

Appendix 6. Particulate Size Distribution in Colloid and Sediment Samples

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry.

Table A6-2. Particulate size distribution of streambed sediment samples.

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Sac. R.–Shasta		Sac. R.–Keswick		Sac. R.–Bend Br.		Sac. R.–Colusa		Sac. R.–Verona		Sac. R.–Freeport	
Sept. 1996		Sept. 1996		Sept. 1996		Sept. 1996		Sept. 1996		Sept. 1996	
Mean (nm)	186.	Mean (nm)	219	Mean (nm)	427.	Mean (nm)	316.	Mean (nm)	232.	Mean (nm)	407.
Variance	1.321	Variance	1.432	Variance	1.491	Variance	0.913	Variance	0.327	Variance	0.923
Skew	3.208	Skew	4.134	Skew	3.566	Skew	2.504	Skew	2.238	Skew	1.9
RMS	0.00659	RMS	0.00516	RMS	0.00372	RMS	0.00329	RMS	0.0062	RMS	4.33
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
68	10	92	14	144	0	138	13	147	12	101	1
78	20	110	30	173	2	159	26	160	29	116	4
89	31	130	44	207	24	183	40	174	49	132	9
101	42	155	58	248	46	211	54	190	66	150	17
116	54	185	73	297	67	243	70	206	78	171	26
132	66	220	88	356	89	280	86	224	85	195	37
150	74	262	91	427	90	323	88	249	85	222	50
171	80	312	93	511	91	372	89	276	85	253	60
195	84	372	94	612	92	428	89	305	85	289	68
222	87	443	94	733	92	494	89	337	85	329	74
253	90	527	94	878	92	569	89	373	86	375	78
289	90	627	94	1,052	92	655	89	413	87	428	79
329	90	747	95	1,260	93	843	90	456	91	488	79
375	91	889	96	1,510	94	948	93	505	94	556	79
428	91	1,059	97	1,808	96	1,067	95	558	96	633	80
488	92	1,261	98	2,166	98	1,201	98	617	98	722	82
556	93	1,501	99	2,595	99	1,351	99	683	99	823	85
634	94	1,788	100	3,108	100	1,520	100	755	100	938	88
722	96									1,069	92
823	97									1,219	95
939	98									1,389	97
1,070	99									1,584	99
1,219	100									1,805	100
1,390	100									2,058	100

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Spring Cr. Arm		Sac. R.–Shasta		Sac. R.–Keswick		Sac. R.–Bend Br.		Sac. R.–Colusa		Sac. R.–Verona	
Sept. 1996		Nov. 1996		Nov. 1996		Nov. 1996		Nov. 1996		Nov. 1996	
Mean (nm)	362.	Mean (nm)	741.	Mean (nm)	575.	Mean (nm)	357.	Mean (nm)	936.	Mean (nm)	366.
Variance	2.376	Variance	2.319	Variance	3.63	Variance	2.341	Variance	0.983	Variance	0.289
Skew	3.786	Skew	4.202	Skew	5.72	Skew	4.003	Skew	0.719	Skew	0.17
RMS	0.0104	RMS	0.0055	RMS	0.0108	RMS	0.00418	RMS	0.00419	RMS	0.0108
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
125	14	276	13	179	13	128	14	66	2	122	6
152	29	335	28	236	28	156	29	76	4	135	13
184	47	407	49	311	50	189	48	87	7	151	23
224	64	494	66	409	69	230	64	100	11	168	31
272	79	599	81	539	84	279	79	116	15	186	38
330	93	728	94	710	97	339	93	133	20	207	44
400	93	883	94	935	97	411	93	153	26	231	44
486	93	1,073	94	1,232	97	499	93	176	31	257	44
590	93	1,302	94	1,623	97	606	93	203	36	286	44
716	93	1,581	94	2,138	97	736	93	234	41	318	44
869	93	1,919	94	2,816	97	893	93	269	46	354	45
1,055	93	2,330	94	3,710	97	1,084	93	310	49	394	46
1,281	94	2,828	95	4,887	98	1,317	94	357	52	438	62
1,555	95	3,433	96	6,437	99	1,598	95	411	55	488	75
1,888	97	4,168	97	8,479	100	1,940	97	473	57	543	84
2,292	98	5,060	98			2,356	98	544	58	604	91
2,783	99	6,143	99			2,860	99	626	59	672	96
3,378	100	7,458	100			3,472	100	779	59	748	100
								905	59		
								1,051	59		
								1,221	63		
								1,418	69		
								1,647	75		
								1,913	84		
								2,221	91		
								2,580	96		
								2,996	100		

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Sac. R.–Freeport		Sac. R.–Shasta		Sac. R.–Keswick		Sac. R.–Bend Br.		Sac. R.–Colusa		Sac. R.–Verona	
Nov. 1996		Dec. 1996		Dec. 1996		Dec. 1996		Dec. 1996		Dec. 1996	
Mean (nm)	1322.	Mean (nm)	723.	Mean (nm)	1027.	Mean (nm)	966.	Mean (nm)	743.	Mean (nm)	653.
Variance	1.922	Variance	1.851	Variance	2.361	Variance	0.707	Variance	2.379	Variance	1.843
Skew	2.311	Skew	3.954	Skew	3.884	Skew	1.182	Skew	3.715	Skew	3.953
RMS	0.00021	RMS	0.00807	RMS	0.0083	RMS	0.00737	RMS	0.00754	RMS	0.00757
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
206	4	291	13	361	14	240	15	252	15	262	15
245	10	349	27	438	29	291	30	306	30	313	31
292	17	418	48	532	47	353	47	372	47	375	47
347	26	501	66	646	64	429	63	451	62	450	63
414	36	600	80	784	79	521	78	548	77	539	78
492	49	719	93	952	93	632	93	665	92	645	94
586	59	861	93	1,156	93	767	93	808	92	773	94
698	67	1,032	93	1,403	93	931	93	981	92	926	94
831	73	1,236	93	1,704	93	1,131	93	1,190	92	1,109	94
990	78	1,480	93	2,068	93	1,373	93	1,445	92	1,329	94
1,178	81	1,773	93	2,511	93	1,667	93	1,754	92	1,591	94
1,403	81	2,124	93	3,048	93	2,023	93	2,130	92	1,906	94
1,671	81	2,544	94	3,701	94	2,456	94	2,586	93	2,284	95
1,989	82	3,048	95	4,493	95	2,982	95	3,139	95	2,735	95
2,369	83	3,651	97	5,454	96	3,620	97	3,811	96	3,277	97
2,820	85	4,373	98	6,621	98	4,395	98	4,626	98	3,925	98
3,358	87	5,238	99	8,039	99	5,335	99	5,616	99	4,702	99
3,998	91	6,275	100	9,759	100	6,477	100	6,818	100	5,632	100
4,761	94										
5,669	96										
6,750	98										
8,037	99										
9,569	100										

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Sac. R.–Freeport		Spring Cr.–Weir		Spring Cr. arm		Sac. R.–Keswick		Sac. R.–Bend Br.		Sac. R.–Colusa	
Dec. 1996		Dec. 1996		Dec. 1996		Jan. 1997		Jan. 1997		Jan. 1997	
Mean (nm)	437.	Mean (nm)	965.	Mean (nm)	605.	Mean (nm)	781.	Mean (nm)	590.	Mean (nm)	1190.
Variance	0.38	Variance	2.341	Variance	2.359	Variance	3.475	Variance	0.543	Variance	0.744
Skew	0.585	Skew	3.974	Skew	3.42	Skew	5.085	Skew	1.146	Skew	2.901
RMS	0.00218	RMS	0.00412	RMS	0.0157	RMS	0.00393	RMS	0.0019	RMS	0.0022
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
160	7	344	15	197	12	142	1	187	4	569	10
177	18	418	30	240	25	187	4	208	9	651	22
196	30	507	47	291	48	246	25	231	16	744	35
217	40	615	63	353	66	324	45	256	25	851	51
240	48	747	78	429	79	426	62	284	34	973	68
266	52	907	93	521	91	562	79	316	45	1,113	88
300	52	1,101	93	632	91	740	84	351	53	1,273	90
339	52	1,337	93	767	91	975	88	389	58	1,456	90
392	53	1,623	93	931	91	1,284	92	432	62	1,665	90
437	55	1,970	93	1,131	91	1,691	94	480	64	1,905	90
488	59	2,392	93	1,373	91	2,228	96	533	65	2,178	90
544	65	2,904	93	1,666	91	2,935	96	592	65	2,491	90
607	72	3,525	94	2,023	92	3,866	96	657	66	2,849	92
678	80	4,279	95	2,456	94	5,093	97	730	69	3,259	93
756	88	5,195	97	2,982	96	6,709	98	811	72	3,727	95
844	94	6,307	98	3,620	97	8,838	99	900	77	4,262	97
941	98	9,657	99	4,394	99	11,642	100	999	81	4,875	98
1,051	100	9,295	100	5,335	100			1,110	86	5,575	100
								1,232	91		
								1,368	95		
								1,519	97		
								1,687	99		
								1,873	100		
								2,080	100		

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Sac. R.–Freeport		Spring Cr.–Road		Yolo Bypass		Sac. R.–Verona		Sac. R.–Shasta		Sac. R.–Keswick	
Jan. 1997		Jan. 1997		Jan. 1997		June 1997		May 1997		May 1997	
Mean (nm)	509.	Mean (nm)	749.	Mean (nm)	573.	Mean (nm)	388.	Mean (nm)	281.	Mean (nm)	389.
Variance	1.188	Variance	0.567	Variance	0.634	Variance	1.834	Variance	1.544	Variance	0.452
Skew	2.537	Skew	1.065	Skew	4.874	Skew	3.992	Skew	4.373	Skew	3.318
RMS	0.01	RMS	0.00061	RMS	0.00342	RMS	0.0113	RMS	0.0028	RMS	0.00288
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
152	5	175	1	129	2	156	15	114	1	222	11
174	12	196	2	170	17	187	30	136	18	250	23
200	21	220	5	224	39	224	47	163	39	281	37
230	31	248	10	296	57	269	63	195	58	317	53
264	42	278	16	389	74	322	79	234	77	357	71
302	55	312	25	513	89	386	93	280	94	402	92
347	65	351	35	676	91	462	93	336	94	452	93
398	73	394	44	890	93	554	93	402	94	510	93
457	79	443	53	1,172	95	663	93	482	94	574	93
525	83	498	60	1,544	96	765	93	577	94	647	93
602	85	559	64	2,034	96	952	93	692	94	728	93
691	86	628	65	2,680	96	1,140	93	828	94	820	93
793	86	705	65	3,530	97	1,366	94	992	95	924	94
911	86	792	66	4,650	98	1,636	95	1,189	96	1,041	95
1,045	87	890	68	6,126	99	1,960	97	1,424	97	1,172	96
1,200	89	1,000	70	8,069	100	2,347	98	1,706	98	1,320	98
1,377	91	1,123	74			2,812	99	2,043	99	1,487	99
1,580	93	1,262	81			3,368	100	2,448	100	1,675	100
1,814	96	1,418	87								
2,082	97	1,593	92								
2,339	99	1,789	95								
2,742	99	2,010	98								
3,147	100	2,258	100								
		2,537	100								

Table A6-1. Particulate size distribution of Sacramento River colloid samples as determined by photon correlation spectrometry—*Continued*

Sac. R.–Bend Br.		Sac. R.–Colusa		Sac. R.–Freeport		Spring Cr.–Weir		Spring Cr. arm		Colusa Basin Drain	
May 1997		May 1997		May 1997		May 1997		May 1997		May 1997	
Mean (nm)	262.	Mean (nm)	271.	Mean (nm)	432.	Mean (nm)	600.	Mean (nm)	290.	Mean (nm)	668.
Variance	0.717	Variance	1.881	Variance	0.213	Variance	3.191	Variance	1.552	Variance	0.723
Skew	1.491	Skew	3.746	Skew	–0.016	Skew	3.505	Skew	3.355	Skew	2.833
RMS	0.00365	RMS	0.00275	RMS	0.00332	RMS	0.0029	RMS	0.0074	RMS	0.00196
d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d	d(nm)	% < d
62	0	105	14	137	4	105	7	95	1	327	11
71	3	126	30	150	10	128	16	114	2	372	23
81	7	151	47	166	17	155	27	136	24	424	37
92	14	181	63	183	22	188	38	163	46	484	52
105	23	217	78	201	27	228	50	195	68	551	70
120	35	260	93	222	29	277	63	234	89	628	89
136	46	311	93	249	29	337	72	280	91	716	90
156	55	372	93	282	30	409	79	336	91	817	90
177	62	446	93	314	32	496	84	402	91	931	90
202	67	534	93	349	35	602	87	482	91	1,061	90
230	70	640	93	388	41	731	89	577	91	1,209	90
263	70	767	93	431	50	887	89	692	91	1,378	90
299	72	918	94	479	60	1,077	89	828	92	1,571	91
341	74	1,100	95	533	71	1,308	89	992	94	1,791	93
389	77	1,318	96	592	82	1,588	90	1,189	96	2,041	95
443	81	1,579	98	658	90	1,928	91	1,424	97	2,327	96
505	85	1,891	99	732	96	2,340	93	1,706	99	2,652	98
576	90	2,265	100	813	100	2,841	95	2,043	100	3,023	100
656	94					3,449	97				
748	97					4,187	98				
853	99					5,083	99				
972	100					6,171	100				
1,108	100					7,492	100				

Table A6-2. Particulate size distribution of streambed sediment samples

[Numbers denote percent finer than size indicated; Br., Bridge; R., River; Sac., Sacramento; mm, millimeter; mm/dd/yy, month/day/year]

Particulate Size	Site								
	Sac. R.–Rodeo Park	Sac. R.–Chum Creek	Sac. R.–Balls Ferry	Sac. R.–Bend Br.	Sac. R.–Tehama	Sac. R.–Colusa	Sac. R.–Verona	Sac. R.–Freeport	Cottonwood Creek
	Date Sampled (mm/dd/yy)								
	10/23/96	10/22/96	10/22/96	10/22/96	10/23/96	11/14/96	11/13/96	11/15/96	10/23/96
16.0 mm	100	100	100	90	100	100	100	100	100
8.0 mm	100	94	98	60	100	100	100	100	98
4.0 mm	99	92	91	47	100	100	100	100	96
2.0 mm	97	90	85	37	99	100	100	100	94
1.0 mm	94	89	80	35	97	100	100	100	92
0.5 mm	91	87	74	33	96	100	99	99	89
0.25 mm	75	70	52	22	91	99	93	91	74
0.125 mm	35	25	12	8	74	74	43	71	46
0.062 mm	10	6	3	3	44	36	11	31	35
0.031 mm	7	4	2	2	31	23	7	19	32
0.016 mm	4	3	2	1	18	14	5	12	23
0.008 mm	3	2	1	1	13	9	4	9	15
0.004 mm	2	2	1	1	9	7	2	7	10
0.002 mm	2	1	1	1	7	5	2	5	8
0.001 mm	1	1	0	0	5	3	1	4	6
0.005 mm	1	1	0	0	4	2	0	2	4
0.00025 mm	0	0	0	0	2	0	0	1	2