

Table S1. Basic characteristics of the localities (No. – number of a sample; Cond. – specific conductance, $\mu\text{S cm}^{-1}$; T – temperature, $^{\circ}\text{C}$; Chl *a* – chlorophyll *a*, $\mu\text{g l}^{-1}$; TS – trophic state: O – oligotrophic, M – mesotrophic, E – eutrophic, H – hypereutrophic).

No.	Name	Coordinates	pH	Cond.	T	Chl <i>a</i>	TS
Hanoi							
1	Hồ Tien Sa (Tien Sa Reservoir) Ba Vi National Park	N21° 04.979' E105° 22.225'	8.2	74	28	30	H
2	Hồ Ao Vua (Ao Vua Reservoir)	N21° 05.802' E105° 22.484'	7.5	100	27	14	E
3	Van Hoa Commune, Ba Vi District	N21° 05.904' E105° 25.290'	8.1	136	28	34	H
4	Hồ Suối Hai (Suoi Hai Reservoir)	N21° 09.750' E105° 23.023'	7.8	155	27	48	H
5	Cam Linh Commune, Ba Vi District	N21° 09.790' E105° 23.115'	7.2	252	27	101	H
6	Hồ Cẩm Quỳ (Cam Quy Reservoir)	N21° 08.923' E105° 20.877'	7.3	162	28	114	H
7	Đầm Long (Dam Long Wetland)	N21° 10.279' E105° 20.021'	7.1	182	27	137	H
8	Đầm Long (Dam Long Wetland)	N21° 10.270' E105° 19.993'	7.0	216	27	233	H
9	Đầm Long (Dam Long Wetland)	N21° 10.563' E105° 19.059'	8.0	181	28	53	H
10	Hồ Thạch Sa (Thach Sa Reservoir)	N21° 01.211' E105° 19.191'	8.3	227	28	72	H
11	Khanh Thuong Commune, Ba Vi District	N21° 00.965' E105° 19.326'	8.0	278	29	49	H
12	Sông Đà (Da River)	N21° 05.197' E105° 18.924'	7.8	153	25	3	O
13	Đập Vồng (Dap Vong Reservoir)	N21° 03.177' E105° 18.391'	8.5	161	29	61	H
14	Minh Quang Commune, Ba Vi District	N21° 02.514' E105° 18.464'	8.2	154	29	102	H
15	Khanh Thuong Commune, Ba Vi District	N21° 01.976' E105° 18.701'	8.2	69	29	30	H
16	Khanh Thuong Commune, Ba Vi District	N21° 01.917' E105° 19.243'	7.2	167	28	209	H
17	Hồ Xuân Khanh (Xuan Khanh Reservoir)	N21° 08.133' E105° 26.106'	7.6	216	64	29	H
18	Hồ Đồng Mô (Dong Mo Reservoir)	N21° 04.575' E105° 28.453'	7.7	97	27	17	E
19	Hồ Duy Minh 2 (Duy Minh 2 Reservoir)	N21° 00.528' E105° 31.266'	7.3	587	27	20	E
20	Hồ Hòa Lạc (Hoa Lac Reservoir)	N20° 59.354' E105° 30.439'	8.2	141	27	23	E
Ninh Binh Province							
21	Hồ Mạc (Mac Lake) Cúc Phương National Park	N20° 15.470' E 105° 42.432'	8.3	206	29	42	H

22	Small lake in the forest in Cúc Phương National Park	N20° 19.304' E 105° 37.616'	7.7	539	28	8	M
23	Yen Quang Reservoir near Cúc Phương National Park	N20° 17.099' E 105° 43.492'	9.0	177	29	36	H
24	Aquaculture pond 1, Van Phuong Commune, Nho Quan District	N20° 17.213' E 105° 45.155'	9.2	262	31	174	H
25	Hồ Yên Quang (Yen Quang Reservoir)	N20° 16.908' E 105° 43.836'	8.2	368	31	24	E
26	Unnamed water body 1	near	7.9	434	34	30	H
27	Unnamed water body 2	near	8.1	347	32	9	M
28	Aquaculture pond 2, Van Phuong Commune, Nho Quan District	N20° 17.250' E 105° 45.096'	7.9	343	31	52	H
29	Tràng An (Trang An Wetland – The World Cultural and Natural Heritage)	N20° 15.662' E 105° 53.911'	7.8	380	29	6	M
30	Unnamed reservoir in Ninh Binh city	N20° 15.417' E 105° 56.784'	8.3	870	31	22	E
31	Vân Long (Van Long Wetland Nature Reserve)	N20° 21.933' E 105° 52.919'	7.4	480	34	15	E
32	Temporary water body 3	N20° 21.860' E 105° 52.800'	7.3	343	35	28	H
33	Unnamed water body 3	N20° 21.826' E 105° 52.866'	7.1	668	35	11	E
34	Unnamed water body 4	N20° 21.772' E 105° 52.985'	8.6	265	37	46	H
35	Unnamed water body 5	N20° 21.704' E 105° 52.918'	7.1	333	33	16	E
36	Unnamed water body 6 in the rice field, Gia Van Commune, Gia Vien District	N20° 21.703' E 105° 52.910'	7.0	335	34	18	E
37	Unnamed water body 7 in the rice field, Gia Van Commune, Gia Vien District	N20° 21.702' E 105° 52.915'	7.0	336	33	24	E
38	Unnamed water body 8 in the rice field, Gia Van Commune, Gia Vien District	N20° 21.705' E 105° 52.917'	6.9	382	34	27	H
39	Đầm Cút (Dam Cut Wetland)	N20° 22.899' E 105° 51.095'	8.4	239	33	12	E
40	Đầm Cút (Dam Cut Wetland)	N20° 22.906' E 105° 51.070'	7.4	453	30	32	H
41	Đầm Cút (Dam Cut Wetland)	N20° 22.894' E 105° 51.068'	8.2	222	35	26	H
Thanh Hoa Province							
42	Hồ Đồng Bể (Dong Be Reservoir)	N19° 45.486' E 105° 32.524'	8.2	134	33	16	E
43	Hồ Lai Triều (Lai Trieu Reservoir)	N19° 47.701' E 105° 31.375'	8.2	98	33	38	H

	Unnamed water body 9, swamp area						
44	near a small river, Quang Yen Commune, Quang Xuong District	N19° 44.108' E105° 44.496'	7.0	263	31	18	E
45	Unnamed water body 10, Quang Yen Commune, Quang Xuong District	near	7.4	360	37	111	H
46	Unnamed water body 11, Quang Yen Commune, Quang Xuong District	near	7.8	955	35	19	E
47	Unnamed water body 12, Quang Yen Commune, Quang Xuong District	near	7.1	835	35	38	H
48	Unnamed water body 13, Quang Thinh Commune, Quang Xuong District	N19° 45.627' E105° 45.976'	7.4	91	34	22	E
49	Sông Hoàng Giang (Hoang Giang River)	N19° 43.337' E105° 42.762'	7.0	154	31	12	E
50	Pond 3, Hai Van Commune, Nhu Thanh District	N19° 36.865' E105° 31.965'	7.2	96	32	6	M
51	Hồ Sông Mực 2 (Song Muc 2 Reservoir) in Ben En National Park	N19° 36.995' E105° 32.061'	7.3	92	31	8	M
52	Pond 4, Hai Van Commune, Nhu Thanh District	N19° 36.981' E105° 32.094'	7.1	92	33	7	M
53	Hồ Yên Mỹ (Yen My Reservoir)	N19° 29.694' E105° 39.882'	8.1	120	33	5	M
54	Pond 5 in the floodplain of the Nam River in Thanh Hoa city	N19° 50.120' E105° 47.383'	7.2	468	32	30	H
Bac Kan Province							
55	Hồ Ba Be (Ba Be Lake), Ba Be National Park	N22° 23.718' E105° 37.969'	7.9	174	22	n/a	n/a

Table S2. Distribution of *Mallomonas* and *Synura* species in water bodies of Hanoi. Localities numbers are listed in the Table S1, “+” indicates the presence of taxon.

Taxon	Localities																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<i>Mallomonas caudata</i>		+										+						+		
<i>M. ceylanica</i>											+									
<i>M. crassisquama</i>		+																		
<i>M. hexareticulata</i>			+		+	+								+						
<i>M. grata</i>						+														
<i>M. kenyana</i>	+		+	+		+			+	+	+			+		+	+	+	+	+
<i>M. loricata</i>							+													
<i>M. mangofera</i>						+														
<i>M. morrisonensis</i>																+				
<i>M. peronoides</i>											+									
<i>M. portae-ferreae</i>											+									
<i>M. pseudomatvienkoae</i>															+					
<i>M. rasilis</i>																	+			
<i>M. tonsurata</i>		+										+	+					+		
<i>M. vietnamica</i>												+								
<i>Mallomonas</i> sp. 1	+			+														+		
<i>Mallomonas</i> sp. 2									+											
<i>Mallomonas</i> sp. 6								+												
<i>Synura</i> sp. 1											+				+	+	+	+		
Total	2	3	2	2	1	4	1	1	2	1	5	3	1	2	2	3	3	5	1	1

Table S3. Distribution of *Mallomonas* and *Synura* species in water bodies of Ninh Binh Province. Localities numbers are listed in the Table S1, “+” indicates the presence of taxon.

Taxon	Localities																				
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
<i>Mallomonas acaroides</i>					+																
<i>M. ceylanica</i>									+											+	
<i>M. favosa</i> f. <i>favosa</i>									+												
<i>M. favosa</i> f. <i>gemina</i>																	+				
<i>M. grata</i>																				+	
<i>M. guttata</i>											+										
<i>M. kenyana</i>				+			+	+	+		+	+	+	+				+	+	+	
<i>M. mangofera</i>													+					+	+		
<i>M. cf. mangofera</i> var. <i>reticulata</i>		+	+					+			+				+	+	+				
<i>M. matvienkoeae</i> var. <i>siveri</i>									+		+										
<i>M. morrisonensis</i>		+																			
<i>M. paragrandis</i>	+								+												
<i>M. parvula</i>											+										
<i>M. peronoides</i>	+				+			+	+		+	+	+	+	+	+	+	+	+		
<i>M. portae-ferreae</i>				+	+										+	+					
<i>M. pseudocratis</i>									+		+										
<i>M. rasilis</i>			+						+					+						+	
<i>M. siderea</i>																				+	
<i>M. tonsurata</i>																					+
<i>Mallomonas</i> sp. 1	+								+		+									+	
<i>Mallomonas</i> sp. 3											+				+	+		+			
<i>Mallomonas</i> sp. 4																					
<i>Synura</i> sp. 1						+	+		+	+	+	+	+		+	+	+	+		+	
Total	3	2	2	2	3	1	2	3	10	1	10	3	4	3	5	5	5	5	2	7	1

Table S4. Distribution of *Mallomonas* and *Synura* species in water bodies of Thanh Hoa Province. Localities numbers are listed in the Table S1, “+” indicates the presence of taxon.

Taxon	Localities												
	42	43	44	45	46	47	48	49	50	51	52	53	54
<i>Mallomonas caudata</i>							+			+	+	+	
<i>M. crassisquama</i>		+					+			+	+	+	
<i>M. hexareticulata</i>							+	+					
<i>M. grata</i>													+
<i>M. kenyana</i>			+		+	+	+	+					+
<i>M. korshikovii</i>											+		
<i>M. lamii</i>			+				+	+					
<i>M. mangofera</i>			+				+	+					+
<i>M. mangofera</i> var. <i>foveata</i>				+									+
<i>M. cf. mangofera</i> var. <i>reticulata</i>					+								
<i>M. morrisonensis</i>			+										
<i>M. neoampla</i>			+				+						
<i>M. paragrandsis</i>			+								+		
<i>M. peronoides</i>			+	+			+	+					+
<i>M. portae-ferreae</i>			+										
<i>M. pseudomatvienkoae</i>			+										
<i>M. rasilis</i>	+	+											
<i>M. siderea</i>													+
<i>M. spinosa</i>			+										
<i>M. tonsurata</i>	+	+			+						+	+	
<i>Mallomonas</i> sp. 1	+	+								+	+		
<i>Mallomonas</i> sp. 2			+										
<i>Mallomonas</i> sp. 3			+	+				+					
<i>Mallomonas</i> sp. 6			+	+				+					
<i>Synura</i> sp. 1	+		+	+	+	+	+	+	+		+		
<i>Synura</i> sp. 2			+										
Total	4	4	15	5	4	2	9	8	1	3	7	3	6