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A. Suspended-Sediment Rating Curves

The U.S. Geological Survey (USGS) suspended-sediment sampling data for six study area rivers are presented graphically along with LOWESS-fit sediment rating curves in Figure A1. LOWESS fit curves were used to compute daily suspended-sediment discharge as discussed in the text.

B. Corrections for Daily Discharge Bias

The daily mean concentrations derived from the LOWESS curves were corrected for daily averaging bias (A_{daily}) as discussed in the text and shown in Equation 1. Values of were computed by the ratio of sediment flux computed from 15-minute discharge records ("instantaneous discharge") and daily mean discharge records, and these values are shown in Table B1.

C. Annual Water and Suspended-Sediment Discharge Loads

The annual water and suspended-sediment loads for the USGS gaging stations during 1969-1999 are presented in Tables C1-C4. These tables include water year summaries for years with complete data records (Tables C1 and C3) and for the complete 1969-1999 records with data filled with the interpolation scheme discussed in the text (Tables C2 and C4).

D. Event-Based Sampling Data

The results of the event-based suspended-sediment sampling are presented in Table D1. Each table presents the results from one station, and includes the following parameters: date and time (24-hour, local time) of the sample, regional mean streamflow normalized by drainage basin area at the time of the sample, mean concentration of fines (<0.063 um), mean concentration of sand (>0.063um), mean sediment concentration, and the standard deviation and standard error of duplicate samples if n>2.

E. Watershed Characteristics

Table E-1 summarize the watershed characteristics used for the step-wise multiple variable regression as discussed in the text. Data sources are explained in the text and are organized here by data type (precipitation, hydrography, land use, and geology). Table E-2 provides a cross-correlation matrix of the watershed characteristics, which was used to evaluate collinearity between the variables.

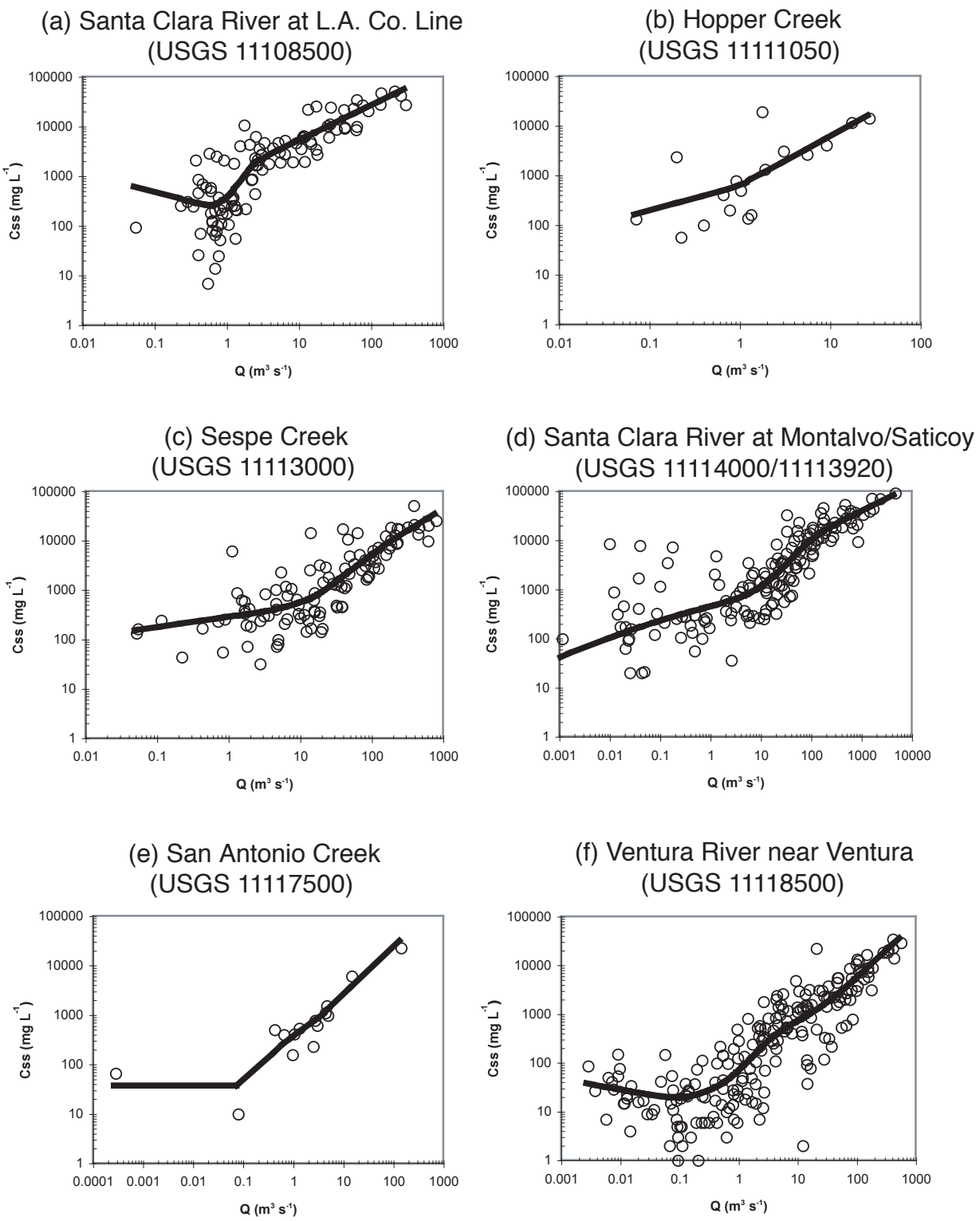

Figure A1. Suspended-sediment concentration (Css) and discharge (Q) relations from USGS sampling for six rivers of the study area. Solid lines represent LOWESS fit rating curves (see text).

Table B1. Coefficients to correct for instantaneous-daily transformation bias for USGS river gaging stations.

USGS Station Number	***Station Name***	A_{daily}
111085000	Santa Clara River at L.A. Co Line	1.318
11111050	Hopper Creek	1.694
11113000	Sespe Creek	1.286
11114000/11113920	Santa Clara River at Montalvo/Saticoy	1.478
11117500	San Antonio Creek	1.815
11118500	Ventura River at Ventura	1.423

Table C1. Annual water discharge for USGS gaging stations for water years with complete discharge records. Data have been normalized by contributing watershed area and presented in units of depth (cm).

Water Year	USGS 11108145 Castaic Creek (cm)	USGS 11108500 Santa Clara River at LA Co. Line (cm)	USGS 11110000 Piru Creek (cm)	USGS 11111050 Hopper Creek (cm)	USGS 11113000 Sespe Creek (cm)	USGS 11113500 Santa Paula Creek (cm)	USGS 11114000 Santa Clara River at Montalvo (cm)	USGS 11115500 Matilija Creek (cm)	USGS 11116000 North Fork Matilija Creek (cm)	USGS 11117500 San Antonio Creek (cm)	USGS 11118000 Coyote Creek (cm)	USGS 11118500 Ventura River near Ventura (cm)	USGS 11119500 Carpinteria Creek (cm)	USGS 11120000 Atascadero Creek (cm)	USGS 111020500 San Jose Creek (cm)
1969	25.70	19.72	15.89	51.29	87.91	133.69	36.66	102.15	166.70	72.73		63.35	88.33	52.92	39.56
1970	1.62	1.87	7.85	3.72	10.09	9.24	2.15	11.38	11.64	4.80	**2.85**	3.20	2.96	4.25	9.63
1971	0.96	1.76	4.11	5.38	12.15	15.18	2.75	13.70	13.79	5.11	**3.23**	3.62	1.80	6.03	5.26
1972	0.39	1.23	2.10	2.94	5.17	5.33	1.22	7.19	7.63	1.83	**0.85**	0.96	6.20	5.04	2.91
1973	4.48	4.42	5.78	11.06	30.12	41.80	8.28	36.39	50.92	17.76	**13.45**	15.08	24.61	32.26	25.03
1974	1.79	1.86	5.13	4.24	9.83	13.72	2.58	12.91	11.39	4.51	**3.86**	4.33	6.12	7.31	10.13
1975	0.62	1.25	2.65	4.15	11.89	13.66	2.16	16.56	14.45	4.74	**3.82**	4.28	6.44	15.98	13.79
1976		0.82	0.90	0.84	3.91	4.63	0.71	7.08	4.40	1.16	**0.40**	0.44	1.68	3.81	4.32
1977		0.94	0.96	1.05	2.49	2.82	0.28	3.71	4.09	0.80	**0.45**	0.50	0.60	1.66	3.57
1978		8.96	3.70	42.10	79.57	103.38	27.64	89.88	100.22	50.04	**67.66**	75.85		36.09	54.32
1979		5.58	5.95	8.74	19.64	24.29	7.33	18.46	20.90	10.68	**8.88**	9.95	6.50	6.88	8.63
1980		7.35	7.28	27.18	29.59	40.46	16.85	46.07	52.20	25.33	**37.36**	41.88	22.12	15.97	21.12
1981		1.79	5.70	2.80	5.43	6.92	1.29	6.45	8.41	4.19	**2.24**	2.51	1.35	5.19	7.38
1982		2.68	4.53	3.49	7.61	10.89	1.32	6.38	8.09	3.00	**1.09**	1.22	1.38	3.89	14.00
1983		9.75	1.14	38.18	58.92	83.62	26.66	85.31	66.56	46.48		68.64	46.02	34.31	63.85
1984		3.17	7.19		7.11	9.65	1.73	11.21				9.01	3.12	6.09	4.82
1985		2.39	2.07		2.87	4.03	0.21	4.53				0.90	0.65	2.88	3.17
1986		3.72	4.18			24.30	6.37	40.29				14.43	8.24	9.24	18.52
1987		1.91	3.46			3.78	0.03	4.93				0.90	0.77	1.78	2.86
1988		2.42	2.65			8.73	0.95	15.96				1.43	0.81	3.26	2.72
1989		2.59	1.17			3.44	0.04					0.46	0.29	2.06	1.15
1990		1.89	0.58			2.95	0.07					0.12	0.05	2.34	0.55
1991		2.64	1.43		14.82	18.05	3.28					6.11	6.23	14.77	13.99
1992		5.36	4.94		38.58	40.06	10.44					16.68	12.51	20.43	14.96
1993		11.68	10.14			84.80	34.40					63.79	36.30	40.33	36.53
1994		2.55	6.13		18.11	9.93						1.94	1.52	4.05	4.15
1995		6.52	9.39		63.00	74.99						88.56	81.71	50.19	
1996		3.51	4.20		5.84	10.39	2.46					3.96	8.87	5.19	16.73
1997			3.74		15.37	21.38	2.54					6.10	10.48	7.39	8.81
1998			6.63		72.91	95.84	28.05					84.44	81.32	74.24	
1999			4.70		4.75	6.65						3.88			6.36

Table C2. Annual water discharge for USGS gaging stations for all water years including interpolated records (see text). Data have been normalized by contributing watershed area and presented in units of depth (cm).

Water Year	USGS 11108145 Castaic Creek (cm)	USGS 11108500 Santa Clara River at LA Co. Line (cm)	USGS 11110000 Piru Creek (cm)	USGS 11111050 Hopper Creek (cm)	USGS 11113000 Sespe Creek (cm)	USGS 11113500 Santa Paula Creek (cm)	USGS 11114000 Santa Clara River at Montalvo (cm)	USGS 11115500 Matilija Creek (cm)	USGS 11116000 North Fork Matilija Creek (cm)	USGS 11117500 San Antonio Creek (cm)	USGS 11118000 Coyote Creek (cm)	USGS 11118500 Ventura River near Ventura (cm)	USGS 11119500 Carpinteria Creek (cm)	USGS 11120000 Atascadero Creek (cm)	USGS 111020500 San Jose Creek (cm)
1969	25.70	19.72	15.89	51.29	87.91	133.69	36.66	102.15	166.70	72.73	56.51	63.35	88.33	52.92	39.56
1970	1.62	1.87	7.85	3.72	10.09	9.24	2.15	11.38	11.64	4.80	**2.85**	3.20	2.96	4.25	9.63
1971	0.96	1.76	4.11	5.38	12.15	15.18	2.75	13.70	13.79	5.11	**3.23**	3.62	1.80	6.03	5.26
1972	0.39	1.23	2.10	2.94	5.17	5.33	1.22	7.19	7.63	1.83	**0.85**	0.96	6.20	5.04	2.91
1973	4.48	4.42	5.78	11.06	30.12	41.80	8.28	36.39	50.92	17.76	**13.45**	15.08	24.61	32.26	25.03
1974	1.79	1.86	5.13	4.24	9.83	13.72	2.58	12.91	11.39	4.51	**3.86**	4.33	6.12	7.31	10.13
1975	0.62	1.25	2.65	4.15	11.89	13.66	2.16	16.56	14.45	4.74	**3.82**	4.28	6.44	15.98	13.79
1976	1.10	0.82	0.90	0.84	3.91	4.63	0.71	7.08	4.40	1.16	**0.40**	0.44	1.68	3.81	4.32
1977	1.26	0.94	0.96	1.05	2.49	2.82	0.28	3.71	4.09	0.80	**0.45**	0.50	0.60	1.66	3.57
1978	12.07	8.96	3.70	42.10	79.57	103.38	27.64	89.88	100.22	50.04	**67.66**	75.85	48.57	36.09	54.32
1979	7.52	5.58	5.95	8.74	19.64	24.29	7.33	18.46	20.90	10.68	**8.88**	9.95	6.50	6.88	8.63
1980	9.90	7.35	7.28	27.18	29.59	40.46	16.85	46.07	52.20	25.33	**37.36**	41.88	22.12	15.97	21.12
1981	2.41	1.79	5.70	2.80	5.43	6.92	1.29	6.45	8.41	4.19	**2.24**	2.51	1.35	5.19	7.38
1982	3.61	2.68	4.53	3.49	7.61	10.89	1.32	6.38	8.09	3.00	**1.09**	1.22	1.38	3.89	14.00
1983	13.14	9.75	1.14	38.18	58.92	83.62	26.66	85.31	66.56	46.48	61.23	68.64	46.02	34.31	63.85
1984	4.28	3.17	7.19	4.08	7.11	9.65	1.73	11.21	13.26	4.29	8.04	9.01	3.12	6.09	4.82
1985	3.22	2.39	2.07	1.70	2.87	4.03	0.21	4.53	5.37	0.43	0.80	0.90	0.65	2.88	3.17
1986	5.02	3.72	4.18	10.28	18.57	24.30	6.37	40.29	47.68	6.87	12.87	14.43	8.24	9.24	18.52
1987	2.58	1.91	3.46	1.60	2.89	3.78	0.03	4.93	5.84	0.43	0.80	0.90	0.77	1.78	2.86
1988	3.27	2.42	2.65	3.69	6.67	8.73	0.95	15.96	18.89	0.68	1.27	1.43	0.81	3.26	2.72
1989	3.49	2.59	1.17	1.45	2.63	3.44	0.04	0.71	0.71	0.22	0.41	0.46	0.29	2.06	1.15
1990	2.55	1.89	0.58	1.25	2.25	2.95	0.07	0.18	0.18	0.06	0.10	0.12	0.05	2.34	0.55
1991	3.55	2.64	1.43	7.63	14.82	18.05	3.28	9.49	9.42	2.91	5.45	6.11	6.23	14.77	13.99
1992	7.22	5.36	4.94	16.94	38.58	40.06	10.44	25.90	25.72	7.94	14.88	16.68	12.51	20.43	14.96
1993	15.74	11.68	10.14	35.87	64.79	84.80	34.40	99.07	98.37	30.37	56.90	63.79	36.30	40.33	36.53
1994	3.44	2.55	6.13	4.20	18.11	9.93	2.94	3.01	2.99	0.92	1.73	1.94	1.52	4.05	4.15
1995	8.79	6.52	9.39	31.72	63.00	74.99	22.18	137.53	136.55	42.15	78.99	88.56	81.71	50.19	59.92
1996	4.73	3.51	4.20	4.39	5.84	10.39	2.46	6.15	6.11	1.89	3.53	3.96	8.87	5.19	16.73
1997	3.51	2.57	3.74	9.04	15.37	21.38	2.54	9.47	9.40	2.90	5.44	6.10	10.48	7.39	8.81
1998	15.72	11.50	6.63	40.54	72.91	95.84	28.05	131.13	130.20	40.19	75.32	84.44	81.32	74.24	77.06
1999	1.09	0.80	4.70	2.81	4.75	6.65	1.97	6.03	5.99	1.85	3.47	3.88	3.74	3.74	6.36

Table C3. Annual suspended-sediment discharge for USGS gaging stations for water years with complete discharge records.

Water Year	USGS 11108500 Santa Clara River at LA Co. Line (Mt/yr)	USGS 11111050 Hopper Creek (Mt/yr)	USGS 11113000 Sespe Creek (Mt/yr)	USGS 11114000 Santa Clara River at Montalvo (Mt/yr)	USGS 11117500 San Antonio Creek (Mt/yr)	USGS 11118500 Ventura River near Ventura (Mt/yr)
1969	16.79	1.087	10.15	49.55	2.612	6.36
1970	0.05	0.013	0.25	0.66	0.007	0.01
1971	0.20	0.018	0.36	1.52	0.018	0.03
1972	0.04	0.012	0.06	0.34	0.004	0.01
1973	0.73	0.063	1.83	5.07	0.241	0.37
1974	0.17	0.020	0.13	0.92	0.014	0.02
1975	0.03	0.016	0.27	0.84	0.011	0.04
1976	0.01	0.003	0.06	0.20	0.001	0.00
1977	0.03	0.002	0.01	0.03	0.001	0.00
1978	2.98	0.693	7.88	29.32	1.280	6.98
1979	0.51	0.023	0.24	2.02	0.022	0.06
1980	1.57	0.413	1.07	10.93	0.210	1.12
1981	0.04	0.007	0.04	0.23	0.005	0.01
1982	0.09	0.010	0.09	0.26	0.003	0.00
1983	3.47	0.443	4.08	22.74	0.554	2.31
1984	0.11		0.10	0.24		0.06
1985	0.09		0.01	0.03		0.00
1986	0.46			3.18		0.33
1987	0.02			0.00		0.00
1988	0.06			0.26		0.01
1989	0.24			0.00		0.00
1990	0.03			0.01		0.00
1991	0.30		0.49	1.78		0.09
1992	1.51		2.17	7.41		0.54
1993	3.04			23.92		1.18
1994	0.05		0.03			0.01
1995	1.31		5.74			3.52
1996	0.27		0.06	0.94		0.02
1997			0.27	0.74		0.03
1998			5.27	22.69		4.88
1999			0.02	0.02		0.00

Table C4. Annual suspended-sediment discharge for USGS gaging stations for all water years including interpolated records

Water Year	USGS 11108500 Santa Clara River at LA Co. Line (Mt/yr)	USGS 11111050 Hopper Creek (Mt/yr)	USGS 11113000 Sespe Creek (Mt/yr)	USGS 11114000 Santa Clara River at Montalvo (Mt/yr)	USGS 11117500 San Antonio Creek (Mt/yr)	USGS 11118500 Ventura River near Ventura (Mt/yr)
1969	16.79	1.087	10.15	49.55	2.612	6.36
1970	0.05	0.013	0.25	0.66	0.007	0.01
1971	0.20	0.018	0.36	1.52	0.018	0.03
1972	0.04	0.012	0.06	0.34	0.004	0.01
1973	0.73	0.063	1.83	5.07	0.241	0.37
1974	0.17	0.020	0.13	0.92	0.014	0.02
1975	0.03	0.016	0.27	0.84	0.011	0.04
1976	0.01	0.003	0.06	0.20	0.001	0.00
1977	0.03	0.002	0.01	0.03	0.001	0.00
1978	2.98	0.693	7.88	29.32	1.280	6.98
1979	0.51	0.023	0.24	2.02	0.022	0.06
1980	1.57	0.413	1.07	10.93	0.210	1.12
1981	0.04	0.007	0.04	0.23	0.005	0.01
1982	0.09	0.010	0.09	0.26	0.003	0.00
1983	3.47	0.443	4.08	22.74	0.554	2.31
1984	0.11	0.011	0.10	0.24	0.022	0.06
1985	0.09	0.001	0.01	0.03	0.003	0.00
1986	0.46	0.081	0.70	3.18	0.154	0.33
1987	0.02	0.000	0.00	0.00	0.000	0.00
1988	0.06	0.007	0.06	0.26	0.013	0.01
1989	0.24	0.000	0.00	0.00	0.000	0.00
1990	0.03	0.000	0.00	0.01	0.000	0.00
1991	0.30	0.057	0.49	1.78	0.107	0.09
1992	1.51	0.252	2.17	7.41	0.477	0.54
1993	3.04	0.613	5.27	23.92	1.158	1.18
1994	0.05	0.003	0.03	0.13	0.006	0.01
1995	1.31	0.669	5.74	26.10	1.264	3.52
1996	0.27	0.007	0.06	0.94	0.013	0.02
1997	0.09	0.031	0.27	0.74	0.059	0.03
1998	2.84	0.614	5.27	22.69	1.159	4.88
1999	0.00	0.002	0.02	0.02	0.004	0.00

Table D-1. Gaviota Creek (Site 1) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	15:00	0.0700	2.64	0	2.64	0.00894	0.00339
1/29/98	9:05	0.0798	2.60	0.12	2.72	0.0126	0.00463
2/23/98	7:45	1.1078	25.78	1.70	27.48	3.266	0.11885
12/1/98	5:20	0.0075	0.33	0	0.33	0.0119	0.03625
1/18/99	12:18	0.0004	0.0017	0	0.0017	0.00088	0.50537
2/9/99	10:35	0.0145	0.03	0	0.03	0.02346	0.80796
2/9/99	12:20	0.0436	0.05	0	0.05	0.02717	0.57654
3/19/99	19:56	0.0052	2.82	0.056	2.88	0.87783	0.30531
3/25/99	8:30	0.0341	34.58	2.75	37.33	3.96963	0.10634
2/12/00	0:02	0.0599	0.01	0	0.01	0.01889	1.27863
2/16/00	14:26	0.0078	0.0003	0	0.0003	0.00042	1.41421
2/23/00	7:00	0.1603	14.34	0.88	15.22	0.4096	0.02692
2/24/00	9:20	0.0527	0.85	0	0.85	na	na
3/8/00	6:52	0.2000	5.57	0.065	5.63	0.01335	0.00237

Table D-1 (cont'). San Onofre Creek (Site 2) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	15:00	0.070	0.58	0	0.58	0.00	0.01
1/29/98	9:38	0.052	0.067	0.003	0.070	0.00	0.07
2/3/98	8:45	0.75	2.59	0.79	3.38	0.06	0.02
2/23/98	8:20	1.45	6.54	1.58	8.12	2.31	0.28
1/18/99	12:41	0.0004	0.014	0	0.014	0.00	0.22
2/9/99	11:15	0.088	0.0070	0	0.0070	0.00	0.38
2/9/99	12:30	0.039	0.0065	0	0.0065	0.01	1.22
3/25/99	8:40	0.081	0.24	0	0.24	na	na

Table D-1 (cont'). Refugio Creek (Site 3) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	15:00	0.070	4.250	1.20	5.45	0.00083	0.00015
1/29/98	10:00	0.051	0.150	0	0.15	0.0036	0.024
2/3/98	9:15	0.982	14.523	5.17	19.69	0.8072	0.041
2/23/98	8:50	1.792	4.234	2.81	7.04	0.0837	0.01189
2/12/00	0:24	0.0004	0.047	0	0.047	0.01837	0.38784
2/16/00	14:49	0.064	0.006	0	0.006	na	na
2/23/00	7:21	0.034	2.753	0.22	2.98	0.2395	0.08045
2/24/00	9:44	0.007	0.031	0	0.031	na	na
3/8/00	7:15	0.094	3.469	0.47	3.94	na	na
1/18/99	11:53	0.084	0.068	0	0.068	0.01196	0.17642
2/9/99	11:40	0.007	0.018	0	0.018	0.00653	0.35874
2/9/99	12:55	0.187	0.070	0	0.070	0.02074	0.29538
3/19/99	20:25	0.062	0.064	0	0.064	0.00498	0.07774
3/25/99	9:07	0.200	2.726	0.063	2.79	0.00825	0.00296

Table D-1 (cont'). El Capitan Creek (Site 4) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	15:00	0.07	7.290	1.5	8.790	0.058	0.007
1/29/98	10:30	0.0568	0.971	0.26	1.230	0.022	0.018
2/3/98	9:30	1.0263	42.397	11.79	54.190	0.717	0.013
2/23/98	9:10	1.9071	3.303	1.91	5.210	0.064	0.012
12/1/98	6:00	0.0412	0.030	0	0.030	0.021	0.708
1/18/99	11:27	0.00036	0.000	0	0.000	0.000	0.627
1/24/99	17:30	0.0087	0.001	0	0.001	na	na
2/9/99	13:10	0.0348	0.068	0	0.068	na	na
3/19/99	20:40	0.009	0.154	0	0.154	0.061	0.395
3/25/99	9:20	0.0958	0.377	0	0.377	0.055	0.147
2/12/00	0:36	0.0844	0.500	0.0090	0.509	0.042	0.082
2/16/00	15:57	0.0078	0.001	0	0.001	0.001	1.414
2/23/00	7:35	0.2481	7.196	0.933	8.129	0.400	0.049
2/24/00	9:48	0.0624	0.029	0	0.029	na	na
3/8/00	7:25	0.2	0.290	0	0.290	na	na

Table D-1 (cont'). Atascadero Creek (Site 5) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	15:00	0.170	1.97	0.45	2.42	0.011	0.004
1/29/98	11:10	0.030	0.78	0	0.78	0.012	0.015
2/3/98	11:00	0.093	7.89	2.621	10.51	0.079	0.008
2/23/98	9:45	1.258	9.10	7.143	16.24	0.165	0.010
3/31/98	12:21	0.209	3.36	0.026	3.39	0.213	0.063
3/31/98	14:42	0.456	8.11	0.031	8.14	0.070	0.009
3/31/98	15:57	0.350	10.30	0.021	10.32	0.298	0.029
1/18/99	11:45	0.0004	0.083	0	0.083	na	na
1/24/99	15:15	0.002	0.0071	0	0.007	0.005	0.735
2/9/99	9:05	0.021	0.063	0	0.063	0.028	0.454
2/12/00	0:56	0.126	1.81	0	1.81	1.788	0.986
2/16/00	15:29	0.008	0.03	0	0.030	0.038	1.284
2/23/00	8:05	0.301	3.80	1.04	4.84	2.254	0.465
2/24/00	10:19	0.043	0.19	0	0.190	0.175	0.922
3/8/00	7:42	0.200	3.65	0.61	4.26	1.544	0.362

Table D-1 (cont'). Montecito Creek (Site 6) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	17:52	0.092	0.20	0	0.20	0.002	0.010
2/3/98	11:30	1.36	1.01	0.548	1.56	0.060	0.039
2/23/98	10:50	1.57	2.99	1.195	4.18	0.018	0.004
1/24/99	16:15	0.0027	0.10	0	0.10	0.059	0.595
2/9/99	10:50	0.016	0.087	0	0.087	0.083	0.958
2/16/00	15:55	0.0078	0.024	0	0.024	0.026	1.094
2/23/00	9:10	0.72	1.76	0.573	2.33	0.168	0.072
2/24/00	10:35	0.048	0.012	0	0.012	na	na
3/8/00	8:10	0.20	0.31	0	0.31	na	na

Table D-1 (cont'). Santa Monica Creek (Site 7) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
12/5/97	15:40	0.135	0.53	0.19	0.72	0.0311	0.0432
1/9/98	17:07	0.078	0.17	0	0.17	0.0170	0.0997
1/29/98	6:35	0.071	0.055	0.025	0.08	0.0016	0.0205
2/3/98	11:55	0.925	14.5	1.13	15.61	0.1539	0.0099
2/23/98	11:35	2.222	7.30	0.99	8.29	0.0685	0.0083
1/24/99	16:45	0.005	0.035	0	0.035	na	na
2/9/99	10:10	0.011	0.190	0	0.190	na	na
2/12/00	1:31	0.088	0.38	0	0.378	0.0089	0.0236
2/16/00	16:11	0.008	0.015	0	0.015	0.0148	1.0011
2/23/00	9:34	0.835	3.73	0.15	3.89	0.0286	0.0074
2/24/00	10:58	0.047	0.028	0	0.028	na	na
3/8/00	8:27	0.200	0.89	0.0070	0.90	na	na

Table D-1 (cont'). Franklin Creek (Site 8) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
12/5/97	15:55	0.164	1.67	0.26	1.93	0.03513	0.0182
1/9/98	17:25	0.072	1.71	5.16	6.87	0.0202	0.00294
1/29/98	7:10	0.063	2.46	0.055	2.51	0.0127	0.00506
2/3/98	12:10	0.978	4.98	0.38	5.36	0.132	0.02463
2/23/98	11:45	2.384	8.07	2.60	10.67	0.0726	0.0068
1/24/99	17:05	0.006	0.22	0	0.22	0.02275	0.10545
2/9/99	10:25	0.015	0.12	0	0.12	0.02273	0.18447
2/12/00	1:41	0.080	1.30	0.18	1.48	0.12873	0.08672
2/16/00	16:19	0.008	1.16	0.0079	1.17	0.00537	0.0046
2/23/00	9:42	0.833	4.23	0.48	4.71	0.43698	0.09284
2/24/00	11:00	0.047	0.072	0	0.072	na	na
3/8/00	8:31	0.200	1.33	0.028	1.35	na	na

Table D-1 (cont'). Rincon Creek (Site 9) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	16:45	0.0804	27.23	1.19	28.42	0.4675	0.01645
2/3/98	13:00	0.7242	16.06	3.91	19.96	0.3282	0.01644
2/23/98	12:30	2.1112	42.74	10.86	53.6	1.649	0.03076
1/18/99	12:05	0.00035	0.12	0	0.12	0.13282	1.11141
1/24/99	16:45	0.0048	0.018	0	0.018	0.01603	0.91587
2/16/00	16:31	0.0078	3.90	0.0074	3.90	0.01136	0.00291
2/23/00	10:02	0.831	33.40	7.93	41.33	1.46524	0.03545
2/24/00	11:13	0.038	1.38	0.86	2.23	na	na
3/8/00	8:49	0.2	34.04	3.74	37.78	na	na

Table D-1 (cont'). Willow Creek (Site 10) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	14:22	0.049	5.10	1.20	6.29	0.107	0.017
1/29/98	7:35	0.078	1.82	0.075	1.89	0.070	0.037
1/31/98	10:00	0.019	0.11	0	0.11	0.022	0.195
2/3/98	13:35	0.641	22.94	8.59	31.52	1.363	0.043
1/18/99	17:00	0.000	0.021	0	0.021	na	na
1/24/99	16:55	0.006	0.41	0	0.41	0.137	0.336
2/12/00	1:49	0.080	3.63	0.0044	3.64	0.102	0.028
2/16/00	16:41	0.011	0.96	0.012	0.97	0.055	0.057
2/23/00	10:17	0.767	23.40	2.38	25.78	0.321	0.012
2/24/00	11:21	0.038	1.010	0	1.01	na	na
3/8/00	8:55	0.200	18.23	0.70	18.93	na	na

Table D-1 (cont'). Padre Juan Creek (Site 11) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
1/9/98	4:20 PM	0.080	18.5	0.97	19.5	0.544	0.028
1/29/98	7:55 AM	0.074	50.8	4.74	55.6	2.696	0.049
2/3/98	1:55 PM	0.557	40.6	16.18	56.8	0.429	0.008
2/12/00	2:15 AM	0.065	25.8	1.29	27.1	0.330	0.012
2/16/00	4:49 PM	0.017	6.50	0.0032	6.50	0.052	0.008
2/23/00	10:30 AM	0.728	189.0	43.22	232.2	3.472	0.015
2/24/00	11:27 AM	0.038	5.51	0.44	5.95	na	na
3/8/00	9:03 AM	0.200	57.0	2.16	59.1	na	na

Table D-1 (cont'). Ventura River (Site 12) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
12/5/97	14:45	0.00016	4.14	0.0060	4.15	0.036	0.009
1/9/98	15:07	***nd***	6.51	0.12	6.63	0.039	0.006
1/29/98	8:35	***nd***	12.73	0.026	12.76	0.078	0.006
1/31/98	10:20	***nd***	0.06	0	0.06	0.012	0.192
2/2/98	8:20	***nd***	14.06	0.82	14.87	0.041	0.003
2/2/98	17:15	***nd***	6.26	0.42	6.68	0.152	0.023
2/23/98	15:00	1.95	32.72	2.43	35.15	0.260	0.007
1/24/99	18:00	0.00097	0.29	0	0.29	0.111	0.381
3/20/99	9:40	0.0035	0.36	0	0.36	0.029	0.080
2/12/00	2:35	0.00038	0.12	0	0.12	0.172	1.414
2/23/00	10:49	0.12	26.52	1.23	27.75	0.136	0.005
2/24/00	11:59	0.0065	0.21	0	0.21	na	na
3/8/00	9:20	0.043	7.39	0.58	7.97	na	na

Table D-1 (cont'). Santa Clara River (Site 13) suspended sediment sampling data.

Date	Time	Regional Streamflow (um s^{-1})	Fine Concentration (g L^{-1})	Sand Concentration (g L^{-1})	Total Sediment Concentration (g L^{-1})	SD (g L^{-1})	SE
12/5/97	13:55	0.0018	2.18	0.072	2.25	0.062	0.027
1/9/98	15:47	0.0032	2.33	0.14	2.47	0.044	0.018
1/29/98	9:20	0.0069	1.41	0.16	1.57	0.026	0.017
1/31/98	11:45	0.00081	0.050	0	0.050	0.010	0.207
2/2/98	9:25	0.053	11.50	1.59	13.09	0.289	0.022
2/2/98	16:45	0.054	2.47	0.45	2.92	0.054	0.018
2/3/98	15:15	0.0010	17.62	3.03	20.65	2.366	0.115
2/23/98	15:40	0.40	30.35	6.19	36.54	0.423	0.012
1/24/99	17:30	0.000002	0.035	0	0.035	0.046	1.328
3/20/99	9:25	0.0050	0.23	0.50	0.73	0.497	0.683
2/16/00	17:40	0.00006	0.036	0	0.036	0.000	0.007
2/23/00	11:32	0.027	3.32	0.086	3.41	0.399	0.117
2/24/00	12:20	0.0075	1.41	0.24	1.66	na	na
3/8/00	10:10	0.17	2.46	0.46	2.92	na	na

Table E-1. Precipitation and geomorphic indices for the study area watersheds.

Watershed Area	Area (km^2)	Av. Annual Precipitation (cm)	Total Relief (m)	Max. Elevation (m)	1st Order Relief (m)	1st Order Slope
Santa Clara River Tributary						
Lower Watershed	650	35	1323	1323	33.55	0.1839
Santa Paula	104	65	1731	1913	73.02	0.3373
Sespe	650	55	1965	2180	64.06	0.3153
Hopper	61	45	1199	1409	59.68	0.3182
Piru	1131	35	2428	2652	51.97	0.2640
Castaic	477	40	1495	1801	50.51	0.2671
Eastern	1142	35	1701	1928	44.31	0.2357
Ventura River Tributary						
Ungauged	98	40	741	810	39.61	0.2324
Coyote	107	55	1301	1391	45.09	0.2332
Central	65.6	45	1115	1205	31.43	0.1447
San Antonio	133	55	1525	1633	48.22	0.2253
Matilija - North F.	40.4	70	1049	1422	76.68	0.3559
Matilija -Hot Sp.	141	65	1417	1761	78.66	0.3622
TOTAL VR	***585***	***55***	***1761***	***1761***	***51.18***	***0.2496***
Santa Ynez Mountain Watersheds						
Upper San Jose	14.3	55	852	913	51.05	0.2775
Atascadero	49	50	1062	1068	34.33	0.1768
Carpinteria	33.9	60	1326	1353	56.44	0.3265
Gaviota	52.2	45	797	800	44.93	0.2267
San Onofre	5.3	50	757	759	78.58	0.3121
Refugio	21.2	55	913	915	40.01	0.2010
El Capitan	16	55	917	927	44.87	0.2577
Atascadero	49	50	1062	1068	34.33	0.1768
Montecito	17	55	1125	1127	63.51	0.3088
Santa Monica	9.3	55	1112	1115	61.10	0.3581
Franklin	9.8	45	466	484	27.95	0.1568
Rincon	39	55	1398	1403	59.31	0.2903
Willow	13.4	40	622	622	65.30	0.3039
Padre Juan	7.8	40	633	633	57.85	0.3035

Table E-1. (cont') Geologic characteristics for the study area watersheds summarized into the groupings of theSaucedo et al. (2000) .

Watershed Area	Area (km^2)	Qal & Qt	Qm	Qc	QP	Pc	Puc	Pu	Pmlc	Pml	Mc	Mu	Mm	Ml	Oc	Ov	O	E	Ep	Tc	Ku	gr	m	pC
Santa Clara River																								
Lower Watershed	650	41%	9%	--	6%	--	--	15%	--	5%	--	5%	10%	2%	5%	--	--	2%	--	--	--	--	--	--
Santa Paula	104	11%	--	3%	--	--	--	9%	--	8%	--	3%	7%	--	1%	--	--	58%	--	--	--	--	--	--
Sespe	650	1%	--	1%	--	--	--	--	--	--	--	1%	4%	6%	16%	--	--	60%	--	--	4%	6%	--	1%
Hopper	61	--	--	--	--	--	--	--	--	--	--	13%	88%	--	--	--	--		--	--	--	--	--	--
Piru	1131	5%	--	--	--	8%	8%	1%	7%	--	--	9%	4%	1%	1%	1%	--	15%	--	3%	--	17%	--	20%
Castaic	477	2%	--	--	--	--	--	--	15%	--	--	11%	--	--	1%	--	--	--	17%	--	--	13%	1%	41%
Eastern	1142	10%	--	2%	13%	--	--	4%	--	4%	9%	4%	--	--	7%	3%	--	--	3%	--	--	8%	15%	17%
Ventura River																								
Ungauged	98	17%	14%	--	--	--	--	48%	--	9%	--	5%	8%	--	--	--	--	--	--	--	--	--	--	--
Coyote	107	3%	--	--	--	--	--	--	--	--	--	--	5%	1%	62%	--	--	29%	--	--	--	--	--	--
Central	65.6	43%	--	--	--	--	--	--	--	--	--	--	12%	6%	15%	--	--	24%	--	--	--	--	--	--
San Antonio	133	32%	--	--	--	--	--	--	--	--	--	--	14%	3%	10%	--	--	37%	--	--	4%	--	--	--
Matilija - North F.	40.4	--	--	--	--	--	--	--	--	--	--	--	--	--	6%	--	--	83%	--	--	12%	--	--	--
Matilija -Hot Sp.	141	4%	--	5%	--	--	--	--	--	--	--	--	--	--	--	--	--	89%	--	--	2%	--	--	--
Numerous, Small WS's																								
Upper San Jose	14.3	1%	--	--	--	--	--	--	--	--	--	--	--	10%	26%	--	--	64%	--	--	--	--	--	--
Atascadero	49	40%	3%	--	--	--	--	--	--	--	--	--	0%	4%	19%	--	--	33%	--	--	--	--	--	--
Carpinteria	33.9	12%	--	--	--	--	--	--	--	--	--	--	--	--	42%	--	--	46%	--	--	--	--	--	--
Gaviota	52.2	11%	--	--	--	--	--	--	--	--	--	--	14%	22%	8%	--	16%	29%	--	--	0%	--	--	--
San Onofre	5.3	4%	--	--	--	--	--	--	--	--	--	--	0%	2%	4%	--	22%	68%	--	--	--	--	--	--
Refugio	21.2	7%	--	--	--	--	--	--	--	--	--	--	11%	15%	6%	--	9%	52%	--	--	--	--	--	--
El Capitan	16	4%	--	--	--	--	--	--	--	--	--	--	2%	12%	13%	--	13%	56%	--	--	--	--	--	--
Atascadero	49	40%	3%	--	--	--	--	--	--	--	--	--	0%	4%	19%	--	--	33%	--	--	--	--	--	--
Montecito	17	27%	--	--	--	--	--	--	--	--	--	--	2%	1%	1%	--	--	69%	--	--	--	--	--	--
Santa Monica	9.3	12%	--	--	--	--	--	--	--	--	--	--	--	--	41%	--	--	47%	--	--	--	--	--	--
Franklin	9.8	57%	--	--	--	--	--	--	--	--	--	--	--	--	31%	--	--	12%	--	--	--	--	--	--
Rincon	39	11%	2%	6%	--	--	--	--	--	--	--	--	3%	2%	51%	--	--	24%	--	--	--	--	--	--
Willow	13.4	8%	--	--	--	--	--	9%	--	--	--	--	19%	14%	50%	--	--	--	--	--	--	--	--	--
Padre Juan	7.8	6%	--	--	--	--	--	38%	--	--	--	--	6%	7%	43%	--	--	--	--	--	--	--	--	--

Table E-1. (cont') Watershed characteristics of the Santa Ynez Mountain basins sampled in the event-based sampling.

Site No.	Watershed	GEOLOGICAL FORMATION																															
		Qa	**Qg**	**Qls**	**Qoa**	**Qog**	**Qca**	**Qsb**	**QTpm**	**Tps**	**Tp/Tpr**	**Tsq**	**Tm**	**Tml**	**Tr**	**Tvq**	**Tsp**	**Ta**	**Tgsl**	**Tgss**	**Tg-sa**	**Tcw**	**Tcwsh**	**Tsash**	**Tsass**	**Tcd**	**Tcdss**	**Tma**	**Tmash**	**Tan**	**Tjsh**	**Tjss**	**Kjss**
1	GAVIOTA	8%	--	7%	0%	3%	--	--	--	--	--	--	3%	9%	14%	3%	8%	2%	6%	4%	4%	--	--	1%	5%	7%	--	10%	--	7%	--	--	0%
2	SAN ONOFRE	1%	--	--	3%	--	--	--	--	--	--	--	--	0%	1%	1%	4%	6%	8%	8%	--	--	--	20%	28%	19%	--	--	--	--	--	--	--
3	REFUGIO	7%	--	6%	--	--	--	--	--	--	--	--	0%	6%	10%	5%	6%	2%	--	8%	--	--	--	25%	25%	--	--	--	--	--	--	--	--
4	EL CAPITAN	2%	0%	2%	1%	--	--	--	--	--	--	--	--	2%	7%	5%	13%	--	--	13%	--	1%	--	14%	6%	11%	3%	20%	1%	--	--	--	--
5	ATASCADERO	18%	0%	0%	6%	16%	--	3%	--	--	--	--	0%	0%	2%	2%	19%	--	--	--	--	24%	2%	--	--	5%	0%	1%	0%	--	--	--	--
6	MONTECITO	4%	3%	1%	15%	5%	--	--	--	--	--	--	--	2%	1%	--	1%	--	--	--	--	8%	2%	--	--	12%	0%	18%	--	--	22%	5%	--
7	SANTA MONICA	2%	5%	--	--	4%	--	--	--	--	--	--	--	--	--	--	41%	--	--	--	--	14%	4%	--	--	11%	--	11%	--	--	7%	0%	--
8	FRANKLIN	41%	--	--	--	16%	--	--	--	--	--	--	--	--	--	--	31%	--	--	--	--	12%	--	--	--	--	--	--	--	--	--	--	--
9	RINCON	3%	1%	5%	1%	6%	6%	2%	--	--	--	0%	1%	3%	2%	--	46%	--	--	--	--	16%	1%	--	--	4%	0%	2%	0%	--	--	--	--
10	WILLOW	5%	--	2%	3%	--	--	--	--	5%	1%	4%	9%	10%	10%	2%	50%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
11	PADRE JUAN	3%	--	18%	1%	2%	--	--	7%	16%	4%	9%	3%	--	5%	2%	31%	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Formation Key:

Qa	Surfcial sediments, alluvium
Qg	Surfcial sediments, stream channels, mostly gravel
Qls	Landslide debris
Qoa	Older dissected surficial sediments, alluvium
Qog	Older dissected surficial sediments, cooble-boulder fan gravel and fanglomerate
Qca	Casitas Formation, nonmarine, early to middle Pleistocene, weakly consolidated alluvial deposits
Qsb	Santa Barbara Formation, shallow marine, early Pleistocene and latest Pliocene age
QTpm	Pico Formation, marine, Pliocene and Pleistocene ages, Mudpit Claystone Member
Tps	Pico Formation, marine, Pliocene and Pleistocene ages, mostly sandstone
Tp/Tpr	Pico Formation, marine, Pliocene and Pleistocene ages, "Repetto" member, mostly claystone
Tsq	Sisquoc Shale, marine, late Miocene age, shale or claystone
Tm	Monterey Shale, marine, early to late Miocene age, upper shale unit
Tml	Monterey Shale, marine, early to late Miocene age, lower shale unit
Tr	Rincon Shale, marine, early Miocene age
Tvq	Vaqueros Sandstone, shallow marine, early Miocene age
Tsp	Sespe Formation, nonmarine, predominantly Oligocene age, upper shale
Ta	Sespe Formation, nonmarine, predominantly Oligocene age, lower sandstone
Tgsl	Gaviota Formation, shallow marine, early Oligocene age, siltstone and claystone
Tgss	Gaviota Formation, shallow marine, early Oligocene age, sandstone
Tg-sa	Gaviota - Sacate Formations, early Oligocene to late Eocene age, undifferentiated
Tcw	Coldwater Sandstone, marine, late Eocene, hard sandstone
Tcwsh	Coldwater Sandstone, marine, late Eocene, siltstone and shale
Tsash	Sacate Formation, marine, late Eocene age, predominantly shale
Tsass	Sacate Formation, marine, late Eocene age, predominantly sandstone
Tcd	Cozy Dell Shale, marine, late Eocene age, shale
Tcdss	Cozy Dell Shale, marine, late Eocene age, sandstone
Tma	Matilija Sandstone, marine, middle to late Eocene age, hard sandstone
Tmash	Matilija Sandstone, marine, middle to late Eocene age, shale
Tan	Anita Shale, marine, early to middle Eocene age
Tjsh	Juncal Formation, marine, early to middle Eocene age, shale
Tjss	Juncal Formation, marine, early to middle Eocene age, sandstone
Kjss	Jalama Formation, marine, late Cretaceous age, hard sandstone

Table E-1. (cont') Description of geologic units as described by Saucedo et al. (2000).

Map Unit	Geologic Age	Rock Source	Common Stratigraphic Units
Qa & Qt	Quaternary	alluvium	--
Qm	Quaternary	marine	Santa Barbara
Qc	Quaternary	nonmarine	Casitas
QP	Plio-Pleistocene	nonmarine	Saugus
Pc	Pliocene	nonmarine	Morales
Puc	Pliocene	nonmarine	Hungry Valley
Pu	Pliocene	marine	Pico
Pmlc	Pliocene	nonmarine	Ridge Route
Pml	Pliocene	marine	Towsley
Mc	Miocene	nonmarine	many
Mu	Miocene	marine	Sisquoc
Mm	Miocene	marine	Monterey
Ml	Miocene	marine	Rincon, Vaqueros
Oc	Ogliocene	nonmarine	Sespe, Vaquez
Ov	Ogliocene	volcanic	--
O	Ogliocene	marine	Gaviota
E	Eocene	marine	Coldwater, Cozy Dell, others
Ep	Eocene	marine	unnamed
Tc	Tertiary	nonmarine	Caliente
Ku	Cretaceous	marine	Jalama
gr	Mesozoic	granitic	many granitic
m	pre-Cretaceous	metamorphic	Pelona Schist
pC	Precambrian	granitic & metamorph.	Mendenhall Gneiss

Table E-1. (con't) Land use indices for the study area watersheds.

Watershed Area	Area (km^2)	Chaparral (%)	Grassland (%)	Agriculture (%)	Urban (%)	Barren (%)
Santa Clara River						
Lower Lowershed	650	53.3%	8.4%	21.7%	8.9%	7.8%
Santa Paula	104	89.3%	5.3%	5.3%	--	--
Sespe	650	100.0%	--	--	--	--
Hopper	61	91.5%	8.5%	--	--	--
Piru	1131	98.0%	0.5%	1.5%	--	--
Castaic	477	98.9%	--	1.1%	--	--
Eastern	1142	86.1%	1.1%	1.1%	6.3%	5.5%
Ventura River						
Ungauged	98	74.8%	4.6%	--	20.6%	--
Coyote	107	91.9%	5.8%	2.2%	--	--
Central	65.6	76.1%	--	18.9%	5.0%	--
San Antonio	133	63.3%	1.8%	14.7%	20.3%	--
Matilija - North F.	40.4	100.0%	--	--	--	--
Matilija -Hot Sp.	141	100.0%	--	--	--	--
Numerous, Small WS's						
Upper San Jose	14.3	82.3%	--	17.7%	--	--
Atascadero	49	63.9%	--	1.6%	34.5%	--
Carpinteria	33.9	94.6%	--	--	5.4%	--
Gaviota	52.2	45.3%	54.7%	--	--	--
San Onofre	5.3	98.2%	1.8%	--	--	--
Refugio	21.2	73.1%	26.9%	--	--	--
El Capitan	16	89.1%	10.9%	--	--	--
Atascadero	49	63.9%	--	1.6%	34.5%	--
Montecito	17	76.0%	--	18.5%	5.4%	--
Santa Monica	9.3	84.5%	--	13.9%	1.6%	--
Franklin	9.8	43.7%	--	38.8%	17.5%	--
Rincon	39	78.9%	--	21.1%	--	--
Willow	13.4	78.0%	6.5%	8.8%	--	6.7%
Padre Juan	7.8	71.0%	--	--	--	29.0%

Table E-2. Cross-correlation matrix for the watershed variables used for statistical analysis. Correlations shown with shading were assessed to be colinear as described by Montgomery and Peck (1992)

Variable	(1) Av. Annual Sed Production (t/km²/yr)	(2) Av. Annual Precipitation (cm)	(3) Area (km²)	(4) Total Relief (m)	(5) Max. Elevation (m)	(6) Drainage Density (km⁻¹)	(7) 1st Order Relief (m)	(8) 1st Order Slope (%)	(9) 1st Order D. Density (km⁻¹)	(10) Qal & Qt (%)	(11) Qm (%)	(12) Qc (%)	(13) QP (%)	(14) Pc (%)	(15) Puc (%)	(16) Pu (%)	(17) Pmlc (%)	(18) Pml (%)	(19) P (%)	(20) Mc (%)	(21) Mu (%)	(22) Mm (%)	(23) Ml (%)	(24) Oc (%)	(25) Ov (%)	(26) E (%)	(27) Ep (%)	(28) Tc (%)	(29) Ku (%)	(30) gr (%)	(31) m (%)	(32) pC (%)	(33) Total QPm (%)	(34) Total gr+m (%)	(35) Chaparral (%)	(36) Grassland (%)	(37) Agriculture (%)	(38) Urban (%)	(39) Barren (%)	(40) Total Ag + Grass (%)
(1)	1.00																																						
(2)	0.05	1.00																																					
(3)	-0.30	-0.73	1.00																																				
(4)	-0.26	-0.32	0.78	1.00																																			
(5)	-0.30	-0.43	0.83	0.98	1.00																																		
(6)	0.08	-0.23	0.07	0.01	0.02	1.00																																	
(7)	-0.24	0.58	-0.29	0.08	0.07	-0.60	1.00																																
(8)	-0.27	0.38	-0.23	0.01	0.05	-0.60	0.95	1.00																															
(9)	0.22	-0.50	0.28	0.12	0.14	0.93	-0.75	-0.72	1.00																														
(10)	0.64	-0.07	0.01	0.02	-0.06	0.43	-0.50	-0.67	0.52	1.00																													
(11)	0.85	-0.41	0.20	0.06	0.06	0.12	-0.53	-0.52	0.40	0.69	1.00																												
(12)	-0.27	0.31	0.16	0.12	0.07	-0.65	0.44	0.31	-0.65	-0.06	-0.23	1.00																											
(13)	-0.10	-0.55	0.61	0.06	0.09	0.10	-0.51	-0.44	0.29	0.23	0.27	0.37	1.00																										
(14)	-0.39	-0.41	0.54	0.78	0.77	0.09	0.00	0.01	0.19	-0.18	-0.13	-0.23	-0.17	1.00																									
(15)	-0.39	-0.41	0.54	0.78	0.77	0.09	0.00	0.01	0.19	-0.18	-0.13	-0.23	-0.17	1.00	1.00																								
(16)	0.70	-0.55	0.40	0.13	0.13	0.14	-0.62	-0.59	0.45	0.67	0.96	-0.11	0.52	-0.09	-0.09	1.00																							
(17)	-0.36	-0.39	0.20	0.18	0.29	-0.03	-0.06	0.04	-0.07	-0.33	-0.17	-0.32	-0.24	0.33	0.33	-0.20	1.00																						
(18)	0.45	-0.60	0.52	0.08	0.10	0.14	-0.65	-0.60	0.43	0.57	0.78	0.10	0.81	-0.19	-0.19	0.92	-0.26	1.00																					
(19)	0.03	-0.83	0.71	0.60	0.67	0.13	-0.48	-0.39	0.38	0.17	0.47	-0.33	0.20	0.64	0.64	0.52	0.56	0.42	1.00																				
(20)	-0.44	-0.41	0.55	0.03	0.07	0.06	-0.31	-0.25	0.14	-0.04	-0.13	0.47	0.92	-0.13	-0.13	0.15	-0.17	0.53	0.02	1.00																			
(21)	-0.13	-0.65	0.15	-0.03	0.11	-0.05	0.00	0.26	0.07	-0.37	0.00	-0.43	-0.05	0.31	0.31	0.00	0.58	-0.04	0.48	-0.06	1.00																		
(22)	0.21	0.00	-0.46	-0.49	-0.45	-0.01	0.26	0.42	0.01	-0.19	-0.06	-0.29	-0.21	-0.14	-0.14	-0.13	-0.24	-0.17	-0.30	-0.19	0.55	1.00																	
(23)	0.22	0.51	-0.04	0.33	0.27	0.16	0.37	0.21	0.02	0.14	0.03	0.07	-0.29	-0.11	-0.11	-0.07	-0.35	-0.17	-0.32	-0.31	-0.57	-0.25	1.00																
(24)	0.01	0.44	-0.35	-0.32	-0.40	0.08	-0.23	-0.25	-0.01	-0.18	-0.14	-0.15	-0.15	-0.21	-0.21	-0.18	-0.29	-0.18	-0.40	-0.09	-0.53	-0.21	0.12	1.00															
(25)	-0.56	-0.53	0.72	0.29	0.32	0.08	-0.31	-0.24	0.20	-0.10	-0.16	0.39	0.86	0.21	0.21	0.12	-0.07	0.46	0.23	0.95	0.05	-0.23	-0.34	-0.16	1.00														
(26)	0.06	0.84	-0.30	0.18	0.05	-0.34	0.62	0.36	-0.51	0.06	-0.21	0.51	-0.42	-0.14	-0.14	-0.32	-0.39	-0.40	-0.52	-0.35	-0.75	-0.31	0.71	0.22	-0.39	1.00													
(27)	-0.28	-0.30	0.06	-0.17	-0.04	-0.07	-0.12	-0.01	-0.14	-0.27	-0.15	-0.14	-0.01	-0.15	-0.15	-0.14	0.87	-0.09	0.30	0.05	0.45	-0.22	-0.37	-0.23	0.00	-0.41	1.00												
(28)	-0.39	-0.41	0.54	0.78	0.77	0.09	0.00	0.01	0.19	-0.18	-0.13	-0.23	-0.17	1.00	1.00	-0.09	0.33	-0.19	0.64	-0.13	0.31	-0.14	-0.11	-0.21	0.21	-0.14	-0.15	1.00											
(29)	0.04	0.75	-0.30	0.11	0.03	0.05	0.54	0.30	-0.19	0.23	-0.25	0.35	-0.34	-0.25	-0.25	-0.34	-0.35	-0.37	-0.57	-0.25	-0.64	-0.18	0.81	-0.04	-0.33	0.84	-0.29	-0.25	1.00										
(30)	-0.65	-0.57	0.70	0.66	0.76	0.03	-0.02	0.08	0.07	-0.43	-0.28	-0.12	0.06	0.69	0.69	-0.18	0.75	-0.13	0.67	0.18	0.47	-0.36	-0.17	-0.33	0.40	-0.34	0.50	0.69	-0.31	1.00									
(31)	-0.46	-0.42	0.55	0.02	0.07	0.05	-0.32	-0.25	0.13	-0.06	-0.13	0.46	0.92	-0.13	-0.13	0.14	-0.12	0.52	0.04	1.00	-0.02	-0.20	-0.33	-0.11	0.94	-0.37	0.12	-0.13	-0.27	0.21	1.00								
(32)	-0.54	-0.55	0.43	0.21	0.34	-0.01	-0.17	-0.05	-0.02	-0.35	-0.23	-0.13	0.12	0.29	0.29	-0.15	0.92	-0.06	0.57	0.21	0.55	-0.32	-0.45	-0.33	0.31	-0.51	0.88	0.29	-0.43	0.83	0.27	1.00							
(33)	0.71	-0.54	0.38	0.10	0.11	0.14	-0.62	-0.59	0.44	0.67	0.96	-0.10	0.53	-0.12	-0.12	1.00	-0.21	0.92	0.50	0.16	-0.01	-0.12	-0.07	-0.18	0.12	-0.32	-0.14	-0.12	-0.33	-0.20	0.15	-0.15	1.00						
(34)	0.00	-0.86	0.87	0.43	0.51	0.14	-0.60	-0.49	0.41	0.24	0.50	0.05	0.79	0.22	0.22	0.69	0.19	0.82	0.74	0.61	0.23	-0.36	-0.27	-0.35	0.68	-0.56	0.21	0.22	-0.51	0.46	0.62	0.43	0.69	1.00					
(35)	-0.68	0.14	0.07	0.17	0.23	-0.57	0.61	0.72	-0.66	-0.95	-0.69	0.23	-0.29	0.27	0.27	-0.68	0.40	-0.61	-0.10	-0.02	0.27	-0.01	-0.06	0.09	0.07	0.13	0.29	0.27	-0.09	0.52	0.00	0.40	-0.69	-0.23	1.00				
(36)	0.67	-0.17	-0.35	-0.52	-0.53	0.14	-0.36	-0.22	0.32	0.22	0.54	-0.47	0.03	-0.25	-0.25	0.47	-0.40	0.35	-0.05	-0.19	0.24	0.65	-0.28	0.21	-0.26	-0.41	-0.34	-0.25	-0.46	-0.58	-0.21	-0.48	0.48	-0.04	-0.45	1.00			
(37)	0.76	-0.05	-0.08	-0.03	-0.10	0.43	-0.51	-0.66	0.52	0.98	0.76	-0.21	0.09	-0.19	-0.19	0.69	-0.28	0.52	0.20	-0.21	-0.32	-0.13	0.16	-0.12	-0.26	0.04	-0.24	-0.19	0.18	-0.46	-0.22	-0.37	0.69	0.18	-0.94	0.34	1.00		
(38)	0.24	0.08	-0.11	-0.11	-0.17	0.72	-0.41	-0.59	0.63	0.80	0.20	-0.11	0.20	-0.22	-0.22	0.23	-0.30	0.26	-0.12	0.13	-0.39	-0.09	0.19	-0.13	0.06	0.03	-0.20	-0.22	0.41	-0.35	0.12	-0.26	0.23	0.04	-0.82	0.02	0.73	1.00	
(39)	0.41	-0.61	0.54	0.08	0.10	0.14	-0.65	-0.60	0.42	0.54	0.74	0.13	0.84	-0.19	-0.19	0.89	-0.26	1.00	0.40	0.57	-0.04	-0.18	-0.19	-0.18	0.50	-0.41	-0.09	-0.19	-0.37	-0.11	0.56	-0.04	0.90	0.83	-0.59	0.32	0.49	0.26	1.00
(40)	0.87	-0.11	-0.20	-0.24	-0.29	0.40	-0.55	-0.62	0.54	0.86	0.82	-0.35	0.09	-0.25	-0.25	0.74	-0.38	0.55	0.14	-0.24	-0.16	0.15	0.02	-0.01	-0.31	-0.13	-0.33	-0.25	-0.04	-0.60	-0.26	-0.48	0.74	0.13	-0.93	0.66	0.93	0.59	0.52