SJC 12

THE PAUL F. ROMBERG TIBURON CENTER FOR ENVIRONMENTAL STUDIES

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DECEMBER 17, 1987

ENCLOSED PLEASE FIND THE ERRATA FOR "THE ROLE OF WATER DIVERSIONS IN THE DECLINE OF FISHERIES OF THE DELTA - SAN FRANCISCO BAY AND OTHER ESTUARIES" BY ROZENGURT, M., M.J. HERZ AND S. FELD, 1987.

Rozengurt, M., Herz, M.J. and Feld, S., 1987. The Role of Water Diversions in the Decline of Fisheries of the Delta-San Francisco Bay and Other Estuaries. Romberg Tiburon Center for Environmental Studies, SWRCB Bay-Delta Hearings Exhibit 20.

ERRATA

Page	Line	Says	Should read
1	21	food	food per unit volume
3	16	brackish	delete
3	21	Fisher	Fischer
6	11	e.g., 1986	e.g., as in 1986
10	15	adapted over centuries of evolution	adjusted over time
12	24	has	have
13	1	evidence	indicate
20	14	larvae	larval
25	5	As a result	delete
26	25	hectar	hectare
31	1	River and	River, and
32	5	Reservoir	Lake Millerton
32	18	Contra Costa Canal	the Contra Costa Canal
32	26	extends 48 miles from the Delta.	also supplies domestic water for the cities of Walnut Creek and Concord.
33	5	Reservoir	Reservoir west of Los Banos
33	18	Southern California.	Southern California as far as San Diego.
33	19	Lake Oroville Dam	the Oroville Dam
34	24	overall project	SWP
51	7	constitute	constitutes
61	20	recreational	party boat
63	10	"	"
63	12	1922-1943	1912-1944
64	18	recreational	party boat
66	19	"	"
72	15	recreational	party boat

81	19	one	zero
81	20	6.S	delete
81	21	0.76	0.74
81	27	0.01	0.21
88	1	(Fig.5-4)	delete
88	6	0.84	0.88
88	7	0.88	0.84
88	11	1940	1938
88	13	1956	1957
88	25	fig 5-12	figs. 5-12 & 5-10
95	18	0.82	0.81
95	19	0.55	0.54
107	4	recreational	party boat
107	5	.pa	delete
107	11	recreational	party boat
109	6	"	"
109	8	"	"
110	13	0.78	0.79
110	13	0.73	0.70
113	4	SBI	striped bass catch
117	26	recreational	party boat
119	18	0.75	0.62
119	20	0.80	0.75
119	24	0.69	0.68
120	21	recreational	party boat
120	25	recreational	party boat
121	1	"	"
121	19	"	"
123	2	"	"
123	4	"	"

124	2	"	"
124	18	"	"
124	18	0.38	0.37
124	21	recreational	party boat
129	5	half that level	half the level of
130	6	excluded	excluded (Fig. 7-5)
130	7	1927)	1927; Fig. 7-6)
130	5-9	(coefficients omitted from Table 7-2, see attached revised Table 7-2)	
130	7	0.89	0.82
134	17	recreational	party boat
135	8	"	"
140	22	"	"
141	14	"	"
141	17	"	"
141	26	"	"
142	24	8-25	18-25
143	17	spring RDO	spring RDO_3,RDO_5
143	27	recreational	party boat
145	4	"	"
145	5	"	"
146	10	"	"
147	9	recreational	party boat
Table 5-3	#4	4. Spawning area	4a. Spawning area
"	"	4. Time of spawning	4b. Time of spawning
Table 2-1		Austin and Boreman	Boreman and Austin
Table 6-1	#6	Skinner	Skinner (1962)
"	#6	Moyle	Moyle (1976)
"	#7	Skinner	Skinner (1962)
"	#9 B.	200 hrs	48 hrs
"	#9 B.	Moyle (1972)	Moyle (1976)

" #11 (In San Joaquin R)	Farley (1966)	Stevens and Miller (1983)
" #11 (In the Delta)	360-893 cfs	< 1768 cfs
" "	Chadwick et al.(1972)	Chadwick et al.(1977)
" #12	Turner & Farley (1971)	Farley (1966)
" #15	McKechnie Miller	McKechnie and Miller
Table 6-4	recreational	party boat
Fig. 2-8	Borman	Boreman
Fig. 2-11	Source omitted	Dennis, 1981
Fig. 2-12	"	"
Fig. 5-7	1915-36	1916-36
Fig. 5-11	mean spring	3-year running mean spring
Fig. 5-18	(1944-1958)	(1944-1957)
Fig. 6-1	recreational	party boat
Fig. 6-29	198	1982
Fig. 6-34	recreational	party boat
Fig. 6-35	"	"
Fig. 6-36	"	"
Fig. 6-37	"	"

The following references were inadvertedly omitted from the bibliography or incomplete:

Drinkwater, K.F. and R.A. Myers, 1987. Testing Predictions of Marine Fish and Shellfish Landings from Environmental Variables. Canadian Journal of Fisheries and Aquatic Sciences, Vol. 44, in press.

Gorelov, V.K., 1975. Survival and growth rates of the striped bass (Morone saxatilis). Transactions of the All Union Institute of Fisheries and Oceanography (VNIRO), 55:84-87.

Ricker, W.E., 1975. Computation and Interpretation of Biological Statistics of Fish Populations. Ottawa, Canada, Dept. of the Environment Fisheries and Marine Service, Bulletin 191.

Turner, J.L. and P.C. Farley, 1971. Effects of temperature, salinity, and dissolved oxygen on the survival of striped bass eggs and larvae. California Fish and Game Bulletin, 57(4):268-273.

The following pages contain corrected tables (* denotes changes) and two figures omitted from the original report (Figures 7-5 & 7-6).

Table 5-4. Some statistical data of the relationship between commercial catch of salmon in the Bay Area and the regulated Delta outflow to the San Francisco estuarine system

Fig.	Catch Period (years)	"n" running mean Delta outflow	Lag (yrs)	Equation	Parameters a	b	c	r	p
			——ANNUAL——						
5-2	1916-31	4	0	POL	- 1.62	0.23	-1.8E-3	0.55	0.05
5-3	1916-36	4	0	POL	- 1.62	0.22	-1.5E-3	0.67*	0.01
5-4	1916-36	4	1	POL	0.32	-0.02	4.9E-3	0.86	0.05
5-5	1916-31	4	1	EXP	0.29	0.09		0.78	0.01
5-6	1916-31 *	5	0 *	LOG	17.29	6.47		0.80	0.01
5-7	1916-36	5	0	LIN	2.34	0.25		0.74	0.05
—	1916-44	4	1 *	LIN	0.51	0.62		0.34	
—	1915-43	5 *	1	POL	0.18	0.04	1.5E-3	0.57	0.01
—	1944-57 *	4	0	POL	-16.17	1.86	-0.04	0.48	
—	1944-57	5	1	LIN	- 0.41	0.11		0.39	
—	1915-57	5	0	LIN	0.97	0.05		0.21	
—	1916-31	4	1	POL	2.31	0.016	4.6E-3	0.57	
—	1916-43	4	1	POL	-1.8	0.38	-5.2E-3	0.46	
—	1944-57	4	1	LIN	1.5	0.14		0.50	
5-8	1917-36 *	5	1	LIN	-3.46	0.38		0.87	0.01

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			——SPRING——						
——	1916-36	1	4	LOG	-1.87	0.95		0.56	0.05
5-10	1916-31	3	2	LIN	-1.99	1.55		0.97	0.05
5-11	1916-31	3	3	LOG *	-2.23	18.44		0.88	0.01
5-12	1944-57 *	3	3	LIN	-2.6	1.96		0.84	
5-13	1916-31	1	4	LIN	0.56	0.97		0.70	0.01
5-14	1916-31	3	2	LIN	-0.75	1.94		0.83	0.01
5-15	1917-38	3	2	LIN	-1.21	1.18		0.80	0.05
5-16	1917-57	3	2	LIN	-1.15	1.18		0.66	0.05
5-17	1916-43	3	2	POL	1.02	0.35	0.2	0.68	0.01
5-18	1944-57	3	2	LIN	0.78	1.56		0.63	0.05
5-19	1916-57	3	2	LIN	0.26	1.42		0.61	0.01
SALMON RUN									
5-22	1967/71-1977/81	5	0	EXP	3.88	0.11		0.89	0.01
5-22	1967/71-1978/82	5	0	LIN	37.32	3.68		0.75	0.05
5-23	1971-80, 82	5	1	LIN	-24.89	2.16		0.81	0.05
5-24	1967-83 (excl. 1969)	5	1	LIN	-33.57	3.08		0.54	0.05
5-25	1972-80	5	1	LIN	-24.31	2.04		0.72	0.05

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Table 6-3. Some statistical data of the relationship between Striped Bass Index and the regulated D outflow to the San Francisco estuarine system

Fig.	SBI Period (years)	"n" running mean Delta outflow	Lag (yrs)	Equation	Parameters a	Parameters b	Parameters r	p
			-----ANNUAL-----					
6-16	1967-1981	3	0	LIN	12.49	1.69	0.45	
6-17	1967-1981	4	0	LIN	-27.55	3.69	0.74	0.01
6-18	1967-1981	5	0	LIN	-47.48	4.60	0.84	0.05
6-19	1967/71-1977/81	5	0	LIN	-26.90	3.80	0.97	0.05
6-20	1959/63-1977/81	5	0	LIN	- 5.49	3.43	0.64	0.01
6-21	1959/63-1966/70	5	0	LIN	27.35	2.79	0.78	
6-22	1959/63-1978/82	5	0	LIN	- 3.64	3.23	0.58	0.05
6-23	1967-1981	5	0	LIN	-44.52	4.19	0.82	0.05
			-----SPRING-----					
6-24	1967-81 *	3	0	LOG	-56.50	36.33	0.62	0.01
6-25	1967/71-1977/81	5	0	LIN	-12.73	45.90	0.75	0.05
6-26	1959/63-1977/81	5	0	LIN	-16.18	53.33	0.82	0.05
6-27	1959/63-1978/82	5	0	LIN	- 7.98	45.85	0.68	0.01

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Table 6-4. Some statistical data of the relationship between recreational catch of striped bass and the regulated Delta outflow to the San Francisco estuarine system

Fig.	Catch Period (years)	"n" running mean Delta outflow	Lag (yrs)	Equation	Parameters a	Parameters b	Parameters r	p
			——ANNUAL——					
6-35 *	1965-1982	3	3		- 1.68	0.67	0.52	0.05
			——SPRING——					
--- *	1959-1976	3	0		18.56	13.89	0.52	0.05
6-36 *	1961-1982	3	3		- 0.99	11.33	0.61	0.01
6-37 *	1961-197? *	3	3		4.89	9.33	0.55	
--- *	1938-1944	3	3		3.66	7.86	0.37	

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Table 7-2. Some statistical data of the relationship between commercial catch of shad and the regulated Delta outflow to the San Francisco estuarine system

Fig.	Catch Period (years)	"n" running mean Delta outflow	Lag (yrs)	Equation	Parameters a	Parameters b	Parameters r	p
			-----ANNUAL-----					
7-1	1916-31 (excl. 1925, 27)	2	1	EXP	0.38	0.05	0.88	0.05
7-2	1916-43 (excl. 1925, 27)	2	1	LIN	0.05	0.07	0.61	0.01
7-3	1916-43	4	1	LIN	0.45	0.06	0.40	0.05
7-4	1916-43 (excl. 1915, 27)	4	1	LIN	0.02	0.08	0.51	0.05
			-----SPRING-----					
7-5	1916-31 (excl. 1925, 27)	2 *	1	EXP	.46	.43	0.89	0.05
7-6 *	1916-31 (excl. 1925,27)	3	1	EXP	.43	.46	0.82	
— *	1916-31 (excl. 1925,27)	4	1	EXP	.30	.07	0.74	

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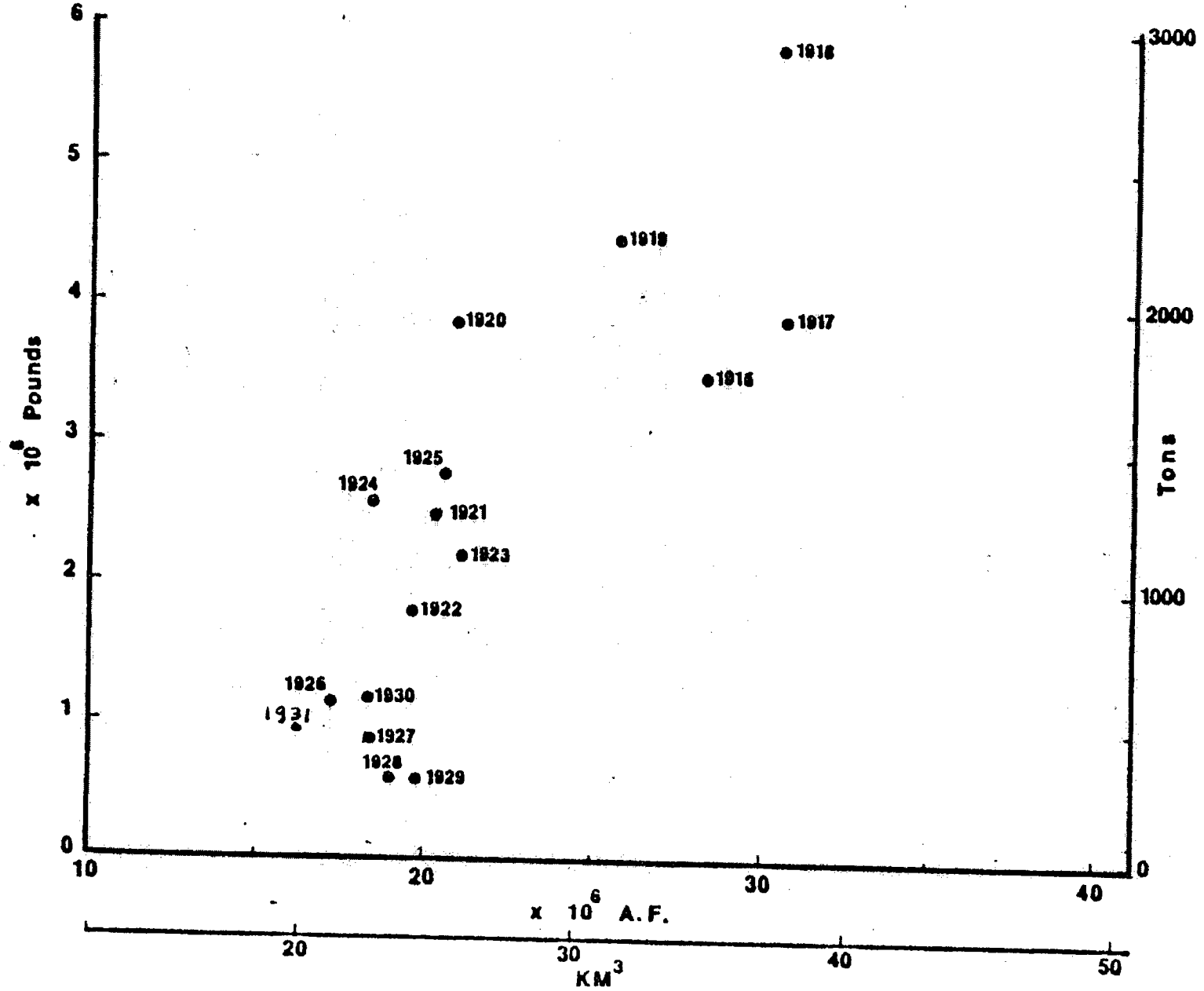

Fig. 5-6 Annual commercial salmon catch in the Sacramento and San Joaquin Rivers and upper San Francisco Bay (1916-1931) vs. 5-year running mean annual regulated Delta outflow. No lag time; e.g., salmon catch of 1918 is related to 5-year mean annual RDO for 1914-18

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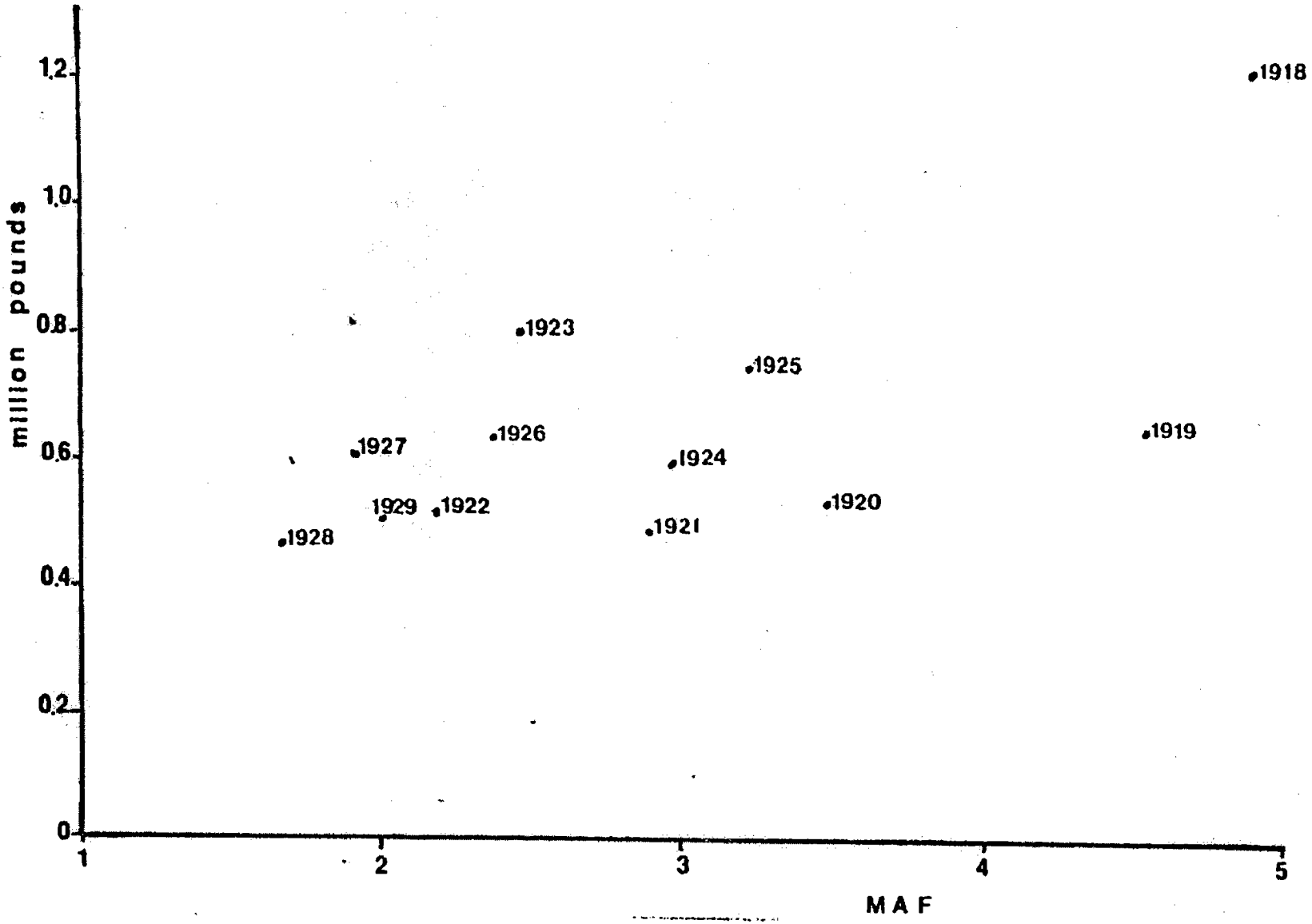

Fig. 6-5 Annual commercial striped bass catch in the Sacramento and San Joaquin Rivers and upper San Francisco Bay (1918-1929, Dept. Public Works data) vs. 3-year running mean spring regulated Delta outflow. Catch is lagged by two years; e.g., catch for 1918 is related to mean spring RDO of 1914-16.

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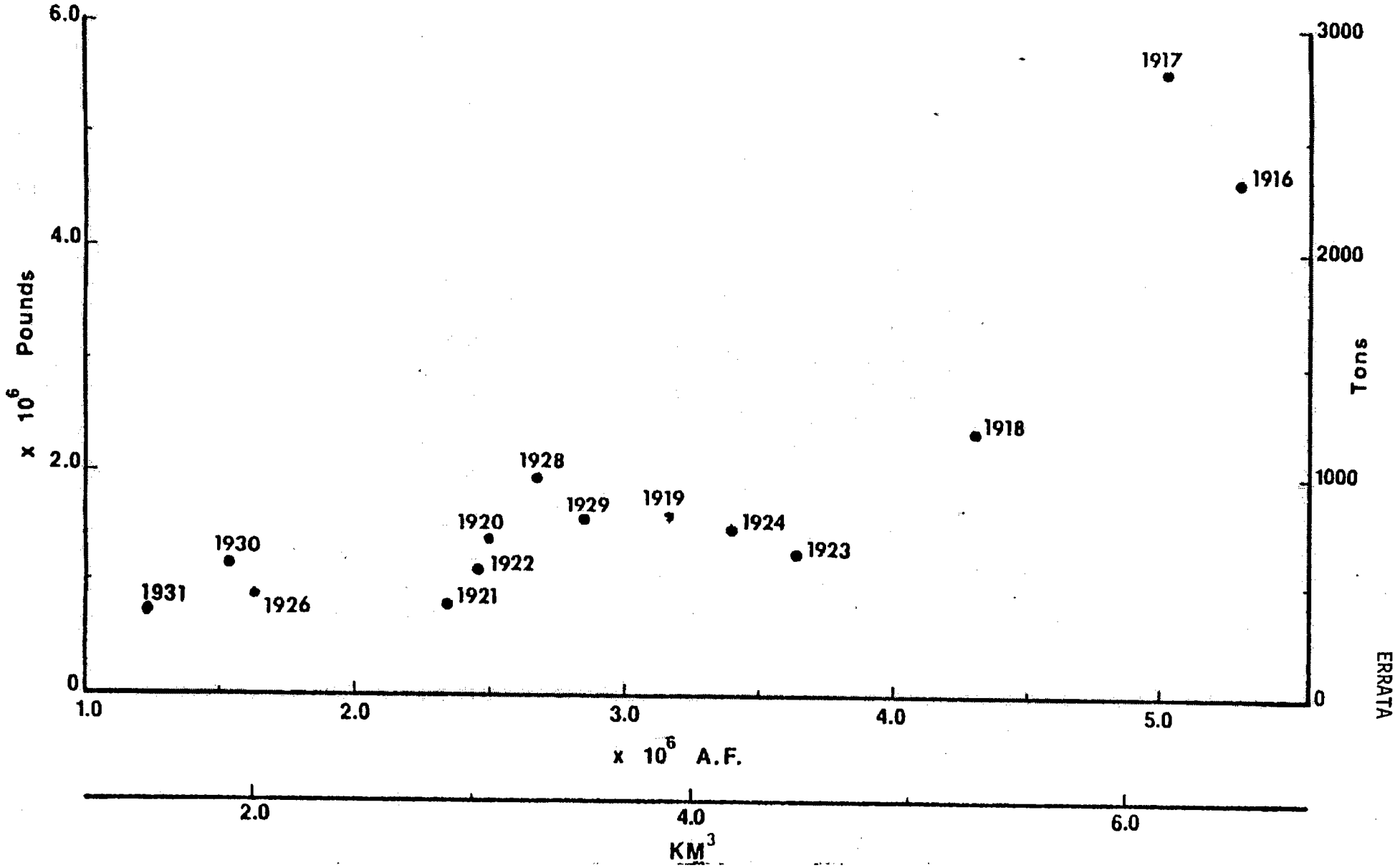

Fig. 7-5 Annual shad catch in the San Francisco Bay for the period 1916-1931 (except 1925, 27) vs. two-year running mean spring regulated Delta outflow. The catch is lagged by one year; e.g., shad catch of 1916 is related to mean spring RDO of 1914-15

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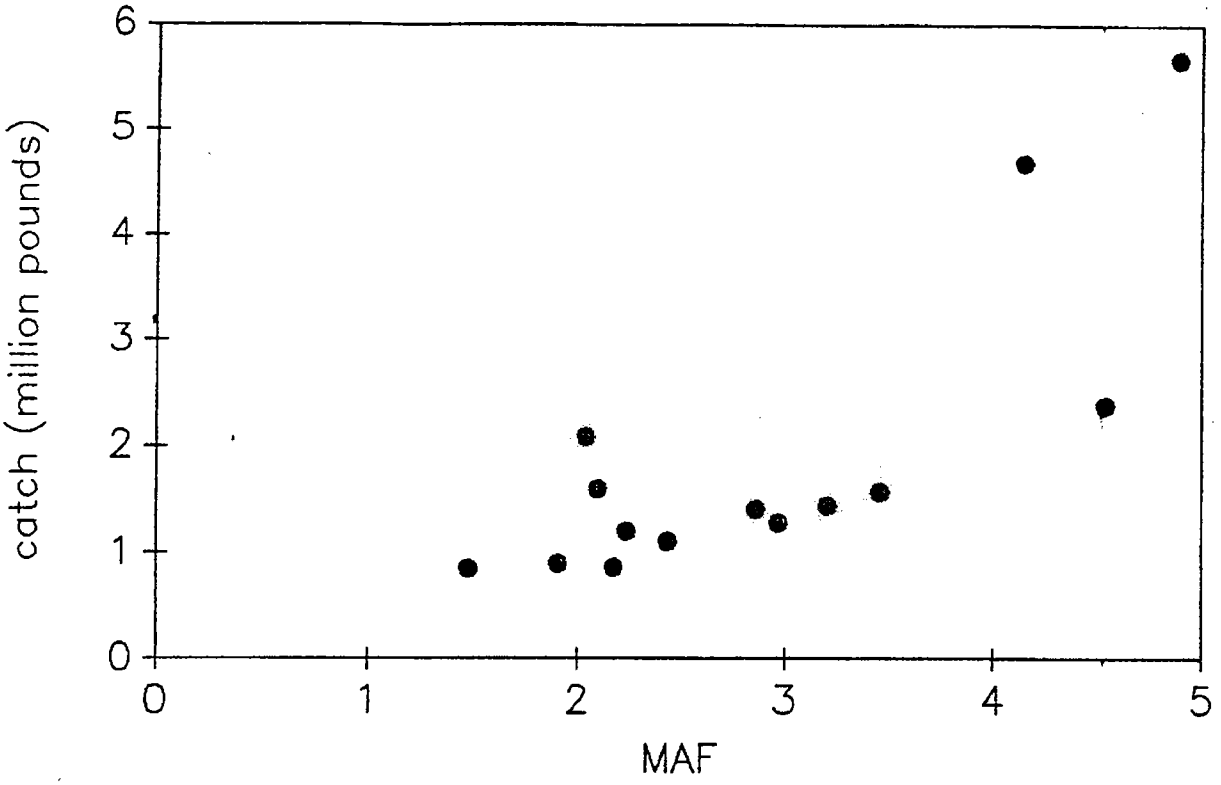

Fig. 7-6 Annual shad catch in the San Francisco Bay for the period 1916-1931 (except 1925, 27) vs. 3-year running mean spring regulated Delta outflow. The catch is lagged by one year; e.g., shad catch of 1916 is related to mean spring RDO of 1913-15