

Appendix IId. Bioassessment metrics calculated for macroinvertebrate samples collected May 1999 from sites within the San Diego watershed, San Diego County, California.

Site: <i>Transect Number:</i> <i>ABL Laboratory Number:</i>	Aliso Creek AC-PPD			Aliso Creek AC-CCR			Arroyo Trabuco ATC-AP			San Juan Creek SJC-74			Murrieta Creek MC-GS			Temecula Creek TC-1-15			Santa Margarita R. SMR-WGR		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
	3225	3226	3227	3222	3223	3224	3216	3217	3218	3213	3214	3215	3210	3211	3212	3207	3208	3209	3189	3190	3191
Taxa Richness	10	12	13	16	19	15	17	14	13	12	8	11	11	9	7	12	16	20	11	12	11
Percent Dominant Taxon	46	55	42	25	39	40	34	60	64	60	54	40	39	34	52	38	26	31	55	46	64
Ephemeropteran Taxa	2	2	2	2	2	2	2	2	2	3	3	3	3	0	1	2	3	3	2	2	2
Plecopteran Taxa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichopteran Taxa	1	1	1	3	3	1	0	0	0	0	0	0	0	0	0	2	2	3	2	3	3
EPT Taxa	3	3	3	5	5	3	2	2	2	3	3	3	3	0	1	4	5	6	4	5	5
EPT Index (%)	66	68	53	51	17	17	37	66	67	74	61	37	16	0	0	16	21	24	65	55	83
Sensitive EPT Index	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
Percent Baetidae	59	66	53	32	8	15	37	66	67	73	60	25	15	0	0	11	12	15	55	46	64
Percent Hydropsychidae	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3	3	2	9	8	13
Dipteran Taxa	3	4	3	4	4	4	4	4	2	2	1	1	3	3	3	2	4	4	3	2	3
Percent Dipteran	28	17	38	33	34	34	35	25	8	4	1	0	51	57	42	44	52	53	16	32	12
Non-Insect Taxa	2	1	3	2	5	2	3	3	4	2	3	3	3	5	3	1	4	3	3	1	2
Percent Non-Insect	5	1	7	2	45	41	10	2	6	12	31	59	21	43	58	1	8	6	17	1	2
Percent Chironomidae	28	17	38	33	34	34	35	25	8	4	1	0	51	57	42	44	52	53	16	32	12
Shannon Diversity	1	1	2	2	2	2	2	1	1	1	1	2	2	2	1	2	2	2	1	1	1
Tolerance Value	5	5	5	5	7	7	5	5	5	5	5	7	6	7	8	6	6	6	6	5	5
Percent Intolerant (0-2)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
Percent Tolerant (8-10)	5	1	6	1	44	41	5	1	4	1	30	58	19	43	58	0	6	5	14	0	2
Percent Collectors	92	83	91	60	81	87	84	91	78	79	92	96	47	61	72	29	48	46	85	79	76
Percent Filterers	2	15	6	20	4	7	6	5	18	10	8	3	51	34	27	66	45	47	11	19	18
Percent Grazers	6	2	0	14	12	3	2	1	1	0	0	0	0	5	1	2	3	2	1	1	4
Percent Predators	0	1	3	7	2	2	8	4	2	12	1	1	2	0	0	2	4	5	3	2	1
Percent Shredders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Abundance (#/ sample)	5128	3107	2563	7547	1638	4605	7973	5071	3649	6198	10588	6963	4447	3819	4296	6808	5976	477	5667	7808	6493

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Site: <i>Transsect Number:</i> <i>ABL Laboratory Number:</i>	Rainbow Creek RC-WGR			Sandia Creek SC-SCR			Santa Margarita R. SMR-DP			Santa Margarita R. SMR-CP			Santa Margarita R. SMR-SMB			San Luis Rey R. SLRR-PG			San Luis Rey R. SLRR-395		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
	3204	3205	3206	3201	3202	3203	3195	3196	3197	3192	3193	3194	3198	3199	3200	3183	3184	3185	3180	3181	3182
Taxa Richness	9	5	9	19	22	26	12	15	11	17	20	18	12	13	13	15	21	15	15	23	14
Percent Dominant Taxon	36	53	39	48	41	25	47	46	65	22	23	26	75	62	40	40	29	22	34	30	48
Ephemeropteran Taxa	1	1	1	3	3	3	3	3	4	4	4	4	1	2	1	2	4	2	3	3	3
Plecopteran Taxa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0
Trichopteran Taxa	0	0	0	1	6	4	3	2	1	1	1	2	0	0	0	4	4	4	1	0	1
EPT Taxa	1	1	1	4	9	7	6	5	5	5	5	6	1	2	1	7	9	7	4	3	4
EPT Index (%)	36	5	18	57	72	37	84	75	86	30	24	35	3	1	9	63	64	67	9	4	16
Sensitive EPT Index	0	0	0	0	3	1	6	0	0	1	0	1	0	0	0	13	20	22	1	0	1
Percent Baetidae	36	5	18	55	58	27	48	27	73	26	24	32	3	1	9	40	29	21	4	2	5
Percent Hydropsychidae	0	0	0	0	0	3	34	46	10	0	0	2	0	0	0	3	23	20	0	0	0
Dipteran Taxa	4	3	2	4	3	3	3	2	2	3	4	4	4	4	4	2	2	3	2	2	3
Percent Dipteran	48	42	43	24	3	21	11	13	6	32	51	50	5	13	33	9	9	6	40	27	54
Non-Insect Taxa	2	0	4	6	5	6	2	3	2	2	2	2	3	5	5	4	5	2	7	7	4
Percent Non-Insect	1	0	3	9	21	13	1	2	1	3	2	1	88	85	55	27	23	26	47	39	22
Percent Chironomidae	48	42	43	24	3	21	11	13	6	32	51	50	5	13	33	9	9	6	40	27	54
Shannon Diversity	2	1	1	2	2	2	1	2	1	2	2	2	1	1	2	2	2	2	2	2	2
Tolerance Value	6	6	6	6	5	6	5	5	5	5	5	5	8	8	7	6	5	5	7	6	6
Percent Intolerant (0-2)	0	0	0	0	3	0	6	2	0	0	0	0	0	0	0	14	21	22	0	1	0
Percent Tolerant (8-10)	1	0	3	9	20	11	1	1	0	3	2	1	90	82	54	25	21	26	46	41	22
Percent Collectors	53	8	25	76	82	56	60	45	81	78	68	78	95	89	89	83	69	68	62	86	43
Percent Filterers	46	92	75	20	4	34	40	54	18	15	12	8	2	7	6	5	25	21	38	5	57
Percent Grazers	0	0	0	1	11	5	0	0	0	1	0	0	0	0	0	8	2	6	0	0	0
Percent Predators	1	0	0	2	3	5	0	1	0	6	11	9	3	4	4	4	4	5	0	8	0
Percent Shredders	0	0	0	0	1	0	0	0	0	0	9	6	0	0	0	0	0	0	0	0	0
Abundance (#/ sample)	10715	19337	9621	10249	6198	5102	5645	5025	22141	98	1527	4163	3241	3623	780	1925	1619	1701	831	796	825

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Site: <i>Transsect Number:</i> <i>ABL Laboratory Number:</i>	San Luis Rey R. SLRR-MR			San Luis Rey R. SLRR-FR			Keys Creek KC-LR			Loma Alta Creek LAC-CB			Loma Alta Creek LAC-ECR			Buena Vista Cr. BVR-ED			Buena Vista Cr. BVR-SVW		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
	3177	3178	3179	3174	3175	3176	3186	3187	3188	3171	3172	3173	3168	3169	3170	3165	3166	3167	3162	3163	3164
Taxa Richness	15	14	19	12	14	9	16	18	20	12	6	6	11	10	10	10	9	11	9	7	7
Percent Dominant Taxon	19	29	51	36	30	54	32	60	32	63	52	44	28	49	25	51	81	57	61	66	54
Ephemeropteran Taxa	3	3	3	2	2	1	1	1	2	0	0	0	1	1	1	2	1	2	2	0	1
Plecopteran Taxa	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Trichopteran Taxa	2	2	1	1	0	0	3	4	5	0	0	0	0	0	1	1	1	0	0	0	
EPT Taxa	5	5	4	3	2	1	5	6	8	0	0	0	1	1	2	3	2	3	2	0	1
EPT Index (%)	41	19	24	10	3	3	42	76	45	0	0	0	0	1	7	18	5	23	2	0	1
Sensitive EPT Index	1	0	0	0	0	0	9	6	22	0	0	0	0	0	0	0	0	0	0	0	0
Percent Baetidae	34	7	17	9	3	3	21	60	18	0	0	0	0	1	6	13	4	19	2	0	1
Percent Hydropsychidae	3	1	3	0	0	0	11	10	5	0	0	0	0	0	0	0	0	0	0	0	0
Dipteran Taxa	2	4	3	4	3	2	3	2	3	4	3	2	3	3	4	4	4	4	3	3	3
Percent Dipteran	6	22	19	38	36	3	37	6	34	75	47	81	72	36	30	71	94	65	79	92	62
Non-Insect Taxa	6	3	3	4	6	4	3	4	3	4	3	2	5	4	3	2	2	3	4	4	3
Percent Non-Insect	33	29	2	22	36	64	6	4	6	21	53	18	20	58	38	2	1	5	19	8	38
Percent Chironomidae	6	22	19	38	36	3	37	6	34	75	47	81	72	36	30	71	94	65	79	92	62
Shannon Diversity	2	2	2	2	2	1	2	2	2	1	1	1	2	2	2	2	1	1	1	1	1
Tolerance Value	6	6	6	6	7	9	5	5	5	7	8	6	6	8	7	5	5	5	6	6	7
Percent Intolerant (0-2)	0	0	1	0	0	0	9	6	22	0	0	0	0	0	0	0	0	0	0	0	0
Percent Tolerant (8-10)	32	30	3	18	34	64	0	0	4	21	53	18	19	58	38	2	1	4	19	8	38
Percent Collectors	61	64	42	46	36	13	54	66	54	32	58	62	66	74	68	68	95	83	82	78	96
Percent Filterers	38	33	55	48	58	84	27	19	12	66	42	37	34	25	30	24	2	11	18	22	4
Percent Grazers	0	0	0	0	0	1	1	1	2	1	0	0	0	0	2	5	2	5	0	0	0
Percent Predators	2	2	2	5	6	2	9	11	12	1	0	1	1	2	0	3	1	0	0	0	0
Percent Shredders	0	0	0	0	0	0	9	4	20	0	0	0	0	0	0	0	0	0	0	0	0
Abundance (#/ sample)	986	987	911	313	512	101	865	632	1993	866	1868	5248	695	426	3059	5033	12624	4027	3947	12246	5934

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Site:	Agua Hedionda AHC-ECR			San Marcos Creek SMC-SP			San Marcos Creek SMC-M			San Marcos Creek SMC-RSFR			San Marcos Creek SMC-LCCC			Encinitas Creek EC-GVR			Escondido Creek EC-HRB			Esco
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1
ABL Laboratory Number:	3159	3160	3161	3150	3151	3152	3147	3148	3149	3153	3154	3155	3144	3145	3146	3156	3157	3158	3141	3142	3143	3138
Taxa Richness	17	15	18	11	11	9	9	6	7	13	13	12	11	15	14	6	5	6	17	14	12	11
Percent Dominant Taxon	28	57	49	47	50	57	37	64	43	25	46	69	34	49	37	36	45	54	46	34	47	49
Ephemeropteran Taxa	2	2	3	2	2	2	2	1	2	2	2	2	2	2	2	0	0	0	2	2	2	3
Plecopteran Taxa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichopteran Taxa	0	0	0	1	1	1	0	0	0	2	1	1	1	2	1	0	0	0	1	1	1	3
EPT Taxa	2	2	3	3	3	3	2	1	2	4	3	3	3	4	3	0	0	0	3	3	3	6
EPT Index (%)	8	6	18	29	15	3	10	16	23	44	57	18	67	16	17	0	0	0	5	8	3	43
Sensitive EPT Index	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Percent Baetidae	8	6	18	26	12	2	10	16	23	33	53	18	64	13	15	0	0	0	5	7	3	34
Percent Hydropsychidae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Dipteran Taxa	4	3	4	2	4	3	3	3	2	3	3	3	2	3	4	2	2	2	3	3	3	3
Percent Dipteran	49	67	64	51	65	60	28	7	21	19	7	8	17	28	34	65	68	45	51	36	46	8
Non-Insect Taxa	6	4	6	5	4	2	3	1	2	5	6	5	5	6	5	3	2	3	6	5	3	0
Percent Non-Insect	34	22	11	19	21	36	38	64	43	26	12	5	12	7	11	3	2	1	38	55	49	0
Percent Chironomidae	49	67	64	51	65	60	28	7	21	19	7	8	17	28	34	65	68	45	51	36	46	8
Shannon Diversity	2	2	2	2	2	1	2	1	1	2	2	1	2	2	2	1	1	1	2	2	1	1
Tolerance Value	6	6	5	6	6	7	7	8	7	6	6	6	5	6	6	6	6	6	6	7	7	5
Percent Intolerant (0-2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Percent Tolerant (8-10)	32	22	10	14	20	36	38	64	43	23	8	3	11	6	9	3	2	1	38	55	50	0
Percent Collectors	61	83	80	88	82	96	73	86	87	64	66	27	89	31	40	39	25	11	92	96	99	41
Percent Filterers	36	16	18	5	13	2	27	14	13	23	26	71	8	64	52	61	75	89	1	1	0	58
Percent Grazers	0	0	0	4	3	1	0	0	0	11	4	0	2	2	2	0	0	0	1	1	0	0
Percent Predators	2	1	2	3	2	0	0	0	0	2	4	2	0	3	6	0	0	0	5	2	1	1
Percent Shredders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Abundance (#/ sample)	3318	298	1999	3227	2620	6099	10688	4500	11124	2082	1203	7499	7134	10377	10645	6109	9641	9789	666	3332	4995	9738

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	Indido Creek		Rattlesnake Cr.			Los Penasquitas			Los Penasquitas			Carrol Canyon Cr.			San Diego River			San Diego River			San
	Site: EC-EF		RC-HP			LPC-CCR			LPC-BMR			CCC-805			SDR-MD			SDR-MT			T1
<i>Transect Number:</i>	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1
<i>ABL Laboratory Number:</i>	3139	3140	3135	3136	3137	3132	3133	3134	3129	3130	3131	3126	3127	3128	3123	3124	3125	3120	3121	3122	3117
Taxa Richness	11	8	13	13	11	12	11	15	15	15	16	6	8	8	10	7	9	10	10	13	5
Percent Dominant Taxon	43	43	32	35	36	35	31	30	41	20	26	46	60	46	40	79	40	57	53	66	91
Ephemeropteran Taxa	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	0
Plecopteran Taxa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichopteran Taxa	4	1	1	1	1	2	1	2	1	0	1	0	1	1	0	0	0	3	3	2	1
EPT Taxa	5	3	3	3	3	4	3	4	3	2	3	2	3	3	2	1	2	5	5	4	1
EPT Index (%)	45	46	9	23	7	21	25	9	30	19	9	47	19	52	17	6	3	78	70	82	3
Sensitive EPT Index	10	0	0	0	0	0	8	1	1	0	0	0	0	0	0	0	0	4	4	4	0
Percent Baetidae	17	40	8	22	6	20	17	7	30	19	9	47	18	51	17	6	3	67	59	78	0
Percent Hydropsychidae	28	6	0	0	0	1	8	1	1	0	0	0	0	0	0	0	0	6	9	4	0
Dipteran Taxa	4	2	4	4	3	3	3	3	3	3	3	3	3	3	2	3	4	2	2	3	1
Percent Dipteran	12	9	56	57	28	49	52	50	16	33	33	19	69	39	5	12	24	11	5	5	6
Non-Insect Taxa	1	2	5	4	4	4	3	5	6	8	7	0	0	1	5	2	2	2	2	5	2
Percent Non-Insect	0	1	35	8	63	4	5	10	12	26	32	0	0	1	44	3	41	9	2	4	1
Percent Chironomidae	12	9	56	57	28	49	52	50	16	33	33	19	69	39	5	12	24	11	5	5	6
Shannon Diversity	2	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	1	1	0
Tolerance Value	5	5	7	6	8	6	5	6	6	7	7	5	5	5	7	6	8	5	5	5	6
Percent Intolerant (0-2)	10	0	0	0	0	0	8	1	1	0	0	0	0	0	0	0	0	4	4	4	0
Percent Tolerant (8-10)	0	1	33	8	63	4	3	9	11	25	28	0	0	1	44	3	41	7	2	3	0
Percent Collectors	28	48	55	66	80	58	51	26	44	41	36	61	79	86	63	20	65	85	65	83	6
Percent Filterers	71	51	11	28	16	36	35	42	54	55	57	39	20	12	35	79	33	8	32	15	91
Percent Grazers	0	0	1	1	1	1	0	0	0	0	1	0	1	1	2	0	0	5	2	1	3
Percent Predators	0	1	33	5	3	5	14	32	2	4	6	0	0	1	0	1	1	2	1	1	1
Percent Shredders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Abundance (#/ sample)	7585	6401	3652	7616	8772	5081	6399	921	2736	740	1627	5126	3756	5591	10153	11544	7302	4859	10430	5529	5379

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	Diego River Site: SDR-1		Tecolote Creek TC-TCNP			Sweetwater River SR-79			Sweetwater River SR-94			Sweetwater River SR-WS		
Transsect Number:	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
ABL Laboratory Number:	3118	3119	3219	3220	3221	3114	3115	3116	3111	3112	3113	3108	3109	3110
Taxa Richness	16	9	7	5	6	31	29	33	17	12	15	10	10	10
Percent Dominant Taxon	36	63	89	57	92	33	25	28	53	58	65	46	80	61
Ephemeropteran Taxa	0	0	0	0	0	5	5	6	2	2	2	2	1	2
Plecopteran Taxa	0	0	0	0	0	2	1	1	0	0	0	0	0	0
Trichopteran Taxa	1	1	0	0	0	6	6	4	0	0	0	0	1	0
EPT Taxa	1	1	0	0	0	13	12	11	2	2	2	2	2	2
EPT Index (%)	7	1	0	0	0	71	41	63	20	2	3	1	1	2
Sensitive EPT Index	0	0	0	0	0	52	25	48	0	0	0	0	0	0
Percent Baetidae	0	0	0	0	0	11	12	10	20	2	3	1	0	2
Percent Hydropsychidae	0	0	0	0	0	8	2	1	0	0	0	0	0	0
Dipteran Taxa	3	2	4	3	3	4	3	2	4	4	3	3	3	3
Percent Dipteran	40	17	96	76	7	14	9	7	14	23	19	46	16	35
Non-Insect Taxa	9	5	2	1	1	6	7	7	7	3	4	3	4	1
Percent Non-Insect	16	19	1	3	1	8	45	23	63	67	73	6	3	2
Percent Chironomidae	40	17	96	76	7	14	9	7	14	23	19	46	16	35
Shannon Diversity	2	1	1	1	0	3	2	3	2	1	1	1	1	1
Tolerance Value	6	6	5	6	6	3	6	4	8	7	9	6	6	6
Percent Intolerant (0-2)	0	0	0	0	0	53	25	49	0	0	0	0	0	0
Percent Tolerant (8-10)	9	18	0	3	1	5	44	23	57	67	73	6	2	2
Percent Collectors	46	17	92	60	6	62	59	63	88	88	90	35	16	30
Percent Filterers	38	73	7	40	93	11	3	1	3	2	3	65	83	69
Percent Grazers	8	10	0	0	1	5	28	27	0	0	0	0	0	0
Percent Predators	8	0	1	0	1	11	5	8	8	9	6	0	1	0
Percent Shredders	0	0	0	0	0	11	4	1	0	0	0	0	0	0
Abundance (#/ sample)	1853	1044	3855	11439	7001	2276	2198	1987	1435	3861	6967	2356	6554	6576