

Supplementary Information

Table S1 Geographic coordinates and descriptions of the 18 sampling stations located along the terrestrial-marine continuum of the Bengkulu River catchment and adjacent coastal waters, western Indonesia.

<i>Station</i>	<i>Sample Area</i>	<i>Geographic Coordinates</i>
1	Sungai Rindu Hati	3°42'52.75"S 102°28'34.80"E
2	Semarang	3°46'53.05"S 102°17'36.35"E
3	Danau Dendam A	3°48'10.02"S 102°18'21.60"E
4	Danau Dendam B	3°48'10.89"S 102°18'20.37"E
5	Danau Dendam C	3°48'18.05"S 102°18'28.48"E
6	Kampung Kelawi	3°46'49.22"S 102°16'13.34"E
7	Sungai Hitam Hilir	3°45'18.10"S 102°15'33.32"E
8	Sungai Hitam Hulu	3°45'18.47"S 102°15'39.73"E
9	Mulut Muara	3°45'24.73"S 102°15'34.60"E
10	Jembatan Kota Tua	3°46'19.47"S 102°15'49.17"E
11	Pantai Panjang	3°46'18.98"S 102°15'39.45"E
12	Pantai Pasir Putih	3°49'55.95"S 102°16'54.87"E
13	Muara Jenggalu	3°50'21.75"S 102°17'44.03"E
14	Pulau Baai 1	3°54'26.16"S 102°18'23.88"E
15	Pulau Baai 2	3°54'20.74"S 102°18'28.81"E
16	Pulau Baai 3	3°54'17.42"S 102°18'30.21"E
17	Air PDAM	3°42'52.75"S 102°28'34.80"E
18	Pulau Tikus	3°50'16.70"S 102°10'49.28"E

Table S2 Principal component loadings for the seven environmental variables included in the principal component analysis. Positive and negative loadings indicate the direction of association between each variable and the corresponding principal component, while the magnitude of the loading reflects the relative contribution of each variable to that component. Loadings with absolute values greater than 0.40 ($|\text{loading}| > 0.40$) are shown in bold.

	PC1	PC2	PC3	PC4	PC5	PC6	PC7
Salinity	-0.266	0.410	-0.286	0.683	-0.461	0.031	-0.011
eHS							
(mg/L)	0.332	-0.044	0.821	0.333	-0.259	-0.177	0.069
dCo (nM)	0.360	-0.435	-0.420	0.290	0.050	-0.608	0.220
dMn (nM)	0.436	-0.392	-0.151	0.299	-0.010	0.705	-0.218
a254	-0.432	-0.163	0.195	0.490	0.711	0.032	0.036
S275_295	0.392	0.489	-0.063	0.036	0.299	0.215	0.683
HIX	-0.400	-0.472	0.054	-0.086	-0.350	0.230	0.657

Table S3 Measured values of the environmental variables (salinity, eHS, dCo, dMn, a₂₅₄, S₂₇₅₋₂₉₅, and HIX) used in the principal component analysis

Station	Salinity	eHS _{FA} (mg/L)	dCo (nM)	dMn (nM)	a ₂₅₄ (m ⁻¹)	S ₂₇₅₋₂₉₅ (nm ⁻¹)	HIX
S1	0.08	0.21	0.608	10.5	16.2	0.0204	0.664
S2	0.08	0.35	0.922	140	32.3	0.0157	0.865
S3	0.09	1.25	12.2	3880	6.52	0.028	0.459
S4	0.06	5.83	2.07	2490	18.9	0.0222	0.657
S5	0.02	5.75	12.7	5020	9.55	0.027	0.391
S6	0.16	1.77	2.92	921	39.0	0.0178	0.827
S7	3.58	1.21	19.3	4610	28.7	0.0166	0.861
S8	2.57	0.69	19.3	4613	17.3	0.0199	0.661
S9	0.19	0.34	1.06	163	266	0.0133	0.952
S10	0.13	0.78	0.675	263	31.9	0.0199	0.706
S11	29.55	1.15	0.350	32.9	7.14	0.0319	0.317
S12	28.1	0.12	0.199	12.4	5.17	0.0320	0.266
S13	4.25	0.37	0.663	1870	4.58	0.0244	0.633
S14	28.05	0.45	0.614	134	243	0.0133	0.936
S15	20.75	0.85	1.03	65.3	71.1	0.0154	0.900
S16	25	0.38	0.253	449	62.3	0.0141	0.943
S17	0.09	0.14	13.9	4020	21.2	0.0159	0.868
S18	28.05	0.069	0.202	251	163	0.0136	0.930