Supplementary Materials

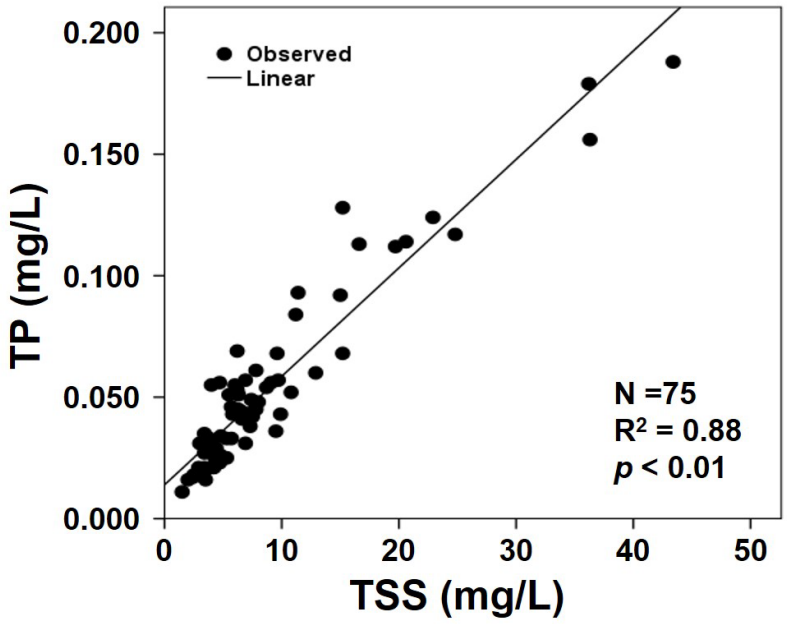

Figure S1. Regression analysis between TSS and TP during the wet season.

Table S1. Information on the analytical methods and instruments.

Parameter	Analytical method	Analytical instrument
BOD	Azide modification of Winkler method (5 d, incubation, 20 °C)	5100 DO Instrument (YSI Inc., Yellow Springs, OH, USA), Incubator VS-3250Di (VISION Scientific, South Korea)
COD	Potassium permanganate method ($KMnO_4$, 100 °C Acid)	J-BS3D Water Bath (JISICO Corp., South Korea)
TOC	High temperature combustion oxidation	TOC-LCPH (SHIMADZU Corp., Kyoto, Japan)
TSS	Gravimetric	47 mm GF/C Filter (Whatman, Maidstone, UK)
TN	Continuous flow analysis	AACS_VI (BLTEC Corp., Tokyo, Japan)
NH_3-N	Continuous flow analysis	AACS_VI (BLTEC Corp., Tokyo, Japan)
NO_3-N	Smart Chem wet chemistry analysis	Smart Chem 200 (AMS Alliance Corp., Westborough, MA, USA)
TP	Continuous flow analysis	AACS_VI (BLTEC Corp., Tokyo, Japan)
PO_4-P	Smart Chem wet chemistry analysis	Smart Chem 200 (AMS, Alliance Corp., Westborough, MA, USA)
Chl-*a*	UV-Visible Spectrophotometer	AU/Carry 3500 (Agilent technologies, Santa Clara, CA, USA)
TC	Membrane filtration method	Vacuum Pressure Pump DOA-P704-AC (GAST Corp., USA) Incubator VS-31258Bi (VISION Scientific, South Korea)

Units (mg/L), except pH, WT (°C), EC (μS/cm), Chl -*a* (mg/m^3), and TC (CFU/100 mL)

Table S2. Reference range for water quality parameters for RTWQI calculation.

Parameter	Unit	Water quality reference range
WT	°C	(Mean month for 10 years - 10 °C) ≤ WT ≤ (Mean month for 10 years + 10 °C)
pH	–	6.5 ≤ pH ≤ 9.0
EC	μS/cm	EC ≤ 200 μS/cm
DO	mg/L	0.8 × DO (Saturation concentration at current temperature) ≤ DO ≤ 1.3 × DO (Saturation concentration at current temperature)
TSS	mg/L	TSS ≤ 5.0 mg/L
TOC	mg/L	TOC ≤ 3.0 mg/L
TN	mg/L	TN ≤ 3.0 mg/L
TP	mg/L	TP ≤ 0.1 mg/L

Table S3. Descriptive statistics of RTWQI.

Sites	RTWQI				
	Min	**Median**	**Max**	**Mean**	**Rating**
PD1	54	78	90	79	Good
PD2	65	86	100	85	Excellent
PD3	54	77	90	77	Good
PD4	78	100	100	95	Excellent
PD5	45	66	89	66	Good
Overall	45	79	100	81	Excellent

Table S4. Mean values of physicochemical and biological parameters in different seasons in the PDR.

Parameter	DS	WS	F	Sig.
WT	11.9[a] ± 6.4[b] (2.2[c]–25.5[d])	23.7 ± 2.2 (18.9–29.9)	246.582	0.000
pH	8.0 ± 0.4 (6.7–9.7)	7.8 ± 0.4 (18.9–29.9)	18.023	0.000
EC	246 ± 63 (116–389)	213 ± 58 (101–381)	15.197	0.000
DO	11.4 ±1.7 (6.9–14.4)	8.8 ± 1.3 (4.3–12.5)	144.378	0.000
Transparency	1.8 ± 0.8 (0.6–4.8)	1.2 ± 0.5 (0.4–2.7)	36.155	0.000
BOD	1.4 ± 0.7 (0.4–3.7)	1.5 ± 0.6 (0.4–3.2)	1.076	0.301
COD	3.9 ± 0.8 (2.7–7.2)	4.6 ± 0.9 (3.0–7.1)	30.677	0.000
TOC	2.2 ± 0.5 (1.5–3.8)	2.6 ± 0.5 (1.9–4.0)	26.936	0.000
TSS	5.1 ± 3.0 (1.0–18.9)	9.7 ± 7.5 (2.4–43.4)	53.093	0.000
TN	2.469 ± 0.577 (1.343–4.007)	2.240 ± 0.453 (1.399–3.208)	9.677	0.002
NH_3-N	0.062 ± 0.056 (0.005–0.350)	0.040 ± 0.029 (0.008–1.555)	10.515	0.001
NO_3-N	2.067 ± 0.481 (0.791–3.148)	1.828 ±0.427 (0.779–2.649)	14.308	0.000
TP	0.030 ± 0.015 (6.7–9.7)	0.061 ± 0.034 (0.017–0.188)	108.833	0.000
PO_4-P	0.006 ± 0.007 (0.001–0.039)	0.021 ± 0.019 (0.001–0.074)	93.925	0.000
Chl-*a*	14.5 ± 10.7 (0.5–52.2)	19.4 ± 13.3 (1.1–67.5)	10.278	0.002
TC	252 ± 1,151 (1–15,000)	1,554 ± 2,755 (6–17,000)	30.564	0.000

[a]Mean; [b]Standard deviation; [c]Minimum; [d]Maximum.

Units (mg/L), except pH, WT (°C), EC (μS/cm), Chl-*a* (mg/m^3), and TC (CFU/100 mL)

ANOVA for water quality parameters for stations and seasons at $p < 0.05$ (Turkey test).

Table S5. Results of principal component analysis of normalized data: total variance explained.

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.379	33.621	33.621	4.268	26.674	26.674
2	3.648	22.799	56.420	3.531	22.069	48.743
3	2.586	16.162	72.582	2.819	17.617	66.359
4	0.135	7.093	79.675	2.131	13.316	79.675