

Watershed Summary Information

Accounting Unit Name: San Francisco Bay

State(s): CA

Political Boundaries: Alameda, Santa Clara, Contra Costa, San Francisco, San Mateo

Major Waterways: Alameda Cr
Alamo Cr
Arroyo Mocho
San Antonio Res
Lake Del Valle

Number of Stations in Watershed: Tier1 - 19
Tier2 - 37
Tier3 - 8



Figure 177. Watershed Location Map

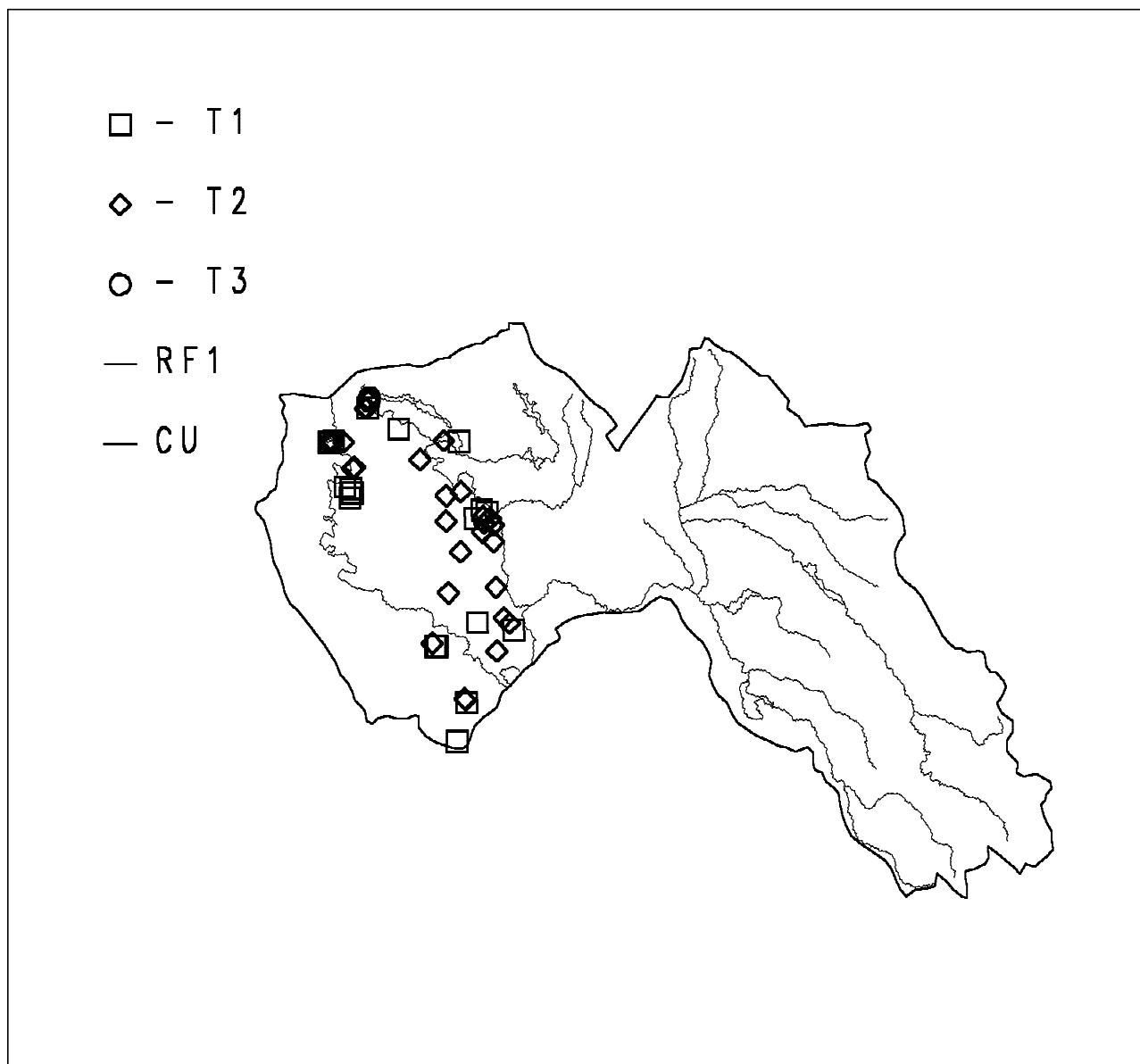


Figure 178. Major Waterways and Location of Sampling Stations

Data Source(s) Used in Evaluation

Source: **COSED** Agency: **NS&T**
 Monitoring Program: **NOAA/National Status and Trends**
 Num. of Stations: 15 Date Range: 1984-88

Source: **SEACOE** Agency: **NOAA84**
 Monitoring Program: **Benthic Surveillance 1984**
 Num. of Stations: 7 Date Range: 1984

Source: **SEACOE** Agency: **SFHPORT**
 Monitoring Program: **San Fran Homeport verification studies**
 Num. of Stations: 2 Date Range: 1987

Source: **SEACOE** Agency: **SFTRIAD**

Monitoring Program: **A Field Trial of Sediment Quality Triad in San Francisco Bay**

Num. of Stations: 19 Date Range: 1985

Source: **STORET** Agency: **112WRD**

Monitoring Program: **US Geological Survey Data**

Num. of Stations: 21 Date Range: 1989-92

Chemicals Responsible for Sampling Station Classification as Tier 1 or Tier 2

Classifying Parameter	Number of Stations							
	All Parameters				Aquatic Life		Human Health	
	Total	T.1&2	Tier1	Tier2	Tier1	Tier2	Tier1	Tier2
Nickel	50	50	.	50	.	50	.	.
Copper	50	47	.	47	.	47	.	.
Mercury	50	43	10	33	10	33	.	.
Arsenic	50	40	1	39	1	39	.	.
Lead	50	30	.	30	.	30	.	.
Chromium	48	27	6	21	6	21	.	.
Zinc	50	26	.	26	.	26	.	.
Benzo(a)pyrene	28	25	1	24	1	23	.	25
Pyrene	28	24	3	21	3	21	.	.
Benzo(a)anthracene	28	24	.	24	.	24	.	15
Chrysene	28	24	.	24	.	24	.	.
Naphthalene	26	21	.	21	.	21	.	.
Dibenzo(a,h)anthracene	22	20	3	17	3	17	.	20
Polychlorinated biphenyls	23	19	1	18	1	12	.	19
DDT	28	19	.	19	.	19	.	.
Silver	50	11	3	8	3	8	.	.
Fluorene	23	9	.	9	.	9	.	.
Phenanthrene	28	8	1	7	1	7	.	.
Dieldrin	20	8	.	8	.	2	.	8
Methylnaphthalene, 2-	14	8	.	8	.	8	.	.
HMW_PAHs	14	7	2	5	2	5	.	.
Acenaphthene	21	7	.	7	.	7	.	.
Fluoranthene	28	7	.	7	.	7	.	.
LMW_PAHs	14	6	1	5	1	5	.	.
Anthracene	13	5	.	5	.	5	.	.
Cadmium	50	5	.	5	.	5	.	.
Indeno(1,2,3-cd)pyrene	7	5	.	5	.	1	.	5
BHC	18	4	.	4	.	4	.	.
Acenaphthylene	4	2	.	2	.	2	.	.
Aldrin	12	1	.	1	.	.	.	1
Benzo(ghi)perylene	7	1	.	1	.	1	.	.

Sediment Chemistry Data: Chemical Summary

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Acenaphthene	32	26.19	16.50	26	120.00	2.00
Acenaphthylene	14	28.14	9.50	12	120.00	5.00
Aldrin	12	0.31	0.00	3	1.80	0.70
Anthracene	30	98.57	46.50	30	450.00	13.00
Antimony	41	802.68	850.00	36	2200.00	290.00
Arsenic	144	8192.23	6125.00	80	72000.00	2780.00
Benzene	2	0.00	0.00	0	.	.
Benzo(a)anthracene	47	288.91	200.00	46	1400.00	20.00
Benzo(a)pyrene	47	465.70	320.00	46	2200.00	34.00
Benzo(b)fluoranthene	2	28.50	28.50	2	32.00	25.00
Benzo(ghi)perylene	17	522.35	350.00	17	1900.00	35.00
Benzo(k)fluoranthene	2	27.50	27.50	2	30.00	25.00
Benzoic acid	2	0.00	0.00	0	.	.
Benzyl alcohol	2	0.00	0.00	0	.	.
Biphenyl	19	15.00	10.00	19	43.00	6.00
Bis(2-ethylhexyl)phthalate	2	0.00	0.00	0	.	.
Butyl benzyl phthalate	2	0.00	0.00	0	.	.
BHC	27	0.32	0.00	11	2.40	0.20
Cadmium	142	129.35	0.00	44	2500.00	20.00
Chlordane	24	0.53	0.33	15	2.00	0.20
Chlorobenzene	2	0.00	0.00	0	.	.
Chromium	142	90021.13	18000.00	142	1090000	8000.00
Chrysene	47	378.94	220.00	46	2208.00	24.00
Copper	143	40603.21	36000.00	143	147000.0	549.00
Cresol, m-	2	0.00	0.00	0	.	.
Cresol, o	2	0.00	0.00	0	.	.
Di-n-butyl phthalate	2	0.00	0.00	0	.	.
Di-n-octyl phthalate	2	0.00	0.00	0	.	.
Dibenzo(a,h)anthracene	49	106.33	36.00	41	1341.00	10.00
Dibenzofuran	2	0.00	0.00	0	.	.
Dibromochloromethane	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,2-	3	0.00	0.00	0	.	.
Dichlorobenzene, 1,3-	2	0.00	0.00	0	.	.
Dichlorobenzene, 1,4-	2	0.00	0.00	0	.	.
Dichloroethane 1,1-	2	0.00	0.00	0	.	.
Dichloroethane 1,2-	2	0.00	0.00	0	.	.
Dichloromethane	2	0.00	0.00	0	.	.
Dieldrin	32	1.32	1.00	23	4.50	0.40
Diethyl phthalate	2	0.00	0.00	0	.	.
Dimethyl phthalate	2	0.00	0.00	0	.	.
Dimethylphenol, 2,4-	2	0.00	0.00	0	.	.
DDT	149	2.30	1.90	137	18.00	0.22

Sediment Parameter	Total Observations			Detected Observations		
	Num.	Mean (ppb)	Median (ppb)	Num.	Max (ppb)	Min (ppb)
Endosulfan, alpha-	2	0.00	0.00	0	.	.
Endosulfan, beta-	2	0.00	0.00	0	.	.
Endrin	2	0.00	0.00	0	.	.
Ethylbenzene	2	0.00	0.00	0	.	.
Fluoranthene	47	728.91	430.00	47	3712.00	15.00
Fluorene	35	34.26	16.00	30	232.00	5.00
Heptachlor	16	0.54	0.00	7	2.20	0.30
Heptachlor epoxide	9	0.00	0.00	0	.	.
Hexachlorobenzene	28	0.54	0.50	22	2.00	0.10
Hexachlorobutadiene	2	0.00	0.00	0	.	.
Hexachloroethane	2	0.00	0.00	0	.	.
HMW_PAHs	14	2529.00	775.00	10	12064.00	294.00
Indeno(1,2,3-cd)pyrene	17	455.71	310.00	17	1600.00	23.00
Isophorone	2	0.00	0.00	0	.	.
Lead	144	30638.68	25000.00	144	223000.0	300.00
LMW_PAHs	14	604.71	173.00	9	3160.00	20.00
Mercury	141	411.67	280.00	137	8700.00	20.00
Methylnaphthalene, 2-	14	33.93	25.00	9	126.00	12.00
Mirex/Dechlorane	5	1.54	2.00	5	3.00	0.30
Naphthalene	42	59.55	47.50	38	200.00	20.00
Nickel	144	79975.69	83600.00	144	133000.0	25000.00
Nitrosodiphenylamine, N-	2	0.00	0.00	0	.	.
Pentachlorophenol	2	0.00	0.00	0	.	.
Phenanthrene	47	305.96	180.00	47	1600.00	20.00
Phenol	2	0.00	0.00	0	.	.
Polychlorinated biphenyls	41	38.09	26.95	37	255.26	2.00
Pyrene	47	882.09	590.00	47	4900.00	17.00
Silver	141	338.50	0.00	44	8600.00	140.00
Tetrachloroethane, 1,1,2,2-	2	0.00	0.00	0	.	.
Tetrachloroethene	2	0.00	0.00	0	.	.
Tetrachloromethane	2	0.00	0.00	0	.	.
Toluene	2	0.00	0.00	0	.	.
Tribromomethane/Bromoform	2	0.00	0.00	0	.	.
Trichlorobenzene, 1,2,4-	2	0.00	0.00	0	.	.
Trichloroethane, 1,1,2-	2	0.00	0.00	0	.	.
Trichloroethene	2	0.00	0.00	0	.	.
Trichloromethane/Chloroform	2	0.00	0.00	0	.	.
Xylenes	2	0.00	0.00	0	.	.
Zinc	144	112930.6	97000.00	144	359000.0	31000.00

Biotoxicity Data

Lat.	Long.	Date	Species Name	Phase	% Mortality		Sign.
					Test	Control	
Monitoring Program: A Field Trial of Sediment Quality Triad in San Francisco Bay							
37.7471	122.3875	85-07-17	Rhepoxynius Abronius	S	100.00	6.00	Yes
37.7472	122.3867	85-07-17	Rhepoxynius Abronius	S	24.00	6.00	no
37.7472	122.3881	85-07-17	Rhepoxynius Abronius	S	48.00	6.00	Yes
37.7472	122.3888	85-07-17	Rhepoxynius Abronius	S	95.00	6.00	Yes
37.7474	122.3832	85-07-18	Rhepoxynius Abronius	S	50.00	6.00	Yes
37.7474	122.3892	85-07-17	Rhepoxynius Abronius	S	95.00	6.00	Yes
37.7475	122.3853	85-07-18	Rhepoxynius Abronius	S	21.00	6.00	no
37.7475	122.3860	85-07-18	Rhepoxynius Abronius	S	31.00	6.00	Yes
37.7478	122.3836	85-07-18	Rhepoxynius Abronius	S	29.00	6.00	Yes
37.7479	122.3828	85-07-18	Rhepoxynius Abronius	S	37.00	6.00	Yes
37.7914	122.3344	85-07-18	Rhepoxynius Abronius	S	11.00	6.00	no
37.7914	122.3360	85-07-18	Rhepoxynius Abronius	S	13.00	6.00	no
37.7922	122.3360	85-07-18	Rhepoxynius Abronius	S	12.00	6.00	no
			Rhepoxynius Abronius	S	22.00	6.00	no
37.7931	122.3344	85-07-18	Rhepoxynius Abronius	S	20.00	6.00	no
37.7931	122.3360	85-07-17	Rhepoxynius Abronius	S	13.00	6.00	no
37.7939	122.3344	85-07-17	Rhepoxynius Abronius	S	8.00	6.00	no
			Rhepoxynius Abronius	S	20.00	6.00	no
37.7946	122.3344	85-07-17	Rhepoxynius Abronius	S	10.00	6.00	no