Supplementary Table 1. Depth, mean grain size, TOC, TN, TOC/TN, and $\delta^{13}C$ values of cores of the study area.

Sl. No.	Sample No.	Depth (cm)	Mean (µm)	TOC (%)	TN (%)	TOC/TN	$\delta^{13}C$ (‰)
Site 1 (Latitude: 21°57'40.62"N; Longitude: 89°58'56.10"E)							
1	D2L1-01	0	131.50	0.422	0.035	12.057	
2	D2L1-02	3	84.18	0.556	0.040	13.900	-23.456
3	D2L1-03	8	76.89	0.419	0.031	13.516	
4	D2L1-04	13	102.70	0.581	0.037	15.703	-22.671
5	D2L1-05	18	101.20	0.744	0.044	16.909	
6	D2L1-06	23	91.64	0.733	0.050	14.660	
7	D2L1-07	28	111.30	0.495	0.046	10.761	-20.739
8	D2L1-08	33	109.50	0.362	0.034	10.647	-20.183
9	D2L1-09	38	87.08	0.431	0.039	11.051	
10	D2L1-10	43	66.82	0.513	0.034	15.088	-22.532
11	D2L1-11	48	92.97	0.865	0.037	18.804	-24.351
12	D2L1-12	53	51.78	0.567	0.047	12.064	
13	D2L1-13	58	70.21	0.463	0.039	11.872	-18.816
14	D2L1-14	63	44.88	0.476	0.040	11.900	
15	D2L1-15	68	59.88	0.436	0.041	10.634	-20.096
16	D2L1-16	73	48.39	0.437	0.041	10.659	
17	D2L1-17	78	38.54	0.278	0.029	9.586	-19.691
18	D2L1-18	93	29.22	0.256	0.029	8.828	
19	D2L1-19	97	29.63	0.359	0.035	10.257	-22.147
Site 2 (Latitude: 21°57'44.03"N; Longitude: 89°58'55.89"E)							
1	D2L2-01	0	81.37	0.689	0.061	11.295	
2	D2L2-02	3	63.38	0.253	0.025	10.120	-20.761
3	D2L2-03	6	58.74	0.465	0.036	12.917	
4	D2L2-04	10	58.94	0.355	0.033	10.758	-19.893
5	D2L2-05	13	49.50	0.387	0.032	12.094	
6	D2L2-06	16	58.55	0.313	0.025	12.520	
7	D2L2-07	20	53.32	0.292	0.026	11.231	-19.046
8	D2L2-08	23	44.46	0.322	0.026	12.385	
9	D2L2-09	26	63.41	0.183	0.020	9.150	
10	D2L2-10	30	44.55	0.231	0.026	8.885	-20.803
11	D2L2-11	36	48.19	0.222	0.023	9.652	
12	D2L2-12	40	35.99	0.388	0.032	12.125	-19.248
13	D2L2-13	43	37.20	0.219	0.021	10.429	
14	D2L2-14	48	67.71	0.289	0.029	9.966	-18.806
15	D2L2-15	53	52.99	0.339	0.033	10.273	
16	D2L2-16	63	35.83	0.332	0.030	11.067	
17	D2L2-17	68	43.40	0.418	0.037	11.297	-23.545

Sl. No.	Sample No.	Depth (cm)	Mean (µm)	TOC (%)	TN (%)	TOC/TN	$\delta^{13}C$ (‰)
18	D2L2-18	78	32.05	0.251	0.027	9.296	
19	D2L2-19	83	42.61	0.325	0.030	10.833	-23.004
20	D2L2-20	88	37.39	0.217	0.019	11.421	
21	D2L2-21	93	41.60	0.209	0.021	9.952	
22	D2L2-22	98	34.54	0.191	0.020	9.550	-22.102
Site 1 (Latitude: 21°57'47.21"N; Longitude: 89°58'55.89"E)							
1	D2L3-01	0	84.12	0.226	0.021	10.762	
2	D2L3-02	4	78.60	0.340	0.032	10.625	-19.242
3	D2L3-03	7	56.53	0.240	0.024	10.000	
4	D2L3-04	10	60.88	0.329	0.028	11.750	
5	D2L3-05	14	63.37	0.198	0.020	9.900	-19.155
6	D2L3-06	17	63.47	0.574	0.043	13.349	
7	D2L3-07	20	50.95	0.247	0.026	9.500	
8	D2L3-08	24	56.12	0.148	0.020	7.400	-18.955
9	D2L3-09	27	61.20	0.234	0.026	9.000	
10	D2L3-10	30	67.11	0.197	0.022	8.955	
11	D2L3-11	34	67.36	0.213	0.023	9.261	-19.804
12	D2L3-12	37	68.11	0.250	0.026	9.615	
13	D2L3-13	40	70.40	0.305	0.031	9.839	-18.839
14	D2L3-14	44	41.83	0.188	0.022	8.545	
15	D2L3-15	47	46.82	0.148	0.019	7.789	
16	D2L3-16	50	83.37	0.135	0.016	8.438	
17	D2L3-17	54	50.29	0.200	0.023	8.696	-21.479
18	D2L3-18	57	48.90	0.211	0.023	9.174	
19	D2L3-19	60	47.54	0.148	0.021	7.048	
20	D2L3-20	64	51.80	0.177	0.020	8.850	-21.889
21	D2L3-21	67	40.16	0.355	0.026	13.654	
22	D2L3-22	70	53.35	0.214	0.023	9.304	
23	D2L3-23	74	81.41	0.300	0.032	9.375	-23.107
24	D2L3-24	77	60.93	0.376	0.033	11.394	
25	D2L3-25	80	48.92	0.389	0.035	11.114	
26	D2L3-26	83	38.40	0.325	0.030	10.833	-22.602
27	D2L3-27	90	44.91	0.282	0.024	11.750	
28	D2L3-28	95	33.03	0.287	0.028	10.250	
29	D2L3-29	100	45.57	0.174	0.019	9.158	-22.628
30	D2L3-30	105	36.56	0.243	0.024	10.125	
31	D2L3-31	110	35.14	0.221	0.022	10.045	
32	D2L3-32	115	37.25	0.233	0.025	9.320	-23.123
33	D2L3-33	120	41.28	0.152	0.017	8.941	
34	D2L3-34	125	51.85	0.239	0.024	9.958	
35	D2L3-35	130	44.47	0.159	0.019	8.368	-22.386

Supplementary Table 2. Diatoms count in surficial and beach sediment with species and ecological groups.

Name/sample	**Ecology**	**Site-1**	**Site-2**	**Site-3**	**Beach Sand**
Achnanthes delicatula (Kütz.) Grun.	MB	1	0	0	4
Amphora normannii Rabenhorst	F	0	0	0	1
Aulacoseira granulata (Ehr.) Simonsen	F	0	0	1	0
Aulacoseira subarcta (O.Müller) Haworth	F	0	0	0	2
Bacterosira fragilis (Gran) Gran	M	2	0	0	0
Caloneis permagma (Bailey) Cleve.	B	0	1	0	0
Campylodiscus sp. 1	B	0	0	1	1
Cyclotella caspia	B	0	1	0	0
Cyclotella meneghiniana Kütz.	BF	1	0	0	0
Cyclotella stylorum Brightwell	M	3	0	1	0
Cyclotella striata (Kütz.) Grun.	MB	5	7	2	2
Cymbella perpusilla A. Cleve	F	0	0	0	1
Cymbella pusilla Grun.	F	2	0	4	0
Cymbella sinuata Greg.	F	0	0	0	1
Cymbella silesiaca Bleisch.	F	0	0	0	1
Delphineis surirella (Eer.) Andrews	M	1	1	0	1
Diploneis smithii var. rhombica Mereschkowsky	M	0	0	0	1
Frafilaria brevistriata Gurn.	BF	0	3	0	0
Frafilaria fasciculata	BM	2	1	0	3
Fragilaria zeilleri Héribaud var. zeilleri	F	1	0	0	0
Gomphonema minutum (C. Agardh) C. Agardh	F	0	0	0	2
Gomphonema parvulum Kütz.	F	0	0	0	1
Gyrosigma acuminatum (Kütz.) Rabenhorst	F	0	2	0	0
Hemidiscus cuneiformis	M	0	1	0	2
Hemidiscus ovalis Lohman	F	1	0	1	1
Navicula clementis Grun.	FB	0	0	0	4
Navicula cryptotenella	F	1	0	10	57
Navicula fossalis Krasske var. fossalis	F	0	0	0	1
Navicula halophila (Grun.) Cleve	MB	0	0	3	0
Navicula meniscus Schumann	B	0	0	0	1
Navicula modica Hust.	F	0	0	0	1
Navicula paucivisitata Patrick	F	0	2	0	0
Navicula perminuta Grun.	B	0	0	5	0
Navicula phyllepta Kütz.	B	1	0	0	2
Navicula pseudoscutiformis Hust.	F	0	0	0	1
Navicula pygmaea	BF	0	0	4	2
Navicula lapidosa Krasske	F	0	0	0	6
Navicula reinhardtii (Grun.) Grun.	F	0	1	1	0
Navicula schoenfeldii Hust.	F	0	0	1	0

Name/sample	**Ecology**	**Site-1**	**Site-2**	**Site-3**	**Beach Sand**
Navicula subminuscula Manguin	F	0	0	0	2
Nitzschia clausii	BF	0	2	1	8
Nitzschia constricta	M	0	0	0	1
Nitzschia epithemoides var. disputata (Carter) Lange-Bertalot	B	0	0	0	2
Nitzschia fonticola Grun.	F	0	0	0	2
Nitzschia granulata	B	1	0	0	0
Nitzschia hantzschiana Rabenhorst	F	0	0	1	1
Nitzschia littoralis Grun.	B	1	0	2	1
Nitzscia recta	F	0	2	3	6
Paralia sulcata (Eer.) Cleve	M	1	0	0	0
Raphoneis amphicerous Eer.	M	0	2	0	0
Raphoneis cf. rhomboides Hendrey	M	1	0	0	1
Rhopalodia gibberula (Eer.) O. Müller	BF	0	0	0	2
Stauroneis borrichii (Peterson) Lund.	F	1	0	0	0
Stephanodiscus hiagare Eer.	F	1	0	0	0
Thalassiosira excentrica (Eer.) Cleve	M	1	0	0	0
Thalassiosira miocenica Schrader	M	1	0	0	0
Thalassiosira oestrupii	M	5	3	0	1
*Thalassiosira trifult*a Fryxell	M	0	0	0	1
Thalassiosira sp. 1	BF	0	0	0	1