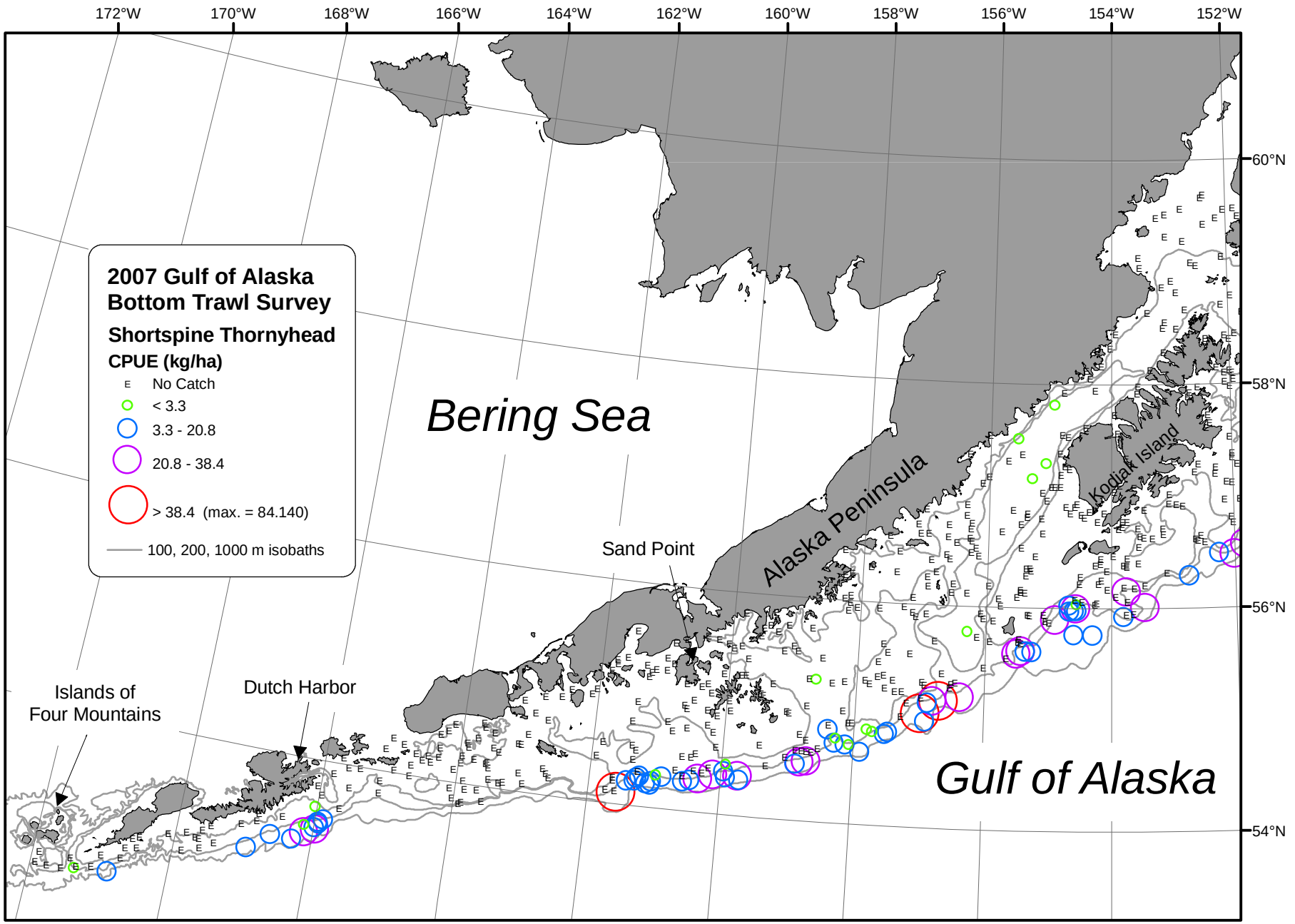

Figure 42. -- Distribution and relative abundance of shortspine thornyhead from the 2007 Gulf of Alaska bottom trawl survey. Relative abundance is categorized by no catch, sample CPUE less than the mean CPUE, between the mean CPUE and two standard deviations above the mean, between two and four standard deviations above the mean, and greater than four standard deviations above the mean.

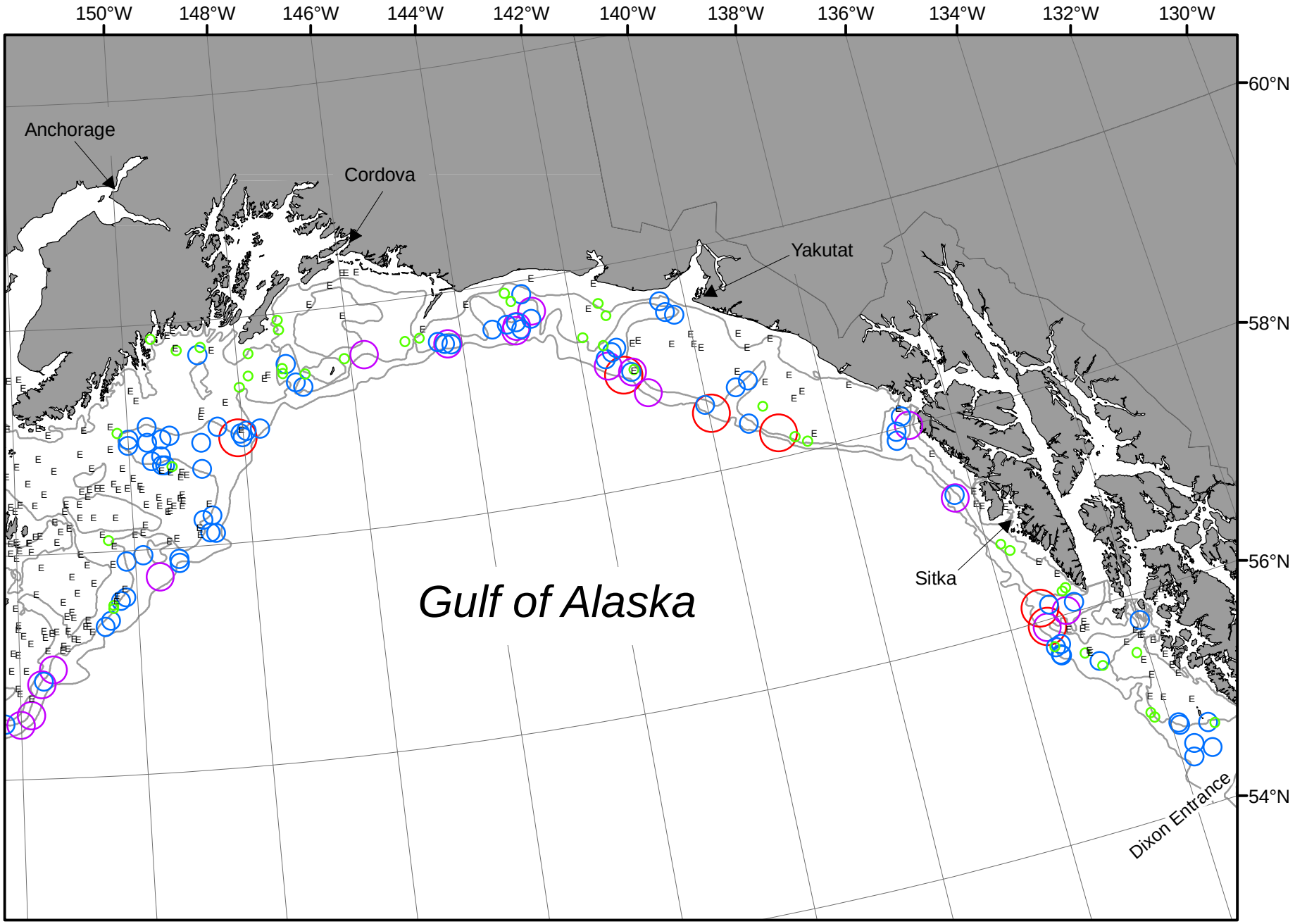

Figure 42. -- Continued (shortspine thornyhead 2007).

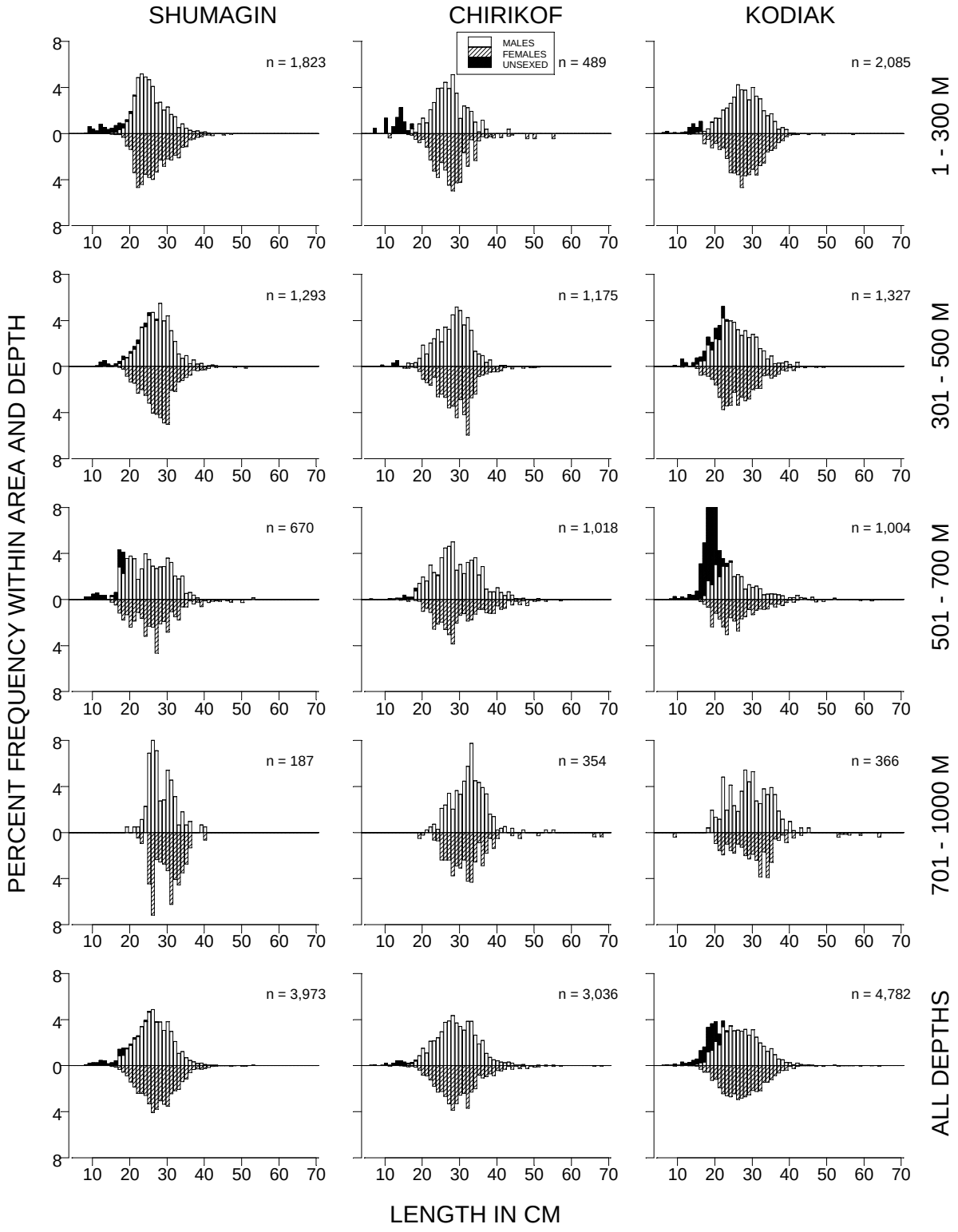

Figure 43. -- Size composition of shortspine thornyhead from the 2007 Gulf of Alaska bottom trawl survey by International North Pacific Fisheries Commission statistical areas and depth intervals.

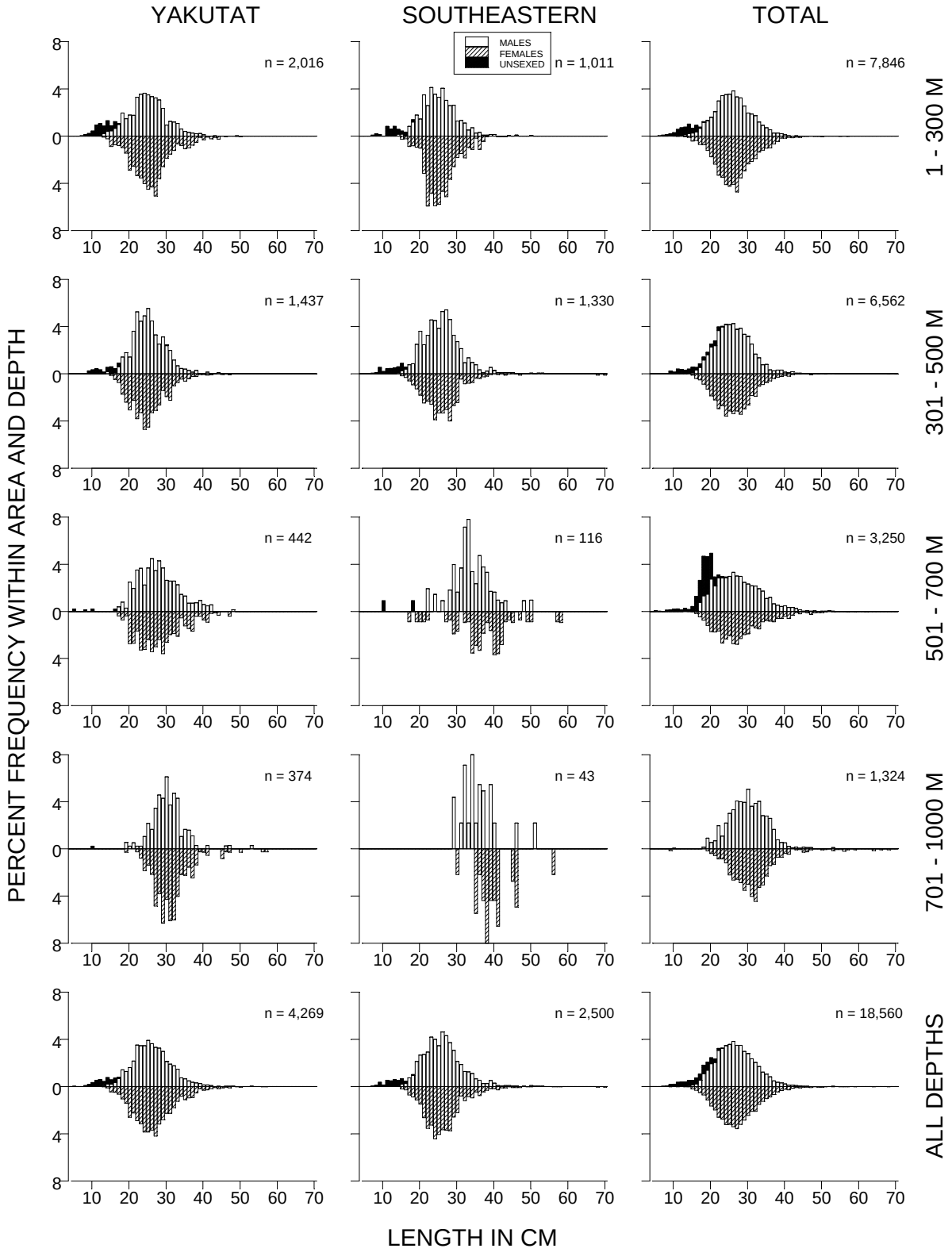

Figure 43. -- (continued).

Table 54. -- Catch per unit of effort by stratum for shortspine thornyhead 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
Southeastern	301 - 500	Southeastern Slope	4	4	48.00	3,709	737	6,680
Yakutat	501 - 700	Yakutat Slope	3	3	27.91	4,101	0	8,291
Kodiak	301 - 500	Kodiak Slope	10	10	25.30	7,368	4,564	10,172
Chirikof	501 - 700	Chirikof Slope	7	7	25.22	4,927	1,312	8,542
Chirikof	301 - 500	Chirikof Slope	10	10	23.42	3,757	2,816	4,698
Kodiak	501 - 700	Kodiak Slope	6	6	23.12	4,035	2,635	5,435
Yakutat	301 - 500	Yakutat Slope	7	7	21.12	3,212	2,140	4,285
Yakutat	201 - 300	Yakutat Slope	9	8	20.92	4,451	182	8,719
Yakutat	701 - 1000	Yakutat Slope	3	3	19.66	3,711	349	7,074
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	19.08	2,147	0	5,593
Shumagin	301 - 500	Shumagin Slope	9	9	18.58	4,702	2,717	6,688
Yakutat	301 - 500	Yakutat Gullies	2	2	16.10	1,782	0	8,307
Southeastern	301 - 500	Southeastern Deep Gullies	7	7	15.08	3,534	1,735	5,333
Kodiak	701 - 1000	Kodiak Slope	4	4	13.69	4,782	1,704	7,860
Shumagin	501 - 700	Shumagin Slope	5	5	12.91	2,590	1,547	3,633
Kodiak	201 - 300	Kodiak Slope	7	7	10.80	1,752	142	3,363
Shumagin	201 - 300	Shumagin Slope	17	14	10.44	2,910	1,580	4,240
Shumagin	701 - 1000	Shumagin Slope	2	2	10.03	1,943	0	4,314
Chirikof	701 - 1000	Chirikof Slope	5	5	9.63	2,953	1,390	4,517
Southeastern	501 - 700	Southeastern Slope	3	3	8.27	855	282	1,428
Kodiak	201 - 300	Kenai Gullies	19	17	7.98	5,317	3,564	7,069
Yakutat	201 - 300	Yakutat Gullies	8	8	7.56	2,300	55	4,545
Chirikof	201 - 300	Chirikof Slope	8	8	6.39	977	10	1,945
Southeastern	701 - 1000	Southeastern Slope	2	2	4.39	530	0	3,150
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	11	3.39	1,332	550	2,115
Yakutat	101 - 200	Yakataga Shelf	8	6	2.54	1,341	0	3,320
Yakutat	101 - 200	Middleton Shelf	9	7	2.01	1,476	288	2,664
Chirikof	101 - 200	East Shumagin Gully	17	2	0.54	596	0	1,859
Kodiak	101 - 200	Portlock Flats	35	3	0.51	374	0	990
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	4	0.43	181	0	441
Kodiak	101 - 200	Kenai Flats	18	7	0.40	487	0	1,195
Southeastern	101 - 200	Prince of Wales Shelf	14	2	0.30	205	0	636
Kodiak	201 - 300	Upper Shelikof Gully	4	2	0.25	81	0	261
Kodiak	1 - 100	Kenai Peninsula	7	1	0.25	131	0	450
Yakutat	101 - 200	Fairweather Shelf	8	2	0.09	68	0	225
Yakutat	1 - 100	Yakutat Shallows	6	2	0.08	81	0	244
Chirikof	201 - 300	Lower Shelikof Gully	18	3	0.06	63	0	159
Shumagin	101 - 200	Shumagin Outer Shelf	28	2	0.01	7	0	17
Kodiak	101 - 200	Kodiak Outer Shelf	28	1	0.01	4	0	13
Kodiak	101 - 200	Albatross Gullies	28	1	0.00	2	0	7
Chirikof	101 - 200	Chirikof Outer Shelf	25	1	0.00	1	0	4

Other Rockfishes

Redstripe rockfish (*Sebastes proriger*)

Redstripe rockfish were rare outside the Southeastern INPFC area and were not captured in the Yakutat INPFC area (Table 55). Approximately 94% of the total survey area biomass was estimated to be in the Southeastern INPFC area with most of the remainder in the Kodiak INPFC area. Three tows in the 101 to 200 m depth range of the Prince of Wales Shelf stratum accounted for almost 82% of the total biomass estimate even though this stratum only comprises a little over 2% of the entire survey area (Table 56).

Silvergray rockfish (*Sebastes brevispinis*)

Silvergray rockfish were rare outside the Yakutat and Southeastern INPFC areas and were not captured in the Shumagin INPFC area (Table 57). Silvergray rockfish was the sixth most abundant groundfish species in the Southeastern INPFC area (Table 2). The highest mean CPUEs were recorded in the Prince of Wales Shelf and Prince of Wales Slope and Gullies strata, which accounted for 66% of the total survey biomass estimate (Table 58). These two strata comprise just over 3% of the total survey area. Silvergray rockfish were almost exclusively caught in the 101 to 300 m depth range, which accounted for over 99% of its total estimated biomass. No fish were caught deeper than 500 m. Mean fish size generally increased with depth.

Harlequin rockfish (*Sebastes variegatus*)

Harlequin rockfish were caught infrequently and in modest numbers throughout the survey area, primarily in the 101 to 200 m depth range, which accounted for approximately 93% of its total biomass estimate (Table 59). The highest mean CPUEs were recorded in the Chirikof Outer Shelf, Prince of Wales Shelf, and Shumagin Outer Shelf strata, which accounted for approximately 84% of the estimated biomass. The combined area of these strata comprises just over 6% of the total survey area (Table 60).

Redbanded rockfish (*Sebastes babcocki*)

Redbanded rockfish were caught infrequently and in modest numbers in the Shumagin, Chirikof, and the western part of the Kodiak INPFC areas (Table 61). Approximately 83% of the total estimated biomass was in the Yakutat and Southeastern INPFC areas, with the highest mean CPUEs recorded in the 201 to 300 m depth range, which accounted for approximately 64% of its total biomass. Most of the remaining biomass was estimated to be in the 101 to 200 m depth range. No redbanded rockfish were caught deeper than 500 m. The highest mean CPUEs were noted in the Prince of Wales Slope/Gullies and the Yakutat Gullies strata, which accounted for about 44% of the total biomass (Table 62).

Yelloweye rockfish (*Sebastes ruberrimus*)

Yelloweye rockfish were caught very infrequently and in very modest numbers throughout the survey area (Table 63). Approximately 47% of the total biomass estimate was attributed to two hauls in the Prince of Wales Shelf stratum whose area comprises just over 2% of the survey

area (Table 64). No yelloweye rockfish were caught deeper than 300 m. The highest mean CPUEs were consistently recorded in the 101 to 200 m depth range of all INPFC areas, which accounted for over 95% of its total biomass.

Rosethorn rockfish (*Sebastes helvomaculatus*)

Except for a single haul with an extremely low CPUE in the Shumagin INPFC area, rosethorn rockfish were caught only in the Yakutat and Southeastern INPFC areas (Table 65). Mean CPUEs were modest in all strata where rosethorn rockfish were caught, with the highest values recorded in the Prince of Wales Slope/Gullies, Yakutat Gullies, and Fairweather Shelf strata (Table 66). Rosethorn rockfish were almost exclusively captured in the 101 to 300 m depth range, which accounted for more than 99% of its estimated biomass.

Table 55. -- Number of survey hauls, number of hauls with redstripe rockfish, 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	1	0.007	10	0	31	0.800
	201 - 300	17	1	0.018	5	0	16	0.818
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	2	0.002	15	0	38	0.806
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	1	0.002	4	0	13	0.529
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	1	0.001	4	0	13	0.529
Kodiak	1 - 100	97	1	0.043	168	0	564	1.309
	101 - 200	127	3	0.109	475	0	1,190	0.555
	201 - 300	30	1	0.008	9	0	30	1.000
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	5	0.064	651	0	1,460	0.657
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	1	0.015	10	0	32	0.205
	101 - 200	22	6	9.217	10,217	0	25,214	0.512
	201 - 300	17	8	1.193	603	0	1,249	0.495
	301 - 500	11	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	15	3.862	10,830	0	25,840	0.511
All areas	1 - 100	334	2	0.014	178	0	574	1.01
	101 - 200	290	11	0.875	10,706	0	25,722	0.51
	201 - 300	107	10	0.171	617	0	1,263	0.50
	301 - 500	49	0	---	---	---	---	---
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	23	0.359	11,501	0	26,535	0.517

Table 56. -- Catch per unit of effort by stratum for redstripe rockfish 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
Southeastern	101 - 200	Prince of Wales Shelf	14	3	13.63	9,390	0	24,451
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	3	1.97	827	0	2,037
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	7	1.49	585	0	1,234
Kodiak	101 - 200	Kodiak Outer Shelf	28	2	0.68	341	0	1,013
Kodiak	1 - 100	Kenai Peninsula	7	1	0.32	168	0	577
Kodiak	101 - 200	Portlock Flats	35	1	0.18	134	0	407
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	0.16	18	0	96
Kodiak	201 - 300	Kodiak Slope	7	1	0.06	9	0	31
Shumagin	201 - 300	Shumagin Slope	17	1	0.02	5	0	16
Southeastern	1 - 100	Southeastern Shallows	11	1	0.02	10	0	33
Shumagin	101 - 200	Shumagin Outer Shelf	28	1	0.01	10	0	31
Chirikof	101 - 200	Chirikof Outer Shelf	25	1	0.01	4	0	13

Table 57. -- Number of survey hauls, number of hauls with silvergray rockfish, 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	0	---	---	---	---	---
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	0	---	---	---	---	---
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	1	0.032	76	0	233	0.762
	201 - 300	26	1	0.009	10	0	33	1.347
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	2	0.013	86	0	244	0.802
Kodiak	1 - 100	97	2	0.018	69	0	211	0.717
	101 - 200	127	5	0.022	94	0	197	0.841
	201 - 300	30	2	0.095	110	0	288	1.430
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	9	0.027	273	34	511	0.957
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	8	2.084	6,122	0	16,386	1.809
	201 - 300	17	7	5.091	2,632	0	7,552	1.805
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	15	1.530	8,754	0	19,919	1.808
Southeastern	1 - 100	11	1	0.148	97	0	311	1.358
	101 - 200	22	13	12.968	14,375	2,248	26,501	1.649
	201 - 300	17	13	12.146	6,137	1,834	10,439	1.797
	301 - 500	11	1	0.244	76	0	256	2.167
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	28	7.377	20,685	7,899	33,470	1.690
All areas	1 - 100	334	3	0.013	167	0	408	0.989
	101 - 200	290	27	1.689	20,667	5,548	35,785	1.678
	201 - 300	107	23	2.466	8,888	2,777	14,999	1.793
	301 - 500	49	1	0.060	76	0	256	2.167
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	54	0.931	29,798	13,588	46,007	1.705

Table 58. -- Catch per unit of effort by stratum for silvergray rockfish 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
Southeastern	101 - 200	Prince of Wales Shelf	14	9	19.79	13,631	1,455	25,806
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	12	15.32	6,015	1,691	10,340
Yakutat	101 - 200	Fairweather Shelf	8	4	7.70	5,949	0	16,474
Yakutat	201 - 300	Yakutat Gullies	8	1	6.98	2,123	0	7,143
Yakutat	201 - 300	Yakutat Slope	9	6	2.39	509	7	1,012
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	4	1.77	744	0	1,762
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	1.08	121	0	644
Kodiak	201 - 300	Kodiak Slope	7	1	0.49	80	0	274
Southeastern	301 - 500	Southeastern Deep Gullies	7	1	0.33	76	0	263
Southeastern	1 - 100	Southeastern Shallows	11	1	0.15	97	0	314
Kodiak	1 - 100	Kenai Peninsula	7	2	0.13	69	0	216
Yakutat	101 - 200	Middleton Shelf	9	2	0.12	87	0	225
Chirikof	101 - 200	Shelikof Edge	27	1	0.10	76	0	233
Yakutat	101 - 200	Yakataga Shelf	8	1	0.08	42	0	142
Kodiak	101 - 200	Portlock Flats	35	4	0.07	53	0	113
Chirikof	201 - 300	Chirikof Slope	8	1	0.07	10	0	34
Yakutat	101 - 200	Yakutat Flats	8	1	0.05	44	0	148
Kodiak	201 - 300	Kenai Gullies	19	1	0.05	30	0	93
Kodiak	101 - 200	Kenai Flats	18	1	0.03	40	0	125

Table 59. -- Number of survey hauls, number of hauls with harlequin rockfish, 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	3	0.563	826	0	2,474	0.648
	201 - 300	17	2	0.029	8	0	20	0.426
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	5	0.128	834	0	2,482	0.644
Chirikof	1 - 100	82	1	0.000	1	0	2	0.059
	101 - 200	69	5	0.757	1,805	0	4,770	0.485
	201 - 300	26	3	0.007	8	0	18	0.390
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	9	0.267	1,814	0	4,779	0.483
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	8	0.018	77	0	161	0.256
	201 - 300	30	3	0.010	12	0	29	0.424
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	11	0.009	89	4	174	0.271
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	4	0.087	256	0	602	0.138
	201 - 300	17	5	0.099	51	2	100	0.317
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	9	0.054	307	0	657	0.152
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	6	0.742	823	0	2,480	0.196
	201 - 300	17	5	0.366	185	0	562	0.148
	301 - 500	11	2	0.020	6	0	16	0.160
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	13	0.361	1,014	0	2,714	0.185
All areas	1 - 100	334	1	0.000	1	0	2	0.059
	101 - 200	290	26	0.310	3,786	130	7,442	0.334
	201 - 300	107	18	0.073	265	0	645	0.179
	301 - 500	49	2	0.005	6	0	16	0.160
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	47	0.127	4,057	384	7,730	0.315

Table 60. -- Catch per unit of effort by stratum for harlequin rockfish 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
Chirikof	101 - 200	Chirikof Outer Shelf	25	4	3.57	1,790	0	4,761
Southeastern	101 - 200	Prince of Wales Shelf	14	4	1.17	805	0	2,474
Shumagin	101 - 200	Shumagin Outer Shelf	28	3	1.01	826	0	2,477
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	5	0.47	185	0	565
Yakutat	101 - 200	Fairweather Shelf	8	3	0.31	241	0	595
Yakutat	201 - 300	Yakutat Gullies	8	3	0.14	41	0	89
Kodiak	201 - 300	Kodiak Slope	7	3	0.07	12	0	30
Kodiak	101 - 200	Portlock Flats	35	4	0.07	49	0	125
Kodiak	101 - 200	Kodiak Outer Shelf	28	4	0.06	28	0	66
Chirikof	201 - 300	Chirikof Slope	8	3	0.06	8	0	18
Yakutat	201 - 300	Yakutat Slope	9	2	0.05	10	0	27
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	2	0.04	18	0	52
Shumagin	201 - 300	Shumagin Slope	17	2	0.029	8	0	21
Yakutat	101 - 200	Yakataga Shelf	8	1	0.028	15	0	50
Southeastern	301 - 500	Southeastern Deep Gullies	7	2	0.026	6	0	16
Chirikof	101 - 200	East Shumagin Gully	17	1	0.014	15	0	47
Chirikof	1 - 100	Semidi Bank	23	1	0.001	1	0	2

Table 61. -- Number of survey hauls, number of hauls with redbanded rockfish, 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	6	0.186	52	3	101	0.674
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	6	0.008	52	3	101	0.674
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	4	0.033	79	0	169	0.938
	201 - 300	26	7	0.162	186	40	333	1.213
	301 - 500	10	1	0.183	29	0	95	2.316
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	12	0.043	294	113	475	1.177
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	5	0.012	52	0	103	0.401
	201 - 300	30	13	0.708	814	61	1,566	0.849
	301 - 500	10	2	0.017	5	0	13	0.145
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	20	0.086	870	117	1,623	0.776
Yakutat	1 - 100	11	1	0.059	98	0	338	1.571
	101 - 200	33	3	0.382	1,122	0	3,495	0.970
	201 - 300	17	13	2.795	1,445	0	3,794	0.726
	301 - 500	9	7	0.405	106	11	202	0.485
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	24	0.485	2,772	0	5,967	0.808
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	8	0.707	783	0	1,684	1.050
	201 - 300	17	14	4.162	2,103	128	4,078	1.198
	301 - 500	11	7	1.041	324	17	631	0.829
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	29	1.145	3,211	1,115	5,307	1.110
All areas	1 - 100	334	1	0.008	98	0	338	1.571
	101 - 200	290	20	0.166	2,035	0	4,534	0.962
	201 - 300	107	53	1.276	4,600	1,649	7,551	0.932
	301 - 500	49	17	0.364	465	144	786	0.707
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	91	0.225	7,198	3,315	11,081	0.927

Table 62. -- Catch per unit of effort by stratum for redbanded rockfish 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
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	11	5.08	1,996	8	3,983
Yakutat	201 - 300	Yakutat Gullies	8	5	3.83	1,165	0	3,566
Southeastern	301 - 500	Southeastern Slope	4	4	2.63	203	0	565
Kodiak	201 - 300	Kodiak Slope	7	4	2.36	382	0	1,098
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	4	1.52	637	0	1,561
Yakutat	101 - 200	Fairweather Shelf	8	2	1.36	1,049	0	3,477
Yakutat	201 - 300	Yakutat Slope	9	8	1.32	281	100	462
Chirikof	201 - 300	Chirikof Slope	8	6	1.08	165	4	325
Southeastern	201 - 300	Baranof-Chichagof Slope	3	3	0.95	107	0	272
Kodiak	201 - 300	Kenai Gullies	19	8	0.63	421	0	883
Yakutat	301 - 500	Yakutat Slope	7	5	0.58	89	0	188
Southeastern	301 - 500	Southeastern Deep Gullies	7	3	0.52	122	0	319
Southeastern	101 - 200	Prince of Wales Shelf	14	4	0.213	147	0	311
Shumagin	201 - 300	Shumagin Slope	17	6	0.186	52	3	101
Chirikof	301 - 500	Chirikof Slope	10	1	0.183	29	0	96
Yakutat	301 - 500	Yakutat Gullies	2	2	0.162	18	0	105
Yakutat	101 - 200	Yakataga Shelf	8	1	0.138	73	0	245
Yakutat	1 - 100	Yakutat Shallows	6	1	0.099	98	0	350
Chirikof	101 - 200	East Shumagin Gully	17	3	0.062	69	0	158
Kodiak	101 - 200	Portlock Flats	35	3	0.035	26	0	62
Kodiak	201 - 300	Upper Shelikof Gully	4	1	0.032	10	0	43
Chirikof	201 - 300	Lower Shelikof Gully	18	1	0.022	22	0	68
Kodiak	101 - 200	Albatross Gullies	28	1	0.019	15	0	45
Kodiak	301 - 500	Kodiak Slope	10	2	0.017	5	0	13
Chirikof	101 - 200	Shelikof Edge	27	1	0.013	10	0	31
Kodiak	101 - 200	Kenai Flats	18	1	0.009	11	0	34

Table 63. -- Number of survey hauls, number of hauls with yelloweye rockfish, 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	3	0.022	92	0	208	1.813
	101 - 200	39	3	0.159	234	0	613	3.827
	201 - 300	17	0	---	---	---	---	---
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	6	0.050	326	0	722	2.917
Chirikof	1 - 100	82	1	0.010	25	0	76	1.889
	101 - 200	69	5	0.122	291	0	609	2.109
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	6	0.046	316	0	637	2.090
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	4	0.078	339	0	756	2.255
	201 - 300	30	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	4	0.033	339	0	756	2.255
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	4	0.265	779	0	1,770	3.450
	201 - 300	17	1	0.051	26	0	86	2.480
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	5	0.141	806	0	1,798	3.406
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	6	2.161	2,396	0	6,366	3.167
	201 - 300	17	1	0.094	48	0	150	3.457
	301 - 500	11	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	7	0.871	2,444	0	6,414	3.172
All areas	1 - 100	334	4	0.009	116	0	243	1.829
	101 - 200	290	22	0.330	4,039	5	8,073	3.032
	201 - 300	107	2	0.021	74	0	189	3.031
	301 - 500	49	0	---	---	---	---	---
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	28	0.132	4,230	192	8,267	2.982

Table 64. -- Catch per unit of effort by stratum for yelloweye rockfish 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
Southeastern	101 - 200	Prince of Wales Shelf	14	2	2.87	1,974	0	5,948
Southeastern	101 - 200	Baranof-Chichagof Shelf	8	4	1.01	422	0	898
Yakutat	101 - 200	Fairweather Shelf	8	3	0.55	422	0	1,126
Chirikof	101 - 200	Chirikof Outer Shelf	25	3	0.42	209	0	500
Yakutat	101 - 200	Yakutat Flats	8	1	0.40	357	0	1,202
Shumagin	101 - 200	Shumagin Outer Shelf	28	3	0.29	234	0	613
Kodiak	101 - 200	Kenai Flats	18	2	0.21	256	0	642
Yakutat	201 - 300	Yakutat Slope	9	1	0.12	26	0	87
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	1	0.12	48	0	151
Kodiak	101 - 200	Portlock Flats	35	2	0.11	83	0	245
Chirikof	101 - 200	Shelikof Edge	27	1	0.09	69	0	210
Shumagin	1 - 100	Davidson Bank	48	1	0.04	50	0	151
Shumagin	1 - 100	Shumagin Bank	36	2	0.034	42	0	104
Chirikof	1 - 100	Semidi Bank	23	1	0.034	25	0	76
Chirikof	101 - 200	East Shumagin Gully	17	1	0.012	14	0	42

Table 65. -- Number of survey hauls, number of hauls with rosethorn rockfish, 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	1	0.006	2	0	5	0.261
	301 - 500	9	0	---	---	---	---	---
	501 - 700	5	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	205	1	0.000	2	0	5	0.261
Chirikof	1 - 100	82	0	---	---	---	---	---
	101 - 200	69	0	---	---	---	---	---
	201 - 300	26	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	7	0	---	---	---	---	---
	701 - 1000	5	0	---	---	---	---	---
	All depths	199	0	---	---	---	---	---
Kodiak	1 - 100	97	0	---	---	---	---	---
	101 - 200	127	0	---	---	---	---	---
	201 - 300	30	0	---	---	---	---	---
	301 - 500	10	0	---	---	---	---	---
	501 - 700	6	0	---	---	---	---	---
	701 - 1000	4	0	---	---	---	---	---
	All depths	274	0	---	---	---	---	---
Yakutat	1 - 100	11	0	---	---	---	---	---
	101 - 200	33	2	0.108	318	0	798	0.246
	201 - 300	17	4	0.408	211	0	554	0.247
	301 - 500	9	0	---	---	---	---	---
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	3	0	---	---	---	---	---
	All depths	76	6	0.092	529	0	1,111	0.247
Southeastern	1 - 100	11	0	---	---	---	---	---
	101 - 200	22	5	0.196	218	0	460	0.198
	201 - 300	17	6	0.443	224	0	468	0.223
	301 - 500	11	1	0.017	5	0	20	0.394
	501 - 700	3	0	---	---	---	---	---
	701 - 1000	2	0	---	---	---	---	---
	All depths	66	12	0.159	447	115	780	0.211
All areas	1 - 100	334	0	---	---	---	---	---
	101 - 200	290	7	0.044	536	8	1,063	0.224
	201 - 300	107	11	0.121	436	38	835	0.234
	301 - 500	49	1	0.004	5	0	20	0.394
	501 - 700	24	0	---	---	---	---	---
	701 - 1000	16	0	---	---	---	---	---
	All depths	820	19	0.031	978	316	1,639	0.229

Table 66. -- Catch per unit of effort by stratum for rosethorn rockfish 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
Southeastern	201 - 300	Prince of Wales Slope/Gullies	14	5	0.55	216	0	461
Yakutat	201 - 300	Yakutat Gullies	8	1	0.48	146	0	491
Yakutat	101 - 200	Fairweather Shelf	8	2	0.41	318	0	810
Southeastern	101 - 200	Prince of Wales Shelf	14	5	0.32	218	0	462
Yakutat	201 - 300	Yakutat Slope	9	3	0.30	65	0	160
Southeastern	201 - 300	Baranof-Chichagof Slope	3	1	0.07	8	0	44
Southeastern	301 - 500	Southeastern Slope	4	1	0.07	5	0	22
Shumagin	201 - 300	Shumagin Slope	17	1	0.01	2	0	5