BENTHIC MACROFAUNA AND ANCILLARY DATA FOR SAN FRANCISCO BAY, CALIFORNIA, JANUARY TO NOVEMBER 1988

By *Laurence E. Schemel, Allan Y. Ota, Jerry G. Harmon, Johnevan M. Shay,* and *Richard M. Adorador*

U.S. GEOLOGICAL SURVEY

Open-File Report 89-596

Prepared in cooperation with the
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

3019-48

Sacramento, California
1990

DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., *Secretary*

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, *Director*

For additional information write to:

District Chief
U.S. Geological Survey
Federal Building, Room W-2234
2800 Cottage Way
Sacramento, CA 95825

Copies of this report may be purchased from:

U.S. Geological Survey
Books and Open-File Reports Section
Box 25425
Building 810, Federal Center
Denver, CO 80225

CONTENTS

ILLUSTRATION

TABLES

CONVERSION FACTORS

Metric units are used in this report. For readers who prefer inch-pound units, the conversion factors for the terms used in this report are listed below.

Multiply	By	To obtain
cm (centimeter)	0.3937	inch
km (kilometer)	0.6214	mile
m (meter)	3.281	foot
m^2 (square meter)	10.76	square foot
mm (millimeter)	0.03937	inch

TRADE NAMES

The use of brand or trade names in this report is for identification purposes and does not imply endorsement by the U.S. Geological Survey.

BENTHIC MACROFAUNA AND ANCILLARY DATA FOR SAN FRANCISCO BAY, CALIFORNIA, JANUARY TO NOVEMBER 1988

By *Laurence E. Schemel, Allan Y. Ota, Jerry G. Harmon, Johnevan M. Shay,* and *Richard M. Adorador*

ABSTRACT

Benthic macrofauna and ancillary data were collected during 1988 as part of the U.S. Geological Survey Regional Effects Monitoring Program in San Francisco Bay, California. Data were collected during six cruises at 2-month intervals from January to November. Benthic macrofauna for identification and counting of species and sediments for size analysis were collected at eight stations. Temperature, salinity, and concentrations of dissolved oxygen and suspended sediment were measured at 12 stations. Salinity was measured at three stations that coincided with continuous monitoring stations.

The percentage of benthic macrofauna specimens that could be identified to the species level varied among sampling stations. Based on annual averages at each station, this percentage ranged from 60 to 95 percent. Three or fewer species represented from 25 to 75 percent of the total number of specimens at all stations. This percentage changed over time, as did the species. The annual average number of species per sample ranged from 4 to 21. Stations in the southern bay were typically higher in number of species and number of specimens per sample than those in the northern bay. The newly introduced species of clam, *Potamocorbula amurensis*, persisted as an abundant species in the northern bay, and became more abundant at all stations in the southern bay except one.

INTRODUCTION

The U.S. Geological Survey began regular data collection for the Regional Effects Monitoring Program in 1987 and continued data collection for this program through 1988. The program was done in cooperation with the California State Water Resources Control Board, which developed the program as part of a plan for assessing effects of pollutants on the biological resources of San Francisco Bay. The major objective of the program is to detect long-term trends in selected biological and chemical properties by establishing a consistent and reliable data base. Data collected during the first few years will help evaluate variability caused by natural factors. This is necessary in order to identify long-term trends. This report presents data from the second year of the program.

Data collection during 1988 was limited to the benthic macrofauna and ancillary data components of the program. Measurements included in the ancillary data component were selected to characterize major changes in the physical and chemical environment that affect benthic macrofauna. Fifteen stations were sampled at 2-month intervals from January through November (table 1, fig. 1). Ancillary data, which consisted of measurements of salinity, temperature, and concentrations of dissolved oxygen and suspended particulate matter, were collected at 12 stations. These included the eight stations where samples were collected for benthic macrofauna and sediment grain-size analysis. Salinity was measured at three additional stations (stations 3, 7, and 9), where it is monitored continuously.

Table 1.— *Regional Effects Monitoring Program stations*

[Ancillary data were collected at all stations. An asterisk (*) indicates stations where benthic macrofauna and sediment data also were collected]

Station No. (fig. 1)	Station name	Latitude north	Longitude west
*1	Palo Alto	37°27.80'	122°04.90'
2	Redwood Creek	37°33.25'	122°11.44'
3	San Mateo Bridge	37°35.00'	122°22.00'
*4	Coyote Point	37°36.30'	122°18.65
*5	South Bay Deep	37°41.20'	122°19.28'
*6	San Leandro	37°39.57'	122°14.17'
7	Bay Bridge	37°47.50'	122°23.00'
*8	Berkeley	37°52.43'	122°21.20'
9	Point San Pablo	37°57.87'	122°25.72'
*10	San Pablo Shallow	38°03.75'	122°24.40'
*11	San Pablo Deep	38°02.67'	122°18.93'
12	Suisun Bay	38°03.12'	122°06.63'
*13	Grizzly Bay	38°06.97'	122°02.33'
14	Honker Bay	38°03.80'	121°58.00'
15	Chipps Island	38°02.80'	121°55.00'

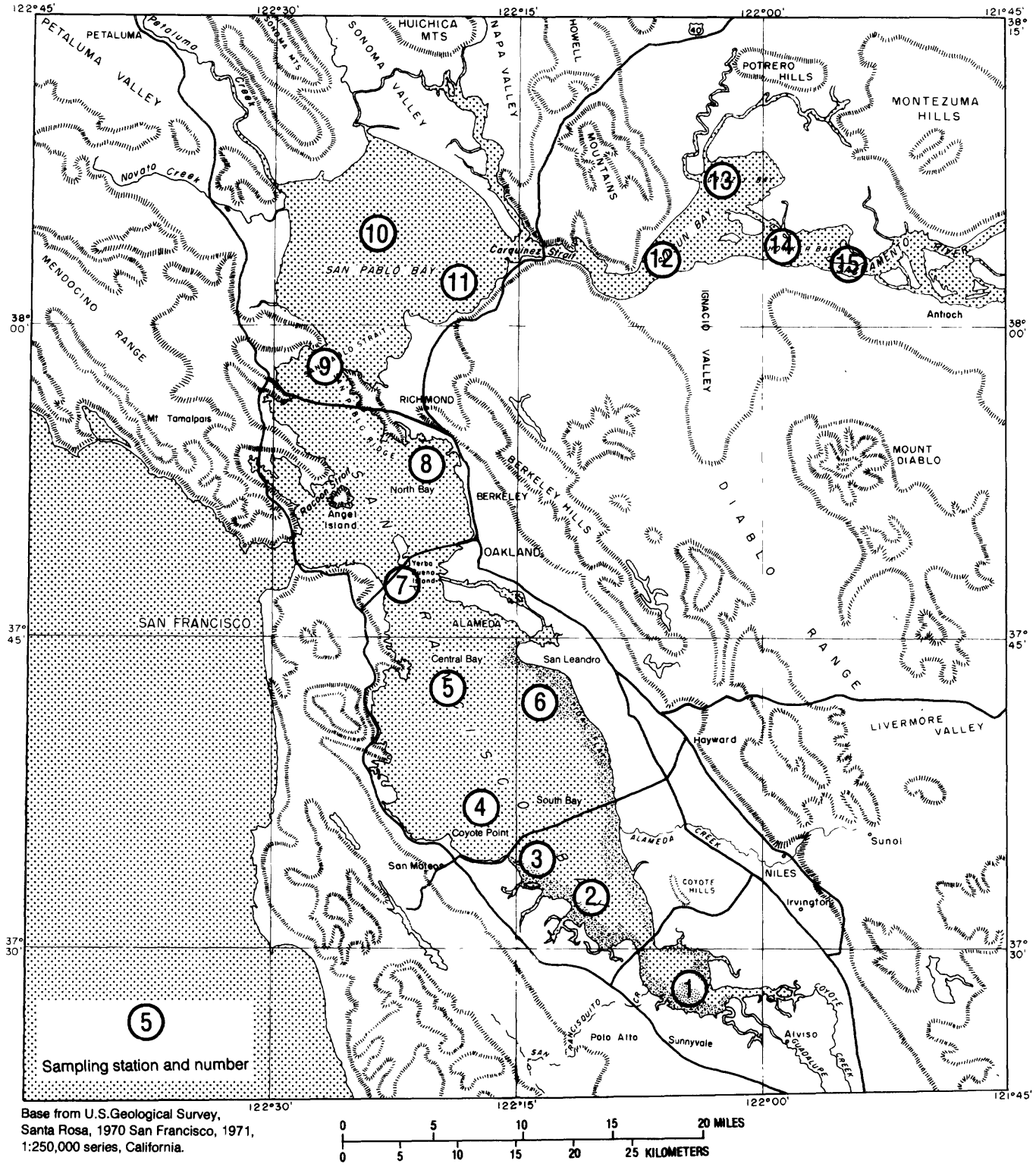

Figure 1.—Location of sampling stations in the Regional Effects Monitoring Program.

Benthic Macrofauna Stations

Palo Alto (Station 1) is in shallow water on the west side of southern San Francisco Bay, south of the Dumbarton Bridge in a large area that appears relatively uniform in the type of substrate. This station is about 1.5 km east of a transect of three intertidal stations that were studied by the U.S. Geological Survey for changes in benthic macrofauna community structure for about 14 years (Nichols and Thompson, 1985a).

Coyote Point (Station 4) is in shallow water on the west side of the deep channel in southern San Francisco Bay, north of the San Mateo Bridge. The National Oceanic and Atmospheric Administration Status and Trends program occupies a station annually that is north of this station near Hunters Point.

South Bay Deep (Station 5) is in deep water east of the dredged channel in southern San Francisco Bay. This station is about 2.7 km west of a major municipal waste outfall. Finding a suitable location for a deep water station in the southern bay is difficult because of dredging, locations of pipelines and anchorages, and major municipal waste outfalls.

San Leandro (Station 6) is in shallow water on the east side of southern San Francisco Bay, north of the San Mateo Bridge. This station is in a large area of shell debris, and replicate samples exhibit greater variability in substrate type than at most other stations. For example, some samples show exposed shell debris, whereas others are primarily mud.

Berkeley (Station 8) is in a broad, relatively uniform area in central San Francisco Bay, west of Berkeley. This station is southeast of a Status and Trends station in the area of the Southampton Shoal channel, and is north of a Mussel Watch station and a major municipal waste outfall. This station represents the most typically marine environment sampled by the program.

San Pablo Shallow (Station 10) is in a broad, relatively uniform area in shallow water on the west side of the deep channel in San Pablo Bay. It is north of a deeper water station that was sampled by the National Oceanic and Atmospheric Administration in their Triad studies.

San Pablo Deep (Station 11) is on the east side of the deep channel west of the Status and Trends station. This deep water station in San Pablo Bay typically exhibited variability in substrate type and the presence of unconsolidated debris. In spite of these problems, this station was sampled during 1988 so that the persistence of the newly introduced clam, *Potamocorbula amurensis*, could be monitored.

Grizzly Bay (Station 13) is adjacent to a station that has been sampled monthly since 1980 by the California Department of Water Resources as part of D1485 monitoring. Grizzly Bay provides overlap between the two programs. The Department of Water Resources program extends landward to locations in the delta of the Sacramento and San Joaquin Rivers.

Acknowledgments

The authors wish to thank Brian T. Yost for assistance with data collection and processing and Janet K. Thompson and Frederic H. Nichols for much helpful advice and assistance with quality control of the benthic macrofauna data.

STUDY DESIGN AND METHODS

Samples for benthic macrofauna and ancillary data were collected during six cruises on the U.S. Geological Survey Research Vessel, R/V *Saul E. Rantz* (table 2). The dates of the sampling cruises were selected to fall within the neap tides of the month. At these times when tidal currents were weak, the wire angle was nearly vertical, the benthic sampler landed squarely on the substrate, and the area that was sampled varied little among the replicates. Weather was a major factor, particularly wind, which created swells, and consequently boat motion during sampling. Under these conditions, the sampler could not penetrate the substrate or operate correctly. Consequently, no samples could be collected until the wind subsided.

Table 2.—*Cruise names and dates, 1988*

Cruise name	Sampling dates
JAN88	January 11-14
MAR88	March 7, 8, 14, 15
MAY88	May 23, 24, 25, 26, 31
JUL88	July 20, 21, 25, 26, 27, 28
SEP88	September 12-14, 15
NOV88	October 31 - November 2, 3

Samples were usually collected at stations 12 through 15 on the first day, at stations 7 through 11 on the second day, at stations 2 through 6 on the third day, and at station 1 on the fourth day. Exact locations of the stations were selected so that they could be relocated easily by the use of radar and navigational aids. Station locations were confirmed by loran c.

Benthic macrofauna were collected with a modified Van Veen, which sampled an area of 0.05 m^2. Depth of penetration of the sampler varied with substrate type. Soft substrates were sampled to a depth of 15 to 18 cm, whereas penetration of hard substrates was often limited to 7 to 10 cm. Six samples were collected at each station; five were for benthic macrofauna analysis and one was for sediment grain-size analysis. The sample for grain-size analysis was subsampled from the consolidated sediment just below the surface layer but above the redox discontinuity.

Benthic macrofauna samples were washed on a 0.5-mm mesh screen to remove the fine sediment. Macrofauna and debris were transferred to plastic jars, where organisms were relaxed with propylene phenoxytol, then preserved in a buffered formalin solution (10 percent). After 4 to 7 days, samples were washed to remove the formalin solution, then transferred to a 70 percent solution of ethyl alcohol.

Water samples were collected at eight stations where samples for benthic macrofauna were collected and at seven additional stations. The seven additional stations enabled better characterization of the salinity field and chemical-physical environment of the estuary. Three of these additional stations (3, 7, and 9) were at locations where temperature and specific conductance were monitored continuously. These monitors were installed by the California Department of Water Resources and are now operated by the U.S. Geological Survey. Samples collected at these stations during the Regional Effects Monitoring cruises provided a link between Regional Effects Monitoring data and data from the monitors. Data from the monitors are needed to evaluate changes in the environment of the estuary between Regional Effects Monitoring cruises.

Samples for salinity analysis were collected at the three locations with continuous monitors. Samples were collected at the remaining 12 stations as part of the ancillary-data collection. Near-surface water (1 m) was sampled with a Niskin Bottle from which two dissolved-oxygen samples, one salinity sample, and a sample for suspended particulate matter were drawn. When water depths exceeded about 3 m, a deeper water sample, about 1 m above the bottom, was collected in an identical manner.

Samples for dissolved oxygen were collected in glass-stoppered iodine flasks, immediately preserved with 1-mL aliquots of manganous sulfate reagent and alkaline iodide-azide reagent, then shaken. Samples were kept cool and out of direct sunlight. A small quantity of distilled water was placed in the flange of each flask to ensure the seal of the ground glass stopper. Laboratory and field tests indicated that the titration of the dissolved- oxygen samples could be delayed for at least 1 week when the above procedures were followed.

Salinity was determined with a high precision laboratory salinometer calibrated with standard seawater. Salinity was reported without the traditional units, in accordance with the practical salinity scale of 1978 (Lewis, 1980). Dissolved oxygen was determined by the Winkler titration method (azide modification; American Public Health Association, 1985). Suspended particulate matter in a known volume of sample was collected on a tared membrane filter, dried, and weighed to determine the concentration. Sediment samples were analyzed for grain size by the wet-sieve and hydrometer method (Guy, 1969).

Kinnetic Laboratories, Inc. of Carlsbad, California, was contracted to provide identifications and counts of macrofaunal species. Identifications were made to the species level or the lowest possible taxon. U.S. Geological Survey experts in the field of benthic ecology, Janet Thompson and Frederic Nichols, provided a final check on the quality of the benthic macrofauna data.

BENTHIC MACROFAUNA AND ANCILLARY DATA

Identifications of benthic macrofauna to the lowest possible taxon, usually genus and species, are shown in table 3. Table 4 is a summary of these data showing the numbers of taxanomic entries, species, and individuals for each replicate, station, and date. Ancillary data are presented in table 5, and sediment grain-size data are presented in table 6.

Species and Numbers Data

The data presented in table 3 can be summarized by various biological indexes. The number of species and the number of individuals within each species are key biological properties that commonly are used in the calculation of indexes, such as diversity indexes, which summarize the community characteristics. Selection and use of indexes to summarize benthic macrofauna data is a subject of controversy among ecologists, but they generally agree on the need for sample replication to provide results that are statistically valid (Green, 1979). In this study, a level of replication was selected that, based on the experiences of previous investigators, should collect most of the species and provide sufficiently accurate estimates of their abundances.

Five replicates were collected at each station, but on two occasions only four of the replicates passed our quality control (see table 3). The cumulative number of species collected with respect to the number of replicates is shown for each station and sampling cruise in table 7. Almost all species that were abundant in high or moderate densities (numbers per unit area) were present in all five replicates. When specimens of a species were collected only in the fourth or fifth replicate or both, density of that species was typically low (only one or two individuals from all five replicates). Only 3 of the 183 species that were collected only in the fourth or fifth replicate or both had densities equal to or exceeding an average of one specimen per replicate. Relative to the total numbers of species collected in all five replicates, an average of about 80 percent were collected by the third replicate and about 90 percent were collected by the fourth replicate at all of the stations. The percentages were highest at Palo Alto, where an average of 95 percent of the species were collected by the third replicate, and they were lowest at San Pablo Deep, where an average of 74 percent of the species were collected by the third replicate and 85 percent by the fourth replicate.

Identification of benthic macrofauna to the species level is necessary for the characterization of the community structure and for the calculation of some indexes. For various reasons, some individuals will not be identified to the species level. The percentage of the total individuals that was represented by specimens that were identified to the species level varied greatly among stations in this study. On the average, about 95 percent of the individuals could be identified to the species level at Palo Alto. This percentage was about 90 percent at Coyote Point, about 80 percent at South Bay Deep, about 70 percent at San Leandro, and about 60 percent at Berkeley. In the northern bay, the greatest percentage of individuals usually were identified to the species level at Grizzly Bay (about 95 percent), followed by about 90 percent at San Pablo Shallow and about 80 percent at San Pablo Deep. In most specimens, lower percentages were the result of moderate to high numbers of oligochaetes or nematodes, or both, and other organisms including an unidentified *authozoan* at South Bay Deep and *Phoronsis* sp(p) at Berkeley.

In general, the abundances of one or two species (dominant species) represented a large percentage of the total number of individuals, followed by as much as three or four species with abundances of one-half or less those of the dominant species. The percentage of the total abundance represented by the dominant species varied with time, as did the species that were dominant. Fifty to more than 75 percent of the individuals at Palo Alto were represented by two species, *Gemma gemma* and *Ampelisca abdita.* One-half of the individuals at Coyote Point and South Bay Deep were represented by two crustaceans, *Ampelisca abdita* and *Corophium* sp(a), and two polychaetes, *Exogone lourei* and *Asychis elongata.* On most dates, one of these species represented 25 to 50 percent of the individuals. At San Leandro, 25 percent of the individuals were represented by the mollusk, *Musculista senhousia,* or the crustacean, *Ampelisca abdita.* In general, Berkeley exhibited a large number of species with relatively low densities (see below). However, a single crustacean, *Ampelisca abdita* or *Corophium* sp(a), represented more than one-half of the individuals during three of the six sampling times. Fifty to more than 75 percent of the individuals at San Pablo Deep were represented by the newly introduced species of mollusk, *Potamocorbula amurensis*, or the crustacean, *Corophium* sp(a). About 50 percent of the individuals at San Pablo Shallow were represented by *Ampelisca abdita* during three sampling times and by the newly introduced mollusk, *Potamocorbula amurensis*, during May, July, and September. *Potamocorbula amurensis* represented more than 75 percent of the individuals at Grizzly Bay during all sampling dates.

Differences in the mean numbers of species and the mean numbers of individuals were observed among the stations. These differences were generally consistent over time, so the following discussion was based on annual means for numbers of species and individuals per sample. Lowest numbers of species (4 to 6) were observed at Grizzly Bay and at San Pablo Deep. Moderate numbers of species (12 to 15) were observed at Berkeley, San Pablo Shallow, and San Leandro. High numbers of species (18 to 21) were observed at Coyote Point, Palo Alto, and South Bay Deep. Palo Alto exhibited the greatest number of individuals, more than a factor of three higher than the next highest stations, Coyote Point, San Leandro, and San Pablo Shallow. Lowest numbers of individuals were observed at San Pablo Deep, followed by Grizzly Bay, Berkeley, and South Bay Deep. The mean number of individuals at South Bay Deep was about one-half that at San Leandro or Coyote Point.

Differences in the numbers of species and numbers of individuals among the replicates are expressed here as the coefficient of variation, the standard deviation divided by the mean. The values were averaged for the six sampling dates to provide a mean coefficient of variation for comparisons among stations. Mean coefficient of variation for species was lower than mean coefficient of variation for individuals at all stations. The lowest mean coefficient of variation for species and individuals were observed in the southern bay at Palo Alto (0.10 and 0.17, respectively), and in the northern bay at San Pablo Shallow (0.12 and 0.24, respectively). Low values also were typical at Coyote Point, Grizzly Bay, and South Bay Deep. The highest mean coefficient of variation for species was at San Pablo Deep (0.41), and highest mean coefficient of variation for individuals was at Berkeley (0.70). Coefficients of variation among replicates were consistently high for these two stations, although one or two outlier values were often the cause of a high coefficient of variation at any one sampling time.

A major goal of the Regional Effects Monitoring program is the detection of long-term trends in the abundances and community structures of the benthic macrofauna. Analysis of the data for trends is not possible at this time. Data from many years are required to distinguish trends, primarily because natural variability results from annual and semiannual cycles of climate and reproduction (Nichols and Pamatmat, 1988).

Ancillary Data

Ancillary data collected with the benthic macrofauna samples characterize changes in environmental conditions in the estuary. Northern California experienced a second consecutive year of less-than-normal rainfall during 1988. Rainfall is seasonal in northern California, with most occurring from late autumn through early spring. Inflow of fresh water from runoff is a major factor affecting salinity in San Francisco Bay (Dedini and others, 1981). Dilution by freshwater inflow generally results in lower than average salinities through about May or June. Effects of freshwater inflow on salinity vary with location in the estuary. The upper reaches of northern San Francisco Bay, including Grizzly Bay, are most affected by seasonal variations in freshwater inflow from the Sacramento River and San Joaquin River. Similarly, salinity at Palo Alto can be greatly reduced by runoff from local streams.

Salinities measured at Grizzly Bay and Palo Alto during the winter and spring of 1988 were greater than values measured during 1980, a year with a normal amount of freshwater inflow (Dedini and others, 1981). The effect of low levels of freshwater inflow on salinity was greater at Grizzly Bay, where values ranged from 4.1 in January to 12.5 in July 1988. In contrast, salinities were less than 1 from January through May 1980, then reached a maximum value of about 7.6 during September (Dedini and others, 1981). Previous investigations have shown that similar increases in the salinity at Grizzly Bay affect the species composition of the benthic macrofauna (Nichols and Thompson, 1985b; Nichols and Pamatmat, 1988).

Dissolved oxygen was saturated at levels exceeding 80 percent in 75 of the 76 samples. Dissolved oxygen was above 90 percent saturation in 57 of the samples, and exceeded saturation in 5 samples that were taken in southern San Francisco Bay during March.

Sediment Grain-Size Analyses

Substrates at all the stations sampled for benthic macrofauna are classified as soft bottom substrates. San Leandro differed somewhat from the others because a large amount of shell debris was present in the mud. The shell debris generally was larger than 1 mm, and as a consequence it was not quantified in the sediment grain-size analysis.

Differences among the sediment grain sizes at the stations are shown in table 6. San Leandro, Coyote Point, Grizzly Bay, and Palo Alto were similar in that about 50 percent of the sediment typically was finer than 0.004 mm. San Pablo Shallow and Berkeley were similar in that about 50 percent of the sediment typically was finer than 0.008 mm, although grain sizes were somewhat more variable at Berkeley. The two deep stations, San Pablo Deep and South Bay Deep, were distinctively different from the others in that they exhibited greater variability in grain-size distributions and the sediments generally were coarser (larger grain size). Greatest variability in sediment grain size was observed at San Pablo Deep. The results from the sediment grain-size analyses for 1988 were consistent with those for 1987 (Schemel and others, 1988).

Persistence of *Potamocorbula amurensis*

By reviewing available taxanomic literature, Dr. James T. Carlton of the University of Oregon has determined that the probable genus and species of the newly introduced clam is *Potamocorbula amurensis*. It is possible, however, that synonyms might exist.

The spread of the new species of clam shortly after its introduction was documented during the first year of sampling of this program (Schemel and others, 1988). Data collected during 1988 show that this new species persisted as a dominant species in northern San Francisco Bay and became more abundant in areas of southern San Francisco Bay. Because of low levels of freshwater inflow during 1988, *Potamocorbula amurensis* has not experienced a normal seasonal range of environmental conditions at locations in the northern and southern bays.

Greatest densities (abundances per unit area) of the new clam during 1987 were observed at Grizzly Bay and San Pablo Deep (Schemel and others, 1988). Although densities at these locations during 1988 were lower than the maximum densities during 1987, examinations in the laboratory have indicated that specimens generally were larger in size during 1988 (J.K. Thompson, U.S. Geological Survey, oral commun., 1988). Specimens were found in all replicates collected at Grizzly Bay and in all but one replicate collected at San Pablo Deep during 1988. Densities of the new clam during 1988 were greater than those during 1987 at the other stations with the exception of San Leandro, where no specimens were collected during 1987 or 1988. Lowest densities, typically about one specimen or less per sample, were found at South Bay Deep and Berkeley. Densities increased during 1988 at Coyote Point and Palo Alto. Specimens were found in all but one replicate collected at Coyote Point, where densities averaged about 40 specimens per sample during September and November. Specimens were found in all replicates collected at Palo Alto beginning in May. Average density increased to a maximum value of 65 specimens per sample in November at Palo Alto. Specimens of the new clam have been found in every replicate collected at San Pablo Shallow since July 1987. Average density at San Pablo Shallow reached a maximum of 455 specimens per sample in May 1988.

SUMMARY

Sampling was continued for the Regional Effects Monitoring Program in San Francisco Bay during 1988. Samples for benthic macrofauna, sediment grain size, and ancillary data were collected during six cruises at 2-month intervals beginning in January. Benthic macrofauna were identified to the species level or the lowest possible taxon and counted. Eight stations were sampled for benthic macrofauna and sediment grain size during each cruise. At each station, five replicate samples were collected for benthic macrofauna, and one sample was collected for sediment grain-size analysis. Ancillary data, consisting of salinity, temperature, and dissolved-oxygen and suspended-sediment concentrations, were collected at 12 stations, including the 8 stations where benthic macrofauna samples were collected. Salinity was measured at three stations that coincided with continuous water-quality monitors. Benthic macrofauna data showed the persistence of the newly introduced clam, *Potamocorbula amurensis*, at stations in the northern bay, and increasing densities at all stations except San Leandro in the southern bay.

REFERENCES CITED

American Public Health Association, 1985, Standard methods for the examination of water and wastewater, 16th ed.: Washington, D.C., p. 413-419.

Dedini, L.A., Schemel, L.E., and Tembreull, M.A., 1981, Salinity and temperature measurements in San Francisco Bay waters, 1980: U.S. Geological Survey Open-File Report 82-125, 130 p.

Green, R.H., 1979, Sampling design and statistical methods for environmental biologists: New York, John Wiley, 257 p.

Guy, H.P., 1969, Laboratory theory and methods for sediment analysis: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. C1, 58 p.

Lewis, E.L., 1980, The practical salinity scale of 1978 and its antecedents: Journal of Oceanic Engineering, v. OE-5, no. 1, p. 3-8.

Nichols, F.H., and Pamatmat, M.M., 1988, The ecology of the soft-bottom benthos of San Francisco Bay: a community profile: U.S. Fish and Wildlife Service Biological Report 85(7.19), 73 p.

Nichols, F.H. and Thompson, J.K., 1985a, Persistence of an introduced mudflat community in South San Francisco Bay, California: Marine Ecology-Progress Series, v. 24, p. 83-97.

——-1985b, Timescales of change in the San Francisco Bay benthos: Hydrobiologia, v. 129, p. 121-138.

Schemel, L.E., Ota, A.Y., Harmon, J.G., Shay, J.M., and Adorador, R.M., 1988, Benthic macrofauna and ancillary data for San Francisco Bay, California, March to November 1987: U.S. Geological Survey Open-File Report 88-192, 73 p.

Table 3.—*Benthic macrofauna data*

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Berkeley				
		Sampling date: January 12, 1988				
Amaeana occidentalis	4810001	4	4	4	3	5
Ampelisca abdita	5275504	103	268	217	73	263
Anaitides longipes	4810505	0	1	1	1	0
Asychis elongata	4810565	0	0	4	2	3
Cerebratulus sp(p).	4000014	3	0	0	0	0
Corophium alienense	5275287	7	10	4	1	14
Cryptomya californica	5540155	1	1	0	0	0
Edwardsia sipunculoides	3730022	0	1	1	4	0
Edwardsiidae, unident.	3730045	1	0	0	0	0
Euchone limnicola	4810255	1	3	4	0	6
Exogone lourei	4810066	2	7	8	2	5
Glycinde polygnatha	4810496	2	5	5	10	7
Harmothoe lunulata	4810689	0	1	0	0	4
Hemigrapsus oregonensis	5286092	0	0	1	0	1
Hesperonoe sp(p).	4810090	0	0	1	1	0
Leitoscoloplos pugettensis	4810516	3	3	4	3	2
Leptochelia dubia	5264038	1	5	8	1	8
Lineidae, unident.	4000038	0	1	0	0	0
Macoma sp(p).	5540105	0	0	1	0	0
Musculista senhousia	5540401	1	0	2	0	0
Mysella sp(p).	5540137	3	0	0	0	2
Mysella sp. *(A) (SCAMIT)*	5540212	3	0	2	1	4
Mytilus edulis	5540024	1	0	1	0	1
Natantia, unident.	5286111	0	0	0	0	1
Nematodes, unident.	4500001	3	64	37	0	7
Nephtys ferruginea	4810706	0	1	1	0	0
Nephtys sp(p).	4810579	0	0	0	1	0
Oligochaete, unident.	4880001	3	39	3	2	29
Philine sp. *(A) (SCAMIT)*	5570240	2	0	0	1	2
Pholoe glabra	4810442	0	0	1	0	0
Phoronis sp(p).	5700002	340	10	0	0	142
Potamocorbula amurensis	5540214	0	1	0	0	1
Protothaca staminea	5540035	0	0	1	0	1
Pseudopolydora kempi	4810640	0	1	1	0	0
Pseudopolydora paucibranchiata	4810347	0	1	2	1	4
Sarsiella zostericola	5220091	0	3	0	0	0
Schistomeringos rudolphi	4810354	2	0	0	0	0
Scleroplax granulata	5286519	1	0	0	0	0
Sphaerosyllis californiensis	4810272	1	66	5	1	20
Stylatula sp(p).	3730044	0	2	0	1	2
Tapes japonica	5540158	0	1	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Berkeley				
		Sampling date: March 8, 1988				
Amaeana occidentalis	4810001	1	2	2	2	1
Ampelisca abdita	5275504	1	0	9	6	0
Amphiodia digitata (juv)	5930026	0	0	0	1	0
Amphiuridae, unident.	5930032	0	0	0	0	1
Anthozoan, unident.	3730010	0	0	3	0	0
Asychis elongata	4810565	0	0	2	2	3
Campanularidae, unident.	3710039	0	0	0	1	0
Chaetognatha	6200000	0	0	1	0	0
Cirriformia spirabrancha	4810854	0	0	0	0	1
Corophium alienense	5275287	0	0	11	6	2
Corophium sp(p).	5275098	0	3	32	29	8
Cryptomya californica	5540155	0	0	0	0	2
Decapod larvae	5286045	0	0	3	0	0
Edwardsia sipunculoides	3730022	0	0	3	0	0
Euchone limnicola	4810255	0	0	3	0	0
Exogone lourei	4810066	0	8	10	7	0
Gemma gemma	5540400	0	0	1	0	0
Glycinde polygnatha	4810496	1	6	2	8	3
Hesperonoe sp(p).	4810090	0	2	1	0	0
Leitoscoloplos pugettensis	4810516	1	2	1	1	0
Leptochelia dubia	5264038	0	2	0	10	1
Leucon subnasica	5263012	0	0	0	0	1
Lightiella serendipita	5204001	0	0	1	0	0
Lineidae, unident.	4000038	0	0	1	0	0
Mediomastus sp.	4810303	0	0	1	2	0
Modiolus sp(p).	5540409	1	0	1	0	0
Mysella sp(p).	5540137	0	1	0	0	0
Mysella sp. *(A) (SCAMIT)*	5540212	0	9	2	9	0
Nematodes, unident.	4500001	0	14	20	78	1
Nephtys cornuta franciscana	4810116	1	0	0	1	3
Nephtys ferruginea	4810706	2	0	0	0	0
Oligochaete, unident.	4880001	0	11	5	17	1
Pholoe glabra	4810442	0	0	0	1	0
Phoronis sp(p).	5700002	0	16	1	0	182
Pseudopolydora paucibranchiata	4810347	1	1	0	2	0
Schistomeringos rudolphi	4810354	0	1	1	0	3
Sphaerosyllis californiensis	4810272	0	9	5	30	3
Spiophanes berkeleyorum	4810465	0	0	1	0	0
Stylatula sp(p).	3730044	0	1	1	4	1
Tapes japonica	5540158	1	0	1	0	0
Tubulanus sp(p).	4000013	0	0	1	0	0
Upogebia pugettensis	5286103	0	0	2	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Berkeley				
		Sampling date: May 31, 1988				
Amaeana occidentalis	4810001	2	0	1	3	0
Ampelisca abdita	5275504	12	7	6	5	15
Asychis elongata	4810565	3	1	2	1	2
Capitella capitata	4810241	6	7	11	11	10
Cerebratulus sp(p).	4000014	1	0	1	0	0
Cirriformia spirabrancha	4810854	1	0	0	0	0
Corophium sp. a	5275510	229	115	28	349	179
Crangon sp *(juv)*	5286127	1	0	0	0	0
Cryptomya californica	5540155	0	0	1	0	0
Dentinephtys sp. *A (Harris)*	4810904	0	1	2	0	0
Edwardsiidae, unident.	3730045	1	2	2	1	1
Euchone limnicola	4810255	2	0	0	0	4
Exogone lourei	4810066	3	5	2	7	1
Glycinde polygnatha	4810496	7	5	1	5	11
Harmothoe imbricata	4810343	0	0	0	1	0
Harmothoe lunulata	4810689	1	0	1	0	0
Hesperonoe sp(p).	4810090	0	0	0	3	0
Leitoscoloplos pugettensis	4810516	3	1	6	1	4
Leptochelia dubia	5264038	1	0	0	1	0
Lightiella serendipita	5204001	1	1	1	0	0
Macoma nasuta	5540019	1	0	0	0	0
Mysella sp. *(A) (SCAMIT)*	5540212	5	1	2	24	1
Mytilus edulis	5540024	1	0	0	0	0
Nematodes, unident.	4500001	3	0	2	5	0
Nephtys cornuta franciscana	4810116	8	2	8	2	5
Oligochaete, unident.	4880001	16	10	35	16	12
Philine sp. *(A) (SCAMIT)*	5570240	4	6	5	0	1
Phoronis sp(p).	5700002	24	0	0	0	1
Potamocorbula amurensis	5540214	0	0	0	2	0
Pseudopolydora kempi	4810640	0	0	0	2	0
Sarsiella zostericola	5220091	2	0	0	3	2
Schistomeringos rudolphi	4810354	0	0	0	0	2
Sphaerosyllis bilobata	4810833	1	0	0	0	0
Sphaerosyllis californiensis	4810272	18	3	8	8	8
Stylatula sp(p).	3730044	1	0	1	1	0
Tapes japonica	5540158	1	0	0	0	0
Tenonia priops	4810727	0	0	0	1	0
Tubulanus sp(p).	4000013	0	1	1	0	0
Upogebia pugettensis	5286103	0	3	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Berkeley				
		Sampling date: July 28, 1988				
Amaeana occidentalis	4810001	0	0	1	0	0
Ampelisca abdita	5275504	8	3	2	6	0
Ampharete labrops	4810002	0	0	1	0	0
Asychis elongata	4810565	2	2	2	6	3
Campanulariidae, unident.	3710039	0	0	1	1	0
Capitella capitata	4810241	13	2	3	0	0
Cerebratulus sp(p).	4000014	3	0	0	0	0
Corophium sp(p).	5275098	2	2	1	2	0
Corophium sp. *a*	5275510	162	125	16	37	85
Cryptomya californica	5540155	1	0	0	0	0
Edwardsia sipunculoides	3730022	1	0	0	0	0
Edwardsiidae, unident.	3730045	0	2	1	1	0
Euchone limnicola	4810255	0	1	0	0	0
Glycinde polygnatha	4810496	1	4	4	2	3
Leitoscoloplos pugettensis	4810516	1	3	1	1	1
Leptochelia dubia	5264038	1	0	0	0	0
Leucon subnasica	5263012	0	0	1	0	0
Lightiella serendipita	5204001	0	1	0	0	0
Lineidae, unident.	4000038	3	0	0	0	0
Musculista senhousia	5540401	1	0	0	0	0
Mya arenaria	5540402	0	0	0	1	1
Mysella sp. *(A) (SCAMIT)*	5540212	0	0	2	0	0
Natantia, unident.	5286111	1	1	0	0	0
Nemertea, unident.	4000002	0	0	0	2	2
Nephtys cornuta franciscana	4810116	2	1	2	1	1
Ostracods, unident.	5220003	0	1	0	0	0
Phoronis sp(p).	5700002	189	1	14	59	43
Photis brevipes	5275109	0	0	0	4	0
Pleusymtes sp(p).	5275203	0	1	1	0	0
Potamocorbula amurensis	5540214	0	1	0	0	0
Protothaca staminea	5540035	0	0	1	1	0
Pseudopolydora kempi	4810640	1	0	1	0	0
Pyromaia tuberculata	5286094	0	0	1	0	0
Sarsiella zostericola	5220091	0	0	0	0	1
Schistomeringos rudolphi	4810354	2	1	1	0	0
Scleroplax granulata	5286519	0	0	0	0	1
Scolelepis squamata	4810589	0	1	0	0	0
Spiophanes berkeleyorum	4810465	0	1	0	0	0
Stylatula sp(p).	3730044	3	1	0	1	0
Tubulanus sp(p).	4000013	0	1	0	0	0
Upogebia pugettensis	5286103	1	0	0	0	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals, Replicate number 1	2	3	4	5
		Berkeley				
		Sampling date: September 13, 1988				
Amaeana occidentalis	4810001	0	1	0	1	0
Ampelisca abdita	5275504	2	7	5	1	1
Asychis elongata	4810565	4	1	0	1	1
Campanulariidae, unident.	3710039	1	0	0	0	0
Capitella capitata	4810241	0	0	3	2	3
Cerebratulus sp(p).	4000014	1	0	1	1	1
Cooperella subdiaphana	5540056	0	0	0	0	1
Corophium sp(p).	5275098	0	0	0	0	1
Corophium sp. *a*	5275510	77	50	53	11	82
Cryptomya californica	5540155	8	10	6	0	4
Diopatra sp(p).	4810999	0	1	0	0	0
Edwardsia sp(p).	3730037	0	0	1	0	0
Edwardsiidae, unident.	3730045	1	1	1	0	0
Euchone limnicola	4810255	0	0	0	0	1
Exogone lourei	4810066	0	0	1	0	1
Glycinde polygnatha	4810496	4	8	6	4	6
Harmothoe imbricata	4810343	0	0	0	0	1
Harpacticoid copepod, unident.	5230052	1	0	1	0	0
Heteromastus filiformis	4810438	1	0	0	0	0
Hydrozoa, unident.	3710052	1	0	0	0	0
Leitoscoloplos pugettensis	4810516	0	7	4	3	2
Leptochelia dubia	5264038	0	0	0	0	1
Leucon subnasica	5263012	0	1	0	0	0
Lineidae, unident.	4000038	0	0	2	0	1
Mysella sp. *(A) (SCAMIT)*	5540212	0	1	0	0	0
Nematodes, unident.	4500001	0	0	0	0	1
Nephtys caecoides	4810114	0	0	0	0	1
Nephtys cornuta franciscana	4810116	3	2	2	8	1
Oligochaete, unident.	4880001	1	7	1	10	1
Pennatulacea, unident.	3700002	0	1	1	0	2
Philine sp. *(A) (SCAMIT)*	5570240	1	0	1	3	3
Phoronis sp(p).	5700002	13	120	330	35	352
Photis brevipes	5275109	0	0	3	0	1
Platyhelminthid, unident.	3900001	0	1	0	0	0
Potamocorbula amurensis	5540214	0	0	3	5	1
Protothaca staminea	5540035	1	1	1	1	1
Pseudopolydora kempi	4810640	0	0	0	1	0
Pseudopolydora paucibranchiata	4810347	0	0	0	2	0
Sarsiella zostericola	5220091	0	0	2	1	0
Solen sicarius	5540416	0	0	0	1	1
Spiophanes missionensis	4810204	1	0	0	0	0
Tenonia priops	4810727	0	0	1	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Berkeley				
		Sampling date: September 13, 1988—Continued				
Theora lubrica	5540114	0	0	0	1	0
Tubulanus sp(p).	4000013	3	0	1	0	0
Upogebia pugettensis	5286103	1	0	0	0	0
		Sampling date: November 1, 1988				
Amaeana occidentalis	4810001	0	0	0	1	0
Ampelisca abdita	5275504	10	10	2	0	26
Asychis elongata	4810565	5	0	2	3	3
Campanulariidae, unident.	3710039	1	0	0	1	0
Capitella capitata	4810241	1	3	4	0	3
Cerebratulus sp(p).	4000014	0	1	0	0	0
Clinocardium nuttallii	5540417	0	0	0	1	0
Corophium sp. *a*	5275510	55	22	22	0	4
Cryptomya californica	5540155	30	26	0	0	11
Edwardsia sipunculoides	3730022	0	0	0	0	1
Edwardsiidae, unident.	3730045	0	1	2	0	1
Euchone limnicola	4810255	0	0	0	3	0
Eusyllis transecta	4810680	0	1	0	0	0
Glycinde polygnatha	4810496	4	6	4	6	5
Leitoscoloplos pugettensis	4810516	1	1	2	1	1
Leptochelia dubia	5264038	0	1	0	0	0
Leucon subnasica	5263012	1	0	0	0	0
Lightiella serendipita	5204001	0	1	0	0	0
Macoma indentata	5540176	0	1	0	0	0
Mactra sp(p).	5540122	0	0	0	1	0
Melanochlamys diomedea	5570248	0	1	0	0	0
Molgula manhattensis	6301075	0	1	0	0	0
Musculista senhousia	5540401	1	0	0	0	0
Neanthes virens	4810560	0	1	0	0	0
Nematodes, unident.	4500001	0	0	0	4	0
Nephtys caecoides	4810114	1	0	0	0	1
Nephtys cornuta franciscana	4810116	0	1	0	3	2
Nephtys sp(p).	4810579	0	0	2	0	0
Oligochaete, unident.	4880001	7	2	0	1	0
Philine sp. *(A) (SCAMIT)*	5570240	1	1	2	0	2
Phoronis sp(p).	5700002	58	580	41	1	59
Photis sp(p).	5275013	0	4	2	0	3
Polydora socialis	4810940	0	1	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Berkeley						
Sampling date: November 1, 1988—Continued						
Potamocorbula amurensis	5540214	1	0	2	3	0
Protothaca staminea	5540035	0	0	0	1	0
Pseudopolydora kempi	4810640	0	0	0	1	0
Sarsiella zostericola	5220091	1	1	0	0	2
Schistomeringos rudolphi	4810354	1	1	0	0	0
Solen sicarius	5540416	1	0	0	0	0
Sphaerosyllis californiensis	4810272	0	0	0	1	0
Stylatula sp(p).	3730044	1	1	1	1	0
Tapes japonica	5540158	0	1	0	0	0
Tenonia priops	4810727	0	1	0	0	0
Tubulanus sp(p).	4000013	2	0	0	0	1
Coyote Point						
Sampling date: January 13, 1988						
Amaeana occidentalis	4810001	0	0	1	0	0
Ampelisca abdita	5275504	269	215	189	139	138
Anaitides longipes	4810505	1	0	0	0	0
Anthozoan, unident.	3730010	0	0	1	0	0
Asychis elongata	4810565	27	39	22	20	25
Capitella capitata	4810241	0	0	0	0	1
Corophium alienense	5275287	12	15	29	19	20
Eusyllis transecta	4810680	15	9	4	7	12
Exogone lourei	4810066	1	3	3	3	0
Gemma gemma	5540400	0	0	1	0	0
Glycinde polygnatha	4810496	9	11	10	5	6
Heteromastus filiformis	4810438	0	0	1	0	0
Leitoscoloplos pugettensis	4810516	2	0	0	0	1
Macoma balthica	5540147	0	0	0	1	0
Mediomastus sp.	4810303	1	1	0	0	0
Musculista senhousia	5540401	7	3	3	2	6
Mya arenaria	5540402	0	0	0	0	2
Nematodes, unident.	4500001	2	10	12	11	0
Nephtys caecoides	4810114	1	1	1	0	0
Nephtys cornuta franciscana	4810116	1	1	2	0	0
Odostomia (Evalea) sp. *N (Shrake)*	5570321	0	1	0	0	1
Oligochaete, unident.	4880001	20	63	47	53	7
Philine sp. *(A) (SCAMIT)*	5570240	0	1	0	0	0
Potamocorbula amurensis	5540214	4	4	4	3	2
Pseudopolydora kempi	4810640	1	1	6	1	3
Sarsiella zostericola	5220091	12	5	7	5	12

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Coyote Point						
Sampling date: January 13, 1988—Continued						
Schistomeringos rudolphi	4810354	0	1	0	1	0
Streblospio benedicti	4810257	0	0	0	1	0
Tapes japonica	5540158	35	40	38	25	18
Theora lubrica	5540114	7	4	6	3	4
Sampling date: March 8, 1988						
Ampelisca abdita	5275504	46	34	142		54
Asychis elongata	4810565	21	28	34		32
Campanulariidae, unident.	3710039	0	1	1		0
Corophium alienense	5275287	11	1	11		6
Corophium sp(p).	5275098	6	0	0		5
Euchone limnicola	4810255	4	2	2		0
Exogone lourei	4810066	20	8	5		5
Gemma gemma	5540400	3	1	0		0
Glycera americana	4810487	0	0	0		1
Glycinde polygnatha	4810496	6	3	9		3
Heteromastus filiformis	4810438	1	0	2		0
Leitoscoloplos pugettensis	4810516	0	1	0		0
Leucon subnasica	5263012	0	1	0		0
Musculista senhousia	5540401	11	13	29		5
Neanthes succinea	4810562	0	1	0		0
Nematodes, unident.	4500001	0	12	6		2
Nephtys caecoides	4810114	1	2	0		0
Nephtys cornuta franciscana	4810116	1	0	0		0
Odostomia (Evalea) sp. *I (Shrake)*	5570317	0	0	0		1
Oligochaete, unident.	4880001	40	43	2		1
Polydora brachycephala	4810557	3	3	2		0
Polynoid, unident.	4810936	1	0	0		0
Potamocorbula amurensis	5540214	4	2	3		2
Pseudopolydora kempi	4810640	2	0	0		0
Sarsiella zostericola	5220091	2	1	3		2
Schistomeringos rudolphi	4810354	1	0	1		0
Sphaerosyllis californiensis	4810272	0	1	0		0
Streblospio benedicti	4810257	1	0	0		1
Tapes japonica	5540158	33	26	43		24
Theora lubrica	5540114	3	2	4		3
Upogebia pugettensis	5286103	1	0	0		0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Coyote Point						
Sampling date: May 31, 1988						
Amaeana occidentalis	4810001	0	0	0	1	0
Ampelisca abdita	5275504	121	118	91	175	89
Amphiurid, unident.	5930014	1	0	0	0	0
Anaitides longipes	4810505	1	3	0	0	0
Anthozoan, unident.	3730010	1	0	0	1	0
Asychis elongata	4810565	43	28	12	40	37
Balanus crenatus	5250036	1	0	0	0	0
Brachyuran megalops	5286064	1	0	0	0	0
Capitella capitata	4810241	0	1	0	3	2
Corophium sp(p).	5275098	0	3	1	0	1
Corophium sp. *a*	5275510	371	325	391	492	404
Cryptomya californica	5540155	0	0	0	0	1
Euchone limnicola	4810255	5	4	5	7	5
Exogone lourei	4810066	5	13	17	8	17
Gemma gemma	5540400	0	0	1	0	0
Glycinde polygnatha	4810496	19	28	24	27	40
Harmothoe imbricata	4810343	2	0	3	1	1
Leitoscoloplos pugettensis	4810516	0	0	0	0	2
Leptochelia dubia	5264038	0	0	0	2	1
Leucon subnasica	5263012	0	1	1	1	0
Lightiella serendipita	5204001	0	1	0	0	0
Musculista senhousia	5540401	52	40	31	29	32
Nematodes, unident.	4500001	0	0	0	2	0
Nephtys caecoides	4810114	0	0	1	0	1
Nephtys cornuta franciscana	4810116	0	2	5	4	1
Oligochaete, unident.	4880001	1	0	7	6	3
Philine sp. *(A) (SCAMIT)*	5570240	0	0	2	2	2
Polydora brachycephala	4810557	4	1	3	0	4
Potamocorbula amurensis	5540214	1	4	5	3	1
Pseudopolydora paucibranchiata	4810347	0	0	0	3	0
Pyromaia tuberculata	5286094	0	0	0	0	1
Sarsiella zostericola	5220091	0	0	5	6	3
Schistomeringos rudolphi	4810354	3	0	7	1	0
Siliqua lucida	5540043	0	0	0	0	1
Sphaerosyllis californiensis	4810272	1	0	1	0	1
Tapes japonica	5540158	46	41	42	18	32
Theora lubrica	5540114	1	2	3	3	0
Upogebia pugettensis	5286103	0	0	1	0	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Coyote Point						
Sampling date: July 25, 1988						
Ampelisca abdita	5275504	8	15	14	14	6
Anthozoan, unident.	3730010	0	2	0	0	1
Asychis elongata	4810565	53	68	25	39	25
Campanulariidae, unident.	3710039	0	1	1	1	0
Capitella capitata	4810241	1	0	0	1	0
Cheilostomata unident.	5600177	0	1	1	1	0
Corophium sp(p).	5275098	0	1	3	3	0
Corophium sp. *a*	5275510	16	12	32	19	6
Euchone limnicola	4810255	7	31	20	21	3
Exogone lourei	4810066	1	2	2	15	0
Glycinde polygnatha	4810496	2	1	2	3	0
Harmothoe imbricata	4810343	2	2	1	4	2
Heteromastus filiformis	4810438	0	2	0	0	0
Hydrozoa, unident.	3710052	0	0	1	1	1
Leitoscoloplos pugettensis	4810516	0	1	2	4	2
Leptochelia dubia	5264038	1	0	0	1	0
Marphysa sanguinea	4810248	0	0	0	1	0
Mediomastus sp.	4810303	1	0	0	0	0
Molgula manhattensis	6301075	0	0	1	1	0
Musculista senhousia	5540401	10	10	25	16	22
Nephtys caecoides	4810114	1	0	0	0	0
Nephtys cornuta franciscana	4810116	1	1	0	1	0
Oligochaete, unident.	4880001	0	1	0	2	0
Philine sp. *(A) (SCAMIT)*	5570240	2	0	1	0	2
Phoronis sp(p).	5700002	0	0	0	0	9
Polydora ligni	4810168	0	2	2	2	0
Potamocorbula amurensis	5540214	2	4	0	3	0
Pseudopolydora paucibranchiata	4810347	0	1	1	0	1
Sarsiella zostericola	5220091	0	5	2	1	0
Schistomeringos rudolphi	4810354	0	0	0	1	0
Streblospio benedicti	4810257	0	0	0	1	0
Tapes japonica	5540158	6	16	9	9	5
Theora lubrica	5540114	4	10	6	8	0
Sampling date: September 14, 1988						
Ampelisca abdita	5275504	182	76	93	112	106
Amphiuridae, unident.	5930032	1	0	0	0	0
Anthozoan, unident.	3730010	0	3	0	1	1
Asychis elongata	4810565	35	57	82	27	31
Campanulariidae, unident.	3710039	0	1	0	0	0
Capitella capitata	4810241	1	3	0	2	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Coyote Point				
		Sampling date: September 14, 1988—Continued				
Cirratulidae, unident.	4810990	1	3	1	3	2
Corophium sp(p).	5275098	1	0	0	0	0
Corophium sp. *a*	5275510	19	7	4	7	18
Crepidula plana	5570204	0	0	1	0	0
Crepidula sp(p).	5570203	1	0	0	0	0
Crepidula sp. *A (Shrake)*	5570331	0	0	1	0	0
Cryptomya californica	5540155	0	0	0	1	0
Dorvilleidae, unident.	4810583	1	3	7	2	0
Euchone limnicola	4810255	125	137	242	192	132
Eudorella pacifica	5263112	0	0	0	1	0
Eusyllis transecta	4810680	0	3	0	0	0
Exogone lourei	4810066	196	238	315	278	181
Gemma gemma	5540400	1	0	0	0	0
Glycinde polygnatha	4810496	0	3	1	1	5
Grandidierella japonica	5275503	12	3	4	2	4
Harmothoe imbricata	4810343	2	4	3	2	1
Harmothoe lunulata	4810689	0	1	0	1	0
Leitoscoloplos pugettensis	4810516	1	1	0	2	0
Leptochelia dubia	5264038	3	0	3	2	0
Leucon subnasica	5263012	0	0	0	1	1
Macoma sp(p).	5540105	0	0	0	0	1
Melanochlamys diomedea	5570248	0	1	0	0	0
Molgula manhattensis	6301075	0	35	6	8	1
Musculista senhousia	5540401	48	60	52	54	16
Natantia, unident.	5286111	0	0	1	0	0
Neanthes succinea	4810562	1	0	0	2	0
Nematodes, unident.	4500001	93	7	13	61	1
Nephtys cornuta franciscana	4810116	2	4	1	2	1
Nudibranchia, unident.	5570976	0	0	1	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	1	1	1	1	0
Oligochaete, unident.	4880001	38	32	71	39	44
Philine sp. *(A) (SCAMIT)*	5570240	0	0	2	2	0
Phoronis sp(p).	5700002	1	0	2	10	1
Platyhelminthid, unident.	3900001	0	0	0	0	1
Polydora brachycephala	4810557	3	5	4	5	7
Polydora ligni	4810168	92	115	166	123	174
Potamocorbula amurensis	5540214	40	65	21	50	52
Pseudopolydora kempi	4810640	0	6	13	8	12
Pseudopolydora paucibranchiata	4810347	59	57	62	54	38
Pyromaia tuberculata	5286094	0	0	4	1	0
Sarsiella zostericola	5220091	13	8	11	12	10
Schistomeringos rudolphi	4810354	2	0	3	4	1
Sphaerosyllis bilobata	4810833	0	3	2	5	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Coyote Point						
Sampling date: September 14, 1988—Continued						
Sphaerosyllis californiensis	4810272	5	17	18	10	11
Streblospio benedicti	4810257	15	28	16	13	17
Tapes japonica	5540158	39	43	32	43	30
Tenonia priops	4810727	2	0	0	0	1
Theora lubrica	5540114	31	23	12	32	38
Tubulanus pellucidus	4000011	1	0	0	0	0
Sampling date: November 2, 1988						
Amaeana occidentalis	4810001	0	0	1	3	0
Ampelisca abdita	5275504	1,512	1,013	1,297	1,486	1,279
Amphiodia sp(p).	5930040	0	0	1	0	0
Amphiuridae, unident.	5930032	0	1	0	0	0
Anthozoan, unident.	3730010	2	1	2	1	1
Asychis elongata	4810565	20	22	18	42	25
Brachyuran megalops	5286064	0	2	1	0	1
Brachyuran zoea	5286063	1	0	0	0	0
Campanulariidae, unident.	3710039	0	1	1	1	1
Capitella capitata	4810241	1	0	0	11	3
Caprella sp(p).	5275117	0	0	0	1	0
Cirratulidae, unident.	4810990	2	4	0	3	2
Corophium sp(p).	5275098	1	0	1	0	0
Corophium sp. *a*	5275510	46	12	22	86	35
Cossura pygodactylata	4810861	4	3	1	16	3
Crangon nigricauda	5286120	0	0	1	0	0
Crepidula plana	5570204	0	0	1	0	1
Crepidula sp(p).	5570203	1	0	0	0	0
Crepidula sp. *A (Shrake)*	5570331	0	0	1	0	0
Diopatra sp(p).	4810999	0	0	1	0	0
Edwardsiidae, unident.	3730045	0	0	0	0	1
Euchone limnicola	4810255	394	286	450	576	411
Exogone lourei	4810066	166	220	200	318	258
Gemma gemma	5540400	0	0	0	1	0
Glycera americana	4810487	0	1	0	0	0
Glycinde polygnatha	4810496	5	1	0	2	4
Grandidierella japonica	5275503	3	1	5	3	9
Harmothoe imbricata	4810343	2	2	0	1	2
Leitoscoloplos pugettensis	4810516	4	0	2	0	1
Leptochelia dubia	5264038	2	1	2	5	2
Macoma acolasta	5540026	0	0	0	1	0
Macoma sp(p).	5540105	1	0	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Coyote Point						
Sampling date: November 2, 1988—Continued						
Molgula manhattensis	6301075	0	8	0	0	0
Musculista senhousia	5540401	5	10	11	22	6
Mysella sp. *(A) (SCAMIT)*	5540212	0	0	0	1	1
Mytilus edulis	5540024	0	0	0	1	0
Natantia, unident.	5286111	1	0	0	0	0
Neanthes succinea	4810562	2	1	0	4	0
Nematodes, unident.	4500001	50	62	63	132	61
Nephtys caecoides	4810114	0	1	1	1	0
Nephtys cornuta franciscana	4810116	1	2	4	2	8
Nephtys sp(p).	4810579	3	0	0	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	4	2	5	6	6
Odostomia (Evalea) sp. *J (Shrake)*	5570305	1	0	0	0	0
Odostomia sp(p).	5570075	1	0	0	0	0
Oligochaete, unident.	4880001	24	38	47	101	34
Philine sp. *(A) (SCAMIT)*	5570240	2	0	2	1	1
Phoronis sp(p).	5700002	1	1	0	0	0
Polydora ligni	4810168	130	69	117	168	110
Potamocorbula amurensis	5540214	38	31	49	41	40
Pseudopolydora kempi	4810640	6	3	3	12	3
Pseudopolydora paucibranchiata	4810347	23	5	36	60	32
Pyromaia tuberculata	5286094	0	0	0	3	2
Sarsiella zostericola	5220091	13	4	6	10	3
Schistomeringos rudolphi	4810354	1	3	0	8	3
Sphaerosyllis californiensis	4810272	3	2	4	17	5
Spiophanes bombyx	4810203	0	0	0	2	0
Streblospio benedicti	4810257	0	2	0	0	0
Synidotea laticauda	5265110	0	0	0	1	0
Tapes japonica	5540158	23	14	40	33	33
Theora lubrica	5540114	42	48	28	43	26
Tubulanus sp(p).	4000013	0	0	1	0	0
Grizzly Bay						
Sampling date: January 11, 1988						
Ampelisca abdita	5275504	0	1	0	1	0
Grandidierella japonica	5275503	0	0	0	1	0
Leucon subnasica	5263012	8	17	8	57	32
Macoma balthica	5540147	2	0	0	0	0
Neanthes succinea	4810562	0	1	1	1	0
Oligochaete, unident.	4880001	16	19	20	24	22
Potamocorbula amurensis	5540214	176	158	187	192	141

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Grizzly Bay						
Sampling date: January 11, 1988—Continued						
Pseudopolydora kempi	4810640	0	1	0	1	1
Streblospio benedicti	4810257	0	0	1	0	0
Sampling date: March 14, 1988						
Ampelisca abdita	5275504	2	0	0	0	1
Exogone lourei	4810066	1	0	0	0	0
Leucon subnasica	5263012	9	29	16	16	34
Macoma balthica	5540147	0	2	0	2	0
Neanthes succinea	4810562	1	0	1	0	1
Oligochaete, unident.	4880001	12	37	25	30	25
Potamocorbula amurensis	5540214	151	276	131	201	248
Pseudopolydora kempi	4810640	0	1	0	1	0
Sarsiella zostericola	5220091	1	0	0	0	0
Streblospio benedicti	4810257	0	2	3	3	0
Sampling date: May 23, 1988						
Ampelisca abdita	5275504	0	0	1	0	0
Leucon subnasica	5263012	6	17	14	5	28
Macoma balthica	5540147	1	0	1	1	1
Oligochaete, unident.	4880001	2	5	2	3	8
Potamocorbula amurensis	5540214	153	135	168	141	188
Pseudopolydora kempi	4810640	0	0	0	1	0
Sampling date: July 21, 1988						
Balanus improvisus	5250020	2	1	0	0	3
Brachyuran zoea	5286063	0	0	0	1	0
Corophium sp. *a*	5275510	1	0	0	0	1
Leucon subnasica	5263012	0	1	12	3	0
Neanthes succinea	4810562	0	0	1	0	0
Oligochaete, unident.	4880001	0	2	0	1	0
Potamocorbula amurensis	5540214	76	47	210	95	105
Sampling date: September 12, 1988						
Ampelisca abdita	5275504	0	1	2	3	0
Balanus improvisus	5250020	2	0	0	0	2
Corophium sp(p).	5275098	0	0	0	1	0
Heteromastus filiformis	4810438	1	0	1	1	0
Hydrozoa, unident.	3710052	0	0	0	0	1
Leucon subnasica	5263012	0	2	2	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Grizzly Bay						
Sampling date: September 12, 1988—Continued						
Neanthes succinea	4810562	0	0	0	1	0
Nematodes, unident.	4500001	0	0	0	0	1
Oligochaete, unident.	4880001	0	0	0	3	2
Potamocorbula amurensis	5540214	182	141	161	212	251
Pseudopolydora kempi	4810640	0	1	1	2	1
Streblospio benedicti	4810257	0	0	0	1	2
Volvulella panamica	5570236	1	0	0	0	0
Sampling date: October 31, 1988						
Ampelisca abdita	5275504	1	1	0	1	1
Balanus sp(p).	5250002	10	2	4	10	6
Diopatra sp(p).	4810999	0	0	1	0	0
Exogone lourei	4810066	0	2	0	0	0
Grandidierella japonica	5275503	0	1	0	0	0
Heteromastus filiformis	4810438	0	0	0	1	0
Leucon subnasica	5263012	6	9	5	2	10
Neanthes succinea	4810562	0	0	1	1	1
Nematodes, unident.	4500001	0	0	1	0	0
Oligochaete, unident.	4880001	7	0	0	0	0
Potamocorbula amurensis	5540214	236	197	210	243	213
Pseudopolydora kempi	4810640	0	0	0	1	0
Palo Alto						
Sampling date: January 14, 1988						
Ampelisca abdita	5275504	107	439	956	1165	556
Asychis elongata	4810565	3	5	2	3	3
Euchone limnicola	4810255	1	2	2	1	1
Gemma gemma	5540400	1,042	1,459	1,530	1,389	1,862
Glycinde polygnatha	4810496	6	9	12	3	10
Gobiidae, unident.	6384002	1	0	0	0	0
Grandidierella japonica	5275503	1	1	3	1	2
Heteromastus filiformis	4810303	26	93	52	53	81
Leucon subnasica	5263012	59	65	64	61	76
Macoma balthica	5540147	2	1	1	1	3
Musculista senhousia	5540401	5	7	9	12	11
Nassarius obsoletus	5570304	0	1	0	0	0
Neanthes succinea	4810562	4	3	1	2	2
Nematodes, unident.	4500001	3	15	42	2	7
Odostomia (Evalea) sp. *I (Shrake)*	5570317	14	23	34	8	18
Oligochaete, unident.	4880001	35	107	93	44	61

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Palo Alto						
Sampling date: January 14, 1988—Continued						
Pseudopolydora kempi	4810640	2	0	0	0	0
Sarsiella zostericola	5220091	127	205	295	269	224
Streblospio benedicti	4810257	65	98	122	102	105
Synidotea laticauda	5265110	0	1	0	0	0
Tharyx sp.	4810595	2	5	1	2	3
Sampling date: March 7, 1988						
Ampelisca abdita	5275504	147	150	228	176	207
Asychis elongata	4810565	3	1	2	3	2
Campylaspis sp(p).	5263001	0	1	2	0	0
Cumella vulgaris	5263098	28	10	37	27	21
Euchone limnicola	4810255	2	5	2	7	2
Gemma gemma	5540400	546	985	513	719	783
Glycinde polygnatha	4810496	4	2	4	1	4
Harmothoe sp(p).	4810856	4	0	3	2	3
Heteromastus filiformis	4810438	62	42	45	93	96
Leucon subnasica	5263012	157	56	218	194	145
Macoma balthica	5540147	0	0	0	3	0
Musculista senhousia	5540401	7	9	1	6	7
Neanthes succinea	4810562	3	5	1	2	4
Nematodes, unident.	4500001	9	2	2	3	2
Nephtys caecoides	4810114	0	1	0	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	4	6	1	2	3
Odostomia (Evalea) sp. *J (Shrake)*	5570305	1	0	0	0	0
Oligochaete, unident.	4880001	70	29	40	100	91
Polydora ligni	4810168	7	4	7	14	0
Potamocorbula amurensis	5540214	0	1	0	0	0
Pseudopolydora kempi	4810640	2	0	1	0	2
Sarsiella zostericola	5220091	138	74	94	144	113
Sphaerosyllis bilobata	4810833	3	0	2	2	1
Streblospio benedicti	4810257	209	54	171	277	212
Tharyx sp(p).	4810319	0	0	5	4	2
Upogebia pugettensis	5286103	2	0	1	0	1
Sampling date: May 26, 1988						
Ampelisca abdita	5275504	2,953	1,324	2,910	3,190	2,735
Amphiurid, unident.	5930014	1	0	0	0	0
Anthozoan, unident.	3730010	0	1	0	0	0
Asychis elongata	4810565	0	0	1	0	4
Cirratulidae, unident.	4810990	0	0	1	2	0
Corophium sp(p).	5275098	218	141	196	210	183

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals, Replicate number 1	2	3	4	5
		Palo Alto				
		Sampling date: May 26, 1988—Continued				
Corophium sp. *a*	5275510	1	1	0	1	0
Cumella vulgaris	5263098	20	8	39	27	37
Gemma gemma	5540400	1,368	1,699	964	1,128	974
Glycinde polygnatha	4810496	46	74	87	72	80
Grandidierella japonica	5275503	34	15	37	67	33
Harmothoe imbricata	4810343	4	3	14	5	10
Heteromastus filiformis	4810438	6	3	13	3	8
Leucon subnasica	5263012	142	137	167	143	136
Macoma balthica	5540147	4	3	5	3	0
Macoma sp(p).	5540105	0	0	0	0	1
Musculista senhousia	5540401	8	12	8	8	17
Mya arenaria	5540402	3	7	2	4	1
Neanthes succinea	4810562	1	2	1	0	1
Nematodes, unident.	4500001	24	0	15	4	4
Nemertea, unident.	4000002	0	0	4	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	0	1	7	0	6
Odostomia (Evalea) sp. *I (Shrake)*	5570317	6	4	0	3	0
Odostomia (Evalea) sp. *J (Shrake)*	5570305	5	11	4	4	0
Oligochaete, unident.	4880001	14	7	20	8	10
Philine sp. *(A) (SCAMIT)*	5570240	5	10	1	15	4
Polydora ligni	4810168	1	0	1	0	0
Potamocorbula amurensis	5540214	14	10	12	7	7
Pseudopolydora kempi	4810640	1	1	0	0	0
Pseudopolydora paucibranchiata	4810347	26	9	14	8	1
Sarsiella zostericola	5220091	197	118	186	237	196
Streblospio benedicti	4810257	24	22	23	65	18
Tapes japonica	5540158	0	0	0	1	0
Theora lubrica	5540114	11	12	9	9	4
Upogebia pugettensis	5286103	0	0	1	0	0
		Sampling date: July 26, 1988				
Ampelisca abdita	5275504	464	471	452	589	537
Asychis elongata	4810565	3	1	2	0	0
Cirratulidae, unident.	4810990	1	0	0	1	0
Corophium sp(p).	5275098	106	131	148	96	84
Euchone limnicola	4810255	0	1	0	0	0
Exogone lourei	4810066	0	0	1	0	0
Gemma gemma	5540400	478	371	448	559	330
Glycinde polygnatha	4810496	12	30	16	15	39
Grandidierella japonica	5275503	115	182	202	173	267
Harmothoe imbricata	4810343	7	3	4	5	4
Heteromastus filiformis	4810438	0	2	13	33	12

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Palo Alto						
Sampling date: July 26, 1988—Continued						
Leucon subnasica	5263012	26	11	39	47	30
Lumbrineris sp(p).	4810584	1	0	0	0	0
Macoma sp(p).	5540105	0	2	0	6	0
Melanochlamys diomedea	5570248	0	0	0	0	1
Musculista senhousia	5540401	11	9	8	8	5
Mya arenaria	5540402	4	1	2	2	1
Neanthes succinea	4810562	0	2	0	0	1
Nematodes, unident.	4500001	0	0	3	2	0
Odostomia (Evalea) sp. *I (Shrake)*	5570317	2	0	0	0	1
Odostomia (Evalea) sp. *J (Shrake)*	5570305	1	1	0	0	1
Philine sp. *(A) (SCAMIT)*	5570240	4	3	2	8	3
Potamocorbula amurensis	5540214	12	11	14	11	7
Pseudopolydora kempi	4810640	1	3	3	1	2
Pseudopolydora paucibranchiata	4810347	0	0	8	0	0
Sarsiella zostericola	5220091	289	268	318	362	373
Streblospio benedicti	4810257	13	7	33	34	39
Synidotea laticauda	5265110	0	0	2	0	0
Tapes japonica	5540158	0	4	0	5	1
Theora lubrica	5540114	22	12	17	21	5
Sampling date: September 14, 1988						
Ampelisca abdita	5275504	1,963	3,316	2,545	4,127	2,686
Asychis elongata	4810565	0	1	0	3	1
Caprella sp(p).	5275117	0	1	0	0	0
Cirratulidae, unident.	4810990	0	2	1	0	3
Corophium sp(p).	5275098	1	0	0	10	0
Deutella californica	5275261	0	1	0	2	0
Exogone lourei	4810066	0	0	0	3	0
Gemma gemma	5540400	914	528	249	392	236
Glycinde polygnatha	4810496	6	4	13	5	8
Grandidierella japonica	5275503	62	52	50	71	43
Harmothoe imbricata	4810343	0	2	4	1	1
Harmothoe lunulata	4810689	0	1	0	0	0
Heteromastus filiformis	4810438	22	30	8	15	26
Leucon subnasica	5263012	213	237	205	234	136
Macoma sp(p).	5540105	0	1	1	2	2
Musculista senhousia	5540401	11	17	13	11	4
Mya arenaria	5540402	4	1	3	1	2
Nassarius obsoletus	5570304	0	1	0	0	0
Neanthes succinea	4810562	2	6	4	9	2
Nematodes, unident.	4500001	4	9	6	52	133
Nephtys cornuta franciscana	4810116	0	0	1	0	2

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		Palo Alto				
		Sampling date: September 14, 1988—Continued				
Nudibranchia, unident.	5570976	0	7	0	0	0
Odostomia (Evalea) sp. *I (Shrake)*	5570317	6	7	0	3	1
Odostomia (Evalea) sp. *J (Shrake)*	5570305	0	2	1	0	0
Oligochaete, unident.	4880001	87	143	187	126	207
Philine sp. *(A) (SCAMIT)*	5570240	11	6	7	6	6
Podocopid ostracod	5220092	0	1	0	0	1
Polydora ligni	4810168	29	31	42	41	13
Polydora socialis	4810940	0	0	0	3	1
Potamocorbula amurensis	5540214	81	71	38	63	26
Pseudopolydora kempi	4810640	8	5	9	3	11
Pseudopolydora paucibranchiata	4810347	20	13	18	23	16
Sarsiella zostericola	5220091	284	282	241	319	184
Silophasma geminata	5265020	0	1	0	0	0
Streblospio benedicti	4810257	59	108	158	91	43
Synidotea laticauda	5265110	0	2	0	0	0
Tapes japonica	5540158	7	7	6	4	2
Theora lubrica	5540114	14	11	12	10	8
		Sampling date: November 2, 1988				
Ampelisca abdita	5275504	1,783	2,297	3,113	2,253	1,271
Asychis elongata	4810565	1	0	0	0	0
Cirratulidae, unident.	4810990	0	0	0	0	5
Euchone limnicola	4810255	3	2	0	0	2
Eudorella pacifica	5263112	0	1	2	5	0
Gemma gemma	5540400	237	390	351	310	361
Glycinde polygnatha	4810496	7	5	4	3	2
Grandidierella japonica	5275503	30	43	39	29	30
Harmothoe imbricata	4810343	1	4	3	0	1
Heteromastus filiformis	4810438	20	17	42	4	32
Leucon subnasica	5263012	103	121	111	71	82
Macoma sp(p).	5540105	0	0	0	0	1
Melanochlamys diomedea	5570248	0	0	0	0	1
Musculista senhousia	5540401	33	45	31	28	40
Mya arenaria	5540402	0	1	0	0	0
Nassarius obsoletus	5570304	0	0	1	0	0
Neanthes succinea	4810562	3	3	7	4	4
Nematodes, unident.	4500001	22	21	45	87	7
Odostomia (Evalea) sp. *I (Shrake)*	5570317	0	0	9	6	4
Odostomia (Evalea) sp. *J (Shrake)*	5570305	1	7	11	10	4
Odostomia (Evalea) sp. *N (Shrake)*	5570321	0	1	0	0	0
Oligochaete, unident.	4880001	110	48	54	35	71
Philine sp. *(A) (SCAMIT)*	5570240	0	3	2	2	2

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
Palo Alto						
Sampling date: November 2, 1988—Continued						
Polydora ligni	4810168	0	1	0	0	1
Potamocorbula amurensis	5540214	56	83	68	57	61
Pseudopolydora kempi	4810640	0	0	1	0	1
Pseudopolydora paucibranchiata	4810347	0	4	1	0	0
Pyromaia tuberculata	5286094	0	0	0	0	1
Sarsiella zostericola	5220091	336	487	388	246	393
Silophasma geminata	5265020	0	4	1	1	5
Streblospio benedicti	4810257	34	5	28	20	11
Synidotea laticauda	5265110	0	0	0	0	1
Tapes japonica	5540158	3	7	2	6	6
Theora lubrica	5540114	3	9	4	5	3
San Leandro						
Sampling date: January 13, 1988						
Ampelisca abdita	5275504	36	74	58	25	29
Anthozoan, unident.	3730010	0	2	3	0	1
Asychis elongata	4810565	8	7	3	7	13
Cirratulidae, unident.	4810990	0	1	0	0	0
Corophium alienense	5275287	1	0	2	1	1
Corophium sp(p)	5275098	1	0	0	0	0
Cossura pygodactylata	4810861	0	0	0	2	0
Crepidula plana	5570204	0	0	0	1	0
Crepidula sp(p)	5570203	0	0	0	0	2
Crepidula sp. *A (Shrake)*	5570331	1	0	0	1	0
Euchone limnicola	4810255	0	0	0	1	0
Exogone lourei	4810066	8	8	11	6	13
Glycinde polygnatha	4810496	19	20	16	17	20
Grandidierella japonica	5275503	0	1	0	0	0
Harmothoe imbricata	4810343	0	1	1	1	1
Heteromastus filiformis	4810438	1	3	1	3	0
Macoma balthica	5540147	1	0	0	0	0
Marphysa sanguinea	4810248	0	1	1	0	0
Musculista senhousia	5540401	70	61	110	69	132
Nematodes, unident.	4500001	9	10	8	5	24
Nephtys cornuta franciscana	4810116	0	0	1	0	0
Oligochaete, unident.	4880001	94	269	178	172	146
Paranemertes sp(p).	4000050	0	1	0	0	0
Polydora brachycephala	4810557	0	0	0	0	1
Pseudopolydora kempi	4810640	0	0	0	0	1
Pseudopolydora paucibranchiata	4810347	0	2	1	0	2
Sarsiella zostericola	5220091	19	53	46	22	24

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Leandro						
Sampling date: January 13, 1988—Continued						
Schistomeringos rudolphi	4810354	0	1	0	3	0
Sphaerosyllis bilobata	4810833	0	3	8	2	9
Sphaerosyllis californiensis	4810272	3	17	11	5	9
Tapes japonica	5540158	6	10	8	3	13
Tenonia priops	4810727	0	1	1	1	1
Theora lubrica	5540114	0	1	2	1	1
Urosalpinx cinerea	5570200	0	0	1	1	0
Sampling date: March 8, 1988						
Ampelisca abdita	5275504	11	2	2	5	0
Anthozoan, unident.	3730010	1	2	0	2	7
Asychis elongata	4810565	4	5	3	6	0
Crepidula plana	5570204	0	3	0	3	2
Crepidula sp. *A (Shrake)*	5570331	5	0	1	3	2
Exogone lourei	4810066	2	15	9	27	9
Gemma gemma	5540400	1	4	1	0	1
Glycinde polygnatha	4810496	5	8	5	8	4
Harmothoe imbricata	4810343	0	0	1	0	4
Hemigrapsus oregonensis	5286092	0	0	0	0	3
Heteromastus filiformis	4810438	0	0	1	1	6
Lightiella serendipita	5204001	0	0	0	1	0
Macoma sp(p).	5540105	1	0	0	0	0
Marphysa sanguinea	4810248	5	2	2	4	3
Musculista senhousia	5540401	25	67	23	45	58
Nematodes, unident.	4500001	45	33	7	110	10
Oligochaete, unident.	4880001	11	37	26	40	12
Ostrea edulis	5540215	0	0	1	0	0
Pettiboneia sanmatiensis	4810552	0	0	0	0	1
Polydora brachycephala	4810557	0	0	0	0	1
Pseudopolydora paucibranchiata	4810347	1	0	0	0	0
Sarsiella zostericola	5220091	18	21	6	23	0
Schistomeringos rudolphi	4810354	0	0	0	0	2
Sphaerosyllis bilobata	4810833	0	9	0	4	6
Sphaerosyllis californiensis	4810272	1	4	3	4	5
Tapes japonica	5540158	6	19	12	22	31
Theora lubrica	5540114	0	2	0	0	1
Tubulanus sp(p).	4000013	0	0	1	0	0
Sampling date: May 25, 1988						
Amaeana occidentalis	4810001	0	0	0	0	1
Ampelisca abdita	5275504	5	26	11	4	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Leandro						
Sampling date: May 25, 1988—Continued						
Anthozoan, unident.	3730010	0	0	0	0	10
Asychis elongata	4810565	1	9	2	0	4
Balanus sp(p).	5250002	0	0	0	0	1
Brachyuran megalops	5286064	0	1	0	0	0
Cirratulidae, unident.	4810990	1	0	1	0	0
Corophium sp(p).	5275098	1	2	0	1	4
Corophium sp. *a*	5275510	32	102	0	41	5
Cossura pygodactylata	4810861	0	0	0	0	1
Crepidula sp(p).	5570203	1	2	0	2	0
Crepidula sp. *A (Shrake)*	5570331	0	0	0	0	8
Exogone lourei	4810066	12	10	2	8	27
Glycinde polygnatha	4810496	10	19	5	21	12
Harmothoe imbricata	4810343	1	0	0	0	6
Heptacarpus stimpsoni	5286106	0	0	0	0	1
Leucon subnasica	5263012	0	0	0	2	0
Marphysa sanguinea	4810248	6	3	1	0	1
Musculista senhousia	5540401	18	7	0	1	185
Mysella sp. *(A) (SCAMIT)*	5540212	0	0	0	0	3
Mysella tumida	5540145	0	0	0	1	0
Mytilidae, unident.	5540403	0	0	1	0	0
Nematodes, unident.	4500001	0	1	0	0	10
Nephtys cornuta franciscana	4810116	2	6	8	9	0
Oligochaete, unident.	4880001	13	35	10	28	17
Philine sp. *(A) (SCAMIT)*	5570240	1	0	9	11	0
Porifera	3600000	1	0	0	0	1
Pyromaia tuberculata	5286094	1	0	0	0	0
Sarsiella zostericola	5220091	13	19	11	8	9
Schistomeringos rudolphi	4810354	0	2	0	0	0
Sphaerosyllis bilobata	4810833	1	0	0	0	1
Sphaerosyllis californiensis	4810272	2	1	2	5	3
Tapes japonica	5540158	0	0	0	0	8
Theora lubrica	5540114	1	1	0	2	0
Sampling date: July 27, 1988						
Ampelisca abdita	5275504	5	0	0	1	5
Anthozoan, unident.	3730010	0	24	4	1	1
Asychis elongata	4810565	1	2	1	0	1
Capitella capitata	4810241	0	1	0	0	0
Corophium sp(p).	5275098	0	1	0	3	0
Corophium sp. *a*	5275510	20	1	1	4	2
Cossura pygodactylata	4810861	0	0	0	0	1
Crepidula sp(p).	5570203	3	12	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
		San Leandro				
		Sampling date: July 27, 1988—Continued				
Crepidula sp. *A (Shrake)*	5570331	0	12	0	2	0
Exogone lourei	4810066	0	1	0	12	0
Glycinde polygnatha	4810496	4	5	3	7	3
Harmothoe imbricata	4810343	0	1	2	0	0
Hydrozoa, unident.	3710052	0	0	0	0	1
Leitoscoloplos pugettensis	4810516	0	0	1	0	0
Marphysa sanguinea	4810248	5	1	2	0	0
Musculista senhousia	5540401	5	248	71	29	12
Nematodes, unident.	4500001	0	0	0	36	3
Nephtys cornuta franciscana	4810116	0	0	0	1	2
Philine sp. *(A) (SCAMIT)*	5570240	0	0	0	1	0
Porifera	3600000	0	1	0	0	0
Pyromaia tuberculata	5286094	1	0	0	0	0
Sarsiella zostericola	5220091	4	0	0	1	4
Schistomeringos rudolphi	4810354	0	1	0	0	0
Sphaerosyllis californiensis	4810272	0	0	1	0	0
Streblospio benedicti	4810257	0	1	0	0	0
Tapes japonica	5540158	1	26	7	4	1
		Sampling date: September 13, 1988				
Amaeana occidentalis	4810001	0	1	0	0	0
Ampelisca abdita	5275504	302	236	297	718	239
Asychis elongata	4810565	7	8	2	7	2
Campanulariidae, unident.	3710039	1	0	1	0	1
Capitellidae, unident.	4810558	0	0	0	0	1
Cirratulidae, unident.	4810990	1	0	1	1	2
Corophium sp. *a*	5275510	328	190	91	11	131
Cossura pygodactylata	4810861	0	0	2	2	1
Crepidula plana	5570204	8	8	5	10	6
Crepidula sp(p).	5570203	3	5	5	0	4
Crepidula sp. *A (Shrake)*	5570331	1	1	1	2	3
Cryptomya californica	5540155	6	1	1	0	1
Euchone limnicola	4810255	12	20	21	6	14
Exogone lourei	4810066	29	21	21	26	13
Glycinde polygnatha	4810496	7	4	5	5	12
Grandidierella japonica	5275503	12	8	2	10	12
Harmothoe imbricata	4810343	1	1	1	0	2
Hemigrapsus oregonensis	5286092	1	0	0	0	0
Leitoscoloplos pugettensis	4810516	0	1	0	0	0
Leucon subnasica	5263012	0	0	0	1	0
Marphysa sanguinea	4810248	2	0	5	8	5
Mediomastus sp(p).	4810598	1	0	1	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Leandro						
Sampling date: September 13, 1988—Continued						
Melanochlamys diomedea	5570248	0	0	0	0	2
Musculista senhousia	5540401	1	1	0	18	0
Nematodes, unident.	4500001	224	0	256	18	43
Nephtys cornuta franciscana	4810116	1	2	4	6	0
Oligochaete, unident.	4880001	38	11	37	14	51
Philine sp. *(A) (SCAMIT)*	5570240	0	0	0	1	0
Phoronis sp(p).	5700002	0	2	1	0	0
Platyhelminthid, unident.	3900001	5	0	2	0	3
Polydora ligni	4810168	15	6	0	19	4
Porifera	3600000	0	0	0	1	0
Pyromaia tuberculata	5286094	0	2	0	3	1
Sarsiella zostericola	5220091	26	7	16	13	19
Schistomeringos rudolphi	4810354	5	4	6	8	4
Sphaerosyllis californiensis	4810272	7	0	2	1	2
Tapes japonica	5540158	11	6	2	10	11
Theora lubrica	5540114	40	32	18	23	16
Sampling date: November 2, 1988						
Ampelisca abdita	5275504	2,609	2,896	3,052	2,556	2,091
Amphiuridae, unident.	5930032	0	0	0	1	0
Armandia brevis	4810012	0	1	0	0	0
Asychis elongata	4810565	1	7	9	6	11
Campanulariidae, unident.	3710039	0	0	0	1	0
Cirratulidae, unident.	4810990	1	0	0	0	0
Corophium sp(p).	5275098	1	3	0	0	1
Corophium sp. *a*	5275510	0	1	1	0	12
Cossura pygodactylata	4810861	1	0	1	2	0
Euchone limnicola	4810255	9	19	21	10	10
Exogone lourei	4810066	54	72	105	81	23
Glycinde polygnatha	4810496	0	1	2	1	0
Harmothoe imbricata	4810343	6	6	4	2	6
Leitoscoloplos pugettensis	4810516	0	1	0	0	1
Leucon subnasica	5263012	0	0	0	1	0
Marphysa sanguinea	4810248	3	2	4	3	4
Melanochlamys diomedea	5570248	0	0	0	1	0
Musculista senhousia	5540401	43	59	91	49	16
Nematodes, unident.	4500001	18	46	161	186	149
Nephtys cornuta franciscana	4810116	1	4	1	1	0
Oligochaete, unident.	4880001	17	9	19	12	19
Philine sp. *(A) (SCAMIT)*	5570240	1	3	0	1	2
Platyhelminthid, unident.	3900001	0	1	0	0	0
Polydora ligni	4810168	0	0	0	2	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals, Replicate number 1	2	3	4	5
		San Leandro				
		Sampling date: November 2, 1988—Continued				
Pyromaia tuberculata	5286094	1	1	0	3	7
Sarsiella zostericola	5220091	13	9	10	6	10
Schistomeringos rudolphi	4810354	4	2	2	0	3
Sphaerosyllis californiensis	4810272	3	6	10	2	2
Tapes japonica	5540158	27	37	30	15	15
Theora lubrica	5540114	11	32	18	23	57
		San Pablo Deep				
		Sampling date: January 12, 1988				
Amaeana occidentalis	4810001	0	0	0	0	2
Ampelisca abdita	5275504	2	0	0	4	3
Cirratulidae, unident.	4810990	0	1	0	0	0
Corophium alienense	5275287	0	0	0	1	3
Gemma gemma	5540400	3	0	0	0	0
Glycinde polygnatha	4810496	1	1	1	0	3
Leucon subnasica	5263012	2	0	0	0	2
Mediomastus sp.	4810303	1	0	0	0	0
Nematodes, unident.	4500001	2	0	0	0	0
Odostomia (Evalea) sp. *N (Shrake)*	5570321	0	0	0	0	6
Oligochaete, unident.	4880001	5	1	1	0	8
Platyhelminthid, unident.	3900001	0	0	0	0	1
Polydora brachycephala	4810557	0	0	0	2	2
Potamocorbula amurensis	5540214	79	93	117	57	153
Pseudopolydora kempi	4810640	0	0	1	0	0
Synidotea laticauda	5265110	0	0	0	0	2
Tapes japonica	5540158	0	0	0	0	1
		Sampling date: March 15, 1988				
Ampelisca abdita	5275504	0	0	0	0	1
Asychis elongata	4810565	0	0	0	1	0
Capitella capitata	4810241	0	0	2	1	0
Gemma gemma	5540400	0	0	0	1	0
Glycinde polygnatha	4810496	1	1	0	0	0
Nematodes, unident.	4500001	3	0	0	0	0
Oligochaete, unident.	4880001	19	6	2	38	0
Potamocorbula amurensis	5540214	51	59	53	63	33
Rhepoxynius sp(p).	5275241	1	0	0	0	0
Scolelepis squamata	4810589	0	0	0	0	1
Tapes japonica	5540158	0	0	1	0	0
Tharyx sp.	4810595	1	0	0	3	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Deep						
Sampling date: May 24, 1988						
Ampelisca abdita	5275504	0	0	8	1	0
Amphiurid, unident.	5930014	0	1	0	0	0
Balanus crenatus	5250036	0	1	23	96	15
Balanus sp(p).	5250002	3	4	0	0	0
Cerebratulus sp(p).	4000014	0	0	1	0	0
Corophium sp(p).	5275098	0	0	0	1	2
Corophium sp. *a*	5275510	28	91	75	54	99
Cryptomya californica	5540155	1	0	0	0	0
Exogone lourei	4810066	0	1	0	0	0
Glycinde polygnatha	4810496	1	3	6	4	2
Grandidierella japonica	5275503	0	1	0	1	0
Harmothoe imbricata	4810343	0	0	0	1	0
Hydrozoa, unident.	3710052	0	32	0	0	14
Musculista senhousia	5540401	0	0	0	0	1
Nemertea, unident.	4000002	2	0	0	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	2	1	0	0	2
Oligochaete, unident.	4880001	0	0	1	1	0
Polydora brachycephala	4810557	16	47	8	38	42
Polydora ligni	4810168	0	2	0	0	0
Potamocorbula amurensis	5540214	1	32	13	6	32
Sarsiella zostericola	5220091	1	1	1	4	4
Scleroplax granulata	5286519	0	0	0	1	0
Scolelepis sp(p).	4810316	1	0	0	0	0
Stenothoid, unident.	5275122	0	0	1	0	0
Upogebia pugettensis	5286103	0	0	1	0	0
Sampling date: July 20, 1988						
Ampelisca abdita	5275504	0	0	1	0	0
Aporobopyrus muguensis	5265041	0	0	2	0	0
Balanus crenatus	5250036	0	0	0	0	22
Corophium sp. *a*	5275510	0	0	4	0	0
Glycinde polygnatha	4810496	1	0	0	0	0
Leptochelia dubia	5264038	0	0	0	0	1
Lineidae, unident.	4000038	0	0	0	2	0
Natantia, unident.	5286111	1	0	0	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	0	0	1	0	0
Odostomia (Evalea) sp. *J (Shrake)*	5570305	1	0	0	0	0
Odostomia (Evalea) sp. *N (Shrake)*	5570321	1	0	0	0	0
Philine sp. *(A) (SCAMIT)*	5570240	0	0	1	0	0
Phoronis sp(p).	5700002	0	0	10	0	0
Pleusymtes sp(p).	5275203	0	0	0	0	1
Polydora brachycephala	4810557	0	2	10	3	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Deep						
Sampling date: July 20, 1988—Continued						
Potamocorbula amurensis	5540214	30	21	46	0	1
Sarsiella zostericola	5220091	0	0	0	1	0
Upogebia pugettensis	5286103	0	0	1	0	0
Sampling date: September 13, 1988						
Ampelisca abdita	5275504	34	15	42	44	39
Asychis elongata	4810565	0	0	2	1	2
Balanus crenatus	5250036	0	0	1	0	7
Brachyura, unident.	5286098	0	0	1	0	0
Cerebratulus sp(p).	4000014	0	0	1	0	0
Cirratulidae, unident.	4810990	0	0	2	0	0
Corophium sp. *a*	5275510	104	71	122	111	148
Glycinde polygnatha	4810496	5	6	2	4	2
Grandidierella japonica	5275503	0	0	0	0	1
Heteromastus filiformis	4810438	0	0	2	1	2
Lineidae, unident.	4000038	1	0	0	0	0
Molgula manhattensis	6301075	0	1	0	0	0
Mysids, unident.	5262006	0	0	1	0	0
Nematodes, unident.	4500001	1	0	6	4	0
Oligochaete, unident.	4880001	0	0	5	0	1
Paleanotus bellis	4810139	0	0	1	0	0
Phoronis sp(p).	5700002	1	1	9	0	18
Pleusymtes sp(p).	5275203	0	1	0	0	1
Polydora brachycephala	4810557	15	29	8	1	7
Polydora ligni	4810168	0	0	18	0	2
Potamocorbula amurensis	5540214	11	2	17	10	19
Pyromaia tuberculata	5286094	6	0	3	0	2
Sarsiella zostericola	5220091	1	0	1	1	0
Synidotea laticauda	5265110	0	0	0	0	1
Tubulanus pellucidus	4000011	0	0	0	1	0
Tubulanus sp(p).	4000013	0	0	1	0	0
Upogebia pugettensis	5286103	0	1	0	0	0
Sampling date: November 1, 1988						
Ampelisca abdita	5275504	2	0	5	1	26
Balanus crenatus	5250036	2	0	12	0	0
Campanulariidae, unident.	3710039	1	1	1	0	0
Corophium sp(p).	5275098	1	0	0	0	0
Corophium sp. *a*	5275510	0	1	3	2	20
Crangon sp(p).	5286514	1	0	0	0	0
Eusyllis transecta	4810680	0	0	1	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Deep						
Sampling date: November 1, 1988—Continued						
Glycinde polygnatha	4810496	3	4	6	2	0
Harmothoe imbricata	4810343	2	0	0	0	0
Hydrozoa, unident.	3710052	0	1	1	0	0
Molgula manhattensis	6301075	1	0	7	0	0
Nematodes, unident.	4500001	0	0	2	0	0
Odostomia (Evalea) sp. *I (Shrake)*	5570317	0	0	1	0	0
Philine sp. *(A) (SCAMIT)*	5570240	1	0	0	0	0
Phoronis sp(p).	5700002	0	0	4	0	0
Pleusymtes sp(p).	5275203	9	0	1	0	1
Polydora brachycephala	4810557	13	33	7	11	6
Potamocorbula amurensis	5540214	12	22	31	18	17
Pyromaia tuberculata	5286094	0	0	1	0	0
Scolelepis sp(p).	4810316	0	0	0	1	0
Synidotea laticauda	5265110	2	0	5	0	2
Theora lubrica	5540114	1	0	0	0	0
San Pablo Shallow						
Sampling date: January 12, 1988						
Ampelisca abdita	5275504	85	138	135	131	40
Asychis elongata	4810565	1	6	4	4	2
Corophium alienense	5275287	5	8	7	5	6
Glycinde polygnatha	4810496	3	3	2	6	3
Heteromastus filiformis	4810438	1	1	2	15	0
Leucon subnasica	5263012	0	3	1	5	4
Mediomastus sp.	4810303	1	1	1	0	0
Neanthes succinea	4810562	1	0	0	0	0
Nematodes, unident.	4500001	3	4	0	0	0
Nephtys cornuta franciscana	4810116	1	0	0	1	1
Odostomia (Evalea) sp. *N (Shrake)*	5570321	0	0	0	0	2
Oligochaete, unident.	4880001	34	57	1	52	37
Platyhelminthid, unident.	3900001	1	0	0	0	0
Potamocorbula amurensis	5540214	74	50	57	91	55
Pseudopolydora kempi	4810640	4	2	2	1	2
Sarsiella zostericola	5220091	9	8	8	12	5
Streblospio benedicti	4810257	13	8	5	10	11
Synidotea laticauda	5265110	1	0	0	0	0
Tapes japonica	5540158	1	3	0	0	2
Theora lubrica	5540114	1	2	0	1	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Shallow						
Sampling date: March 14, 1988						
Ampelisca abdita	5275504	118	•	104	427	163
Asychis elongata	4810565	3	•	12	0	7
Campanularidae, unident.	3710039	0	•	0	1	0
Corophium alienense	5275287	1	•	6	21	14
Corophium sp(p)	5275098	2	•	24	75	44
Cumella vulgaris	5263098	9	•	2	0	10
Glycinde polygnatha	4810496	2	•	3	2	0
Leucon subnasica	5263012	84	•	14	2	32
Macoma sp(p)	5540105	0	•	1	0	0
Molgula manhattensis	6301075	0	•	0	1	0
Musculista senhousia	5540401	1	•	0	0	0
Nematodes, unident.	4500001	4	•	10	1	3
Nephtys cornuta franciscana	4810116	0	•	1	0	0
Odostomia (Evalea) sp. *J (Shrake)*	5570305	0	•	0	0	1
Oligochaete, unident.	4880001	50	•	89	44	41
Polynoid, unident.	4810936	0	•	0	1	0
Potamocorbula amurensis	5540214	36	•	52	74	57
Pseudopolydora kempi	4810640	3	•	0	5	0
Sarsiella zostericola	5220091	9	•	7	17	15
Solen sicarius	5540416	2	•	0	0	0
Solenidae, unident.	5540219	0	•	0	0	1
Streblospio benedicti	4810257	16	•	5	11	13
Tapes japonica	5540158	4	•	3	4	6
Theora lubrica	5540114	4	•	1	0	2
Upogebia pugettensis	5286103	0	•	0	1	0
Sampling date: May 31, 1988						
Ampelisca abdita	5275504	791	1,013	545	971	924
Asychis elongata	4810565	4	8	2	5	5
Capitella capitata	4810241	1	2	0	2	0
Corophium sp(p)	5275098	5	8	9	6	15
Corophium sp. *a*	5275510	18	25	19	34	30
Crangon nigricauda	5286120	0	0	1	0	0
Eudorella pacifica	5263112	1	1	0	0	0
Gemma gemma	5540400	0	0	1	0	0
Glycinde polygnatha	4810496	7	11	11	18	12
Harmothoe imbricata	4810343	0	0	2	3	3
Harpacticoid copepod, unident.	5230052	0	0	0	0	1
Leitoscoloplos pugettensis	4810516	0	0	0	1	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals, Replicate number 1	2	3	4	5
		San Pablo Shallow				
		Sampling date: May 31, 1988—Continued				
Leucon subnasica	5263012	8	17	14	16	6
Musculista senhousia	5540401	0	0	2	2	1
Nematodes, unident.	4500001	6	27	4	25	1
Neomediomastus sp(p).	4810865	0	0	0	1	0
Nephtys cornuta franciscana	4810116	0	1	0	1	1
Odostomia (Evalea) sp. *I (Shrake)*	5570317	0	0	1	0	0
Odostomia (Evalea) sp. *N (Shrake)*	5570321	0	0	0	0	1
Oligochaete, unident.	4880001	15	15	0	9	12
Parapleustes derzhavini	5275293	0	0	0	2	0
Philine sp. *(A) (SCAMIT)*	5570240	1	0	0	0	0
Potamocorbula amurensis	5540214	447	491	355	457	526
Sarsiella zostericola	5220091	18	18	7	6	8
Sphaerosyllis californiensis	4810272	1	0	0	0	0
Streblospio benedicti	4810257	1	2	0	0	0
Tapes japonica	5540158	1	8	0	3	2
Theora lubrica	5540114	0	0	5	5	0
Upogebia pugettensis	5286103	0	0	0	2	1
		Sampling date: July 25, 1988				
Ampelisca abdita	5275504	208	276	159	191	278
Asychis elongata	4810565	4	6	4	7	5
Campanulariidae, unident.	3710039	0	1	0	0	0
Capitella capitata	4810241	0	0	1	1	0
Corophium sp(p).	5275098	3	2	4	1	4
Corophium sp. *a*	5275510	10	10	7	9	6
Ctenostomate, unident.	5600114	0	1	0	0	0
Glycinde polygnatha	4810496	7	11	7	13	11
Grandidierella japonica	5275503	0	0	0	1	0
Harmothoe imbricata	4810343	1	0	0	0	0
Heteromastus filiformis	4810438	0	3	0	0	1
Leitoscoloplos pugettensis	4810516	1	0	0	1	0
Leucon subnasica	5263012	0	5	1	1	4
Melanochlamys diomedea	5570248	0	0	1	0	0
Musculista senhousia	5540401	3	0	2	1	2
Nematodes, unident.	4500001	0	4	0	0	0
Nephtys cornuta franciscana	4810116	0	0	0	4	2
Odostomia (Evalea) sp. *H (Shrake)*	5570314	1	0	1	1	3
Oligochaete, unident.	4880001	0	5	0	0	0
Pleusymtes sp(p).	5275203	1	0	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Shallow						
Sampling date: July 25, 1988—Continued						
Potamocorbula amurensis	5540214	378	263	238	459	499
Pseudopolydora kempi	4810640	1	1	2	0	1
Sarsiella zostericola	5220091	15	23	13	10	12
Sphaerosyllis californiensis	4810272	0	1	0	0	0
Streblospio benedicti	4810257	0	2	0	1	0
Tapes japonica	5540158	1	7	3	1	1
Theora lubrica	5540114	1	1	0	1	2
Sampling date: September 13, 1988						
Ampelisca abdita	5275504	165	213	163	155	199
Asychis elongata	4810565	5	4	8	5	4
Bivalvia, unident.	5540210	0	0	0	2	0
Campanularidae, unident.	3710039	0	1	0	0	0
Capitella capitata	4810241	1	1	0	2	2
Corophium sp. *a*	5275510	45	44	41	16	28
Exogone lourei	4810066	0	2	2	0	0
Glycinde polygnatha	4810496	6	3	4	5	3
Harmothoe imbricata	4810343	0	0	1	0	0
Hydrozoa, unident.	3710052	0	1	1	0	0
Leitoscoloplos pugettensis	4810516	0	0	1	1	0
Leucon subnasica	5263012	2	6	3	2	0
Lineidae, unident.	4000038	0	1	0	0	0
Mediomastus sp.	4810303	0	0	0	0	1
Musculista senhousia	5540401	1	1	1	2	1
Nematodes, unident.	4500001	0	40	17	0	0
Nephtys caecoides	4810114	0	0	0	0	1
Nephtys cornuta franciscana	4810116	0	0	3	2	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	0	1	0	0	0
Oligochaete, unident.	4880001	0	13	13	1	1
Philine sp. *(A) (SCAMIT)*	5570240	2	0	0	1	0
Pleusymtes sp(p).	5275203	0	2	0	0	0
Potamocorbula amurensis	5540214	366	455	356	429	430
Pseudopolydora kempi	4810640	0	0	1	0	0
Sarsiella zostericola	5220091	16	21	18	16	13
Sphaerosyllis californiensis	4810272	0	0	0	0	1
Streblospio benedicti	4810257	0	1	1	0	1
Tapes japonica	5540158	3	4	0	1	4
Theora lubrica	5540114	2	0	1	3	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
San Pablo Shallow						
Sampling date: November 1, 1988						
Ampelisca abdita	5275504	415	300	335	312	168
Asychis elongata	4810565	23	5	3	7	1
Campanulariidae, unident.	3710039	1	1	1	1	1
Capitella capitata	4810241	1	0	1	7	0
Corophium sp. *a*	5275510	35	49	43	20	17
Euchone limnicola	4810255	1	0	0	0	0
Eudorella pacifica	5263112	0	1	0	0	0
Exogone lourei	4810066	1	0	0	0	0
Glycinde polygnatha	4810496	10	3	4	9	4
Heteromastus filiformis	4810438	0	0	0	1	0
Hydrozoa, unident.	3710052	0	0	0	0	1
Leucon subnasica	5263012	3	3	3	4	0
Magelona sacculata	4810102	0	1	0	0	0
Mediomastus sp.	4810303	0	4	0	0	0
Natantia, unident.	5286111	0	0	0	1	1
Nematodes, unident.	4500001	2	1	4	58	1
Nephtys caecoides	4810114	0	0	0	1	0
Nephtys cornuta franciscana	4810116	1	0	2	0	0
Nephtys sp(p).	4810579	0	0	0	0	1
Odostomia sp(p).	5570075	1	0	0	0	6
Oligochaete, unident.	4880001	0	8	11	38	0
Philine sp. *(A) (SCAMIT)*	5570240	0	1	2	1	2
Pleusymtes sp(p).	5275203	1	0	0	0	0
Polydora ligni	4810168	0	0	1	0	0
Potamocorbula amurensis	5540214	204	146	114	202	129
Pyromaia tuberculata	5286094	1	0	1	1	0
Sarsiella zostericola	5220091	14	6	7	9	2
Scolelepis squamata	4810589	0	0	0	0	1
Streblospio benedicti	4810257	0	1	0	0	0
Tapes japonica	5540158	0	0	1	0	0
Theora lubrica	5540114	1	1	2	1	0
South Bay Deep						
Sampling date: January 13, 1988						
Amaeana occidentalis	4810001	1	1	0	2	2
Ampelisca abdita	5275504	4	2	3	2	16
Amphipholis sp(p).	5930041	0	1	0	2	0
Amphiuridae, unident.	5930032	1	0	1	1	0
Anaitides longipes	4810505	0	0	1	0	0
Anthozoan, unident.	3730010	100	32	221	92	6
Asychis elongata	4810565	21	14	18	16	20

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: January 13, 1988—Continued						
Bivalvia, unident.	5540210	1	0	0	0	0
Campanulariidae, unident.	3710039	0	1	1	0	1
Capitella capitata	4810241	2	1	5	3	1
Capitellidae, unident.	4810558	1	0	0	0	2
Caprella sp(p).	5275117	1	0	0	0	0
Cerebratulus sp(p).	4000014	3	0	1	1	0
Cirratulidae, unident.	4810990	0	0	0	1	0
Corophium alienense	5275287	2	3	0	1	16
Cossura pygodactylata	4810861	4	4	5	4	0
Cryptomya californica	5540155	0	1	1	0	0
Edwardsia sipunculoides	3730022	0	0	1	0	0
Epitonium sp.	5570117	2	0	1	1	0
Euchone limnicola	4810255	0	0	0	0	3
Eudorella pacifica	5263112	0	2	0	1	0
Eusyllis transecta	4810680	0	1	0	0	0
Exogone lourei	4810066	70	183	77	180	27
Gemma gemma	5540400	0	2	0	5	0
Glycinde polygnatha	4810496	6	11	10	8	3
Hemigrapsus oregonensis	5286092	0	0	1	0	0
Hesperonoe sp(p).	4810090	1	0	0	0	0
Leptochelia dubia	5264038	11	3	13	15	1
Mediomastus sp.	4810303	15	19	12	10	7
Modiolus sp(p).	5540409	1	0	0	2	0
Molgula manhattensis	6301075	0	2	0	1	0
Mya sp(p).	5540124	0	0	0	0	1
Mysella sp(p).	5540137	0	0	0	1	0
Nematodes, unident.	4500001	3	6	3	34	1
Neomediomastus sp(p).	4810865	0	0	0	2	0
Nephtys cornuta franciscana	4810116	6	4	3	2	1
Notomastus sp.	4810389	0	0	1	0	1
Oligochaete, unident.	4880001	2	9	16	26	3
Paleanotus bellis	4810139	0	0	1	0	0
Philine sp. *(A) (SCAMIT)*	5570240	0	0	1	0	0
Pleusymtes sp(p).	5275203	2	0	1	0	0
Polydora brachycephala	4810557	0	0	0	0	1
Polydora socialis	4810940	1	0	0	0	0
Pycnogonum stearnsi	5202014	0	0	0	1	0
Sarsiella zostericola	5220091	7	6	6	8	6
Schistomeringos rudolphi	4810354	2	0	2	2	3
Sphaerosyllis bilobata	4810833	0	1	1	0	0
Sphaerosyllis californiensis	4810272	8	4	6	2	0
Tapes japonica	5540158	0	4	0	5	1
Tharyx sp.	4810595	0	2	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: January 13, 1988—Continued						
Theora lubrica	5540114	2	0	1	2	0
Tubulanus sp(p).	4000013	0	0	1	0	0
Sampling date: March 8, 1988						
Amaeana occidentalis	4810001	0	1	0	1	0
Ampelisca abdita	5275504	1	0	2	5	5
Amphiuridae, unident.	5930032	0	0	0	1	0
Anaitides longipes	4810505	0	0	1	0	0
Anthozoan, unident.	3730010	8	5	2	4	13
Asychis elongata	4810565	46	16	35	32	25
Campanulariidae, unident.	3710039	1	1	1	0	1
Capitella capitata	4810241	0	0	2	0	0
Cerebratulus sp(p).	4000014	0	0	3	2	0
Cirriformia spirabrancha	4810854	0	1	0	0	0
Corophium alienense	5275287	1	3	2	0	1
Cossura pygodactylata	4810861	6	12	6	14	4
Crepidula plana	5570204	1	0	0	0	0
Cryptomya californica	5540155	0	2	0	0	0
Ctenostomate, unident.	5600114	0	0	0	0	1
Edwardsiidae, unident.	3730045	0	1	0	1	0
Epitonium sp.	5570117	0	1	0	0	0
Eudorella pacifica	5263112	1	0	1	1	0
Euphilomedes sp(p).	5220069	0	0	0	0	1
Exogone lourei	4810066	158	147	229	226	136
Glycinde polygnatha	4810496	3	5	7	3	1
Hesperonoe sp(p).	4810090	0	0	0	1	0
Leptochelia dubia	5264038	11	6	10	2	3
Lineidae, unident.	4000038	0	0	0	0	1
Mediomastus sp(p).	4810598	5	12	10	4	5
Modiolus sp(p).	5540409	0	1	1	0	0
Musculista senhousia	5540401	2	0	0	1	0
Mysella sp(p).	5540137	0	1	0	3	0
Nematodes, unident.	4500001	15	38	14	3	5
Nephtys cornuta franciscana	4810116	4	4	4	6	2
Notomastus sp.	4810389	0	0	0	1	0
Oligochaete, unident.	4880001	2	1	1	2	0
Paraonidae, unident.	4810708	0	0	0	1	0
Pettiboneia sanmatiensis	4810552	0	0	0	0	4
Pholoe glabra	4810442	0	0	0	1	0
Phoronis sp(p).	5700002	0	1	0	0	0
Porifera	3600000	0	1	0	0	0
Sarsiella zostericola	5220091	9	14	8	9	11

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: March 8, 1988—Continued						
Schistomeringos rudolphi	4810354	0	4	2	7	1
Sphaerosyllis bilobata	4810833	1	0	0	0	1
Sphaerosyllis californiensis	4810272	6	9	11	10	2
Tapes japonica	5540158	5	5	10	2	7
Tharyx sp(p).	4810319	1	1	1	0	0
Theora lubrica	5540114	2	0	0	3	1
Transennella tantilla	5540189	0	1	0	0	0
Tubulanus sp(p).	4000013	3	1	1	1	3
Upogebia pugettensis	5286103	0	0	1	0	0
Sampling date: May 25, 1988						
Ampelisca abdita	5275504	424	290	300	378	115
Anaitides longipes	4810505	0	1	0	0	2
Anthozoan, unident.	3730010	1	2	0	11	6
Arabellid, unident.	4810281	0	1	0	0	0
Asychis elongata	4810565	47	54	55	16	15
Campanulariidae, unident.	3710039	0	0	1	1	0
Cancer productus	5286083	0	0	0	0	1
Cirriformia spirabrancha	4810854	0	2	0	1	1
Corophium sp. *a*	5275510	319	218	135	31	42
Cossura pygodactylata	4810861	1	0	0	0	0
Crassostraea virginica	5540195	0	0	0	1	0
Cryptomya californica	5540155	0	1	0	0	0
Edwardsiidae, unident.	3730045	1	0	0	0	0
Eudorella pacifica	5263112	3	2	4	4	6
Exogone lourei	4810066	54	43	54	116	26
Gastropoda, unident.	5570885	0	0	0	1	0
Glycinde polygnatha	4810496	10	8	7	8	4
Harmothoe imbricata	4810343	0	0	0	0	1
Leptochelia dubia	5264038	3	4	5	7	16
Leucon subnasica	5263012	0	1	0	1	1
Lineidae, unident.	4000038	1	0	0	0	0
Macoma sp(p).	5540105	0	1	0	0	0
Mediomastus sp.	4810303	0	2	2	3	0
Molgula manhattensis	6301075	0	0	0	0	1
Musculista senhousia	5540401	4	6	0	2	1
Nephtys cornuta franciscana	4810116	3	11	5	7	3
Oligochaete, unident.	4880001	3	1	0	0	0
Philine sp. *(A) (SCAMIT)*	5570240	4	1	4	0	3
Pholoides aspera	4810570	0	0	0	1	0
Phoronis sp(p).	5700002	0	0	0	2	0
Potamocorbula amurensis	5540214	2	0	0	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: May 25, 1988—Continued						
Pseudopolydora paucibranchiata	4810347	0	0	0	1	0
Pycnogonida, unident.	5202006	0	0	0	0	2
Pygodelphys aquilonaris	5230174	0	0	0	0	1
Pyromaia tuberculata	5286094	0	1	1	1	0
Rictaxis punctocaelatus	5570083	0	1	0	0	0
Sabellaria sp(p).	4810190	0	0	0	1	0
Sarsiella zostericola	5220091	12	7	7	11	0
Schistomeringos rudolphi	4810354	0	3	1	3	2
Scolelepis sp(p)	4810316	0	0	1	0	0
Sphaerosyllis bilobata	4810833	2	0	0	1	0
Sphaerosyllis californiensis	4810272	3	4	0	3	0
Tapes japonica	5540158	13	13	22	20	15
Theora lubrica	5540114	0	1	1	0	0
Tubulanus sp(p).	4000013	0	0	1	0	0
Upogebia pugettensis	5286103	0	0	1	0	1
Sampling date: July 25, 1988						
Acmira lopezi lopezi	4810853	0	0	0	1	0
Amaeana occidentalis	4810001	1	0	1	1	1
Ampelisca abdita	5275504	30	14	31	4	36
Amphipholis sp(p)	5930041	0	0	0	0	1
Amphiuridae, unident.	5930032	0	0	0	0	1
Anthozoan, unident.	3730010	4	1	0	6	2
Arabellid, unident.	4810281	0	0	0	0	1
Ascidiacea, unident.	6301008	1	0	0	0	0
Asychis elongata	4810565	5	35	12	21	41
Balanus crenatus	5250036	3	1	0	0	1
Bivalvia, unident.	5540210	1	0	0	0	0
Campanularidae, unident.	3710039	1	1	1	0	1
Capitella capitata	4810241	0	0	0	0	1
Cerebratulus sp(p).	4000014	0	0	0	0	3
Cheilostomata unident.	5600177	1	1	1	0	0
Cirriformia spirabrancha	4810854	0	1	1	0	0
Corophium sp(p)	5275098	1	2	1	1	1
Corophium sp. *a*	5275510	111	79	34	27	137
Euchone limnicola	4810255	0	1	1	0	1
Eudorella pacifica	5263112	0	0	0	1	0
Eusyllis transecta	4810680	1	0	0	1	1
Exogone lourei	4810066	10	6	1	1	15
Gemma gemma	5540400	0	0	0	4	0
Glycera sp(p).	4810079	0	1	0	0	0
Glycinde polygnatha	4810496	2	0	2	1	2

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: July 25, 1988—Continued						
Harmothoe imbricata	4810343	1	0	0	1	0
Heteromastus filiformis	4810438	0	4	0	1	1
Hydrozoa, unident.	3710052	1	1	1	1	1
Leptochelia dubia	5264038	14	4	2	6	15
Leucon subnasica	5263012	0	0	0	0	1
Lineidae, unident.	4000038	0	0	2	1	0
Molgula manhattensis	6301075	0	0	0	5	0
Musculista senhousia	5540401	1	0	0	6	3
Mysella sp. *(A) (SCAMIT)*	5540212	0	0	0	1	3
Nematodes, unident.	4500001	0	0	0	0	1
Nemertea, unident.	4000002	0	0	0	3	0
Neomediomastus sp(p).	4810865	0	0	1	0	0
Nephtys cornuta franciscana	4810116	1	1	1	3	1
Nephtys ferruginea	4810706	0	0	0	0	1
Philine sp. *(A) (SCAMIT)*	5570240	2	3	1	1	1
Pholoe glabra	4810442	0	1	0	0	0
Phoronis sp(p).	5700002	0	0	0	1	0
Polydora sp(p).	4810588	1	0	0	0	0
Porifera	3600000	0	0	0	1	0
Pycnogonum stearnsi	5202014	0	0	0	1	0
Pyromaia tuberculata	5286094	0	1	0	0	4
Sarsiella zostericola	5220091	11	1	7	1	2
Schistomeringos rudolphi	4810354	1	0	2	4	2
Sphaerosyllis bilobata	4810833	0	0	0	0	1
Sphaerosyllis californiensis	4810272	0	0	0	0	1
Synidotea laticauda	5265110	0	0	0	1	0
Tapes japonica	5540158	3	3	3	6	6
Theora lubrica	5540114	0	0	1	0	2
Tubulanus sp(p).	4000013	0	0	0	0	1
Sampling date: September 14, 1988						
Amaeana occidentalis	4810001	0	0	0	1	0
Ampelisca abdita	5275504	9	3	3	8	7
Amphipholis sp(p).	5930041	0	0	0	1	0
Anthozoan, unident.	3730010	5	4	10	12	22
Armandia brevis	4810012	0	0	0	1	0
Asychis elongata	4810565	25	11	20	26	22
Autolytus sp(p).	4810277	3	3	5	18	11
Balanus crenatus	5250036	3	0	0	0	0
Brachyuran zoea	5286063	0	1	0	0	0
Campanulariidae, unident.	3710039	1	1	1	1	1
Capitella capitata	4810241	0	2	0	0	1

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: September 14, 1988—Continued						
Capitellidae, unident.	4810558	0	0	0	0	1
Cerebratulus sp(p).	4000014	0	0	2	0	1
Cirratulidae, unident.	4810990	0	0	0	1	0
Corophium sp. *a*	5275510	0	1	0	0	0
Cossura pygodactylata	4810861	2	2	3	0	0
Crepidula sp(p).	5570203	0	0	1	0	0
Dorvilleidae, unident.	4810583	3	3	0	0	0
Edwardsiidae, unident.	3730045	0	0	0	0	1
Eudorella pacifica	5263112	0	0	0	0	1
Eusyllis transecta	4810680	0	0	1	0	1
Exogone lourei	4810066	50	55	77	60	55
Glycera robusta	4810532	0	0	0	1	0
Glycinde polygnatha	4810496	6	3	6	3	7
Granulina margaritula	5570042	1	0	0	0	0
Harmothoe imbricata	4810343	2	2	2	0	0
Heteromastus filiformis	4810438	0	2	0	0	0
Hydrozoa, unident.	3710052	1	1	1	1	1
Leitoscoloplos pugettensis	4810516	0	0	0	0	1
Leptochelia dubia	5264038	26	13	20	21	26
Leucon subnasica	5263012	0	0	0	0	1
Mediomastus sp(p).	4810598	2	0	3	4	0
Modiolus sp(p).	5540409	0	0	0	0	1
Molgula manhattensis	6301075	13	1	22	5	11
Musculista senhousia	5540401	5	0	0	1	1
Mytilus edulis	5540024	0	1	0	0	0
Neanthes succinea	4810562	0	0	0	2	0
Nematodes, unident.	4500001	0	12	20	2	19
Nephtys cornuta franciscana	4810116	3	1	3	1	1
Nudibranchia, unident.	5570976	0	0	1	0	0
Odostomia (Evalea) sp. *H (Shrake)*	5570314	0	0	0	0	1
Oligochaete, unident.	4880001	3	2	3	1	1
Philine sp. *(A) (SCAMIT)*	5570240	0	1	3	5	0
Pholoides aspera	4810570	0	0	0	0	2
Phoronis sp(p).	5700002	0	3	0	1	0
Platyhelminthid, unident.	3900001	1	0	0	0	0
Pleusymtes sp(p).	5275203	0	1	0	2	1
Polydora brachycephala	4810557	0	1	0	0	0
Polydora ligni	4810168	4	3	1	0	0
Potamocorbula amurensis	5540214	0	0	0	0	1
Proceraea sp(p).	4810713	8	0	3	8	10
Pseudopolydora paucibranchiata	4810347	1	0	2	0	0
Pyromaia tuberculata	5286094	1	2	4	0	3
Sarsiella zostericola	5220091	1	1	4	0	7

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: September 14, 1988—Continued						
Schistocomus sp. *A*	4810892	0	0	0	1	0
Schistomeringos rudolphi	4810354	0	2	0	1	3
Sphaerosyllis californiensis	4810272	9	8	8	2	5
Tapes japonica	5540158	6	4	4	6	2
Theora lubrica	5540114	0	1	5	2	1
Thysanocardia nigra	4000039	0	1	0	0	0
Tubulanus pellucidus	4000011	1	2	1	0	2
Sampling date: November 1, 1988						
Acmira catherinae	4810671	0	0	0	1	0
Amaeana occidentalis	4810001	0	0	0	1	1
Ampelisca abdita	5275504	0	1	1	4	4
Amphipholis sp(p)	5930041	1	1	2	0	0
Amphiuridae, unident.	5930032	0	1	0	1	0
Anthozoan, unident.	3730010	37	52	21	6	9
Asychis elongata	4810565	30	29	51	54	29
Autolytus sp(p)	4810277	1	0	0	0	0
Brachyuran zoea	5286063	0	1	0	0	0
Campanularidae, unident.	3710039	1	1	1	1	1
Capitella capitata	4810241	0	0	2	1	0
Cerebratulus sp(p)	4000014	0	0	2	0	0
Cirratulidae, unident.	4810990	4	0	0	0	0
Cirriformia spirabrancha	4810854	0	0	1	0	1
Corophium sp. *a*	5275510	0	1	8	0	0
Cossura pygodactylata	4810861	1	0	0	0	1
Crepidula sp(p)	5570203	0	2	1	0	0
Cryptomya californica	5540155	4	2	40	1	0
Dorvilleidae, unident.	4810583	0	0	1	0	0
Epitonium sp.	5570117	1	0	1	0	1
Euchone limnicola	4810255	1	0	0	0	0
Eudorella pacifica	5263112	0	0	1	0	0
Eusyllis transecta	4810680	0	2	1	0	3
Exogone lourei	4810066	92	124	93	36	24
Glycera sp(p)	4810079	0	1	0	2	1
Glycinde polygnatha	4810496	5	1	4	1	3
Harmothoe imbricata	4810343	1	1	1	2	3
Harpacticoid copepod, unident.	5230052	0	2	1	0	0
Hemigrapsus oregonensis	5286092	0	0	0	0	1
Leitoscoloplos pugettensis	4810516	1	0	0	0	0
Leptochelia dubia	5264038	38	33	19	2	12
Lineidae, unident.	4000038	0	0	0	0	1
Macoma sp(p)	5540105	1	0	4	0	0

Table 3.—*Benthic macrofauna data*—Continued

Taxonomic entry	Kinnetic Laboratory code	Individuals				
		Replicate number				
		1	2	3	4	5
South Bay Deep						
Sampling date: November 1, 1988—Continued						
Mediomastus sp.	4810303	0	1	0	2	3
Modiolus sp(p).	5540409	0	0	1	0	0
Molgula manhattensis	6301075	105	155	106	28	30
Musculista senhousia	5540401	29	113	80	6	11
Mysella sp. *(A) (SCAMIT)*	5540212	0	0	1	0	2
Mytilus edulis	5540024	0	0	3	0	0
Natantia, unident.	5286111	0	0	0	1	1
Nematodes, unident.	4500001	12	89	104	9	7
Nephtys cornuta franciscana	4810116	8	9	15	6	6
Nuculana oxia	5540197	0	0	1	0	0
Oligochaete, unident.	4880001	5	6	0	2	0
Philine sp. *(A) (SCAMIT)*	5570240	5	6	0	2	1
Pholoe glabra	4810442	1	0	0	0	1
Phoronis sp(p).	5700002	0	0	10	0	0
Platyhelminthid, unident.	3900001	6	2	2	0	0
Polydora brachycephala	4810557	1	0	0	0	0
Polydora ligni	4810168	0	0	0	1	0
Polydora socialis	4810940	0	0	0	1	0
Potamocorbula amurensis	5540214	0	1	0	0	0
Proceraea sp(p).	4810713	2	0	0	0	0
Pygodelphys aquilonaris	5230174	1	0	1	0	0
Pyromaia tuberculata	5286094	1	1	1	1	6
Sarsiella zostericola	5220091	2	4	0	0	4
Schistomeringos rudolphi	4810354	0	0	4	0	0
Sphaerosyllis bilobata	4810833	0	1	0	0	0
Sphaerosyllis californiensis	4810272	10	5	8	3	3
Tapes japonica	5540158	5	7	6	2	2
Theora lubrica	5540114	6	10	24	4	14
Thysanocardia nigra	4000039	1	0	1	0	0
Tubulanus sp(p).	4000013	8	4	8	4	9
Upogebia pugettensis	5286103	0	0	1	0	0

Table 4.—*Summary of benthic macrofauna data*

Replicate No.	Taxonomic entries	Species identified	Individuals
	Berkeley		
	Sampling date: January 12, 1988		
1	22	16	488
2	24	19	499
3	25	21	319
4	18	14	109
5	24	18	534
Mean number of species identified per sample:		18	
Mean number of individuals per sample:		390	
	Sampling date: March 8, 1988		
1	9	8	10
2	16	9	88
3	30	17	128
4	20	14	217
5	17	11	217
Mean number of species identified per sample:		12	
Mean number of individuals per sample:		132	
	Sampling date: May 31, 1988		
1	29	22	359
2	17	14	171
3	22	16	127
4	22	17	452
5	17	14	259
Mean number of species identified per sample:		17	
Mean number of individuals per sample:		274	
	Sampling date: July 28, 1988		
1	20	14	398
2	21	13	156
3	20	16	57
4	15	10	125
5	11	9	142
Mean number of species identified per sample:		12	
Mean number of individuals per sample:		176	
	Sampling date: September 13, 1988		
1	19	11	125
2	17	11	220
3	23	14	430
4	19	16	92
5	26	19	472
Mean number of species identified per sample:		14	
Mean number of individuals per sample:		268	
	Sampling date: November 1, 1988		
1	20	15	183
2	26	20	671
3	13	8	88
4	17	11	33
5	16	12	125
Mean number of species identified per sample:		13	
Mean number of individuals per sample:		220	

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	Coyote Point		
	Sampling date: January 13, 1988		
1	19	16	427
2	20	17	428
3	20	17	387
4	17	15	299
5	16	15	258
Mean number of species identified per sample:	16		
Mean number of individuals per sample:	360		
	Sampling date: March 8, 1988		
1	23	20	222
2	21	18	186
3	17	14	299
4			
5	16	13	147
Mean number of species identified per sample:	16		
Mean number of individuals per sample:	214		
	Sampling date: May 31, 1988		
1	20	18	680
2	17	16	615
3	23	22	659
4	23	22	835
5	25	24	683
Mean number of species identified per sample:	20		
Mean number of individuals per sample:	694		
	Sampling date: July 25, 1988		
1	17	16	118
2	22	17	189
3	20	16	151
4	26	21	173
5	13	10	85
Mean number of species identified per sample:	16		
Mean number of individuals per sample:	143		
	Sampling date: September 14, 1988		
1	35	27	1,068
2	34	28	1,053
3	36	29	1,271
4	40	36	1,176
5	32	25	940
Mean number of species identified per sample:	29		
Mean number of individuals per sample:	1,102		
	Sampling date: November 2, 1988		
1	39	29	2,541
2	35	28	1,877
3	35	27	2,425
4	40	34	3,226
5	35	29	2,413
Mean number of species identified per sample:	29		
Mean number of individuals per sample:	2,496		

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	Grizzly Bay		
	Sampling date: January 11, 1988		
1	4	3	202
2	6	5	197
3	5	4	217
4	7	6	277
5	4	3	196
Mean number of species identified per sample:		4	
Mean number of individuals per sample:		218	
	Sampling date: March 14, 1988		
1	7	6	177
2	6	5	347
3	5	4	176
4	6	5	253
5	5	4	309
Mean number of species identified per sample:		5	
Mean number of individuals per sample:		252	
	Sampling date: May 23, 1988		
1	4	3	162
2	3	2	157
3	5	4	186
4	5	4	151
5	4	3	225
Mean number of species identified per sample:		3	
Mean number of individuals per sample:		176	
	Sampling date: July 21, 1988		
1	3	3	79
2	4	3	51
3	3	3	223
4	4	3	100
5	3	3	109
Mean number of species identified per sample:		3	
Mean number of individuals per sample:		112	
	Sampling date: September 12, 1988		
1	4	4	186
2	4	4	145
3	5	5	167
4	8	6	224
5	7	4	260
Mean number of species identified per sample:		5	
Mean number of individuals per sample:		196	
	Sampling date: October 31, 1988		
1	5	3	260
2	6	5	212
3	6	3	222
4	7	5	259
5	5	4	231
Mean number of species identified per sample:		4	
Mean number of individuals per sample:		237	

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	Palo Alto		
	Sampling date: January 14, 1988		
1	19	14	1,505
2	19	15	2,539
3	17	13	3,219
4	17	13	3,118
5	17	13	3,025
Mean number of species identified per sample: 14			
Mean number of individuals per sample: 2,681			
	Sampling date: March 7, 1988		
1	21	18	1,408
2	19	16	1,437
3	22	17	1,380
4	20	16	1,779
5	20	16	1,701
Mean number of species identified per sample: 17			
Mean number of individuals per sample: 1,541			
	Sampling date: May 26, 1988		
1	27	23	5,137
2	26	23	3,635
3	28	23	4,742
4	25	21	5,224
5	23	19	4,470
Mean number of species identified per sample: 22			
Mean number of individuals per sample: 4,642			
	Sampling date: July 26, 1988		
1	20	17	1,572
2	22	20	1,526
3	21	19	1,735
4	20	16	1,978
5	21	20	1,743
Mean number of species identified per sample: 18			
Mean number of individuals per sample: 1,711			
	Sampling date: September 14, 1988		
1	22	19	3,808
2	34	28	4,907
3	25	21	3,822
4	28	24	5,630
5	28	24	3,804
Mean number of species identified per sample: 23			
Mean number of individuals per sample: 4,394			
	Sampling date: November 2, 1988		
1	19	17	2,786
2	25	23	3,609
3	24	22	4,318
4	20	18	3,182
5	28	24	2,403
Mean number of species identified per sample: 21			
Mean number of individuals per sample: 3,260			

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	San Leandro		
	Sampling date: January 13, 1988		
1	15	12	277
2	22	17	547
3	21	18	471
4	22	20	349
5	20	16	443
Mean number of species identified per sample:	17		
Mean number of individuals per sample:	417		
	Sampling date: March 8, 1988		
1	16	12	142
2	16	13	233
3	17	14	104
4	17	14	308
5	20	17	168
Mean number of species identified per sample:	14		
Mean number of individuals per sample:	191		
	Sampling date: May 25, 1988		
1	20	16	123
2	17	13	246
3	12	9	63
4	15	12	144
5	23	18	319
Mean number of species identified per sample:	14		
Mean number of individuals per sample:	179		
	Sampling date: July 27, 1988		
1	10	9	49
2	16	13	338
3	10	9	93
4	13	10	102
5	12	9	36
Mean number of species identified per sample:	10		
Mean number of individuals per sample:	124		
	Sampling date: September 13, 1988		
1	28	21	1,095
2	24	21	578
3	27	19	806
4	26	23	942
5	28	21	605
Mean number of species identified per sample:	21		
Mean number of individuals per sample:	805		
	Sampling date: November 2, 1988		
1	20	16	2,824
2	23	19	3,218
3	18	16	3,541
4	23	19	2,965
5	19	16	2,439
Mean number of species identified per sample:	17		
Mean number of individuals per sample:	2,997		

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	San Pablo Deep		
	Sampling date: January 12, 1988		
1	8	5	95
2	4	2	96
3	4	3	120
4	4	4	64
5	12	10	186
Mean number of species identified per sample:		5	
Mean number of individuals per sample:		112	
	Sampling date: March 15, 1988		
1	6	2	76
2	3	2	66
3	4	3	58
4	6	4	107
5	3	3	35
Mean number of species identified per sample:		3	
Mean number of individuals per sample:		68	
	Sampling date: May 24, 1988		
1	10	7	56
2	13	10	217
3	11	8	138
4	12	10	208
5	10	8	213
Mean number of species identified per sample:		9	
Mean number of individuals per sample:		166	
	Sampling date: July 20, 1988		
1	5	4	34
2	2	2	23
3	9	8	76
4	3	2	6
5	5	4	26
Mean number of species identified per sample:		4	
Mean number of individuals per sample:		33	
	Sampling date: September 13, 1988		
1	10	7	179
2	9	7	127
3	20	12	245
4	10	9	178
5	15	12	252
Mean number of species identified per sample:		9	
Mean number of individuals per sample:		196	
	Sampling date: November 1, 1988		
1	14	11	51
2	6	4	62
3	16	11	88
4	6	5	35
5	6	5	72
Mean number of species identified per sample:		7	
Mean number of individuals per sample:		62	

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
		San Pablo Shallow	
		Sampling date: January 12, 1988	
1	18	14	239
2	15	12	294
3	12	10	225
4	13	12	334
5	13	12	170
Mean number of species identified per sample:		12	
Mean number of individuals per sample:		252	
		Sampling date: March 14, 1988	
1	17	14	348
2			
3	16	12	334
4	16	11	687
5	15	11	409
Mean number of species identified per sample:		12	
Mean number of individuals per sample:		445	
		Sampling date: May 31, 1988	
1	16	13	1,325
2	15	12	1,647
3	15	13	978
4	20	16	1,569
5	17	13	1,549
Mean number of species identified per sample:		13	
Mean number of individuals per sample:		1,414	
		Sampling date: July 25, 1988	
1	15	13	635
2	18	13	622
3	14	13	443
4	17	16	703
5	15	14	831
Mean number of species identified per sample:		14	
Mean number of individuals per sample:		647	
		Sampling date: September 13, 1988	
1	12	12	614
2	19	13	814
3	18	15	635
4	16	14	643
5	15	13	690
Mean number of species identified per sample:		13	
Mean number of individuals per sample:		679	
		Sampling date: November 1, 1988	
1	17	13	715
2	16	12	531
3	17	14	535
4	17	13	673
5	14	8	335
Mean number of species identified per sample:		12	
Mean number of individuals per sample:		558	

Table 4.—*Summary of benthic macrofauna data*—Continued

Replicate No.	Taxonomic entries	Species identified	Individuals
	South Bay Deep		
	Sampling date: January 13, 1988		
1	28	15	280
2	26	19	319
3	30	19	415
4	31	19	433
5	22	14	123
Mean number of species identified per sample:		17	
Mean number of individuals per sample:		314	
	Sampling date: March 8, 1988		
1	23	16	292
2	28	16	295
3	25	16	365
4	28	16	347
5	23	15	234
Mean number of species identified per sample:		16	
Mean number of individuals per sample:		307	
	Sampling date: May 25, 1988		
1	20	16	910
2	26	21	679
3	19	15	607
4	26	20	632
5	22	20	265
Mean number of species identified per sample:		18	
Mean number of individuals per sample:		619	
	Sampling date: July 25, 1988		
1	24	16	208
2	21	15	162
3	21	15	107
4	30	24	113
5	35	25	293
Mean number of species identified per sample:		19	
Mean number of individuals per sample:		177	
	Sampling date: September 14, 1988		
1	28	19	195
2	34	25	154
3	30	19	239
4	30	18	199
5	35	23	232
Mean number of species identified per sample:		21	
Mean number of individuals per sample:		204	
	Sampling date: November 1, 1988		
1	34	22	427
2	33	21	669
3	40	26	633
4	29	20	185
5	31	22	195
Mean number of species identified per sample:		22	
Mean number of individuals per sample:		422	

Table 5.—*Ancillary data*

[Salinity is reported without traditional units, in accordance with the practical salinity scale of 1978 (Lewis, 1980). Abbreviations: m, meters; °C, degrees Celsius, µmole/L, micromoles per liter; mg/L, milligrams per liter. —, no data]

Station name	Depth (m)	Temperature (°C)	Salinity	Dissolved oxygen (µmole/L) Mean	Dissolved oxygen (µmole/L) Range (+)	Mean dissolved oxygen (percent saturation)	Suspended particulate matter concentration (mg/L)
			Sampling date: January 11, 1988				
Grizzly Bay	1.0	8.0	4.10	338.6	0.3	94.1	25.9
Suisun Bay	1.0	8.3	6.15	332.1	0.5	94.2	23.7
	11.0	8.1	12.92	312.3	0.0	92.0	—
Honker Bay	1.0	7.7	1.68	334.5	0.8	90.8	78.2
	5.3	7.7	1.63	333.6	0.1	90.5	94.4
Chipps Island	1.0	7.8	0.43	330.5	0.3	89.2	118.1
	10.0	7.8	0.42	330.0	0.1	89.1	147.6
			Sampling date: January 12, 1988				
San Pablo Deep	1.0	8.1	17.21	306.9	0.3	93.0	8.8
	8.0	9.6	25.46	279.8	0.1	92.5	11.0
San Pablo Shallow	1.0	8.6	19.19	306.8	0.1	95.3	19.7
Point San Pablo	0.0	—	20.65	—	—	—	—
Berkeley	1.0	10.1	27.00	280.9	0.5	94.9	16.6
Bay Bridge	0.0	—	24.11	—	—	—	—
San Mateo Bridge	0.0	29.07	—	—	—	—	—
			Sampling date: January 13, 1988				
San Leandro	1.0	9.2	29.33	274.8	0.2	92.3	24.4
South Bay Deep	1.0	9.4	27.89	277.5	0.5	92.8	6.6
	8.0	9.4	28.76	273.0	0.1	91.8	26.3
Coyote Point	1.0	9.5	29.00	278.9	0.3	94.1	15.8
Redwood Creek	1.0	9.3	28.21	277.6	0.4	92.8	23.1
	12.0	—	28.76	274.8	0.6	—	56.1
			Sampling date: January 14, 1988				
San Mateo Bridge	0.0	—	28.79	—	—	—	—
Bay Bridge	0.0	—	27.40	—	—	—	—
Point San Pablo	0.0	—	20.83	—	—	—	—
Palo Alto	1.0	9.5	25.81	279.8	0.2	92.5	11.1
			Sampling date: March 7, 1988				
Palo Alto	1.0	16.1	24.14	437.3	1.2	164.8	18.8
			Sampling date: March 8, 1988				
Redwood Creek	1.0	14.4	26.42	304.1	0.6	112.2	21.4
	13.0	14.2	26.80	282.8	0.1	104.2	68.1
San Mateo Bridge	0.0	—	26.88	—	—	—	—
San Leandro	1.0	14.1	27.24	290.0	0.1	106.9	21.4
South Bay Deep	1.0	13.7	28.28	268.5	0.1	98.8	7.4
	7.5	13.6	28.34	261.5	0.1	96.1	20.7
Berkeley	1.0	13.5	29.57	251.0	0.5	92.7	20.0
Bay Bridge	0.0	—	30.09	—	—	—	—
Coyote Point	1.0	14.1	28.27	275.2	0.4	102.1	17.3

Table 5.—*Ancillary data*—Continued

Station name	Depth (m)	Temperature (°C)	Salinity	Dissolved oxygen (µmole/L) Mean	Dissolved oxygen (µmole/L) Range (+)	Mean dissolved oxygen (percent saturation)	Suspended particulate matter concentration (mg/L)
			Sampling date: March 14, 1988				
San Mateo Bridge	0.0	—	28.12	—	—	—	—
Bay Bridge	0.0	—	30.68	—	—	—	—
Point San Pablo	0.0	—	28.03	—	—	—	—
San Pablo Shallow	1.0	13.7	24.05	265.2	0.2	95.1	22.7
Grizzly Bay	1.0	15.0	9.46	292.6	0.3	98.6	13.9
			Sampling date: March 15, 1988				
San Pablo Deep	1.0	13.2	27.03	258.6	0.1	93.4	42.0
	8.5	13.1	27.18	257.6	0.2	92.9	79.6
Suisun Bay	1.0	13.8	20.37	263.0	0.4	92.3	25.2
	11.0	13.6	21.80	259.8	0.7	91.6	50.0
Honker Bay	1.0	13.8	11.67	282.7	0.2	94.1	53.0
	6.5	13.7	11.31	283.3	0.5	93.8	54.3
Chipps Island	1.0	13.9	9.28	285.8		94.1	46.3
	13.5	13.8	11.27	279.7	0.9	92.8	47.0
			Sampling date: May 23, 1988				
Grizzly Bay	1.0	19.3	9.11	261.6	0.6	96.0	82.2
			Sampling date: May 24, 1988				
Chipps Island	1.0	19.3	3.60	260.0	0.4	92.3	30.9
	8.0	19.1	5.43	254.9	0.1	91.2	89.6
Honker Bay	1.0	19.2	6.01	255.7	0.3	92.0	32.6
	6.0	19.2	5.88	256.1	0.7	92.0	38.0
Suisun Bay	1.0	18.4	15.61	240.9	0.2	90.3	13.6
	9.0	18.4	19.23	225.0	0.2	86.2	106.0
San Pablo Deep	1.0	17.9	22.29	237.6	0.3	91.8	14.0
	6.5	—	26.18	227.3	0.1	—	31.8
Point San Pablo	0.0	—	27.15	—	—	—	—
			Sampling date: May 25, 1988				
South Bay Deep	1.0	17.0	28.29	224.1	0.4	89.2	21.2
	8.5	16.2	—	215.5	0.5	84.6	32.1
San Leandro	1.0	17.3	29.85	233.4	0.5	93.3	37.9
San Mateo Bridge	0.0	—	28.14	—	—	—	—
			Sampling date: May 26, 1988				
Palo Alto	1.0	18.5	25.99	195.0	0.6	77.9	23.6
Redwood Creek	1.0	18.0	29.57	220.7	0.0	89.2	21.5
	12.0	17.8	29.65	219.5	0.1	88.4	69.9
			Sampling date: May 31, 1988				
Coyote Point	1.0	16.6	30.24	236.7	0.3	93.5	106.3
Bay Bridge	0.0	—	31.22	—	—	—	—
Berkeley	1.0	—	30.27	238.3	0.6	—	39.4
Point San Pablo	0.0	—	28.03	—	—	—	—
San Pablo Shallow	1.0	17.4	24.65	239.6	0.1	93.0	87.5

Table 5.—*Ancillary data*—Continued

Station name	Depth (m)	Temperature (°C)	Salinity	Dissolved oxygen (µmolc/L) Mean	Dissolved oxygen (µmolc/L) Range (+)	Mean dissolved oxygen (percent saturation)	Suspended particulate matter concentration (mg/L)
			Sampling date: July 20, 1988				
San Pablo Deep	1.0	21.7	22.89	—	—	—	35.7
	8.5	21.3	25.23	—	—	—	129.0
			Sampling date: July 21, 1988				
Grizzly Bay	1.0	20.8	12.54	—	—	—	66.6
			Sampling date: July 25, 1988				
Chipps Island	1.0	—	3.90	—	—	—	44.3
Coyote Point	1.0	21.6	31.84	—	—	—	21.1
Honker Bay	1.0	—	5.35	—	—	—	44.1
Suisun Bay	1.0	—	13.91	—	—	—	33.8
San Pablo Shallow	1.0	21.0	26.59	—	—	—	48.7
Point San Pablo	0.0	—	29.78	—	—	—	—
South Bay Deep	1.0	21.4	31.84	—	—	—	43.6
	8.8	20.5	31.85	—	—	—	70.6
Bay Bridge	0.0	—	32.06	—	—	—	—
			Sampling date: July 26, 1988				
Palo Alto	1.0	25.1	29.53	—	—	—	16.3
			Sampling date: July 27, 1988				
Redwood Creek	1.0	23.0	31.71	—	—	—	25.4
	11.3	—	31.93	—	—	—	44.0
San Leandro	1.0	21.8	31.84	—	—	—	70.7
			Sampling date: July 28, 1988				
San Mateo Bridge	0.0	—	31.90	—	—	—	—
Berkeley	1.0	18.5	31.90	—	—	—	34.3
			Sampling date: September 12, 1988				
Grizzly Bay	1.0	19.3	12.07	255.3	0.0	95.4	52.7
Suisun Bay	1.0	19.1	17.62	244.0	0.3	93.9	51.4
	7.0	—	18.77	241.1	0.1	—	68.6
Honker Bay	1.0	19.6	9.29	254.6	0.2	94.1	50.6
	7.5	19.7	9.52	254.6	0.7	94.4	69.7
Chipps Island	1.0	19.7	7.83	256.6	0.8	94.2	58.4
	12.0	—	9.05	257.4	1.0	—	64.8
			Sampling date: September 13, 1988				
San Pablo Deep	1.0	18.9	24.78	234.0	0.3	93.6	53.5
	7.0	—	25.06	234.6	0.4	—	70.9
San Pablo Shallow	1.0	—	25.64	236.9	0.2	—	88.4
Point San Pablo	0.0	—	29.15	—	—	—	—
Berkeley	1.0	—	31.71	228.9	0.3	—	20.3
San Leandro	1.0	—	32.90	221.7	0.0	—	18.2

Table 5.—*Ancillary data*—Continued

Station name	Depth (m)	Temperature (°C)	Salinity	Dissolved oxygen (µmole/L) Mean	Dissolved oxygen (µmole/L) Range (+)	Mean dissolved oxygen (percent saturation)	Suspended particulate matter concentration (mg/L)
			Sampling date: September 14, 1988				
South Bay Deep	1.0	19.4	32.55	210.7	0.5	89.1	19.0
	7.5	—	32.55	210.1	0.9	—	32.0
Coyote Point	1.0	19.3	32.62	218.9	0.1	92.4	21.6
Palo Alto	1.0	20.3	29.32	225.6	0.7	95.1	10.6
			Sampling date: September 15, 1988				
Redwood Creek	1.0	20.1	32.47	207.8	0.7	88.9	32.6
	12.0	20.1	32.48	208.0	0.3	89.0	50.3
San Mateo Bridge	0.0	—	32.56	—	—	—	—
Bay Bridge	0.0	—	32.23	—	—	—	—
			Sampling date: October 31, 1988				
Grizzly Bay	1.0	16.1	11.83	271.9	0.0	95.1	14.7
Suisun Bay	1.0	16.5	15.58	265.4	0.6	95.7	27.5
	10.0	15.7	19.40	251.3	—	91.3	46.2
Honker Bay	1.0	—	7.98	271.8	0.3	—	11.8
	6.5	—	11.44	265.1	0.3	—	25.8
Chipps Island	1.0	—	5.55	275.4	0.3	—	11.3
	13.5	—	9.34	266.4	0.3	—	22.7
			Sampling date: November 1, 1988				
San Pablo Deep	1.0	15.4	28.57	235.1	0.1	89.7	21.5
	7.8	15.4	28.86	231.5	0.5	88.5	38.9
San Pablo Shallow	1.0	15.6	25.73	242.5	0.3	91.3	22.3
Point San Point	0.0	—	27.63	—	—	—	—
Berkeley	1.0	15.1	31.44	241.6	0.7	93.3	12.8
South Bay Deep	1.0	16.5	32.25	224.9	0.2	89.7	8.2
	8.5	16.4	32.28	218.1	0.1	86.9	21.1
			Sampling date: November 2, 1988				
Palo Alto	1.0	16.9	30.08	215.1	0.4	85.4	13.8
Redwood Creek	1.0	16.6	32.33	217.7	0.2	87.1	15.8
	14.0	16.6	32.34	215.8	0.0	86.3	28.6
San Leandro	1.0	16.3	32.32	238.6	0.1	94.9	10.4
Coyote Point	1.0	16.1	32.48	218.1	0.3	86.4	16.4
			Sampling date: November 3, 1988				
San Mateo Bridge	0.0	—	32.42	—	—	—	—
Bay Bridge	0.0	—	31.83	—	—	—	—

Table 6.—*Summary of sediment grain-size data*

[The Phi scale is a logarithmic scale developed to make it easier to directly apply conventional statistical practices to sediment-size data. The equivalent maximum grain sizes in millimeters is shown in parenthesis]

Sampling date	Particle-size distribution of bottom material, in percent									
	Phi>0 (1.0)	Phi>1 (0.50)	Phi>2 (0.25)	Phi>3 (0.125)	Phi>4 (0.062)	Phi>5 (0.031)	Phi>6 (0.016)	Phi>7 (0.008)	Phi>8 (0.004)	Phi>9 (0.002)
					Berkeley					
Jan. 12, 1988	—	—	—	100	86	74	65	57	53	49
Mar. 8	—	—	100	99	90	75	63	53	48	41
May 31	—	100	99	94	82	68	59	52	45	38
July 28	—	—	100	99	85	72	64	56	46	40
Sept. 13	—	100	99	98	85	71	61	53	48	40
Nov. 1	—	100	99	92	80	63	53	45	40	34
					Coyote Point					
Jan. 13, 1988	—	—	100	99	95	85	74	65	60	56
Mar. 8	—	100	99	98	92	84	73	62	55	47
May 31	—	100	99	98	89	84	73	64	55	48
July 25	100	99	99	98	94	87	74	65	56	48
Sept. 14	—	100	99	97	92	84	73	62	55	48
Nov. 2	—	100	99	97	94	86	73	63	58	47
					Grizzly Bay					
Jan. 11, 1988	—	—	—	100	97	92	76	57	51	40
Mar. 14	—	—	—	100	98	93	78	62	50	42
May 23	—	—	—	100	99	96	87	68	58	48
July 21	—	—	—	100	98	95	83	68	54	44
Sept. 12	—	—	—	100	99	95	80	63	54	46
Oct. 31	—	—	—	100	99	95	81	64	52	43
					Palo Alto					
Jan. 14, 1988	—	100	99	99	95	86	71	63	58	51
Mar. 7	—	100	98	97	91	83	71	61	52	44
May 26	—	100	98	96	91	84	72	62	54	46
July 26	—	100	99	98	93	86	72	61	58	52
Sept. 14	—	100	99	97	93	86	73	62	56	47
Nov. 2	—	100	99	97	93	86	75	65	57	50
					San Leandro					
Jan. 13, 1988	—	100	99	97	88	79	69	62	58	50
Mar. 8	—	100	98	96	85	75	65	55	51	44
May 25	—	100	97	91	83	73	62	56	49	42
July 27	100	98	96	95	78	71	61	54	47	40
Sept. 13	—	100	99	97	87	77	67	57	54	46
Nov. 2	—	100	99	95	90	76	66	55	51	45
					San Pablo Deep					
Jan. 12, 1988	—	100	99	86	70	64	54	42	34	28
Mar. 15	—	100	91	43	37	35	28	22	20	18
May 24	—	100	99	93	92	90	84	72	58	47
July 20	93	92	75	17	14	13	11	9	8	7
Sept. 13	91	90	86	48	37	35	28	24	20	17
Nov. 1	—	100	98	91	86	78	65	53	46	37
					San Pablo Shallow					
Jan. 12, 1988	—	—	100	98	82	75	61	51	44	39
Mar. 14	—	100	99	98	84	72	58	48	42	35
May 31	—	100	98	95	81	73	61	52	45	39
July 25	—	100	98	97	77	69	59	49	41	33
Sept. 13	—	100	99	98	86	75	62	51	46	38
Nov. 1	—	100	99	98	91	83	70	59	50	41
					South Bay Deep					
Jan. 13, 1988	100	99	83	55	47	40	33	30	27	24
Mar. 8	100	99	97	87	76	65	56	48	43	39
May 25	100	98	84	60	53	45	38	33	30	26
July 25	—	100	84	64	51	46	38	34	30	25
Sept. 14	100	99	88	70	61	55	48	41	36	31
Nov. 1	100	99	67	50	44	37	31	26	24	20

Table 7.—*Cumulative number of species with respect to number of replicates*

Cruise Name	Number of replicates				
	1	2	3	4	5
		Berkeley			
JAN88	16	25	29	29	29
MAR88	8	13	21	23	26
MAY88	22	24	25	29	30
JUL88	14	19	26	28	30
SEP88	11	15	21	25	30
NOV88	15	25	25	31	32
		Coyote Point			
JAN88	16	19	22	24	26
MAR88	20	24	24		26
MAY88	18	22	27	31	35
JUL88	16	21	23	26	26
SEP88	27	34	38	41	41
NOV88	29	34	38	45	45
		Grizzly Bay			
JAN88	3	6	7	8	8
MAR88	6	9	9	9	9
MAY88	3	3	4	5	5
JUL88	3	4	5	6	6
SEP88	4	7	7	9	9
NOV88	3	5	6	8	8
		Palo Alto			
JAN88	14	16	16	16	16
MAR88	18	20	20	21	21
MAY88	24	25	27	28	28
JUL88	17	21	24	24	25
SEP88	19	28	29	31	31
NOV88	17	24	27	27	30

Table 7.—*Cumulative number of species with respect to number of replicates*—Continued

Cruise name	Number of replicates				
	1	2	3	4	5
		San Leandro			
JAN88	12	20	22	25	27
MAR88	12	15	18	19	23
MAY88	16	18	18	20	26
JUL88	9	16	18	20	21
SEP88	21	24	25	28	29
NOV88	16	20	20	23	23
		San Pablo Deep			
JAN88	5	5	6	8	12
MAR88	2	2	4	6	8
MAY88	7	11	13	15	16
JUL88	4	5	11	12	14
SEP88	7	9	14	15	17
NOV88	11	12	15	15	15
		San Pablo Shallow			
JAN88	14	15	15	15	16
MAR88	14		15	17	18
MAY88	13	14	20	23	24
JUL88	13	17	19	21	21
SEP88	12	15	19	19	21
NOV88	13	17	19	21	22
		South Bay Deep			
JAN88	15	22	27	28	30
MAR88	16	22	25	26	27
MAY88	16	24	25	28	32
JUL88	16	21	22	30	35
SEP88	19	29	30	35	41
NOV88	22	28	36	40	41

GPO 786-034/39052