Appendix K. Long term trends in the B-IBI and associated bioindicators for the Virginia tributary and Chesapeake Bay main stem monitoring stations for the period of 1985 through 2006. All trends shown were significant at p<=010.

Station	Parameter	P value	Slope	Baseline	% Change	Direction
TF5.5	Benthic Index of Biotic Integrity	0.1149	0.033	2.16	34.02	No Trend
TF5.5	Total Abundance per square meter	0.1630	207.495	1335.60	341.79	No Trend
TF5.5	Total Biomass per square meter	0.4168	0.027	0.34	174.60	No Trend
TF5.5	Shannon-Weiner Diversity Index	0.8711	0.004	1.18	7.30	No Trend
TF5.5	Pollution Sensitive Species Abundance	0.0042	1.282	0.00	N.E.	Improving
TF5.5	Pollution Indicative Species Abundance	0.0252	-2.283	90.08	-55.75	Improving
TF5.5	Pollution Sensitive Species Biomass	0.0042	2.991	0.00	N.E.	Improving
TF5.5	Pollution Indicative Species Biomass	0.0086	-3.494	75.00	-102.49	Improving
RET5.2	Benthic Index of Biotic Integrity	0.0092	0.050	2.09	52.21	Improving
RET5.2	Total Abundance per square meter	0.2174	27.030	610.56	97.40	No Trend
RET5.2	Total Biomass per square meter	0.7452	-0.006	7.34	-1.91	No Trend
RET5.2	Shannon-Weiner Diversity Index	0.0179	0.049	1.66	64.73	Improving
RET5.2	Pollution Sensitive Species Abundance	0.0010	1.616	10.42	341.05	Improving
RET5.2	Pollution Indicative Species Abundance	0.4353	-0.608	17.50	-76.40	No Trend
RET5.2	Pollution Sensitive Species Biomass	0.0125	2.235	28.04	175.33	Improving
RET5.2	Pollution Indicative Species Biomass	0.1348	-0.694	11.20	-136.39	No Trend
LE5.1	Benthic Index of Biotic Integrity	0.2322	0.037	2.90	24.27	No Trend
LE5.1	Total Abundance per square meter	0.8368	9.540	524.70	34.55	No Trend
LE5.1	Total Biomass per square meter	0.3870	-0.033	5.71	-11.10	No Trend
LE5.1	Shannon-Weiner Diversity Index	0.8368	0.005	2.06	4.38	No Trend
LE5.1	Pollution Sensitive Species Abundance	0.5923	-0.287	32.16	-16.95	No Trend
LE5.1	Pollution Indicative Species Abundance	0.1436	0.276	7.13	73.55	No Trend
LE5.1	Pollution Sensitive Species Biomass	0.8368	-0.240	74.24	-6.13	No Trend
LE5.1	Pollution Indicative Species Biomass	0.1679	0.119	4.82	47.04	No Trend
LE5.2	Benthic Index of Biotic Integrity	0.5376	-0.020	3.33	-13.42	No Trend
LE5.2	Total Abundance per square meter	0.0912	43.611	1221.12	78.57	Improving
LE5.2	Total Biomass per square meter	0.3799	-0.153	4.58	-73.33	No Trend
LE5.2	Shannon-Weiner Diversity Index	0.2843	-0.027	2.55	-23.63	No Trend
LE5.2	Pollution Sensitive Species Abundance	0.0556	2.036	34.48	129.91	Improving
LE5.2	Pollution Indicative Species Abundance	0.9225	-0.092	17.25	-11.75	No Trend
LE5.2	Pollution Sensitive Species Biomass	0.9225	-0.076	40.78	-4.12	No Trend
LE5.2	Pollution Indicative Species Biomass	0.1443	0.435	8.76	109.35	No Trend
LE5.4	Benthic Index of Biotic Integrity	0.8440	0.000	3.72	0.00	No Trend
LE5.4	Total Abundance per square meter	0.5164	19.947	2528.10	17.36	No Trend
LE5.4	Total Biomass per square meter	0.0023	-1.536	22.86	-147.83	Degrading
LE5.4	Shannon-Weiner Diversity Index	0.0692	-0.024	3.69	-14.51	Degrading
LE5.4	Pollution Sensitive Species Abundance	0.1356	-0.769	48.80	-34.69	No Trend
LE5.4	Pollution Indicative Species Abundance	0.0886	-0.078	2.24	-76.75	Improving
LE5.4	Pollution Sensitive Species Biomass	0.0274	-1.719	59.75	-63.28	Degrading
LE5.4	Pollution Indicative Species Biomass	0.8958	0.000	0.94	0.00	No Trend

Appendix K. Continued.

Station	Parameter	P value	Slope	Baseline	% Change	Direction
SBE2	Benthic Index of Biotic Integrity	0.0954	0.025	1.93	23.61	Improving
SBE2	Total Abundance per square meter	0.0271	186.117	1659.96	201.82	Improving
SBE2	Total Biomass per square meter	0.3214	0.028	0.92	55.21	No Trend
SBE2	Shannon-Weiner Diversity Index	0.5285	0.022	1.67	23.20	No Trend
SBE2	Pollution Sensitive Species Abundance	0.0003	4.769	4.62	1856.22	Improving
SBE2	Pollution Indicative Species Abundance	0.0090	-3.200	75.68	-76.11	Improving
SBE2	Pollution Sensitive Species Biomass	0.0272	2.162	8.41	462.75	Improving
SBE2	Pollution Indicative Species Biomass	0.2418	-1.248	69.21	-32.46	No Trend
SBE5	Benthic Index of Biotic Integrity	0.0090	0.067	1.25	95.98	Improving
SBE5	Total Abundance per square meter	0.7187	50.562	3806.46	23.91	No Trend
SBE5	Total Biomass per square meter	0.1612	0.048	0.58	147.54	No Trend
SBE5	Shannon-Weiner Diversity Index	0.5890	0.023	0.99	41.11	No Trend
SBE5	Pollution Sensitive Species Abundance	<0.0001	4.008	0.31	23066.04	Improving
SBE5	Pollution Indicative Species Abundance	0.0009	-5.214	85.43	-109.85	Improving
SBE5	Pollution Sensitive Species Biomass	0.0060	2.788	2.15	2331.05	Improving
SBE5	Pollution Indicative Species Biomass	0.0476	-3.557	77.83	-82.27	Improving

Appendix K. Continued.

Station	Parameter	P value	Slope	Baseline	% Change	Direction
TF4.2	Benthic Index of Biotic Integrity	0.7877	0.007	2.62	5.83	No Trend
TF4.2	Total Abundance per square meter	0.0817	85.860	410.22	460.47	Improving
TF4.2	Total Biomass per square meter	0.5308	0.008	0.15	117.86	No Trend
TF4.2	Shannon-Weiner Diversity Index	0.0287	0.037	0.96	83.72	Improving
TF4.2	Pollution Sensitive Species Abundance	0.2454	0.530	12.50	93.36	No Trend
TF4.2	Pollution Indicative Species Abundance	0.1661	-1.630	65.97	-54.36	No Trend
TF4.2	Pollution Sensitive Species Biomass	0.9288	-0.079	19.44	-8.98	No Trend
TF4.2	Pollution Indicative Species Biomass	0.2640	-1.134	59.72	-41.78	No Trend
RET4.3	Benthic Index of Biotic Integrity	0.3046	-0.026	3.57	-16.00	No Trend
RET4.3	Total Abundance per square meter	0.0817	143.967	1030.32	307.41	Improving
RET4.3	Total Biomass per square meter	0.3960	-0.259	4.43	-128.97	No Trend
RET4.3	Shannon-Weiner Diversity Index	0.1956	-0.037	2.50	-32.38	No Trend
RET4.3	Pollution Sensitive Species Abundance	0.3046	-0.961	40.89	-51.69	No Trend
RET4.3	Pollution Indicative Species Abundance	0.5618	-0.157	14.84	-23.26	No Trend
RET4.3	Pollution Sensitive Species Biomass	0.8935	0.045	83.08	1.19	No Trend
RET4.3	Pollution Indicative Species Biomass	0.9644	-0.004	4.11	-2.04	No Trend
LE4.1	Benthic Index of Biotic Integrity	0.1392	-0.037	2.98	-27.30	No Trend
LE4.1	Total Abundance per square meter	0.6231	-15.900	1535.94	-22.77	No Trend
LE4.1	Total Biomass per square meter	0.1408	-0.904	27.51	-72.32	No Trend
LE4.1	Shannon-Weiner Diversity Index	0.0673	-0.028	2.47	-25.19	Degrading
LE4.1	Pollution Sensitive Species Abundance	0.8234	-0.283	37.56	-16.59	No Trend
LE4.1	Pollution Indicative Species Abundance	0.2836	0.762	23.71	70.67	No Trend
LE4.1	Pollution Sensitive Species Biomass	0.0141	-3.042	82.49	-81.13	Degrading
LE4.1	Pollution Indicative Species Biomass	0.0896	1.039	8.28	276.07	Degrading
LE4.3	Benthic Index of Biotic Integrity	0.3190	0.036	2.92	27.20	No Trend
LE4.3	Total Abundance per square meter	1.0000	0.303	3138.66	0.21	No Trend
LE4.3	Total Biomass per square meter	0.9345	0.118	6.32	40.99	No Trend
LE4.3	Shannon-Weiner Diversity Index	0.2502	0.036	2.47	32.23	No Trend
LE4.3	Pollution Sensitive Species Abundance	0.8054	-0.115	56.44	-4.49	No Trend
LE4.3	Pollution Indicative Species Abundance	0.5112	-0.159	16.74	-20.87	No Trend
LE4.3	Pollution Sensitive Species Biomass	0.8054	-0.212	72.97	-6.39	No Trend
LE4.3	Pollution Indicative Species Biomass	0.9345	-0.021	4.88	-9.49	No Trend
LE4.3B	Benthic Index of Biotic Integrity	0.0337	0.097	2.63	70.37	Improving
LE4.3B	Total Abundance per square meter	0.4791	50.880	2766.60	34.94	No Trend
LE4.3B	Total Biomass per square meter	0.8703	0.019	3.28	11.05	No Trend
LE4.3B	Shannon-Weiner Diversity Index	0.1143	0.072	2.44	56.26	No Trend
LE4.3B	Pollution Sensitive Species Abundance	0.1143	1.387	18.36	143.49	No Trend
LE4.3B	Pollution Indicative Species Abundance	0.0256	-2.036	41.44	-93.36	Improving
LE4.3B	Pollution Sensitive Species Biomass	0.6241	0.317	54.16	11.14	No Trend
LE4.3B	Pollution Indicative Species Biomass	0.6241	-0.382	14.87	-48.84	No Trend

Appendix K. Continued.

Station	Parameter	P value	Slope	Baseline	% Change	Direction
TF3.3	Benthic Index of Biotic Integrity	0.6765	0.019	2.64	15.64	No Trend
TF3.3	Total Abundance per square meter	0.6769	-16.695	1001.70	-36.67	No Trend
TF3.3	Total Biomass per square meter	0.0635	-2.241	93.92	-52.49	Degrading
TF3.3	Shannon-Weiner Diversity Index	0.6769	-0.005	1.95	-5.74	No Trend
TF3.3	Pollution Sensitive Species Abundance	0.3837	-0.656	32.36	-44.59	No Trend
TF3.3	Pollution Indicative Species Abundance	0.8795	0.143	11.14	28.25	No Trend
TF3.3	Pollution Sensitive Species Biomass	0.0112	-2.294	80.17	-62.95	Degrading
TF3.3	Pollution Indicative Species Biomass	0.4484	0.280	6.59	93.34	No Trend
RET3.1	Benthic Index of Biotic Integrity	0.0949	-0.061	3.62	-37.10	Degrading
RET3.1	Total Abundance per square meter	0.3830	45.098	1001.70	99.05	No Trend
RET3.1	Total Biomass per square meter	0.0090	-0.444	9.02	-108.14	Degrading
RET3.1	Shannon-Weiner Diversity Index	0.2403	-0.021	2.37	-19.43	No Trend
RET3.1	Pollution Sensitive Species Abundance	0.0057	-1.572	33.99	-101.73	Degrading
RET3.1	Pollution Indicative Species Abundance	0.5949	0.127	1.88	149.28	No Trend
RET3.1	Pollution Sensitive Species Biomass	0.0090	-4.156	71.23	-128.36	Degrading
RET3.1	Pollution Indicative Species Biomass	0.4034	0.033	1.57	46.14	No Trend
LE3.2	Benthic Index of Biotic Integrity	0.9095	-0.003	1.94	-3.74	No Trend
LE3.2	Total Abundance per square meter	0.1199	19.080	429.30	97.78	No Trend
LE3.2	Total Biomass per square meter	0.4257	0.008	0.27	62.86	No Trend
LE3.2	Shannon-Weiner Diversity Index	1.0000	0.000	1.21	0.00	No Trend
LE3.2	Pollution Sensitive Species Abundance	0.8489	0.000	41.28	0.00	No Trend
LE3.2	Pollution Indicative Species Abundance	0.9396	-0.006	55.38	-0.24	No Trend
LE3.2	Pollution Sensitive Species Biomass	0.9696	0.000	46.51	0.00	No Trend
LE3.2	Pollution Indicative Species Biomass	0.8201	0.430	47.94	19.73	No Trend
LE3.4	Benthic Index of Biotic Integrity	0.2224	0.037	2.06	36.22	No Trend
LE3.4	Total Abundance per square meter	0.9640	0.000	791.82	0.00	No Trend
LE3.4	Total Biomass per square meter	1.0000	0.000	1.17	0.61	No Trend
LE3.4	Shannon-Weiner Diversity Index	0.9641	-0.003	1.56	-4.31	No Trend
LE3.4	Pollution Sensitive Species Abundance	0.8203	0.000	16.74	0.00	No Trend
LE3.4	Pollution Indicative Species Abundance	0.4177	-1.226	68.60	-35.74	No Trend
LE3.4	Pollution Sensitive Species Biomass	0.7505	-0.180	51.66	-6.98	No Trend
LE3.4	Pollution Indicative Species Biomass	0.6525	-1.034	38.94	-53.08	No Trend

Appendix K. Continued.

Station	Parameter	P value	Slope	Baseline	% Change	Direction
CB5.4	Benthic Index of Biotic Integrity	0.5696	0.017	1.81	21.15	No Trend
CB5.4	Total Abundance per square meter	0.2110	35.225	333.90	232.09	No Trend
CB5.4	Total Biomass per square meter	1.0000	0.000	0.44	0.00	No Trend
CB5.4	Shannon-Weiner Diversity Index	0.5196	0.012	1.71	15.37	No Trend
CB5.4	Pollution Sensitive Species Abundance	0.7332	-0.352	29.84	-25.98	No Trend
CB5.4	Pollution Indicative Species Abundance	0.8498	0.151	36.32	9.14	No Trend
CB5.4	Pollution Sensitive Species Biomass	0.7332	-0.306	29.89	-22.55	No Trend
CB5.4	Pollution Indicative Species Biomass	0.3437	-0.891	33.95	-57.75	No Trend
CB6.1	Benthic Index of Biotic Integrity	0.9395	0.003	3.42	2.24	No Trend
CB6.1	Total Abundance per square meter	0.0112	74.200	1488.24	109.69	Improving
CB6.1	Total Biomass per square meter	0.2113	-0.116	10.82	-23.60	No Trend
CB6.1	Shannon-Weiner Diversity Index	0.1204	0.018	2.64	14.60	No Trend
CB6.1	Pollution Sensitive Species Abundance	0.9095	-0.047	31.37	-3.30	No Trend
CB6.1	Pollution Indicative Species Abundance	0.0170	0.878	16.08	120.06	Degrading
CB6.1	Pollution Sensitive Species Biomass	0.7909	-0.126	27.34	-10.12	No Trend
CB6.1	Pollution Indicative Species Biomass	0.0447	0.773	1.70	997.22	Degrading
CB6.4	Benthic Index of Biotic Integrity	0.8794	-0.010	4.47	-4.99	No Trend
CB6.4	Total Abundance per square meter	0.0254	189.210	1640.88	253.68	Improving
CB6.4	Total Biomass per square meter	0.0487	-0.184	5.35	-75.58	Degrading
CB6.4	Shannon-Weiner Diversity Index	0.0372	0.029	2.94	21.38	Improving
CB6.4	Pollution Sensitive Species Abundance	0.9698	0.024	49.63	1.09	No Trend
CB6.4	Pollution Indicative Species Abundance	0.6224	-0.272	16.91	-35.36	No Trend
CB6.4	Pollution Sensitive Species Biomass	0.1204	-1.536	83.36	-40.53	No Trend
CB6.4	Pollution Indicative Species Biomass	0.5196	0.154	1.39	243.31	No Trend
CB7.3E	Benthic Index of Biotic Integrity	0.6709	0.000	4.22	0.00	No Trend
CB7.3E	Total Abundance per square meter	0.7617	-13.992	5495.04	-5.60	No Trend
CB7.3E	Total Biomass per square meter	0.1498	-0.294	12.91	-50.03	No Trend
CB7.3E	Shannon-Weiner Diversity Index	0.9095	0.001	3.72	0.88	No Trend
CB7.3E	Pollution Sensitive Species Abundance	0.4717	-0.223	49.82	-9.83	No Trend
CB7.3E	Pollution Indicative Species Abundance	0.1034	-0.489	13.76	-78.20	No Trend
CB7.3E	Pollution Sensitive Species Biomass	0.9095	-0.021	63.30	-0.72	No Trend
CB7.3E	Pollution Indicative Species Biomass	0.5196	-0.039	1.62	-53.21	No Trend
CB8.1	Benthic Index of Biotic Integrity	0.4133	-0.014	4.33	-7.05	No Trend
CB8.1	Total Abundance per square meter	0.2561	63.600	3129.12	44.72	No Trend
CB8.1	Total Biomass per square meter	0.4555	-0.239	12.22	-42.94	No Trend
CB8.1	Shannon-Weiner Diversity Index	0.1834	0.016	3.79	9.42	No Trend
CB8.1	Pollution Sensitive Species Abundance	0.1273	-0.650	54.87	-26.06	No Trend
CB8.1	Pollution Indicative Species Abundance	0.0297	-0.836	18.00	-102.21	Improving
CB8.1	Pollution Sensitive Species Biomass	0.0744	-1.017	82.88	-27.01	Degrading
CB8.1	Pollution Indicative Species Biomass	0.4555	-0.042	1.07	-86.70	No Trend