

**Summary of 1997-98
Spawning-Ground Surveys
and
Commercial Catch in Tomales Bay.**

Prepared for:
Director's Herring Advisory Committee
Menlo Park
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Location, Date, and Biomass Estimates of Spawn Events for the 1997-98 Tomales Bay Pacific Herring Spawning Season

Spawn Event 1

Location: South of Tomasini Pt.
Date: Nov. 18, 1997
Coverage= 21,673 sq. meters
Spawn Estimate= 6.4 tons

Spawn Event 2

Location: Bed # 28B North of Tomasini Pt.
Date: Dec. 31, 1998
Coverage= 87,484 sq. meters
Spawn Estimate= 194.6 tons

Spawn Event 3

Location: Bed # 1B Shell Beach.
Date: Jan. 05, 1998
Trace Spawn

Spawn Event 4

Location: Bed # 1A (north section), Bed # 28B.,
and Marconi Cove to Tomasini Pt.
Date: Feb. 01, 1998
Coverage= 206,247 sq. meters
Spawn Estimate= 235.6 tons

Spawn Event 5

Location: Bed #1 (Indian Beach)
to past Duck Cove
Date: Feb. 24, 1998
Coverage= 40,271.9 sq. meters
Spawn Estimate= 83 tons

Spawn Event 6

Location: Indian Beach to Bed # 1A (north section)
Date: March 1, 1998
Coverage= 170,619 sq. meters
Spawn Estimate= 66 tons

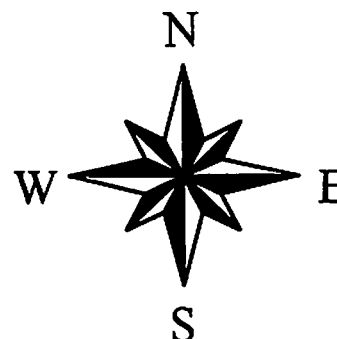
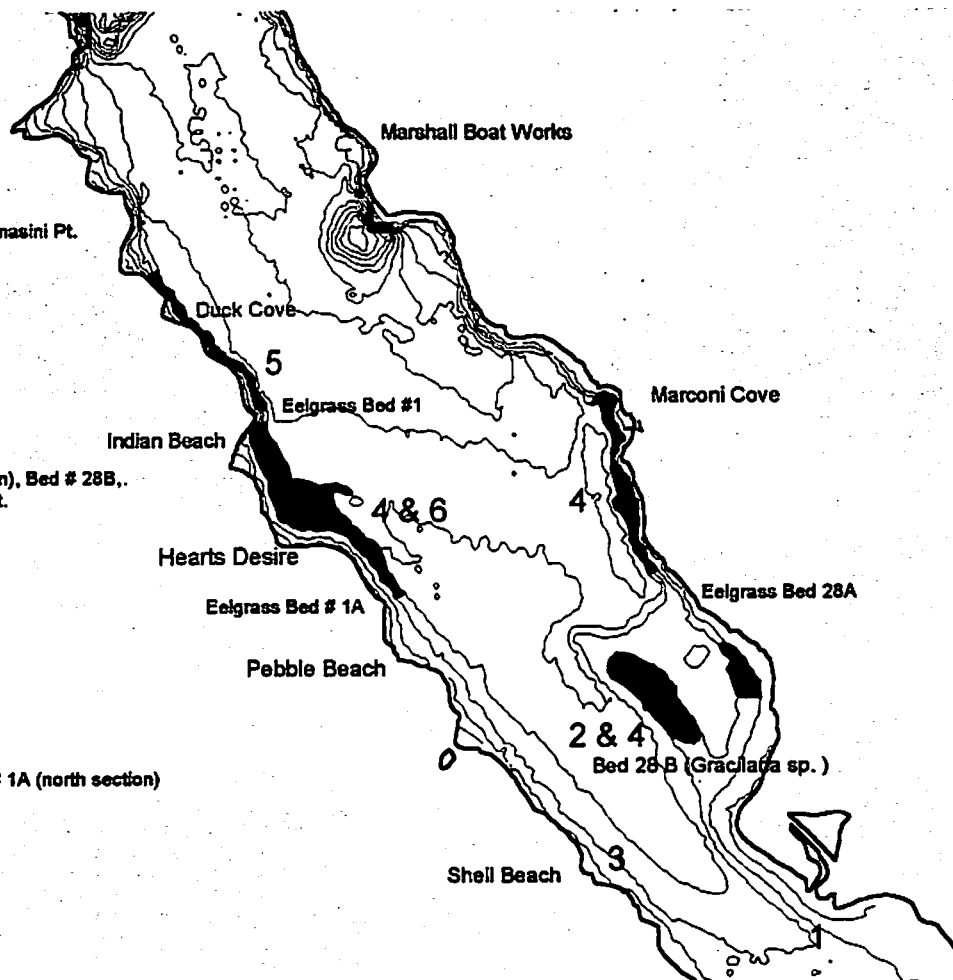


TABLE 1. Tomales Bay Herring Spawn Data, 1997-98 Season.

Date	Location	Area M ²	Eggs/ M ²	Millions of Eggs	Conversion Factor X 10 ⁻⁸	Tons
18- NOV-97	28	21,673	21,487.4	466	1.38	6.4
31- DEC-97	28B	87,483.5	161,171.6	14,100	1.38	194.6
05- JAN-98	1B	---	---	---	---	TRACE
01- FEB-98	1A	14,704.9	51,069.91	751	1.38	10.4
01- FEB-98	Marconi Cove to 28A	104,058.5	21,487	2,240	1.38	30.9
01- FEB-98	28B	87,483.5	161,171.6	14,100	1.38	194.6
24- FEB-98	Duck Cove to Bed 1	40,271.9	149,487.1	6,020	1.38	83.1
01- MAR-98	Hearts Desire to 1A	170,619	27889.94	4,760	1.38	65.7
TOTAL						585.7

T = Trace Spawn, <1 ton

Spawning Biomass vs. Rainfall

November - March, 1975 - 1998

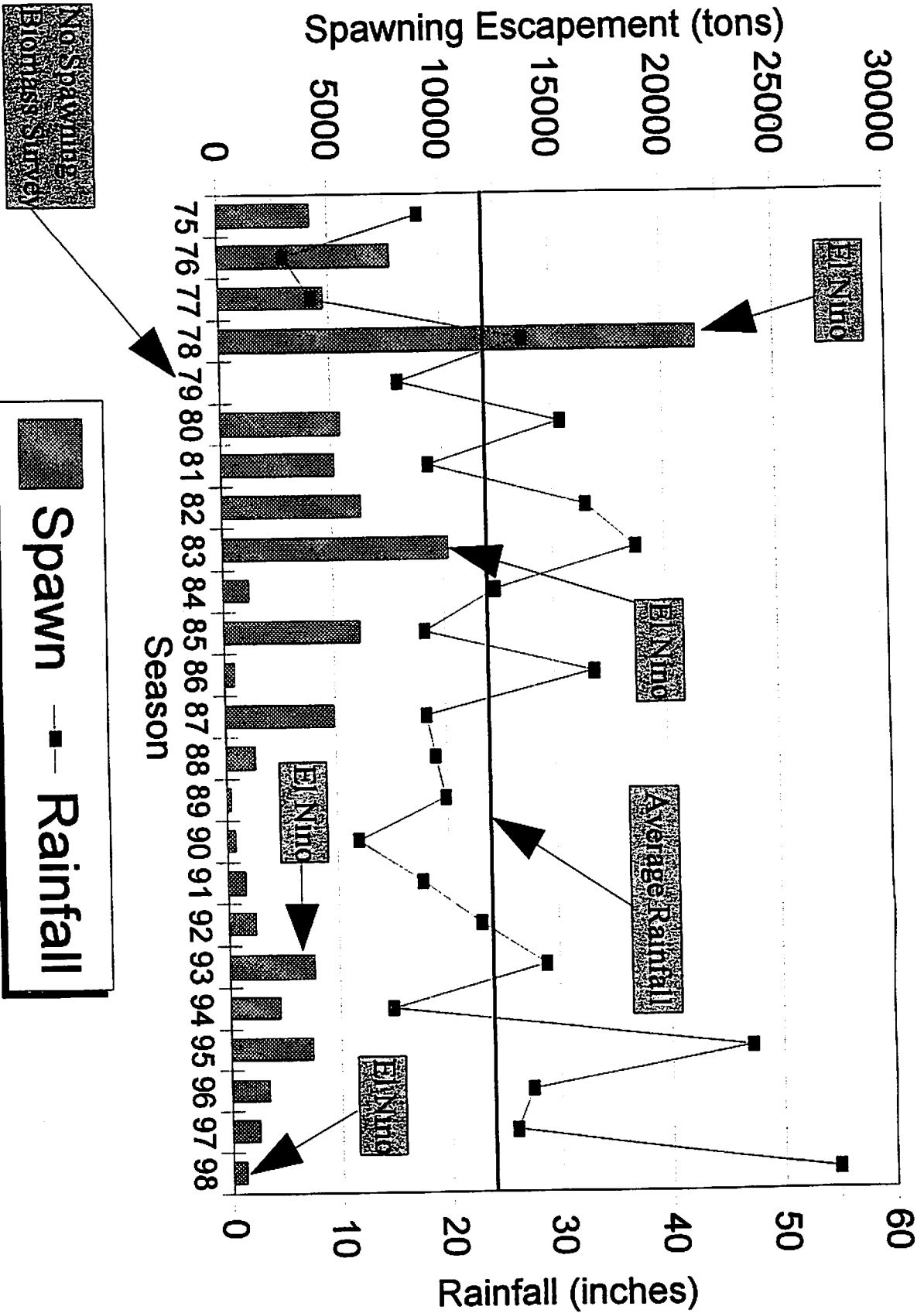


TABLE 2. Tomales Bay Herring Biomass Estimates 1973-74 through 196-97 Season.

Season	Spawn Escapement (tons)	Catch (tons)	% Catch (Exploitation Rate)	Spawning Biomass (tons)
1973-74	6,041	521	7.9	6,562
1974-75	4,210	518	10.9	4,728
1975-76	7,769	144	1.8	7,913
1976-77	4,739	344	6.7	5,083
1977-78	21,513	646	2.9	22,163
1978-79	---	448	--	--
1979-80	5,420	603	10	6,023
1980-81	5,128	448	8	5,576
1981-82	6,298	851	11.9	7,149
1982-83	10,218	822	7.4	11,040
1983-84	1,170	110	8.5	1,280
1984-85	6,156	430	6.5	6,586
1985-86	435	771	12.8	6,000*
1986-87	4,931	867	14.9	5,798
1987-88	1,311	750	36.4	2,061
1988-89	167	213	56	380
1989-90	345	--	0	345
1990-91	779	--	0	779
1991-92	1,214	--	0	1,214
1992-93	3,856	222	5.4	4,078
1993-94	2,244	219	8.9	2,463
1994-95	3,704	275	7.4	3,979
1995-96	1,704	355	17.2	2,059
1996-97	1,288	222	15.1	1,510
1997-98	586	0	0	586
AVERAGE	4,217	407	10.7	4,806

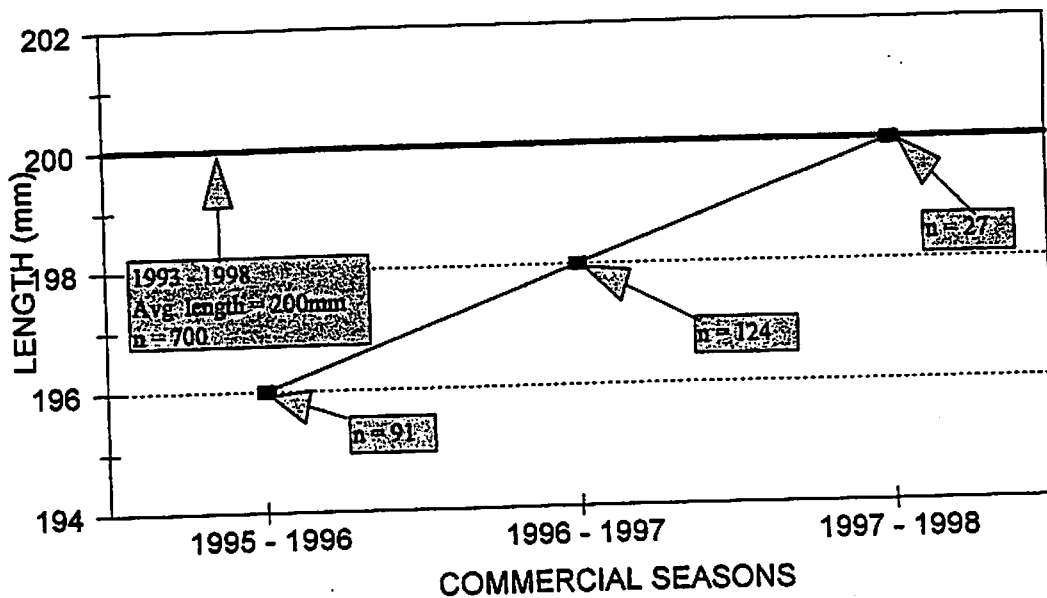
*Biomass estimated by cohort analysis; for all other years, biomass was estimated from spawning-ground surveys.

TABLE 3. Annual Landings from Tomales/Bodega Bay Gillnet Fleet.

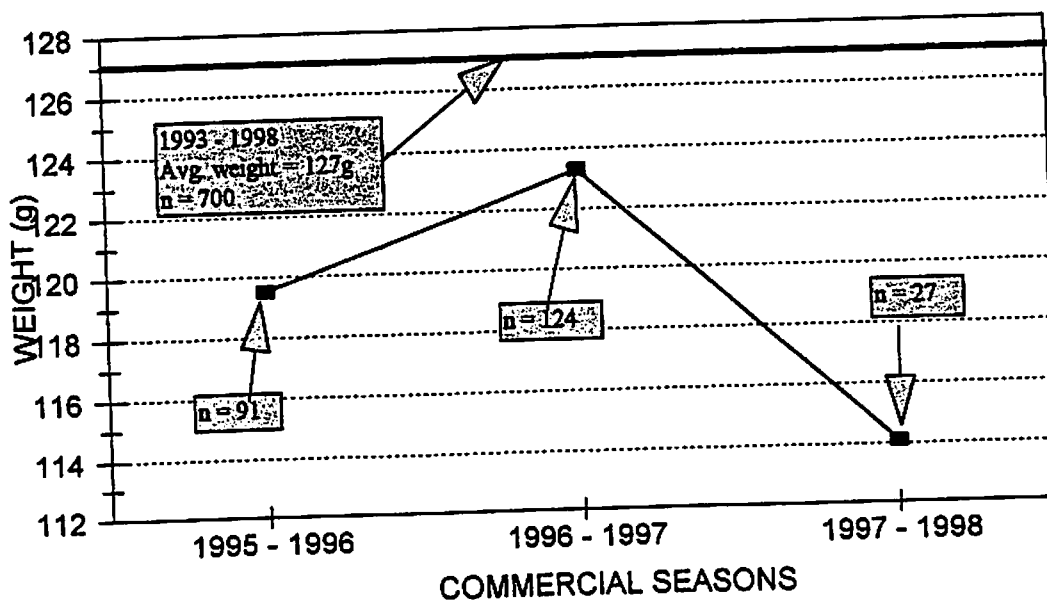
Year	Pounds	Tons	Trips	Lbs/Trip	Roe Count
84-85	844,472	422.2	215	3,928	12.8
85-86	1,542,676	771.3	512	3,013	12.5
86-87	1,732,428	866.2	429	4,038	12.5
87-88	1,499,402	749.5	484	3,097	12.4
88-89	426,163	213.0	291	1,464	12.7
89-90	190,409	95.2	61	42	13.5
90-91	173,103	86.5	72	2,404	13.6
91-92	47,125	23.5	30	1,571	14.6
92-93*	444,312	222.3	66	6,736	11.0
93-94*	437,867	218.9	164	2,670	12.3
94-95*	550,262	275.1	84	6,551	12.0
95-96*	710,573	355.3	134	5,303	13.8
96-97*	443,128	222.0	126	2,100	11.6
97-98*	0	0	0	0	0
Average	645,851	323	191	3,066	11.8

* Catch from Tomales Bay only, outer Bodega Bay closed to fishing.

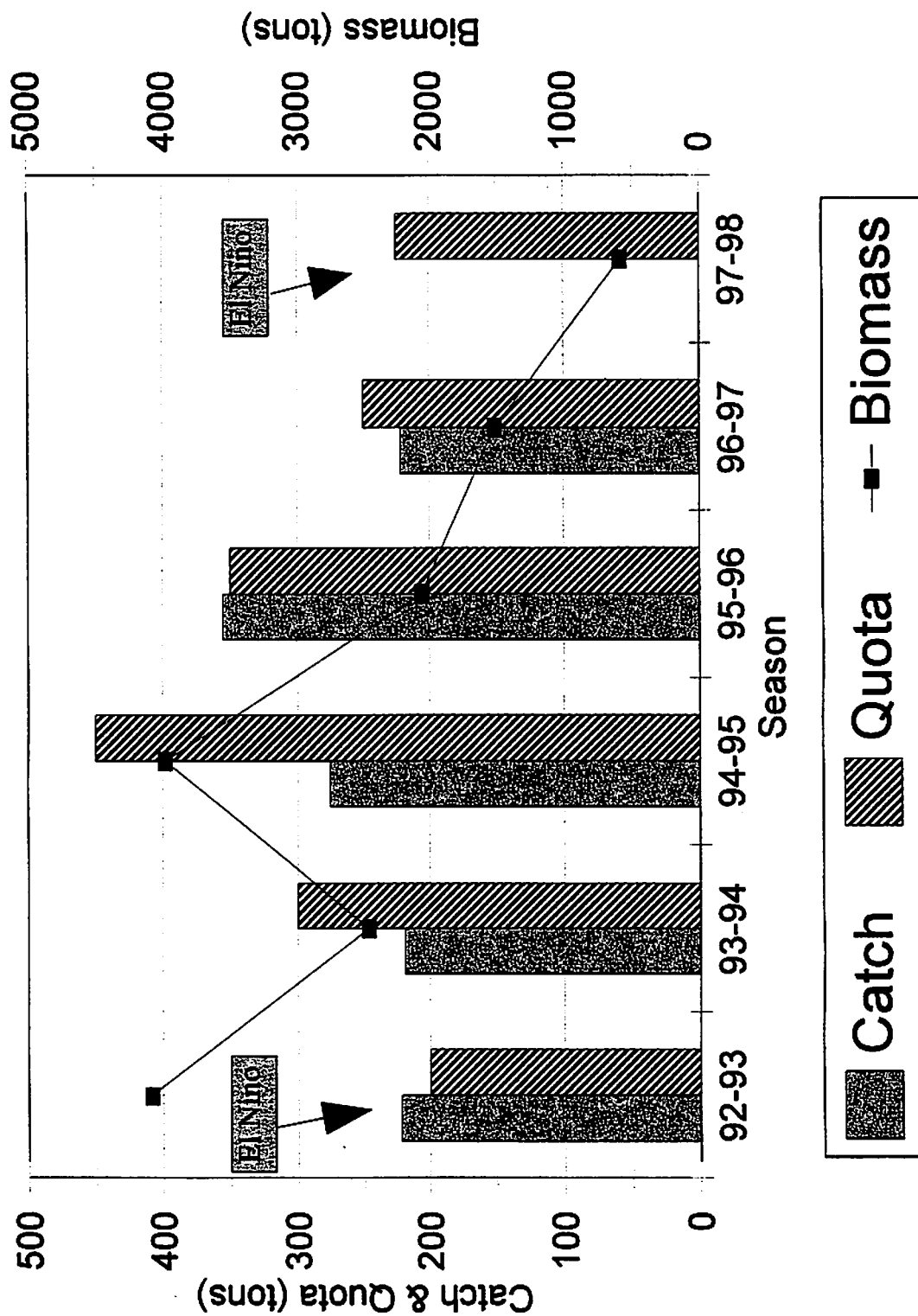
AVERAGE LENGTH OF HERRING BY SEASON (Herring 190mm and greater in length)



AVERAGE WEIGHT OF HERRING BY SEASON (Herring 190mm and greater in length)



Tomales Bay Herring Biomass, Catches and Quotas, 1992-93 to 1997-98



98-99
**Proposals for the 1997-98 Herring
Fishery in Tomales Bay**

The preliminary spawning biomass estimate of 586 tons is down 61% from last season and is below the 5-year average of 2,820 tons since the fishery re-opened in the 1992-93 season. There were no commercial herring landings for the Tomales Bay gillnet fleet. Less than half of the Tomales Bay permittees participated due to the quoted low price per ton and uncertainty over El Nino effects on fish abundance and condition.

PROPOSALS FOR THE SEASON:

QUOTA: 90 tons (15% of 1997-98 spawning biomass). However, if the spawning biomass exceeds 1,590 tons prior to February 15, the quota shall be increased as follows: 1) If the spawning biomass is more than 1,590 tons, the total take shall not exceed 190 tons; 2) If the spawning biomass is more than 2,590 tons, the total take shall not exceed 290 tons; 3) If the spawning biomass is more than 3,590 tons, the total take shall not exceed 390 tons; 4) If the spawning biomass is more than 4,590 tons, the total take shall not exceed 490 tons.

RATIONALE: A clear trend is not evident for the herring spawning biomass in Tomales Bay. Heavy rains associated with the El Nino drastically reduced bay salinities and most likely inhibited spawning. The few fish caught by commercial gear were given to the Department for research purposes. Those fish were mainly age six and older with reduced weights at length. Given the low biomass for this and the previous season, a conservative initial quota is proposed with increases if spawning biomass goals are met.

PERMITS: Two permits per vessel.

RATIONALE: Most fishermen prefer this option since it reduces the number of vessels on the bay.

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

RATIONALE: Most fishermen like this option since it reduces the amount of gear fishing at one time in the bay