Table S1. Species name with abbreviation code and % RA of diatom across the sampling sites.

| **Species Name** | **Code** | **1642** | **1643** | **1645** | **1647** | **1648** | **1658** | **1662** | **1663** | **1676** | **1687** | **1689** | **1690** | **1693** | **1695** | **1697** | **1700** | **1702** | **1709** | **1711** | **1716** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Dev1** | **Dev2** | **Dev3** | **Dev4** | **Dev4** | **Asso 1** | **Huli** | **Tor1** | **Mun** | **Hul** | **Hul** | **Hul** | **Kath 1** | **Kath 2** | **Kath 2** | **Kath 3** | **Male** | **Nkat h** | **Nkat h** | **Mavi 1** |
| *Eunotia rhomboidea* | **ERHO** | 23.17 | 0.00 | 0.00 | 22.67 | 25.55 | 11.83 | 0.00 | 0.00 | 12.80 | 0.00 | 1.85 | 2.86 | 0.00 | 6.01 | 7.44 | 6.80 | 0.00 | 4.20 | 15.06 | 1.78 |
| *Eunotia incisa* | **EINC** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 47.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.90 | 1.11 | 0.00 | 0.00 | 2.49 | 0.00 | 0.00 |
| *Eunotia bilunaris* | **EBIL** | 1.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 1.79 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.13 |
| *Eunotia intermedia* | **EINT** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Eunotia incisadistans* | **EIND** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Eunotia* new sp. 1 | **ENS1** | 18.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Eunotia* new sp. 2 | **ENS2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Eunotia* new sp. 3 | **ENS3** | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Eunotia* new sp. 4 | **ENS4** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.47 | 0.00 | 0.00 | 2.13 | 0.00 |
| *Eunotia* new sp. 5 | **ENS5** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.95 | 0.00 |
| *Brachysira neoexilis* | **BMIC** | 12.02 | 0.00 | 9.24 | 0.31 | 2.49 | 1.00 | 0.78 | 0.00 | 2.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.65 | 0.00 | 5.56 | 0.00 | 1.96 | 0.16 |
| *Brachysira* new sp. 1 | **BNS1** | 3.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.27 | 0.00 | 0.00 |
| *Navicula obtecta* | **NOBT** | 1.17 | 0.00 | 0.00 | 0.00 | 0.00 | 4.33 | 11.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.23 | 15.75 | 0.00 | 0.89 | 0.00 | 3.58 | 6.22 | 1.94 |
| *Navicula nielsfogedii* | **NNEI** | 0.00 | 0.00 | 5.12 | 0.00 | 0.00 | 0.00 | 9.40 | 2.33 | 3.87 | 0.00 | 16.31 | 16.03 | 7.55 | 11.53 | 1.74 | 0.00 | 0.00 | 0.00 | 1.80 | 7.93 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Navicula globulifera* var. *robusta* | **NGLR** | 4.55 | 0.00 | 9.57 | 5.59 | 9.97 | 0.00 | 2.98 | 2.83 | 0.00 | 0.50 | 0.00 | 2.06 | 0.00 | 1.95 | 2.22 | 3.25 | 2.78 | 3.58 | 8.84 | 0.00 |
| *Navicula notha* | **NNOT** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Navicul escambia* | **NESC** | 0.00 | 0.00 | 0.00 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 20.00 | 15.08 | 21.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.93 | 0.00 | 2.27 |
| *Navicula feuerbornii* f. *africana* | **NFEA** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 38.99 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Navicula angusta* | **NANG** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 17.32 | 0.00 | 0.00 | 0.00 |
| *Navicula* new sp. 1 | **NNS1** | 9.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Navicula* new sp. 2 | **NNS2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00 | 4.92 | 2.86 | 0.16 | 1.46 | 0.00 | 2.07 | 0.00 | 0.00 | 0.00 | 17.31 |
| *Frustulia jogensis* | **FJOG** | 7.62 | 0.60 | 4.13 | 1.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.83 | 0.77 | 2.22 | 0.00 | 0.00 | 1.90 | 0.00 | 0.65 | 0.00 | 0.00 | 0.00 |
| *Frustulia inculta* | **FINC** | 1.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.33 | 1.50 | 0.92 | 1.27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.58 | 1.64 | 0.00 |
| *Frustulia crassinervia* | **FCRA** | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.50 | 1.19 | 19.33 | 5.08 | 1.90 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Frustulia* new sp. 1 | **FNS1** | 0.00 | 0.00 | 0.00 | 1.55 | 0.62 | 0.00 | 0.00 | 0.00 | 2.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Frustulia* new sp. 2 | **FNS2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.35 | 5.56 | 0.00 |
| *Frustulia* new sp. 3 | **FNS3** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.69 | 0.00 | 0.00 |
| *Frustulia* new sp. 4 | **FNS4** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.78 | 0.98 | 0.00 |
| *Achnanthidium minutissimum* | **AMIN** | 0.00 | 0.00 | 37.46 | 5.59 | 3.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.28 | 0.00 | 0.00 | 0.00 | 19.44 | 3.27 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Achnanthidium initium* | **AINI** | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Achnanthidium catenatum* | **ACAT** | 3.52 | 0.00 | 0.00 | 7.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.91 | 0.00 | 0.00 | 0.00 | 2.12 | 0.00 | 0.00 | 0.00 |
| *Achnanthidium linannulum* | **ALIN** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.90 | 11.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Achnanthidium* new sp. 1 | **ANS1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 18.88 | 17.37 | 0.00 | 3.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pinnularia acrosphaeria* | **PACR** | 0.00 | 26.56 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pinnularia* new sp. 1 | **PNS1** | 0.00 | 53.12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pinnularia* new sp. 2 | **PNS2** | 0.00 | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pinnularia* new sp. 3 | **PNS3** | 0.00 | 0.00 | 1.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 19.94 | 0.00 | 2.61 | 0.00 | 2.13 | 0.00 |
| *Pinnularia* new sp. 4 | **PNS4** | 0.00 | 0.00 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Pinnularia* new sp. 5 | **PNS5** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.56 | 0.00 | 0.00 | 0.00 |
| *Planothidium frequentissimum* | **PLFR** | 0.00 | 2.21 | 0.00 | 14.29 | 11.53 | 1.00 | 1.41 | 0.00 | 0.00 | 14.67 | 10.46 | 11.27 | 3.45 | 0.97 | 1.11 | 8.58 | 0.00 | 0.00 | 0.00 | 7.61 |
| *Planothidium* new sp. 1 | **PLNS1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.27 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.11 | 0.00 |
| *Planothidium* new sp. 2 | **PLNS2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.69 | 0.00 | 0.00 | 0.00 | 8.09 |
| *Gomphonema diminutum* | **GDIM** | 4.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema gandhii* | **GGAN** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 19.87 | 5.84 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Gomphonema parvulum* | **GPAR** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.70 | 2.67 | 2.38 | 0.00 | 1.69 | 2.70 | 0.00 | 5.19 | 0.00 | 2.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema insularum* | **GINS** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 55.33 | 0.00 | 0.00 | 4.31 | 0.00 | 0.00 | 0.00 | 0.00 | 2.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema subclavatum* | **GSUB** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.94 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema gregarium* | **GGRE** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.00 | 1.85 | 4.60 | 0.00 | 0.00 | 0.00 | 2.66 | 0.00 | 3.73 | 6.55 | 0.00 |
| *Gomphonema spiculoides* | **GSPI** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.02 | 0.00 | 0.00 |
| *Gomphonema* new sp. 1 | **GNS1** | 0.00 | 0.00 | 10.07 | 6.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.63 | 0.00 | 0.00 | 0.00 |
| *Gomphonema* new sp. 2 | **GNS2** | 0.00 | 0.00 | 0.00 | 3.42 | 0.93 | 0.00 | 2.04 | 3.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 19.90 |
| *Gomphonema* new sp. 3 | **GNS3** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 10.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema* new sp. 4 | **GNS4** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 14.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema* new sp. 5 | **GNS5** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 11.17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema* new sp. 6 | **GNS6** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.46 | 3.02 | 0.00 | 0.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gomphonema* new sp. 7 | **GNS7** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.73 | 0.00 | 0.93 | 0.65 | 0.00 |
| *Gomphonema* new sp. 8 | **GNS8** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.63 | 0.00 | 0.00 | 1.87 | 0.00 | 0.00 |
| *Gomphonema* new sp. 9 | **GNS9** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.79 | 0.00 | 0.00 | 0.00 | 0.00 | 2.33 | 9.17 | 10.68 |
| *Gomphonema* new sp. 10 | **GNS10** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 4.26 | 0.00 |
| *Cymbopleura* new sp. | **CYNS** | 0.88 | 0.00 | 13.86 | 0.00 | 2.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 13.61 | 0.00 | 18.95 | 2.18 | 11.78 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Ulnaria ulna* | **UULN** | 1.91 | 0.00 | 0.00 | 14.60 | 0.00 | 25.50 | 8.93 | 1.50 | 15.77 | 3.50 | 18.62 | 23.97 | 3.45 | 4.55 | 0.00 | 6.21 | 0.00 | 2.02 | 5.07 | 16.02 |
| *Ulnaria ungeriana* | **UUNG** | 0.00 | 0.00 | 0.00 | 0.00 | 27.73 | 0.00 | 6.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Ulnaria* new sp. 1 | **UNS1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Neidium* sp. | **NESP** | 0.00 | 0.60 | 0.17 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.49 | 0.00 | 0.00 | 0.00 |
| *Neidium suboblongum* | **NESU** | 0.00 | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Neidium* new sp. 1 | **NENS1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.64 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Neidium* new sp. 2 | **NENS2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Neidium* new sp. 3 | **NENS3** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.42 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Neidium* new sp. 4 | **NENS4** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Humidophila pantropica* | **HPAN** | 0.00 | 0.40 | 0.00 | 0.31 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 |
| *Humidophila contenta* | **HCON** | 0.00 | 0.00 | 0.00 | 0.93 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.93 | 0.00 | 0.00 |
| *Rhopalodia rupestris* | **RRUP** | 0.00 | 0.60 | 0.00 | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 0.00 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.64 | 1.15 | 0.97 |
| *Sellaphora pupula* | **SPUP** | 0.00 | 0.00 | 0.66 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.89 | 0.00 |
| *Sellaphora* new sp. 1 | **SNS1** | 0.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 24.37 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Surirella capronioides* | **SUCA** | 0.00 | 3.42 | 0.83 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.29 | 0.00 | 0.00 | 0.00 |
| *Craticula riparia* | **CRRI** | 0.44 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 | 0.00 | 2.06 | 0.00 | 0.00 | 0.00 | 0.33 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Stauroneis* new sp. 1 | **STNS 1** | 0.00 | 0.00 | 2.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.27 | 3.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Stauroneis* new sp. 2 | **STNS 2** | 0.00 | 0.00 | 0.00 | 3.11 | 0.62 | 0.00 | 0.00 | 0.00 | 0.00 | 23.83 | 7.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.16 |
| *Adlafia bryophila* | **ADBR** | 0.00 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Encyonema* new sp. 1 | **ECNS 1** | 0.00 | 0.00 | 0.00 | 1.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.61 | 4.20 | 0.00 | 0.00 |
| *Diploneis* new sp. 1 | **DINS1** | 0.00 | 0.00 | 0.17 | 0.00 | 3.74 | 0.00 | 0.00 | 0.00 | 0.30 | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.01 | 5.13 | 0.00 | 0.49 |
| *Nitzschia clausii* | **NICL** | 0.00 | 0.00 | 0.00 | 0.00 | 1.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.85 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Cocconeis feuerbornii* | **COFE** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Cocconeis* new sp. | **CONS** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.17 | 1.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Gyrosigma acuminatum* | **GYAC** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.17 | 0.92 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Germainiella* new sp. 1 | **GENS 1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Germainiella* new sp. 2 | **GENS 2** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.63 | 0.00 | 0.00 | 0.00 |
| *Oricymba japonica* | **OJAP** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 9.20 | 13.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Prestauroneis* new sp. | **PSNS 1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 5.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| *Caloneis* new sp. 1 | **CLNS 1** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 3.59 | 3.58 | 0.00 | 0.00 |

Table S2. Presence absence data for all diatom taxa across the sampling sites.

| **Species Name** | **Code** | **1642** | **1643** | **1645** | **1647** | **1648** | **1658** | **1662** | **1663** | **1676** | **1687** | **1689** | **1690** | **1693** | **1695** | **1697** | **1700** | **1702** | **1709** | **1711** | **1716** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Dev1** | **Dev2** | **Dev3** | **Dev4** | **Dev4** | **Asso1** | **Huli** | **Tor1** | **Mun** | **Hul** | **Hul** | **Hul** | **Kath1** | **Kath2** | **Kath2** | **Kath3** | **Male** | **Nkath** | **Nkath** | **Mavi1** |
| *Eunotia rhomboidea* | **ERHO** | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| *Eunotia incisa* | **EINC** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| *Eunotia bilunaris* | **EBIL** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Eunotia intermedia* | **EINT** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Eunotia incisadistans* | **EIND** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Eunotia* new sp. 1 | **ENS1** | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Eunotia* new sp. 2 | **ENS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Eunotia* new sp. 3 | **ENS3** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Eunotia* new sp. 4 | **ENS4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| *Eunotia* new sp. 5 | **ENS5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Brachysira neoexilis* | **BMIC** | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 |
| *Brachysira* new sp. 1 | **BNS1** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Navicula obtecta* | **NOBT** | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| *Navicula nielsfogedii* | **NNEI** | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| *Navicula globulifera* var. *robusta* | **NGLR** | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| *Navicula notha* | **NNOT** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Navicul escambia* | **NESC** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| *Navicula feuerbornii* f. *africana* | **NFEA** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Navicula angusta* | **NANG** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Navicula* new sp. 1 | **NNS1** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Navicula* new sp. 2 | **NNS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| *Frustulia jogensis* | **FJOG** | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| *Frustulia inculta* | **FINC** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

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| *Frustulia crassinervia* | **FCRA** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Frustulia* new sp. 1 | **FNS1** | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Frustulia* new sp. 2 | **FNS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| *Frustulia* new sp. 3 | **FNS3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Frustulia* new sp. 4 | **FNS4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| *Achnanthidium minutissimum* | **AMIN** | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| *Achnanthidium initium* | **AINI** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Achnanthidium catenatum* | **ACAT** | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Achnanthidium linannulum* | **ALIN** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Achnanthidium* new sp. 1 | **ANS1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Pinnularia acrosphaeria* | **PACR** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pinnularia* new sp. 1 | **PNS1** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pinnularia* new sp. 2 | **PNS2** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pinnularia* new sp. 3 | **PNS3** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| *Pinnularia* new sp. 4 | **PNS4** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pinnularia* new sp. 5 | **PNS5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Planothidium frequentissimum* | **PLFR** | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 |
| *Planothidium* new sp. 1 | **PLNS1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Planothidium* new sp. 2 | **PLNS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| *Gomphonema diminutum* | **GDIM** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema gandhii* | **GGAN** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema parvulum* | **GPAR** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Gomphonema insularum* | **GINS** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Gomphonema subclavatum* | **GSUB** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema gregarium* | **GGRE** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| *Gomphonema spiculoides* | **GSPI** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Gomphonema* new sp. 1 | **GNS1** | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

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| *Gomphonema* new sp. 2 | **GNS2** | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Gomphonema* new sp. 3 | **GNS3** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema* new sp. 4 | **GNS4** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema* new sp. 5 | **GNS5** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema* new sp. 6 | **GNS6** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gomphonema* new sp. 7 | **GNS7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| *Gomphonema* new sp. 8 | **GNS8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| *Gomphonema* new sp. 9 | **GNS9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *Gomphonema* new sp. 10 | **GNS10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Cymbopleura* new sp. | **CYNS** | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 |
| *Ulnaria ulna* | **UULN** | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| *Ulnaria ungeriana* | **UUNG** | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Ulnaria* new sp. 1 | **UNS1** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neidium* sp. | **NESP** | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Neidium suboblongum* | **NESU** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Neidium* new sp. 1 | **NENS1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Neidium* new sp. 2 | **NENS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Neidium* new sp. 3 | **NENS3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Neidium* new sp. 4 | **NENS4** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Humidophila pantropica* | **HPAN** | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Humidophila contenta* | **HCON** | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| *Rhopalodia rupestris* | **RRUP** | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| *Sellaphora pupula* | **SPUP** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| *Sellaphora* new sp. 1 | **SNS1** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Surirella capronioides* | **SUCA** | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Craticula riparia* | **CRRI** | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| *Stauroneis* new sp. 1 | **STNS1** | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| *Stauroneis* new sp. 2 | **STNS2** | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Adlafia bryophila* | **ADBR** | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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| *Encyonema* new sp. 1 | **ECNS1** | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| *Diploneis* new sp. 1 | **DINS1** | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| *Nitzschia clausii* | **NICL** | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cocconeis feuerbornii* | **COFE** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Cocconeis* new sp. | **CONS** | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Gyrosigma acuminatum* | **GYAC** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Germainiella* new sp. 1 | **GENS1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Germainiella* new sp. 2 | **GENS2** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Oricymba japonica* | **OJAP** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Prestauroneis* new sp. | **PSNS1** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Caloneis* new sp. 1 | **CLNS1** | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |