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Jeffrey R. Johansen, *John Carroll University*

Rex L. Lowe, *Bowling Green State University*

Susan Carty, *Heidelberg College*

Karolina Fucikova, *John Carroll University*

Catherine E. Olsen, *John Carroll University*, et al.

New Algal Species Records for Great Smoky Mountains National Park, with an Annotated Checklist of all Reported Algal Taxa for The Park

Jeffrey R. Johansen^{1,*}, Rex L. Lowe², Susan Carty³, Karolina Fučíková¹, Catherine E. Olsen¹, Margaret H. Fitzpatrick¹, Jennifer A. Ress², and Paula C. Furey²

Abstract - Great Smoky Mountains National Park, which straddles the Tennessee–North Carolina state-line is a biologically diverse region which has recently become the site of an All Taxon Biodiversity Inventory, an effort to chronicle species diversity by documenting all species in all phyla present within park boundaries. As a result of studies within the last two years, we have added 415 new algal taxa records. With records reported in 2004, we now have documented a total of 1000 taxa in the park. This paper summarizes all algal species found to date.

Introduction

Great Smoky Mountains National Park (GSMNP) is the largest contiguous preserve east of the Rocky Mountains. Although settled and logged for many years, the Park has retained much of its diverse flora and fauna due to the rugged terrain and long period of protection since becoming a national park in 1934. The north–south orientation of the Park, its complex geology, elevational variety, and moist climate contribute to high species biodiversity. Because of the mountainous terrain, old-growth forest patches that have never been cleared for lumber still exist within park, and serve as pristine refugia for some species.

In December of 1997, the All Taxon Biodiversity Inventory (ATBI) was undertaken to identify every species in every phylum present in the park (Pederson 1999). As of August 2001, 450 vertebrate, 2250 fungal, 2816 higher plant, and 4280 invertebrate species records had been documented in the Park (Sharkey 2001).

Algal records were compiled and published by Johansen et al. (2004). The 585 taxa reported in that publication included historical published records, historical gray literature, and recent collection efforts. The historical literature for the algae in the Park is summarized in that publication. Other publications based on unusual records have since been published or have been accepted for publication (Casamatta et al. 2006, Johansen et al. 2005).

¹Department of Biology, John Carroll University, University Heights, OH 44118.

²Department of Biological Science, Bowling Green State University, Bowling Green, OH 43403. ³Department of Biology, Heidelberg College, Tiffin, OH 44883. *Corresponding author - johansen@jcu.edu.

The purpose of this paper is to report all new records and to present the taxa in a more phylogenetic context based on recent systematic studies.

Materials and Methods

Efforts in recent years have focused on several habitats within the Park. As became clear in Gomez et al. (2003), moist aerial habitats in the Park (particularly seeps, wet rock faces, and waterfall splash zones) are especially rich in interesting species. We made special efforts to sample these habitats, and the habitats studied since the Gomez (2002) study are listed in Appendix A. The other understudied habitats were lentic, and included some small standing bodies of water in Cades Cove, as well as the northern shoreline of Fontana Lake, which contains the Park boundary in its deepest course. We studied both the littoral and pelagic zones of Fontana Lake. Other miscellaneous sites such as waterfalls, sinks and streams from less-accessable areas of GSMNP were sampled as well. Sites were found with the help of maps and guidebooks (Anonymous 1994, 1998).

While in the field, all samples were divided into portions for fresh examination and preservation. A rough portion of each was transferred to polycarbonate bottles, preserved in 2% glutaraldehyde, and kept under refrigeration for the duration of the study. Diatom slides were made from all samples for future analysis. All taxa were examined and photographed using Olympus BX51, Olympus B-Max, and Zeiss Axiophot photomicroscopes with high resolution Nomarski DIC optics. Recently collected materials are still being used for continued study, but will eventually be deposited at the California Academy of Sciences (both preserved material and diatom slides). Images and drawings of most taxa exist and will be illustrated in several taxon-specific floras to be published at the conclusion of the study.

Several diatom taxa, particularly those with structure too fine to discern in light microscopes, were also examined with a high resolution Hitachi HHS-2R scanning electron microscope (SEM) at Bowling Green State University (BGSU). Diatoms were cleaned in boiling nitric acid and air dried onto cover glasses. Each cover glass was mounted on a specimen stub, sputter-coated with 10 nm gold-palladium alloy prior to SEM analysis. Preserved samples that contained dinoflagellates were dehydrated in a graded alcohol series, critical-point dried, sputter-coated with gold-palladium alloy, then studied in the BGSU SEM microscope.

Taxonomic determinations were made using standard references. For cyanobacteria, Desikachary (1959), Geitler (1932), Komárek and Anagnostidis (1999, 2005), and Starmach (1966) were the primary references for species, with generic assignments following the recent revisions of Komárek and Anagnostidis (Anagnostidis and Komárek 1985, 1988, 1990; Komárek and Anagnostidis 1986, 1989). References used for identifying green algae were diverse (Croasdale and Flint 1986, 1988; Croasdale et al. 1994; Dillard 1990, 1991a, 1991b, 1993; Ettl and Gärtner 1995; Komárek and Fott 1983;

Lokhorst 1996). Diatoms were also identified using a number of texts (Krammer 1997a, 1997b; Krammer and Lange-Bertalot 1986, 1988, 1991a, 1991b; Lange-Bertalot 2001; Lange-Bertalot and Metzeltin 1996; Patrick and Reimer 1966, 1975). For tribophytes and eustigmatophytes, Ettl and Gärtner (1995) was the primary resource.

Placement of cyanobacteria in higher-level taxa follows Hoffmann et al. (2005). This new classification is based on sequence-based phylogenies as well as ultrastructural and morphological criteria. It represents a radical departure from classification schemes of the 20th century, but we concur with Hoffmann et al. (2005) that this system is superior. Placement of diatom taxa in higher taxonomic groups follows the system of Round et al. (1990). Placement of coccoid chlorophyte genera in higher-level taxa is problematic. We followed the scheme of Graham and Wilcox (2000), informed by a number of recent phylogenetic studies (Booton et al. 1998a 1998b; Friedl and Zeltner 1994; Hanagata 1998; Huss et al. 1999; Lewis 1997). Coccoid taxa known to belong in the Trebouxiophyceae were placed in the Trebouxiales. Coccoid taxa known to have directly opposite (DO) flagellar ultrastructure, or belong to that clade based upon DNA sequence data, were placed provisionally in the Sphaeropleales. The Chlorococcales contains the coccoid taxa with the clock-wise orientation of flagellar roots and those azosporic taxa sharing sequence similarity with those species. Additionally, we found the ITIS website *Catalogue of Life: 2005 Annual Checklist* (<http://annual.sp2000.org/2005/search.php>) to be especially helpful in identifying higher-level taxonomy and correct author designations.

Results and Discussion

With the combination of recent and older records, the park now has a total of 1000 algal species records (Appendix B): 190 Cyanobacteria, 108 Chlorophyta (Chlorophyceae, Trebouxiophyceae, Ulvophyceae), 137 Charophyta (Klebsormidiophyceae, Zygnematophyceae), 21 Dinophyta, 19 Euglenophyta, 1 Cryptophyta, and 5 Rhodoplantae (Cyanidiophyta, Rhodophyta). Kingdom Stramenopila (formerly synonymous with Heterokontophyta) included the following numbers of taxa in eight phyla: 3 Chrysophyta, 7 Synurophyta, 1 Prymnesiophyta, 1 Raphidiophyta, 16 Tribophyta, 2 Eustigmatophyta, 488 Bacillariophyta, and 1 Phaeophyta. These totals include 82 taxa ("sp." or as "cf." taxa) which could be recognized as distinct, but which could not be identified with confidence to species. All of these uncertain taxa are potentially new to science.

In the process of examining the algae, we encountered one taxon that was morphologically similar to *Merismopedia trolleri* Bachman. However, the color and thylakoid structure were incorrect for that taxon (iridescent purplish pink), and we were able to subsequently identify this distinctive bacterium as *Thiopedia rosea* Vinogradskij (Appendix B).

Since Johansen et al. (2004), we have found representatives of six phyla which were not reported previously. These include Cyanidiophyta, Prymnesiophyta, Raphidophyta, Phaeophyta, and Cryptophyta. With 16 phyla represented, the prokaryotic and eukaryotic algae demonstrate deep branching diversity. At this point, all existing freshwater algal phyla are represented within the park.

The habitats with richest algal diversity in the park are the subaerial seeps and waterfall splash zones. We have found most of our taxa in these habitats. This may be due to the fact that the streams in the park are almost all high-gradient, thoroughly scoured, nutrient-poor streams with limited ecological variability. Algae in the streams and rivers are mostly tightly attached to the rocky substrate and are very patchy in distribution as well as difficult to sample (*Chamaesiphon* spp., *Heribaudiella* sp., and *Achnantheidium* are good examples). More collection effort in the streams could potentially yield more taxa. The park is especially depauperate in lentic habitats, and this may be the cause for the absence of some common cosmopolitan genera and species. Fontana Lake is the only lentic habitat of any size. A few marshes, a sinkhole, and a black gum swamp are the only other still-water habitats. We have not yet studied the algae of the soils or aerophytic dry habitats such as tree bark and rocks. The subaerial habitats will likely yield the most new taxa with the least collection effort.

Johansen et al. (2004) predicted that *Batrachospermum* would be found within the park, and indeed it was. We are currently working on the identity of the species of this genus, which was found in two watersheds within the park. Other taxa receiving special attention are a new species of *Draparnaldia* (Johansen and Lowe, 2007), as well as three putative new species of *Leptolyngbya* (*L. appalachiana*, *L. badia*, *L. nonconstricta*). Fučíková (in press) found one new species of sacoderm desmid in her studies. Thomas et al. (in press) found 14 new records plus 6 new species of gomphonemoid diatoms. These latter taxa are also the subjects of Johansen et al. (in press B). *Rexia erecta* (Casamatta et al. 2006) is a new genus and species of cyanobacteria described from the park, and we have also discovered a new genus of centric diatom in the Thalassiosiraceae (Johansen et al., in press A), given the provisional name in this manuscript "*Spicaticribra kingstonii*." These findings, as well as other new or rare taxa (Casamatta et al. 2006, Johansen et al. 2005), indicate that the Park is home to a distinctive algal flora that is worthy of preservation efforts.

As we build the species record list, we recognize that some taxa in our list have been incorrectly identified by past workers. For example, *Gomphonema rhombicum*, *G. ventricosum*, and *G. micropus* were reported in the 1970s based on the literature available at the time, but now we recognize that the organisms that likely represented those reports are new species or at least species described more recently. We have removed some of these

records from the list, but where we are not reasonably confident of incorrect identification, we have left the names on the list. Readers can make their own judgement concerning records by examining the date of the reports (Appendix B).

Johansen et al. (2004) made a number of new taxonomic combinations to reflect more recent generic concepts in diatoms. One of these taxonomic corrections was actually made prior to 2004. *Navicula mobiliensis* var. *minor* Patrick was transferred and elevated to *Luticola minor* (Patr.) Mayama (Mayama and Kawashima 1998), and is an earlier synonym of *Luticola naviculoides* Johansen in Johansen et al. (2004). The latter name is thus invalid, and we publish the correction here.

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Appendix A. Sites for which algae are reported in this paper. Site code is followed by a short description of the site, with county and state. When multiple habitat types were sampled, the site code has a number for each habitat type. Descriptions are based on the topographic trail map of the park (Anonymous 1998).

| Code | Site |
|--|--|
| Collection sites sampled since 2001 (some additionally sampled earlier): | |
| ABB | Andrews Bald Bog, below Clingmans Dome, Swain County, NC |
| AC | Abrams Creek, west end of park from Cades Cove to Chilhowee Lake, Blount County, TN |
| ACT | Alum Cave Trail, epilithic habitats between Arch Rock and Alum Cave, Sevier County, TN |
| AF | Abrams Falls, a large cascade in Abrams Creek, Blount County, TN |
| ANT | Anthony Creek, the easternmost tributary of Abrams Creek, Blount County, TN |
| BIG | Big Creek, aerial epilithic habitats in drainage, east end of park, Haywood County, NC |
| CAD1 | Cades Cove, iris fen, Bount County, TN |
| CAD2 | Cades Cove, sink hole, Blount County, TN |
| CAD3 | Cades Cove, bubbling spring, Blount County, TN |
| CAT1 | Cataloochee Road, waterfalls by side of dirt road, Longarm Quartzite, Haywood County, NC |
| CAT2 | Cataloochee Road, wet rocks by paved road, Basement Complex, Haywood County, NC |
| CAT3 | Little Cataloochee Trail, thick blue-green mat, Roaring Fork Sandstone, Haywood County, NC |
| CAT4 | Cataloochee Road, damp rocks along road, Basement Complex, Haywood County, NC |
| CD1 | Clingmans Dome, damp soil, Swain County, NC |
| CD2 | Clingmans Dome, damp rock, Swain County, NC |
| CF | Cataract Falls, damp rocks outside spray zone, Roaring Fork Sandstone, Sevier County, TN |
| CHC | Chasteen Cascade, Swain County, NC |
| CRT | Cooper Road Trail, wet rocks, Blount County, TN |
| CS | Cades Cove Sluice, Blount County, TN |
| CHI1 | Chimney Tops Trail, wet wall along trail Sevier County, TN |
| FCF | Flat Creek Falls, Swain County, NC |
| FON | Fontana Lake, reservoir along southern boundary of the park, Swain County, NC |
| FON1 | Fontana Lake, lakeshore trail along Eagle Creek arm, Swain County, NC |
| GMT | Gabes Mountain Trail, wet rocks, Cocke County, TN |
| GRO | Grotto Falls, small cascade in Roaring Fork watershed, Sevier County, TN |
| HRR | Heintooga Ridge Road, seeps and wet walls, Swain County, NC |
| HWF | Hen Wallow Falls, cascade in small tributary of Cosby Creek, Cocke County, TN |

| Code | Site |
|------|---|
| HWT | Hen Wallow Falls Trail, seep before falls, Cocke County, TN |
| IC | Indian Creek Falls, eastern tributary of Deep Creek, Swain County, NC |
| JWF | Juney Whank Falls, Swain County, NC |
| KC | Kingfisher Creek, Blount County, TN |
| LAU | Laurel Falls near Elkmont, wet siliceous rocks, Sevier County, TN |
| LCAT | Little Cataloochee Trail, epilithon, Haywood County, NC |
| LCF | Little Creek Falls, Swain County, NC |
| LCT | Lower Mt. Cammerer Trail, subaerial habitats, Cocke County, TN |
| LCR | Laurel Creek Road, wet wall outside tunnel, Blount County, TN |
| LFT | Laurel Falls Trail, forest soil, Sevier County, TN |
| LR | Little River, Sevier County, TN |
| LRR1 | Little River Road, damp rocks along road to Cades Cove, Sevier County, TN |
| LOW | Lower Gap Trail, wet rocks along trail, Sevier County, TN |
| MCP | Methodist Church Pond, Blount County, TN |
| MEI | Meigs Creek, tributary of the Little River, Sevier County, TN |
| MPT | Middle Prong Trail, seep along trail, Thunderhead Sandstone, Blount County, TN |
| NDT | Noland Divide Trail, forest soil, Swain County, NC |
| NEW1 | Newfound Gap, wet debris, Sevier County, TN |
| NEW2 | Newfound Gap, stream below gap, Sevier County, TN |
| NEW3 | Newfound Gap, roadside drain on the road to the gap, Sevier County, TN |
| NEW4 | Newfound Gap, wet schist, Sevier County, TN |
| NGR | Newfound Gap Road, Sevier County TN to Swain County, NC |
| OR | Oconaluftee River, Swain County, NC |
| ORG | Oconaluftee River Gorge, wet rocks along road, Swain County, NC |
| PK | Purchase Knob, spruce tree, Haywood County, NC |
| PTD | Place of 1000 Drips, damp rocks outside spray zone, Sevier County, TN |
| RAM | Ramsey Prong, tributary of the Middle Prong Little Pigeon River, Sevier County, TN |
| RAM1 | Ramsey Cascades, cascade on Ramsey Prong, Sevier County, TN |
| RFT1 | Roaring Fork Trail, above site known as 1000 drips, Sevier County, TN |
| RFT2 | Roaring Fork Trail, Place of a 1000 drips, Sevier County, TN |
| RFR | Roaring Fork Road, damp rocks along road, Roaring Fork Sandstone, Sevier County, TN |
| SF | Spruce Flats Falls, Blount County, TN |
| SGT | Schoolhouse Gap Trail, damp rocks along trail, Metcalf Phyllite, Blount County, TN |
| SL | Sewage lagoons, Cades Cove, Blount County, TN |
| TBF | Toms Branch Falls, slime underneath overhang, Swain County, NC |
| TMC | Twentymile Creek Trail, wet rocks, Swain County, NC |
| TW | Twin Creeks, Sevier County, TN |
| TWP | Twin Creeks Facility, pool below spring house, Sevier County, TN |
| WOS | Whiteoak Sink, Blount County, TN |

| Code | Site |
|---------------------------------|---|
| Sites sampled only before 2001: | |
| APP | Appalachian Trail, wet trailside rock, Swain County, NC |
| BF | Beech Flats Prong, the westernmost tributary of the Oconaluftee River, Swain County, NC |
| BIG1 | Big Creek, stream habitat, east end of park, Haywood County, NC |
| BOW | Bower Creek, a tributary of Forge Creek in Abrams Creek watershed, Blount County, TN |
| BRA | Bradley Fork, northernmost tributary of the Oconaluftee River, Swain County, NC |
| CAC | Cataloochee Creek, east end of park, Haywood County, NC |
| CAD | Cades Cove, unspecified habitats in Abrams Creek watershed, Blount County, TN |
| CAN | Cane Creek, small stream in northwest corner of park, Blount County, TN |
| CC | Cooper Creek, a tributary of the Tuckasegee River, Swain County, NC |
| CH | Camel Hump Creek, a tributary of Cosby Creek, Cocke County, TN |
| CHA1 | Charlies Bunion, gently flowing water below site, Sevier County, TN |
| CHA2 | Charlies Bunion, wet rock at base, Sevier County, TN |
| CHI | Chimney Tops Trail, at trailhead, acidic soil, Sevier County, TN |
| EC | Eagle Creek, southern part of park, emptying into Fontana Lake, Swain County, NC |
| FC | Fighting Creek, tributary of the West Prong of the Little Pigeon River, Sevier County, TN |
| FLA | Flat Creek, eastern tributary of Bunches Creek, Swain County, NC |
| GAT | Gatlinburg, soil above town, Sevier County, TN |
| GRE1 | Greenbrier swimming pool, Sevier County, TN |
| GRE2 | Greenbrier, sluggish water near Hiking Club Cabin, Sevier County, TN |
| GSM | Great Smoky Mountains National Park, unidentified site. |
| HAN | Hannah Mountain Trail, rocks in swift stream, Blount County, TN |
| HAZ | Hazel Creek, southern part of park, emptying into Fontana Lake, Swain County, NC |
| HUG | Hughes Ridge-Bradley Fork Trail, trailside rock, Swain County, NC |
| HU | Husky Branch, tributary of the Little River above Elkmont, Sevier County, TN |
| IGG | Indian Grave Gap, north of Cades Cove, Sevier County, TN |
| PIG1 | Little Pigeon River, Middle Prong, near Hiking Club cabin, Greenbrier, Sevier County, TN |
| PIG2 | Little Pigeon River below Trout Branch, Sevier County, TN |
| LRR2 | Little River Road, unspecified habitat, Sevier County, TN |
| MCB | Madcap Branch, a tributary of Mingus Creek, Swain County, NC |
| MOO | Moore Springs Cabin, Gregory Bald, Swain County, NC |
| MYR | Myrtle Point, east of Mount Le Conte, wet rocks, Sevier County, TN |
| PEC | Pecks Corner, spring near Hughes Ridge Trail, Swain County, NC |
| POR | Porters Creek, tributary of the Little Pigeon River, Sevier County, TN |
| ROU | Round Bottom CCC camp, Swain County, NC |
| SUG1 | Sugarlands C.C.C. Camp, turbid stream above camp, Sevier County, TN |
| SUG2 | Sugarlands Mountain Trail near Mt. Collins, Sevier County, TN |
| WP | Walker Prong, below Newfound Gap, Sevier County, TN |

Appendix B. Algal species observed in Great Smoky Mountains National Park. Sources of each record are coded as follows: 1) Algal foray in May 1999; 2) Deason and Herndon (1989); 3) Flechtner et al. (2002); 4) Gomez et al. in May 2001; 5) Keithan (1983); 6) Kociolek (1982); 7) Lowe 1976–1977 studies; 8) Lowe and Kociolek (1984); 9) Makosky 1999–2001 study (unfinished thesis); 10) Silva (1949); 11) Silva (1953); 12) Silva and Sharp (1944); 13) Wołowski and Walne (1997); 14) Current NSF-funded study; 15) New taxon record, current NSF-funded study. 16) New taxon record from Thomas et al. (in press), which is simultaneously in press with this paper. Sites codes refer to sites in Appendix A. If a species was recovered in 5–7 sites, it is just listed as common; if it was in 8 or more sites it is considered widespread. Provisional names (i.e., new species names in manuscripts in press) are set off in quotation marks, e.g., *Leptolyngbya* “*badia*” and have no author listing.

| Taxon | Source | Sites |
|--|--------|-------------------|
| Proteobacteria | | |
| Gammaproteobacteria | | |
| Chromatiales | | |
| <u>Chromatiaceae</u> | | |
| <i>Thiopedia rosea</i> Vinogradskij | 15 | SL |
| Cyanobacteria (190 TAXA) | | |
| Synechococcophycidae | | |
| Synechococcales | | |
| <u>Chamaesiphonaceae</u> | | |
| <i>Chamaesiphon confervicolus</i> A. Br. | 1 | FLA |
| <i>C. incrustans</i> Grun. | 1 | ANT |
| <i>C. incrustans</i> f. <i>cylindricus</i> (J.B. Petersen) Kom. & Anagn. | 15 | LR |
| <i>C. minutus</i> (Rostaf.) Lemm. | 15 | LCF |
| <i>C. polonicus</i> (Rostaf.) Hansg. | 15 | LR |
| <i>C. rostafinskii</i> Hansg. | 12 | SUG1 |
| <u>Merismopediaceae</u> | | |
| <i>Aphanocapsa fusco-lutea</i> Hansg. | 15 | CAT2, HRR, LCM |
| <i>A. grevillei</i> (Berk.) Rabh. | 12 | LRR2 |
| <i>A. muscicola</i> (Menegh.) Wille | 4, 14 | GRO, AF, SF, CAT1 |
| <i>A. testacea</i> Näg. | 15 | SF |
| <i>Snowella lacustris</i> (Chodat) Kom. & Hindák | 15 | MCP |
| <i>Synechocystis</i> sp. 1 | 4 | LRR1 |
| <i>Woronichinia naegeliana</i> (Unger) Elenkin | 15 | FON |
| <u>Pseudanabaenaceae</u> | | |
| <i>Geitlerinema splendidum</i> (Grev. ex Gom.) Anagn. | 15 | MCP |
| <i>Heteroleibleinia purpurascens</i> (Hansg.) Anagn. & Kom. | 15 | Common |
| <i>Homoeothrix janthina</i> (Bornet & Flah.) Starm. | 12 | IGG |
| <i>H. juliana</i> (Born. & Flah.) Kirchner | 15 | AC |
| <i>H. rivularis</i> (Hansg.) Kom. & Kann | 1 | AF |
| <i>Jaaginema pseudogeminatum</i> (Schmid) Anagn. & Kom. | 15 | HRR |
| <i>Leibleinia epiphytica</i> Hieron. | 15 | LCF, LRR1, TBF |
| <i>Leptolyngbya angustissima</i> (W. & G.S. West) Anagn. & Kom. | 15 | CAT2 |
| <i>L.</i> “ <i>appalachiana</i> ” | 4, 14 | CAT1, CAT2 |
| <i>L.</i> “ <i>badia</i> ” | 4, 14 | CAT2 |

| Taxon | Source | Sites |
|--|--------|--------------------|
| <i>Leptolyngbya cataractarum</i> (Rabh. ex Hansg.) Kom. & Anagn. | 15 | CAT1 |
| <i>L. cebennensis</i> (Gom.) Umezaki & M. Watan. | 15 | FCF, HRR |
| <i>L. compacta</i> (Kütz. ex Hansg.) Kom. | 15 | FCF |
| <i>L. foveolarum</i> (Rabh. ex Gom.) Anagn. & Kom. | 4, 14 | LRR1, SF |
| <i>L. cf. nana</i> (Tilden) Anagn. & Kom. | 15 | HRR |
| <i>L. "nonconstricta"</i> | 15 | CAT2 |
| <i>L. nostocorum</i> (Bornet ex Gom.) Anagn. & Kom. | 12, 14 | CAT2, LRR2 |
| <i>L. ochracea</i> (Thuret ex Gom.) Anagn. & Kom. | 12 | GRE1, POR |
| <i>L. subtilissima</i> (Kütz. ex Hansg.) Kom. | 4, 14 | RFT1, CAT2 |
| <i>L. subtruncata</i> (Voronichin) Anagn. | 4 | LRR1 |
| <i>L. tenuis</i> (Ag. ex Gom.) Anagn. & Kom. | 4, 12 | CAD, GRO |
| <i>L. cf. truncata</i> (Lemm.) Anagn. & Kom. | 15 | IC |
| <i>L. sp. 1</i> | 4 | BIG |
| <i>L. sp. 2</i> | 4 | BIG |
| <i>Pseudanabaena batrachospermorum</i> (Skuja) Anagn. & Kom. | 15 | GRO |
| <i>P. frigida</i> (Fritsch) Anagn. | 4, 14 | CAT1, HRR, JWF |
| <i>P. sp. 1</i> | 4 | BIG |
| <i>P. franquetii</i> (Bour) Bour. | 15 | SF |
| <i>Spirulina albida</i> Kolkwitz | 15 | HWF |
| Schizotrichaceae | | |
| <i>Schizothrix calcicola</i> Gomont | 15 | AC |
| <i>S. lardacea</i> Gom. | 15 | PK |
| <i>S. muelleri</i> Näg. ex Gom. | 12 | LAU |
| <i>S. tinctoria</i> Gom. | 4 | RFT1 |
| <i>S. vaginata</i> (Näg. in Kütz.) Gom. | 4 | CAT2 |
| <i>Trichocoleus minimus</i> (Frémy) Anagn. | 4 | CAT2 |
| Synechococcaceae | | |
| <i>Anacystis marginata</i> Menegh. | 12 | POR |
| <i>A. rupestris</i> (Lyngb.) Drouet & Daily | 12 | LRR2 |
| <i>Aphanothece bachmannii</i> Kom.-Legn. & Cronb. | 15 | FON |
| <i>A. bullosa</i> (Mengh.) Rabh. | 15 | SL |
| <i>A. caldarium</i> P.G. Richter | 15 | LCM, SF |
| <i>A. castagnei</i> (Bréb.) Rabh. | 4, 14 | AF, CAT2, RFT1 |
| <i>A. cylindracea</i> (Gardner) Kom. & Anagn. | 15 | CRT |
| <i>A. naegeli</i> Wartmann | 4 | LRR1 |
| <i>A. pallida</i> (Kütz.) Rabh. | 15 | SF, TBF |
| <i>A. saxicola</i> Näg. | 1, 14 | Common |
| <i>Gloeothece confluens</i> Näg. | 1, 4 | AF, BIG, CAT1, TBF |
| <i>G. fusco-lutea</i> Näg. | 4, 14 | BIG, CAT1, LRR1 |
| <i>G. palea</i> (Kütz.) Rabh. | 4, 14 | CAT1, LRR1 |
| <i>G. rupestris</i> (Lyngb.) Bornet | 4, 14 | AF, BIG, RFT1 |
| <i>G. tepidariorum</i> (A. Br.) Lagerh. | 4, 14 | Common |
| <i>Rhabdoderma</i> sp. 1 | 15 | AC |
| <i>Synechococcus elongatus</i> (Näg.) Näg. | 4 | CAT1, RFT1 |
| Oscillatoriophyceae | | |
| Chroococcales | | |
| Chroococcaceae | | |
| <i>Asterocapsa divina</i> Kom. | 15 | SF |
| <i>Chroococcus cohaerens</i> (Bréb.) Näg. | 4, 14 | BIG2, SF |
| <i>C. dispersus</i> (Keissler) Lemm. | 15 | CAT2, HWF |
| <i>C. distans</i> (G.M. Smith) Kom.-Legn. & Cronb. | 15 | HWF |
| <i>C. helveticus</i> Näg. | 4, 14 | Common |

| Taxon | Source | Sites |
|--|-----------|-----------------------|
| <i>Chroococcus lithophilus</i> Erc. | 15 | LRR1 |
| <i>C. montanus</i> Hansg. | 4 | AF, CAT1 |
| <i>C. pallidus</i> (Näg.) Näg. | 4, 14 | LRR1 |
| <i>C. spelaeus</i> Erc. | 15 | SF |
| <i>C. tenax</i> (Kirch.) Hieron. | 4, 14 | Common |
| <i>C. turgidus</i> (Kütz.) Näg. | 12 | RAM1 |
| <i>C. varius</i> A. Br. | 15 | GRO |
| <i>C. westii</i> J.B. Petersen | 15 | SF, TBF |
| <i>C. sp. 1</i> | 4 | AF |
| <i>C. sp. 2</i> | 4 | BIG |
| <i>Cyanodictyon iac</i> Cronb. & Kom | 15 | FON |
| <i>Gloeocapsopsis dvorakii</i> (Nováček) Kom. & Anagn. | 1, 14 | AF, GRO |
| <i>G. magma</i> (Bréb.) Kom. & Anagn. | 4, 12, 14 | CAT2, FCF, RAM1, RFT1 |
| <i>G. pleurocapsoides</i> (Nováček) Kom. & Anagn. | 15 | SF |
| <i>G. sp. 1</i> | 4 | LRR1, AF |
| <u>Cyanobacteriaceae</u> | | |
| <i>Cyanobacterium cedrorum</i> (Sauvageau) Kom. | 15 | CAT2 |
| <i>Cyanothece aeruginosa</i> (Näg.) Kom. | 15 | GRO |
| <u>Entophysalidaceae</u> | | |
| <i>Chlorogloeoa microcystoides</i> Geitler | 1 | AF |
| <u>Hyellaceae</u> | | |
| <i>Pleurocapsa minor</i> Hansg. | 4, 14 | LRR1, CAT1 |
| <i>P. sp. 1</i> | 4 | CAT2 |
| <u>Hydrococcaceae</u> | | |
| <i>Hydrococcus rivularis</i> Kütz. | 15 | AC, CAT2, SF |
| <u>Microcystaceae</u> | | |
| <i>Gloeocapsa aeruginosa</i> Kütz. | 4 | AF |
| <i>G. atrata</i> Kütz. | 15 | CAT2, CHC |
| <i>G. rupestris</i> Kütz. | 4 | RFT1, AF, BIG7 |
| <i>G. caldariorum</i> Rabh. | 15 | SF, CAT2 |
| <i>G. decorticans</i> (A. Br.) P.G. Richter | 15 | CAT2 |
| <i>G. haematodes</i> Kütz. | 15 | CHC |
| <i>G. cf. novacekii</i> Kom. & Anagn. | 15 | GRO |
| <i>G. punctata</i> Näg. | 15 | CAT1 |
| <i>Microcystis aeruginosa</i> (Kütz.) Kütz. | 15 | SL |
| <u>Xenococcaceae</u> | | |
| <i>Xenococcus cf. yoniedae</i> Umez. & M. Watan. | 15 | TBF |
| Phormidiales | | |
| <u>Phormidiaceae</u> | | |
| <i>Phormidium aerugineo-caeruleum</i> (Gom.) Anagn. & Kom. | 4 | CAT1 |
| <i>P. autumnale</i> (Ag.) Trevisan ex Gom. | 12 | NEW1 |
| <i>P. breve</i> (Kütz. ex Gom.) Anagn. & Kom. | 15 | LRR1 |
| <i>P. caeruleum</i> (Gicklhorn) Anagn. | 15 | SL |
| <i>P. chalybeum</i> (Mertens ex Gom.) Anagn. & Kom. | 15 | CAT2 |
| <i>P. inundatum</i> Kütz. ex Gom. | 12 | Common |
| <i>P. irrugum</i> (Kütz. ex Gom.) Anagn. & Kom. | 1 | AF |
| <i>P. kuetzingianum</i> (Kirchner) Anagn. & Kom. | 15 | SF |
| <i>P. cf. numidicum</i> (Gom.) Anagn. | 4 | BIG |
| <i>P. papyraceum</i> Kütz. ex Gom. | 12, 14 | Common |
| <i>P. cf. priestleyi</i> Fritsch | 4 | RFT1 |

| Taxon | Source | Sites |
|--|----------|------------------|
| <i>Phormidium puteale</i> (Mont. ex Gom.) Anagn. & Kom. | 12 | GRE2 |
| <i>P. retzii</i> Kütz. ex Gom. | 12, 14 | AC, BRA, POR, OR |
| <i>P. tergestinum</i> (Kütz.) Anagn. & Kom. | 15 | SL |
| <i>P. uncinatum</i> Gom. | 12 | WP |
| <i>P. versicolor</i> Wartmann ex Gom. | 12 | POR |
| <i>P. sp. 1</i> | 4 | BIG |
| <i>P. sp. 2</i> | 4 | CAT1 |
| <i>P. sp. 3</i> | 4 | CAT2 |
| <i>Porphyrosiphon martensianus</i> (Menegh. ex Gom.) Anagn. & Kom. | 15 | SF, FCF, FON |
| <i>P. sp. 1</i> | 4 | BIG |
| <i>Symploca muralis</i> Kütz. ex Gom. | 12 | POR, ROU |
| <i>S. muscorum</i> Gom. | 12 | LRR2 |
| <i>Symplocastrum friesii</i> (Ag. ex Gom.) Kirchner | 12 | GAT |
| <i>Tychonema bornetii</i> (Zukal) Anagn. & Kom. | 15 | MCP |
| Oscillatoriales | | |
| <u>Oscillatoriaceae</u> | | |
| <i>Oscillatoria anguina</i> Bory ex Gom. | 15 | LRR1 |
| <i>O. engelmanniana</i> Gaidukov | 15 | SF |
| <i>O. formosa</i> Bory ex Gom. | 1 | ANT |
| <i>O. limosa</i> Ag. ex Gom. | 12, 14 | GRE2, MEI, PIG1 |
| <i>O. rupicola</i> Hansg. | 15 | CHC, HWF |
| <i>O. subbrevis</i> Schmidle | 4 | GRO |
| <i>O. tenuis</i> var. <i>natans</i> Gom. | 12 | IGG1 |
| <i>O. sp. 1</i> | 4 | BIG |
| <i>O. sp. 2</i> | 15 | SL |
| <i>Plectonema tomasinianum</i> Bornet ex Gom. | 12 | IGG |
| Nostocophycidae | | |
| Nostocales | | |
| <u>Microchaetaceae</u> | | |
| <i>Coleodesmium wrangellii</i> (Ag.) Borzi ex Bornet & Flah. | 1, 3, 14 | LR, MEI |
| <i>Dichothrix willei</i> Gardner | 15 | CD2 |
| <i>Hassallia byssoidea</i> (Ag.) Hassall ex Bornet & Flah. | 12 | LRR1 |
| <i>Microchaete catenata</i> Lemm. | 15 | IC |
| <i>Rexia erecta</i> Casamatta et al. | 15 | CAT1 |
| <i>Tolypothrix distorta</i> Kütz. ex Bornet & Flah. | 15 | FCF |
| <i>T. penicillata</i> Thur. ex Bornet & Flah. | 15 | LRR1 |
| <i>T. tenuis</i> Kütz. ex Bornet & Flah. | 15 | SF |
| <i>T. sp. 1</i> | 4 | BIG |
| <u>Nostocaceae</u> | | |
| <i>Anabaena</i> cf. <i>cylindrica</i> Lemm. | 15 | HWF |
| <i>A. oryzae</i> Fritsch | 4 | CAT1 |
| <i>A. scheremetievii</i> Elenkin | 15 | FON |
| <i>A. sp. 1</i> | 4, 14 | CAT1, HWF |
| <i>A. sp. 2</i> | 15 | HWF |
| <i>Aphanizomenon flos-aquae</i> (L.) Ralfs | 15 | FON |
| <i>A. ovalisporum</i> Forti | 15 | FON |
| <i>Cylindrospermum maius</i> Kütz. ex Bornet & Flah. | 15 | FON1, ABB, HWF |
| <i>Nodularia harveyana</i> Thuret ex Bornet & Flah. | 4, 14 | HWF |
| <i>Nostoc commune</i> Vauch. ex Bornet & Flah. | 1, 4 | GCD, AF |
| <i>N. epilithicum</i> Ercegović | 15 | RFT1 |

| Taxon | Source | Sites |
|---|-----------|----------------------|
| <i>Nostoc humifusum</i> Carm. sec. Harvey | 15 | CAT2 |
| <i>N. linckia</i> (Roth) Bornet ex Bornet & Flah. | 4 | CAT1 |
| <i>N. macrosporum</i> Menegh. ex Bornet & Flah. | 15 | SF |
| <i>N. microscopicum</i> Carmich. ex Bornet & Flah. | 4, 12, 14 | Common |
| <i>N. paludosum</i> Kütz. ex Bornet & Flah. | 15 | LRR1, HWF |
| <i>N. pruniforme</i> Ag. ex Bornet & Flah. | 1 | FON1 |
| <i>N. punctiforme</i> (Kütz.) Hariot | 15 | HWF |
| <i>N. sphaericum</i> Vauch ex Bornet & Flah. | 15 | SF |
| <i>Trichormus ellipso sporus</i> (Fritsch) Kom. & Anagn. | 4 | CAT1 |
| <i>T. variabilis</i> (Kütz. ex Born. & Flah.) Kom. & Anagn. | 12, 14 | HWF, NEW3 |
| <u>Rivulariaceae</u> | | |
| <i>Calothrix braunii</i> Bornet & Flah. | 4, 14 | CAT2, FCF, HRR, RFT1 |
| <i>C. elenkinii</i> Kossinsk. | 15 | IC, JWF |
| <i>C. fusca</i> (Kütz.) Bornet & Flah. | 4, 12 | CAT1, LRR2 |
| <i>C. parietina</i> Thuret ex Bornet & Flah. | 12, 14 | LMC, FIG2 |
| <i>C. spp.</i> | 4, 14 | CAT2, ICF |
| <u>Scytonemataceae</u> | | |
| <i>Scytonema crispum</i> (Ag.) Bornet | 15 | SF |
| <i>S. figuratum</i> Ag. ex Bornet & Flah. | 12 | LRR2 |
| <i>S. guyanense</i> Bornet & Flah. | 12 | LRR2 |
| <i>S. cf. holstii</i> Hieron. | 4 | GCD |
| <i>S. hyalinum</i> Gardner | 15 | HWF |
| <i>S. ocellatum</i> Lyngb. ex Bornet & Flah. | 15 | Common |
| <i>S. cf. pseudohofmanii</i> Bharadw. | 4 | BIG |
| <i>S. cf. stuposum</i> Bornet ex Bornet & Flah. | 4 | AF |
| <i>S. tolypotrichoides</i> Bornet & Flah. | 12 | LRR2 |
| <u>Symphyonemataceae</u> | | |
| <i>Capsosira brebissonii</i> Kütz. ex Bornet & Flah. | 15 | JWF |
| <i>C. lowei</i> Casamatta et al. | 15 | HWF |
| <u>Stigonemataceae</u> | | |
| <i>Hapalosiphon fontinalis</i> var. <i>fischeroides</i> Hansg. ex Forti | 15 | CAT2 |
| <i>Stigonema hormoides</i> (Kütz.) Bornet & Flah. | 1, 4, 14 | AF, BIG, CAT1, CAT2 |
| <i>S. hormoides</i> var. <i>africana</i> Fritsch | 15 | Common |
| <i>S. cf. mammosum</i> (Lyngb.) Ag. | 15 | HAZ |
| <i>S. minutum</i> Bornet & Flah. | 12, 14 | HRR, RAM1 |
| <i>S. cf. mirabile</i> Beck-Mannag. | 15 | TMC |
| <i>S. ocellatum</i> (Dillw.) Thuret | 15 | TMC |
| <i>S. tomentosum</i> (Kütz.) Hieron. | 1, 4 | AF, CAT2 |

Charophyta (137 TAXA)

Klebsormidiophyceae

Klebsormidiales

Klebsormidiaceae

| | | |
|---|----------|--------------|
| <i>Klebsormidium dissectum</i> (Gay) Ettl & Gärtner | 4 | LRR1 |
| <i>K. elegans</i> Lokh. | 4 | RAM1 |
| <i>K. flaccidum</i> (Kütz.) Silva et al. | 4, 14 | GCD, SF, PK |
| <i>K. nitens</i> (Menegh.) Lokh. | 1, 4, 14 | MEI, AF, HWF |
| <i>K. sterile</i> (Deason & Bold) Silva et al. | 4 | LOW |

| Taxon | Source | Sites |
|---|--------|--------------------|
| Zygnematophyceae | | |
| Desmidiiales | | |
| <u>Closteriaceae</u> | | |
| <i>Closterium acerosum</i> (Schrank) Ehr. | 15 | LAU |
| <i>C. acutum</i> (Lyngb.) Brèb. ex Ralfs | 15 | FON1 |
| <i>C. angustatum</i> Kütz. | 15 | FON1 |
| <i>C. cynthia</i> De Not. | 15 | CAD1 |
| <i>C. ehrenbergii</i> Meneghini | 15 | MCP |
| <i>C. exile</i> West & West | 15 | HRR |
| <i>C. flaccidum</i> Delponte | 15 | MCP |
| <i>C. idiosporum</i> West & West | 15 | CAD1 |
| <i>C. intermedium</i> Ralfs | 15 | CAD1, IC, MCP |
| <i>C. lineatum</i> Ehr. | 1 | MEI |
| <i>C. lunula</i> (Müll.) Nitzsch | 15 | CAD1 |
| <i>C. macilentum</i> Brèb. | 15 | MCP |
| <i>C. moniliferum</i> (Bory) Ehr. | 1 | AF |
| <i>C. navicula</i> (Brèb.) Lütkem. | 15 | MCP |
| <i>C. peracerosum</i> Gay | 15 | FCF |
| <i>C. ralfsii</i> Brèb. ex Ralfs | 15 | FON1 |
| <i>C. spetsbergense</i> Borge | 15 | FON, FON1 |
| <i>C. striolatum</i> Ehr. | 15 | CAD2 |
| <i>C. subscoticum</i> Gutwinski | 15 | CAD1 |
| <i>C. toxon</i> W. West | 1, 14 | AF, SF |
| <i>C. tumidulum</i> Gay | 15 | CAD1, LAU |
| <i>C. tumidum</i> Johnson | 15 | HRR |
| <i>C. turgidum</i> Ehr. | 15 | MCP, CAD2 |
| <i>C. venus</i> Kütz. ex Ralfs | 15 | FON |
| <u>Desmidiaceae</u> | | |
| <i>Actinotaenium cruciferum</i> (de Bary) Teil. | 1 | FLA |
| <i>A. cucurbita</i> (Brèb.) Teil. | 4 | BIG, RAM1, CAT1 |
| <i>A. curtum</i> (Brèb.) Teil. ex Růžička & Pouzar | 4 | BIG |
| <i>A. cf. palangula</i> (Brèb.) Teil. ex Růžička & Pouzar | 15 | FON |
| <i>Cosmarium abbreviatum</i> Raciborski | 15 | HWF |
| <i>C. asphaerosporum</i> var. <i>strigosum</i> Nordst. | 15 | CAT1 |
| <i>C. blytii</i> Wille | 15 | CAT1 |
| <i>C. caelatum</i> Ralfs | 15 | CAT1, CD2, LCT |
| <i>C. costatum</i> var. <i>subhexalobum</i> Boldt | 15 | GCD |
| <i>C. cyclicum</i> var. <i>nordstedtianum</i> (Reinsch) West & West | 15 | CAT1 |
| <i>C. depressum</i> f. <i>minutum</i> Heimerl | 15 | ACT, CD2, LAU, MEI |
| <i>C. exiguum</i> Archer | 15 | GCD |
| <i>C. holmiense</i> var. <i>integrum</i> Lundell | 15 | CD2, LRR1, SF |
| <i>C. isthmium</i> var. <i>horizontale</i> Schmidle | 15 | MCP |
| <i>C. latifrons</i> Lundell | 15 | CAD2 |
| <i>C. norvegicum</i> Strøm | 15 | CAD1 |
| <i>C. ochthodes</i> Nordst. | 15 | CAT1 |
| <i>C. pachydermum</i> Lundell | 15 | CAD1 |
| <i>C. polygonum</i> (Näg.) Archer | 15 | FON |
| <i>C. portianum</i> Archer | 15 | MCP |
| <i>C. pseudoconnatum</i> Nordst. | 15 | FON1 |
| <i>C. punctulatum</i> Brèb. | 15 | CD2, HRR, MEI, SF |
| <i>C. pyramidatum</i> var. <i>stephani</i> Irène-Marie | 15 | CAD1 |
| <i>C. quadrifarum</i> f. <i>octastichum</i> Nordst. | 15 | LRR1 |

| Taxon | Source | Sites |
|--|--------|----------------------|
| <i>Cosmarium quadratulum</i> var. <i>minus</i> (Gay) De Toni | 15 | MCP |
| <i>C. quadratum</i> var. <i>willei</i> (Schmidle) Krieger & Gerloff | 15 | HWF |
| <i>C. reniforme</i> (Ralfs) Archer | 15 | CAT1, GCD, LCT |
| <i>C. speciosum</i> Lund | 15 | CAT2, LCT, WOS |
| <i>C. subcucumis</i> Schmidle | 15 | CAD1, CAT2, HWF, LCT |
| <i>C. subspeciosum</i> Nordstedt | 15 | FON |
| <i>C. tetragonum</i> var. <i>lundellii</i> Cooke | 15 | CAT2 |
| <i>C. transitorium</i> (Heimerl) Ducellier | 15 | CAD1, CAT2 |
| <i>C. trilobulatum</i> Reinsch | 15 | FON1 |
| <i>C. cf. turnerianum</i> Mask. | 4 | LRR1 |
| <i>C. cf. undulatum</i> Corda | 4 | AF |
| <i>Desmidium baileyi</i> (Ralfs) Nordst. | 15 | FON1 |
| <i>Euastrum ansatum</i> Ehr. ex Ralfs | 15 | CAD1 |
| <i>E. ansatum</i> var. <i>dideltiforme</i> Ducellier | 15 | CAD1, CAD2 |
| <i>E. bidentatum</i> Näg. | 15 | MCP |
| <i>E. binale</i> (Turpin) Ehr. | 15 | CAD1, FON1 |
| <i>E. cornubiense</i> West & West | 15 | GCD, LRR1 |
| <i>E. didelta</i> (Turpin) Ralfs | 15 | MCP |
| <i>E. cf. dubium</i> Näg. | 15 | CAD1 |
| <i>E. incavatum</i> Joshua & Nordst. | 15 | GCD |
| <i>E. johnsonii</i> West & West | 15 | MCP |
| <i>E. oblongum</i> var. <i>angustum</i> Prescott | 15 | MCP |
| <i>E. sinuosum</i> var. <i>subjeneri</i> West & West | 15 | FON1 |
| <i>E. verrucosum</i> var. <i>alatum</i> Wolle | 15 | MCP |
| <i>E. verrucosum</i> var. <i>dalbisii</i> f. <i>minus</i> Prescott & Scott | 15 | CAD1 |
| <i>Hyalotheca dissiliens</i> (Smith) Bréb. ex Ralfs | 15 | MCP |
| <i>Micrasterias denticulata</i> Bréb. ex Ralfs | 1 | CAD1, CAD2, FON |
| <i>M. johnsonii</i> West & West | 15 | FON |
| <i>M. radiata</i> Hassall | 15 | FON1 |
| <i>M. truncata</i> (Corda) Bréb. ex Ralfs | 4, 14 | ACT, FON |
| <i>Nothocosmarium obliquum</i> f. <i>tatrica</i> (Gutwinski) Cedergrén | 15 | CAT2 |
| <i>Pleurotaenium trabecula</i> (Ehr.) Näg. | 15 | CAD1, FON1, GRO, MCP |
| <i>Spondylosium planum</i> (Wolle) West & West | 15 | FON |
| <i>Staurastrum</i> cf. <i>anatinum</i> Cooke & Wills | 15 | FON |
| <i>S. bieneanum</i> Rabh. | 15 | FON |
| <i>S. botrophilum</i> Wolle | 15 | CAD1, GCD |
| <i>S. capitulum</i> Bréb. | 15 | GCD, HRR, HWF |
| <i>S. furcigerum</i> Bréb. | 15 | MCP |
| <i>S. cf. lanceolatum</i> Archer | 15 | CAT1 |
| <i>S. lapponicum</i> (Schmidle) Groenblad | 1 | FON1 |
| <i>S. leptacanthum</i> var. <i>borgei</i> Förster | 15 | FON1 |
| <i>S. cf. manfeldtii</i> Delponte | 15 | GSM |
| <i>S. meriani</i> Reinsch | 15 | LRR1 |
| <i>S. novae-terrae</i> Taylor | 15 | GSM |
| <i>S. pachyrhynchum</i> Nordst. | 15 | FON1 |
| <i>S. pentacerum</i> (Wolle) G.M. Smith | 15 | FON1 |
| <i>S. quadrispinatum</i> Turner | 1 | FON |
| <i>S. rugulosum</i> Bréb. ex Ralfs | 15 | Common |
| <i>S. rugulosum</i> var. <i>angulare</i> Grönblad | 15 | FON1 |
| <i>S. setigerum</i> var. <i>pectinatum</i> West & West | 15 | FON |
| <i>S. tetracerum</i> | 15 | FON |

| Taxon | Source | Sites |
|--|--------|---------------------|
| <i>Staurodesmus extensus</i> (Anderson) Teil. | 15 | GSM |
| <i>S. triangularis</i> (Lagerh.) Teil. | 15 | FON |
| <i>S. triangularis</i> var. <i>subparalellus</i> (G.M. Smith) Teil. | 15 | FON |
| <i>Teilingia wallichii</i> var. <i>anglica</i> (West & West) Förster | 15 | AC |
| <i>Tetmemorus granulatus</i> (Bréb.) Ralfs | 15 | CAD1 |
| <i>T. granulatus</i> var. <i>attenuatus</i> West | 15 | CAD1 |
| <i>T. laevis</i> (Kütz.) Ralfs | 15 | Common |
| <u>Gonatozygaceae</u> | | |
| <i>Gonatozygon kinahani</i> (Archer) Rabh. | 15 | MCP |
| <u>Peniaceae</u> | | |
| <i>Penium margaritaceum</i> (Ehr.) Bréb. | 1 | AF, FON |
| Zygnematales | | |
| <u>Mesotaeniaceae</u> | | |
| <i>Cylindrocystis brebissonii</i> Menegh. | 4, 14 | CAT1, HRR, LOW, MEI |
| <i>C. brebissonii</i> var. <i>minor</i> West & West | 15 | CD |
| <i>C. spp.</i> | 4, 14 | BIG, CD |
| <i>Mesotaenium caldariorum</i> (Lagerh.) Hansg. | 15 | HWF |
| <i>M. chlamyosporum</i> de Bary | 15 | CAT2, HWF |
| <i>M. degreyi</i> var. <i>breve</i> West | 15 | CAT1, HWF |
| <i>M. endlicherianum</i> Näg. | 15 | Common |
| <i>M. macrococcum</i> (Kütz.) Roy & Bisset | 15 | Common |
| <i>M. macrococcum</i> var. <i>minus</i> (de Bary) Compere | 15 | ACT, GCD, MEI |
| <i>M. "testaceovaginatatum"</i> | 15 | GCD, ABB |
| <i>Netrium digitus</i> (Ehr.) Itzigson & Rothe | 12, 14 | CAD1, GCD, SUG1 |
| <i>N. interruptum</i> (Bréb.) Lütkem. | 15 | CAD1 |
| <i>N. oblongum</i> var. <i>brevius</i> W. West | 15 | Common |
| <i>Roya obtusa</i> (Bréb.) West & West | 15 | AF |
| <i>Spirotaenia condensata</i> Bréb. | 15 | CAD1 |
| <i>S. bryophila</i> (Bréb.) Lütkem. | 15 | CAT1, FCF |
| <i>S. endospira</i> (Bréb.) Archer | 15 | FCF |
| <i>S. minuta</i> Thuret | 15 | GCD, HWF, SUG1 |
| <i>Tortitaenia obscura</i> (Ralfs) Brook | 15 | CAD1, HRR |
| <u>Zygnemataceae</u> | | |
| <i>Mougeotia viridis</i> (Kütz.) Wittr. | 15 | CAD1 |
| <i>M. spp.</i> | 4 | ACT, HWF |
| <i>Spirogyra pseudo-juergensii</i> H. Silva | 1 | LRR2 |
| <i>Zygnema</i> sp. 1 | 15 | CAD1 |
| <i>Zygogonium ericetorum</i> Kütz. | 10 | SUG2 |
| Chlorophyta (108 TAXA) | | |
| Chlorophyceae | | |
| Chaetophorales | | |
| <u>Chaetophoraceae</u> | | |
| <i>Diplosphaera chodatii</i> Bialosuknia | 15 | CAT2, HWF, PK |
| <i>Draparnaldia acuta</i> (Ag.) Kütz. | 1 | MEI |
| <i>D. appalachiana</i> Lowe & Johansen | 15 | CAD3 |
| <i>D. platyzonata</i> Hazen | 10 | RAM |
| <i>D. plumosa</i> (Vauch.) Ag. | 10 | NEW2 |
| <i>Gongrosira</i> sp. 1 | 15 | AC |
| <i>Stigeoclonium aestivale</i> (Hazen) Collins | 15 | SF |

| Taxon | Source | Sites |
|---|--------|-------------------|
| <i>Stigeoclonium attenuatum</i> (Hazen) Collins | 1 | AF |
| <i>S. subsecundum</i> (Kütz.) Kütz. | 15 | MCP |
| Chlamydomonadales | | |
| <u>Chlamydomonadaceae</u> | | |
| <i>Chloromonas clathrata</i> Korsch. | 15 | LFT |
| <i>C. mirabilis</i> Korsch. | 15 | NDT |
| <i>C. palmelloides</i> Broady | 15 | LFT |
| Chlorococcales | | |
| <u>Chariaceae</u> | | |
| <i>Characium ornithocephalum</i> A. Br. | 15 | GRO |
| <u>Chlorococcaceae</u> | | |
| <i>Axilococcus clingmanii</i> Deason & Herndon | 2 | CD1 |
| <i>Burkillia</i> sp. 1 | 4 | LRR1 |
| <i>Chlorococcum ellipsoideum</i> Deason & Bold | 4 | BIG, CAT1, GRO |
| <i>C. cf. tatrense</i> Archibald | 4 | AF |
| <i>C. sp. 1</i> | 4 | LRR1 |
| <i>Dictyochloris pulchra</i> Deason & Herndon | 2 | CHI |
| <i>Elliptochloris cf. bilobata</i> Tschermak-Woess | 4 | ACT |
| <i>E. reniformis</i> (S. Watanabe) Ettl & Gärtner | 4 | CAT1 |
| <i>E. subsphaerica</i> (Reisigl) Ettl & Gärtner | 4 | CAT1 |
| <i>Ettlia cf. pseudoalveolaris</i> (Deason & Bold) Kom. | 4 | LRR1 |
| <i>E. sp. 1</i> | 4 | CAT1, GRO |
| <i>Lautosphaeria monsfumosa</i> Deason & Herndon | 2 | CHI |
| <i>Lobosphaeriopsis</i> sp. 1 | 4 | LRR1 |
| <i>Schroederia setigera</i> (Schröder) Lemm. | 15 | LRR1 |
| <i>Tetraedron minimum</i> (A. Br.) Hansg. | 15 | CAT1, HWF |
| <i>T. planctonicum</i> G.M. Smith | 15 | FON |
| <i>Trochiscia erlangensis</i> Hansg. | 15 | GRO |
| <i>T. granulata</i> (Reinsch) Hansg. | 1, 14 | AF, CHC, HWF, LMC |
| <u>Coccomyxaceae</u> | | |
| <i>Coccomyxa confluens</i> (Kütz.) Fott | 1 | AF |
| <i>C. dispar</i> Schmidle | 12 | RAM1 |
| <i>Nannochloris</i> sp. 1 | 4 | CAT1 |
| <u>Dictyosphaeraceae</u> | | |
| <i>Dictyosphaerium pulchellum</i> H.C. Wood | 1 | FON |
| <u>Gloeocystaceae</u> | | |
| <i>Gloeocystis polydermatica</i> (Kütz.) Hindák | 1, 14 | AF, CAT2, HWF |
| <i>G. vesiculosa</i> Näg. | 12, 14 | CAT1, CAT2, HUG |
| <i>G. sp. 1</i> | 4 | CAT2 |
| <u>Micractiniaceae</u> | | |
| <i>Micractinium pusillum</i> Fresenius | 15 | AC |
| Microsporales | | |
| <u>Microsporaceae</u> | | |
| <i>Microspora quadrata</i> Hazen | 15 | NEW4 |
| <i>M. stagnorum</i> (Kütz.) Lagerh. | 12 | CHA1 |
| <i>M. tumidula</i> Hazen | 12 | GRE2 |
| <i>M. willeana</i> Lagerh. | 12 | CHA2 |

| Taxon | Source | Sites |
|--|--------|-------------------------|
| Oedogoniales | | |
| <u>Oedogoniaceae</u> | | |
| <i>Bulbochaete</i> sp. 1 | 15 | MCP |
| <i>Oedogonium pringsheimii</i> C.E. Cramer | 15 | BIG |
| <i>O. punctatostriatum</i> de Bary | 15 | FON |
| Prasiolales | | |
| <u>Schizogoniaceae</u> | | |
| <i>Schizogonium murale</i> Kütz. | 10, 12 | APP, NEW |
| Sphaeropleales | | |
| <u>Palmellaceae</u> | | |
| <i>Palmellopsis muralis</i> Bold & King | 15 | CAT2 |
| <u>Scenedesmaceae</u> | | |
| <i>Bracteacoccus</i> cf. <i>minor</i> (Chodat) Petrová | 4 | RFT1 |
| <i>B.</i> sp. 1 | 4 | LRR1 |
| <i>Coelastrum microporum</i> Näg. | 1 | FON |
| <i>Crucigenia irregularis</i> Wille | 15 | AC |
| <i>Elakatothrix gelatinosa</i> Wille | 15 | FON |
| <i>Follicularia botryoides</i> (W. Herndon) Kom. | 15 | CAT2 |
| <i>Planktosphaeria gelatinosa</i> G.M. Smith | 15 | FON |
| <i>Scenedesmus abundans</i> (Kirchn.) Chodat | 4 | RFT1 |
| <i>S. ecornis</i> (Ehr.) Chodat | 15 | FON |
| <i>S. obtusus</i> Meyen | 15 | FON |
| <i>S. protuberans</i> Fritsch & Rich | 15 | SL |
| <i>S. quadricauda</i> (Turp.) Bréb. | 1 | FON2 |
| <i>S. serratus</i> (Corda) Bohlin | 4 | LRR1 |
| <i>S. soli</i> Hortob. | 15 | HRR |
| <i>Scotiellopsis levicostata</i> (Hollerb.) Punčoch. & Kalina | 4, 14 | CAT2, CHC, LMC, LRR1 |
| <i>S. terrestris</i> (Reisigl) Punčoch. & Kalina | 4 | AF, CAT2 |
| Tetrasporales | | |
| <u>Tetrasporaceae</u> | | |
| <i>Tetraspora cylindrica</i> (Wahlenb.) Ag. | 10 | RAM |
| <i>T. lubrica</i> (Roth) Ag. | 1 | MEI |
| <i>T. lacustris</i> Lemm. | 1 | AF |
| Volvocales | | |
| <u>Chlamydomonadaceae</u> | | |
| <i>Chlorogonium metamorphum</i> Skuja | 15 | LRR1 |
| <u>Haematococcaceae</u> | | |
| <i>Haematococcus lacustris</i> (Girod-Chantrons) Rostafinski | 15 | CHI |
| <u>Volvocaceae</u> | | |
| <i>Pandorina mora</i> (O.F. Müll.) Bory | 15 | MCP, SL |
| Trebouxiophyceae | | |
| Microthamniales | | |
| <u>Microthamniaceae</u> | | |
| <i>Dictyochloropsis reticulata</i> (Tscher.-Woess) Tscher.-Woess | 15 | LCF |
| <i>Myrmecia</i> cf. <i>bisecta</i> Reisigl | 4 | LRR1 |

| Taxon | Source | Sites |
|--|--------|----------------|
| <i>Microthamnion kuetzingianum</i> Näg. | 10 | POR |
| <i>Stichococcus bacillaris</i> Näg. | 4 | AF, CAT1, GRO |
| <i>S. fluitans</i> Gay | 10 | RAM1 |
| <i>S. minutus</i> Grintz. & Péterfi | 4 | AF, LOW |
| <i>S. subtilis</i> (Kütz.) Klereker | 12 | POR |
| <i>S. scopulinus</i> Hazen | 12 | PEC |
| Trebouxiales | | |
| <u>Chlorellaceae</u> | | |
| <i>Chlorella</i> cf. <i>asymetrica</i> Mainx | 4 | RFT1 |
| <i>C. ellipsoidea</i> Gern. | 15 | PK |
| <i>C. luteoviridis</i> Chodat | 4 | BIG |
| <i>C. minutissima</i> Fott & Nov. | 4 | AF |
| <i>C. vulgaris</i> Beijerinck | 4 | LRR1 |
| <i>C. sp. 1</i> | 4 | BIG, CAT1 |
| <i>Choricystis</i> cf. <i>chodatii</i> (Jaag) Fott | 4 | CAT1 |
| <i>C. sp. 1</i> | 4 | LRR1, CAT1, AF |
| <u>Oocystaceae</u> | | |
| <i>Kirchneriella lunaris</i> (Kirchn.) Möbius | 15 | AC |
| <i>Monoraphidium contortum</i> (Thuret) Kom.-Legn. | 15 | LCF |
| <i>M. sp. 1</i> | 4 | BIG |
| <i>Muriella decolor</i> Vischer | 4 | LOW |
| <i>M. terrestris</i> J.B. Petersen | 4 | AF |
| <i>M. sp. 1</i> | 4 | ACT |
| <i>Nephrocytium agardhianum</i> Näg. | 1 | FON |
| <i>Oocystis elliptica</i> W. West | 15 | HRR, IC |
| <i>O. marsonii</i> Lemm. | 15 | SF |
| <i>O. solitaria</i> f. <i>major</i> Wille | 4 | LRR1 |
| <i>Oonephris obesa</i> (W. West) Fott | 15 | BIG |
| <i>Pseudochlorococcum typicum</i> Archibald | 4 | BIG |
| <i>Quadrigula closterioides</i> (Bohlin) Printz | 15 | AC |
| Ulvophyceae | | |
| Trentepohliales | | |
| <u>Trentepohliaceae</u> | | |
| <i>Epibolium dermaticola</i> Printz | 4, 14 | RFT1 |
| <i>Trentepohlia aurea</i> (L.) Martius | 12, 14 | MYR, SF |
| Ulotrichales | | |
| <u>Ulotrichaceae</u> | | |
| <i>Geminella terricola</i> J.B. Petersen | 4 | LOW |
| <i>Radiofilum transversalis</i> (Breb.) Ramanathan | 15 | MCP |
| <i>Ulothrix aequalis</i> Kütz. | 1 | ANT |
| <i>U. implexa</i> (Kütz.) Kütz. | 15 | FCF |
| <i>U. variabilis</i> (Kütz.) Kütz. | 4, 10 | MOO, CAT1 |
| <i>U. cf. verrucosa</i> Loh. | 4 | ACT |
| <i>U. zonata</i> (Weber & Mohr) Kütz. | 15 | FCF |
| Cyanidiophyta (1 TAXON) | | |
| Cyanidiales | | |
| <u>Cyanidiaceae</u> | | |
| <i>Rhodospira sordida</i> Geitler | 15 | LRR1 |

| Taxon | Source | Sites |
|--|--------|------------|
| Rhodophyta (4 TAXA) | | |
| Acrochaetiales | | |
| <u>Acrochaetaceae</u> | | |
| <i>Audouinella hermannii</i> (Roth) Duby | 1 | MEI |
| Batrachospermales | | |
| <u>Batrachospermaceae</u> | | |
| <i>Batrachospermum</i> sp. 1 | 15 | KC |
| <u>Lemaneaceae</u> | | |
| <i>Lemanea fucina</i> Bory | 12 | PIG, RAM |
| <i>Paralemanea annulata</i> (Kütz.) Vis & Sheath | 12 | PIG, RAM |
| Chrysophyta (3 TAXA) | | |
| Ochromonadales | | |
| <u>Dinobryaceae</u> | | |
| <i>Dinobryon bavaricum</i> Imhof | 15 | FON |
| <i>D. sertularia</i> Ehr. | 1 | FON |
| Phaeothamniales | | |
| <u>Phaeothamnaiceae</u> | | |
| <i>Schizochlamydeella minutissima</i> P. Broady | 15 | HWF |
| Synurophyta (7 TAXA) | | |
| Synurales | | |
| <u>Synuraceae</u> | | |
| <i>Mallomonas caudata</i> Iwanov | 15 | FON |
| <i>M. elongata</i> Reverdin | 15 | FON |
| <i>M. guttata</i> Wujek | 15 | FON |
| <i>M. pseudocoronata</i> Prescott | 1 | FON |
| <i>M. transsylvanica</i> Pérterfi & Momeu | 15 | MCP |
| <i>Synura spinosa</i> Korshikov | 15 | FON |
| <i>S. uvella</i> Ehr. | 1 | FON |
| Prymnesiophyta (1 TAXON) | | |
| Isochrysidales | | |
| <u>Derepyxidaceae</u> | | |
| <i>Spongomonas intestinalis</i> (Cienkowski) S. Kent | 15 | FON |
| Raphidiophyta (1 TAXON) | | |
| Chloromonadales | | |
| <u>Vacuolariaceae</u> | | |
| <i>Gonyostomum semen</i> (Ehr.) Diesing | 15 | MCP |
| Tribophyta (16 TAXA) | | |
| Mischococcales | | |
| <u>Pleurochloridaceae</u> | | |
| <i>Ellipsoidion</i> sp. 1 | 4 | CAT2, NEW4 |

| Taxon | Source | Sites |
|---|-----------------|-------------------|
| <i>Monallantus stichococcoides</i> Pascher | 4 | CAT1, RFT1 |
| <i>Monodus</i> sp. 1 | 4 | CAT1 |
| <i>Nephrodiella</i> sp. 1 | 4 | RFT1 |
| <i>Pleurochloris nanella</i> Geitler | 4 | CAT2 |
| <i>Pleurogaster</i> sp. 1 | 4 | GRO |
| Tribonematales | | |
| <u>Tribonemataceae</u> | | |
| <i>Tribonema aequale</i> Pascher | 4 | CAT2 |
| <i>T. bombycinum</i> (Ag.) Derbes & Sol | 12 | Common |
| <i>T. fonticola</i> Ettl | 15 | LRR1 |
| <i>T. minus</i> (Wille) Hazen | 15 | HRR, LMC |
| <i>T. monochloron</i> Pascher & Geitler | 1 | GCD |
| <i>T. spirotaenia</i> Ettl | 1 | AF |
| <i>T. cf. vulgare</i> Pascher | 15 | CAT1 |
| <i>Xanthonema bristolianum</i> (Pascher) Silva | 4 | CAT1 |
| <i>X.</i> sp. 1 | 4 | LOW |
| Vaucheriales | | |
| <u>Vaucheriaceae</u> | | |
| <i>Vaucheria sessilis</i> (Vaucher) DC. | 10 | SUG1 |
| Eustigmatophyta (2 TAXA) | | |
| Eustigmatales | | |
| <u>Eustigmataceae</u> | | |
| <i>Eustigmatos magnus</i> (J.B Petersen) Hibberd | 4, 14 | CHC, RFT1, LRR1 |
| <i>E.</i> sp. 1 | 4 | RFT1 |
| Bacillariophyta (488 TAXA) | | |
| Achnanthes | | |
| <u>Achnantheaceae</u> | | |
| <i>Achnanthes coarctata</i> (Bréb.) Grun. | 5, 6, 14 | Widespread |
| <i>A. harveyi</i> Reim. | 5, 6, 14 | BF, HU |
| <i>A. helvetica</i> (Hust.) L.-Bert. | 15 | CAT1 |
| <i>A. kraeuselii</i> Chohn. | 6, 14 | AC, CF |
| <i>A. lewisiana</i> Patr. | 6, 7 | AC, BOW, CC |
| <i>A. lutheri</i> Hust. | 5, 6, 8, 14 | BF, CH, HU |
| <i>A. reimeri</i> Camb. | 6 | AC, BF |
| <i>A. rosenstockii</i> L.-Bert. | 15 | JWF |
| <i>A. saxonica</i> Krasske ex Hust. | 5, 6, 7 | Common |
| <i>A. stewartii</i> Patr. | 5, 6, 7, 14 | Widespread |
| <i>A. subrostrata</i> var. <i>appalachiana</i> Camb. & Lowe | 5, 6, 7, 14 | Widespread |
| <i>A. subsalsa</i> J.B. Petersen | 15 | FCF, HRR |
| <i>A. ventralis</i> (Krasske) L.-Bert. | 6 | AC |
| <u>Achnanthidiaceae</u> | | |
| <i>Achnanthidium alpestre</i> (Lowe & Kociol.) Lowe & Kociol. | 5, 6, 8 | Common |
| <i>A. deflexum</i> (Reim.) Kingston | 7, 14 | BOW, PIG1, TW |
| <i>A. exiguum</i> (Grun.) Czarn. | 7, 14 | Widespread |
| <i>A. exiguum</i> var. <i>heterovalvum</i> (Krasske) Czarn. | 5, 6, 14 | AC, BF, CAT1, HWF |
| <i>A. microcephalum</i> Kütz. | 5, 6, 14 | AC, BF, CH |
| <i>A. minutissimum</i> (Kütz.) Czarn. | 5, 6, 7, 11, 14 | Widespread |

| Taxon | Source | Sites |
|---|--------------|----------------|
| <i>Eucocconeis lapponica</i> var. <i>ninkei</i> (Guerm. & Mang.) Edl. | 7 | CC, MCB |
| <i>Karayevia clevei</i> (Grun.) Round & Bukht. | 6 | AC |
| <i>K. laterostrata</i> (Hust.) Round & Bukht. | 6 | AC |
| <i>Lemnicola hungarica</i> (Grun.) Round & Basson | 9 | EC |
| <i>Planothidium apiculatum</i> (Patr.) Lowe | 9 | CAN |
| <i>P. biporum</i> (Hohn & Heller.) L.-Bert. | 15 | CAT1 |
| <i>P. conspicuum</i> (A. Mayer) Aboal | 15 | IC, JWF, TBF |
| <i>P. dubium</i> (Grun.) Round & Bukht. | 5, 6 | AC, BF, CH, HU |
| <i>P. fossile</i> (Temp. & Perag.) Lowe | 6 | AC |
| <i>P. frequentissimum</i> (L.-Bert.) Round & Bukht. | 15 | RFT1 |
| <i>P. haukianum</i> (Grun.) Round & Bukht. | 6 | AC |
| <i>P. lanceolatum</i> (Bréb. ex Kütz.) Round & Bukht. | 6, 7, 12, 14 | Widespread |
| <i>Psammothidium helveticum</i> (Hust.) Bukht. & Round | 5, 6 | AC, BF, CH, HU |
| <i>P. marginulatum</i> (Grun.) Bukht. & Round | 6, 7, 14 | Widespread |
| <i>P. subatomoides</i> (Hust.) Bukht. & Round | 5, 6, 7, 14 | Widespread |
| <i>Rossithidium lineare</i> (W. Sm.) Round & Bukht. | 7 | CC, MCB |
| <u>Cocconeidaceae</u> | | |
| <i>Cocconeis diminuta</i> Pant. | 6 | AC |
| <i>C. pediculus</i> Ehr. | 9 | AC |
| <i>C. placentula</i> Ehr. | 7, 12, 14 | Widespread |
| <i>C. placentula</i> var. <i>lineata</i> (Ehr.) V.H. | 5, 6, 7, 12 | Common |
| Aulacoseirales | | |
| <u>Aulacoseiraceae</u> | | |
| <i>Aulacoseira alpigena</i> (Grun.) Kramm. | 9, 14 | CAC, HWF |
| <i>A. distans</i> (Ehr.) Simonsen | 9 | GCD |
| <i>A. granulata</i> (Ehr.) Simonsen | 15 | FON |
| Bacillariales | | |
| <u>Bacillariaceae</u> | | |
| <i>Hantzschia abundans</i> L.-Bert. | 15 | CAT1, HWF |
| <i>H. amphioxys</i> (Ehr.) Grun. | 7, 14 | GSM, HWF |
| <i>H. vivax</i> (W. Sm.) M. Perag. | 15 | LCM |
| <i>Nitzschia acicularis</i> (Kütz.) W. Sm. | 6 | AC |
| <i>N. acida</i> Camb. | 6 | AC |
| <i>N. acidoclinata</i> L.-Bert. | 15 | HWF |
| <i>N. alpina</i> Hust. | 15 | HWF |
| <i>N. amphibia</i> Grun. | 6, 14 | AC, RFR |
| <i>N. balcanica</i> Hust. | 6 | AC |
| <i>N. clausii</i> Hantz. | 6, 14 | AC, MPT |
| <i>N. dissipata</i> (Kütz.) Grun. | 5, 6 | AC, BF, HU |
| <i>N. dissipata</i> var. <i>media</i> (Hantz.) Grun. | 9 | AC |
| <i>N. frustulum</i> (Kütz.) Grun. | 5, 6, 7 | Widespread |
| <i>N. frustulum</i> var. <i>perpusilla</i> (Rabh.) Grun. | 7 | TW |
| <i>N. gracilis</i> Hantz. | 6 | AC |
| <i>N. hantzschiana</i> Rabh. | 15 | HWF |
| <i>N. linearis</i> W. Sm. | 6, 14 | AC, PTD, RFR |
| <i>N. microcephala</i> Grun. | 6 | AC, BF |
| <i>N. monanestris</i> Camb. | 6 | AC |
| <i>N. palea</i> (Kütz.) W. Sm. | 5, 6, 14 | AC, CH, PTD |
| <i>N. perminuta</i> (Grun.) M. Perag. | 15 | CAT2 |

| Taxon | Source | Sites |
|---|-----------------|--------------------|
| <i>Nitzschia rectiformis</i> Hust. | 15 | IC, JWF, LCF, TBF |
| <i>N. sublinearis</i> Hust. | 6 | AC |
| <i>N. terricola</i> Lund | 6, 7 | AC, TW |
| <i>N. tropica</i> Hust. | 6 | BF |
| <i>Tryblionella acuta</i> (Cl.) D.G. Mann | 6 | AC |
| Cymbellales | | |
| <u>Cymbellaceae</u> | | |
| <i>Cymbella affinis</i> Kütz. | 6, 12 | AC, LRR2 |
| <i>C. aspera</i> (Ehr.) H. Perag. | 6 | AC, BF |
| <i>C. cistula</i> (Ehr.) Kirch. | 6 | AC |
| <i>C. cymbiformis</i> Ag. | 11 | AF |
| <i>C. ehrenbergii</i> Kütz. | 12 | BRA |
| <i>C. hauckii</i> V.H. | 6, 12 | BF, BRA |
| <i>C. scotica</i> W. Sm. | 12 | BRA |
| <i>C. tumida</i> (Bréb. ex Kütz.) V.H. | 6, 12 | AC, LRR2 |
| <i>C. turgidula</i> Grun. | 9 | AC |
| <i>Cymbopleura gondwana</i> L.-Bert. et al. | 15 | FCF, HRR |
| <i>C. naviculiformis</i> (Auersw.) Kramm. | 6, 7, 12, 14 | AC, BF, BRA, MCB |
| <i>C. rupicola</i> (Grunow) Kramm. | 15 | WOS |
| <i>Encyonema hebridicum</i> Grun. ex Cl. | 11 | AF |
| <i>E. lunatum</i> (W. Sm.) V.H. | 7, 14 | Widespread |
| <i>E. minutiforme</i> Kramm. | 15 | HWF |
| <i>E. minutum</i> (Hilse) D.G. Mann | 5, 6, 7, 12, 14 | Widespread |
| <i>E. neogracile</i> Kramm. | 15 | FCF, HRR, IC |
| <i>E. neomesianum</i> Kramm. | 5, 7, 14 | Common |
| <i>E. perpusillum</i> (A. Cl.) D.G. Mann | 6 | AC, BF |
| <i>E. procerum</i> Kramm. | 15 | CAT1 |
| <i>E. prostratum</i> (Berk.) Kütz. | 6, 12 | AC, FIG |
| <i>E. schneideri</i> Kramm. | 15 | FCF, HRR, JWF, LCM |
| <i>E. silesiacum</i> (Bleisch) D.G. Mann | 9, 14 | Common |
| <i>E. silesiacum</i> var. <i>distinctepunctata</i> Kramm. | 15 | Common |
| <i>E. simile</i> Kramm. | 15 | IC, LCF, TBF |
| <i>E. vulgare</i> Kramm. | 15 | HWF |
| <i>Encyonopsis microcephala</i> (Grun.) Kramm. | 9 | CAC |
| <i>Placoneis abiskoensis</i> (Hust.) L.-Bert. & Metzelt. | 6 | BF |
| <i>P. anglica</i> (Ralfs) Cox | 11, 14 | AF, LCM, TBF |
| <i>P. clementis</i> (Grun.) Cox | 6 | AC |
| <i>P. elginensis</i> (Greg.) Cox | 6, 7 | AC, BF, IC |
| <i>P. lata</i> (M. Perag.) Lowe | 6 | AC |
| <i>P. neglecta</i> (Krasske) Lowe | 6 | AC, BF |
| <i>P. gastrum</i> (Ehr.) Mereschkowsky | 6, 7 | BF, IC |
| <i>P. paraelginensis</i> L.-Bert. | 15 | LCM |
| <u>Gomphonemataceae</u> | | |
| <i>Gomphoneis minuta</i> (Stone) Kociol. & Stoerm. | 6 | AC |
| <i>G. olivacea</i> (Hornemann) Ross & Sims | 16 | KC |
| <i>Gomphonema acuminatum</i> Ehr. | 6, 7 | AC, CC, IC |
| <i>G. acuminatum</i> var. <i>pusillum</i> Grunow | 16 | CAT1, KC |
| <i>G. affine</i> Kütz. | 7 | TW |
| <i>G. affine</i> var. <i>insigne</i> (Greg.) Andrews | 7 | IC, TW, LCAT |
| <i>G. anglicum</i> Ehr. | 16 | CAD3 |
| <i>G. angustatum</i> (Kütz.) Rabh. | 5, 6, 7, 14 | Widespread |
| <i>G. angustatum</i> var. <i>obtusatum</i> (Kütz.) Grun. | 9 | HWF |
| <i>G. apicatum</i> Ehr. | 16 | AC |

| Taxon | Source | Sites |
|---|-----------------|------------------|
| <i>Gomphonema augur</i> Ehr. | 16 | AC |
| <i>G. brasiliense</i> Grun. | 5, 6 | AC, CH, HU |
| <i>G. christensenii</i> Lowe & Kociol. | 8, 14 | Widespread |
| <i>G. commutatum</i> Grun. | 16 | Common |
| <i>G. consector</i> Hohn & Hellerm. | 7 | CC, IC |
| <i>G. coronatum</i> Ehr. | 16 | AC |
| <i>G. dichotomum</i> Kütz. | 7 | Common |
| <i>G. freesei</i> Lowe & Kociol. | 8, 14 | Widespread |
| <i>G. gibba</i> Wall. | 9 | AC |
| <i>G. gracile</i> Ehr. | 6, 7, 14 | Widespread |
| <i>G. gracile</i> var. <i>naviculoides</i> (W. Sm.) Grun. | 11, 12 | RAM1 |
| <i>G. grunowii</i> Patr. | 11, 12 | RAM1 |
| <i>G. intricatum</i> Kütz. | 9 | CAC |
| <i>G. intricatum</i> var. <i>vibrio</i> (Ehr.) Cl. | 9 | BIG1 |
| <i>G. instabilis</i> Hohn & Hellerman | 16 | LCAT |
| <i>G. laticollum</i> Reichardt | 16 | MEI |
| <i>G. mehleri</i> Camb. | 6, 14 | AC, IC |
| <i>G. cf. micropus</i> | 9, 14 | EC, HWF |
| <i>G. minutum</i> (Ag.) Ag. | 15 | Widespread |
| <i>G. montanum</i> Schumann | 16 | Widespread |
| <i>G. parvulum</i> Kütz. | 5, 6, 7, 14 | Widespread |
| <i>G. procerum</i> Reichardt & L.-Bert. | 16 | HWF |
| <i>G. puiggarianum</i> Grun. | 7 | BOW, FC, RAM, TW |
| <i>G. pygmaeum</i> Kociol. & Stoerm. | 16 | Widespread |
| <i>G. reimeri</i> Camb. | 16 | AC, TMC |
| <i>G. rhombicum</i> Fricke | 9 | HAZ |
| <i>G. sphaerophorum</i> Ehr. | 6, 12 | AC, LRR2 |
| <i>G. subclavatum</i> (Grun.) Grun. | 6, 7, 14 | Common |
| <i>G. subclavatum</i> var. <i>mexicanum</i> Grun. | 9 | BIG1 |
| <i>G. tenellum</i> Kütz. | 7 | Common |
| <i>G. truncatum</i> Ehr. | 7, 11, 14 | Common |
| <i>G. truncatum</i> var. <i>capitatum</i> (Ehr.) Patr. | 9, 11, 12 | CAN, LRR2 |
| <i>G. truncatum</i> var. <i>cuneatum</i> (Fricke) Camb. | 7 | GSM |
| <i>G. turgidum</i> Ehr. | 16 | AC |
| <i>G. ventricosum</i> Greg. | 11 | AF |
| <i>Gomphosphenia</i> sp. 1 | 16 | CAT1, RFT2 |
| <i>Reimeria sinuata</i> (Greg.) Kociol. & Stoerm. | 6 | AC, BOW, BF |
| <u>Rhoicospheniaceae</u> | | |
| <i>Rhoicosphenia abbreviata</i> (Ag.) L.-Bert. | 6 | AC |
| Eunotiales | | |
| <u>Eunotiaceae</u> | | |
| <i>Eunotia arcus</i> Ehr. | 7 | CC |
| <i>E. bidens</i> Ehr. | 5, 6, 7, 14 | Common |
| <i>E. bidentula</i> W. Sm. | 9 | POR |
| <i>E. bigibba</i> Kütz. | 15 | Widespread |
| <i>E. billii</i> Lowe & Kociol. | 8, 14 | Widespread |
| <i>E. bilunaris</i> (Ehr.) Mills | 15 | Common |
| <i>E. braendlei</i> L.-Bdert. & Werum | 15 | TWP |
| <i>E. curtagrunowii</i> Nörpel-Sch. & L.-Bert. | 15 | Common |
| <i>E. curvata</i> (Kütz.) Lagerst. | 5, 6, 7, 14 | Widespread |
| <i>E. diodon</i> Ehr. | 6, 7, 14 | Common |
| <i>E. elegans</i> Østr. | 5, 6, 7 | Common |
| <i>E. exigua</i> (Bréb. ex Kütz.) Rabh. | 5, 6, 7, 12, 14 | Widespread |

| Taxon | Source | Sites |
|---|-------------|-------------------------|
| <i>Eunotia exigua</i> cf. var. <i>bidens</i> Hust. | 15 | FCF,HRR,HWF,LCM |
| <i>E. fallax</i> A. Cl. | 7 | IC |
| <i>E. flexuosa</i> (Bréb.) Kütz. | 9 | CAN |
| <i>E. formica</i> Ehr. | 5, 6, 14 | Widespread |
| <i>E. glacialis</i> Meist. | 6, 14 | AC, BF, CAT1 |
| <i>E. hexaglyphis</i> Ehr. | 9 | AC |
| <i>E. incisa</i> Gregory | 5, 6, 14 | BF, CH |
| <i>E. indica</i> Grun. | 7 | FC, TW |
| <i>E. inflata</i> (Grun.) Nörpel & L.-Bert. | 7 | GSM |
| <i>E. intermedia</i> (Krasske) Nörpel-Sch. & L.-Bert. | 15 | CAT1 |
| <i>E. lunaris</i> (Ehr.) Grun. | 12 | BRA |
| <i>E. lunaris</i> var. <i>capitata</i> (Grun.) Schönfeldt | 15 | GMT |
| <i>E. maior</i> (W. Sm.) Rabh. | 7 | IC, CC, MCB |
| <i>E. meisteri</i> var. <i>bidens</i> Hust. | 7 | CC |
| <i>E. microcephala</i> Krasske | 12, 14 | BRA, CAD2, LRR2, RAM |
| <i>E. minor</i> (Kütz.) Grun. | 5, 6, 7, 14 | Widespread |
| <i>E. monodon</i> Ehr. | 15 | CAT1, HWF, IC, LCM |
| <i>E. monodon</i> var. <i>bidens</i> (Greg.) Hust. | 7, 14 | GSM, HRR |
| <i>E. muscicola</i> Krasske | 15 | LAU |
| <i>E. muscicola</i> var. <i>tridentula</i> Nörpel & L.-Bert. | 15 | Widespread |
| <i>E. naegeli</i> Migula | 9 | CAN |
| <i>E. nymanniana</i> Grun. | 15 | Widespread |
| <i>E. paludosa</i> Grun. | 15 | LCF, LCM, TBF |
| <i>E. pectinalis</i> (Kütz.) Rabh. | 9, 14 | Widespread |
| <i>E. perpusilla</i> Grun. | 5, 6 | Widespread |
| <i>E. pirla</i> Carter & Flower | 15 | Common |
| <i>E. praerupta</i> Ehr. | 7, 14 | Widespread |
| <i>E. rhomboidea</i> Hust. | 5, 6, 7, 14 | Widespread |
| <i>E. septentrionalis</i> Østr. | 9 | BIG1 |
| <i>E. serra</i> Ehr. | 7 | PIG1 |
| <i>E. siolii</i> Hust. | 15 | FCF |
| <i>E. soleirolii</i> (Kütz.) Rabh. | 5, 6 | BF, CH, HU |
| <i>E. subarcatoides</i> Alles, Nörpel & L.-Bert. | 15 | FCF |
| <i>E. suecica</i> A. Cl. | 6, 7 | AC, BF, RAM |
| <i>E. sudetica</i> O. Müll. | 9 | CAN |
| <i>E. tenella</i> (Grun.) Cl. | 9, 14 | CAN, CAT1 |
| <i>E. valida</i> Hust. | 9, 14 | BIG1, CAT1, HWF |
| <i>E. vanheurckii</i> var. <i>intermedia</i> (Krasske ex Hust.) Patr. | 6, 12 | BF, RAM |
| <i>E. variundulata</i> Nörpel-Sch. & L.-Bert. | 15 | Common |
| <i>E. cf. yanomami</i> Metzelt. & L.-Bert. | 15 | HWF |
| <i>E. zasuminensis</i> (Cabejsz.) Körner | 15 | FON |
| <i>E. cf. zygodon</i> Ehr. | 15 | HWF |

Fragilariales

Fragilariaceae

| | | |
|---|-----------------|------------|
| <i>Asterionella formosa</i> Hassall | 1, 9 | FON |
| <i>Diatoma mesodon</i> (Ehr.) Kütz. | 5, 6, 7, 12, 14 | Widespread |
| <i>Diatoma vulgare</i> Bory | 9 | HAZ |
| <i>Fragilaria capucina</i> Desmaz. | 15 | HWF |
| <i>F. crotonensis</i> Kitton | 9 | FON |
| <i>F. socia</i> (Wall.) L.-Bert. | 9 | HAZ |
| <i>F. vaucheriae</i> (Kütz.) J.B. Petersen | 6, 7, 14 | Widespread |
| <i>Fragilariaforma hungarica</i> var. <i>tumida</i> (Cl.-Eul.) Hamil. | 15 | FCF |
| <i>F. virescens</i> (Ralfs) Will. & Round | 6, 7, 12, 14 | Widespread |

| Taxon | Source | Sites |
|---|-----------------|-------------------|
| <i>Fragilariaforma virescens</i> var. <i>capitata</i> (Østr.) Czarn. | 12, 14 | BRA, HWF |
| <i>Hannaea arcus</i> (Ehr.) Patr. | 6, 7 | BOW, BF |
| <i>H. arcus</i> var. <i>amphioxys</i> (Rabh.) Patr. | 6, 7 | BOW, BF |
| <i>Martyana martyi</i> (Hérib.) Round | 6 | AC |
| <i>Meridion alansmithii</i> Brandt | 15 | Widespread |
| <i>M. circulare</i> (Grev.) Ag. | 5, 6, 7, 12, 14 | Widespread |
| <i>M. circulare</i> var. <i>constrictum</i> (Ralfs) V.H. | 5, 6 | AC, BF, CH, HU |
| <i>Pseudostaurosira brevistriata</i> (Grun.) Will. & Round | 6 | AC |
| <i>Staurosirella leptostauron</i> (Ehr.) Will. & Round | 6, 11 | AC, AF |
| <i>S. leptostauron</i> var. <i>dubia</i> (Grun.) Edl. | 6 | AC |
| <i>S. pinnata</i> (Ehr.) Will. & Round | 6 | AC |
| <i>Synedra acus</i> var. <i>angustissima</i> Grun. | 9 | FON |
| <i>S. amphicephala</i> Kütz. | 15 | HWF |
| <i>S. delicatissima</i> W. Sm. | 6 | AC |
| <i>S. famelica</i> Kütz. sensu Patr. & Reim. | 15 | HWF |
| <i>S. parasitica</i> (W. Sm.) Hust. | 6 | AC |
| <i>S. rumpens</i> Kütz. | 7, 14 | Widespread |
| <i>S. rumpens</i> var. <i>familiaris</i> (Kütz.) Grun. | 11, 12 | LRR2 |
| <i>S. rumpens</i> var. <i>fragilarioides</i> Grun. | 9 | EC |
| <i>S. rumpens</i> var. <i>scotica</i> Grun. | 9 | BIG1 |
| <i>S. ulna</i> (Nitzsch) Ehr. | 6, 7, 12, 14 | Widespread |
| <i>S. ulna</i> var. <i>contracta</i> Østr. | 6, 9, 11 | AC, BF, BIG1, HAN |
| <i>S. ulna</i> var. <i>oxyrhynchus</i> f. <i>mediocontracta</i> (Forti) Hust. | 9, 12 | EC, HAN |
| <i>S. ulna</i> var. <i>ramesii</i> (Hérib. & Perag.) Hust. | 12 | FC, LRR2 |

Melosirales

Melosiraceae

| | | |
|--|-----------|------------------|
| <i>Melosira dickiei</i> (Thwaites) Kütz. | 15 | Common |
| <i>M. varians</i> Ag. | 6, 12, 14 | AC, BF, PTD, SGT |

Naviculales

Amphipleuraceae

| | | |
|---|-----------------|----------------|
| <i>Amphipleura pellucida</i> (Kütz.) Kütz. | 6 | AC |
| <i>Frustulia amosseana</i> L.-Bert. | 15 | LRR1 |
| <i>F. amphipleuroides</i> (Grun.) Cl.-Euler | 5, 6, 7, 12, 14 | Widespread |
| <i>F. crassinervia</i> (Bréb.) L.-Bert. & Kramm. | 6, 7, 12, 14 | Widespread |
| <i>F. rhomboides</i> (Ehr.) De Toni Varieties are old names | 6, 7, 14 | Widespread |
| <i>F. saxonica</i> Rabh. | 5, 6, 7 | BF, CH, HU, IC |
| <i>F. saxonica</i> var. <i>capitata</i> A. Mayer | 5, 6 | AC, BF, CH |
| <i>F. vulgaris</i> (Thwaites) De Toni | 6, 7, 12, 14 | Widespread |
| <i>F. weinholdii</i> Hust. | 6, 7, 14 | Widespread |

Brachysiraceae

| | | |
|---------------------------------------|----------|--------|
| <i>Brachysira brebissonii</i> Ross | 6, 7, 14 | Common |
| <i>Brachysira vitrea</i> (Grun.) Ross | 6, 7 | Common |

Cavinulaceae

| | | |
|---|------|----------|
| <i>Cavinula cocconeiformis</i> (Greg. ex Grev.) D.G. Mann & Stickle | 6, 7 | Common |
| <i>C. jaernefeltii</i> (Hust.) D.G. Mann & Stickle | 15 | FCF |
| <i>C. lapidosa</i> (Krasske) L.-Bert. | 15 | Common |
| <i>C. weinzierlii</i> (Schimanski) Czarnecki | 15 | HRR, LCM |
| <i>C. sp. 1</i> | 15 | HWF |
| <i>C. sp. 2</i> | 15 | HWF |

| Taxon | Source | Sites |
|---|-----------------|-------------------|
| <u>Diadesmidaceae</u> | | |
| <i>Diadesmis brekkaensis</i> (Petersen) D.G. Mann | 15 | CHC, LCM |
| <i>D. biscutella</i> L.-Bert. | 15 | Common |
| <i>D. contenta</i> (Grun.) D.G. Mann | 5, 6, 7, 14 | Widespread |
| <i>D. laevissima</i> (Cl.) D.G. Mann | 15 | CAT4 |
| <i>D. paracontenta</i> L.-Bert. & Werum | 15 | Common |
| <i>D. paracontenta</i> ssp. <i>magisconcava</i> L.-Bert. | 15 | Common |
| <i>D. perpusilla</i> (Grun.) D.G. Mann | 5, 6, 7, 14 | Widespread |
| <i>Luticola acidoclinata</i> L.-Bert. | 15 | JWF |
| <i>L. cohnii</i> (Hilse) D.G. Mann | 7 | CC |
| <i>L. goeppertiana</i> (Bleisch) D.G. Mann | 7, 14 | Common |
| <i>L. minor</i> (Patr.) Mayama | 6 | AC |
| <i>L. mutica</i> (Kütz.) D.G. Mann | 6 | AC, BF |
| <i>L. muticoides</i> (Hust.) D.G. Mann | 6, 14 | AC, CHC, FCF, TBF |
| <i>L. saxophila</i> (Bock ex Hust.) D.G. Mann | 15 | CAT1, HWF |
| <i>L. stigma</i> (Patr.) Johansen | 9 | CAT1 |
| <i>L. terminata</i> (Hust.) Johansen | 6 | BF |
| <i>L. terminata</i> var. <i>rostrata</i> (Krasske) Johansen | 5, 6, 8 | AC, BF, CH |
| <u>Diploneidaceae</u> | | |
| <i>Diploneis elliptica</i> (Kütz.) Cl. | 6, 7, 14 | Common |
| <i>D. fusca</i> (Greg.) Cl. | 7 | IC, CC, MCB |
| <i>D. marginestriata</i> Hust. | 6 | AC |
| <i>D. oblongella</i> (Näg. ex Kütz.) Ross | 6 | AC |
| <i>D. ovalis</i> (Hilse) Cleve | 15 | CAT1, CAT4, CF |
| <i>D. petersenii</i> Hustedt | 15 | LCR |
| <i>D. smithii</i> var. <i>dilatata</i> (Perag.) Boyer | 9, 14 | GRO, HWF |
| <i>D. sp.1</i> | 15 | GRO, HWF |
| <u>Naviculaceae</u> | | |
| <i>Adlafia suchlandtii</i> (Hust.) L.-Bert. | 6, 8, 14 | AC, BF |
| <i>Chamaepinnularia begeri</i> (Krasske) L.-Bert. | 6, 14 | AC, CAT1, HRR |
| <i>C. margaritacea</i> (Hust.) L.-Bert. | 6 | BF |
| <i>C. mediocris</i> (Krasske) L.-Bert. | 6, 7, 14 | Widespread |
| <i>C. soehrensii</i> var. <i>hassiacae</i> (Krasske) L.-Bert. | 6, 7, 14 | Widespread |
| <i>C. vyvermanii</i> L.-Bert. & Kramm. | 15 | TBF |
| <i>Decussata placenta</i> (Ehr.) L.-Bert. & Metzelt. | 5, 6, 7, 12, 14 | Widespread |
| <i>Fistulifera saprophila</i> (L.-Bert. & Bonik) L.-Bert. | 6 | AC |
| <i>Geissleria decussis</i> (Østrup) L.-Bert. & Metzelt. | 5, 6, 12 | Common |
| <i>G. lateropunctata</i> (Wall.) Potapova & Winter | 9 | POR |
| <i>G. paludosa</i> (Hust.) L.-Bert. & Metzelt. | 6 | AC |
| <i>G. subdecussis</i> (Hust.) L.-Bert. | 15 | HWF |
| <i>Hippodonta capitata</i> (Ehr.) Lange-Bert., Metzelt. & Witk. | 6 | AC |
| <i>H. hungarica</i> (Grun.) Lange-Bert., Metzelt. & Witk. | 6 | AC |
| <i>Microcostatus krasskei</i> (Hust.) Johansen & Sray | 5, 6, 14 | Widespread |
| <i>Navicula abiskoensis</i> Hust. | 15 | CAT4 |
| <i>Navicula amphiceropsis</i> L.-Bert. & Rumr. | 6 | AC |
| <i>N. angusta</i> Grun. | 5, 6, 7, 12, 14 | Widespread |
| <i>N. arvensis</i> Hust. | 9, 14 | Common |
| <i>N. bicephala</i> Hust. | 6 | AC, BF |
| <i>N. cincta</i> (Ehr.) Ralfs | 9 | BIG1 |
| <i>N. cryptocephala</i> Kütz. | 6, 7 | AC, BF, CC |
| <i>N. cryptotenella</i> L.-Bert. | 6, 7, 9, 12 | Common |
| <i>N. digna</i> Hust. | 15 | JWF |
| <i>N. erifuga</i> L.-Bert. | 9 | CAD |
| <i>N. globosa</i> Meist. | 6 | AC |

| Taxon | Source | Sites |
|--|----------|-------------------|
| <i>Navicula gottlandica</i> Grun. | 9 | POR |
| <i>N. graciloides</i> A. Mayer | 6 | AC |
| <i>N. gregaria</i> Donk. | 6 | AC |
| <i>N. hambergii</i> Hust. | 6, 14 | Common |
| <i>N. hasta</i> Pant. | 6, 8 | AC |
| <i>N. keeleyi</i> Patr. | 15 | Widespread |
| <i>N. lanceolata</i> (Ag.) Kütz. | 7 | MCB |
| <i>N. leistikowii</i> L.-Bert. | 15 | Common |
| <i>N. notha</i> Wall. | 7 | IC |
| <i>N. paratunkae</i> J.B. Petersen | 6 | AC |
| <i>N. phyllepta</i> Kütz. | 15 | JWF, TBF |
| <i>N. pseudoarvensis</i> Hust. | 6 | AC |
| <i>N. pseudofrickia</i> Patr. | 7 | IC |
| <i>N. radiosa</i> Kütz. | 9 | AC |
| <i>N. recens</i> L.-Bert. | 9 | HAZ |
| <i>N. rhychocephala</i> Kütz. | 6, 12 | AC |
| <i>N. salinarum</i> var. <i>intermedia</i> (Grun.) Cl. | 6 | AC |
| <i>N. schmassmannii</i> Hust. | 6 | BF |
| <i>N. schroeteri</i> var. <i>escambia</i> Patr. | 6 | AC |
| <i>N. simula</i> Patr. | 7 | CC, MCB |
| <i>N. stroemii</i> Hust. | 15 | CHI1, WOS |
| <i>N. tantula</i> Hust. | 7, 14 | HWF, MCB |
| <i>N. tenuicephala</i> Hust. | 6 | AC |
| <i>N. tripunctata</i> (O. Müll.) Bory | 6 | AC |
| <i>N. trivialis</i> L.-Bert. | 6 | AC |
| <i>N. upsaliensis</i> (Grun.) Perag. | 7 | CC |
| <i>N. venerabilis</i> Hohn & Hellerm. | 7 | IC |
| <i>N. veneta</i> Kütz. | 6, 7, 12 | AC, BF, IC |
| <i>N. viridulacalcis</i> L.-Bert. | 6 | AC |
| <i>N. viridula</i> var. <i>linearis</i> Hust. | 6 | AC |
| <i>N. viridula</i> var. <i>rostellata</i> (Kütz.) Cl. | 6 | AC |
| <i>N. wallacei</i> Reim. | 6 | AC |
| <i>N. yorkensis</i> Camb. | 6 | AC |
| <i>Nupela deformis</i> L.-Bert. | 15 | HRR, JWF |
| <i>N. neglecta</i> Pon., Lowe & Potapova | 15 | Widespread |
| <i>N. tristis</i> (Krasske) L.-Bert. | 15 | LCM |
| <i>N. wellneri</i> (L.-Bert.) L.-Bert. | 15 | Widespread |
| <u>Neidiaceae</u> | | |
| <i>Neidium affine</i> (Ehr.) Pfitzer | 6 | BF |
| <i>Neidium affine</i> var. <i>amphirhynchus</i> (Ehr.) Cl. | 9 | CAD |
| <i>N. affine</i> var. <i>longiceps</i> (Greg.) Cl. | 6 | AC |
| <i>N. alpinum</i> Hust. | 6, 14 | AC, FCF |
| <i>N. ampliatum</i> (Ehr.) Kramm. | 9 | AC, FCF |
| <i>N. binode</i> (Ehr.) Hust. | 6 | AC |
| <i>N. bisulcatum</i> (Lagerst.) Cl. | 6, 7, 14 | Common |
| <i>N. bisulcatum</i> var. <i>subundulatum</i> (Grun.) Reim. | 6 | BF |
| <i>N. dubium</i> (Ehr.) Cl. | 6, 14 | BF, FCF |
| <i>N. hankensis</i> Skvortz. | 6 | AC |
| <i>N. hercynicum</i> f. <i>subrostratum</i> Wall. | 9 | CAN |
| <i>N. iridis</i> (Ehr.) Cl. | 6, 12 | AC, BF |
| <i>N. iridis</i> var. <i>amphigomphus</i> (Ehr.) A. Mayer | 9 | FON1 |
| <i>N. iridis</i> var. <i>vernalis</i> (Reich. ex Hust.) Frenguelli | 6 | BF |
| <i>N. ladogense</i> var. <i>densestriatum</i> f. <i>peribryum</i> Lowe & Kociol. | 6, 7, 8 | BF, IC, PIG1, RAM |
| <i>N. tenuissimum</i> Hust. | 6 | AC, BF |

| Taxon | Source | Sites |
|--|-----------|--------------------|
| <u>Pinnulariaceae</u> | | |
| <i>Caloneis aerophila</i> Bock | 15 | LAU |
| <i>C. alpestris</i> (Grun.) Cl. | 6 | AC |
| <i>C. bacillum</i> (Grun.) Cl. | 6, 7, 14 | Common |
| <i>C. hyalina</i> Hust. | 6 | AC |
| <i>C. lauta</i> Carter & Bailey-Watts | 15 | FCF, HRR, HWF, JWF |
| <i>C. lewisii</i> var. <i>inflata</i> (Schultze) Patr. | 6 | AC |
| <i>C. schumanniana</i> var. <i>biconstricta</i> f. <i>baikalensis</i> Skvortz. | 6 | AC |
| <i>C. tenuis</i> (Greg.) Kramm. | 15 | LCR, NGR |
| <i>C. undulata</i> (Greg.) Kramm. | 11 | AF |
| <i>Diatomella balfouriana</i> (W. Smith) Grev. | 15 | WOS, CF |
| <i>Pinnularia abaujensis</i> var. <i>rostrata</i> (Patr.) Patr. | 7 | CC |
| <i>P. abaujensis</i> var. <i>subundulata</i> (A. Mayer ex Hust.) Patr. | 7 | IC |
| <i>P. acidicola</i> var. <i>elongata</i> Van de Vijver & Beyens | 15 | FCF, HRR, JWF, TBF |
| <i>P. acrospheria</i> W. Sm. | 15 | CAT3 |
| <i>P. cf. amabilis</i> Kramm. | 15 | GSM |
| <i>P. angusta</i> (Cleve) Kramm. | 15 | HWF |
| <i>P. angusta</i> var. <i>rostrata</i> Kramm. | 15 | FCF, HRR |
| <i>P. biceps</i> Greg. | 7 | BOW, FC, TW |
| <i>P. borealis</i> Ehr. | 15 | Common |
| <i>P. borealis</i> var. <i>rectangularis</i> Carls. | 6, 14 | BF, CAT1 |
| <i>P. braunii</i> var. <i>amphicephala</i> (A. Mayer) Hust. | 7 | CC, MCB |
| <i>P. brebissonii</i> (Kütz.) Rabh. | 15 | LMC |
| <i>P. burkei</i> Patr. | 5, 6 | AC, BF, CH, HU |
| <i>P. erratica</i> Kramm. | 5, 6 | BF, CH, HU |
| <i>P. cf. graciloides</i> var. <i>triundulata</i> (Font.) Kramm. | 15 | GSM |
| <i>P. intermedia</i> (Lagerst.) Cl. | 7 | IC, MCB |
| <i>P. lecohui</i> Van de Vijver | 15 | GSM |
| <i>P. macilenta</i> Ehr. | 12 | BRA |
| <i>P. maior</i> (Kütz.) Rabh. | 7, 12 | BRA, CC |
| <i>P. mesogongyla</i> Ehr. | 5, 6 | BF, CH, HU |
| <i>P. mesolepta</i> (Ehr.) W. Sm. | 6 | BF |
| <i>P. mesolepta</i> var. <i>angusta</i> Cl. | 7 | IC, MCB |
| <i>P. microstauron</i> (Ehr.) Cl. | 7, 14 | FCF, IC, LCM, MCB |
| <i>P. microstauron</i> var. <i>rostrata</i> Kramm. | 15 | FCF, HRR, TBF |
| <i>P. neomajor</i> Kramm. | 7, 12 | BRA, CC |
| <i>P. nodosa</i> (Ehr.) W. Sm. | 6 | BF |
| <i>P. obscura</i> Krasske | 6, 7, 14 | Common |
| <i>P. obscuriformis</i> Kramm. | 7 | IC |
| <i>P. rabenhorstii</i> var. <i>franconica</i> Kramm. | 3 | Common |
| <i>P. stomatophora</i> (Grun.) Cl. | 6, 7, 14 | Widespread |
| <i>P. stomatophora</i> var. <i>irregularis</i> Kramm. | 15 | Common |
| <i>P. streptorraphe</i> Cl. | 7 | MCB |
| <i>P. subcapitata</i> Greg. | 7 | CC, IC, MCB |
| <i>P. subcapitata</i> var. <i>hilsseana</i> (Janisch ex Rabj.) Müll. | 15 | Common |
| <i>P. subcapitata</i> var. <i>paucistriata</i> (Grun.) Cl. | 7 | IC |
| <i>P. subrupestris</i> Kramm. | 15 | FCF, HRR, LCM |
| <i>P. substomatophora</i> Hust. | 7 | IC |
| <i>P. sudetica</i> var. <i>britannica</i> (Grun.) Kramm. | 15 | FCF, HRR, JWF, TBF |
| <i>P. termitina</i> (Ehr.) Patr. | 5, 6 | AC, BF, CH, HU |
| <i>P. titusiana</i> Hagelst. | 7 | MCB |
| <i>P. viridis</i> (Nitzsch) Ehr. | 6, 12, 14 | Common |
| <u>Pleurosigmataceae</u> | | |
| <i>Gyrosigma sciotoense</i> (Sullivant & Wormley) Cleve | 9 | AC |
| <i>G. scalproides</i> (Rabh.) Cl. | 6 | AC, BF |
| <i>G. spencerii</i> (Quekett) Griffith & Henfrey | 6 | AC |

| Taxon | Source | Sites |
|---|----------|-----------------|
| Sellaphoraceae | | |
| <i>Eolimna minima</i> (Grun.) L.-Bert. | 6, 14 | Widespread |
| <i>Fallacia indifferens</i> (Hust.) D.G. Mann | 6 | AC, BF |
| <i>F. subhamulata</i> (Grun.) D.G. Mann | 6 | AC |
| <i>F. vitrea</i> (Østrup) D.G. Mann | 7 | FC |
| <i>Sellaphora laevis</i> (Kütz.) D.G. Mann | 6 | AC |
| <i>S. seminulum</i> (Grun.) D.G. Mann | 15 | HWF |
| <i>S. mutata</i> (Krasske) L.-Bert. | 6 | AC |
| <i>S. parapupula</i> L.-Bert. | 5, 6 | AC, HU |
| <i>S. pupula</i> (Kütz.) Meresch. | 6, 7, 14 | AC, CF, IC, MCB |
| <i>S. rectangularis</i> (Greg.) L.-Bert. & Metzelt. | 6, 7, 14 | Common |
| <i>S. cf. rectilinearis</i> L.-Bert. | 15 | IC, TBF |
| <i>S. rostrata</i> (Hust.) Johansen | 6 | AC |
| <i>S. seminulum</i> (Grun.) Mann | 5, 6, 7 | Widespread |
| <i>S. wummensis</i> Johansen | 9 | CAC |
| Stauroneidaceae | | |
| <i>Craticula accomoda</i> (Hust.) D.G. Mann | 6 | AC, BF |
| <i>C. cuspidata</i> (Kütz.) D.G. Mann | 6 | AC |
| <i>Stauroneis acuta</i> var. <i>terryana</i> Temp. | 6 | AC |
| <i>S. anceps</i> Ehr. | 7, 14 | HWF, IC, TW |
| <i>S. borrichi</i> var. <i>subcapitata</i> (J.B. Petersen) Lund | 15 | BF |
| <i>S. gracilior</i> (Rabenhorst) Reichardt | 6, 14 | BF, HRR, LCM |
| <i>S. kriegeri</i> Patr. | 6, 14 | Common |
| <i>S. obtusa</i> Lagerst. | 9 | GCD |
| <i>S. phoenicenteron</i> (Nitz.) Ehr. | 9, 12 | BRA, MEI |
| <i>S. phoenicenteron</i> f. <i>gracilis</i> (Ehr.) Hust. | 6 | AC, BF |
| <i>S. smithii</i> Grun. | 6 | AC |
| <i>S. smithii</i> var. <i>incisa</i> Pant. | 6 | AC |
| Orthoseirales | | |
| Orthoseiraceae | | |
| <i>Orthoseira dendroteres</i> (Ehr.) Crawford | 15 | Common |
| <i>O. roseana</i> (Rabh.) O Meara | 6, 9, 14 | Widespread |
| <i>O. spinosa</i> W. Sm. | 15 | HWF |
| Rhizosoleniales | | |
| Rhizosoleniaceae | | |
| <i>Acanthoceros zachariasi</i> (Brun) Simonsen | 15 | FON |
| <i>Urosolenia eriensis</i> (H.L. Smith) Round & Crawford | 15 | FON |
| Rhopalodiales | | |
| Rhopalodiaceae | | |
| <i>Epithemia adnata</i> var. <i>saxonica</i> (Kütz.) Patr. | 9 | AC |
| <i>E. turgida</i> var. <i>westermanii</i> (Ehr.) Grun. | 6 | AC |
| <i>Rhopalodia acuminata</i> Kramm. | 15 | Common |
| <i>R. brebissonii</i> Kramm. | 9 | FON1 |
| <i>R. gibberula</i> (Ehr.) O. Müll. | 7, 14 | Common |
| <i>R. gibberula</i> var. <i>vanheurckii</i> O. Müll. | 6 | AC, BF |
| Surirellales | | |
| Surirellaceae | | |
| <i>Cymatopleura solea</i> (Bréb.) W. Sm. | 6 | AC |
| <i>Stenopterobia delicatissima</i> (Lewis) Bréb. ex V.H. | 9, 14 | ABB, HRR |
| <i>S. sp. 1</i> | 15 | HWF |
| <i>S. sp. 2</i> | 15 | HWF |

| Taxon | Source | Sites |
|--|--------|------------------------|
| <i>Surirella agmatilis</i> Camb. | 6 | AC |
| <i>S. angustata</i> Kütz. | 6, 7 | AC, CC |
| <i>S. brebissonii</i> var. <i>kuetzingiana</i> Kramm. & L.-Bert. | 5, 6 | AC, CH |
| <i>S. carolinicola</i> Camb. | 6 | AC |
| <i>S. linearis</i> W. Sm. | 9 | AC |
| <i>S. linearis</i> var. <i>helvetica</i> (Brun) Meist. | 6 | AC |
| <i>S. minuta</i> Bréb. | 6 | AC |
| <i>S. nervosa</i> (Schmidt) A. Mayer | 6, 12 | AC |
| <i>S. ovata</i> Kütz. | 5, 6 | AC, CH |
| <i>S. ovata</i> var. <i>pinnata</i> (W. Sm.) Hust. | 6 | AC |
| <i>S. stalagma</i> Hohn & Hellerm. | 6 | AC |
| <i>S. spiralis</i> Kütz. | 6 | AC |
| Tabellariales | | |
| <u>Tabellariaceae</u> | | |
| <i>Tabellaria fenestrata</i> (Lyngbye) Kütz. | 1, 9 | FON |
| <i>T. flocculosa</i> (Roth) Kütz. | 6 | AC |
| <i>Tetracyclus rupestris</i> (A. Br.) Grun. | 6, 14 | Common |
| Thalassiophysales | | |
| <u>Catenulaceae</u> | | |
| <i>Amphora copulata</i> (Kütz.) Schoeman & Archibald | 6 | AC |
| <i>A. pediculus</i> (Kütz.) Grun. | 6 | AC |
| Thalassiosirales | | |
| <u>Stephanodiscaceae</u> | | |
| <i>Cyclotella ocellata</i> Pant. | 15 | FON |
| <i>C. pseudostelligera</i> Hust. | 6 | AC |
| <i>Discostella stelligera</i> (Cl.) Houk & Klee | 6 | AC |
| <i>Stephanocyclus meneghiniana</i> (Kütz.) Skabitsch. | 6 | AC, BF |
| <u>Thalassiosiraceae</u> | | |
| " <i>Spicaticribra kingstonii</i> " | 15 | |
| Phaeophyta (1 TAXON) | | |
| Ectocarpales | | |
| <u>Ralfsiaceae</u> | | |
| <i>Heribaudiella</i> sp. | 15 | AC |
| Cryptophyta (1 TAXON) | | |
| Cryptomonadales | | |
| <u>Cryptomonadaceae</u> | | |
| <i>Cryptomonas pyrenoidifera</i> Geitler | 15 | FON |
| Dinophyta (21 TAXA) | | |
| Gloeodinales | | |
| <u>Gloeodiniopsidaceae</u> | | |
| <i>Rufusiella insignis</i> (Hassall) Loeblich | 1, 14 | AF, CAT1, CAT2, HWF |
| Gymnodinales | | |
| <u>Gymnodiniaceae</u> | | |
| <i>Gymnodinium aeruginosum</i> F. Stein | 15 | MCP |

| Taxon | Source | Sites |
|--|--------|-------|
| <i>Gymnodinium fuscum</i> (Ehr.) F. Stein | 15 | FON |
| <i>Katodinium bohemicum</i> (Fott) Litvinenko | 15 | FON |
| Peridinales | | |
| <u>Ceratiaceae</u> | | |
| <i>Ceratium hirundinella</i> (O. Müll.) Bergh | 15 | MCP |
| <i>C. rhomvoldes</i> Hickel | 15 | FON |
| <u>Gonyaulacaceae</u> | | |
| <i>Thompsodinium intermedium</i> (Thomps.) Bour. | 1 | FON1 |
| <u>Peridiniaceae</u> | | |
| <i>Durinskia baltica</i> (Levan.) Carty & Cox | 15 | MCP |
| <i>Peridiniopsis elpatiewski</i> (Ostenf.) Bour. | 15 | FON |
| <i>P. polonicum</i> (Wolo.) | 15 | FON |
| <i>P. quadridens</i> (Stein) Bour. | 15 | MCP |
| <i>Peridinium deflandrei</i> Lefevre | 15 | FON |
| <i>P. gatunense</i> Nygaard | 15 | MCP |
| <i>P. inconspicuum</i> Lemm. | 15 | FON |
| <i>P. lomnickii</i> Woloszynska | 15 | MCP |
| <i>P. umbonatum</i> Stein | 1 | FON1 |
| <i>P. volzii</i> Lemm. | 15 | MCP |
| <i>P. willei</i> Huitfeld-Kaas | 1 | FON |
| <i>P. wisconsinense</i> Eddy | 15 | FON |
| Phytodinales | | |
| <u>Phytodiniaceae</u> | | |
| <i>Dinococcus bicornis</i> (Wolo.) Fott | 15 | MCP |
| <i>Stylodinium globosum</i> G.A. Krebs | 15 | CAD1 |
| Euglenophyta (19 TAXA) | | |
| Euglenales | | |
| <u>Euglenaceae</u> | | |
| <i>Euglena fusca</i> (Klebs) Lemm. | 15 | MCP |
| <i>E. helicoideus</i> (Bernard) Lemm. | 15 | MCP |
| <i>E. polymorpha</i> P.A. Dangeard | 15 | MCP |
| <i>E. spirogyra</i> Ehr. | 15 | MCP |
| <i>E. splendens</i> P.A. Dangeard | 15 | MCP |
| <i>Lepocinclis ovum</i> (Ehr) Lemm. | 15 | MCP |
| <i>L. s. texta</i> (Dujardin)Lemm. | 15 | MCP |
| <i>Monomorphina pyrum</i> (Ehr.) Mereschkowsky | 15 | CAD2 |
| <i>Phacus platalea</i> Drezepolski | 15 | MCP |
| <i>P. suecicus</i> Lemm. | 15 | BS |
| <i>P. tortus</i> (Lemm.) Skvortzov | 15 | MCP |
| <i>Strombomonas</i> cf. <i>urceolata</i> (Stokes) Defland. | 15 | MCP |
| <i>Trachelomonas armata</i> (Ehr.) Stein | 15 | MCP |
| <i>T. dubia</i> Swirenko | 15 | MCP |
| <i>T. hispida</i> (Perty) Stein | 15 | BS |
| <i>T. superba</i> Svirenko | 15 | MCP |
| <i>T. volvocina</i> Ehr. | 15 | BS |
| <i>T. woycickii</i> Koczwara | 15 | BS |
| Heteronematales | | |
| <u>Peranemidae</u> | | |
| <i>Peranemopsis limax</i> (Christen) Larsen | 13 | RAM1 |