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Supplementary Information of

Benthic diatoms in small Estonian lakes — primary niche substratum comparisons

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Table S1. List of diatom taxa observed on cobbles and macrophytes in studied 12 small Estonian lakes; (1 – Lake Kaiavere; 2- Lake Lahepera; 3 – Lake Löödla (2014); 4 – Lake Rõuge Suurjärv; 5 – Lake Uljaste; 6 – Lake Löödla (2016); 7 – Lake Pühajärv; 8 – Lake Kuremaa; 9 – Lake Tamula; 10 – Lake Ähijärv; 11 – Lake Tündre; 12 – Lake Jõksi; 13 – Lake Suurlaht)

Taxa	Cobbles	Macrophytes
<i>Achnantheidium minutissimum s.l.</i> (Kützing) Czarnecki	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
<i>Achnantheidium petersenii</i> (Hustedt) C.E. Wetzel, L. Ector, D.M. Williams & I. Jüttner 2019	1, 4, 8, 11, 13	4, 6, 8, 9, 12, 13
<i>Achnantheidium pusillum</i> (Grunow) Czarnecki 1996	2, 3, 4, 5, 6, 9, 10, 11, 12, 13	2, 3, 5, 10, 11
<i>Amphipleura pellucida</i> (Kützing) Kützing 1844	11	11
<i>Amphora copulata</i> (Kützing) Schoeman & R.E.M. Archibald 1986	3	2
<i>Amphora inariensis</i> Krammer 1980	7	
<i>Amphora ovalis</i> (Kützing) Kützing 1844	2, 4, 6, 10, 11, 12, 13	
<i>Amphora pediculus</i> (Kützing) Grunow 1875	2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13	1, 3, 6, 8, 9, 10, 11
<i>Amphora veneta</i> Kützing 1844	10, 13	
<i>Aneumastus pseudotusculus</i> (Hustedt) E.J. Cox & D.M. Williams 2000	6	
<i>Aneumastus tusculus</i> (Ehrenberg) D.G. Mann & A.J. Stickle 1990	7	

<i>Asterionella formosa</i> Hassall 1850	3	3, 4
<i>Brachysira neoexilis</i> Lange-Bertalot 1994	2	11
<i>Brachysira procera</i> Lange-Bertalot & Gerd Moser 1994	2	13
<i>Brebissonia lanceolata</i> (C. Agardh) R.K. Mahoney & Reimer 1986	9	
<i>Cavinula cocconeiformis</i> (W. Gregory ex Greville) D.G. Mann & A.J. Stickle 1990	13	
<i>Cavinula jaernefeltii</i> (Hustedt) D.G. Mann & A.J. Stickle 1990		3
<i>Cavinula pseudoscutiformis</i> (Hustedt) D.G. Mann & Stickle 1990	5, 6, 8, 10	
<i>Cavinula scutelloides</i> (W. Smith ex W. Gregory) Lange-Bertalot 1996	6, 7, 10, 11, 13	13
<i>Cocconeis neothumensis</i> Krammer 1990	3, 4, 6, 7, 8, 10, 11	7, 10
<i>Cocconeis pediculus</i> Ehrenberg 1838	1, 5, 6, 7, 8, 9, 10, 11, 13	1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13
<i>Cocconeis placentula</i> incl. varieties Ehrenberg	2, 3, 4, 8, 13	2, 3, 4, 6
<i>Craticula halophila</i> (Grunow) D.G. Mann 1990	11, 13	
<i>Craticula subminuscula</i> (Manguin) C.E. Wetzel & Ector 2015	5, 9, 10, 11	1
<i>Ctenophora pulchella</i> (Ralfs ex Kützing) D.M. Williams & Round 1986		13
<i>Cyclotella comensis</i> Grunow 1882		4

<i>Cyclotella meneghiniana</i> Kützing 1844	11	
<i>Cyclotella ocellata</i> Pantocsek 1901	11, 12	
<i>Cymbella affinis</i> Kützing 1844	1, 2, 3, 8, 10, 12	1, 2, 3, 4, 9, 10, 13
<i>Cymbella aspera</i> (Ehrenberg) Cleve 1894	7, 10, 11, 13	
<i>Cymbella cistula</i> (Ehrenberg) O. Kirchner 1878	1, 3	1
<i>Cymbopleura incerta</i> (Grunow) Krammer 2003		9
<i>Cymbella lanceolata</i> C. Agardh 1830	3, 11, 13	3
<i>Delicatophycus delicatulus</i> (Kützing) M.J. Wynne 2019	13	
<i>Denticula tenuis</i> Kützing 1844	10	13
<i>Diatoma moniliformis</i> (Kützing) D.M. Williams 2012	12	
<i>Diploneis ovalis</i> (Hilse) Cleve 1891	11	
<i>Encyonema affine</i> Metzeltin & Krammer 1997	7	
<i>Encyonema lacustre</i> (C. Agardh) Pantocsek 1901	7	4
<i>Encyonema lange-bertalotii</i> Krammer 1997	8, 9, 10, 12, 13	1, 2, 3, 6, 7, 8, 10
<i>Encyonema minutum</i> (Hilse) D.G. Mann 1990	2, 3, 5, 7, 8, 9, 11, 13	1, 3, 11
<i>Encyonema silesiacum</i> (Bleisch) D.G. Mann 1990	1, 2, 3, 4, 8, 9, 10, 12	1, 2, 3, 4, 5, 10
<i>Encyonema ventricosum</i> (C. Agardh) Grunow 1875	3	
<i>Encyonopsis microcephala</i> (Grunow) Krammer 1997	1, 3, 4, 6, 12, 13	3, 4, 13

<i>Encyonopsis minuta</i> Krammer & E. Reichardt 1997	5, 6, 8, 10, 12, 13	4
<i>Encyonopsis subminuta</i> Krammer & E. Reichardt 1997	1, 2, 3, 6, 10, 12, 13	1, 2, 3, 6, 8, 9, 12
<i>Epithemia adnata</i> (Kützing) Brébisson 1838	2, 3, 4, 6, 7, 8, 9, 10, 11	2, 3, 4, 6, 7, 9
<i>Epithemia argus</i> (Ehrenberg) Kützing 1844		4
<i>Epithemia gibba</i> (Ehrenberg) Kützing 1844	2, 3, 4, 6, 9, 10, 11, 13	4, 9, 13
<i>Epithemia sorex</i> Kützing 1844	2, 3, 4, 7, 8, 9, 10, 13	6, 9, 13
<i>Epithemia turgida</i> (Ehrenberg) Kützing 1844	7	
<i>Eucoconeis flexella</i> (Kützing) F. Meister 1912	5, 10	
<i>Eucoconeis laevis</i> (Østrup) Lange-Bertalot 1999	4, 6, 7, 12	
<i>Eunotia bilunaris</i> (Ehrenberg) Schaarschmidt 1880	1, 11	3, 5, 6, 7, 9, 11, 12
<i>Eunotia exigua</i> (Brébisson ex Kützing) Rabenhorst 1864		7, 11, 12
<i>Eunotia incisa</i> W. Smith ex W. Gregory 1854		6
<i>Eunotia minor</i> (Kützing) Grunow 1881		1, 11
<i>Fallacia monoculata</i> (Hustedt) D.G. Mann 1990	5, 10, 11, 13	
<i>Fragilaria capucina</i> Desmazieres 1830	9	4
<i>Fragilaria crotonensis</i> Kitton 1869	5, 6, 8, 10, 12	6, 7, 8, 10, 11
<i>Fragilaria nanoides</i> Lange-Bertalot 1996		3, 5, 10
<i>Fragilaria radians</i> (Kützing) D.M. Williams & Round	5, 9, 10	1, 2, 13

1988

<i>Fragilaria rumpens</i> (Kützing) G.W.F. Carlson 1913	1, 7, 8	1, 11
<i>Fragilaria tenera</i> (W.Smith) Lange-Bertalot 1980		2, 3, 4
<i>Fragilaria tenera</i> var. <i>nanana</i> (Lange-Bertalot) Lange-Bertalot & S. Ulrich 2014	4, 11, 12, 13	11
<i>Fragilaria vaucheriae</i> (Kützing) J.B. Petersen 1938	9, 10, 11	2, 3, 9
<i>Fragilariforma constricta</i> (Ehrenberg) D.M. Williams & Round 1988		11, 12
<i>Fragilariforma mesolepta</i> (Rabenhorst) Kharitonov 2005	9, 10	2, 3, 9
<i>Gogorevia exilis</i> (Kützing) Kulikovskiy & Kociolek 2020	2, 3, 4, 5, 6, 7, 9, 11	3, 10
<i>Gomphonella olivacea</i> (Hornemann) Rabenhorst 1853	2	2, 3
<i>Gomphonema acuminatum</i> Ehrenberg 1832	5, 9, 11	2, 5, 11
<i>Gomphonema angustatum</i> (Kützing) Rabenhorst 1864	1, 6, 8, 10, 11, 12	1, 2, 7, 10, 12
<i>Gomphonema gracile</i> Ehrenberg 1838	2, 3, 7, 11, 12	1, 2
<i>Gomphonema minutum</i> (C. Agardh) C. Agardh 1831		4, 6, 8, 9, 13
<i>Gomphonema olivaceum</i> (Hornemann) Ehrenberg 1838	1	11
<i>Gomphonema parvulum</i> (Kützing) Kützing 1849	2, 3, 4, 5, 6, 8, 9, 11, 12, 13	2, 3, 5, 6, 11, 13
<i>Gomphonema pumilum</i> (Grunow) E. Reichardt & Lange-Bertalot 1991	2, 3	2, 3
<i>Gomphonema truncatum</i> Ehrenberg 1832	2	2, 13
<i>Grunowia sinuata</i> (Thwaites ex W. Smith) Rabenhorst	1	1

1864

<i>Halamphora coffeiformis</i> (C. Agardh) Mereschkowsky 1903	10	13
<i>Hannaea arcus</i> (Ehrenberg) R.M. Patrick 1966	1	1
<i>Hippodonta capitata</i> (Ehrenberg) Lange-Bertalot, Metzeltin & Witkowski 1996	4, 12, 11	
<i>Karayevia clevei</i> (Grunow) Bukhtiyarova 1999	3, 7, 11	
<i>Lindavia bodanica</i> (Eulenstein ex Grunow) T. Nakov, Guillory, Julius, Theriot & Alverson 2015	10	
<i>Lindavia radiosa</i> (Grunow) De Toni & Forti 1900	7	
<i>Mastogloia baltica</i> Grunow 1880	13	13
<i>Mastogloia elliptica</i> (C. Agardh) Cleve 1893	13	
<i>Mastogloia lacustris</i> (Grunow) Grunow 1880	10	
<i>Mastogloia smithii</i> Thwaites ex W. Smith 1856		13
<i>Melosira varians</i> C. Agardh 1827	7	
<i>Navicula antonii</i> Lange-Bertalot 2000		4
<i>Navicula capitatoradiata</i> H. Germain ex Gasse 1986	4, 5, 6, 9, 10, 11, 13	2, 5, 6, 9, 10
<i>Navicula cryptocephala</i> Kützing 1844	6, 10, 11, 12, 13	
<i>Navicula cryptotenella</i> Lange-Bertalot 1985	1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13	1, 3, 4, 6, 7, 8, 9, 10, 11, 13
<i>Navicula cryptotenelloides</i> Lange-Bertalot 1993	7	

<i>Navicula erifuga</i> Lange-Bertalot 1985	4	
<i>Navicula gregaria</i> Donkin 1861	6, 7, 8, 10, 12, 13	13
<i>Navicula metareichardtiana</i> Lange-Bertalot & Kusber 2019	1, 2, 7	1, 2, 3, 4
<i>Navicula oppugnata</i> Hustedt 1945		4
<i>Navicula radiosa</i> Kützing 1844	1, 4, 5, 8, 10, 11, 12	1, 2, 4
<i>Navicula reinhardtii</i> (Grunow) Grunow 1880	4	
<i>Navicula slesvicensis</i> Grunow 1880	12, 13	
<i>Navicula veneta</i> Kützing 1844	4	3
<i>Navicula vulpina</i> Kützing 1844	10	
<i>Navicula menisculus</i> Schumann 1867	4	
<i>Nitzschia acidoclinata</i> Lange-Bertalot 1976	9	
<i>Nitzschia amphibia</i> Grunow 1862	9, 13	
<i>Nitzschia angusteforaminata</i> Lange-Bertalot 1980	6, 7	
<i>Nitzschia dissipata</i> (Kützing) Rabenhorst 1860	2, 3, 4, 9, 10, 11, 12, 13	2, 3, 4, 10
<i>Nitzschia fonticola</i> (Grunow) Grunow 1881	1, 3, 4	2, 3, 6, 9
<i>Nitzschia frustulum</i> (Kützing) Grunow 1880	1, 4, 8, 9, 12, 13	2, 4, 9, 13
<i>Nitzschia gracilis</i> Hantzsch 1860		4
<i>Nitzschia inconspicua</i> Grunow 1862	5	

<i>Nitzschia intermedia</i> Hantzsch ex Cleve & Grunow 1880	13	
<i>Nitzschia lacuum</i> Lange-Bertalot 1980		10
<i>Nitzschia liebetruthii</i> Rabenhorst 1864	11	
<i>Nitzschia linearis</i> W. Smith 1853		13
<i>Nitzschia palea</i> var. <i>debilis</i> (Kützing) Grunow 1880	9, 10, 13	
<i>Nitzschia palea</i> (Kützing) W. Smith 1856	3, 5, 6, 7, 9, 10, 11, 12, 13	2, 3, 4, 5, 7, 9, 11, 13
<i>Nitzschia perminuta</i> Grunow 1881	5, 8, 9, 11, 13	6, 9, 10, 11, 13
<i>Nitzschia pusilla</i> Grunow 1862	4	
<i>Nitzschia recta</i> Hantzsch ex Rabenhorst 1862	1, 3, 10, 11	2
<i>Nitzschia vermicularis</i> (Kützing) Hantzsch 1860	4	
<i>Parlibellus protractus</i> (Grunow) Witkowski, Lange-Bertalot & Metzeltin 2000	3	
<i>Placoneis anglophila</i> (Lange-Bertalot) Lange-Bertalot 2005		4
<i>Placoneis clementis</i> (Grunow) E.J. Cox 1988		4
<i>Planothidium delicatulum</i> (Kützing) Round & Bukhtiyarova 1996		4
<i>Planothidium frequentissimum</i> (Lange-Bertalot) Lange-Bertalot 1999	3, 4, 6, 7, 8, 10	1, 2, 3, 6, 7, 8, 9
<i>Planothidium lanceolatum</i> (Brébisson ex Kützing) Lange-Bertalot 1999	4, 5, 6, 7, 9, 10, 11, 12, 13	4
<i>Platessa conspicua</i> (Ant. Mayer) Lange-Bertalot 2004		10

<i>Platessa oblongella</i> (Østrup) C.E. Wetzel, Lange-Bertalot & Ector 2017	2, 4	2, 3
<i>Psammothidium bioretii</i> (H. Germain) Bukhtiyarova & Round 1996	5	
<i>Pseudostaurosira parasitica</i> (W. Smith) E. Morales 2003	6, 7, 8, 9, 10, 11, 12	8, 10
<i>Pseudostaurosira subconstricta</i> (Grunow) Kulikovskiy & Genkal 2011	7, 8, 9	
<i>Rhoicosphenia abbreviata</i> (C. Agardh) Lange-Bertalot 1980	9, 11	
<i>Sellaphora atomoides</i> (Grunow) Wetzel & Van de Vijver 2015	4, 5, 6, 7, 8, 9, 10, 11, 12, 13	
<i>Sellaphora pupula</i> (Kützing) Mereschkovsky 1902	2, 3, 11, 13	2, 3, 4, 10
<i>Staurosira binodis</i> (Ehrenberg) Lange-Bertalot 2011	10	2
<i>Staurosira construens</i> Ehrenberg 1843		2, 10
<i>Staurosira leptostauron</i> (Ehrenberg) Kulikovskiy & Genkal 2011	3, 7, 9, 10, 11, 13	1, 2, 3, 7
<i>Staurosira venter</i> (Ehrenberg) Cleve & J.D. Möller 1879	3, 6, 7, 8, 9, 10, 11	2, 3, 5
<i>Staurosirella pinnata</i> (Ehrenberg) D.M. Williams & Round 1988	4	4
<i>Surirella angusta</i> Kützing 1844	4	
<i>Tabellaria flocculosa</i> (Roth) Kützing 1844	2, 3, 5, 7, 10, 11, 12	2, 3, 5, 7, 10, 11
<i>Tabellaria ventricosa</i> Kützing 1844	4	

<i>Tryblionella angustata</i> W. Smith 1853	10	1
<i>Ulnaria acus</i> (Kützing) Aboal 2003		4
<i>Ulnaria ulna</i> (Nitzsch) Compère 2001	8, 9, 12	2
