

Supplementary material

DNA metabarcoding reveals multiple co-occurring species in *Stephanodiscus* spring diatom blooms in a temperate freshwater river

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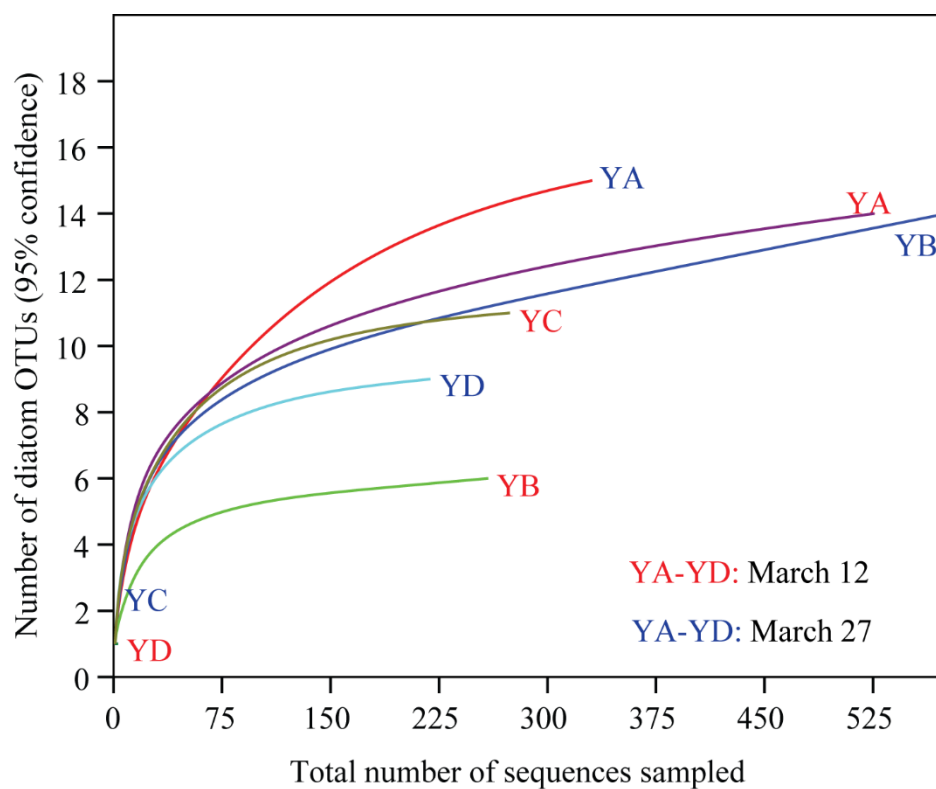


Fig. S1. Rarefaction curves representing the numbers of Operational Taxonomic Units (OTUs) of diatom, against the number of tags sampled from pyrosequencing data.

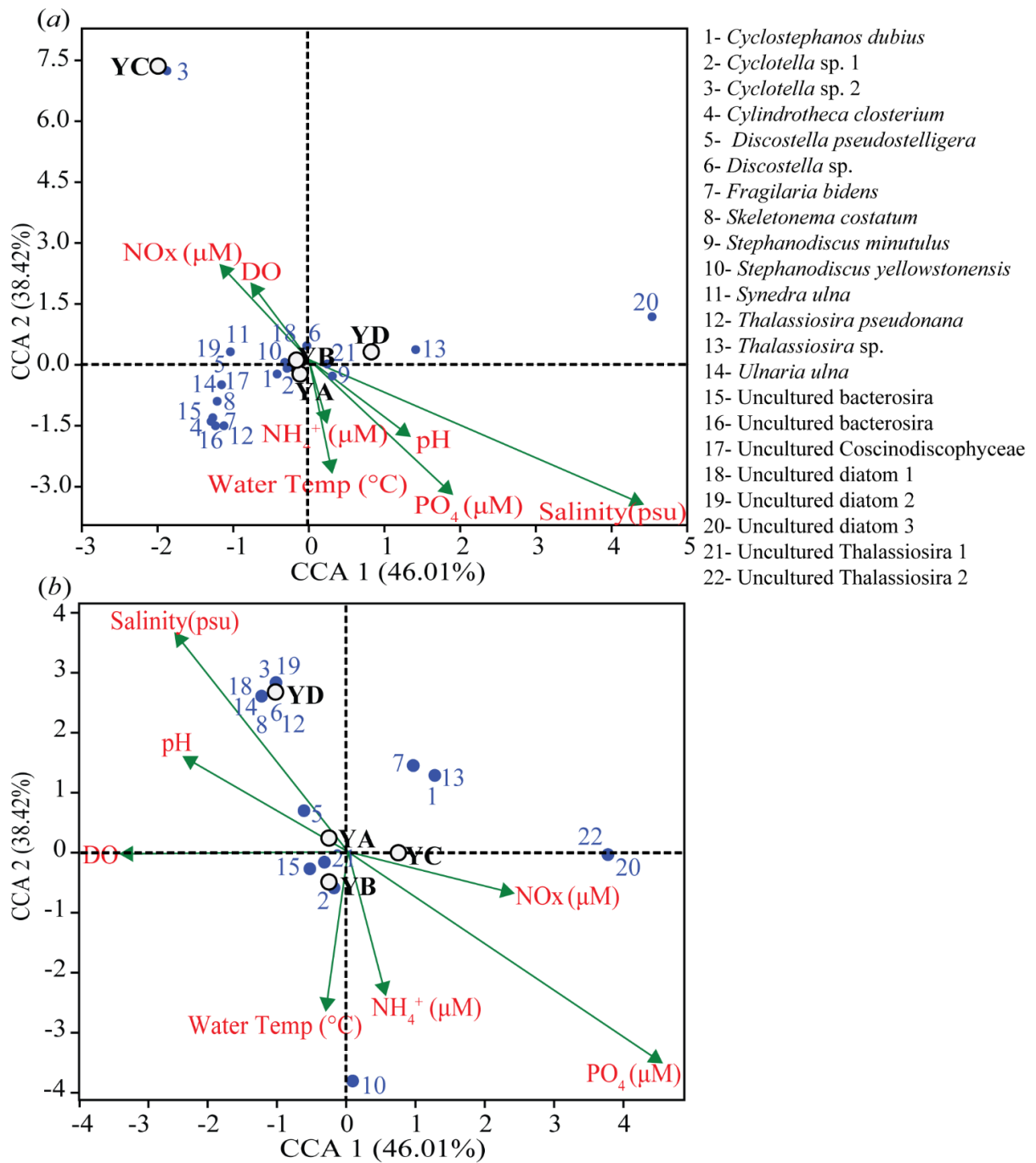


Fig. S2. Canonical Correspondence Analysis (CCA) plot showing the correlation between diatom community, sample locations and environmental variables in 12 March (a) and 27 March (b) 2015, in Yeongsan River. The plot was based on the number of diatoms OTU reads recovered. The green lines and labels correspond to the environmental conditions and nutrient concentrations, the blue dots represent individual taxa, and the white dots represent sampling locations.

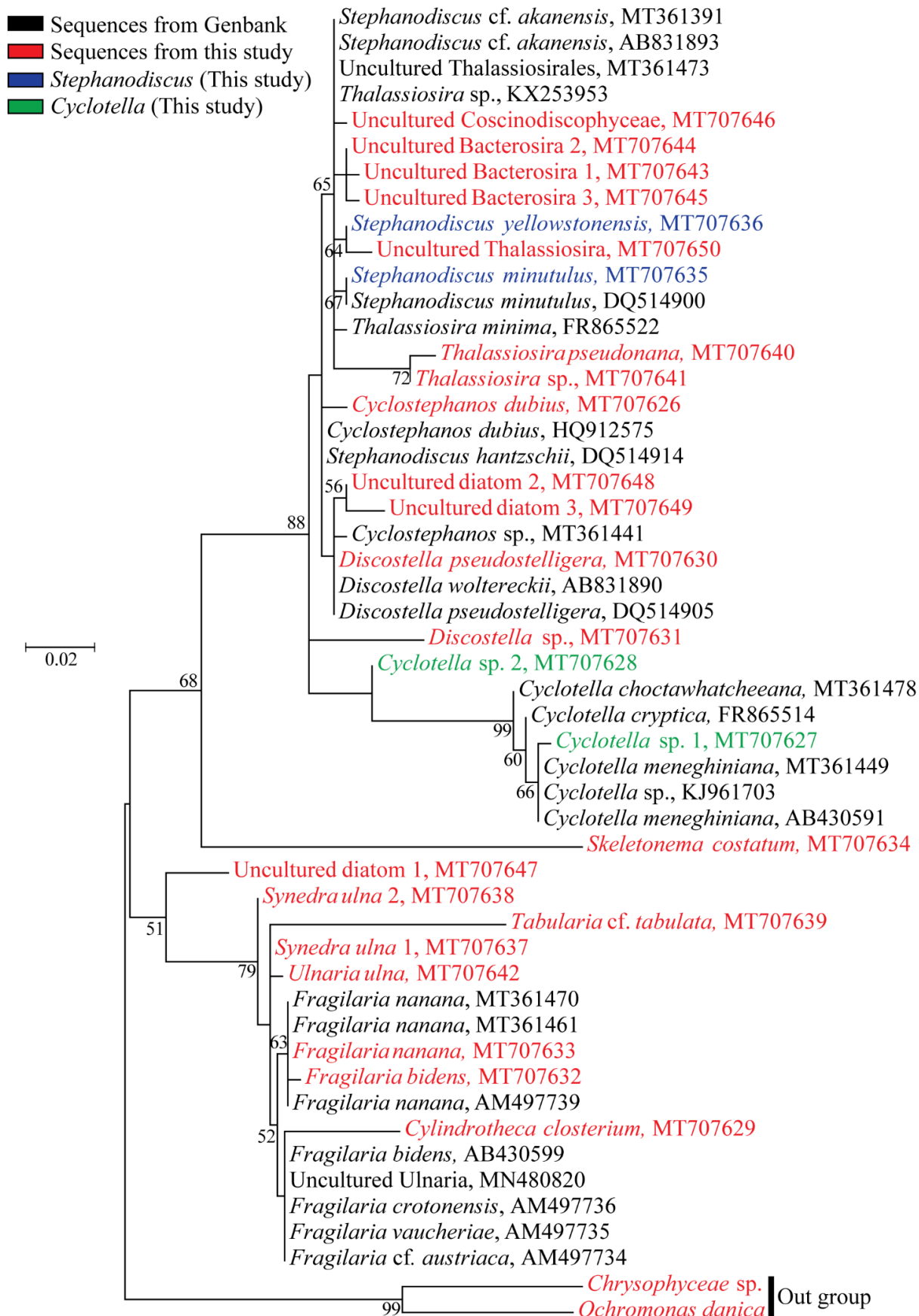


Fig. S3. Maximum Likelihood (ML) phylogenetic tree of reference taxa of diatoms detected from Yeongsan River in this study (marked in red, blue and green colors) and the reference sequences retrieved from GenBank database (marked in black color). Bootstrap values derived from 1000, replicates are given at respective nodes as percentages. The phylogenetic tree was rooted to two chrysophytes (*Chrysophyceae* sp. and *Ochromonas danica*).

Table S1. Diatom OTU detected in Yeongsan River in 12 and 27 March 2015

Sequence ID	Diatom OTU	Accession number	12-Mar				27-Mar			
			YA	YB	Y C	Y D	YA	YB	YC	Y D
YS001	<i>Cyclostephanos dubius</i>	MT707626	43	51	0	13	59	0	46	0
YS002	<i>Cyclotella</i> sp. 1	MT707627	20	34	0	90	28	20	13	0
			8	1			1	6	7	
YS003	<i>Cyclotella</i> sp. 2	MT707628	2	9	3	3	40	1	3	1
YS004	<i>Cylindrotheca closterium</i>	MT707629	2	0	0	0	0	0	0	0
YS005	<i>Discostella pseudostelligera</i>	MT707630	21	58	0	12	68	20	13	0
YS006	<i>Discostella</i> sp.	MT707631	0	24	0	5	4	0	0	0
YS007	<i>Fragilaria bidens</i>	MT707632	4	0	0	0	9	0	7	0
YS008	<i>Fragilaria nanana</i>	MT707633	0	0	0	0	3	0	0	0
YS009	<i>Skeletonema costatum</i>	MT707634	3	1	0	0	0	0	0	0
YS010	<i>Stephanodiscus minutulus</i>	MT707635	2	1	0	1	0	5	2	0
YS011	<i>Stephanodiscus yellowstonensis</i>	MT707636	0	1	0	0	0	0	0	0
YS012	<i>Synedra ulna</i> 1	MT707637	0	1	0	0	1	0	0	0
YS013	<i>Synedra ulna</i> 1	MT707638	0	0	0	0	1	0	1	0
YS014	<i>Tabularia</i> cf. <i>tabulata</i>	MT707639	0	0	0	0	2	0	0	0
YS015	<i>Thalassiosira pseudonana</i>	MT707640	1	0	0	0	0	0	0	0
YS016	<i>Thalassiosira</i> sp.	MT707641	30	59	0	66	36	21	10	0
YS017	<i>Ulnaria ulna</i>	MT707642	3	0	0	0	0	0	0	0
YS018	Uncultured bacterosira 1	MT707643	1	0	0	0	0	0	0	0
YS019	Uncultured bacterosira 2	MT707644	0	0	0	0	1	0	0	0
YS020	Uncultured bacterosira 3	MT707645	1	0	0	0	0	0	0	0
YS021	Uncultured Coscinodiscophyceae	MT707646	6	6	0	0	0	0	46	0
YS022	Uncultured diatom 1	MT707647	0	1	0	0	10	0	0	0
YS023	Uncultured diatom 2	MT707648	0	17	0	0	0	0	5	0
YS024	Uncultured diatom 3	MT707649	0	0	0	26	0	0	0	0
YS025	Uncultured <i>Thalassiosira</i>	MT707650	4	6	0	3	11	6	4	0