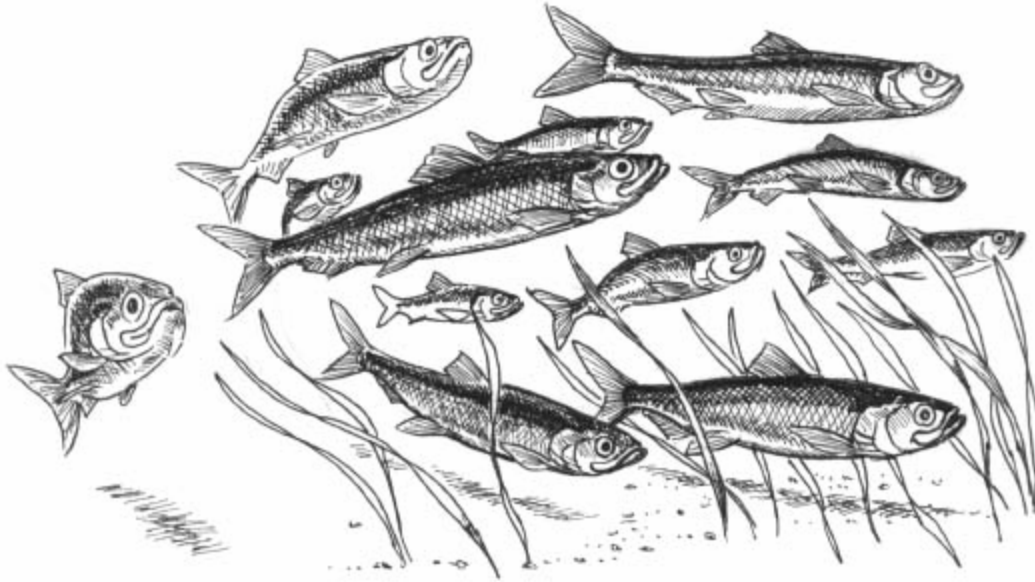


Summary of the 2002-03 Pacific Herring Commercial Fisheries in San Francisco Bay



Prepared for the
DIRECTOR'S HERRING ADVISORY COMMITTEE
March 25-26, 2003
Sausalito, CA

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REVIEW OF THE 2002-2003 SAN FRANCISCO BAY PACIFIC HERRING FISHERIES

QUOTAS

The total quota for San Francisco Bay was set at 3,540 tons for the 2002-2003 season, which was 10% of the estimated spawning biomass of the previous season (35,400 tons). Within the San Francisco Bay quota, separate gill net (i.e., sac roe), fresh fish and herring eggs-on-kelp quotas were established. The gill net quota was further divided among the three platoons (i.e., fishing groups) in proportion to the number of permits assigned to each platoon (Table 1).

HEOK: The total quota for the herring eggs-on-kelp fishery was 57.6 tons of herring-eggs-on-kelp, which was converted from 258 tons of whole fish from the bay's quota. Ten permittees chose to fish the herring eggs-on-kelp fishery. All herring-eggs-on-kelp permittees must hold a herring permit (i.e., a regular gill net or a CH gill net), and each permittee's share of the herring quota (from the sac roe fishery) is transferred to the herring-eggs-on-kelp fishery. In 1994, the Fish and Game Commission decided that CH permittees who fish herring-eggs-on-kelp would be allocated a quota equal to the quota formerly received by round haul permittees (i.e., 0.79% of the sac roe quota). For each CH permit, therefore, 27.7 tons of whole fish were transferred to the herring-eggs-on-kelp fishery; this is equivalent to an individual quota of 6.2 tons herring eggs-on-kelp product for each CH permittee. Regular gill net permittees transferring to the herring-eggs-on-kelp fishery this season received a quota of 1.8 tons of herring-eggs-on-kelp, which is equivalent to 8.1 tons of whole fish. Nine CH permittees and one regular gill net permittee chose to fish herring-eggs-on-kelp this season.

SEASON DATES

GILL NET FISHERY: The opening and closing dates of the gill net seasons are adjusted each year to account for annual changes in the calendar. Approximately three weeks of fishing are provided for the DH fishery with a closing day before December 25. This season, the DH fishery began at 5 p.m. on Sunday, December 1, 2002 and the closing was set at noon on Friday, December 20, 2002. The Odd or Even gill net fisheries traditionally open on the second of January or at sunset on the first Sunday in January. This season, the opening was set at 5:00 p.m. on Sunday, January 5, 2003, and the closing was set at noon on Friday, March 14, 2003. Since 1974, the gill net fisheries have been closed each week from noon on Friday until 5:00 p.m. on Sunday. This weekend closure was instituted to reduce conflicts with recreational users of the bay.

HEOK FISHERY: The opening and closing dates for the herring-eggs-on-kelp fishery are not adjusted for holidays or weekends. The herring-eggs-on-kelp season ran from December 1, 2002 to March 31, 2003.

LANDINGS

Overall, 64% (2,097 tons) of the San Francisco Bay gillnet quota was landed, by the three platoons combined, during the 2002-03 commercial herring season (Table 1). The December fishery (DH platoon) caught just 17% of their quota. The Even platoon landed 70% of their quota, and the Odd platoon was the only fishing group to reach its quota. The three gill net fisheries landed a combined total of 2,097 tons of herring.

In comparison to other seasons, the quotas were set at just over half of the average quota since the beginning of the fishery (and 61% of the 10-year average). Landings were also lower relative to average landings, at half of the 10-year average (Tables 2 and 3). The total take was well within management goals of removing less than 20% of the current biomass. Ex-vessel value of landings from the gill net sac roe is estimated at over \$1.5 million.

A total of 53.3 tons of herring-eggs-on-kelp product with an estimated ex-vessel value of over \$740K tons were landed by ten HEOK permittees.

TABLE 1. Herring quotas and landings, and roe percentage and fish count (as percents of total weight), for San Francisco Bay, 2002-2003 Season.

FISHERY (# PERMITS ACTIVE / #PERMITS ASSIGNED)	QUOTA (TONS)	LANDINGS (TONS)	OVER QUOTA (+) UNDER QUOTA (-)	ROE (%)	FISH COUNT
DH GILL NET (58 OF 133 ACTIVE)	1,016	182	-834 TONS (82% UNDER QUOTA)	11.23	94
EVEN GILL NET (135 OF 150 ACTIVE)	1,108	786	-322 TONS (29% UNDER QUOTA)	15.03	96
ODD GILL NET (139 OF 147 ACTIVE)	1,138	1,129	-9 TONS (<1% UNDER QUOTA)	15.77	96
TOTAL GILL NET	3,262	2,097	-1,165 (36% UNDER QUOTA)	15.10	96
HERRING-EGGS-ON-KELP (10 OF 10 ACTIVE)	57.6 (= 258 TONS IN WHOLE FISH)	53.3 (= 238 TONS IN WHOLE FISH)	-4.3 (7% UNDER QUOTA) (= -125 TONS IN WHOLE FISH)	NA	NA
FRESH FISH PERMITS (1)	20	0	-20	NA	NA
SF BAY TOTAL	3,540	2,336	-1,309	NA	NA
SPECIAL EDUCATION* PERMITS (0 OF 1)	NA	NA	NA	NA	NA

* No SEP permits were issued for the 2002-03 season

TABLE 2. Quotas and landings in tons for the herring ***gill net sac roe fisheries*** in San Francisco Bay,

1972-73 season through 2002-03 season.

SEASON	QUOTA (TONS)	LANDINGS (TONS)	SEASON	QUOTA (TONS)	LANDINGS (TONS)
1972-73	1,500	436	1988-89*	9,238	9,736
1973-74	500	1,938	1989-90*	9,057	8,962
1974-75	600	514	1990-91*	8,858	7,741
1975-76	3,000	1,719	1991-92*	7,134	7,417
1976-77	4,000	4,201	1992-93*	5,175	5,151
1977-78	5,000	4,987	1993-94*	1,996	2,302
1978-79	5,000	4,115	1994-95*	4,408	4,574
1979-80	6,000	6,430	1995-96*	5,524	6,165
1980-81	7,250	5,811	1996-97*	13,543	11,496
1981-82	10,000	10,415	1997-98*	9,793	1,981
1982-83	10,399	9,699	1998-99*	2,739	2,817
1983-84	10,399	2,828	1999-2000*	5,460	3,356
1984-85	6,500	7,740	2000-01*	2,499	2,991
1985-86	7,530	7,278	2001-02*	4,128	3,287
1986-87*	7,470	8,098	2002-03*	3,262	2,097
1987-88*	8,432	8,741			
THIRTY-ONE YEAR AVERAGE:				6,013	5,323
TEN YEAR AVERAGE:				5,335	4,107
FIVE YEAR AVERAGE:				3,618	2,910
* Quotas and landings after the 1985-86 season do <i>not</i> include HEOK or fresh fish allocation and landings					

TABLE 3. Quotas, landings and number of permits for the ***herring-eggs-on-kelp (HEOK)*** fishery in San Francisco Bay, 1989-90 season through 2002-03 season.

SEASON	QUOTA (TONS)	TOTAL LANDINGS (TONS)	PERCENT OF QUOTA LANDED	NUMBER OF PERMITS
1989-90	110.0	107.1	97.4	8
1990-91	144.0	47.0	32.6	10
1991-92	114.0	84.2	73.8	10
1992-93	84.5	47.4	56.1	10
1993-94	35.1	35.0	99.7	10
1994-95	85.0	13.1	15.4	10
1995-96	106.5	106.8	100+	10
1996-97	286.0	185.7	64.9	11
1997-98	209.0	36.4	17.4	11
1998-99	54.4	31.7	58.3	11
1999-2000	99.2	31	31.3	11
2000-01	49.3	27.2	55.2	11
2001-02	73.2	45.3	62.0	10
2002-03	57.6	53.3	92.5	10
AVERAGE (14 YRS)	107.7	60.8	54.0	10.2
AVERAGE (5 YRS)	66.7	37.7	59.9	10.6

REVIEW OF EACH FISHERY

DH GILL NET FISHERY (DECEMBER PLATOON):

The DH herring gill net fishery began on Sunday, December 1, 2002 at 5:00 p.m. By the closure of the DH platoon at noon on Friday, December 20, just 182 tons (17% of the quota) had been landed (Table 4). The average roe count of 11.23% was close to the 20-year average (Table 7). Regulations provide an opportunity for the DH platoon to reopen after both January platoons have reached their quota. However, in the 2002-03 season, the DH fishery did not have a second opportunity to fish for their remaining quota. Of the 133 permits assigned to the DH platoon, just 44% were used during this low-quota season.

TABLE 4. Daily landings for the **DH** gill net platoon.

<i>Week*</i>	<i>Date</i>	<i>Pounds</i>	<i>Tons</i>	<i># Receipts</i>	<i>Tons/Receipt</i>	<i>Fish Count</i>	<i>Roe Count</i>	<i>Notes</i>
3D	12/18/2002	42,734	21.37	37	0.58	95	11.86	? Full Moon 18 th
	12/19/2002	304,565	152.28	55	2.77	94	11.06	
	12/20/2002	15,923	7.96	18	0.44	94	12.84	
Total		363,222	181.61	110	1.65	94	11.23	

LANDINGS- DH		EFFORT	
QUOTA:	1,016	32 BOATS USED IN DH PLATOON	
CATCH:	182	58 PERMITS FISHED IN DH PLATOON	
UNDER QUOTA:	- 834	133 PERMITS ASSIGNED TO DH PLATOON	
		56% OF DH PERMITS NOT USED THIS SEASON	

*Sequential numbering of weeks for all fisheries starting with the first week in December. Numbering includes last week of December. 'D': follows week numbers from December platoon; 'J': follows week numbers from the January platoons.

JANUARY PLATOONS

The January fishery is divided into two separate platoons grouped by permit numbers that are odd and even. Platoons rotate fishing weeks with the first platoon designated by whether the season year is odd or even. In this 2002-03 season, the EVEN platoon was designated to fish first.

EVEN GILL NET FISHERY

The Even platoon was the first January platoon to fish this season. The platoon opened on Sunday, January 5, 2003 at 5:00 p.m. and landed 37% of its quota during the first week of fishing. Fishing was very slow during its second and third weeks of fishing, until a pulse of landings brought in 32% of the Even quota during its fourth week. The majority of Even landings for the season were derived from their first and fourth weeks of fishing. The Even fishing season lasted two more slow weeks, for a total of six weeks, and closed at the season closing date of March 14, 2003. January roe counts were 12 to 13.5%, and increased to counts from 17 to 19% in February. Total landings were 789

tons, which is 30% below the quota. Ten percent of the permits assigned to this platoon were not used this season.

TABLE 5. Daily landings for the **Even** gill net platoon.

Week*	Date	Pounds	Tons	# Receipts	Tons/Receipt	Fish Count	Roe Count	Notes
1J	1/8/2003	109,495	54.75	69	0.79	92	13.08	
	1/9/2003	598,952	299.48	117	2.56	94	12.22	
	1/10/2003	130,570	65.29	62	1.05	95	13.10	? 1 st Qtr Moon
3J	1/21/2003	590	0.30	2	0.15	93	15.30	? Full Moon 18 th
	1/23/2003	1,335	0.67	2	0.33	96	9.40	? Last Qtr Moon 24 th
5J	2/6/2003	1,354	0.68	4	0.17	99	12.00	
7J	2/17/2003	87,373	43.69	47	0.93	98	17.67	? Full Moon 16 th
	2/18/2003	309,132	154.57	69	2.24	99	18.18	
	2/19/2003	239,828	119.91	63	1.90	100	17.59	
	2/20/2003	86,518	43.26	36	1.20	98	18.70	
	2/21/2003	2,054	1.03	4	0.26	98	17.71	? Last Qtr Moon 23 rd
9J	3/4/2003	2,777	1.39	4	0.35	99	18.90	? New Moon 2 nd
10J	3/12/2003	2,776	1.39	2	0.69	88	18.00	? 1 st Qtr Moon 10 th
Total		1,572,754	786.38	481	1.63	96	15.03	

Landings- EVEN		EFFORT	
Quota:	1,108	71 Boats used in EVEN Platoon	
Catch:	789	135 Permits fished in EVEN Platoon	
Under Quota:	322	150 Permits assigned to EVEN Platoon	
		10% of EVEN Permits not used this season	

*Sequential numbering of weeks for all fisheries starting with the first week in December. Numbering includes last week of December. 'D': follows week numbers from December platoon; 'J': follows week numbers from the January platoons.

ODD GILL NET FISHERY

The Odd platoon was the second January platoon to fish this season. It opened on Sunday January 12 at 5:00 p.m. and caught 35% of its quota (with roe counts in the 14 to 16% range) during its first week of fishing. Its second week of fishing yielded 26% of its quota, and its third week of fishing yielded 37% of its quota with roe counts 17 to 18%. The Odd platoon closed after its 3rd week of fishing, on Friday, February 14, 2003 at noon. There was a total of 18 days fished by the Odd platoon. In total, the Odd platoon filled its quota with 1,129 tons of herring (Table 5). The average

roe count was 15.77%. This is above the long-term (20-year) average of 13.3% for the first January platoon (Table 7). Five percent of the permits assigned to this platoon were not used this season.

TABLE 6. Daily landings for the **Odd** gill net platoon.

Week*	Date	Pounds	Tons	# Receipts	Tons/Receipt	Fish Count	Roe Count	Notes
2J	1/14/2003	51,221	25.61	48	0.53	96	15.87	
	1/15/2003	435,363	217.68	124	1.76	95	14.30	
	1/16/2003	312,071	156.04	128	1.22	97	14.09	? Full Moon 18 th
4J	1/27/2003	3,092	1.55	7	0.22	86	12.95	? Last Qtr Moon 24 th
	1/28/2003	41,967	20.98	56	0.37	95	15.29	
	1/29/2003	271,204	135.60	104	1.30	96	15.18	
	1/30/2003	280,138	140.07	132	1.06	98	14.97	
	1/31/2003	16,017	8.01	18	0.44	99	13.35	? New Moon Feb1
6J	2/12/2003	100	0.05	2	0.03	95	17.20	
	2/13/2003	83,235	41.62	25	1.66	96	18.04	
	2/14/2003	762,911	381.46	95	4.02	97	17.63	? Full Moon Feb 16
Total		2,257,319	1128.6	739	1.53	96	15.77	

LANDINGS- ODD		EFFORT	
QUOTA:	1,138 TONS	74 BOATS USED IN DH PLATOON	
CATCH:	1,129 TONS	139 PERMITS FISHED IN DH PLATOON	
UNDER QUOTA:	- 9 TONS	147 PERMITS ASSIGNED TO DH PLATOON	
		5% OF DH PERMITS NOT USED THIS SEASON	

*Sequential numbering of weeks for all fisheries starting with the first week in December. Numbering includes last week of December. 'D': follows week numbers from December platoon; 'J': follows week numbers from the January platoons.

**SUMMARY OF FISHING DAYS IN 2002-03
SAN FRANCISCO BAY COMMERCIAL PACIFIC HERRING FISHERY**

DH platoon 2002:

- Opened Dec 1 at 5 PM
- Fished to Dec 20 at noon
- There were **18** DH fishing days in 2001-02 season

EVEN platoon 2003:

- Opened Sunday, Jan 5 at 5 PM
- Fished Jan 5-10, Jan 19-24, Feb 2-7, Feb 16-21, Feb 23-28, Mar 2-7, Mar 9-14
- Closed on March 14 at noon
- There were **42** Even fishing days in January, February and March

ODD platoon 2003:

- Opened Sunday, Jan 12 at 5 PM
- Fished Jan 12-17, Jan 26-31, Feb 9-14
- Closed on February 14 at noon
- There were **18** Odd fishing days in January and February

TABLE 7. Average roe count (as percent of total weight) in the San Francisco Bay gill net fisheries, 1983-84 season through 2002-03 season.

SEASON	DECEMBER GILL NET PLATOON	1ST JANUARY GILL NET PLATOON	2ND JANUARY GILL NET PLATOON
1983-84	13.5	13.1 ODD	13.4 EVEN
1984-85	10.1	10.8 EVEN	13.4 ODD
1985-86	11.2	11.9 ODD	13.4 EVEN
1986-87	10.9	11.4 EVEN	12.7 ODD
1987-88	11.9	13.5 ODD	15.0 EVEN
1988-89	9.7	11.6 EVEN	13.1 ODD
1989-90	11.6	13.0 ODD	14.3 EVEN
1990-91	11.7	13.4 ODD	15.8 ODD
1991-92	11.7	11.7 EVEN	15.5 ODD
1992-93	9.7	14.0 EVEN	14.8 ODD
1993-94	10.2	11.5 ODD	13.3 EVEN
1994-95	11.1	13.8 EVEN	12.0 ODD
1995-96	12.0	14.4 ODD	14.6 EVEN
1996-97	10.3	14.1 EVEN	13.9 ODD
1997-98	14.1	14.9 ODD	NO LANDINGS
1998-99	13.4	14.8 EVEN	17.2 ODD
1999-2000	12.1	13.3 ODD	15.6 EVEN
2000-01	12.2	14.5 EVEN	13.6 ODD
2001-02	15.0	14.6 ODD	17.5 EVEN
2002-03	11.2	15.0 EVEN	15.8 ODD
AVERAGE	11.7 (20 YEARS)	13.3 (20 YEARS)	14.4 (20 YEARS)

GILL NET MESH SIZE STUDY RESEARCH PARTICIPATION

The proposed gill net mesh size study was suspended due to funding uncertainty and decision to review existing data prior to initiation of another study year. The Department hopes to determine whether to recommence this research study prior to the 2003-04 season.

SPECIAL EDUCATION PERMITS

No Special Education Permit was issued to the City of Oakland Maritime Training Program for the 2002-03 season.

HERRING EGGS ON KELP (HEOK) FISHERY

Ten permittees renewed their herring eggs on kelp permits for the 2002-03 season. The season opened on December 1st, 2002 and will close on March 31st, 2003. All ten permittees suspended kelp and harvested HEOK product this season. Two large spawns in Richardson Bay accounted for most of the herring eggs on kelp landings this season. Six out of the ten permittees landed their quota by February 17th. The following is a summary of kelp suspension and HEOK harvest for the season (as of March 19, 2003).

TABLE 8. Dates of kelp suspension during the 2001-02 season.

DATE	NUMBER OF PERMITTEES REPORTING KELP SUSPENSION	NUMBER OF PERMITTEES REPORTING HARVEST
DECEMBER 22 ND – 28 TH , 2002	1	0
JANUARY 5 TH – 11 TH 2003	6	0
JANUARY 12 TH – 18 TH , 2003	4	0
JANUARY 19 TH – 25 TH , 2003	5	7
JANUARY 26 TH – FEBRUARY 1 ST , 2003	7	8
FEBRUARY 9 TH – 15 TH , 2003	10	7
FEBRUARY 16 TH – 22 ND , 2003	0	8
FEBRUARY 23 RD - MARCH 1 ST , 2003	1	0
MARCH 2 ND – 8 TH , 2003	5	0
MARCH 9 TH – 15 TH , 2003	0	3

Total landings for the 2002-03 Herring Eggs on Kelp fishery are 106,562 pounds/53.3 tons which is 92% of the total season quota (Table 3.) Eight of the ten permittees have landed their quota this season. Two permittees have less than two tons remaining on their quota. At this time accurate landing information regarding product grade or quality is unavailable.

TABLE 9. Herring eggs on kelp landings in San Francisco Bay during the 2002 – 03 season.

	LANDING TOTALS		
LANDING DATES	POUNDS	TONS	COMMENTS
JANUARY 29 TH – 31 ST & FEBRUARY 3 RD	54,261	27.1	RICHARDSON BAY SPAWN
FEBRUARY 15 TH – 17 TH	47,052	23.5	RICHARDSON BAY SPAWN
MARCH 11 TH & 12 TH	5,249	2.6	RICHARDSON BAY SPAWN
<u>TOTAL LANDINGS</u>	<u>106,562</u>	<u>53.3</u>	QUOTA: 57.6 TONS LANDED: 53.3 TONS UNDER QUOTA: 4.3 TONS (EQUIVALENT IN WHOLE FISH QUOTA = 238 TONS LANDED (45.3 TONS/0.2237))

COMMERCIAL GILL NET COMPOSITION

TABLE 10. Mean Length and Sex Ratio of Commercial Gill Net Catch Samples* in San Francisco Bay, 2002-03.

LANDING DATE	MEAN BODY LENGTH (MM)*	SEX RATIO (% MALE : FEMALE)
18 Dec 2002	187.5	48 : 52
19 Dec 2002	190.3	58 : 42
9 Jan 2003	187.1	50 : 50
10 Jan 2003	186.0	50 : 50
14 Jan 2003	185.9	46 : 54
15 Jan 2003	183.7	45 : 55
16 Jan 2003	188.3	40 : 60
29 Jan 2003	183.6	35 : 65
14 Feb 2003	182.7	23 : 77
19 Feb 2003	180.5	15 : 85
20 Feb 2003	180.2	39 : 61
SEASON AVG.	185.1	

*(n=586)

FIGURE 1. Mean length and length range (minimum and maximum) of herring in commercial landings, grouped by school (spawning wave) in San Francisco, 2002-03.

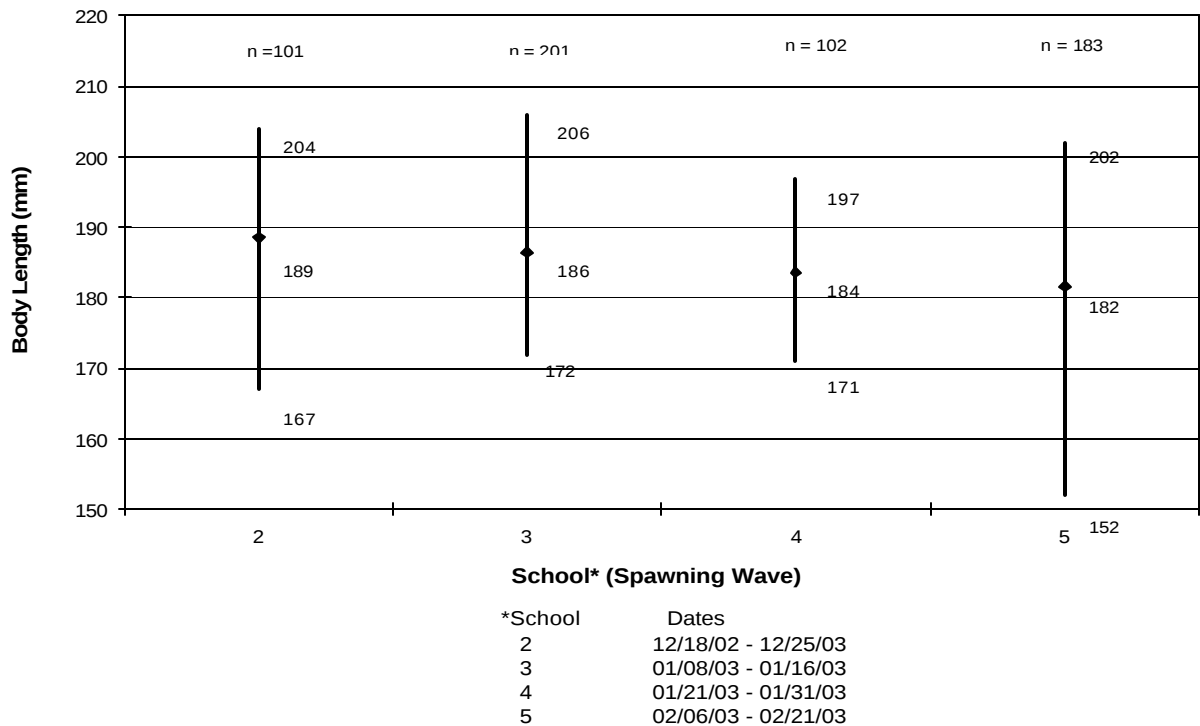
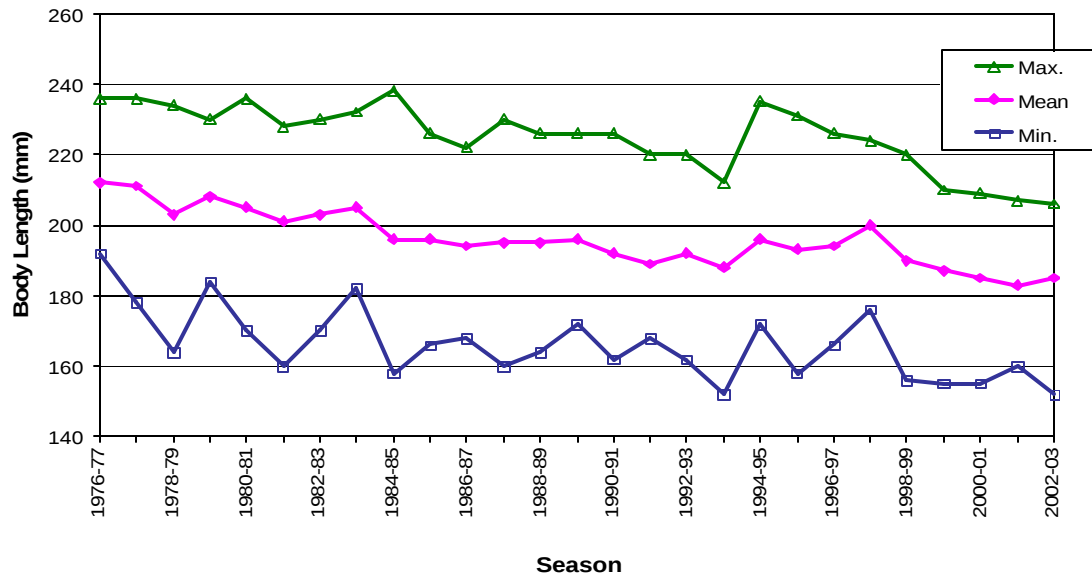
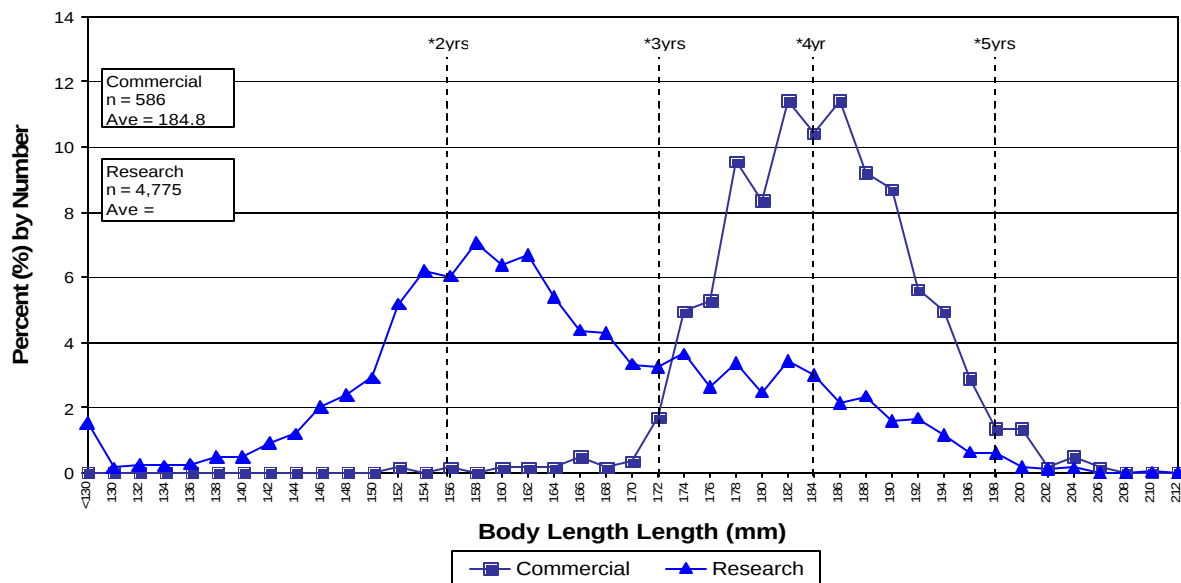


Figure 2. Historic lengths of commercial gill net catch samples from San Francisco Bay gill net fisheries, 1976-77 through 2002-03.



	AVERAGE MEAN BODY LENGTH (MM)	AVERAGE LENGTH RANGE (MM)
AVERAGE (26 YEARS)	196	166 – 225
AVERAGE (10 YEARS)	190	160 – 218
AVERAGE (5 YEARS)	186	156 – 210

Figure 3. Herring lengths from research mid-water trawl samples and commercial gill net landings samples, San Francisco Bay, 2002-03.



* Age lines are the mean length of each age from the 2000-01 season age data

OPENING AND CLOSING DATES AND TIMES FOR THE 2003-04 HERRING SEASON
FOR VOTE BY DHAC MEMBERS, MARCH 25-26, 2003

2003-04 FISHERY		OPENING		CLOSURE	
LOCATION	MONTH/FISHERY	DATE	TIME	DATE	TIME
SAN FRANCISCO	DECEMBER 2003 GILL NET PLATOON (DH PLATOON)				
	JANUARY 2004 1 ST GILL NET PLATOON (ODD PLATOON)			X	X
	JANUARY 2004 2 ND GILL NET PLATOON (EVEN PLATOON)			X	X
	ALL GILL NET PLATOONS	N/A	N/A		
	HERRING EGGS ON KELP FISHERY 2003-04	DEC 1, 2003	----	MAR 31, 2004	----
TOMALES BAY	GILL NET FISHERY 2003-04				