Supplementary material

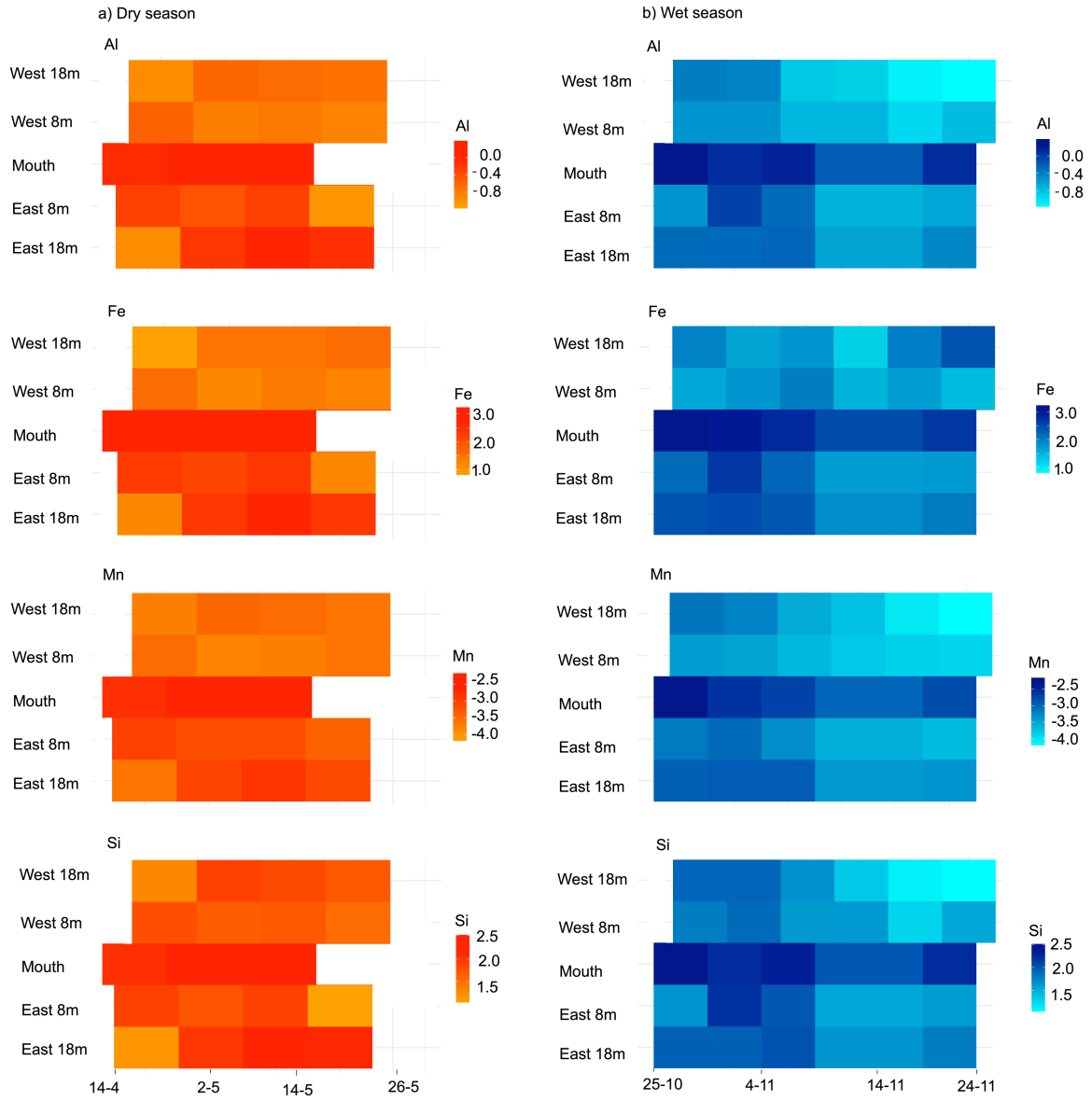
Table S1. ANOVA results summary of significant differences in mass, C_{org} and total N fluxes, grain size and silt and clay % between locations in the dry and wet season.

Season	Parameter	Comparison	Higher value	p adj	diff	lwr	upr
Dry	Mass flux	Mouth-East8	Mouth	0.024	5007.87	458.26	9557.48
Dry	C_{org} flux	Mouth-East8	Mouth	2.40E-03	133.54	36.59	230.49
Dry	Total N flux	Mouth-East8	Mouth	2.80E-03	19.21	5.09	33.34
Dry	Silt/clay %	West18-East18	East18	1.80E-03	-22.07	-38.07	-6.06
Dry	Silt/clay %	West18-East8	East8	5.30E-04	-22.82	-38.01	-7.64
Dry	Silt/clay %	West18-Mouth	Mouth	1.21E-07	-32.52	-46.98	-18.07
Dry	Silt/clay %	West8-Mouth	Mouth	2.40E-04	-22.25	-36.36	-8.14
Wet	Mass flux	Mouth-East18	Mouth	2.62E-08	25717.77	15020.67	36414.88
Wet	Mass flux	Mouth-East8	Mouth	3.55E-09	27893.72	17025.44	38761.99
Wet	Mass flux	West18-Mouth	Mouth	1.00E-03	-30791.16	-41071.52	-20510.80
Wet	Mass flux	West8-Mouth	Mouth	1.30E-08	-25304.65	-35585.01	-15024.29
Wet	C_{org} flux	Mouth-East18	Mouth	2.23E-06	457.73	232.68	682.78
Wet	C_{org} flux	Mouth-East8	Mouth	2.97E-06	476.65	239.37	713.94
Wet	C_{org} flux	West18-Mouth	Mouth	6.23E-10	-585.50	-801.78	-369.21
Wet	C_{org} flux	West8-Mouth	Mouth	8.16E-08	-500.93	-717.21	-284.64
Wet	Total N flux	Mouth-East18	Mouth	1.45E-05	57.03	26.45	87.60
Wet	Total N flux	Mouth-East8	Mouth	1.05E-05	58.84	27.78	89.91
Wet	Total N flux	West18-Mouth	Mouth	7.49E-09	-73.64	-103.03	-44.26
Wet	Total N flux	West8-Mouth	Mouth	3.36E-06	-58.6	-87.99	-29.22
Wet	Silt/clay %	Mouth-East18	Mouth	0.021	13.35	1.35	25.35
Wet	Silt/clay %	Mouth-East8	Mouth	1.90E-04	19.50	7.50	31.49
Wet	Silt/clay %	West18-Mouth	Mouth	3.50E-03	-15.03	-26.38	-3.69
Wet	Silt/clay %	West8-Mouth	Mouth	8.20E-03	-14.32	-25.96	-2.68

Table S2. T-test results of comparisons of mean mass, C_{org} and total N fluxes, grain size and silt and clay % values per season. Bold numbers show significant differences

Location	Variable	Wet Mean	Dry Mean	Difference	p-value
East18	Mass flux	10959.72	7026.07	3933.65	0.162
East18	Total N flux	31.595	14.227	17.368	0.077
East18	C_{org} flux	229.29	96.87	132.42	0.071
East18	Grain size	43.61	99.61	-6.00	0.351
East18	Silt/clay %	58.36	52.26	6.10	0.345
East8	Mass flux	8648.03	4352.32	4295.71	**9.61E-03**
East8	Total N flux	28.901	8.013	20.888	**0.043**

East8	C_{org} flux	175.23	50.13	125.10	0.104
East8	Grain size	49.25	62.63	13.38	0.474
East8	Silt/clay %	55.71	55.41	0.30	0.967
Mouth	Mass flux	36541.74	9202.18	27339.56	**0.048**
Mouth	Total N flux	87.745	27.030	60.720	**0.048**
Mouth	C_{org} flux	678.84	178.98	499.86	**0.047**
Mouth	Grain size	31.27	45.49	14.22	0.099
Mouth	Silt/clay %	75.73	64.12	11.61	0.11
West18	Mass flux	5716.72	6701.46	984.74	0.583
West18	Total N flux	14.303	19.363	5.061	0.331
West18	C_{org} flux	96.18	124.45	28.27	0.484
West18	Grain size	43.75	95.35	51.60	**0.033**
West18	Silt/clay %	57.01	28.65	28.36	**5.00E-04**
West8	Mass flux	11583.96	7301.64	4282.32	0.219
West8	Total N flux	30.454	18.971	11.483	0.139
West8	C_{org} flux	185.68	126.09	59.59	0.203
West8	Grain size	42.88	86.46	43.58	**0.032**
West8	Silt/clay %	62.41	38.16	24.25	**4.70E-03**



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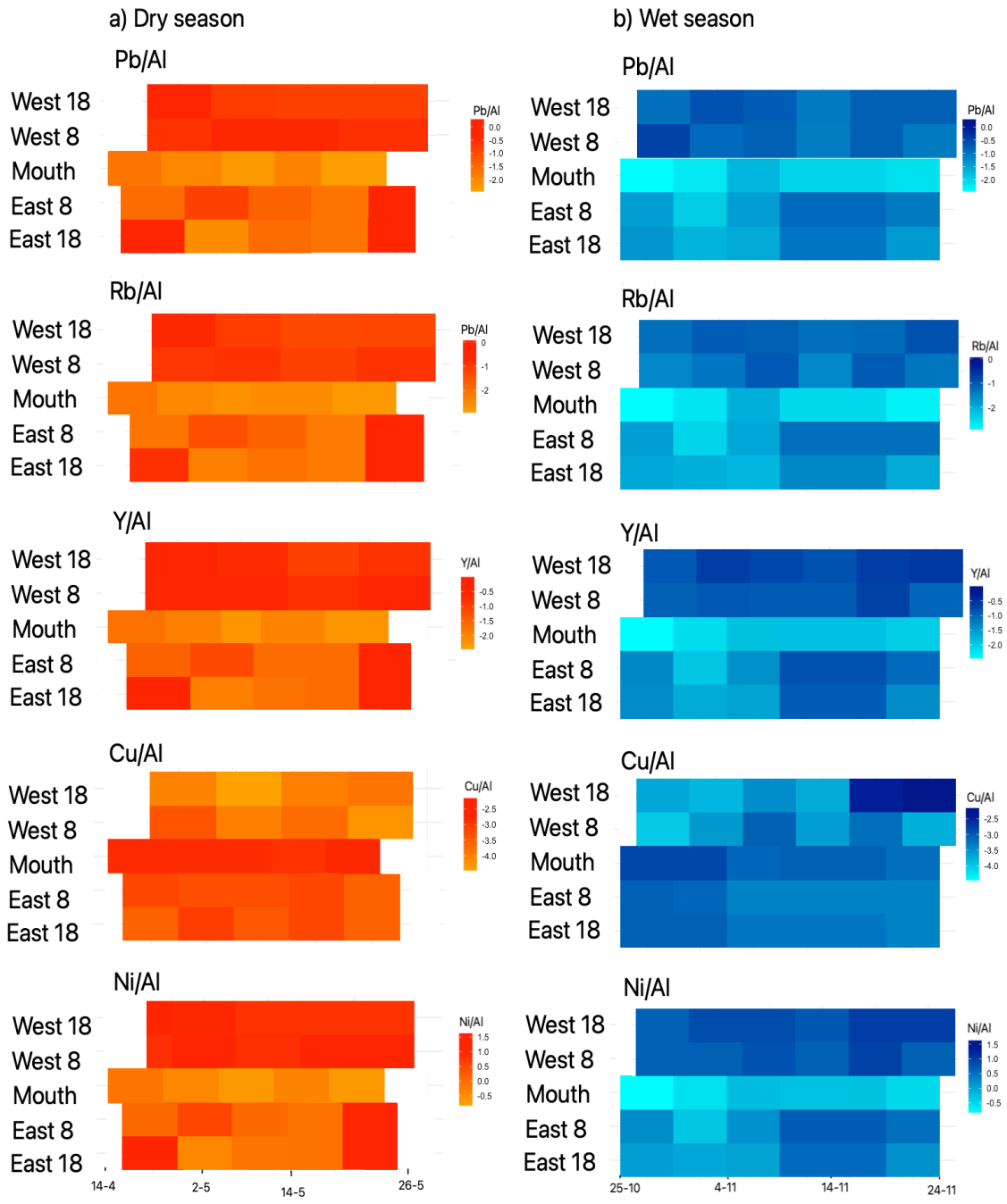
19 **Figure S1.** Elemental intensities of Al, Fe, Mn, and Si in sediment-trap samples during the a)
20 dry season and b) wet season. The x-axis represents sampling dates, and the y-axis displays
21 the five sampled locations (West 18, West 8, Mouth, East 8, and East 18). The color scale
22 indicates centered log-ratios (CLR) of elemental intensities



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26 **Figure S2.** Elemental ratios of Pb/Al, Rb/Al, Y/Al, Cu/Al and Ni/Al in sediment-trap samples
27 during the a) dry season and b) wet season. The x-axis represents sampling dates, and the y-
28 axis displays the five sampled locations (West 18, West 8, Mouth, East 8, and East 18).

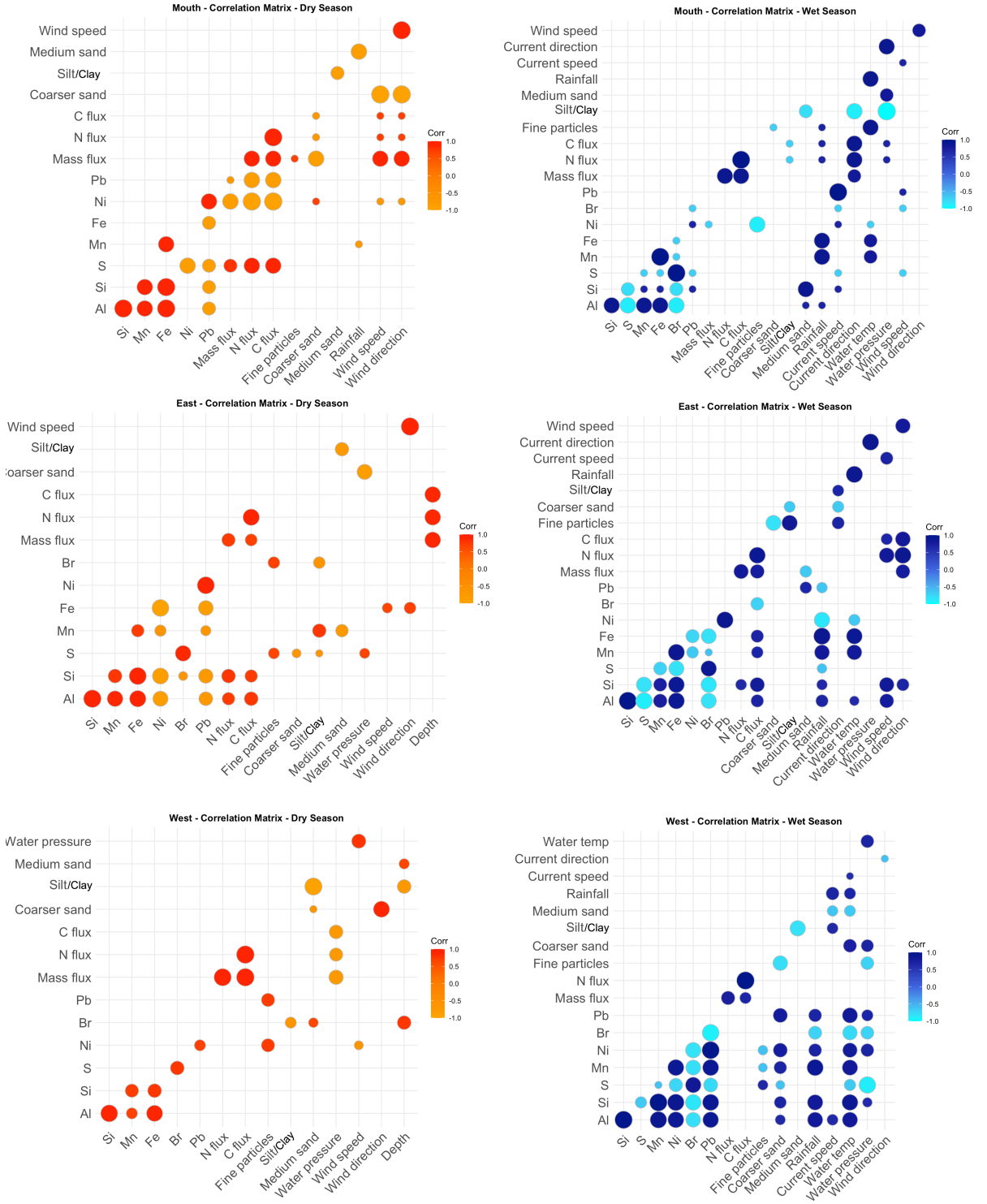

Figure S3. Correlation matrix of suspended particulate matter characteristics and environmental parameters. Only strong to very strong correlations ($r \geq 0.6$) are displayed. (a) Dry season correlations for Mouth (top), East (middle), and West (bottom) locations. (b) Wet season correlations for the same locations following the same vertical order. Data for the two depths (8 and 18 meters) for the east and western reefs were combined.