**Table S1**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | | Chl *a* | Cya | Diat | Dino | Eug | Nak-C | Lori-C | T-Micro | T-Cil |
| **Autumn** | T | -0.04 | 0.29 | 0.27 | 0.21 | **0.59** | -0.33 | 0.21 | 0.42 | 0.08 |
| **(n=20)** | S | 0.12 | **0.53** | -0.04 | 0.26 | -0.28 | -0.13 | 0.43 | 0.14 | 0.25 |
|  | pH | -0.10 | **0.51** | 0.38 | **0.72** | 0.39 | -0.09 | **0.47** | **0.72** | **0.48** |
|  | SM | **0.48** | 0.36 | 0.04 | -0.11 | **-0.48** | -0.31 | 0.28 | -0.08 | 0.02 |
|  | NO**2-** | **-0.50** | 0.12 | 0.17 | 0.42 | 0.27 | -0.06 | 0.06 | **0.46** | -0.04 |
|  | NO**3-** | **-0.50** | 0.14 | 0.14 | 0.39 | 0.16 | -0.12 | 0.06 | 0.41 | -0.03 |
|  | NH**4+** | 0.22 | 0.13 | -0.09 | 0.43 | -0.17 | 0.00 | 0.24 | 0.16 | 0.25 |
|  | PO**43-** | -0.27 | -0.05 | 0.31 | -0.01 | 0.27 | -0.13 | -0.07 | 0.23 | -0.23 |
|  | Si(OH)**4** | 0.23 | -0.12 | 0.36 | 0.11 | 0.14 | -0.10 | -0.04 | 0.27 | -0.28 |
|  | TN | -0.12 | 0.17 | 0.09 | **0.56** | 0.05 | -0.08 | 0.20 | 0.40 | 0.13 |
|  | TP | -0.18 | -0.05 | 0.18 | -0.10 | 0.22 | -0.17 | -0.11 | 0.11 | -0.29 |
|  | N/P | 0.08 | 0.17 | -0.09 | **0.49** | -0.13 | -0.08 | 0.22 | 0.24 | 0.15 |
| **Winter** | T | -0.25 | -0.12 | 0.20 | 0.03 | 0.15 | 0.17 | 0.05 | 0.27 | 0.01 |
| **(n=20)** | S | 0.29 | 0.00 | 0.04 | -0.42 | 0.07 | -0.03 | 0.17 | -0.02 | 0.02 |
|  | pH | 0.10 | -0.30 | -0.09 | -0.37 | -0.02 | -0.09 | -0.33 | -0.08 | -0.36 |
|  | SM | -0.10 | -0.16 | -0.05 | 0.04 | -0.35 | 0.02 | -0.32 | -0.07 | -0.31 |
|  | NO**2-** | 0.04 | -0.15 | 0.27 | -0.21 | -0.23 | 0.28 | 0.04 | 0.25 | 0.14 |
|  | NO**3-** | -0.07 | -0.03 | 0.20 | -0.12 | -0.21 | 0.38 | -0.04 | 0.24 | 0.07 |
|  | NH**4+** | 0.04 | -0.42 | 0.44 | -0.24 | 0.19 | -0.04 | 0.08 | 0.33 | 0.05 |
|  | PO**43-** | -0.17 | -0.02 | **-0.49** | 0.14 | -0.28 | 0.04 | -0.27 | -0.43 | -0.24 |
|  | Si(OH)**4** | -0.06 | -0.14 | 0.16 | 0.00 | -0.06 | -0.28 | 0.07 | 0.09 | -0.02 |
|  | TN | 0.21 | -0.15 | 0.24 | -0.17 | -0.13 | 0.07 | 0.03 | 0.27 | 0.05 |
|  | TP | -0.21 | -0.04 | **-0.53** | 0.12 | -0.21 | 0.19 | -0.33 | **-0.48** | -0.24 |
|  | N/P | 0.17 | -0.02 | **0.48** | -0.23 | 0.19 | 0.02 | 0.21 | 0.42 | 0.19 |
| **Spring** | T | **0.61** | 0.06 | -0.06 | -0.39 | 0.24 | -0.28 | -0.10 | -0.29 | -0.28 |
| **(n=20)** | S | **-0.58** | 0.28 | 0.27 | 0.24 | -0.02 | 0.10 | 0.17 | **0.47** | -0.02 |
|  | pH | **-0.65** | 0.29 | 0.14 | 0.08 | -0.23 | 0.22 | 0.12 | 0.40 | 0.08 |
|  | SM | -0.33 | -0.18 | -0.34 | -0.27 | -0.11 | 0.32 | -0.02 | -0.27 | 0.16 |
|  | NO**2-** | 0.08 | 0.00 | 0.07 | -0.34 | -0.08 | -0.21 | 0.19 | -0.18 | 0.21 |
|  | NO**3-** | 0.43 | -0.03 | 0.24 | 0.25 | 0.19 | -0.40 | 0.06 | 0.07 | -0.09 |
|  | NH**4+** | -0.18 | 0.12 | -0.37 | **-0.47** | -0.38 | 0.18 | 0.01 | -0.37 | 0.09 |
|  | PO**43-** | -0.15 | 0.07 | 0.29 | 0.42 | 0.32 | 0.29 | -0.07 | 0.33 | 0.19 |
|  | Si(OH)**4** | -0.15 | -0.22 | -0.05 | 0.12 | 0.17 | 0.26 | -0.07 | 0.08 | -0.05 |
|  | TN | **0.45** | 0.07 | -0.02 | -0.01 | -0.09 | **-0.60** | -0.11 | -0.15 | -0.32 |
|  | TP | -0.01 | 0.04 | 0.16 | 0.14 | 0.12 | 0.16 | -0.20 | 0.06 | 0.13 |
|  | N/P | 0.33 | -0.07 | -0.24 | -0.37 | -0.34 | -0.37 | 0.10 | -0.37 | -0.19 |
| **Summer** | T | -0.20 | -0.26 | -0.33 | 0.12 | 0.12 | 0.11 | -0.06 | -0.04 | -0.04 |
| **(n=20)** | S | 0.24 | 0.03 | -0.13 | 0.18 | 0.25 | -0.23 | 0.06 | 0.15 | -0.01 |
|  | pH | 0.13 | 0.28 | -0.18 | -0.14 | -0.16 | -0.03 | -0.13 | -0.19 | -0.13 |
|  | SM | -0.04 | 0.25 | 0.15 | -0.04 | -0.12 | 0.24 | -0.07 | -0.14 | -0.06 |
|  | NO**2-** | -0.01 | 0.31 | -0.43 | -0.43 | **-0.63** | 0.21 | -0.15 | **-0.64** | -0.08 |
|  | NO**3-** | 0.01 | 0.35 | -0.35 | **-0.49** | **-0.53** | 0.05 | -0.29 | **-0.59** | -0.24 |
|  | NH**4+** | 0.35 | 0.44 | -0.39 | -0.42 | **-0.61** | 0.13 | 0.00 | **-0.59** | 0.03 |
|  | PO**43-** | -0.10 | 0.12 | -0.03 | -0.20 | -0.32 | 0.09 | -0.15 | -0.31 | -0.14 |
|  | Si(OH)**4** | 0.38 | **0.58** | -0.42 | -0.36 | **-0.52** | 0.20 | -0.23 | **-0.58** | -0.21 |
|  | TN | 0.14 | 0.39 | -0.43 | **-0.45** | **-0.53** | 0.06 | -0.16 | **-0.59** | -0.14 |
|  | TP | -0.09 | 0.16 | -0.01 | -0.16 | -0.31 | 0.07 | -0.12 | -0.31 | -0.12 |
|  | N/P | 0.31 | 0.21 | -0.28 | -0.14 | -0.18 | 0.05 | 0.10 | -0.17 | 0.13 |
| **All data** | T | 0.13 | -0.04 | 0.02 | 0.10 | **0.66** | -0.08 | -0.16 | **0.25** | -0.20 |
| **(n=80)** | S | **0.52** | **0.35** | -0.12 | 0.05 | -0.06 | -0.14 | -0.07 | 0.06 | -0.09 |
|  | pH | **-0.34** | -0.17 | **0.26** | **-0.24** | 0.16 | 0.06 | -0.06 | 0.17 | -0.16 |
|  | SM | 0.09 | 0.02 | 0.01 | **-0.28** | **-0.24** | 0.07 | -0.18 | -0.20 | -0.18 |
|  | NO**2-** | **0.22** | **0.26** | -0.14 | 0.10 | **-0.36** | 0.02 | 0.10 | -0.10 | 0.16 |
|  | NO**3-** | **0.32** | **0.30** | -0.06 | -0.08 | **-0.46** | -0.09 | -0.11 | -0.19 | -0.10 |
|  | NH**4+** | 0.13 | 0.17 | -0.14 | -0.20 | **-0.42** | 0.05 | 0.10 | **-0.24** | 0.09 |
|  | PO**43-** | **0.38** | 0.15 | -0.01 | -0.10 | -0.02 | -0.06 | **-0.38** | -0.09 | **-0.31** |
|  | Si(OH)**4** | **0.42** | 0.11 | 0.01 | 0.05 | **0.31** | -0.09 | **-0.28** | 0.12 | **-0.28** |
|  | TN | **0.40** | **0.34** | -0.18 | 0.02 | **-0.36** | -0.14 | -0.03 | -0.17 | -0.04 |
|  | TP | **0.45** | 0.21 | -0.09 | -0.08 | -0.05 | -0.07 | **-0.40** | -0.16 | **-0.28** |
|  | N/P | -0.09 | 0.05 | 0.00 | -0.02 | **-0.28** | 0.03 | **0.29** | -0.03 | **0.25** |