

Appendix G

Results for Statistical Analyses

Table G-1. Statistical comparison between dry and wet baseflow for results.

Permutation Tests

Parameter	Site	z-value	p-value
Average Flow	Corson & Eddy	-2.7237	0.006455
Average Flow	Homer	0.31163	0.7553
Average Flow	Juneau	-1.9036	0.05697

*no signal of infiltration in yearly flow patterns; therefore, Homer not included for comparison in loading rates (See Section 7.1 of main report).

Parameter (Loading Rates)	Site	z-value	p-value
Total Suspended Solids	Corson & Eddy	-1.5454	0.1222
Total Suspended Solids	Juneau	-0.41708	0.6766
Total Organic Carbon	Corson & Eddy	-2.1656	0.03034
Total Organic Carbon	Juneau	0.749	0.4539
Dissolved Organic Carbon	Corson & Eddy	-2.8703	0.0041
Dissolved Organic Carbon	Juneau	-1.0231	0.3063
Total Arsenic	Corson & Eddy	0.17998	0.8572
Total Arsenic	Juneau	-1.8279	0.06757
Dissolved Arsenic	Corson & Eddy	-1.6662	0.09567
Dissolved Arsenic	Juneau	-1.4626	0.1436
Total Cadmium	Corson & Eddy	-0.6847	0.04935
Total Cadmium	Juneau	-0.45032	0.6525
Total Chromium	Corson & Eddy	0.056943	0.9546
Total Chromium	Juneau	-0.41997	0.6745
Dissolved Chromium	Corson & Eddy	-1.4242	0.1544
Dissolved Chromium	Juneau	-1.3518	0.1765
Total Copper	Corson & Eddy	-0.15692	0.8753
Total Copper	Juneau	0.93838	0.348
Dissolved Copper	Corson & Eddy	-2.4352	0.01488
Dissolved Copper	Juneau	-1.2339	0.2172
Total Lead	Corson & Eddy	Illicit Discharge Impacts	
Total Lead	Juneau	0.79097	0.429
Dissolved Lead	Corson & Eddy	Illicit Discharge Impacts	
Dissolved Lead	Juneau	-0.88921	0.3739
Total Nickel	Corson & Eddy	-2.5125	0.01199
Total Nickel	Juneau	-0.87703	0.3805
Dissolved Nickel	Corson & Eddy	-2.3873	0.01697
Dissolved Nickel	Juneau	-2.0818	0.03736
Total Silver	Corson & Eddy	0.32162	0.7477
Total Silver	Juneau	-0.6427	0.5204
Total Vanadium	Corson & Eddy	-1.1507	0.2499
Total Vanadium	Juneau	-1.14	0.2543
Dissolved Vanadium	Corson & Eddy	-2.1559	0.03109
Dissolved Vanadium	Juneau	-2.1869	0.02875
Total Zinc	Corson & Eddy	-0.52575	0.5991
Total Zinc	Juneau	0.64236	0.5206
Dissolved Zinc	Corson & Eddy	-2.9069	0.003651
Dissolved Zinc	Juneau	-1.6362	0.1018
Total Mercury	Corson & Eddy	-1.5493	0.1213
Total Mercury	Juneau	0.10217	0.9186
Naphthalene	Corson & Eddy	Illicit Discharge Impacts	
Naphthalene	Juneau	-1.42	0.1556
Phenanthrene	Corson & Eddy	Illicit Discharge Impacts	
Phenanthrene	Juneau	-0.97164	0.3312
Bis(2-ethylhexyl)phthalate	Corson & Eddy	0.61699	0.5372
Bis(2-ethylhexyl)phthalate	Juneau	0.96365	0.3352
Diethyl Phthalate	Corson & Eddy	-1.7815	0.07482
Diethyl Phthalate	Juneau	0.79423	0.4271
Total PCBs	Corson & Eddy	-1.3532	0.176
Total PCBs	Juneau	1.9095	0.0562
Total Dioxin TEQ	Corson & Eddy	-0.48132	0.6303

Note: Shading indicates mean wet baseflow results were statistically higher than mean dry baseflow results.

Table G-2. Statistical comparison between wet baseflow and stormflow for results at Corson Eddy and Juneau.

Permutation Tests

Parameter	Site	z-value	p-value
Average Flow	Corson & Eddy	-2.5164	0.01186
Average Flow	Juneau	-2.386	0.01703

Parameter	Site	z-value	p-value
Total Suspended Solids	Corson & Eddy	-1.9158	0.05539
Total Suspended Solids	Juneau	-1.669	0.09512
Total Organic Carbon	Corson & Eddy	-0.82008	0.4122
Total Organic Carbon	Juneau	-2.029	0.04246
Dissolved Organic Carbon	Corson & Eddy	1.9907	0.04651
Dissolved Organic Carbon	Juneau	-1.2495	0.2115
Total Arsenic	Corson & Eddy	-2.7326	0.006284
Total Arsenic	Juneau	-2.3122	0.02076
Dissolved Arsenic	Corson & Eddy	-2.2883	0.02212
Dissolved Arsenic	Juneau	-2.6797	0.007368
Total Cadmium	Corson & Eddy	-2.5434	0.01098
Total Cadmium	Juneau	-1.9181	0.05509
Total Chromium	Corson & Eddy	-2.5012	0.01238
Total Chromium	Juneau	-1.9613	0.04984
Dissolved Chromium	Corson & Eddy	-1.4914	0.1359
Dissolved Chromium	Juneau	-2.4564	0.01403
Total Copper	Corson & Eddy	-2.1572	0.03099
Total Copper	Juneau	-1.0274	0.3042
Dissolved Copper	Corson & Eddy	-1.301	0.1933
Dissolved Copper	Juneau	-0.82375	0.4101
Total Lead	Corson & Eddy	Illicit Discharge Impacts	
Total Lead	Juneau	-1.885	0.05943
Dissolved Lead	Corson & Eddy	Illicit Discharge Impacts	
Dissolved Lead	Juneau	-2.215	0.02676
Total Nickel	Corson & Eddy	-1.0073	0.3138
Total Nickel	Juneau	-2.2291	0.02581
Dissolved Nickel	Corson & Eddy	-0.55879	0.5763
Dissolved Nickel	Juneau	-2.1138	0.03453
Total Silver	Corson & Eddy	-2.088	0.0368
Total Silver	Juneau	-1.5934	0.1111
Total Vanadium	Corson & Eddy	-2.2979	0.02157
Total Vanadium	Juneau	-2.0354	0.04181
Dissolved Vanadium	Corson & Eddy	-1.7274	0.08409
Dissolved Vanadium	Juneau	-2.5586	0.01051
Total Zinc	Corson & Eddy	-2.4589	0.01394
Total Zinc	Juneau	-2.0453	0.04082
Dissolved Zinc	Corson & Eddy	-0.58262	0.5601
Dissolved Zinc	Juneau	-2.1347	0.03279
Total Mercury	Corson & Eddy	-2.0458	0.04078
Total Mercury	Juneau	-2.2574	0.02398
Naphthalene	Corson & Eddy	Illicit Discharge Impacts	
Naphthalene	Juneau	-1.4828	0.1381
Phenanthrene	Corson & Eddy	Illicit Discharge Impacts	
Phenanthrene	Juneau	-1.9165	0.0553
Bis(2-ethylhexyl)phthalate	Corson & Eddy	-1.1467	0.2515
Bis(2-ethylhexyl)phthalate	Juneau	-0.9148	0.3603
Diethyl Phthalate	Corson & Eddy	0.9646	0.3347
Diethyl Phthalate	Juneau	-0.96515	0.3345
Total PCBs	Corson & Eddy	-1.3749	0.1692
Total PCBs	Juneau	-1.7296	0.08369
Total Dioxin TEQ	Corson & Eddy	-2.2159	0.0267

*Wet baseflow loading rates were statistically higher than stormflow loading rates.

Note: Shading indicates mean stormflow results were statistically higher than mean wet baseflow results, unless otherwise noted (*).

Table G-3. Statistical comparison between baseflow and stormflow for results at Homer.*Permutation Tests*

Parameter	Site	z-value	p-value
Average Flow	Homer	-2.6661	0.007674

Parameter (Loading Rates)	Site	z-value	p-value
Total Suspended Solids	Homer	-2.5452	0.01092
Total Organic Carbon	Homer	-3.0859	0.002029
Dissolved Organic Carbon	Homer	-2.817	0.004847
Total Arsenic	Homer	-1.4118	0.158
Dissolved Arsenic	Homer	-3.2056	0.001348
Total Cadmium	Homer	-2.4912	0.01273
Total Chromium	Homer	-2.623	0.008717
Dissolved Chromium	Homer	-2.7341	0.006254
Total Copper	Homer	-2.6521	0.007999
Dissolved Copper	Homer	-3.4226	0.0006203
Total Lead	Homer	-1.5006	0.1334
Dissolved Lead	Homer	-2.5852	0.009731
Total Nickel	Homer	-2.5876	0.009665
Dissolved Nickel	Homer	-2.7823	0.005397
Total Silver	Homer	NA	NA
Total Vanadium	Homer	-2.619	0.008819
Dissolved Vanadium	Homer	-3.2375	0.001206
Total Zinc	Homer	-2.4226	0.01541
Dissolved Zinc	Homer	-3.1593	0.001582
Total Mercury	Homer	-2.486	0.01292
Naphthalene	Homer	-2.6451	0.008167
Phenanthrene	Homer	NA	NA
Bis(2-ethylhexyl)phthalate	Homer	-1.127	0.2597
Diethyl Phthalate	Homer	-1.391	0.1642
Total PCBs	Homer	-2.0756	0.03793

Note: Shading indicates mean stormflow results were statistically higher than mean baseflow results (dry and wet baseflow combined).

Table G-4. Statistical comparison between concentrations at East Marginal and Juneau.*Permutation Tests*

Parameter (Concentration)	z-value	p-value
Total Suspended Solids	2.8231	0.004756
Dissolved Organic Carbon	2.8204	0.004796
Total Organic Carbon	3.2773	0.001048
Total Arsenic	0.67047	0.5026
Dissolved Arsenic	0.89995	0.3681
Total Cadmium	2.4306	0.01507
Total Chromium	2.6799	0.007365
Dissolved Chromium	3.3133	0.000922
Total Copper	-0.54163	0.5881
Dissolved Copper	-0.68891	0.4909
Total Lead	1.6069	0.1081
Dissolved Lead	3.2031	0.00136
Total Nickel	2.6405	0.008278
Dissolved Nickel	2.9849	0.002837
Total Vanadium	1.2278	0.2195
Dissolved Vanadium	0.306	0.7596
Total Silver	1.5721	0.1159
Total Zinc	3.5935	0.0003263
Dissolved Zinc	3.3804	0.0007237
Total Mercury	1.8952	0.05807
Phenanthrene	3.0867	0.002024
Total HPAHs	2.2851	0.02231
Bis(2-ethylhexyl)phthalate	2.478	0.01321
Total PCBs	-1.4504	0.1469

Note: Shading indicates mean concentrations were statistically higher at East Marginal compared to Juneau.