

**SUMMARY OF 1993-94 SPAWNING-GROUND SURVEYS
AND COMMERCIAL CATCH IN TOMALES BAY**

**Prepared for:
Director's Herring Advisory Committee
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by

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Table 1. Daily Landings by Tomales Bay Gillnet Fleet for 1993-94 Season					
DATE	POUNDS	TONS	TRIPS	LBS/TRIP	ROE COUNT
03-Jan-94	131,592	65.98	22	5997.82	11.27
17-Jan-94	137,887	68.94	25	5515.48	11.74
07-Feb-94	24,083	12.04	13	1852.54	13.03
08-Feb-94 & 09-Feb-94	14,869	7.43	39	3211.62	13.63
21-Feb-94	18,692	9.35	17	1099.53	13.74
TOTAL	437,867	218.93	116	3535.4	12.37

Table 2. Mean Length (mm BL) of the commercial gill net catch				
Date	Mean Length		Sex Ratio M/F	
Jan 3, 1994	196.8		55/45 (n=119)	
Jan 17, 1994	193.8		50/41 (n=285)	
Feb 8 & 9, 1994	202.3		44/56 (n=160)	
Feb 21, 1994	199.8		53/47 (n=100)	
Average (1993-94)	197.3		50/46 (n=604)	
Historical Lengths of commercial gill net catch				
6 Year Average	1990-91	1991-92	1992-93*	1993-94
198	197	194	196.4	197.3

*Switched to 2-1/8 inch mesh. Catch entirely from Tomales Bay.

Table 3. Tomales Bay Herring Spawn Data, 1993-94 season.

DATE	LOCATION	AREA	EGGS/ M2	MILLIONS OF EGGS	CONVERSION FACTOR X 10 ⁻⁸	TONS
19-Nov-93	1A	34,608	50,118	1760	1.38	18.25
23-Nov-93	1A	583	82,195	48	1.38	0.55
14-Dec-93	1A	34,608	700,804	2430	1.38	334.7
14-Dec-93	1B	22,333	27,394	612	1.38	8.44
14-Dec-93	1C	1906	520,189	993	1.38	13.68
14-Dec-93	1C Ext.	2583	371,710	961	1.38	13.25
03-Jan-94	1B	22,333	394,406	8810	1.38	121.55
03-Jan-94	1	5268	393,944	2080	1.38	28.64
03-Jan-94	2	2107	20,315	43	1.38	0.59
03-Jan-94	28A	22,714	390,929	8890	1.38	122.54
03-Jan-94	1A	34,608	34,524	1200	1.38	16.49
03-Jan-94	M.C. Pilings	366	NA	NA	1.38	0.29
17-Jan-94	1A	31,404	410,864	1290	1.38	178.06
	1A	3204	13,347	43	1.38	0.59
17-Jan-94	1B	2483	36,408	91	1.38	1.25
17-Jan-94	1C-EXT	2583	21,193	102	1.38	1.41
17-Jan-94	1C	1786	11,537	38	1.38	0.53
27-Jan-94	1A	34608	1,193,949	41,300	1.38	570.22
27-Jan-94	2	4091	81,761	335	1.38	4.62
	2	2774	45,700	127	1.38	1.75
27-Jan-94	1	5268	137,815	725	1.38	10.02
31-Jan-94	1B	14,592	554,708	8090	1.38	111.7
	1B	2332	489,968	1140	1.38	15.76
31-Jan-94	1C	1786	193,285	345	1.38	4.76

Table 3. Tomales Bay Herring Spawn Data, 1993-94 season.

DATE	LOCATION	AREA	EGGS/ M2	MILLIONS OF EGGS	CONVERSION FACTOR X 10 ⁻⁸	TONS
31-Jan-94	1C-EXT	2583	148,962	385	1.38	5.31
02-Feb-94	28A	2887	838,520	2420	1.07	25.9
02-Feb-94	28A	19,827	56,634	1120	1.07	12
06-Feb-94	27	4329	651,924	2820	1.07	30.19
07-Feb-94	1B	14,592	6724	98	1.07	1.05
08-Feb-94	1B	22,333	2,367,359	52,900	1.07	565.7
08-Feb-94	1C	1785	717,956	1280	1.07	13.71
13-Feb-94	28A	16,108	56,151	904	0.966	8.74
13-Feb-94	28	3746	60,079	225	0.966	2.17
Total		379,118		143,605		2244.41

TABLE 4. Tomales Bay Herring Biomass Estimates 1973-74 through 1992-94 Seasons.

Season	Spawn Escapement (tons)	Catch (tons)	Spawning biomass (tons)
1973-74	6,041	521	6,562
1974-75	4,210	518	4,728
1975-76	7,769	144	7,913
1976-77	4,739	344	5,083
1977-78	21,513	646	22,163
1978-79	--	448	--
1979-80	5,420	603	6,023
1980-81	5,128	448	5,576
1981-82	6,298	851	7,149
1982-83	10,218	822	11,040
1983-84	1,170	110	1,280
1984-85	6,156	430	6,586
1985-86	435	771	6,000*
1986-87	4,931	867	5,798
1987-88	1,311	750	2,061
1988-89	167	213	380
1989-90	345	--	345
1990-91	779	--	779
1991-92	1,214	--	1,214
1992-93	3,856	222	4,078
1993-94	2244	219	2463

* Biomass estimated by cohort analysis; for all other years, biomass was estimated from spawning-ground surveys.

Tomales Bay Spawning Biomass & Percent Catch to Biomass, 1974-1994

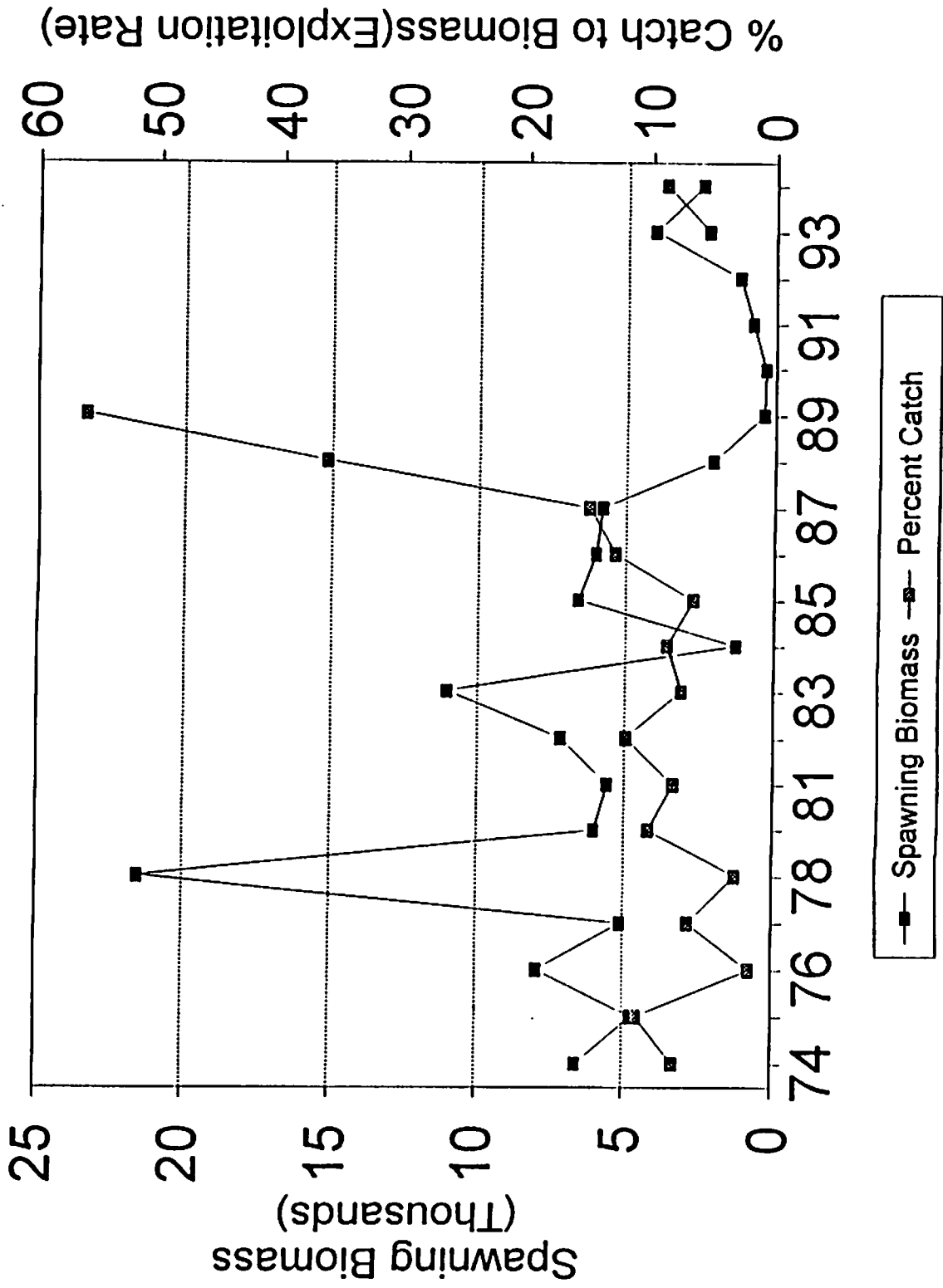


Figure 1. Spawning Biomass and Exploitation Rate from 1974 to 1994.

**Proposals for the 1994-95 Herring
Fishery in Tomales Bay**

The spawn escapement estimate of 2,463 tons for the 1993-94 season is down 42% from last season and remains below the 20-year average of 4,800 tons. It is close to the 10-year average of 2,800 tons and in spite of decreasing following last seasons' large jump in escapement, the overall trend of increasing biomass since the 1989-90 season continues.

PROPOSALS FOR THE SEASON:

QUOTA - 250 Tons (10% of 1993-94 biomass). However, if spawning biomass exceeds 2,500 tons prior to February 15, the quota shall be increased as follows: 1) If spawning biomass is more than 2,500 tons, the total take of herring shall not exceed 350 tons; 2) If the spawning biomass is more than 3,500 tons, the total take of herring shall not exceed 450 tons; 3) If the spawning biomass is more than 4,500 tons, the total take shall not be more than 550 tons.

RATIONAL - Need to ascertain whether biomass will remain at the present level or will continue trend of overall increase.

PERMITS - Two permits per vessel.

RATIONAL - Fishermen liked this option since it reduced the total number of vessels fishing on the bay.

NETS - One shackle of 2-1/8 inch stretch mesh net per permittee.

RATIONAL - Fishermen liked this option since it reduced the amount of gear fishing at one time on the bay.