

Chapter 3  
ECONOMICS AND RECREATIONAL BOATING ON SAN FRANCISCO BAY

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Introduction

San Francisco Bay offers many benefits to its millions of Bay Area residents and visiting tourists. These benefits include boating, fishing, shipping, transportation and waste disposal, to name just a few. My concern for the Bay is the massive diversion of water from the San Francisco Bay and Delta Region to southern and central California resulting from the State Water Project and the federal Central Valley Project. It is estimated that approximately 5.3 million acre-feet of water were diverted in 1978 and it is projected that by the year 2000, approximately 8.4 million acre-feet of water needs to be re-routed (Graff, 1982). The main hazard of this tremendous diversion of water is that the increasing salinity of Bay waters is harmful to agricultural, municipal, industrial, recreational, fish and wildlife uses.

Economics has a huge influence in our society. Urban developers in southern California and farmers in central California have been able to make a strong economic case for their water needs, while northern Californians have been largely unable to counter with a comparable economic argument for retaining their water.

This is a preliminary study which analyzes the economics of one aspect of recreational boating - the total slip rental revenue of marinas in the San Francisco Bay Area. The purpose of my study is to assess the importance of one sector of the Bay economy as a contribution to an eventual determination of the larger overall value of the Bay. It is hoped that the public will recognize the economic importance of protecting the Bay from misuse and therefore preserving it for present and future generations.

Past Studies

Since the economic value of recreational boating on San Francisco Bay has not been quantified before, there is a minimal amount of literature on the subject. One relevant past study is an unpublished report by Williams, Kuebelbeck & Associates, Inc. (1977) which analyzes the economic impact of boating on the state's economy. It also includes case studies of the economic impact of Oyster Point Marina and Berkeley Marina.

Methodology

The San Francisco Bay Area encompasses nine counties - Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma. However, data for Napa were not available.

Therefore, although the San Francisco Bay Area generally includes Napa County within its definition, my study excludes Napa County.

My original plan to determine the total slip rental revenue was to do a telephone survey of major marinas in the San Francisco Bay Area. Harbor masters are the most well-informed, but to my dismay, I found them extremely difficult to contact. Thus, I generally spoke with staff members. This presented three problems: lack of willingness ("I don't have time to talk to you."), lack of ability ("I'm not able to disclose such information."), and lack of knowledge ("I don't know."). In my second attempt, I narrowed my survey to three questions. However, a general lack of knowledge still prevailed so that the responses were not reliable.

I was fortunate to discover a data collecting agency for boating and boating-related matters. The owner, William B. Kirkland, Jr., had tried a telephone and mail survey of marinas in the San Francisco Bay Area. He found the information undependable. Therefore, he chose to gain the information through aerial surveys, even though aerial surveys are more expensive than telephone or mail surveys. Briefly, the aerial survey involved hiring a pilot to fly over marinas in the Bay Area and then photographs of the marinas were taken. Data were obtained by analyzing these photographs. Aerial surveys have become an important tool for more accurate data gathering

The following formula can be applied to calculate the 1982 slip rental revenue for each county:

$$CREV = (\#SLIP)(LENGTH)(RATE)(12mo/yr)$$

where

CREV = total slip revenue for county  
#SLIP = total number of slips  
LENGTH = average slip length  
RATE = average slip rate per month  
12 mo/yr = conversion factor for an annual total

Then summing each county's CREV will provide the total slip rental revenue of marinas in the San Francisco Bay Area (TREV).

#### Data

The first step is to determine the number of marinas with berthing facilities in the San Francisco Bay Area. Table 1 is a summary of existing boating facilities of the San Francisco existing boating facilities of the San Francisco Bay Area. The State Department of Boating and Waterways (formerly the Department of Navigation and Ocean Development) periodically publishes this information. The State Department of Boating and Waterways is currently gathering data for its next edition, which it anticipates to be published by June 1986. Although there is an updated 1977 edition, Table 1 is from the

1970 edition because the 1977 edition applies different boundaries for Contra Costa and San Mateo counties than the information from William B. Kirkland, Jr.

Table 1  
EXISTING BOATING FACILITIES, 1970

<u>County</u>	<u>Total Installations</u>	<u>w/Berthing</u>	<u>Berths</u>
Alameda	32	23	5059
Contra Costa	67	60	3225
Marin	39	28	2892
San Francisco	11	8	1548
San Mateo	10	9	1285
Santa Clara	11	4	322
Solano	30	22	1112
Sonoma	10	2	208
Total	224	167	15652

Source: California Department of Navigation and Ocean Development, 1970.

The data presented in Table 2 is a summary of the preliminary data from William B. Kirkland, Jr.'s aerial survey. Terminology is as defined in the methodology section.

Table 2  
SUMMARY OF BOAT SLIP SIZES AND RATES, 1982

<u>County</u>	<u>#SLIP</u>	<u>LENGTH (FT.)</u>	<u>RATE (\$)</u>
Alameda	5438	32.1	3.58
Contra Costa	2274	31.5	3.13
Marin	3844	33.1	4.00
San Francisco	1328	35.5	3.88
San Mateo	2076	33.3	2.98
Santa Clara	200	29.6	1.50
Solano	1112	31.3	2.63
Sonoma	297	33.4	*3.09
Total	16569	32.5	3.09

Source: William B. Kirkland, Jr., 1982.  
\*RATE for Sonoma county not available; assumed average rate of other seven counties.

Comparison of Tables 1 and 2 demonstrates that the preliminary data is in relatively good agreement with data from the Department of Navigation and Ocean Development. The increased number of slips (16,569 from 15,652) results from extensions of existing marinas or construction of new marinas between 1970 and 1982.

Table 3 sets forth the results of applying the formula:

$$CREV = (\#SLIP)(LENGTH)(RATE)(12 \text{ mo/yr})$$

Table 3

REVENUES OF MARINAS FROM SLIP RENTALS

<u>County</u>	<u>CREV (\$/yr)</u>
Alameda	7,500,000
Contra Costa	2,700,000
Marin	6,100,000
San Francisco	2,200,000
San Mateo	2,500,000
Santa Clara	110,000
Solano	1,100,000
Sonoma	370,000
TREV	22,600,000

The total slip rental revenue of marinas in the San Francisco Bay Area is \$22,600,000 for 1982. The case studies of the Berkeley and Oyster Point marinas from Williams, Kuebelbeck & Associates, Inc. (1977) indicate that slip rentals comprised 61% and 75% of total revenues of those marinas, respectively. Therefore, it seems that one can assume that marina slip rentals make up approximately 70 percent of the total revenue generated by marinas. Thus, the total revenue generated by marinas in the San Francisco Bay Area is about \$30,000,000 for 1982

Net revenue is total expenditures such as wages, purchases, and maintenance subtracted from total revenue. Since data could not be obtained for total expenditures, net revenue can be estimated to be ten percent of total revenue. This is probably a valid assumption because rational 1982 investors would not invest in marinas unless their investment could make at least money market rates of ten percent. Thus, net revenue is:

$$(0.10)(30,000,000) = \$3,000,000$$

This net revenue is the profit to marinas which is an indication of the economic value of recreational boating.

Discussion

There are various problems with this final calculation of the net revenue of marinas in the San Francisco Bay Area. First, Napa County values are not included in the total slip rental revenue of marinas in the San Francisco Bay Area (TREV). Second, in determining TREV, it is assumed that there are no vacancies. This is obviously not the case. However, a telephone survey of each county's two marinas with the greatest number of slips indicates that vacancy, although not full year round, is full the majority of the year. Third, 1982 data are used. Licenses for additional slips have been approved since 1982. However, I could not obtain exact numbers from BCDC, the licensing agency. And inflation has caused slip rental rates to increase. Finally, it may be unrealistic to assume that 75 percent of the

total revenue generated by marinas in the San Francisco Bay Area consists of slip rentals and that net revenue is ten percent of total revenue. The overall effect of these various factors is that the net revenue of marinas in the San Francisco Bay Area is underestimated.

#### Conclusion/Recommendations

San Francisco Bay is a very valuable resource, and human activities, such as the substantial re-direction of water, affect the Bay. Continued misuse can lead to long-term, irreversible damage. If increased human interference perseveres, then additional human maintenance is required to ensure the water quality of the Bay.

To date, there are very few economic studies on San Francisco Bay; the fishing industry may be the most studied aspect of the Bay-related economy (see Jennifer Cohen's report, this volume). Future knowledgeable decision-making requires that more attention be focused on economic studies of Bay resources. Future boating studies would require development of guidelines for the gathering of boating and boating-related data, and a more extensive collection of boating and boating-related information.

#### REFERENCES CITED

- California Department of Navigation and Ocean Development, 1973. Boat Resources Development Planning Study, October, 1973, Final Report, 250pp.
- Graff, Thomas J., 1982. Increased diversions from the Sacramento - San Joaquin Delta/San Francisco Bay system: a prescription for environmental disaster. In San Francisco Bay: use and protection, W. Kockelman, T. Conomos, A. Leviton, eds., Pacific Division of the American Association for the Advancement of Science, San Francisco, California, pp. 197-200.
- Kirkland, William B., Jr., Civil Engineer, 200 Santa Clara Avenue, Alameda, California 94501. Personal communication, March 1986.
- \_\_\_\_\_, 1982. Unpublished preliminary data on Bay Area marinas. Available at Bay Conservation and Development Commission, 30 Van Ness Avenue, San Francisco, California 94102.
- Williams, Kuebelbeck & Associates, Inc., 1977. Marina management study, Volume 2, The economic impact of the boating industry and marinas in the State of California. Unpublished report for the State of California, Resources Agency, Department of Navigation and Ocean Development, 131pp.