Appendix C

Supporting Data

2011 PLOO Stations

Sediment Conditions

Appendix C.1

A subset of the Wentworth scale and sorting coefficients (both based on Folk 1980) used in the analysis of sediments collected from the PLOO region in 2011. Sediment grain size is presented in phi size and microns along with descriptions of each size range and how they are classified within size fractions. The sorting coefficients are the standard deviation (SD) of sediment grain sizes in a sample measured as phi.

Wentworth Scale

Phi size	Microns	Description	Fraction
≤-1	≥ 2000	Granules–Pebbles	Coarse
0	1000 - 1999	Very coarse sand	
1	500 - 999	Coarse sand	Sand
2	250 - 499	Medium sand	
3	125 - 249	Fine sand	
4	62.5 - 124	Very fine sand	
5	31 – 62.4	Coarse silt	Silt
6	15.6 – 30.9	Medium silt	
7	7.8 – 15.5	Fine silt	
8	3.9 – 7.7	Very fine silt	
9	2.0 – 3.8	Clay	Clay
10	0.98 – 1.9	Clay	
11	≤ 0.97	Clay	

Sorting Coefficient

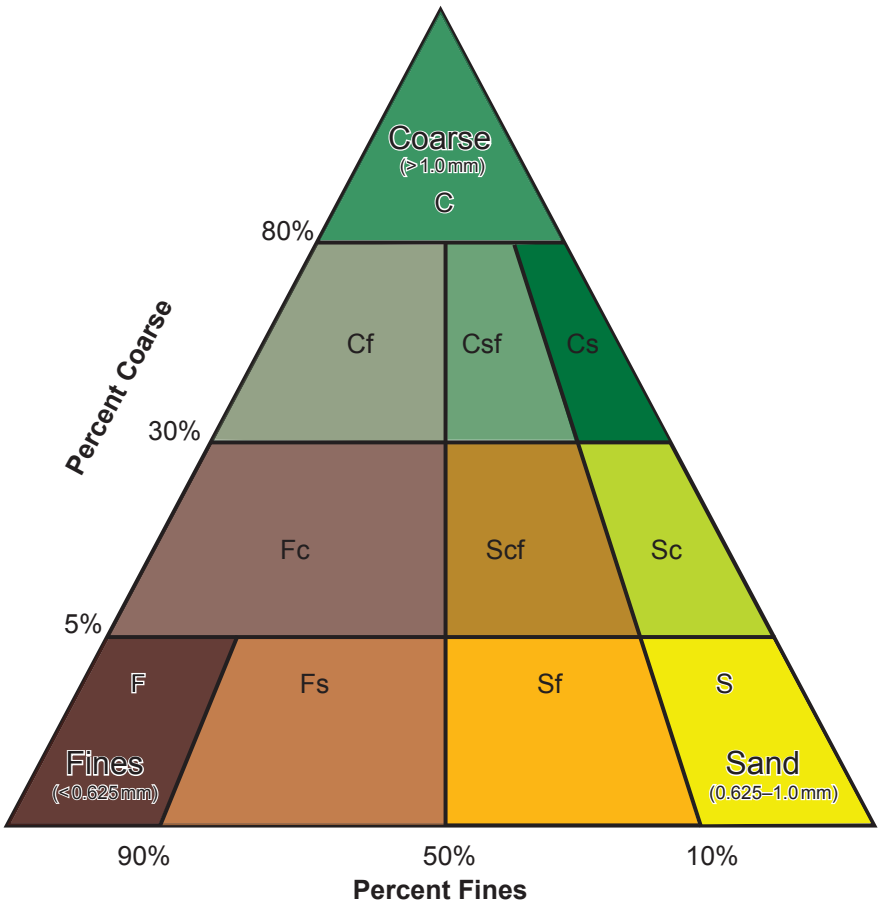
SD, phi	Sorting Category
< 0.35	very well sorted
0.35 – 0.50	well sorted
0.50 – 0.71	moderately well sorted
0.71 – 1.00	moderately sorted
1.00 – 2.00	poorly sorted
2.00 – 4.00	very poorly sorted
> 4.00	extremely poorly sorted

This page intentionally left blank

Appendix C.2

Classification of sediment types defined by relative proportions of percent fines, sand, and coarse particles (based on Folk 1980). Data include the amount of fine and coarse material that determine the sediment type.

Abbr.	Sediment Type	% Fines	% Coarse	Example
F	Fines	90 – 100	0 – 5	
Fs	Fines with sand	50 – 90	0 – 5	
Fc	Fines with coarse	50 – 95	5 – 30	
S	Sand	0 – 10	0 – 5	
Sf	Sand with fines	10 – 50	0 – 5	
Scf	Sand with coarse and fines	10 – 50	5 – 30	
Sc	Sand with coarse	0 – 10	5 – 30	
C	Coarse	0 – 20	80 – 100	
Cf	Coarse with fines	50 – 70	30 – 80	
Csf	Coarse with sand and fines	10 – 50	30 – 80	
Cs	Coarse with sand	0 – 10	30 – 80	



This page intentionally left blank

Appendix C.3

Constituents and method detection limits (MDL) used for the analysis of sediments collected from the PLOO region during 2011.

Parameter	MDL	Parameter	MDL
Organic Indicators			
BOD (ppm)	2	Total Sulfides (ppm)	0.14
Total Nitrogen (TN, % wt.)	0.005	Total Volatile Solids (TVS, % wt.)	0.11
Total Organic Carbon (TOC, % wt.)	0.01		
Metals (ppm)			
Aluminum (Al)	2	Lead (Pb)	0.8
Antimony (Sb)	0.3	Manganese (Mn)	0.08
Arsenic (As)	0.33	Mercury (Hg)	0.003, 0.004[a]
Barium (Ba)	0.02	Nickel (Ni)	0.1
Beryllium (Be)	0.01	Selenium (Se)	0.24
Cadmium (Cd)	0.06	Silver (Ag)	0.04
Chromium (Cr)	0.1	Thallium (Ti)	0.5
Copper (Cu)	0.2	Tin (Sn)	0.3
Iron (Fe)	9	Zinc (Zn)	0.25
Chlorinated Pesticides (ppt)			
Hexachlorocyclohexane (HCH)			
HCH, Alpha isomer	150	HCH, Delta isomer	700
HCH, Beta isomer	310	HCH, Gamma isomer	260
Total Chlordane			
Alpha (cis) Chlordane	240	Heptachlor epoxide	120
Cis Nonachlor	240	Methoxychlor	1100
Gamma (trans) Chlordane	350	Oxychlordane	240
Heptachlor	1200	Trans Nonachlor	250
Total Dichlorodiphenyltrichloroethane (DDT)			
o,p-DDD	830	p,p-DDE	260
o,p-DDE	720	p,-p-DDMU	[b]
o,p-DDT	800	p,p-DDT	800
p,p-DDD	470		
Miscellaneous Pesticides			
Aldrin	430	Endrin	830
Alpha Endosulfan	240	Endrin aldehyde	830
Beta Endosulfan	350	Hexachlorobenzene	470
Dieldrin	310	Mirex	500
Endosulfan Sulfate	260		

[a] Methods changed between January and July.; [b] No MDL available for this parameter.

Appendix C.3 *continued*

Parameter	MDL		MDL
Polychlorinated Biphenyl Congeners (PCBs) (ppt)			
PCB 18	540	PCB 126	720
PCB 28	700	PCB 128	570
PCB 37	700	PCB 138	590
PCB 44	700	PCB 149	500
PCB 49	700	PCB 151	640
PCB 52	700	PCB 153/168	600
PCB 66	700	PCB 156	620
PCB 70	700	PCB 157	700
PCB 74	700	PCB 158	510
PCB 77	700	PCB 167	620
PCB 81	700	PCB 169	610
PCB 87	700	PCB 170	570
PCB 99	700	PCB 177	650
PCB 101	430	PCB 180	530
PCB 105	720	PCB 183	530
PCB 110	640	PCB 187	470
PCB 114	700	PCB 189	620
PCB 118	830	PCB 194	420
PCB 119	560	PCB 201	530
PCB 123	660	PCB 206	510
Polycyclic Aromatic Hydrocarbons (PAHs) (ppb)			
1-methylnaphthalene	20	Benzo[G,H,I]perylene	20
1-methylphenanthrene	20	Benzo[K]fluoranthene	20
2,3,5-trimethylnaphthalene	20	Biphenyl	30
2,6-dimethylnaphthalene	20	Chrysene	40
2-methylnaphthalene	20	Dibenzo(A,H)anthracene	20
3,4-benzo(B)fluoranthene	20	Fluoranthene	20
Acenaphthene	20	Fluorene	20
Acenaphthylene	30	Indeno(1,2,3-CD)pyrene	20
Anthracene	20	Naphthalene	30
Benzo[A]anthracene	20	Perylene	30
Benzo[A]pyrene	20	Phenanthrene	30
Benzo[e]pyrene	20	Pyrene	20

e = values estimated regardless of MDL

Appendix C.4

Summary of the constituents that make up total DDT, total PCB, and total PAH in sediments from the PLOO region during 2011.

Station	Class	Constituent	January	July	Units
B8	DDT	p,p-DDE	670	620	ppt
B9	DDT	p,p-DDE	390	570	ppt
B10	DDT	p,p-DDE	340	360	ppt
B11	DDT	p,p-DDE	430	530	ppt
B12	DDT	p,p-DDE	nd	220	ppt
E1	DDT	p,p-DDE	580	920	ppt
E1	DDT	p,p-DDT	nd	700	ppt
E1	PAH	3,4-benzo(B)fluoranthene	nd	41.3	ppb
E1	PAH	Benzo[A]pyrene	nd	40.1	ppb
E1	PAH	Fluoranthene	nd	31.8	ppb
E1	PAH	Pyrene	nd	41.5	ppb
E1	PCB	PCB 101	nd	890	ppt
E1	PCB	PCB 110	260	640	ppt
E1	PCB	PCB 118	230	830	ppt
E1	PCB	PCB 138	nd	590	ppt
E1	PCB	PCB 149	270	500	ppt
E1	PCB	PCB 187	140	470	ppt
E1	PCB	PCB 206	nd	510	ppt
E1	PCB	PCB 28	nd	660	ppt
E1	PCB	PCB 52	140	nd	ppt
E1	PCB	PCB 66	52	nd	ppt
E1	PCB	PCB 70	77	nd	ppt
E1	PCB	PCB 99	nd	660	ppt
E2	DDT	p,p-DDE	290	710	ppt
E2	PAH	3,4-benzo(B)fluoranthene	nd	31.5	ppb
E2	PAH	Benzo[A]anthracene	nd	22.0	ppb
E2	PAH	Benzo[A]pyrene	nd	29.6	ppb
E2	PAH	Fluoranthene	nd	23.2	ppb
E2	PAH	Pyrene	nd	21.8	ppb
E2	PCB	PCB 101	nd	680	ppt
E2	PCB	PCB 105	nd	720	ppt
E2	PCB	PCB 110	150	640	ppt
E2	PCB	PCB 118	nd	830	ppt
E2	PCB	PCB 138	68	590	ppt
E2	PCB	PCB 149	120	500	ppt
E2	PCB	PCB 153/168	nd	600	ppt
E2	PCB	PCB 49	nd	850	ppt
E2	PCB	PCB 52	nd	1000	ppt
E2	PCB	PCB 70	nd	1100	ppt
E2	PCB	PCB 87	nd	600	ppt
E3	DDT	p,p-DDE	330	330	ppt
E3	PAH	3,4-benzo(B)fluoranthene	33.1	57.2	ppb
E3	PAH	Benzo[A]anthracene	28.5	27.1	ppb

nd = not detected

Appendix C.4 *continued*

Station	Class	Constituent	January	July	Units
E3	PAH	Benzo[A]pyrene	34.5	51.2	ppb
E3	PAH	Benzo[e]pyrene	21.4	30.1	ppb
E3	PAH	Benzo[G,H,I]perylene	21.1	27.8	ppb
E3	PAH	Benzo[K]fluoranthene	nd	24.1	ppb
E3	PAH	Fluoranthene	22	37.1	ppb
E3	PAH	Indeno(1,2,3-CD)pyrene	nd	22.7	ppb
E3	PAH	Pyrene	35.8	28.8	ppb
E3	PCB	PCB 101	1500	840	ppt
E3	PCB	PCB 105	410	nd	ppt
E3	PCB	PCB 110	1300	640	ppt
E3	PCB	PCB 118	1100	830	ppt
E3	PCB	PCB 128	300	nd	ppt
E3	PCB	PCB 138	410	590	ppt
E3	PCB	PCB 149	790	500	ppt
E3	PCB	PCB 151	350	nd	ppt
E3	PCB	PCB 153/168	420	600	ppt
E3	PCB	PCB 170	150	nd	ppt
E3	PCB	PCB 180	280	530	ppt
E3	PCB	PCB 187	210	nd	ppt
E3	PCB	PCB 44	330	nd	ppt
E3	PCB	PCB 49	320	nd	ppt
E3	PCB	PCB 52	1000	nd	ppt
E3	PCB	PCB 66	360	920	ppt
E3	PCB	PCB 70	1500	1100	ppt
E3	PCB	PCB 74	160	nd	ppt
E3	PCB	PCB 87	670	nd	ppt
E3	PCB	PCB 99	530	660	ppt
E5	DDT	p,p-DDE	300	320	ppt
E7	DDT	p,p-DDE	380	460	ppt
E8	DDT	p,p-DDE	250	260	ppt
E9	DDT	p,p-DDE	260	580	ppt
E9	PAH	Benzo[A]anthracene	nd	22.5	ppb
E9	PCB	PCB 101	770	8200	ppt
E9	PCB	PCB 105	240	2000	ppt
E9	PCB	PCB 110	560	6700	ppt
E9	PCB	PCB 118	530	5200	ppt
E9	PCB	PCB 123	nd	660	ppt
E9	PCB	PCB 128	nd	1400	ppt
E9	PCB	PCB 138	nd	2000	ppt
E9	PCB	PCB 149	550	3700	ppt
E9	PCB	PCB 151	290	1700	ppt
E9	PCB	PCB 153/168	nd	3600	ppt
E9	PCB	PCB 156	nd	800	ppt
E9	PCB	PCB 157	nd	700	ppt
E9	PCB	PCB 158	nd	980	ppt
E9	PCB	PCB 167	nd	620	ppt

nd = not detected

Appendix C.4 *continued*

Station	Class	Constituent	January	July	Units
E9	PCB	PCB 170	310	700	ppt
E9	PCB	PCB 177	400	650	ppt
E9	PCB	PCB 18	nd	560	ppt
E9	PCB	PCB 180	710	980	ppt
E9	PCB	PCB 183	210	530	ppt
E9	PCB	PCB 187	420	510	ppt
E9	PCB	PCB 194	310	nd	ppt
E9	PCB	PCB 201	230	nd	ppt
E9	PCB	PCB 206	190	nd	ppt
E9	PCB	PCB 28	150	700	ppt
E9	PCB	PCB 44	420	1800	ppt
E9	PCB	PCB 49	nd	1400	ppt
E9	PCB	PCB 52	630	5400	ppt
E9	PCB	PCB 66	340	1900	ppt
E9	PCB	PCB 70	690	3200	ppt
E9	PCB	PCB 74	270	1200	ppt
E9	PCB	PCB 87	nd	3600	ppt
E9	PCB	PCB 99	230	2500	ppt
E11	DDT	p,p-DDE	200	300	ppt
E14	DDT	p,p-DDE	210	250	ppt
E15	DDT	p,p-DDE	190	580	ppt
E15	PCB	PCB 110	nd	640	ppt
E15	PCB	PCB 118	nd	830	ppt
E15	PCB	PCB 149	nd	500	ppt
E17	DDT	p,p-DDE	210	nd	ppt
E19	DDT	p,p-DDE	360	360	ppt
E20	DDT	p,p-DDE	280	nd	ppt
E21	DDT	p,p-DDE	220	520	ppt
E21	PCB	PCB 206	160	nd	ppt
E23	DDT	p,p-DDE	290	450	ppt
E23	PAH	Benzo[G,H,I]perylene	nd	57.8	ppb
E23	PAH	Dibenzo(A,H)anthracene	nd	41.3	ppb
E23	PAH	Indeno(1,2,3-CD)pyrene	nd	47.6	ppb
E25	DDT	p,p-DDE	280	690	ppt
E25	PAH	Benzo[G,H,I]perylene	nd	47.5	ppb
E25	PAH	Dibenzo(A,H)anthracene	nd	38.5	ppb
E25	PAH	Indeno(1,2,3-CD)pyrene	nd	35.1	ppb
E26	DDT	p,p-DDE	330	390	ppt
E26	PAH	Benzo[G,H,I]perylene	nd	44.9	ppb
E26	PAH	Dibenzo(A,H)anthracene	nd	31.3	ppb
E26	PAH	Indeno(1,2,3-CD)pyrene	nd	34.7	ppb

nd = not detected

This page intentionally left blank

Appendix C.5

Summary of sediment grain size parameters for each PLOO station sampled during January 2011. SD = standard deviation. Silt and clay fractions are indistinguishable for samples analyzed by sieve. Visual observations are from sieved "grunge" (i.e., particles retained on 1-mm mesh screen and preserved with infauna for benthic community analysis).

	Mean (µm)	Mean (phi)	SD (phi)	Median (phi)	Coarse (%)	Sand (%)	Silt (%)	Clay (%)	Fines (%)	Sediment Type	Visual Observations
88-m Depth Contour											
B11[a]	134	4.4	2.0	4.0	1.8	51.0	43.5	3.7	47.2	Sand with fines	pea gravel/gravel/shell hash
B8	55	4.8	1.6	4.5	0.0	40.5	55.6	3.9	59.5	Fines with sand	
E19	68	4.4	1.5	4.0	0.0	54.3	43.1	2.7	45.7	Sand with fines	worm tubes/organic debris/shell hash
E7	72	4.4	1.5	4.0	0.0	56.4	41.0	2.6	43.6	Sand with fines	worm tubes/shell hash
E1	90	4.2	1.7	3.8	0.0	57.5	39.3	3.2	42.5	Sand with fines	coarse sand/pea gravel/gravel/shell hash
98-m Depth Contour											
B12	110	3.9	1.8	3.5	0.0	66.8	30.4	2.9	33.2	Sand with fines	pea gravel/gravel/shell hash
B9	74	4.4	1.6	4.0	0.0	56.5	40.5	3.0	43.5	Sand with fines	pea gravel/gravel
E26	72	4.4	1.5	4.0	0.0	57.3	39.9	2.9	42.7	Sand with fines	worm tubes/organic debris/shell hash
E25	78	4.2	1.5	3.8	0.0	60.9	36.7	2.5	39.1	Sand with fines	worm tubes/organic debris/shell hash
E23	73	4.3	1.5	4.0	0.0	58.4	38.9	2.8	41.7	Sand with fines	worm tubes/organic debris/shell hash
E20	77	4.2	1.5	3.8	0.0	62.2	35.4	2.4	37.8	Sand with fines	worm tubes/organic debris/shell hash
E17[a,b]	135	4.0	1.7	3.8	1.9	63.9	32.0	2.2	34.2	Sand with fines	worm tubes/organic debris/shell hash
E14[b]	88	4.0	1.4	3.7	0.0	70.9	27.3	1.9	29.2	Sand with fines	coarse black sand/shell hash
E11[b]	85	4.1	1.5	3.7	0.0	67.2	30.7	2.1	32.8	Sand with fines	worm tubes/organic debris/shell hash
E8	85	4.1	1.5	3.8	0.0	66.1	31.9	2.1	34.0	Sand with fines	coarse black sand/worm tubes/shell hash
E5[a]	124	4.0	1.6	3.7	1.2	65.0	31.8	1.9	33.8	Sand with fines	coarse black sand/shell hash
E2	88	4.2	1.6	3.8	0.0	61.7	35.6	2.8	38.3	Sand with fines	coarse sand/pea gravel/gravel/shell hash
116-m Depth Contour											
B10	92	4.1	1.7	3.5	0.0	68.4	28.8	2.8	31.6	Sand with fines	shell hash
E21	82	4.1	1.5	3.7	0.0	66.4	31.5	2.2	33.7	Sand with fines	worm tubes/organic debris/shell hash
E15[b]	86	4.0	1.4	3.7	0.0	68.9	29.0	2.0	31.0	Sand with fines	coarse black sand/shell hash
E9[a]	133	4.2	1.8	3.8	1.8	58.4	36.7	3.1	39.7	Sand with fines	coarse black sand/shell hash
E3[a]	146	4.0	2.0	3.5	1.3	60.0	35.2	3.4	38.6	Sand with fines	coarse sand/pea gravel/gravel/shell hash

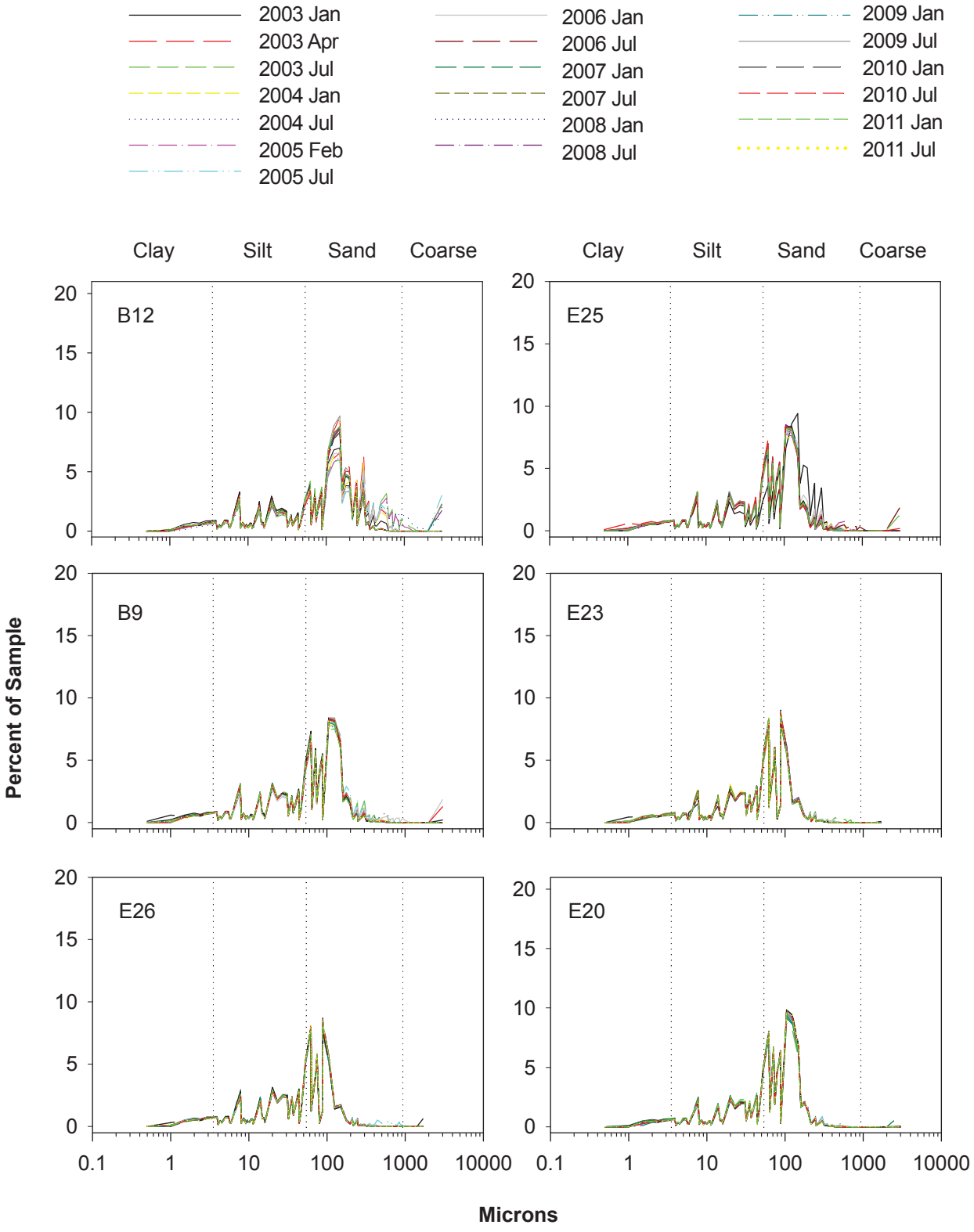
[a] Contains fraction > 2000 microns measured by sieve (not Horiba); [b] nearfield station

Appendix C.5 *continued*

Summary of sediment grain size parameters for each PLOO station sampled during July 2011. SD = standard deviation. Silt and clay fractions are indistinguishable for samples analyzed by sieve. Visual observations are from sieved "grunge" (i.e., particles retained on 1-mm mesh screen and preserved with infauna for benthic community analysis).

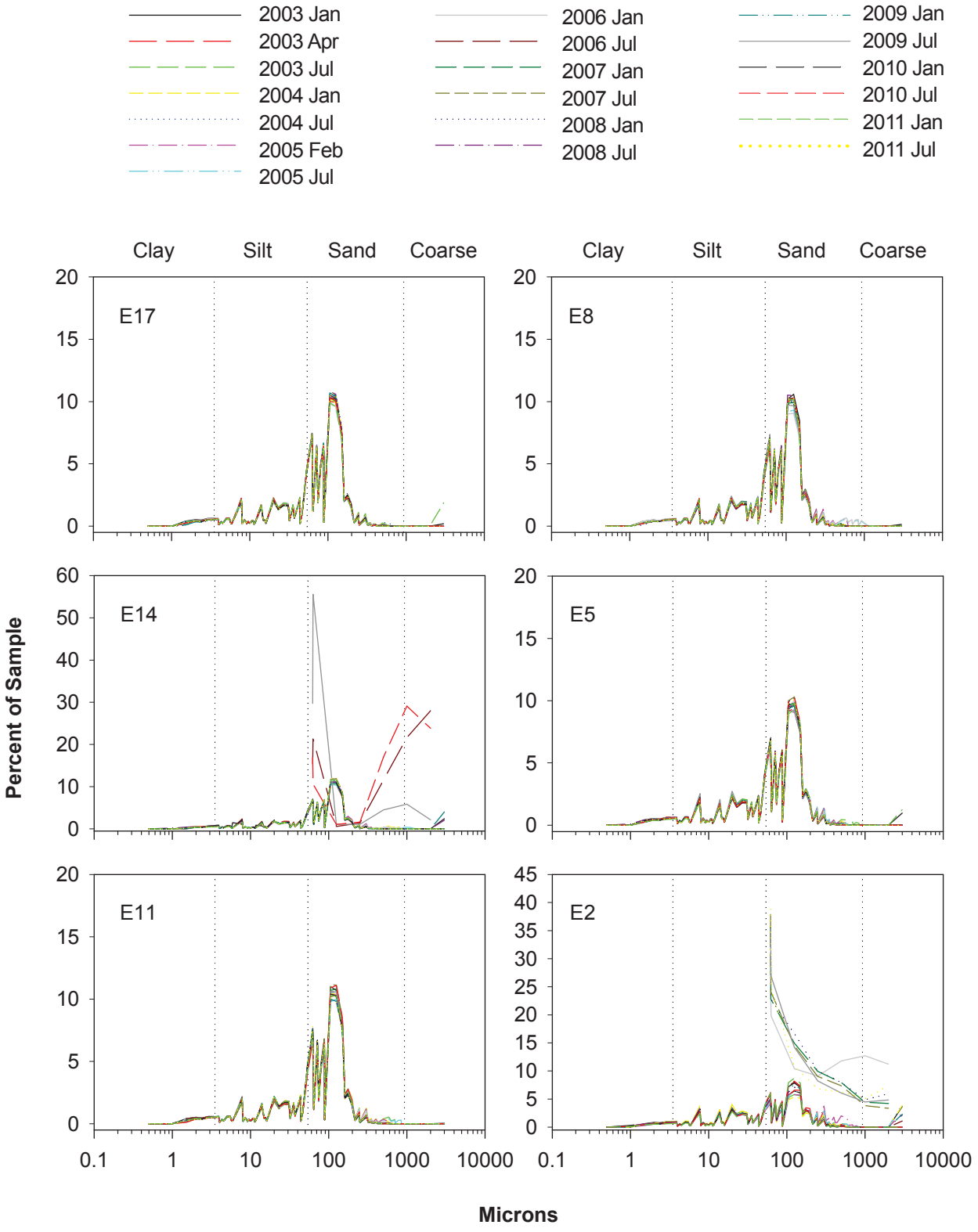
	Mean (µm)	Mean (phi)	SD (phi)	Median (phi)	Coarse (%)	Sand (%)	Silt (%)	Clay (%)	Fines (%)	Sediment Type	Visual Observations
88-m Depth Contour											
B11	84	4.4	1.8	4.0	0.0	53.6	42.8	3.6	46.4	Sand with fines	pea gravel/gravel/shell hash
B8	58	4.7	1.6	4.2	0.0	44.2	51.7	4.1	55.8	Fines with sand	
E19	67	4.5	1.5	4.0	0.0	53.8	42.9	3.4	46.3	Sand with fines	shell hash
E7	71	4.4	1.5	4.0	0.0	55.7	41.6	2.8	44.3	Sand with fines	
E1	90	4.2	1.7	3.8	0.0	58.8	38.3	3.0	41.2	Sand with fines	coarse sand/pea gravel/shell hash
98-m Depth Contour											
B12	113	3.9	1.8	3.3	0.0	68.0	29.0	3.1	32.0	Sand with fines	coarse sand/pea gravel/shell hash
B9	80	4.3	1.7	3.8	0.0	59.4	37.7	3.0	40.6	Sand with fines	pea gravel/gravel
E26	73	4.3	1.5	4.0	0.0	58.3	38.7	3.0	41.7	Sand with fines	shell hash
E25	77	4.3	1.5	3.8	0.0	60.2	37.3	2.5	39.8	Sand with fines	shell hash
E23	75	4.3	1.5	3.8	0.0	60.2	37.2	2.5	39.8	Sand with fines	shell hash
E20	80	4.2	1.5	3.8	0.0	64.2	33.5	2.3	35.8	Sand with fines	shell hash
E17[b]	86	4.0	1.5	3.7	0.0	68.4	29.6	2.0	31.6	Sand with fines	shell hash
E14[b]	92	3.9	1.4	3.5	0.0	73.3	24.9	1.8	26.7	Sand with fines	coarse black sand/shell hash
E11[b]	83	4.1	1.4	3.8	0.0	66.3	31.8	1.9	33.7	Sand with fines	shell hash
E8	86	4.1	1.5	3.7	0.0	67.2	30.5	2.2	32.7	Sand with fines	
E5	86	4.1	1.5	3.7	0.0	66.3	31.5	2.3	33.8	Sand with fines	
E2[a]	300	3.0	1.6	4.0	12.5	48.8	—	—	38.8	Sand with coarse and fines	coarse sand/pea gravel/shell hash
116-m Depth Contour											
B10	96	3.9	1.6	3.5	0.0	71.9	25.7	2.3	28.0	Sand with fines	shell hash
E21	83	4.1	1.5	3.7	0.0	66.5	31.1	2.4	33.5	Sand with fines	shell hash
E15[b]	83	4.2	1.6	3.7	0.0	65.6	31.3	3.0	34.3	Sand with fines	coarse black sand/shell hash
E9[a]	617	1.1	1.1	1.0	27.2	69.1	—	—	3.7	Sand with coarse	coarse sand/shell hash
E3	117	3.9	1.9	3.3	0.0	65.6	31.5	3.0	34.4	Sand with fines	coarse sand/pea gravel/shell hash

[a] Contains fraction > 2000 microns measured by sieve (not Horiba); [b] nearfield station



Appendix C.6

Plots illustrating historical sediment grain size distributions in sediments from PLOO Primary Core stations sampled between 2003–2011.



Appendix C.6 *continued*

Appendix C.7

Summary of organic loading indicators in sediments from PLOO stations sampled during January and July 2011. Bold values indicate concentrations that exceed the 95th percentile calculated for entire year.

	January					July				
	BOD (ppm)	Sulfides (ppm)	TN (% wt)	TOC (% wt)	TVS (% wt)	BOD (ppm)	Sulfides (ppm)	TN (% wt)	TOC (% wt)	TVS (% wt)
88-m Depth Contour										
B11	365	2.46	0.079	**3.10**	**3.64**	nr	8.66	0.06	1.09	**4.04**
B8	439	2.51	**0.095**	0.81	**3.25**	nr	13.10	0.06	0.49	3.07
E19	430	1.70	0.067	0.57	2.50	nr	3.00	0.04	0.37	2.42
E7	357	2.75	0.070	0.61	2.09	nr	3.31	0.05	1.06	2.29
E1	303	2.84	0.052	0.48	2.24	nr	3.97	0.05	0.36	2.18
98-m Depth Contour										
B12	**524**	3.80	0.059	**4.18**	3.17	nr	3.63	0.07	2.73	3.21
B9	301	2.95	0.071	0.62	2.70	nr	10.90	0.07	0.67	2.82
E26	398	4.50	0.065	0.56	2.38	nr	9.30	0.07	0.56	2.54
E25	344	1.88	0.057	0.48	2.28	nr	3.67	0.06	0.50	2.63
E23	311	1.10	0.061	0.52	2.26	nr	2.11	0.06	0.48	2.21
E20	251	2.01	0.053	0.43	1.78	nr	1.75	0.07	0.57	2.07
E17[a]	406	3.97	0.051	0.41	2.09	nr	**24.80**	0.06	0.54	1.99
E14[a]	**541**	**35.70**	0.047	0.39	1.65	nr	**52.40**	0.05	0.43	1.64
E11[a]	483	3.26	0.055	0.49	1.94	nr	2.16	0.05	0.89	2.09
E8	383	2.68	0.051	0.43	1.98	nr	11.80	0.05	0.39	2.06
E5	321	4.67	0.045	0.38	2.03	nr	7.58	0.05	0.42	2.16
E2	371	2.90	0.053	0.45	2.37	nr	12.90	0.05	0.47	2.48
116-m Depth Contour										
B10	365	1.86	0.060	1.09	2.49	nr	8.97	0.06	0.86	2.72
E21	350	3.84	0.059	0.49	1.81	nr	3.20	0.06	0.46	2.18
E15[a]	308	5.86	0.044	0.37	1.86	nr	4.45	0.04	0.33	2.33
E9	388	2.81	0.051	1.06	1.84	nr	5.66	0.07	0.99	2.42
E3	282	3.28	0.046	0.36	1.78	nr	7.57	0.04	0.32	1.90
Detection Rate (%)	100	100	100	100	100	—	100	100	100	100
95th Percentile	523	23.05	0.08	2.79	3.24	—	23.05	0.08	2.79	3.24

[a] nearfield station; nr = not reportable

This page intentionally left blank

Appendix C.8

Concentrations of trace metals (ppm) in sediments from PLOO stations sampled during January 2011. See Appendix C.3 for MDLs and translation of periodic table symbols. Bold values indicate concentrations that exceed the 95th percentile calculated for entire year; values that exceed thresholds are highlighted (see Table 4.1).

	Al	Sb	As	Ba	Be	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Sn	Zn
88-m Depth Contour																		
B11	6710	0.49	3.6	34.3	0.223	0.18	20.3	8.7	15,800	8.60	108.0	0.022	8.25	nd	nd	nd	1.04	38.4
B8	**11,100**	**0.91**	2.9	**61.9**	**0.224**	**0.52**	**24.1**	**13.2**	16,100	**10.30**	**140.0**	0.038	**11.60**	nd	nd	0.99	**2.74**	**42.6**
E19	10,400	0.57	2.6	48.6	0.188	0.19	20.4	8.9	14,300	8.78	115.0	0.027	**9.51**	nd	nd	nd	1.10	37.3
E7	6260	0.42	2.5	41.9	0.144	0.14	15.0	8.8	9580	7.81	86.2	0.026	7.53	nd	nd	nd	1.00	28.8
E1	5150	0.30	2.1	22.9	**0.252**	0.18	**21.8**	5.0	**17,200**	6.48	53.1	0.040	6.07	nd	nd	nd	0.69	34.4
98-m Depth Contour																		
B12	6840	0.47	4.0	**67.9**	0.195	0.11	14.5	13.1	14,600	9.86	120.0	0.015	6.77	nd	nd	nd	0.94	31.9
B9	5730	0.41	2.8	37.4	0.183	0.10	17.3	6.4	12,000	6.58	82.3	0.020	7.01	nd	nd	nd	0.80	30.9
E26	8360	0.43	1.5	39.9	0.168	0.13	15.6	7.7	11,600	7.91	85.0	0.027	7.35	nd	2.81	nd	0.87	28.2
E25	7660	0.51	2.1	35.0	0.139	0.13	15.6	6.9	10,600	6.39	87.1	0.028	7.11	nd	nd	nd	0.82	27.5
E23	8330	0.43	1.8	37.2	0.169	0.13	17.2	7.0	11,900	7.25	92.9	0.029	7.84	nd	nd	nd	0.90	31.1
E20	6460	0.44	2.2	32.2	0.123	0.12	14.3	6.5	9700	5.86	76.8	0.015	6.52	nd	nd	nd	0.72	26.4
E17[a]	6400	0.49	1.8	31.3	0.143	0.17	14.9	6.4	10,200	5.61	75.3	0.021	6.91	nd	0.73	nd	0.86	26.4
E14[a]	5460	0.48	2.0	26.1	0.140	**0.35**	12.4	5.9	8420	4.53	62.3	0.022	5.81	nd	0.16	nd	0.83	22.4
E11[a]	5670	nd	2.2	26.2	0.135	0.13	13.2	5.6	9470	5.03	64.7	0.016	5.97	nd	nd	nd	0.78	23.6
E8	4880	0.31	1.8	28.6	0.119	0.10	12.4	6.4	7500	5.62	62.2	0.020	5.72	nd	nd	nd	0.74	22.8
E5	5180	0.47	1.3	35.5	0.121	0.11	12.0	7.5	7660	6.40	66.9	0.030	5.68	nd	nd	nd	0.86	23.9
E2	5600	0.50	1.8	45.6	0.139	0.08	12.8	9.3	9100	7.37	78.7	0.034	5.87	nd	nd	nd	0.73	27.6
116-m Depth Contour																		
B10	4480	0.34	2.1	21.0	0.150	0.12	14.7	5.0	9790	5.26	53.9	0.016	5.16	nd	nd	nd	0.58	25.2
E21	**12,900**	**0.80**	1.9	**57.1**	**0.238**	0.23	**23.8**	**13.3**	**17,000**	9.67	**129.0**	0.017	**10.70**	nd	nd	nd	1.28	40.9
E15[a]	7240	0.34	1.1	32.3	0.156	0.13	13.6	6.5	10,500	5.31	65.7	0.016	6.09	nd	nd	nd	0.92	23.2
E9	6100	0.63	2.2	26.2	0.159	0.14	17.2	**13.8**	12,300	7.56	67.9	0.023	5.99	nd	nd	nd	0.91	**46.0**
E3	4110	0.46	1.6	44.0	0.099	0.08	9.2	10.1	6900	**326.00**	69.0	**0.051**	4.37	nd	nd	nd	1.09	25.0
Detection Rate (%)	100	95	100	100	100	100	100	100	100	100	100	100	100	0	14	5	100	100
95th Percentile[b]	10,995	0.64	4.9	56.2	0.224	0.29	21.8	13.2	16,610	10.23	126.8	0.051	9.40	—	—	—	1.63	42.3

[a] nearfield stations; [b] 95th Percentile not calculated if detection rate <50%.
nd = not detected; na = not available

Appendix C.8 *continued*

Concentrations of trace metals (ppm) in sediments from PLOO stations sampled during July 2011. See Appendix C.3 for MDLs and translation of periodic table symbols. Bold values indicate concentrations that exceed the 95th percentile calculated for entire year; values that exceed thresholds are highlighted (see Table 4.1).

	Al	Sb	As	Ba	Be	Cd	Cr	Cu	Fe	Pb	Mn	Hg	Ni	Se	Ag	Tl	Sn	Zn
88-m Depth Contour																		
B11	5270	0.59	**6.1**	31.5	0.184	0.14	16.1	7.9	13,900	6.85	**128.0**	0.042	7.78	nd	nd	nd	0.97	31.7
B8	6270	0.43	4.6	44.1	0.164	0.12	16.4	8.6	11,700	7.14	95.4	0.040	8.75	nd	nd	nd	1.22	31.1
E19	5230	0.59	4.8	37.9	0.132	0.15	13.8	7.0	8770	5.53	75.1	0.039	7.35	nd	nd	nd	1.01	24.5
E7	4490	0.46	4.7	33.2	0.119	0.14	12.0	7.0	7860	5.38	66.4	0.037	6.58	nd	nd	nd	0.92	22.0
E1	7570	0.44	4.3	42.9	0.127	0.11	14.6	9.5	11,300	7.97	89.1	**0.058**	6.68	nd	nd	nd	**1.78**	33.0
98-m Depth Contour																		
B12	4200	0.50	**7.8**	17.4	0.215	0.14	21.5	4.9	**16,700**	5.22	49.8	0.018	6.11	nd	nd	nd	0.63	32.3
B9	4710	0.53	4.8	33.8	0.184	**0.30**	15.8	5.9	11,100	5.41	71.1	0.031	6.57	nd	nd	nd	0.92	28.5
E26	4670	0.39	4.1	32.3	0.126	0.14	13.1	6.3	7950	5.14	67.6	0.032	7.01	nd	nd	nd	0.88	22.1
E25	4360	0.48	4.3	31.3	0.122	0.15	13.7	6.3	7450	5.35	69.0	0.031	6.75	nd	nd	nd	0.84	22.4
E23	4920	0.48	4.2	33.7	0.132	0.22	13.4	6.6	8090	4.77	68.2	0.028	7.18	nd	nd	nd	1.04	22.8
E20	4590	0.46	3.8	31.0	0.114	0.17	13.7	6.1	7570	4.98	68.6	0.025	7.04	nd	nd	nd	0.70	22.7
E17[a]	8830	0.58	4.2	32.3	0.143	0.18	15.5	7.5	10,700	5.69	86.4	0.024	7.23	nd	nd	nd	1.32	27.2
E14[a]	3310	0.31	4.4	21.2	0.085	0.17	10.0	5.2	5880	3.18	45.3	0.019	5.20	nd	nd	nd	0.55	17.6
E11[a]	8300	0.44	3.5	29.8	0.140	0.15	14.1	6.1	9760	4.89	80.7	0.020	6.56	nd	nd	nd	1.16	24.0
E8	9560	0.50	3.8	32.6	0.157	0.14	16.6	7.3	11,700	6.37	92.4	0.024	7.27	nd	nd	nd	1.39	28.5
E5	8210	0.45	3.7	33.5	0.144	0.12	15.3	7.0	10,900	5.92	82.0	0.028	6.67	nd	nd	nd	1.52	26.3
E2	**11,100**	**0.64**	4.1	50.8	0.187	0.14	19.1	12.2	15,400	8.93	114.0	**0.060**	8.47	nd	nd	nd	**1.65**	36.9
116-m Depth Contour																		
B10	3900	0.42	3.9	21.0	0.144	0.13	14.5	4.9	9690	4.65	52.4	0.023	5.41	nd	nd	nd	0.54	24.6
E21	3270	0.34	3.9	22.8	0.096	0.14	10.5	5.1	5800	3.83	46.7	0.025	5.77	nd	nd	nd	0.64	17.3
E15[a]	3700	0.41	4.4	24.7	0.107	0.14	11.6	6.0	6610	4.41	51.3	0.030	5.84	nd	nd	nd	0.88	19.4
E9	6560	0.62	4.7	30.4	0.152	0.15	18.4	8.7	12,400	5.72	68.9	0.029	6.86	nd	nd	nd	1.23	29.6
E3	7300	0.53	4.2	50.0	0.126	0.10	13.8	11.0	11,500	**13.30**	94.9	0.048	5.16	nd	nd	nd	1.47	**43.3**
Detection Rate (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	0	0	0	100	100
95th Percentile	10,995	0.64	4.9	56.2	0.224	0.29	21.8	13.2	16,610	10.23	126.8	0.051	9.40	—	—	—	1.63	42.3

[a] nearfield stations; [b] 95th Percentile not calculated if detection rate <50%.
nd = not detected; na = not available

Appendix C.9

Concentrations of HCB, total DDT, total PCB, and total PAH detected in sediments from PLOO stations sampled during January and July 2011. Bold values indicate concentrations that exceed the 95th percentile calculated for entire year; values that exceed thresholds are highlighted (see Table 4.1).

	January				July			
	HCB (ppt)	tDDT (ppt)	tPCB (ppt)	tPAH (ppb)	HCB (ppt)	tDDT (ppt)	tPCB (ppt)	tPAH (ppb)
88-m Stations								
B11	nd	430	nd	nd	nd	530	nd	nd
B8	nd	670	nd	nd	nd	620	nd	nd
E19	nd	360	nd	nd	nd	360	nd	nd
E7	nd	380	nd	nd	**680**	460	nd	nd
E1	nd	580	1169	nd	300	**1620**	5750	155
98-m Stations								
B12	nd	nd	nd	nd	nd	220	nd	nd
B9	nd	390	nd	nd	nd	570	nd	nd
E26	nd	330	nd	nd	390	390	nd	111
E25	nd	280	nd	nd	nd	**690**	nd	121
E23	nd	290	nd	nd	nd	450	nd	147
E20	nd	280	nd	nd	nd	nd	nd	nd
E17[a]	nd	210	nd	nd	nd	nd	nd	nd
E14[a]	nd	210	nd	nd	nd	250	nd	nd
E11[a]	nd	200	nd	nd	nd	300	nd	nd
E8	nd	250	nd	nd	nd	260	nd	nd
E5	nd	300	nd	nd	nd	320	nd	nd
E2	nd	290	338	nd	nd	**710**	8110	128
116-m Stations								
B10	nd	340	nd	nd	nd	360	nd	nd
E21	nd	220	160	nd	nd	520	nd	nd
E15[a]	nd	190	nd	nd	600	580	1970	nd
E9	nd	260	8450	nd	nd	580	**63,890**	23
E3	nd	330	12,090	196	190	330	7210	**306**
Detection Rate (%)	0	95	23	5	23	91	23	32
95th Percentile[b]	—	689	—	—	—	689	—	—

[a] nearfield stations; [b] 95th Percentile not calculated if detection rate < 50%.
nd = not detected; na = not available

This page intentionally left blank