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Table S1 The Test results of the sample in lake water and groundwater.

number	Longitude (E)	Latitude (N)	Tw (°C)	pH	Eh (mV)	EC ($\mu\text{S cm}^{-1}$)	DO (mg L^{-1})	^{222}Rn (Bq m^{-3})	$\delta^{18}\text{O}$ (‰)	$\delta^2\text{H}$ (‰)	Sampling date
S1	112.75427	29.16765	5.2	8.14	84.1	565	11.42	229.25	-5.40	-32.1	2019
S2	112.78569	29.26924	5.3	7.74	167.3	359	11.54	226.12	-3.93	-27.84	2020
S3	112.79981	29.28004	6.9	8.06	73.9	777	11.7	684.71	-6.00	-36.2	2019
S4	112.81143	29.50111	6.5	7.88	152.5	557	11.33	700.72	-4.70	-31.10	2019
S5	112.91741	29.44854	8.6	8.17	191.6	433	11.62	109.80	-3.38	-24.04	2020
S6	113.01094	29.34528	5.5	7.86	115.2	449	10.32	257.42	-5.10	-36.00	2019
S7	112.84083	29.47545	5.3	7.95	169.7	443	11.59	215.88	-6.90	-45.94	2020
S8	112.82316	29.48529	4.0	8.18	166.5	327	13.42	180.33	-4.08	-22.11	2020
S9	112.83906	29.49356	5.4	8.0	182.1	487	10.82	324.01	-4.92	-30.17	2020
S10	113.14350	29.42532	7.6	7.60	57.9	313	11.14	180.56	-6.00	-35.36	2019
S11	113.09062	29.37280	6.8	7.42	109.9	264	11.01	149.18	-6.10	-37.70	2019
S12	113.06994	29.27496	5.3	7.71	75.1	278	11.31	148.32	-4.30	-25.80	2019
S13	113.00346	29.16077	6.5	7.37	87.2	273	11.25	288.57	-5.90	-36.00	2019
S14	113.05156	29.32902	9.0	8.01	188.5	298	10.82	149.27	-5.71	-34.19	2020
S15	113.03542	29.28759	8.9	8.18	237.7	313	11.22	110.05	-5.34	-33.66	2020
S16	113.06003	29.33834	8.8	8.12	280.0	300	11.15	99.44	-5.43	-33.45	2020
S17	112.94918	29.09623	10.2	8.00	154.3	295	10.98	113.02	-5.91	-32.83	2020
G1	112.72587	29.15458	15.3	6.96	-77.9	376	6.88	5191.34	-6.6	-39.7	2019
G2	112.79838	29.42547	/	7.89	-77.8	685	1.59	3234.86	-7.91	-51.63	2020
G3	112.77452	29.50434	/	7.71	-77.4	501	1.22	3598.82	-7.34	-49.67	2020
G4	112.79734	29.49858	16.8	7.13	-71.9	588	4.66	2149.87	-8.00	-53.1	2019
G5	112.84227	29.49765	14.0	7.01	-80.2	1182	1.64	2037.83	-7.70	-52.16	2020
G6	112.97477	29.41602	16.3	8.37	160.8	143	8.15	/	-6.05	-31.14	2020
G7	113.09062	29.37280	/	/	/	/	/	6868.35	-5.50	-35.50	2019
G8	113.09333	29.29013	15.6	7.19	201.1	553	4.07	12309.11	-5.36	-29.68	2020
G9	113.10414	29.21969	16.0	6.98	201.2	282	5.92	2493.26	-4.85	-31.38	2020
G10	113.03390	29.14573	15.5	6.08	140.8	133	5.74	9337.33	-6.20	-37.9	2019
G11	113.00346	29.16077	/	/	/	/	/	5958.70	-6.00	-35.4	2019
G12	112.98883	29.09672	16.4	7.04	-149.3	734	1.96	19821.17	-4.14	-26.89	2020

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*The dot beginning with "S" is surface water and the dot beginning with "G" is groundwater.

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Table S2 Concentration of nutrients in various water bodies in WEDL.

Number	Si (mg L^{-1})	$\text{NH}_4\text{-N}$ (mg L^{-1})	P (mg L^{-1})
S1	2.77	0.28	0.20
S2	3.72	0.39	N.D.
S3	3.28	0.78	0.10
S4	3.29	1.06	N.D.
S5	5.71	0.43	0.03
S6	3.55	0.23	0.06
S7	1.91	0.33	0.04
S8	1.81	0.22	N.D.
S9	2.65	0.45	N.D.
Average	3.19	0.46	0.08
G1	17.97	0.61	0.58
G2	12.88	0.54	0.66
G3	14.64	0.81	0.37
G4	6.48	0.43	0.35
G5	16.01	13	1×10^{-3}
G6	4.61	0.24	5×10^{-3}
Average	12.10	2.61	0.34

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* The N.D. is undetected.

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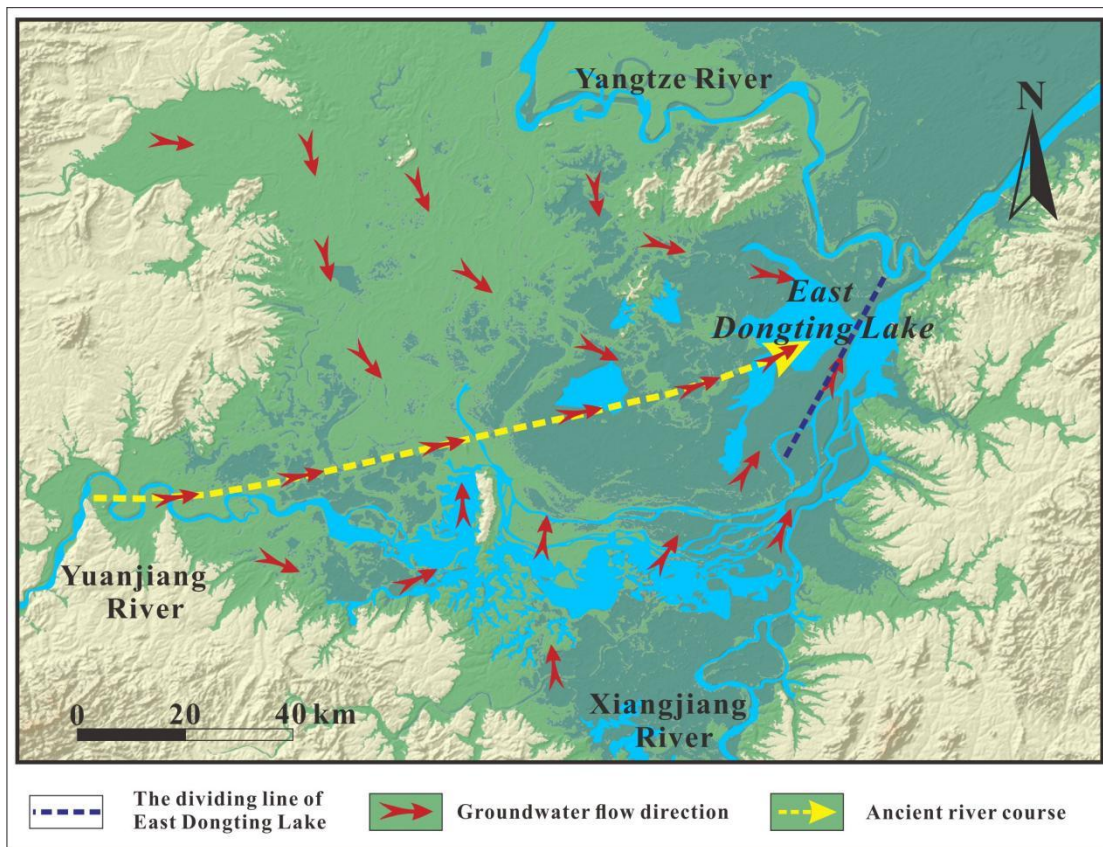
Table S3 Concentration of nutrients in various water bodies in EEDL.

Number	Si (mg L^{-1})	$\text{NH}_4\text{-N}$ (mg L^{-1})	P (mg L^{-1})
S10	3.92	0.75	0.19
S11	4.04	0.60	N.D.
S12	2.29	0.66	N.D.

S13	4.32	0.52	N.D.
S14	4.20	0.34	N.D.
S15	3.62	0.57	0.01
S16	3.60	0.59	0.08
S17	3.65	0.53	0.07
Average	3.71	0.57	0.09
G7	9.51	2.17	N.D.
G8	10.45	0.07	0.02
G9	16.75	0.12	0.05
G10	12.04	0.08	N.D.
G11	11.06	2.47	0.11
G12	15.95	7.85	0.02
Average	12.62	2.13	0.03

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* The N.D. is undetected.



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9 **Figure S1.** Map of groundwater flow direction (Zhao et al., 2020; Xu et al., 2019; Liang et al., 2001). The
 10 topographical information is from Geospatial data cloud (<http://www.gscloud.cn/sources/index?pid=302>).