AGE, SEX, AND SIZE COMPOSITION OF PACIFIC HERRING FROM COASTAL SPAWNING SITES IN THE ARCTIC-YUKON-KUSKOKWIM REGION, 2001

By

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ABSTRACT

During their 2001 spring spawning migration, Pacific herring (*Clupea pallasi*) were sampled from six of the eight commercial fishing districts within the Arctic-Yukon-Kuskokwim (AYK) Region of the Bering Sea. The total biomass in all AYK districts combined was 55,166 tons and the harvest was 4,360 tons. Between 6 May and 23 June, 9,870 herring were sampled for age, sex, and size information. Samples were collected using variable-mesh gillnets operated by Alaska Department of Fish and Game personnel, and from commercial and subsistence gillnet harvests. Throughout the region, age-4, age-5, age-8 and age-10 herring were the most frequently occurring age classes. The percentage of recruit herring (ages 2 through 5) in all AYK districts combined comprised 49.3% of the return in numbers of fish, the highest recruitment percentage since 1982. Males were more abundant than females in variable-mesh gillnet samples while females dominated in commercial harvest samples.

KEY WORDS: *Clupea pallasi*, Bering Sea, biomass, commercial fishing district, commercial harvest, variable-mesh gillnet, age class, recruit herring

INTRODUCTION

The age, sex, and size composition data collected from Pacific herring (*Clupea pallasi*) in the Arctic-Yukon-Kuskokwim (AYK) Region of the Bering Sea is used to assess stock status, gain knowledge of population dynamics, formulate management plans, and facilitate inseason management decisions. The Alaska Department of Fish and Game (ADF&G) has conducted similar studies annually since 1976 (e.g., McBride et al. 1981, DuBois 2001).

The study area comprises the coastal waters of Alaska from Cape Newenham to Cape Prince of Wales (Figure 1). Eight regulatory commercial fishing districts are located within the AYK Region: Security Cove, Goodnews Bay, Cape Avinof, Nelson Island, and Nunivak Island Districts are located within the Kuskokwim Area, whereas Cape Romanzof, Norton Sound, and Port Clarence Districts are located within the Bering Sea-Kotzebue Area. Norton Sound is further divided into seven subdistricts (Figure 2). AYK herring districts are identified and described in ADF&G (2000).

The timing of the spawning migration of herring in the northeastern Bering Sea is greatly influenced by climate and oceanic conditions, particularly the extent and distribution of the Bering Sea ice pack. Most herring appear soon after ice breakup, which generally occurs between late-April and mid-June. Spawning usually begins in the Security Cove District and progresses in a northerly direction. In some areas, spawning may continue as late as July.

METHODS

Sampling Techniques

Variable-mesh gillnets[1] (VMG), consisting of 1.5, 2.0, 2.5, and 3.0 inch stretch-mesh panels, designed to sample age classes in proportion to their abundance, were used by ADF&G personnel to sample the population. Commercial gillnets are the only legal gear in most of the AYK Region, with the exception of Norton Sound where a portion of the harvest is normally taken using beach seine gear and Nunivak Island where a cooperative purse seine fishery is allowed. However, gillnets were the only gear fished in 2001. In the Kuskokwim herring districts, commercial samples were collected from gillnets with mesh sizes ranging from 2 3/4 to 3 5/16 inch. Samples were also collected from subsistence gillnet harvests in the Nelson Island District. In the Cape Romanzof and

[1] The floating variable-mesh gillnet (VMG) is 100 ft (31 m) in length and 10 ft (3 m) in depth and consists of four 25 ft (8 m) panels with stretch mesh sizes of 1.5, 2.0, 2.5, and 3.0 inches (38, 51, 64, and 76 mm).

Norton Sound Districts, commercial samples were collected from gillnets with mesh sizes ranging from 3 to 3 1/8 inch and from 3 1/8 to 3 1/4 inch, respectively.

Data collection methods were similar to those described by Barton and Steinhoff (1980). Length, weight, sex, gonad weight, gonad maturity index and scales were obtained from herring sampled from each gear type. Fish were measured to the nearest millimeter, weighed to the nearest gram, and aged by counting scale annuli viewed with a microfiche reader. Sample size goals were based on the methods of Thompson (1987). The sample size goal was 420 herring from each commercial gear type in each district or subdistrict per week. The sample goal for VMG catches was 60 fish per day. VMGs were fished for short durations to avoid saturating any single mesh size with fish. An effort was made to sample fish from several schools each day to promote representative sampling of the run. VMG sample data is summarized by seven-day periods, which are consistent from year to year.

Estimation of Biomass Age Composition

Aerial surveys have been the primary method of assessing herring biomass, timing and spawn distribution in the Bering Sea herring fisheries since 1978. Aerial survey procedures followed those outlined by Lebida and Whitmore (1985). Biomass estimates from aerial surveys in the AYK Region is often difficult because of unfavorable weather, ice conditions or turbid water. In these cases, preseason projections, spawn deposition observations and commercial and VMG catch rates may be used to estimate the biomass in districts where poor aerial survey conditions precluded an accurate assessment.

The method used to estimate the age composition of the run biomass and escapement biomass is similar for all districts in 2001. The age composition of the escapement biomass was estimated from VMG catches. The age composition of the harvest biomass was estimated from commercial harvest sampling. The age composition of the run biomass was estimated by combining harvest biomass with escapement biomass for each age class. For each district, the number of herring in the run, harvest, and escapement was converted from tons using age-specific average weights of fish sampled from VMG and commercial catches. More detailed information on the methods for estimating the age composition of the biomass is presented in Hamner and Bromaghin (1999). Because VMG sampling was not done in the Nunivak Island District, Nelson Island data was used to estimate the age composition. Security Cove age composition summaries were compiled using VMG samples from Security Cove and Goodnews Bay. The samples from these districts were combined because most of the Security Cove samples were collected after the commercial fishery, and using only the Security Cove samples may overestimate the younger age classes.

RESULTS AND DISCUSSION

ADF&G personnel sampled 9,870 herring between 6 May and 23 June from VMG, commercial gillnet and subsistence harvests. Samples were taken from the Security Cove, Goodnews Bay, Cape Avinof, Nelson Island, Cape Romanzof, and Norton Sound (St. Michael, Unalakleet, and Cape Denbigh Subdistricts) commercial fishing districts. The age, sex, and size data collected from sampled herring are summarized in Appendices A.1-18. Age composition data were not collected from the Nunivak Island and Port Clarence Districts in 2001.

Samples were collected from age-3 to age-17 herring in the AYK Region. Unreadable scales composed 6.4% of all scale samples. The percentage of unreadable scales, unaged herring, ranged from 2.0% in the Cape Denbigh Subdistrict to 17.4 % in the Cape Romanzof District. Readability of herring scales is dependent on the area of the body from which the scales have been removed, regeneration caused by a combination of injury and scale loss, the sampler's ability to identify a readable scale and the ability of the person reading the scales. The proportion of unreadable scales is expected to increase as herring age because the probability for injury or scale loss increases as herring age.

In most districts, the mean length and weight from aged herring was less than the mean length and weight from unaged herring (Appendices A.1-18). For example, the Cape Romanzof mean length from aged herring was 263 mm and the mean length from unaged herring was 276 mm (t-test $p=0.000$, $df=1053$). A similar comparison by mean weight was 261 gm from aged herring and 303 gm from unaged herring (t-test $p=0.000$, $df=1054$). This discrepancy between aged and unaged mean weight and length suggests the relative proportion of unaged older herring may be greater than unaged younger herring, and the age composition contributions from older herring may be underestimated.

The herring biomass for the region was assessed to be 55,166 tons in 2001 (Table 1). The herring biomass was distributed among the districts as follows: 9.4% in Security Cove, 10.4% in Goodnews Bay, 6.3% in Cape Avinof, 11.0% in Nelson Island, 10.3% in Nunivak Island, 4.9% in Cape Romanzof, and 47.7% in Norton Sound (Figure 3). More detailed information on the biomass is presented in DuBois (2002).

The commercial harvest, all taken with gillnets, was 4,360 tons (Table 1). The herring harvest was distributed among the districts as follows: 23.5% in Security Cove, 1.0% in Goodnews Bay, 5.3% in Cape Avinof, 15.6% in Nelson Island, 3.1% in Cape Romanzof, and 51.5% in Norton Sound (Figure 3). More detailed information on the commercial harvest is presented in DuBois (2002).

For most districts, the large recruitment (ages 2 to 5) that was observed in 1981 and 1982 was followed by nine years of reduced recruitment (Figures 4 and 5). In 1992 and 1993, a substantial recruitment of herring was again observed in most districts. In 1997 and 1998, increased recruitment of age-4 herring (1997) and age-5 herring (1998) was observed. In 1999, the AYK

Region had record low recruitment of 8.9% (Figure 6). In 2000, all districts had increased numbers of recruits, primarily because of increased numbers of age-4 herring.

In 2001, recruitment increased in all districts except Cape Avinof, compared to 2000 (Figures 4, 5 and 6). The Cape Avinof District had a slight decrease in recruitment, yet historically sustains one of the highest recruitment levels in the Region (Figures 4 and 6). The total AYK recruitment in 2001 is the highest number of recruits since 1993 (Figure 5) and the highest percentage of recruits since 1982 (Figure 6). The AYK Region average recruitment of 49.3% is twice the 5-year average (1996-2000) recruitment level of 24.2%. Recruitment ranged from 40.6% in the Nelson Island and Nunivak Island districts to 62.1% in the Cape Avinof District (Figure 7). The typically higher percentage of recruit herring returning to the Cape Avinof District has been referenced in earlier reports (e.g. DuBois 2001). The 10-year average (1992-2001) percentage of recruit herring returning to the Cape Avinof District was 42.0% compared to 28.9% for all other districts. Recruits returning from the 1996 year class (age-5) and the 1997 year class (age-4) comprised 26.9% and 22.3%, respectively, of the total AYK herring population (Table 2, Figure 8).

Either age-5 or age-8 herring were the largest components of the biomass in all districts. Age-5 herring dominated the biomass in the Security Cove, Cape Avinof and Cape Romanzof districts (range: 21.9%-24.6%). Age-8 herring was the largest component of the biomass in the Goodnews Bay, Nelson Island, Nunivak Island and Norton Sound districts (range: 17.1%-22.9%, Table 1, Figures 9 and 10). The second most frequent age class by weight for most districts was also either age-5 or age-8. In the Cape Avinof District, age-4 was the second most frequent age class by weight (Table 1, Figure 9).

In numbers of fish, age-5 herring was the largest component in the Security Cove, Nelson Island, Nunivak Island Cape Romanzof and Norton Sound districts (range: 25.3%-32.1%). Age-4 herring was the largest component in numbers of fish in the Goodnews Bay (23.3%) and Cape Avinof (32.3%) districts. Comparing numbers of fish among districts, either age-4 or age-5 herring were the second most frequent age class in Security Cove, Goodnews Bay, Cape Avinof or Norton Sound Districts. Age-8 herring was the second most frequent age class in the Nelson Island, Nunivak Island and Cape Romanzof Districts (Table 2, Figure 8).

The relative abundance of age-9 and older herring by weight was lower in the Cape Avinof (25.1%) and Security Cove (34.8%) districts than in the other AYK districts (range 38.9% - 44.6%, Table 1, Figures 9 and 10). Cape Romanzof and Norton Sound had record high percentages of age-13 herring returning. Herring from the 1988 brood year, returning as age-13 in 2001, has consistently been reported in relative high abundance beginning in 1991 (returning as age-3 herring) for the Norton Sound and Cape Romanzof districts (DuBois 2001). The average age among all herring districts was 6.8 years. Cape Avinof had the youngest average age (5.9 years) while Cape Romanzof had the oldest average age (7.2 years).

Age-8 or age-10 herring dominated the commercial harvest biomass in all Kuskokwim districts (range 29.2%-33.2%, Table 1, Figure 9). In the northern districts of Cape Romanzof and Norton Sound age-13 herring dominated the commercial harvest (30.2% and 44.5%, respectively, Table1, Figure 10). In the AYK Region, age-9 and older herring comprised 78.2% of the commercial

harvest, whereas recruit herring accounted for 0.2%. The percentage of age-9 and older herring among fishing districts ranged from 57.5% in the Cape Avinof District to 88.1% in the Norton Sound District (Table 1). Larger, older-aged herring are targeted by the mesh size of gillnets utilized in the commercial fishery.

Age 6 and older herring typically arrive and spawn earlier than younger herring (Figure 11). This temporal spawning segregation has been observed in previous years (DuBois 2001). An exception to this trend was observed in the Norton Sound District, where VMG catches from the Unalakleet Subdistrict during the early sampling weeks have high percentages of recruit herring (27 May – 2 June, 68.4%; 3-9 June, 85.8%, Appendix A.16.) This pattern has been observed in recent years (DuBois 2001) likely due to immature herring bound for other districts migrating through the Unalakleet District (C. Lean, retired Alaska Department of Fish and Game, Nome, personal communication). In most Kuskokwim districts the spring spawning migration timing appeared to be early in 2001. In the Cape Romanzof and Norton Sound Districts, lingering ice resulted in later run timing.

Mean length at age from samples collected in all districts ranged from 173 mm for age-3 herring to 330 mm for age-14 herring (Appendices A.1-18). Throughout the region, mean length by district within age classes generally decreased in a southerly to northerly direction (Figures 12 and 13). This trend parallels observations noted in previous years (DuBois 2001). For example, the mean length of age-8 herring from the VMG catches in the Security Cove District was 285 mm (n=96, Appendix A.10) compared to 270 mm (n=305, Appendix A.18) in the Norton Sound Districts combined.

In the VMG catches, males outnumbered females in all districts except Cape Avinof (Appendices A.10-18). The percentages of male herring captured in VMG catches were: 61.1% in Security Cove, 56.0% in Goodnews Bay, 49.5% in Cape Avinof, 52.7% in Nelson Island, 55.0% in Cape Romanzof, 61.2% in Norton Sound, and 55.9% for all AYK districts combined. Females outnumbered males in the commercial harvest samples in 2001 (Appendices A.1-9). For females to outnumber males is typical in the commercial harvest (DuBois 2001). The percentages of male herring captured in commercial gillnets were: 46.3% in Security Cove, 49.8% in Goodnews Bay, 41.1% in Cape Avinof, 47.1% in Nelson Island, 48.2% in Cape Romanzof, 38.7% in Norton Sound, and 45.2% for all AYK districts combined.

The Cape Avinof historical percentage of males is typically less than other districts. The 5-year average (1997-2001) percentage of males captured in the VMG catches from Cape Avinof was 47.0% compared to 54.8% for VMG catches from all other districts. The 5-year average (1997-2001) percentage of males captured in the commercial harvest in Cape Avinof was 41.0% compared to 46.0% from all other districts. Comparing only the recruit herring captured in the VMG catches, the 5-year average (1997-2001) percentage of male recruits from Cape Avinof was 48.5% compared to 55.7% for all other districts.

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Table 1. Age composition of Pacific herring run, commercial harvest, and escapement biomass for districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

	Security Cove		Goodnews Bay		Cape Avinof		Nelson Island		Nunivak Island		Cape Romanzof		Norton Sound		Arctic-Yukon-Kuskokwim	
Age	% by weight	tons	% by weight	tons	% by weight	tons	% by weight	tons	% by weight	tons	% by weight	tons	% by weight	tons	% by weight	tons
							Run									
2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
3	0.1	4	0.1	5	0.1	3	0.1	5	0.1	4	0.0	0	0.0	5	0.0	26
4	16.2	845	12.0	693	20.6	718	8.0	483	8.0	451	7.7	208	12.3	3,246	12.0	6,645
5	21.9	1,138	16.0	918	24.6	858	17.5	1,057	17.5	987	22.8	616	19.4	5,105	19.4	10,681
6	4.6	241	4.7	273	6.0	208	5.6	338	5.6	316	5.4	145	4.1	1,068	4.7	2,589
7	5.0	261	5.4	313	7.4	257	6.2	375	6.2	350	3.2	85	1.6	418	3.7	2,059
8	17.4	905	17.1	983	16.3	568	22.7	1,374	22.7	1,283	22.1	596	21.4	5,621	20.5	11,330
9	10.4	540	12.9	740	9.0	312	10.6	642	10.6	600	1.3	34	1.1	294	5.7	3,163
10	12.3	641	15.5	890	9.9	346	16.4	995	16.4	929	12.8	344	12.6	3,304	13.5	7,450
11	8.9	462	12.3	709	4.4	154	9.5	574	9.5	536	6.7	181	5.8	1,530	7.5	4,145
12	2.4	124	3.0	175	1.7	60	2.7	162	2.7	151	2.8	76	3.7	982	3.1	1,731
13+	0.9	46	1.0	56	0.0	0	0.9	52	0.9	49	15.3	414	18.0	4,731	9.7	5,346
Total	100.0	5,206	100.0	5,755	100.0	3,486	100.0	6,057	100.0	5,657	100.0	2,700	100.0	26,305	100.0	55,166
							Commercial Harvest									
2	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	0.0	0	0.0	0
3	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	0.0	0	0.0	0
4	0.0	0	0.0	0	0.0	0	0.0	0	0	0	0.0	0	0.0	0	0.0	0
5	0.3	3	0.9	0	0.5	1	0.1	1	0	0	0.0	0	0.1	2	0.2	8
6	0.9	9	3.9	2	1.9	4	0.0	0	0	0	0.5	1	0.3	7	0.5	23
7	4.0	41	7.2	3	4.9	11	1.9	13	0	0	2.4	3	0.2	4	1.8	76
8	32.4	332	21.3	10	35.2	81	19.8	134	0	0	23.6	32	11.4	255	19.4	844
9	18.3	187	9.4	4	15.9	37	20.3	138	0	0	1.9	3	1.8	41	9.4	410
10	26.7	274	29.4	13	22.5	52	29.2	198	0	0	20.3	28	23.0	517	24.8	1,082
11	12.0	123	23.0	10	12.9	30	21.0	142	0	0	15.4	21	12.7	285	14.0	611
12	3.5	35	3.0	1	5.7	13	7.1	48	0	0	5.7	8	6.0	134	5.5	240
13+	2.0	20	1.8	1	0.3	1	0.6	4	0	0	30.2	42	44.5	999	24.5	1,067
Total	100.0	1,024	100.0	45	100.0	231	100.0	678	0	0	100.0	138	100.0	2,245	100.0	4,360
							Escapement									
2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
3	0.1	4	0.1	5	0.1	3	0.1	5	0.1	4	0.0	0	0.0	5	0.1	26
4	20.2	845	12.1	693	22.0	718	9.0	483	8.0	451	8.1	208	13.5	3,246	13.1	6,645
5	27.1	1,135	16.1	918	26.3	857	19.6	1,056	17.5	987	24.0	616	21.2	5,103	21.0	10,673
6	5.5	232	4.8	271	6.3	204	6.3	338	5.6	316	5.6	144	4.4	1,062	5.1	2,567
7	5.3	220	5.4	309	7.5	245	6.7	362	6.2	350	3.2	82	1.7	414	3.9	1,982
8	13.7	573	17.0	974	15.0	487	23.1	1,240	22.7	1283	22.0	564	22.3	5,365	20.6	10,486
9	8.4	353	12.9	736	8.5	276	9.4	504	10.6	600	1.2	32	1.0	252	5.4	2,753
10	8.8	367	15.4	877	9.0	294	14.8	797	16.4	929	12.4	317	11.6	2,787	12.5	6,368
11	8.1	339	12.2	698	3.8	124	8.0	431	9.5	536	6.2	160	5.2	1,245	7.0	3,534
12	2.1	89	3.0	174	1.4	47	2.1	114	2.7	151	2.6	68	3.5	848	2.9	1,491
13+	0.6	26	1.0	55	0.0	0	0.9	48	0.9	49	14.5	372	15.5	3,731	8.4	4,281
Total	100.0	4,182	100.0	5,710	100.0	3,256	100.0	5,379	100.0	5,657	100.0	2,562	100.0	24,060	100.0	50,806

Table 2. Percent age composition of Pacific herring spawning abundance, in number of fish, for districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

Age	Security Cove	Goodnews Bay	Cape Avinof	Nelson Island	Nunivak Island	Cape Romanzof	Norton Sound	Arctic-Yukon Kuskokwim
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.2	0.2	0.2	0.2	0.2	0.0	0.1	0.1
4	28.4	23.3	32.3	15.1	15.1	13.8	23.1	22.3
5	28.5	22.3	29.6	25.3	25.3	32.1	27.2	26.9
6	4.8	5.3	5.8	6.3	6.3	6.6	4.6	5.2
7	4.2	5.0	6.0	6.0	6.0	3.1	1.5	3.4
8	12.8	13.9	11.7	19.2	19.2	18.9	17.5	16.7
9	6.7	9.3	5.6	8.1	8.1	1.0	0.8	3.9
10	7.6	10.5	5.6	11.4	11.4	9.1	8.5	8.9
11	5.1	7.8	2.3	6.2	6.2	4.4	3.8	4.7
12	1.3	1.8	0.8	1.6	1.6	1.8	2.3	1.9
13+	0.5	0.6	0.0	0.5	0.5	9.1	10.6	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Figure 1. Commercial herring fishing districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

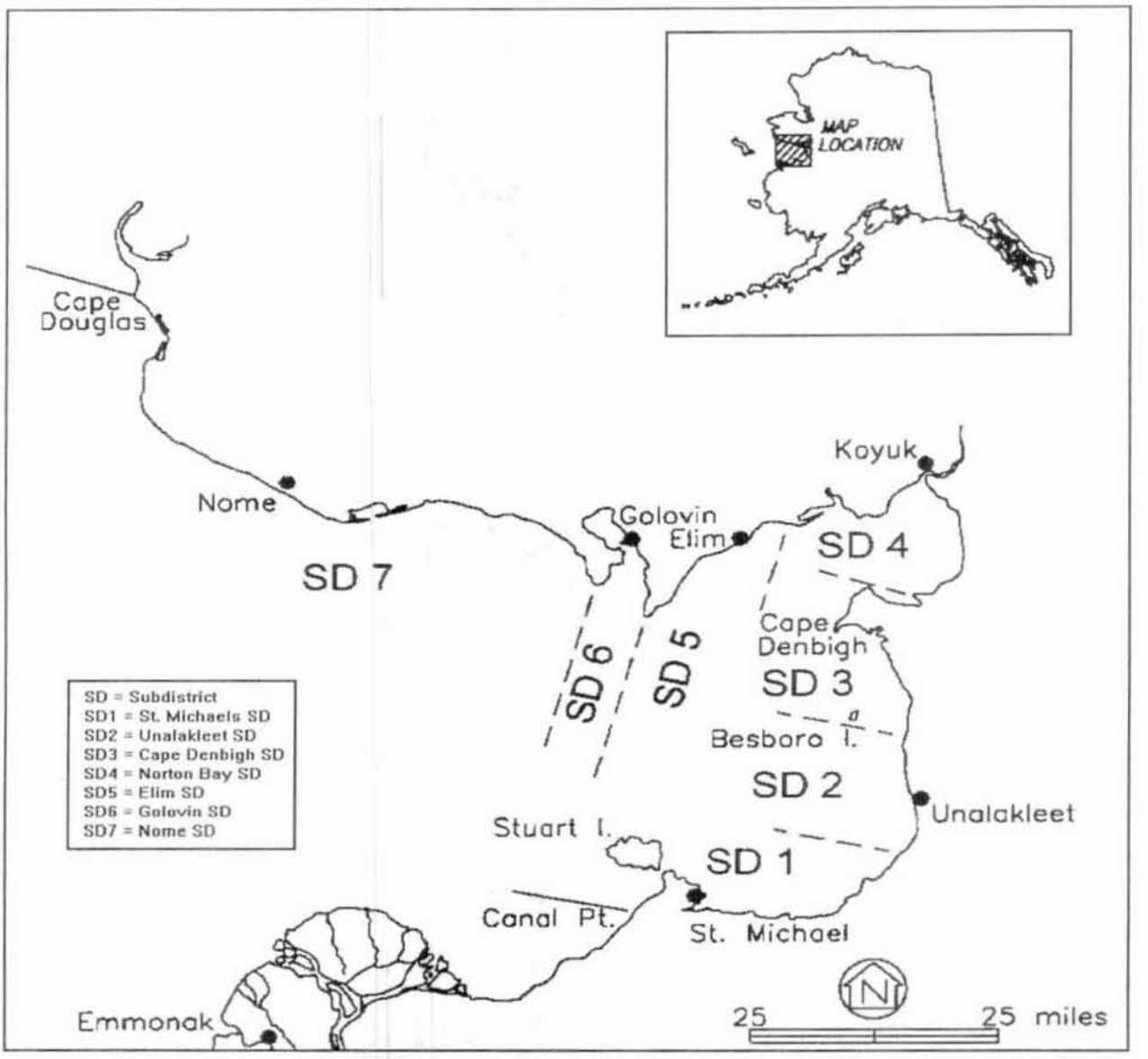
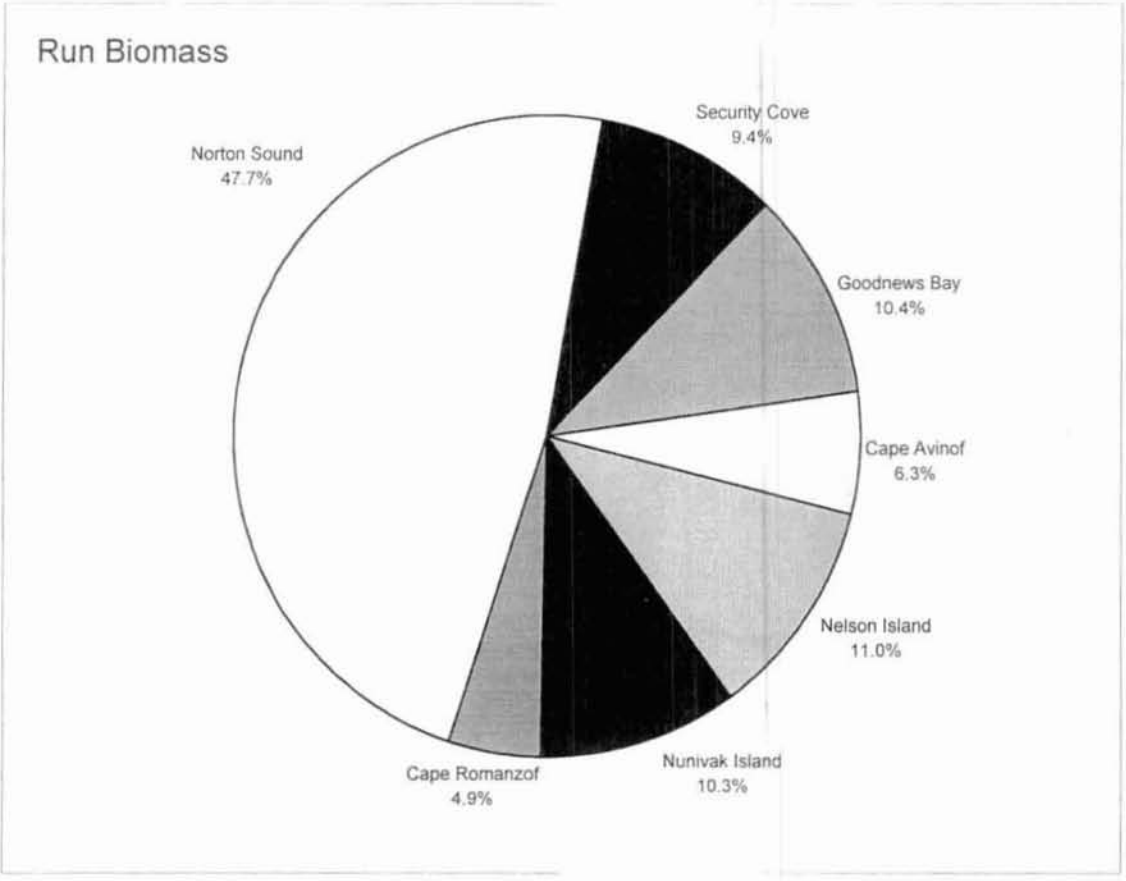


Figure 2. Commercial herring fishing subdistricts within the Norton Sound District, Arctic-Yukon-Kuskokwim Region, Alaska, 2001.



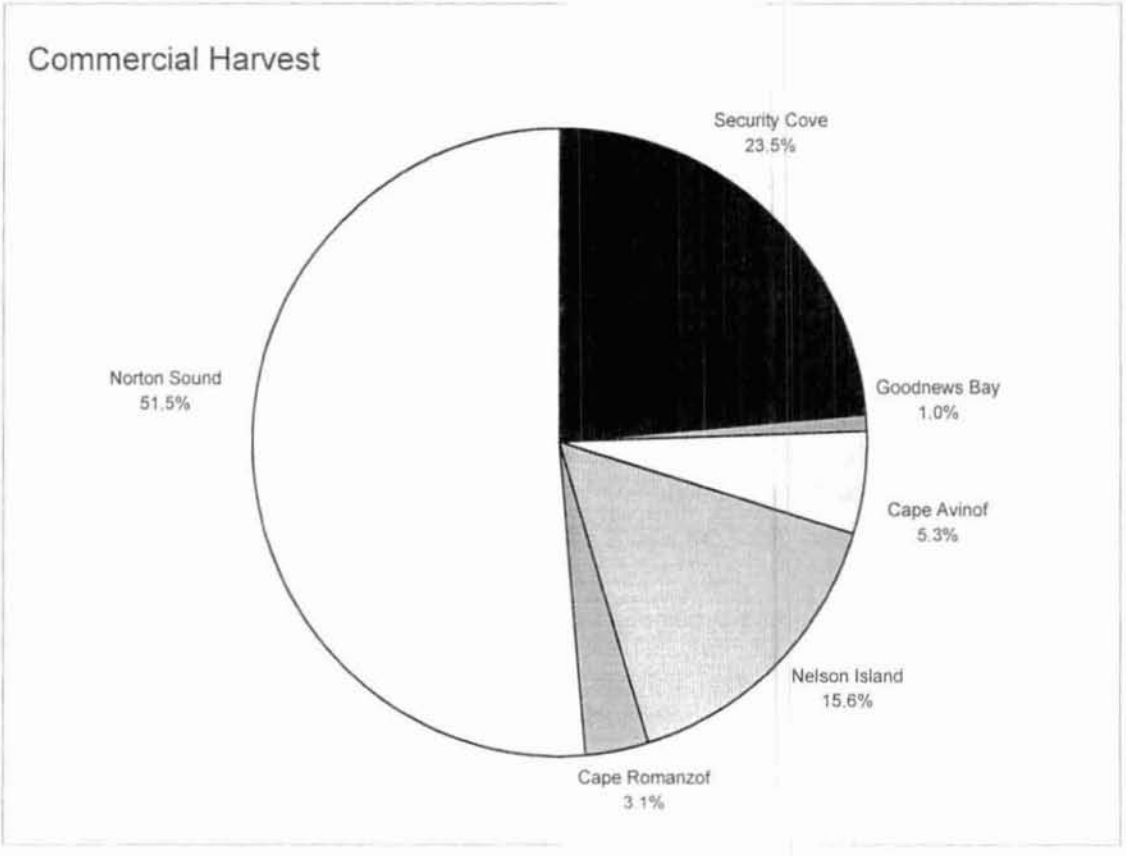


Figure 3. Pacific herring run biomass and commercial harvest distribution by commercial fishing district, Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

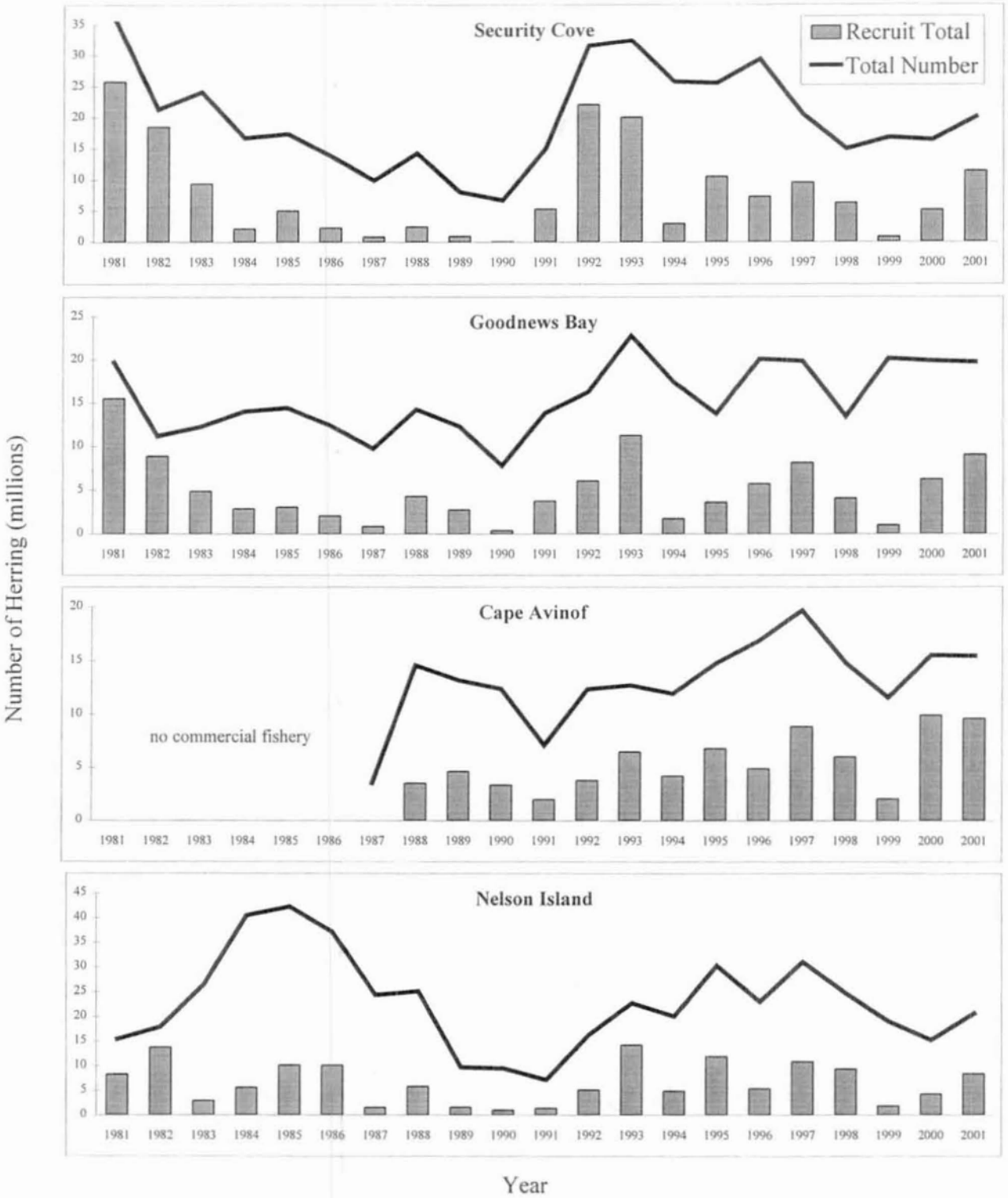


Figure 4. Pacific herring recruits, ages 2 through 5, compared to the total population from 1981 through 2001 for Security Cove, Goodnews Bay, Cape Avinof, and Nelson Island districts within the Arctic-Yukon-Kuskokwim Region, Alaska.

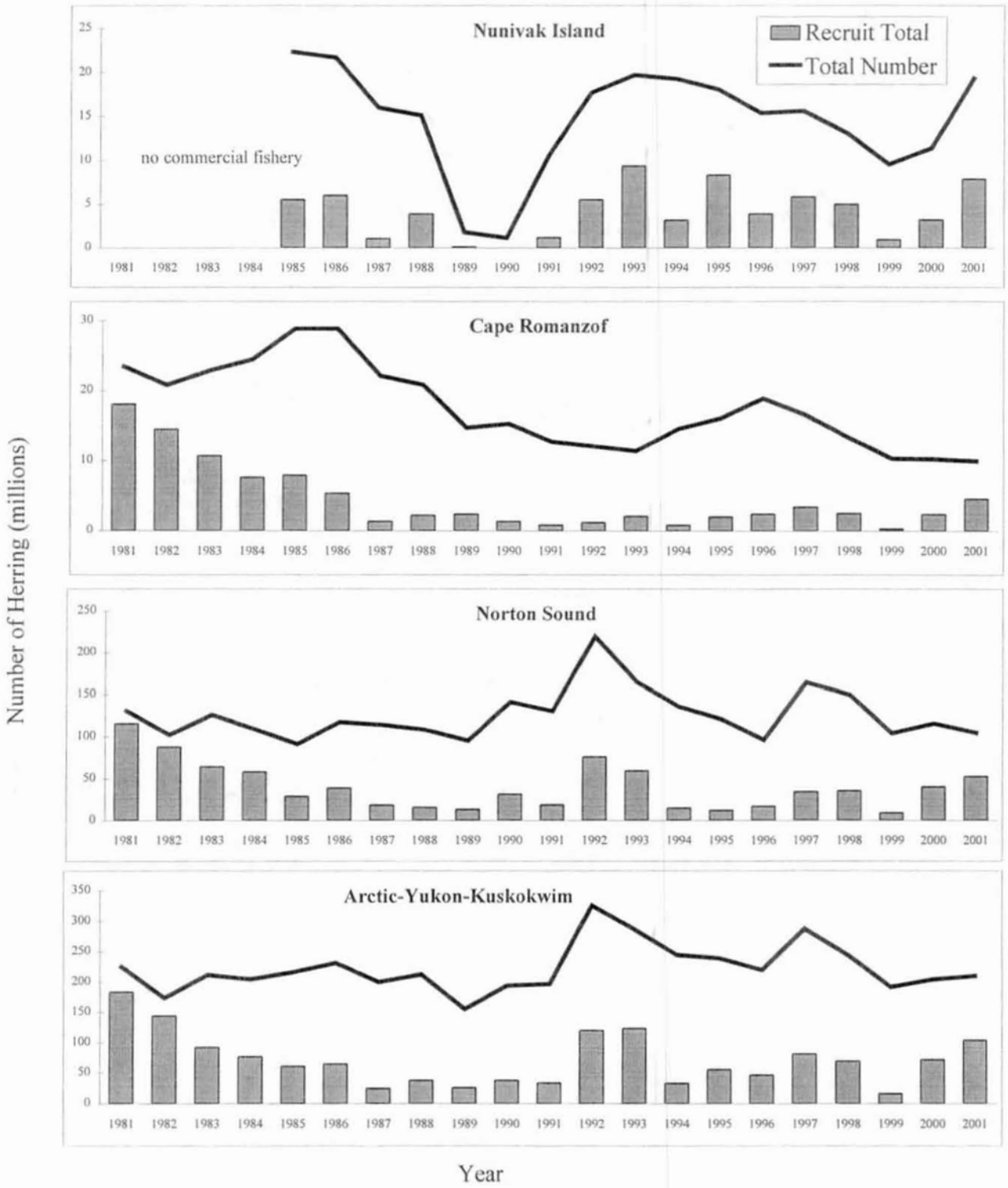


Figure 5. Pacific herring recruits, ages 2 through 5, compared to the total population from 1981 through 2001 for Nunivak Island, Cape Romanzof, and Norton Sound districts, and the combined Arctic-Yukon-Kuskokwim Region, Alaska.

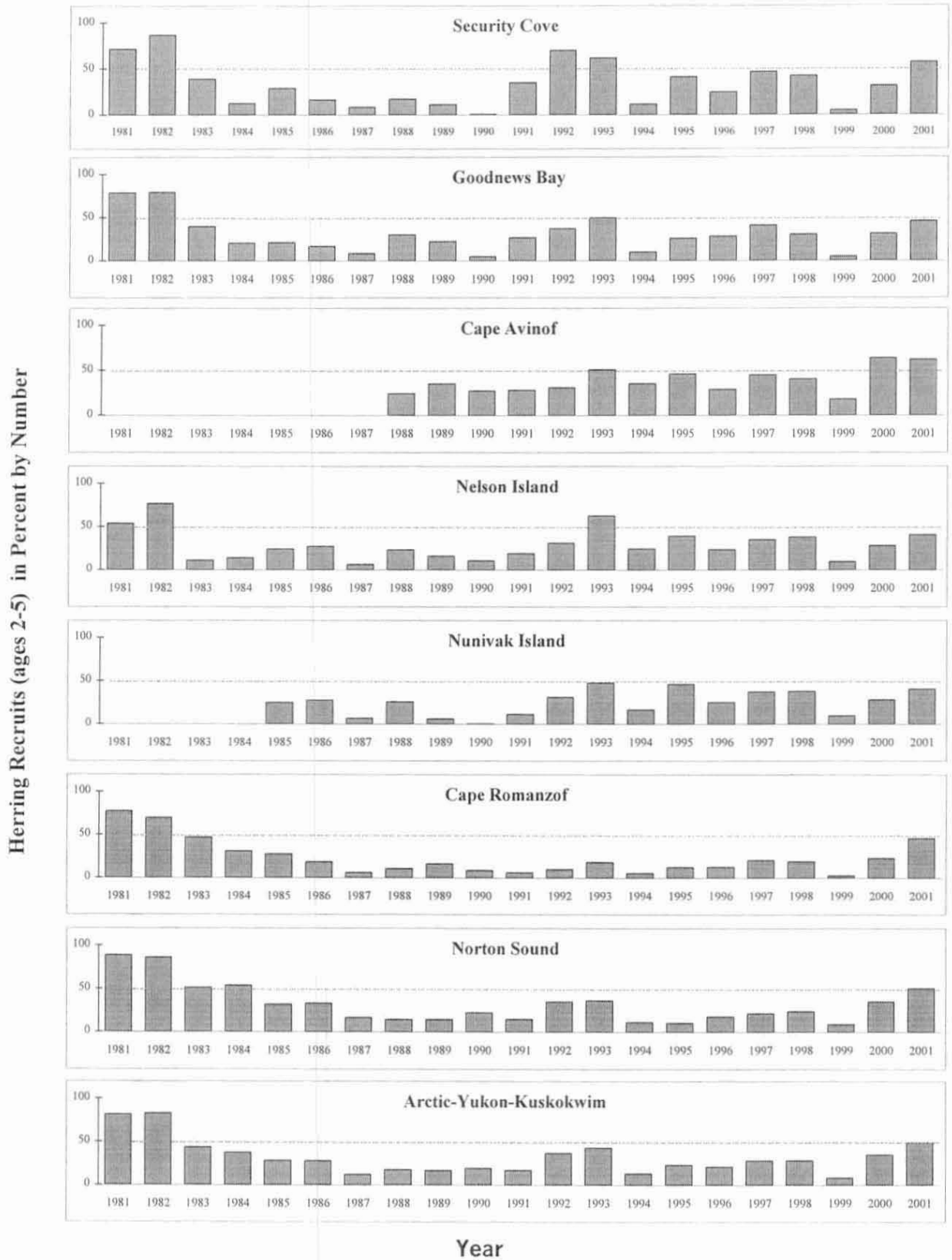


Figure 6. Pacific herring recruits, ages 2 through 5, as a percentage of the total population, from 1981 through 2001 for commercial fishing districts within the Arctic-Yukon-Kuskokwim Region, Alaska.

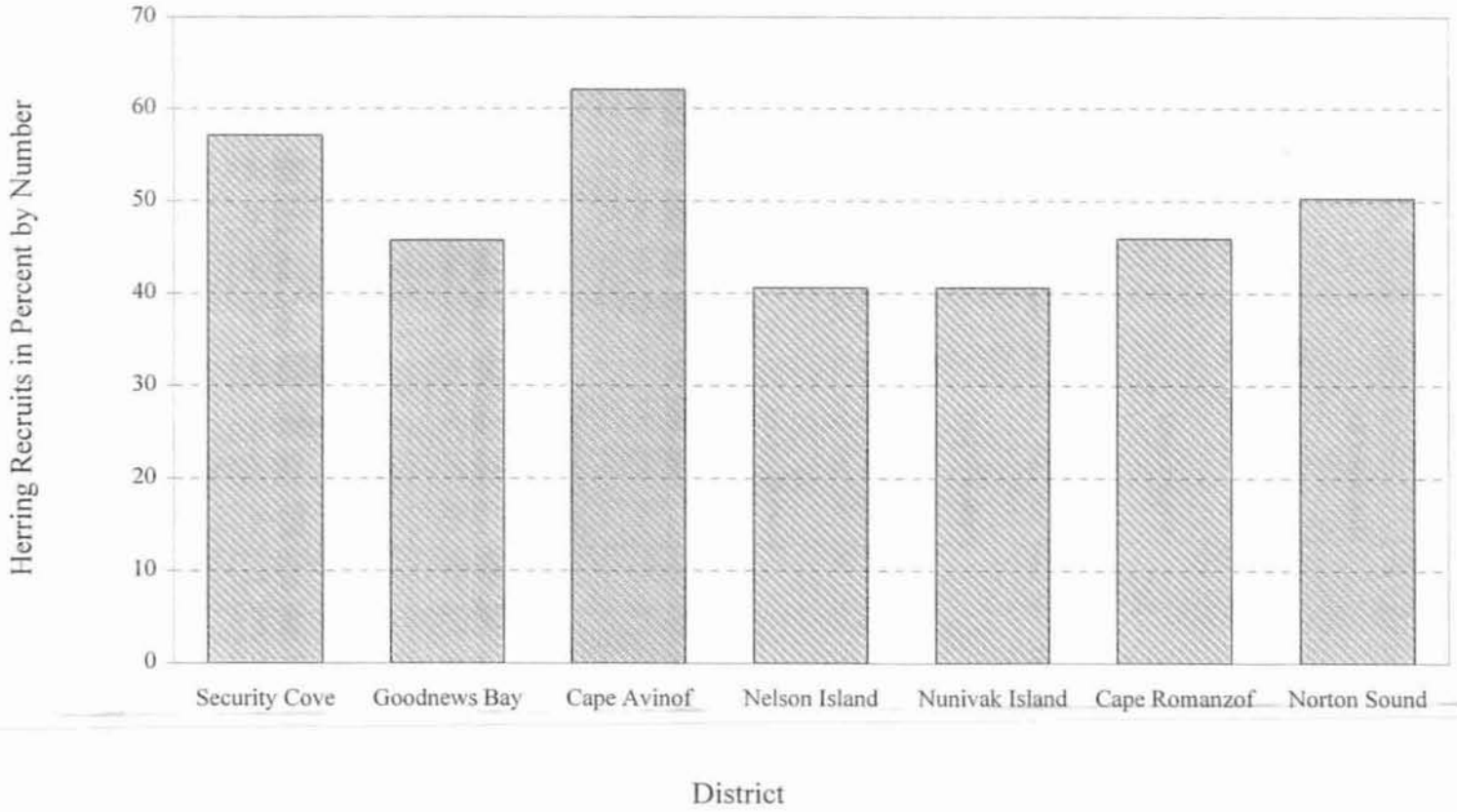


Figure 7. Pacific herring recruits (ages 2 through 5) for commercial fishing districts within the Arctic-Yukon Kuskokwim Region, Alaska, 2001.

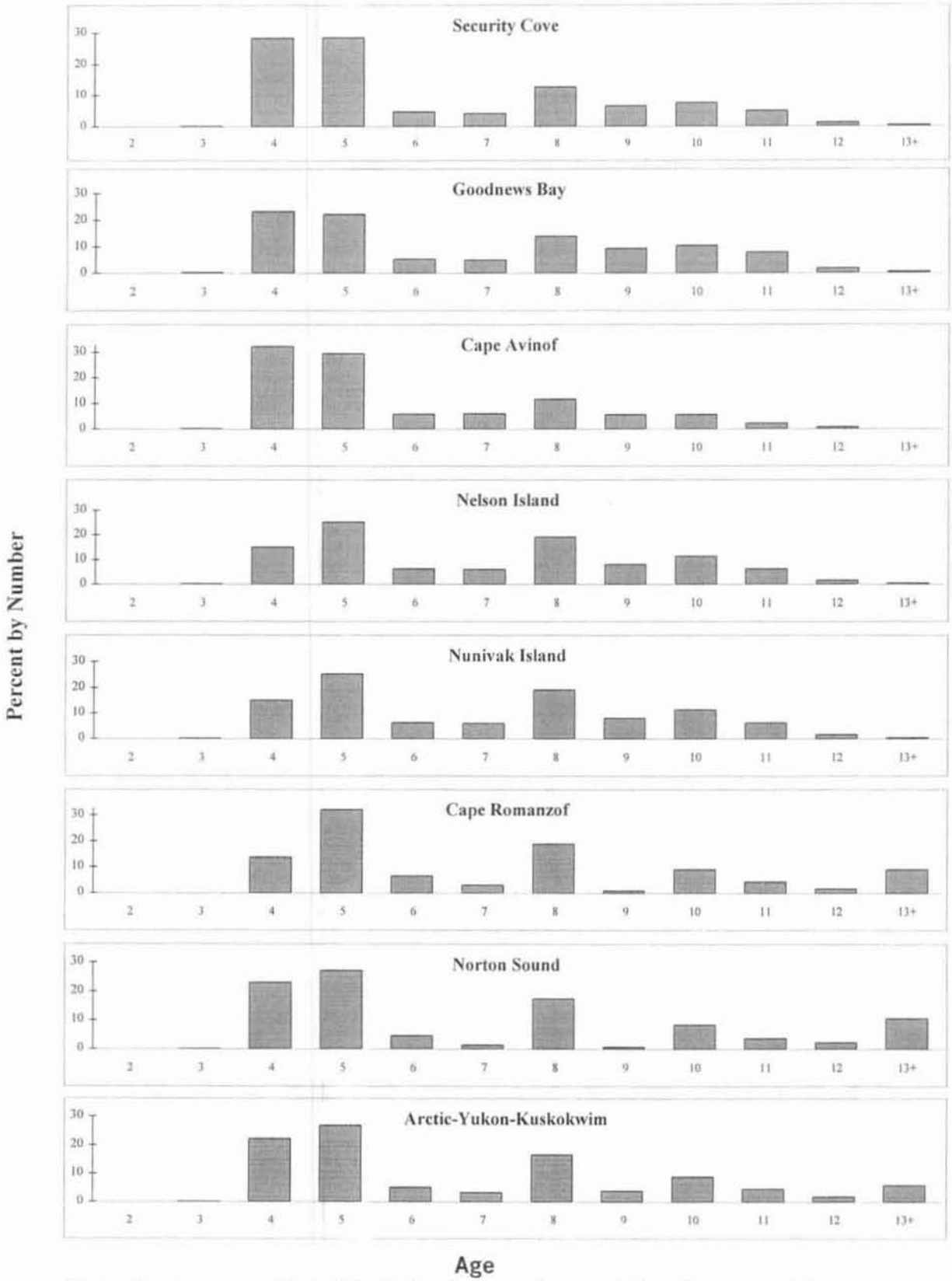


Figure 8. Age composition of Pacific herring spawning populations for commercial fishing districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

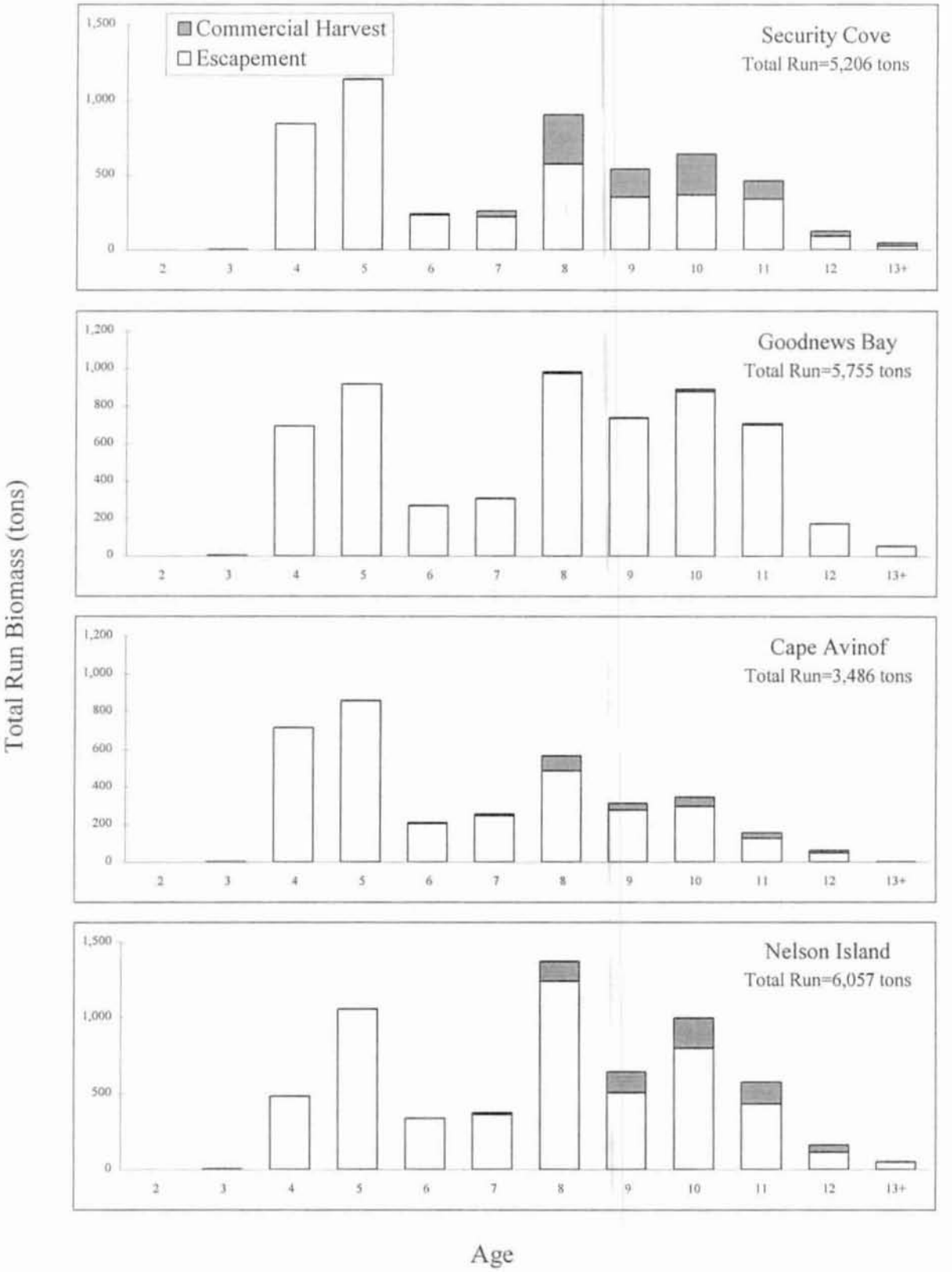


Figure 9. Abundance by age of Pacific herring for the total run, escapement and harvest biomass for the Security Cove, Goodnews Bay, Cape Avinof, and Nelson Island districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

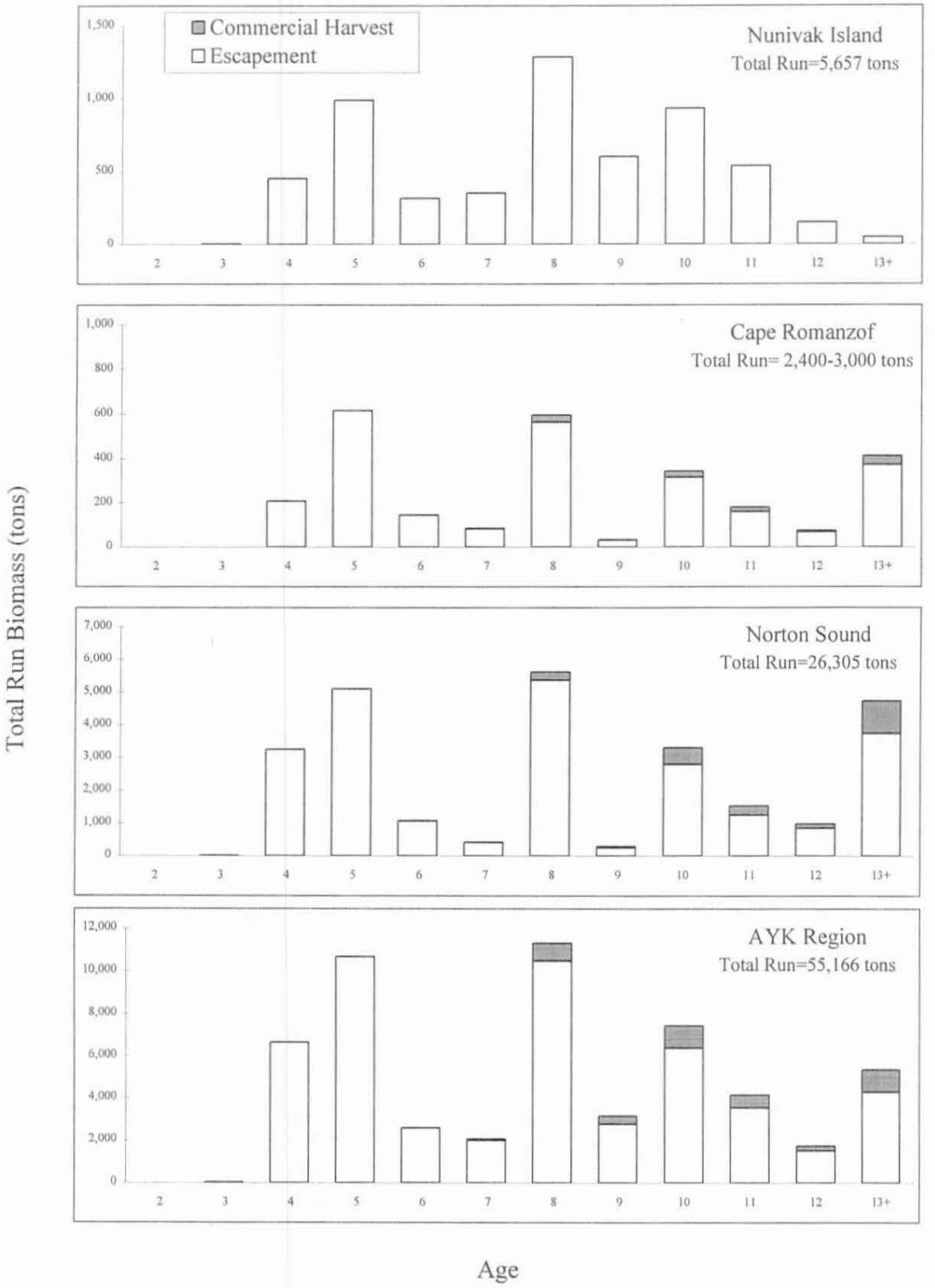


Figure 10. Abundance by age of Pacific herring for the total run, escapement and harvest biomass for the Nunivak Island, Cape Romanzof, Norton Sound districts, and the combined Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

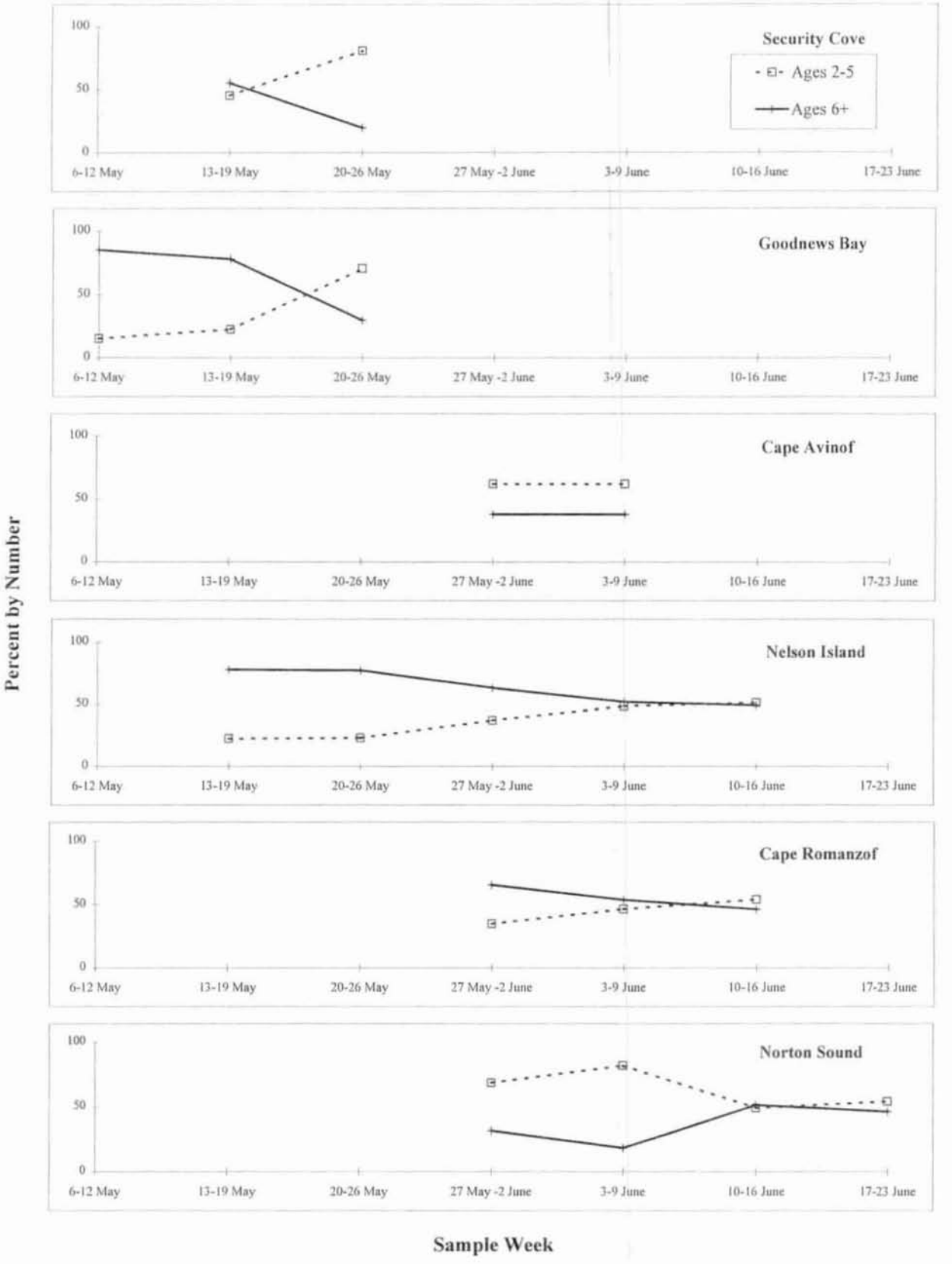


Figure 11. Spawning time comparison (based on variable-mesh gillnet data) of Pacific herring, grouped by ages 2 to 5 and age 6 and older, for districts within the Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

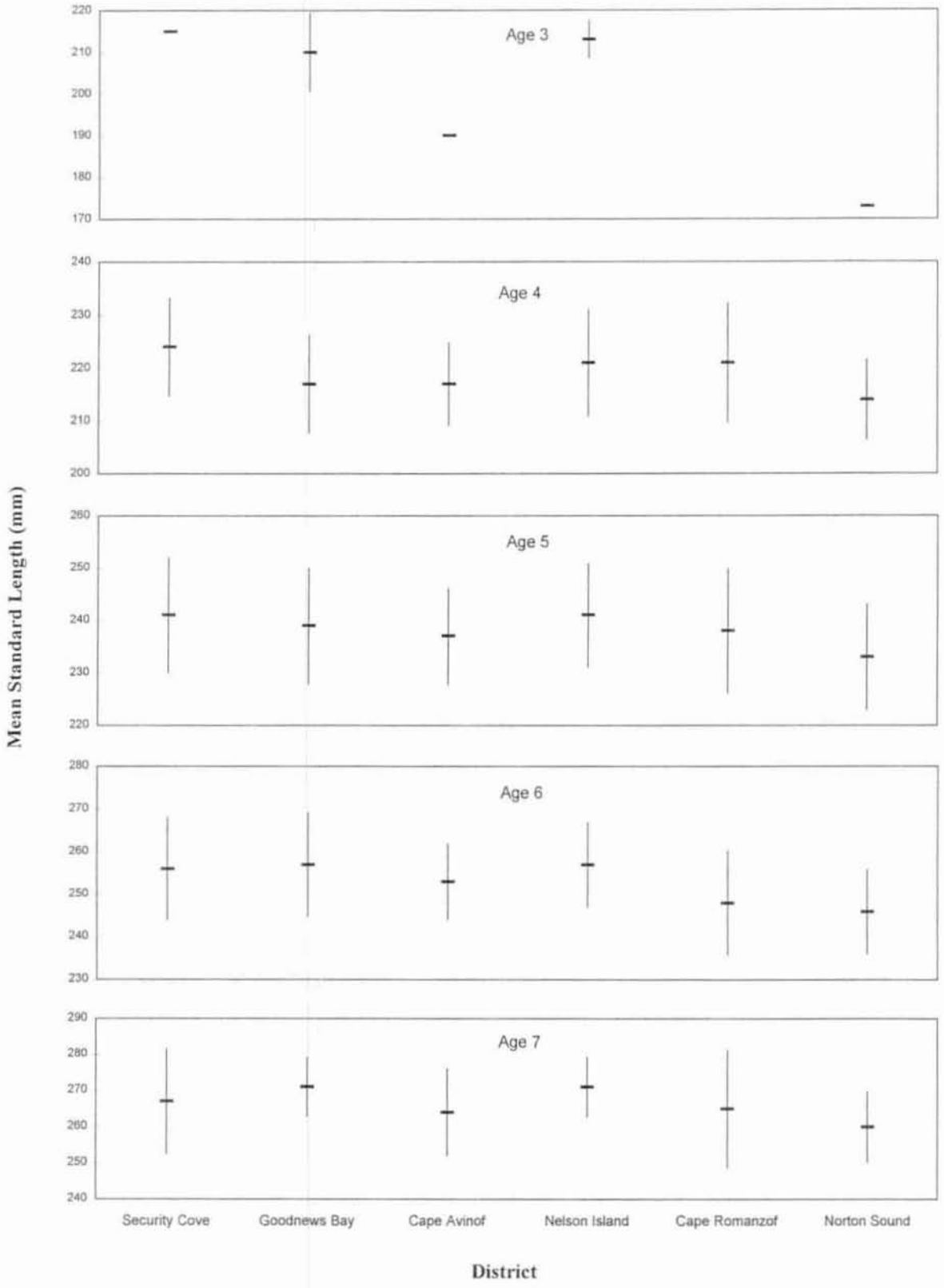


Figure 12. Mean standard length (+/- 1 SD) of Pacific herring by age class and commercial fishing district, ages 3 to 7, Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

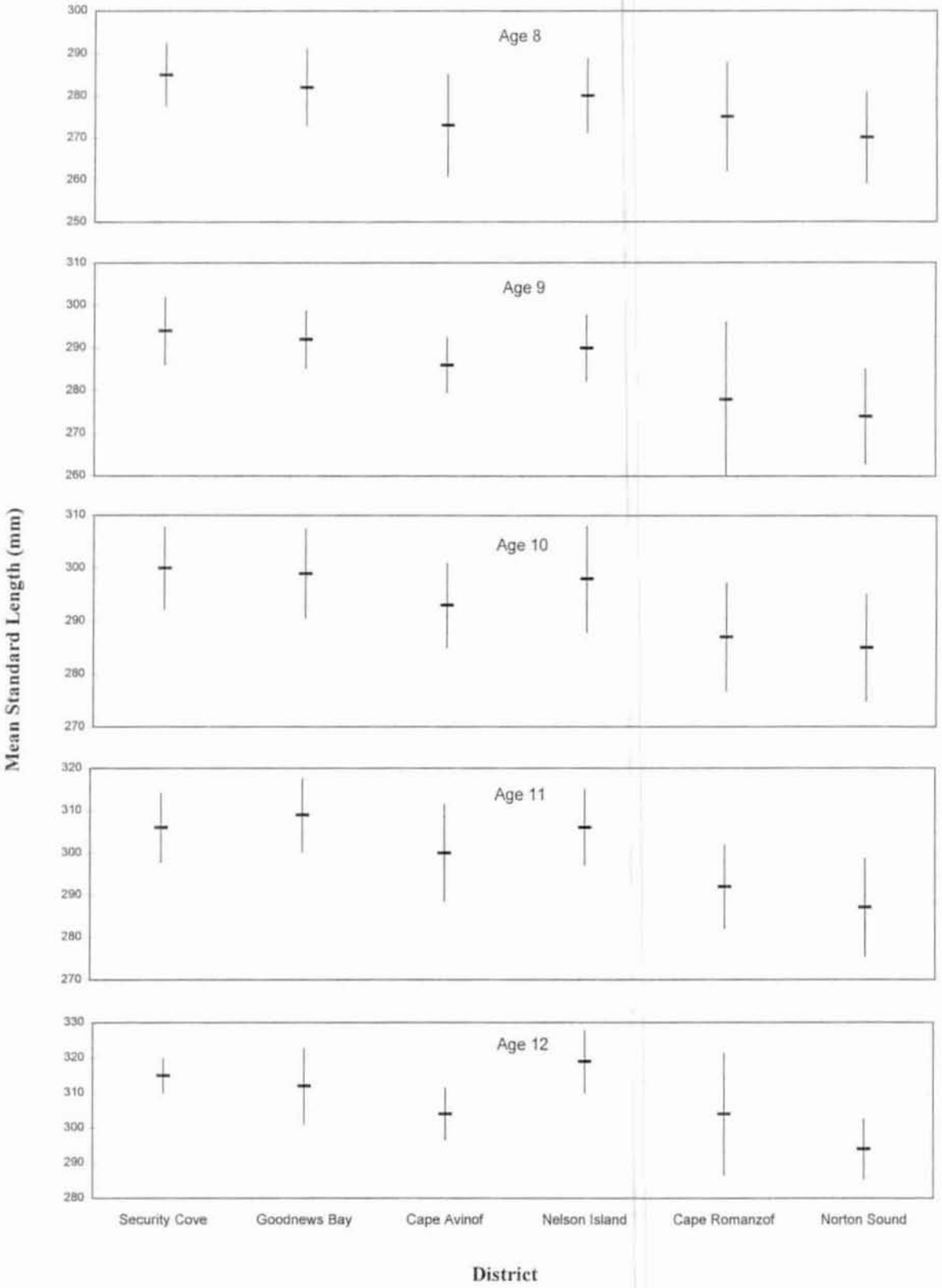


Figure 13. Mean standard length (+/- 1 SD) of Pacific herring by age class and commercial fishing district, ages 8 to 12, Arctic-Yukon-Kuskokwim Region, Alaska, 2001.

Appendix A.1. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Security Cove District, 17-19 May, 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	1	1	0	2	1.1	222	17.0	2	258	3.5	2
	6	1	0	0	1	0.5	262		1	270		1
	7	4	5	0	9	4.9	315	44.7	9	284	8.2	9
	8	28	40	0	68	37.2	341	28.2	68	289	7.7	68
17 May	9	12	14	0	26	14.2	358	38.4	26	295	7.2	26
	10	17	23	0	40	21.9	370	39.4	40	303	8.4	40
	11	14	10	0	24	13.1	401	42.4	24	311	7.0	24
	12	4	4	0	8	4.4	410	37.6	8	321	9.8	8
	13	0	5	0	5	2.7	432	39.5	5	326	10.8	5
	14											
	15											
	16											
	17											
Sample Total		81	102	0	183	100.0	360	47.2	183	297	13.9	183
	2											
	3											
	4											
	5											
	6	1	1	0	2	1.2	241	58.0	2	258	24.7	2
	7	4	4	0	8	4.8	322	12.9	8	276	7.4	8
	8	21	33	0	54	32.7	350	34.3	54	288	8.3	54
18 May	9	14	19	0	33	20.0	366	36.4	33	294	6.3	33
	10	19	29	0	48	29.1	396	53.5	48	302	8.4	48
	11	11	6	0	17	10.3	430	37.5	17	311	6.8	17
	12	1	2	0	3	1.8	453	34.1	3	322	7.6	3
	13											
	14											
	15											
	16											
	17											
Sample Total		71	94	0	165	100.0	374	52.7	165	296	12.9	165
	2											
	3											
	4											
	5											
	6	2	0	0	2	11.8	216	0.0	2	258	17.7	2
	7											
	8	1	1	0	2	11.8	338	19.8	2	285	0.0	2
19 May	9	4	2	0	6	35.3	366	18.8	6	294	4.9	6
	10	4	1	0	5	29.4	430	46.1	5	309	4.2	5
	11	1	0	0	1	5.9	384		1	315		1
	12											
	13	0	1	0	1	5.9	464		1	325		1
	14											
	15											
	16											
	17											
Sample Total		12	5	0	17	100.0	371	74.0	17	296	19.0	17

-continued-

Appendix A.1. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	1	1	0	2	0.5	222	17.0	2	258	3.5	2
	6	4	1	0	5	1.4	235	34.9	5	260	16.2	5
	7	8	9	0	17	4.7	318	32.9	17	280	8.6	17
All Dates Combined	8	50	74	0	124	34.0	345	31.0	124	289	7.9	124
17-19 May	9	30	35	0	65	17.8	363	35.8	65	295	6.5	65
	10	40	53	0	93	25.5	387	49.9	93	303	8.3	93
	11	26	16	0	42	11.5	412	42.1	42	311	6.8	42
	12	5	6	0	11	3.0	422	40.3	11	321	8.9	11
	13	0	6	0	6	1.6	438	37.6	6	326	9.7	6
	14											
	15											
	16											
	17											
All Samples Combined		164	201	0	365	100.0	367	51.5	365	296	13.7	365
Sex Composition		44.9	55.1									
Unaged		32	26	0	58	15.9	370	50.0	58	299	14.6	58
Sex Composition		55.2	44.8									

Appendix A.2. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Goodnews Bay District, 21-22 May, 2001.

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	1	1	0	2	2.3	246	5.7	2	250	0.0	2
	6	2	4	0	6	6.8	270	11.3	6	259	5.8	6
	7	6	4	0	10	11.4	323	22.9	10	273	6.3	10
	8	4	10	0	14	15.9	342	44.3	14	279	5.3	14
21 May	9	5	3	0	8	9.1	386	44.7	8	285	4.6	8
	10	18	9	0	27	30.7	391	39.2	27	295	8.1	27
	11	7	9	0	16	18.2	431	30.3	16	302	9.3	16
	12	3	1	0	4	4.5	442	27.2	4	319	13.8	4
	13	0	1	0	1	1.1	520		1	320		1
	14											
	15											
	16											
	17											
Sample Total		46	42	0	88	100.0	375	62.5	88	288	17.0	88
	2											
	3											
	4											
	5	0	1	0	1	0.9	208		1	250		1
	6	2	3	0	5	4.5	272	13.8	5	258	5.7	5
	7	2	5	0	7	6.3	313	25.6	7	274	7.3	7
	8	15	18	0	33	29.5	343	24.3	33	283	6.6	33
22 May	9	5	6	0	11	9.8	364	27.6	11	289	6.6	11
	10	14	14	0	28	25.0	415	44.8	28	301	9.1	28
	11	12	12	0	24	21.4	436	46.6	24	308	9.9	24
	12	1	0	0	1	0.9	506		1	325		1
	13	2	0	0	2	1.8	438	33.9	2	305	7.1	2
	14											
	15											
	16											
	17											
Sample Total		53	59	0	112	100.0	380	62.6	112	292	16.4	112
	2											
	3											
	4											
	5	1	2	0	3	1.5	233	22.3	3	250	0.0	3
	6	4	7	0	11	5.5	271	11.9	11	259	5.5	11
	7	8	9	0	17	8.5	319	23.8	17	274	6.6	17
All Dates Combined	8	19	28	0	47	23.5	343	31.1	47	281	6.4	47
21-22 May	9	10	9	0	19	9.5	373	36.4	19	287	6.1	19
	10	32	23	0	55	27.5	404	43.4	55	298	9.1	55
	11	19	21	0	40	20.0	434	40.5	40	306	10.0	40
	12	4	1	0	5	2.5	455	37.1	5	320	12.2	5
	13	2	1	0	3	1.5	465	53.1	3	310	10.0	3
	14											
	15											
	16											
	17											
All Samples Combined		99	101	0	200	100.0	378	62.5	200	290	16.7	200
Sex Composition		49.5	50.5									
Unaged		4	3	0	7	3.5	423	85.2	7	298	28.1	7
Sex Composition		57.1	42.9									

Appendix A.3. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Northwestern (Kipnuk) Section, Cape Avinof District, 4-8 June, 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
4 June	2											
	3											
	4											
	5											
	6	0	1	0	1	1.3	213		1	245		1
	7	0	2	0	2	2.5	266	4.2	2	265	7.1	2
	8	12	15	0	27	34.2	307	24.3	27	277	5.8	27
	9	8	6	0	14	17.7	360	49.3	14	290	12.2	14
	10	9	11	0	20	25.3	378	38.8	20	297	10.3	20
	11	3	7	0	10	12.7	391	39.1	10	301	8.8	10
	12	4	1	0	5	6.3	410	24.5	5	309	8.9	5
	13											
	14											
	15											
	16											
	17											
Sample Total		36	43	0	79	100.0	349	53.8	79	289	14.9	79
5 June	2											
	3											
	4											
	5	0	1	0	1	1.4	241		1	260		1
	6	0	3	0	3	4.1	285	18.2	3	273	7.6	3
	7	1	3	0	4	5.4	263	21.7	4	266	10.3	4
	8	10	23	0	33	44.6	310	34.9	33	282	8.1	33
	9	7	3	0	10	13.5	320	29.4	10	289	11.3	10
	10	7	6	0	13	17.6	356	35.0	13	296	9.8	13
	11	2	6	0	8	10.8	390	18.7	8	303	3.7	8
	12	2	0	0	2	2.7	353	126.6	2	293	24.7	2
	13											
	14											
	15											
	16											
	17											
Sample Total		29	45	0	74	100.0	325	47.5	74	286	13.2	74
6 June	2											
	3											
	4											
	5											
	6	1	3	0	4	3.6	245	39.2	4	259	13.1	4
	7	2	5	0	7	6.3	285	30.1	7	270	5.8	7
	8	17	27	0	44	39.3	308	30.8	44	278	6.9	44
	9	9	14	0	23	20.5	339	34.4	23	286	7.4	23
	10	10	10	0	20	17.9	360	38.5	20	291	8.7	20
	11	4	6	0	10	8.9	401	43.3	10	302	8.2	10
	12	1	2	0	3	2.7	438	87.9	3	317	11.5	3
	13											
	14	1	0	0	1	0.9	448		1	310		1
	15											
	16											
	17											
Sample Total		45	67	0	112	100.0	333	53.7	112	284	13.5	112

-continued-

Apppendix A.3. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	1	1	0	2	1.8	204	6.4	2	250	7.1	2
	6	0	2	0	2	1.8	256	25.5	2	260	14.1	2
	7	4	3	0	7	6.1	310	40.4	7	279	11.3	7
	8	11	34	0	45	39.5	298	31.9	45	278	8.7	45
7 June	9	5	10	0	15	13.2	331	42.7	15	289	9.7	15
	10	12	12	0	24	21.1	355	41.2	24	297	10.3	24
	11	7	5	0	12	10.5	396	40.6	12	305	7.1	12
	12	2	5	0	7	6.1	456	60.4	7	321	12.5	7
	13											
	14											
	15											
	16											
	17											
Sample Total		42	72	0	114	100.0	333	61.8	114	288	16.9	114
	2											
	3											
	4											
	5											
	6											
	7	0	3	0	3	15.0	289	7.6	3	273	5.8	3
	8	3	2	0	5	25.0	329	28.7	5	278	9.1	5
8 June	9	0	1	0	1	5.0	335		1	280		1
	10	4	2	0	6	30.0	377	41.9	6	296	8.0	6
	11	2	2	0	4	20.0	383	59.6	4	300	4.1	4
	12	1	0	0	1	5.0	444		1	305		1
	13											
	14											
	15											
	16											
	17											
Sample Total		10	10	0	20	100.0	354	53.0	20	289	13.0	20
	2											
	3											
	4											
	5	1	2	0	3	0.8	216	22.1	3	253	7.6	3
	6	1	9	0	10	2.5	256	34.6	10	262	13.2	10
	7	7	16	0	23	5.8	288	32.8	23	272	9.6	23
All Dates Combined	8	53	101	0	154	38.6	306	31.3	154	278	7.7	154
4-8 June	9	29	34	0	63	15.8	339	40.5	63	288	9.7	63
	10	42	41	0	83	20.8	364	39.4	83	295	9.8	83
	11	18	26	0	44	11.0	394	38.3	44	303	7.0	44
	12	10	8	0	18	4.5	428	66.4	18	313	14.7	18
	13											
	14	1	0	0	1	0.3	448		1	310		1
	15											
	16											
	17											
All Samples Combined		162	237	0	399	100.0	336	55.5	399	287	14.8	399
Sex Composition		40.6	59.4									
Unaged		11	11	0	22	5.5	347	79.7	22	292	21.9	22
Sex Composition		50.0	50.0									

Appendix A.4. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Nelson Island District, 29 May - 1 June, 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6											
	7											
	8	11	15	0	26	32.9	355	31.0	26	287	7.7	26
29 May	9	5	6	0	11	13.9	376	23.4	11	292	6.8	11
	10	6	11	0	17	21.5	397	55.9	17	297	9.0	17
	11	6	6	0	12	15.2	413	58.0	12	301	9.0	12
	12	7	5	0	12	15.2	464	51.3	12	316	6.4	12
	13	0	1	0	1	1.3	401		1	310		1
	14											
	15											
	16											
	17											
Sample Total		35	44	0	79	100.0	393	56.8	79	297	12.6	79
	2											
	3											
	4											
	5	0	1	0	1	0.6	204		1	244		1
	6											
	7	2	5	0	7	4.0	324	25.7	7	280	7.3	7
	8	12	17	0	29	16.5	346	32.2	29	285	8.1	29
31 May	9	27	14	0	41	23.3	370	38.4	41	294	6.7	41
	10	24	32	0	56	31.8	410	46.8	56	301	8.3	56
	11	20	14	0	34	19.3	431	42.1	34	309	6.2	34
	12	3	4	0	7	4.0	435	59.6	7	315	5.8	7
	13	1	0	0	1	0.6	483		1	325		1
	14											
	15											
	16											
	17											
Sample Total		89	87	0	176	100.0	391	55.1	176	298	12.6	176
	2											
	3											
	4											
	5											
	6											
	7	1	1	0	2	1.5	302	11.3	2	273	3.5	2
	8	11	20	0	31	23.1	349	25.3	31	285	7.6	31
1 June	9	17	14	0	31	23.1	376	35.8	31	293	6.3	31
	10	14	23	0	37	27.6	398	35.8	37	299	9.0	37
	11	13	15	0	28	20.9	441	50.8	28	308	6.7	28
	12	2	3	0	5	3.7	443	71.1	5	308	18.2	5
	13											
	14											
	15											
	16											
	17											
Sample Total		58	76	0	134	100.0	391	51.8	134	296	11.7	134

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Appendix A.4. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	0	1	0	1	0.3	204		1	244		1
	6											
	7	3	6	0	9	2.3	319	24.7	9	278	7.2	9
All Dates Combined	8	34	52	0	86	22.1	350	29.4	86	285	7.8	86
29 May - 1 June	9	49	34	0	83	21.3	373	35.5	83	293	6.5	83
	10	44	66	0	110	28.3	404	45.0	110	300	8.7	110
	11	39	35	0	74	19.0	432	48.5	74	307	7.4	74
	12	12	12	0	24	6.2	451	56.9	24	314	9.8	24
	13	1	1	0	2	0.5	442	58.0	2	318	10.6	2
	14											
	15											
	16											
	17											
All Samples Combined		182	207	0	389	100.0	391	54.2	389	297	12.3	389
Sex Composition		46.8	53.2									
Unaged		18	18	0	36	9.3	378	59.9	36	292	12.4	36
Sex Composition		50.0	50.0									

Appendix A.5. Age, sex, and size composition of herring sampled from the subsistence gillnet harvest, Nelson Island District, 5-12 June, 2001.

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	3	4	0	7	3.5	159	15.4	7	231	6.7	7
	5	66	53	0	119	60.1	195	27.7	119	244	8.1	119
	6	6	10	0	16	8.1	232	38.6	16	256	12.6	16
	7	7	7	0	14	7.1	278	66.3	14	273	17.2	14
	8	11	10	0	21	10.6	299	38.9	21	279	12.3	21
5 June	9	5	2	0	7	3.5	320	41.7	7	288	6.0	7
	10	4	5	0	9	4.5	367	49.3	9	300	6.2	9
	11	4	0	0	4	2.0	366	60.9	4	307	5.7	4
	12	1	0	0	1	0.5	391		1	310		1
	13											
	14											
	15											
	16											
	17											
Sample Total		107	91	0	198	100.0	230	67.0	198	256	21.8	198
	2											
	3											
	4	7	11	0	18	12.3	144	15.0	18	226	7.3	18
	5	49	50	0	99	67.8	164	18.7	99	236	7.8	99
	6	6	3	0	9	6.2	208	37.0	9	251	12.6	9
	7	7	4	0	11	7.5	248	27.4	10	265	8.2	11
	8	3	0	0	3	2.1	295	41.0	3	272	7.5	3
12 June	9	1	1	0	2	1.4	284	107.5	2	276	8.5	2
	10	4	0	0	4	2.7	353	21.5	4	291	3.8	4
	11											
	12											
	13											
	14											
	15											
	16											
	17											
Sample Total		77	69	0	146	100.0	179	49.8	145	241	16.3	146
	2											
	3											
	4	10	15	0	25	7.3	148	16.4	25	227	7.3	25
	5	115	103	0	218	63.4	181	28.5	218	240	8.8	218
	6	12	13	0	25	7.3	223	39.0	25	255	12.6	25
	7	14	11	0	25	7.3	265	54.8	24	270	14.2	25
All Dates Combined	8	14	10	0	24	7.0	299	38.3	24	279	11.9	24
5-12 June	9	6	3	0	9	2.6	312	54.8	9	286	8.1	9
	10	8	5	0	13	3.8	363	42.2	13	297	6.8	13
	11	4	0	0	4	1.2	366	60.9	4	307	5.7	4
	12	1	0	0	1	0.3	391		1	310		1
	13											
	14											
	15											
	16											
	17											
All Samples Combined		184	160	0	344	100.0	209	65.3	343	249	21.0	344
Sex Composition		53.5	46.5									
Unaged		8	8	0	16	4.7	199	42.8	16	248	17.0	16
Sex Composition		50.0	50.0									

Appendix A.6. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Kokechik Bay, Cape Romanzof District, 5-7 June 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
5 June	2											
	3											
	4											
	5											
	6	0	1	0	1	2.3	295		1	263		1
	7	1	0	0	1	2.3	293		1	256		1
	8	3	3	0	6	13.6	369	28.9	6	278	8.8	6
	9	2	0	0	2	4.5	363	19.1	2	276	4.2	2
	10	2	7	0	9	20.5	391	17.1	9	286	7.6	9
	11	6	3	0	9	20.5	401	21.4	9	292	6.0	9
	12	3	0	0	3	6.8	412	10.8	3	292	3.0	3
	13	6	6	0	12	27.3	426	24.8	12	297	10.9	12
	14											
	15	0	1	0	1	2.3	425		1	300		1
	16											
	17											
Sample Total		23	21	0	44	100.0	396	36.7	44	288	12.0	44
6 June	2											
	3											
	4											
	5											
	6											
	7	0	1	0	1	3.2	327		1	284		1
	8	8	6	0	14	45.2	329	47.8	14	290	13.8	14
	9											
	10	1	4	0	5	16.1	372	21.0	5	299	12.2	5
	11	3	2	0	5	16.1	332	29.7	5	300	8.3	5
	12											
	13	3	3	0	6	19.4	415	28.7	6	314	4.3	6
	14											
	15											
	16											
	17											
Sample Total		15	16	0	31	100.0	353	50.2	31	297	14.3	31
7 June	2											
	3											
	4											
	5											
	6											
	7	1	1	0	2	2.8	343	1.4	2	297	1.4	2
	8	7	12	0	19	26.4	324	27.6	19	285	9.3	19
	9	0	1	0	1	1.4	345		1	284		1
	10	7	9	0	16	22.2	361	26.0	16	296	8.8	16
	11	2	6	0	8	11.1	401	60.4	7	308	6.2	8
	12	2	3	0	5	6.9	383	37.8	5	306	10.0	5
	13	12	6	1	19	26.4	407	40.7	19	310	10.7	19
	14	1	1	0	2	2.8	453	56.6	2	317	0.7	2
	15											
	16											
	17											
Sample Total		32	39	1	72	100.0	371	50.1	71	299	13.6	72

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Appendix A.6. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6	0	1	0	1	0.7	295		1	263		1
	7	2	2	0	4	2.7	327	23.6	4	284	19.3	4
All Dates Combined	8	18	21	0	39	26.5	333	38.8	39	286	11.5	39
5-7 June	9	2	1	0	3	2.0	357	16.9	3	279	5.5	3
	10	10	20	0	30	20.4	372	26.0	30	294	10.0	30
	11	11	11	0	22	15.0	385	48.7	21	300	9.7	22
	12	5	3	0	8	5.4	394	32.9	8	301	10.5	8
	13	21	15	1	37	25.2	414	34.8	37	306	12.0	37
	14	1	1	0	2	1.4	453	56.6	2	317	0.7	2
	15	0	1	0	1	0.7	425		1	300		1
	16											
	17											
All Samples Combined		70	76	1	147	100.0	375	48.8	146	296	14.1	147
Sex Composition		47.9	52.1									
Unaged		26	27	0	53	36.1	389	45.7	53	296	16.2	53
Sex Composition		49.1	50.9									

Appendix A.7. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, St. Michael Subdistrict, Norton Sound District, 13-18 June, 2001.

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	0	1	0	1	0.7	212		1	251		1
	6											
	7											
	8	1	15	0	16	11.8	356	37.2	16	292	9.2	16
13 June	9	1	0	0	1	0.7	418		1	301		1
	10	15	16	0	31	22.8	382	29.9	31	299	9.5	31
	11	7	11	0	18	13.2	395	38.5	18	299	9.7	18
	12	5	6	0	11	8.1	398	28.3	11	302	7.3	11
	13	29	26	0	55	40.4	401	36.2	55	305	7.5	55
	14	1	0	0	1	0.7	436		1	316		1
	15	0	2	0	2	1.5	443	101.1	2	311	24.7	2
	16											
	17											
Sample Total		59	77	0	136	100.0	390	41.3	136	301	10.5	136
	2											
	3											
	4											
	5											
	6											
	7	0	3	0	3	4.1	306	19.7	3	276	6.1	3
	8	8	14	0	22	29.7	318	32.1	22	278	8.4	22
15 June	9	0	2	0	2	2.7	331	25.5	2	282	1.4	2
	10	10	10	0	20	27.0	361	31.8	20	288	7.9	20
	11	2	3	0	5	6.8	350	27.3	5	295	7.5	5
	12	2	2	0	4	5.4	388	33.8	4	302	5.3	4
	13	6	12	0	18	24.3	376	31.9	18	296	7.3	18
	14											
	15											
	16											
	17											
Sample Total		28	46	0	74	100.0	350	39.6	74	288	11.1	74
	2											
	3											
	4											
	5	1	0	0	1	0.5	176		1	236		1
	6											
	7											
	8	5	33	0	38	19.2	318	45.2	38	284	11.5	38
16 June	9	1	1	0	2	1.0	363	14.8	2	287	2.8	2
	10	23	36	0	59	29.8	361	33.8	59	295	9.3	59
	11	6	17	0	23	11.6	376	40.7	23	300	11.7	23
	12	2	4	0	6	3.0	386	37.0	6	307	8.5	6
	13	26	39	0	65	32.8	402	41.5	65	306	8.9	65
	14	0	3	0	3	1.5	402	17.6	3	312	3.1	3
	15	0	1	0	1	0.5	476		1	330		1
	16											
	17											
Sample Total		64	134	0	198	100.0	369	51.5	198	297	13.7	198

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Appendix A.7. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6											
	7											
	8	4	20	0	24	25.3	324	31.9	24	283	5.8	24
18 June	9	1	1	0	2	2.1	309	2.1	2	288	3.5	2
	10	12	14	0	26	27.4	347	38.7	26	296	9.7	26
	11	3	6	0	9	9.5	365	36.5	9	299	9.1	9
	12	1	0	0	1	1.1	353		1	297		1
	13	16	15	0	31	32.6	397	38.6	31	307	9.7	31
	14	1	0	0	1	1.1	427		1	330		1
	15	1	0	0	1	1.1	396		1	315		1
	16											
	17											
Sample Total		39	56	0	95	100.0	360	46.9	95	297	13.2	95
	2											
	3											
	4											
	5	1	1	0	2	0.4	194	25.5	2	244	10.6	2
	6											
	7	0	3	0	3	0.6	306	19.7	3	276	6.1	3
All Dates Combined	8	18	82	0	100	19.9	325	40.2	100	284	10.2	100
13-18 June	9	3	4	0	7	1.4	346	40.5	7	288	6.7	7
	10	60	76	0	136	27.0	363	35.3	136	295	9.8	136
	11	18	37	0	55	10.9	378	39.9	55	299	10.2	55
	12	10	12	0	22	4.4	391	31.2	22	303	7.4	22
	13	77	92	0	169	33.6	398	38.8	169	305	8.9	169
	14	2	3	0	5	1.0	414	20.8	5	317	8.0	5
	15	1	3	0	4	0.8	439	67.0	4	317	17.0	4
	16											
	17											
All Samples Combined		190	313	0	503	100.0	370	48.3	503	297	13.1	503
Sex Composition		37.8	62.2									
Unaged		23	22	0	45	8.9	377	41.0	45	301	11.6	45
Sex Composition		51.1	48.9									

Appendix A.8. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Cape Denbigh Subdistrict, Norton Sound District, 12-16 June, 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
12 June	2											
	3											
	4											
	5											
	6											
	7											
	8	3	9	0	12	10.3	334	23.8	12	277	7.8	12
	9	1	1	0	2	1.7	286	5.7	2	276	12.0	2
	10	8	15	0	23	19.7	360	35.1	23	288	9.0	23
	11	6	9	0	15	12.8	373	25.5	15	294	8.2	15
	12	2	3	0	5	4.3	406	34.3	5	300	8.2	5
	13	22	35	0	57	48.7	401	36.1	57	299	8.0	57
	14	1	0	0	1	0.9	436		1	308		1
	15	1	1	0	2	1.7	394	82.0	2	300	14.1	2
	16											
	17											
Sample Total		44	73	0	117	100.0	381	42.8	117	294	11.0	117
14 June	2											
	3											
	4											
	5											
	6	1	0	0	1	0.9	250		1	270		1
	7											
	8	3	4	0	7	6.1	320	21.7	7	277	9.6	7
	9	0	2	0	2	1.7	355	38.2	2	290	0.0	2
	10	7	15	0	22	19.1	358	25.2	22	293	4.8	22
	11	10	11	0	21	18.3	362	35.8	21	290	7.4	21
	12	4	7	0	11	9.6	386	24.1	11	298	3.4	11
	13	12	32	0	44	38.3	398	48.9	44	297	8.0	44
	14	1	4	0	5	4.3	406	47.5	5	304	8.5	5
	15	1	1	0	2	1.7	405	41.0	2	304	16.3	2
	16											
	17											
Sample Total		39	76	0	115	100.0	376	46.0	115	294	9.3	115
15 June	2											
	3											
	4											
	5											
	6											
	7											
	8	8	5	0	13	11.0	298	42.2	13	268	8.9	13
	9	2	1	0	3	2.5	337	1.2	3	282	3.2	3
	10	11	18	0	29	24.6	362	36.6	29	287	8.7	29
	11	5	10	0	15	12.7	383	48.3	15	291	6.5	15
	12	3	4	0	7	5.9	392	35.4	7	293	11.6	7
	13	20	25	0	45	38.1	400	39.4	45	297	8.2	45
	14	2	1	0	3	2.5	379	29.0	3	304	6.1	3
	15	2	0	0	2	1.7	429	24.0	2	309	10.6	2
	16											
	17	0	1	0	1	0.8	510		1	315		1
Sample Total		53	65	0	118	100.0	376	51.4	118	290	12.4	118

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Appendix A.8. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6	0	2	0	2	3.3	261	7.1	2	261	5.7	2
	7											
	8	2	2	0	4	6.7	289	59.7	4	265	10.8	4
16 June	9	1	2	0	3	5.0	373	18.1	3	289	8.1	3
	10	5	10	0	15	25.0	355	37.8	15	285	7.6	15
	11	2	4	0	6	10.0	365	22.8	6	289	6.0	6
	12	1	3	0	4	6.7	397	38.7	4	291	7.5	4
	13	8	13	0	21	35.0	388	36.2	21	297	21.5	21
	14	0	1	0	1	1.7	444		1	300		1
	15	2	2	0	4	6.7	437	42.6	4	301	11.8	4
	16											
	17											
Sample Total		21	39	0	60	100.0	370	51.5	60	289	17.2	60
	2											
	3											
	4											
	5											
	6	1	2	0	3	0.7	257	8.1	3	264	6.6	3
	7											
All Dates Combined	8	16	20	0	36	8.8	313	38.5	36	273	9.9	36
12-16 June	9	4	6	0	10	2.4	341	36.0	10	285	8.2	10
	10	31	58	0	89	21.7	359	33.4	89	289	8.2	89
	11	23	34	0	57	13.9	371	36.3	57	291	7.3	57
	12	10	17	0	27	6.6	393	30.3	27	296	7.9	27
	13	62	105	0	167	40.7	398	40.6	167	298	10.6	167
	14	4	6	0	10	2.4	405	41.2	10	304	6.6	10
	15	6	4	0	10	2.4	420	44.1	10	303	11.0	10
	16											
	17	0	1	0	1	0.2	510		1	315		1
All Samples Combined		157	253	0	410	100.0	377	47.5	410	292	12.2	410
Sex Composition		38.3	61.7									
Unaged		4	5	0	9	2.2	380	66.5	9	293	12.1	9
Sex Composition		44.4	55.6									

Appendix A.9. Age, sex, and size composition of herring sampled from the commercial gillnet harvest, Norton Sound District combined, 12-18 June, 2001.

Sample Dates	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6											
	7											
	8	3	9	0	12	10.3	334	23.8	12	277	7.8	12
12 June	9	1	1	0	2	1.7	286	5.7	2	276	12.0	2
	10	8	15	0	23	19.7	360	35.1	23	288	9.0	23
	11	6	9	0	15	12.8	373	25.5	15	294	8.2	15
	12	2	3	0	5	4.3	406	34.3	5	300	8.2	5
	13	22	35	0	57	48.7	401	36.1	57	299	8.0	57
	14	1	0	0	1	0.9	436		1	308		1
	15	1	1	0	2	1.7	394	82.0	2	300	14.1	2
	16											
	17											
Sample Total		44	73	0	117	100.0	381	42.8	117	294	11.0	117
	2											
	3											
	4											
	5	0	1	0	1	0.7	212		1	251		1
	6											
	7											
	8	1	15	0	16	11.8	356	37.2	16	292	9.2	16
13 June	9	1	0	0	1	0.7	418		1	301		1
	10	15	16	0	31	22.8	382	29.9	31	299	9.5	31
	11	7	11	0	18	13.2	395	38.5	18	299	9.7	18
	12	5	6	0	11	8.1	398	28.3	11	302	7.3	11
	13	29	26	0	55	40.4	401	36.2	55	305	7.5	55
	14	1	0	0	1	0.7	436		1	316		1
	15	0	2	0	2	1.5	443	101.1	2	311	24.7	2
	16											
	17											
Sample Total		59	77	0	136	100.0	390	41.3	136	301	10.5	136
	2											
	3											
	4											
	5											
	6	1	0	0	1	0.9	250		1	270		1
	7											
	8	3	4	0	7	6.1	320	21.7	7	277	9.6	7
14 June	9	0	2	0	2	1.7	355	38.2	2	290	0.0	2
	10	7	15	0	22	19.1	358	25.2	22	293	4.8	22
	11	10	11	0	21	18.3	362	35.8	21	290	7.4	21
	12	4	7	0	11	9.6	386	24.1	11	298	3.4	11
	13	12	32	0	44	38.3	398	48.9	44	297	8.0	44
	14	1	4	0	5	4.3	406	47.5	5	304	8.5	5
	15	1	1	0	2	1.7	405	41.0	2	304	16.3	2
	16											
	17											
Sample Total		39	76	0	115	100.0	376	46.0	115	294	9.3	115

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Appendix A.9. (p. 2 of 3)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5											
	6											
	7	0	3	0	3	1.6	306	19.7	3	276	6.1	3
	8	16	19	0	35	18.2	311	36.9	35	274	9.7	35
15 June	9	2	3	0	5	2.6	335	13.2	5	282	2.4	5
	10	21	28	0	49	25.5	362	34.4	49	287	8.3	49
	11	7	13	0	20	10.4	375	45.6	20	292	6.8	20
	12	5	6	0	11	5.7	391	33.1	11	296	10.3	11
	13	26	37	0	63	32.8	393	38.7	63	296	7.9	63
	14	2	1	0	3	1.6	379	29.0	3	304	6.1	3
	15	2	0	0	2	1.0	429	24.0	2	309	10.6	2
	16											
	17	0	1	0	1	0.5	510		1	315		1
Sample Total		81	111	0	192	100.0	366	48.8	192	289	12.0	192
	2											
	3											
	4											
	5	1	0	0	1	0.4	176		1	236		1
	6	0	2	0	2	0.8	261	7.1	2	261	5.7	2
	7											
	8	7	35	0	42	16.3	315	46.7	42	282	12.6	42
16 June	9	2	3	0	5	1.9	369	15.8	5	288	6.1	5
	10	28	46	0	74	28.7	360	34.4	74	293	9.7	74
	11	8	21	0	29	11.2	374	37.7	29	298	11.6	29
	12	3	7	0	10	3.9	390	35.9	10	301	11.3	10
	13	34	52	0	86	33.3	398	40.5	86	304	13.5	86
	14	0	4	0	4	1.6	412	25.6	4	309	6.7	4
	15	2	3	0	5	1.9	444	40.9	5	307	16.4	5
	16											
	17											
Sample Total		85	173	0	258	100.0	369	51.4	258	295	14.9	258
	2											
	3											
	4											
	5											
	6											
	7											
	8	4	20	0	24	25.3	324	31.9	24	283	5.8	24
18 June	9	1	1	0	2	2.1	309	2.1	2	288	3.5	2
	10	12	14	0	26	27.4	347	38.7	26	296	9.7	26
	11	3	6	0	9	9.5	365	36.5	9	299	9.1	9
	12	1	0	0	1	1.1	353		1	297		1
	13	16	15	0	31	32.6	397	38.6	31	307	9.7	31
	14	1	0	0	1	1.1	427		1	330		1
	15	1	0	0	1	1.1	396		1	315		1
	16											
	17											
Sample Total		39	56	0	95	100.0	360	46.9	95	297	13.2	95

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Appendix A.9. (p. 3 of 3)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4											
	5	1	1	0	2	0.2	194	25.5	2	244	10.6	2
	6	1	2	0	3	0.3	257	8.1	3	264	6.6	3
	7	0	3	0	3	0.3	306	19.7	3	276	6.1	3
All Dates Combined	8	34	102	0	136	14.9	322	40.0	136	281	11.2	136
12-18 June	9	7	10	0	17	1.9	343	36.7	17	286	7.5	17
	10	91	134	0	225	24.6	362	34.5	225	292	9.7	225
	11	41	71	0	112	12.3	374	38.1	112	295	9.6	112
	12	20	29	0	49	5.4	392	30.4	49	299	8.4	49
	13	139	197	0	336	36.8	398	39.7	336	301	10.4	336
	14	6	9	0	15	1.6	408	35.1	15	308	9.1	15
	15	7	7	0	14	1.5	426	49.6	14	307	13.8	14
	16											
	17	0	1	0	1	0.1	510		1	315		1
All Samples Combined		347	566	0	913	100.0	373	48.0	913	295	12.9	913
Sex Composition		38.0	62.0									
Unaged		27	27	0	54	5.9	377	45.4	54	299	11.9	54
Sex Composition		50.0	50.0									

Appendix A.10. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Security Cove District, 6-26 May, 2001.

Sample Week	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
6-12 May	2											
	3											
	4	1	0	0	1	100.0	148		1	225		1
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
Sample Total		1	0	0	1	100.0	148		1	225		1
13-19 May	2											
	3											
	4	9	5	0	14	7.3	153	21.9	14	230	4.6	14
	5	50	22	0	72	37.7	188	29.5	72	245	9.9	72
	6	7	1	0	8	4.2	206	17.6	8	261	8.3	8
	7	5	4	0	9	4.7	292	55.5	9	271	6.8	9
	8	34	16	0	50	26.2	316	39.2	50	284	6.7	50
	9	6	8	0	14	7.3	361	29.5	14	296	8.6	14
	10	6	5	0	11	5.8	359	50.4	11	305	8.2	11
	11	5	2	0	7	3.7	388	33.7	7	306	4.8	7
	12	1	2	0	3	1.6	432	79.9	3	317	5.8	3
	13	1	2	0	3	1.6	414	24.0	3	320	5.0	3
	14											
	15											
	16											
	17											
Sample Total		124	67	0	191	100.0	262	88.1	191	268	26.8	191
20-26 May	2											
	3	1	0	0	1	0.1	130		1	215		1
	4	193	105	0	298	43.4	132	23.4	298	223	9.3	298
	5	145	110	0	255	37.1	167	34.8	255	240	11.1	255
	6	17	12	0	29	4.2	215	47.7	29	254	12.7	29
	7	6	14	0	20	2.9	240	59.4	20	266	17.0	20
	8	31	15	0	46	6.7	308	40.5	46	285	8.4	46
	9	4	5	0	9	1.3	351	65.3	9	289	4.6	9
	10	13	5	0	18	2.6	340	30.4	18	297	6.2	18
	11	5	4	0	9	1.3	376	25.7	9	306	10.4	9
	12	1	1	0	2	0.3	387	58.0	2	313	3.5	2
	13											
	14											
	15											
	16											
	17											
Sample Total		416	271	0	687	100.0	176	71.1	687	240	24.0	687

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Appendix A.10. (p. 2 of 2)

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3	1	0	0	1	0.1	130		1	215		1
	4	203	110	0	313	35.6	133	23.7	313	224	9.3	313
	5	195	132	0	327	37.2	172	34.8	327	241	11.0	327
	6	24	13	0	37	4.2	213	43.0	37	256	12.1	37
	7	11	18	0	29	3.3	256	62.2	29	267	14.6	29
All Weeks Combined	8	65	31	0	96	10.9	312	39.8	96	285	7.5	96
6-26 May	9	10	13	0	23	2.6	357	45.8	23	294	8.0	23
	10	19	10	0	29	3.3	347	39.5	29	300	7.8	29
	11	10	6	0	16	1.8	381	29.0	16	306	8.2	16
	12	2	3	0	5	0.6	414	68.1	5	315	5.0	5
	13	1	2	0	3	0.3	414	24.0	3	320	5.0	3
	14											
	15											
	16											
	17											
All Samples Combined		541	338	0	879	100.0	195	83.0	879	246	27.1	879
Sex Composition		61.5	38.5									
Unaged		30	26	0	56	6.4	235	90.3	56	260	29.0	56
Sex Composition		53.6	46.4									

Appendix A.11. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Goodnews Bay District, 6-26 May, 2001.

Sample Week	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
6-12 May	2											
	3											
	4											
	5	2	1	0	3	15.0	164	13.5	3	230	5.0	3
	6	1	0	0	1	5.0	264		1	260		1
	7	0	1	0	1	5.0	295		1	265		1
	8	3	2	0	5	25.0	348	28.1	5	281	11.4	5
	9	1	1	0	2	10.0	404	28.3	2	293	3.5	2
	10	3	1	0	4	20.0	445	50.1	4	296	11.4	4
	11	1	2	0	3	15.0	467	61.8	3	305	5.0	3
	12											
	13											
	14	0	1	0	1	5.0	651		1	335		1
	15											
	16											
	17											
Sample Total		11	9	0	20	100.0	371	125.2	20	282	28.4	20
13-19 May	2											
	3											
	4	14	11	0	25	4.1	141	21.2	25	221	8.2	25
	5	71	42	0	113	18.3	201	25.0	113	243	9.3	113
	6	22	16	0	38	6.2	248	31.6	38	262	9.3	38
	7	22	12	0	34	5.5	292	31.2	34	273	8.7	34
	8	74	42	0	116	18.8	333	41.3	116	284	8.4	116
	9	54	37	0	91	14.7	366	33.5	91	294	6.6	91
	10	64	34	0	98	15.9	390	45.5	98	300	8.2	98
	11	53	24	0	77	12.5	413	55.8	77	310	8.4	77
	12	9	10	0	19	3.1	432	59.8	19	314	11.0	19
	13	3	2	0	5	0.8	447	34.2	5	320	19.7	5
	14	1	0	0	1	0.2	480		1	310		1
	15											
	16											
	17											
Sample Total		387	230	0	617	100.0	322	92.5	617	281	27.3	617
20-26 May	2											
	3	2	1	0	3	0.5	122	19.3	3	210	10.0	3
	4	138	128	0	266	43.5	137	19.5	266	216	9.4	266
	5	69	93	0	162	26.5	183	33.5	162	236	11.4	162
	6	17	10	0	27	4.4	224	39.4	27	249	12.4	27
	7	14	13	0	27	4.4	287	45.1	27	270	7.7	27
	8	22	31	0	53	8.7	304	42.3	53	277	8.5	53
	9	10	13	0	23	3.8	371	51.2	23	288	5.4	23
	10	17	12	0	29	4.7	386	67.1	29	294	7.4	29
	11	11	7	0	18	2.9	422	79.8	18	305	9.8	18
	12	1	3	0	4	0.7	417	86.1	4	304	4.8	4
	13											
	14											
	15											
	16											
	17											
Sample Total		301	311	0	612	100.0	205	94.3	612	240	29.9	612

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Appendix A.11. (p. 2 of 2)

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3	2	1	0	3	0.2	122	19.3	3	210	10.0	3
	4	152	139	0	291	23.3	137	19.6	291	217	9.4	291
	5	142	136	0	278	22.3	190	31.5	278	239	11.1	278
	6	40	26	0	66	5.3	238	36.5	66	257	12.2	66
	7	36	26	0	62	5.0	290	37.4	62	271	8.3	62
All Weeks Combined	8	99	75	0	174	13.9	325	43.3	174	282	9.1	174
6-26 May	9	65	51	0	116	9.3	367	37.6	116	292	6.8	116
	10	84	47	0	131	10.5	391	51.7	131	299	8.5	131
	11	65	33	0	98	7.8	416	61.1	98	309	8.7	98
	12	10	13	0	23	1.8	429	63.0	23	312	10.9	23
	13	3	2	0	5	0.4	447	34.2	5	320	19.7	5
	14	1	1	0	2	0.2	566	120.9	2	323	17.7	2
	15											
	16											
	17											
All Samples Combined		699	550	0	1249	100.0	265	111.2	1249	261	35.0	1249
Sex Composition		56.0	44.0									
Unaged		19	15	0	34	2.7	312	99.7	34	275	29.0	34
Sex Composition		55.9	44.1									

Appendix A.12. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Cape Avinof District, 27 May - 9 June, 2001.

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	20	24	0	44	32.1	131	12.5	44	219	9.0	44
	5	18	23	0	41	29.9	164	23.4	41	237	7.8	41
	6	2	7	0	9	6.6	202	46.0	9	253	10.6	9
	7	3	2	0	5	3.6	291	36.9	5	265	21.5	5
	8	9	10	0	19	13.9	283	55.3	19	274	16.2	19
27 May - 2 June	9	3	5	0	8	5.8	345	34.0	8	287	8.8	8
	10	3	6	0	9	6.6	381	44.1	9	293	7.5	9
	11	1	0	0	1	0.7	339		1	290		1
	12	0	1	0	1	0.7	460		1	315		1
	13											
	14											
	15											
	16											
	17											
Sample Total		59	78	0	137	100.0	205	90.6	137	246	28.0	137
	2											
	3	0	1	0	1	0.3	86		1	190		1
	4	53	58	0	111	32.4	130	15.5	111	216	7.3	111
	5	59	42	0	101	29.4	174	25.8	101	237	9.8	101
	6	8	11	0	19	5.5	208	23.9	19	253	8.4	19
	7	10	14	0	24	7.0	249	34.9	24	264	9.8	24
	8	17	20	0	37	10.8	288	44.8	37	272	9.8	37
3-9 June	9	14	5	0	19	5.5	312	34.1	19	286	5.5	19
	10	9	9	0	18	5.2	368	44.7	18	293	8.4	18
	11	6	4	0	10	2.9	399	40.2	10	302	11.6	10
	12	2	1	0	3	0.9	401	39.8	3	300	0.0	3
	13											
	14											
	15											
	16											
	17											
Sample Total		178	165	0	343	100.0	205	85.4	343	245	28.7	343
	2											
	3	0	1	0	1	0.2	86		1	190		1
	4	73	82	0	155	32.3	131	14.7	155	217	7.9	155
	5	77	65	0	142	29.6	171	25.5	142	237	9.2	142
	6	10	18	0	28	5.8	206	31.9	28	253	9.0	28
	7	13	16	0	29	6.0	256	38.1	29	264	12.1	29
All Weeks Combined	8	26	30	0	56	11.7	287	48.2	56	273	12.2	56
27 May - 9 June	9	17	10	0	27	5.6	322	36.8	27	286	6.5	27
	10	12	15	0	27	5.6	372	44.2	27	293	8.0	27
	11	7	4	0	11	2.3	394	42.2	11	300	11.5	11
	12	2	2	0	4	0.8	416	43.9	4	304	7.5	4
	13											
	14											
	15											
	16											
	17											
All Samples Combined		237	243	0	480	100.0	205	86.8	480	245	28.4	480
Sex Composition		49.4	50.6									
Unaged		7	6	0	13	2.7	278	90.1	13	267	25.0	13
Sex Composition		53.8	46.2									

Appendix A.13. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Nelson Island District, 13 May - 16 June, 2001.

Sample Week	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
13-19 May	2											
	3											
	4											
	5	1	1	0	2	22.2	176	4.9	2	238	3.5	2
	6	1	2	0	3	33.3	214	7.2	3	250	5.0	3
	7	0	1	0	1	11.1	214		1	245		1
	8	0	1	0	1	11.1	288		1	260		1
	9											
	10											
	11	0	2	0	2	22.2	409	35.4	2	298	10.6	2
	12											
	13											
	14											
	15											
	16											
	17											
Sample Total		2	7	0	9	100.0	257	93.1	9	258	23.7	9
20-26 May	2											
	3											
	4	5	13	0	18	5.5	140	16.9	18	224	8.9	18
	5	35	22	0	57	17.4	192	38.9	57	244	12.0	57
	6	21	17	0	38	11.6	243	46.1	38	259	10.8	38
	7	9	11	0	20	6.1	288	35.3	20	272	7.1	20
	8	27	48	0	75	22.9	333	54.2	75	283	11.2	75
	9	12	20	0	32	9.8	355	47.3	32	292	9.1	32
	10	29	16	0	45	13.7	393	55.3	45	300	12.2	45
	11	20	8	0	28	8.5	407	30.9	28	310	6.0	28
	12	3	11	0	14	4.3	452	41.9	14	321	7.0	14
	13	0	1	0	1	0.3	545		1	330		1
	14											
	15											
	16											
	17											
Sample Total		161	167	0	328	100.0	307	98.4	328	277	28.0	328
27 May - 2 June	2											
	3	1	0	0	1	0.4	118		1	218		1
	4	18	13	0	31	11.0	146	23.4	31	225	9.3	31
	5	36	36	0	72	25.6	189	34.1	72	241	10.9	72
	6	10	7	0	17	6.0	244	40.9	17	258	10.4	17
	7	15	3	0	18	6.4	283	46.5	18	270	9.6	18
	8	33	26	0	59	21.0	325	29.4	59	280	6.8	59
	9	7	10	0	17	6.0	358	26.5	17	287	6.0	17
	10	27	13	0	40	14.2	380	48.5	40	297	8.2	40
	11	12	7	0	19	6.8	410	60.5	19	309	7.8	19
	12	4	0	0	4	1.4	409	51.4	4	316	9.7	4
	13	1	1	0	2	0.7	421	7.1	2	306	6.4	2
	14	0	1	0	1	0.4	611		1	330		1
	15											
	16											
	17											
Sample Total		164	117	0	281	100.0	280	99.0	281	267	28.6	281

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Appendix A.13. (p. 2 of 2)

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3	2	0	0	2	0.4	114	12.0	2	210	0.0	2
	4	38	35	0	73	16.0	151	31.9	73	223	8.8	73
	5	72	73	0	145	31.8	188	26.8	145	243	9.0	145
	6	7	8	0	15	3.3	237	43.5	15	259	7.1	15
	7	16	4	0	20	4.4	273	42.9	20	272	5.9	20
	8	42	38	0	80	17.5	316	40.7	80	281	7.9	80
3-9 June	9	22	18	0	40	8.8	358	35.9	40	292	7.1	40
	10	22	28	0	50	11.0	393	47.8	50	299	7.9	50
	11	13	13	0	26	5.7	409	51.9	26	305	7.7	26
	12	0	3	0	3	0.7	509	12.1	3	325	5.0	3
	13	1	1	0	2	0.4	467	1.4	2	317	4.9	2
	14											
	15											
	16											
	17											
Sample Total		235	221	0	456	100.0	263	101.1	456	263	29.7	456
	1											
	2											
	3											
	4	45	46	0	91	27.0	132	24.2	91	218	10.5	91
	5	36	45	0	81	24.0	169	21.9	81	238	8.4	81
	6	11	5	0	16	4.7	213	39.4	16	254	10.2	16
	7	21	5	0	26	7.7	261	28.5	26	270	9.0	26
	8	31	25	0	56	16.6	280	30.2	56	277	6.3	56
10-16 June	9	15	10	0	25	7.4	323	36.8	25	287	6.3	25
	10	12	14	0	26	7.7	356	64.3	26	294	11.5	26
	11	7	6	0	13	3.9	387	75.5	13	297	12.6	13
	12	2	0	0	2	0.6	377	14.1	2	302	2.8	2
	13	0	1	0	1	0.3	396		1	308		1
	14											
	15											
	16											
	17											
Sample Total		180	157	0	337	100.0	223	90.3	337	253	30.1	337
	2											
	3	3	0	0	3	0.2	115	8.9	3	213	4.6	3
	4	106	107	0	213	15.1	141	27.7	213	221	10.1	213
	5	180	177	0	357	25.3	184	30.7	357	241	9.9	357
	6	50	39	0	89	6.3	236	43.7	89	257	10.0	89
	7	61	24	0	85	6.0	274	39.3	85	271	8.4	85
All Weeks Combined	8	133	138	0	271	19.2	315	45.0	271	280	8.8	271
13 May - 16 June	9	56	58	0	114	8.1	350	40.5	114	290	7.8	114
	10	90	71	0	161	11.4	384	54.2	161	298	10.1	161
	11	52	36	0	88	6.2	405	51.9	88	306	9.1	88
	12	9	14	0	23	1.6	445	51.7	23	319	8.9	23
	13	2	4	0	6	0.4	453	53.3	6	314	10.1	6
	14	0	1	0	1	0.1	611		1	330		1
	15											
	16											
	17											
All Samples Combined		742	669	0	1411	100.0	267	101.8	1411	265	30.3	1411
Sex Composition		52.6	47.4									
Unaged		46	37	0	83	5.9	286	91.2	83	272	27.3	83
Sex Composition		55.4	44.6									

Appendix A.14. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Kokechik Bay, Cape Romanzof District, 27 May - 16 June, 2001.

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	2	2	0	4	7.7	129	11.3	4	210	6.6	4
	5	10	4	0	14	26.9	169	29.5	14	234	11.5	14
	6	0	1	0	1	1.9	171		1	229		1
	7	1	1	0	2	3.8	302	9.9	2	260	1.4	2
	8	8	7	0	15	28.8	273	35.6	15	266	11.2	15
27 May - 2 June	9											
	10	6	2	0	8	15.4	322	35.4	8	278	6.5	8
	11	2	0	0	2	3.8	355	33.2	2	283	7.1	2
	12											
	13	3	3	0	6	11.5	390	37.9	6	296	14.0	6
	14											
	15											
	16											
	17											
Sample Total		32	20	0	52	100.0	257	88.0	52	258	26.8	52
	2											
	3											
	4	36	26	0	62	12.8	136	17.6	62	220	11.0	62
	5	95	65	2	162	33.5	174	26.0	160	237	10.5	162
	6	18	15	0	33	6.8	196	31.5	33	244	12.2	33
	7	7	5	0	12	2.5	259	53.9	12	265	12.0	12
	8	53	32	1	86	17.8	286	45.0	85	274	13.2	86
3-9 June	9	3	2	0	5	1.0	277	57.1	5	270	14.7	5
	10	23	19	0	42	8.7	352	44.1	42	288	10.7	42
	11	10	11	0	21	4.3	370	47.1	20	293	10.3	21
	12	4	7	0	11	2.3	387	68.2	11	301	14.9	11
	13	22	15	1	38	7.9	408	40.8	38	301	10.1	38
	14	4	2	0	6	1.2	443	54.6	6	311	13.5	6
	15	3	0	0	3	0.6	405	75.3	3	301	15.5	3
	16	1	1	0	2	0.4	474	67.2	2	311	27.6	2
	17											
Sample Total		279	200	4	483	100.0	247	100.5	479	258	30.1	483
	2											
	3											
	4	18	20	1	39	19.6	137	23.4	39	225	11.2	39
	5	38	30	0	68	34.2	170	26.8	68	241	14.3	68
	6	7	9	0	16	8.0	205	27.8	16	256	8.1	16
	7	4	5	0	9	4.5	231	50.7	9	267	22.8	9
	8	15	21	0	36	18.1	275	45.9	33	279	11.1	36
10-16 June	9	0	2	0	2	1.0	351		1	298	8.5	2
	10	8	6	0	14	7.0	309	49.7	13	291	6.8	13
	11	4	3	0	7	3.5	341	38.7	7	292	9.9	7
	12	1	0	0	1	0.5	466		1	336		1
	13	5	1	0	6	3.0	412	61.9	6	311	10.9	6
	14											
	15	1	0	0	1	0.5	0		0	323		1
	16											
	17											
Sample Total		101	97	1	199	100.0	213	81.2	193	256	28.6	198

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Appendix A.14. (p. 2 of 2)

Sample Dates	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	56	48	1	105	14.3	136	19.7	105	221	11.3	105
	5	143	99	2	244	33.2	173	26.4	242	238	11.9	244
	6	25	25	0	50	6.8	198	30.3	50	248	12.3	50
	7	12	11	0	23	3.1	252	53.1	23	265	16.3	23
All Weeks Combined	8	76	60	1	137	18.7	282	44.3	133	275	13.0	137
27 May - 16 June	9	3	4	0	7	1.0	289	59.3	6	278	18.6	7
	10	37	27	0	64	8.7	339	47.3	63	287	10.3	63
	11	16	14	0	30	4.1	362	45.0	29	292	10.0	30
	12	5	7	0	12	1.6	394	68.9	12	304	17.4	12
	13	30	19	1	50	6.8	406	42.8	50	301	11.1	50
	14	4	2	0	6	0.8	443	54.6	6	311	13.5	6
	15	4	0	0	4	0.5	405	75.3	3	306	16.9	4
	16	1	1	0	2	0.3	474	67.2	2	311	27.6	2
	17											
All Samples Combined		412	317	5	734	100.0	239	96.1	724	257	29.5	733
Sex Composition		56.5	43.5									
Unaged		62	71	0	133	18.1	269	92.3	133	268	26.8	133
Sex Composition		46.6	53.4									

Appendix A.15. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, St. Michael Subdistrict, Norton Sound District, 10-23 June, 2001.

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	49	24	0	73	31.3	122	13.8	73	214	6.9	73
	5	61	31	0	92	39.5	166	27.1	92	237	10.6	92
	6	5	7	0	12	5.2	193	37.5	12	245	11.6	12
	7	3	0	0	3	1.3	258	28.1	3	266	7.0	3
	8	17	8	0	25	10.7	280	36.5	25	275	11.4	25
10-16 June	9	0	0	1	1	0.4	0		0	0		0
	10	6	0	0	6	2.6	300	33.3	6	281	11.3	6
	11	3	1	0	4	1.7	297	14.2	4	296	6.2	4
	12	0	1	0	1	0.4	408		1	308		1
	13	5	11	0	16	6.9	400	64.5	16	311	12.4	16
	14											
	15											
	16											
	17											
Sample Total		149	83	1	233	100.0	190	85.1	232	242	30.2	232
	2											
	3											
	4	31	26	1	58	51.3	128	12.9	57	218	6.9	58
	5	24	11	1	36	31.9	149	22.2	35	230	10.2	36
	6											
	7											
	8	9	4	0	13	11.5	284	41.4	13	280	12.8	13
17-23 June	9											
	10	0	2	0	2	1.8	376	52.3	2	297	8.5	2
	11											
	12	1	0	0	1	0.9	416		1	310		1
	13	3	0	0	3	2.7	396	58.6	3	300	11.7	3
	14											
	15											
	16											
	17											
Sample Total		68	43	2	113	100.0	167	76.4	111	233	26.4	113
	2											
	3											
	4	80	50	1	131	37.9	125	13.6	130	216	7.1	131
	5	85	42	1	128	37.0	161	27.0	127	235	10.9	128
	6	5	7	0	12	3.5	193	37.5	12	245	11.6	12
	7	3	0	0	3	0.9	258	28.1	3	266	7.0	3
All Weeks Combined	8	26	12	0	38	11.0	281	37.8	38	277	12.0	38
10-23 June	9	0	0	1	1	0.3	0		0	0		0
	10	6	2	0	8	2.3	319	49.4	8	285	12.7	8
	11	3	1	0	4	1.2	297	14.2	4	296	6.2	4
	12	1	1	0	2	0.6	412	5.7	2	309	1.4	2
	13	8	11	0	19	5.5	399	62.1	19	309	12.7	19
	14											
	15											
	16											
	17											
All Samples Combined		217	126	3	346	100.0	183	82.9	343	239	29.3	345
Sex Composition		63.3	36.7									
Unaged		9	5	0	14	4.0	205	85.9	14	251	33.1	14
Sex Composition		64.3	35.7									

Appendix A.16. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Unalakleet Subdistrict, Norton Sound District, 27 May - 23 June, 2001.

Sample Week	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
27 May - 2 June	2											
	3											
	4	6	4	0	10	52.6	130	19.6	10	209	10.3	10
	5	3	0	0	3	15.8	149	30.7	3	225	9.0	3
	6	1	0	0	1	5.3	207		1	237		1
	7											
	8	2	1	0	3	15.8	307	25.1	3	268	8.0	3
	9											
	10											
	11											
	12	0	1	0	1	5.3	412		1	304		1
	13	1	0	0	1	5.3	487		1	300		1
	14											
	15											
	16											
	17											
Sample Total		13	6	0	19	100.0	199	111.8	19	232	33.6	19
3-9 June	2											
	3	1	0	0	1	4.8	67		1	173		1
	4	3	3	0	6	28.6	111	24.7	6	204	14.9	6
	5	5	6	0	11	52.4	137	17.7	11	219	8.9	11
	6	1	0	0	1	4.8	173		1	231		1
	7											
	8	1	0	0	1	4.8	153		1	225		1
	9	1	0	0	1	4.8	198		1	247		1
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
Sample Total		12	9	0	21	100.0	131	31.5	21	215	17.2	21
10-16 June	2											
	3											
	4	25	10	0	35	9.4	147	18.1	35	218	9.1	35
	5	76	50	0	126	33.8	182	25.3	126	235	9.4	126
	6	13	8	0	21	5.6	221	25.1	21	250	7.4	21
	7	5	3	0	8	2.1	271	32.8	8	267	10.1	8
	8	45	29	0	74	19.8	285	42.0	74	270	9.0	74
	9	2	1	0	3	0.8	316	83.7	3	280	9.5	3
	10	26	15	0	41	11.0	358	41.0	41	291	8.7	41
	11	8	7	0	15	4.0	370	47.2	15	293	11.4	15
	12	4	1	0	5	1.3	383	43.3	5	295	6.7	5
	13	27	15	0	42	11.3	390	45.6	42	299	8.9	42
	14	1	0	0	1	0.3	474		1	312		1
	15	1	1	0	2	0.5	468	9.2	2	305	6.4	2
	16											
	17											
Sample Total		233	140	0	373	100.0	260	93.2	373	260	29.0	373

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Appendix A.16. (p. 2 of 2)

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	14	9	0	23	19.8	121	13.3	23	213	5.8	23
	5	18	8	0	26	22.4	145	16.1	26	229	10.2	26
	6	2	4	0	6	5.2	154	18.8	6	236	12.5	6
	7											
	8	17	15	0	32	27.6	274	44.9	32	276	13.0	32
17-23 June	9	0	1	0	1	0.9	278		1	282		1
	10	9	5	0	14	12.1	319	46.1	14	286	9.7	14
	11	0	1	0	1	0.9	284		1	269		1
	12	0	1	0	1	0.9	433		1	305		1
	13	5	6	1	12	10.3	368	66.0	11	299	11.7	12
	14											
	15											
	16											
	17											
Sample Total		65	50	1	116	100.0	224	96.6	115	255	33.2	116
	2											
	3	1	0	0	1	0.2	67		1	173		1
	4	48	26	0	74	14.0	134	21.7	74	214	9.8	74
	5	102	64	0	166	31.4	173	29.1	166	233	10.4	166
	6	17	12	0	29	5.5	205	36.1	29	246	10.8	29
	7	5	3	0	8	1.5	271	32.8	8	267	10.1	8
All Weeks Combined	8	65	45	0	110	20.8	281	44.3	110	271	11.4	110
27 May - 23 June	9	3	2	0	5	0.9	285	78.2	5	274	16.3	5
	10	35	20	0	55	10.4	348	45.4	55	290	9.2	55
	11	8	8	0	16	3.0	364	50.4	16	292	12.6	16
	12	4	3	0	7	1.3	394	40.8	7	298	7.2	7
	13	33	21	1	55	10.4	387	52.0	54	299	9.4	55
	14	1	0	0	1	0.2	474		1	312		1
	15	1	1	0	2	0.4	468	9.2	2	305	6.4	2
	16											
	17											
All Samples Combined		323	205	1	529	100.0	245	97.2	528	256	31.3	529
Sex Composition		61.2	38.8									
Unaged		26	17	0	43	8.1	277	93.3	43	267	27.4	43
Sex Composition		60.5	39.5									

Appendix A.17. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Cape Denbigh Subdistrict, Norton Sound District, 3-23 June, 2001.

Sample Week	Age	Sex (number)				Percent of Total	Weight			Length		
		Male	Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
3-9 June	2											
	3											
	4	35	41	0	76	69.1	114	12.5	76	210	5.7	76
	5	9	4	0	13	11.8	141	25.1	13	222	10.7	13
	6	1	3	0	4	3.6	183	22.4	4	236	7.1	4
	7											
	8	6	0	0	6	5.5	260	44.2	6	263	14.4	6
	9	1	0	0	1	0.9	256		1	270		1
	10	3	0	0	3	2.7	327	16.2	3	275	5.0	3
	11											
	12	2	1	0	3	2.7	393	53.0	3	296	9.3	3
	13	1	1	0	2	1.8	393	52.3	2	301	14.8	2
	14											
	15	2	0	0	2	1.8	394	70.7	2	298	17.7	2
	16											
	17											
Sample Total		60	50	0	110	100.0	152	82.4	110	223	26.8	110
10-16 June	2											
	3											
	4	25	46	0	71	15.1	119	16.2	71	217	6.4	71
	5	84	45	0	129	27.4	160	22.8	129	234	8.2	129
	6	13	16	0	29	6.2	206	30.9	29	249	7.6	29
	7	9	1	0	10	2.1	232	27.3	10	256	8.0	10
	8	48	46	0	94	20.0	283	38.7	94	270	8.9	94
	9	1	1	0	2	0.4	356	73.5	2	283	3.5	2
	10	25	18	0	43	9.1	341	47.4	43	285	8.8	43
	11	17	10	0	27	5.7	356	56.9	27	288	9.3	27
	12	12	7	0	19	4.0	359	32.5	19	294	6.6	19
	13	30	13	0	43	9.1	379	34.9	43	294	7.9	43
	14	2	1	0	3	0.6	449	8.1	3	307	6.4	3
	15											
	16											
	17	1	0	0	1	0.2	436		1	303		1
Sample Total		267	204	0	471	100.0	242	99.6	471	256	28.7	471
17-23 June	2											
	3											
	4	48	19	0	67	25.3	114	11.6	67	212	6.2	67
	5	37	20	0	57	21.5	147	22.3	57	229	8.4	57
	6	9	1	0	10	3.8	178	28.1	10	243	10.6	10
	7	3	3	0	6	2.3	218	42.0	6	254	7.1	6
	8	36	21	0	57	21.5	260	36.2	57	265	9.2	57
	9	2	2	0	4	1.5	296	18.1	4	271	5.7	4
	10	15	7	0	22	8.3	299	39.5	22	277	7.9	22
	11	6	4	0	10	3.8	301	36.4	10	276	10.8	10
	12	6	0	0	6	2.3	294	30.6	6	285	8.2	6
	13	18	4	0	22	8.3	349	36.3	22	291	7.5	22
	14											
	15	3	1	0	4	1.5	372	46.6	4	298	5.0	4
	16											
	17											
Sample Total		183	82	0	265	100.0	210	88.3	265	247	29.5	265

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Appendix A.17. (p. 2 of 2)

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	108	106	0	214	25.3	116	13.8	214	213	6.8	214
	5	130	69	0	199	23.5	155	23.8	199	231	9.0	199
	6	23	20	0	43	5.1	197	31.6	43	246	9.2	43
	7	12	4	0	16	1.9	227	32.9	16	255	7.5	16
All Weeks Combined	8	90	67	0	157	18.6	274	39.4	157	268	9.6	157
3-23 June	9	4	3	0	7	0.8	307	48.8	7	274	7.1	7
	10	43	25	0	68	8.0	327	47.9	68	282	9.2	68
	11	23	14	0	37	4.4	341	57.2	37	285	10.9	37
	12	20	8	0	28	3.3	349	45.2	28	292	7.9	28
	13	49	18	0	67	7.9	369	38.0	67	293	8.1	67
	14	2	1	0	3	0.4	449	8.1	3	307	6.4	3
	15	5	1	0	6	0.7	379	49.4	6	298	8.8	6
	16											
	17	1	0	0	1	0.1	436		1	303		1
All Samples Combined		510	336	0	846	100.0	220	98.6	846	249	30.7	846
Sex Composition		60.3	39.7									
Unaged		11	6	0	17	2.0	299	58.2	17	276	19.0	17
Sex Composition		64.7	35.3									

Appendix A.18. Age, sex, and size composition of herring sampled from the variable-mesh gillnet catch, Norton Sound District combined, 27 May - 23 June, 2001.

Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	6	4	0	10	52.6	130	19.6	10	209	10.3	10
	5	3	0	0	3	15.8	149	30.7	3	225	9.0	3
	6	1	0	0	1	5.3	207		1	237		1
	7											
	8	2	1	0	3	15.8	307	25.1	3	268	8.0	3
27 May - 2 June	9											
	10											
	11											
	12	0	1	0	1	5.3	412		1	304		1
	13	1	0	0	1	5.3	487		1	300		1
	14											
	15											
	16											
	17											
Sample Total		13	6	0	19	100.0	199	111.8	19	232	33.6	19
	2											
	3	1	0	0	1	0.8	67		1	173		1
	4	38	44	0	82	62.6	114	13.5	82	209	6.7	82
	5	14	10	0	24	18.3	139	21.7	24	221	9.8	24
	6	2	3	0	5	3.8	181	19.9	5	235	6.5	5
	7											
	8	7	0	0	7	5.3	244	57.0	7	257	19.4	7
3-9 June	9	2	0	0	2	1.5	227	41.0	2	259	16.3	2
	10	3	0	0	3	2.3	327	16.2	3	275	5.0	3
	11											
	12	2	1	0	3	2.3	393	53.0	3	296	9.3	3
	13	1	1	0	2	1.5	393	52.3	2	301	14.8	2
	14											
	15	2	0	0	2	1.5	394	70.7	2	298	17.7	2
	16											
	17											
Sample Total		72	59	0	131	100.0	149	76.9	131	222	25.7	131
	2											
	3											
	4	99	80	0	179	16.6	126	18.8	179	216	7.3	179
	5	221	126	0	347	32.2	170	26.7	347	235	9.4	347
	6	31	31	0	62	5.8	208	31.6	62	249	8.5	62
	7	17	4	0	21	1.9	251	33.6	21	262	10.1	21
	8	110	83	0	193	17.9	283	39.6	193	271	9.4	193
10-16 June	9	3	2	1	6	0.6	332	73.1	5	281	7.1	5
	10	57	33	0	90	8.4	346	45.9	90	287	9.6	90
	11	28	18	0	46	4.3	355	54.3	46	290	10.1	46
	12	16	9	0	25	2.3	366	35.7	25	295	6.9	25
	13	62	39	0	101	9.4	387	45.3	101	299	10.7	101
	14	3	1	0	4	0.4	456	14.0	4	309	5.7	4
	15	1	1	0	2	0.2	468	9.2	2	305	6.4	2
	16											
	17	1	0	0	1	0.1	436		1	303		1
Sample Total		649	427	1	1077	100.0	237	97.8	1076	254	29.8	1076

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Sample Week	Age	Sex (number) Male	Female	Unknown	Total	Percent of Total	Weight Mean (g)	SD	Number Weighed	Length Mean (mm)	SD	Number Measured
	2											
	3											
	4	93	54	1	148	30.0	121	13.8	147	214	7.1	148
	5	79	39	1	119	24.1	147	20.9	118	229	9.3	119
	6	11	5	0	16	3.2	169	27.3	16	240	11.6	16
	7	3	3	0	6	1.2	218	42.0	6	254	7.1	6
	8	62	40	0	102	20.6	267	40.3	102	270	12.5	102
17-23 June	9	2	3	0	5	1.0	292	17.6	5	273	6.9	5
	10	24	14	0	38	7.7	310	45.2	38	281	10.2	38
	11	6	5	0	11	2.2	299	34.9	11	275	10.4	11
	12	7	1	0	8	1.6	327	65.7	8	291	12.4	8
	13	26	10	1	37	7.5	359	49.3	36	294	10.0	37
	14											
	15	3	1	0	4	0.8	372	46.6	4	298	5.0	4
	16											
	17											
Sample Total		316	175	3	494	100.0	204	90.0	491	246	30.6	494
	2											
	3	1	0	0	1	0.1	67		1	173		1
	4	236	182	1	419	24.3	122	16.8	418	214	7.6	419
	5	317	175	1	493	28.6	163	27.5	492	233	10.1	493
	6	45	39	0	84	4.9	199	33.8	84	246	10.0	84
	7	20	7	0	27	1.6	243	37.4	27	260	9.9	27
All Weeks Combined	8	181	124	0	305	17.7	277	41.1	305	270	10.9	305
27 May - 23 June	9	7	5	1	13	0.8	298	60.5	12	274	11.2	12
	10	84	47	0	131	7.6	335	47.9	131	285	10.2	131
	11	34	23	0	57	3.3	344	55.5	57	287	11.7	57
	12	25	12	0	37	2.1	361	47.7	37	294	8.5	37
	13	90	50	1	141	8.2	380	48.3	140	298	10.7	141
	14	3	1	0	4	0.2	456	14.0	4	309	5.7	4
	15	6	2	0	8	0.5	401	58.6	8	299	8.4	8
	16											
	17	1	0	0	1	0.1	436		1	303		1
All Samples Combined		1050	667	4	1721	100.0	220	97.6	1717	249	31.1	1720
Sex Composition		61.2	38.8									
Unaged		46	28	0	74	4.3	268	90.0	74	266	27.8	74
Sex Composition		62.2	37.8									