

Supplementary



TABLE S1. Calculations of OPI at site 1

Parameter	Spring			Summer			Autumn			Winter		
	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i
pH	7.9	6.5	1.21	7.6	6.5	1.17	7.8	6.5	1.2	7.5	6.5	1.15
Conductivity ($\mu\text{S}/\text{cm}$)	251	300	0.8	253	300	0.84	146	300	0.49	130	300	0.43
Turbidity (NTU)	19.08	5	12.46	19.08	5	12.46	23.2	5	15.09	5.6	5	3.67
TDS (mg/L)	150	500	0.3	152	500	0.30	88	500	0.18	78	500	0.16
DO (mg/L)	8.4	5	1.68	2.4	5	0.48	7.8	5	1.56	3.9	5	0.78
BOD (mg/L)	1.5	5	0.3	1.9	5	0.38	1.2	5	0.24	1.1	5	0.22
Total hardness (mg/L)	49.5	300	0.16	53.3	300	0.18	60.3	300	0.20	58.2	300	0.19
Ca (mg/L)	11.25	75	0.15	10.02	75	0.13	13.61	75	0.18	14.08	75	0.19
Mg (mg/L)	5.2	30	0.17	6.9	30	0.23	6.4	30	0.21	5.6	30	0.19
ΣP_i			17.24			16.18			19.35			6.98
OPI			1.91			1.79			2.15			0.77

TABLE S2. Calculations of OPI at site 2

Parameter	Spring			Summer			Autumn			Winter		
	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i
pH	7.5	6.5	1.15	7.5	6.5	1.15	7.5	6.5	1.15	7.5	6.5	1.15
Conductivity ($\mu\text{S}/\text{cm}$)	257	300	0.86	275	300	0.91	153	300	0.51	140	300	0.47
Turbidity (NTU)	37.7	5	24.73	37.7	5	24.73	29.07	5	19.06	6.42	5	4.20
TDS (mg/L)	154	500	0.31	165	500	0.33	92	500	0.18	84	500	0.17
DO (mg/L)	4.2	5	0.84	2.5	5	0.5	3.6	5	0.72	1.7	5	0.34
BOD (mg/L)	1.2	5	0.24	4	5	0.8	1.6	5	0.32	2	5	0.4
Total hardness (mg/L)	75.2	300	0.25	91.8	300	0.31	74.4	300	0.25	73.1	300	0.24
Ca (mg/L)	18.26	75	0.24	24.09	75	0.32	18.44	75	0.25	18.25	75	0.24
Mg (mg/L)	7.2	30	0.24	7.7	30	0.26	6.9	30	0.23	6.7	30	0.22
ΣP_i			28.86			29.31			22.67			7.43
OPI			3.20			3.25			2.52			1.85

TABLE S3. Calculations of OPI at site 3

Parameter	Spring			Summer			Autumn			Winter		
	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i
pH	8.1	6.5	1.24	7.8	6.5	1.2	7.7	6.5	1.18	8	6.5	1.23
Conductivity ($\mu\text{S}/\text{cm}$)	430	300	1.43	457	300	1.5	347	300	1.16	214	300	0.71
Turbidity (NTU)	163	5	106.9	97.5	5	63.97	163	5	106.9	184	5	121.35
TDS (mg/L)	258	500	0.52	274	500	0.55	208	500	0.42	128	500	0.26
DO (mg/L)	4.2	5	0.84	1.8	5	0.38	4.2	5	0.84	1.6	5	0.32
BOD (mg/L)	3.7	5	0.74	8.7	5	1.77	7	5	1.4	4.9	5	0.98
Total hardness (mg/L)	160	300	0.53	159	300	0.55	121	300	0.40	132	300	0.44
Ca (mg/L)	39.22	75	0.52	35.93	75	0.49	29.51	75	0.39	32.95	75	0.44
Mg (mg/L)	15.2	30	0.51	16.8	30	0.58	11.5	30	0.38	12.2	30	0.41
ΣP_i			113.23			70.99			113.07			126.14
OPI			12.58			7.88			12.56			14.01

TABLE S4. Calculations of OPI at site 4

Parameter	Spring			Summer			Autumn			Winter		
	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i	V_n	V_s	P_i
pH	7.5	6.5	1.15	7.8	6.5	1.2	7.5	6.5	1.15	7.3	6.5	1.12
Conductivity ($\mu\text{S}/\text{cm}$)	264	300	0.88	299	300	0.99	110	300	1.37	199	300	0.66
Turbidity (NTU)	51.7	5	33.92	43.89	5	28.80	130.31	5	85.49	25.88	5	16.96
TDS (mg/L)	158	500	0.32	180	500	0.36	66	500	0.13	60	500	0.12
DO (mg/L)	4.4	5	0.88	2.6	5	0.52	2.1	5	0.42	1.2	5	0.24
BOD (mg/L)	1.5	5	0.3	2.6	5	1.52	3.3	5	0.66	3.1	5	0.62
Total hardness(mg/L)	81.1	300	0.27	83.9	300	0.28	80	300	0.27	76.8	300	0.26
Ca (mg/L)	18.51	75	0.25	19.62	75	0.26	19.72	75	0.26	18.27	75	0.24
Mg (mg/L)	8.5	30	0.28	8.5	30	0.28	7.5	30	0.25	7.6	30	0.26
ΣP_i			38.25			34.21			90.00			20.48
OPI			4.25			3.80			10.00			2.27