|  |  |  |
| --- | --- | --- |
| Functional Marker | Mendota vs Trout Bog Epilimnion | Trout Bog Epilimnion vs Hypolimnion |
| RubisCO | 0\* | 0\* |
| Citrate lyase | 0.01\* | 0.01\* |
| Urease | 0.69 | 1 |
| Nitrogenase | 0\* | 0\* |
| Nitrate reductase | 1 | 0\* |
| Nitrite reductase | 0\* | 0\* |
| Nitric oxide reductase | 0.83 | 0\* |
| Nitrous oxide reductase | 0\* | 0.01\* |
| SOX | 0\* | 0.04\* |
| Sulfate adenylyltransferase | 0.94 | 0\* |
| Sulfide quinone reductase | 0\* | 0\* |
| Sulfite reductase | 1 | 0\* |
| FeFe hydrogenase | 0.26 | 0\* |
| [Ni-Fe] hydrogenase group 1 | 0.03\* | 0\* |
| [Ni-Fe] hydrogenase group 2a | 1 | 0\* |
| [Ni-Fe] hydrogenase group 2b | 0.03\* | 1 |
| [Ni-Fe] hydrogenase group 3a | 0\* | 1 |
| [Ni-Fe] hydrogenase group 3b | 0.2 | 1 |
| [Ni-Fe] hydrogenase group 3c | 1 | 0\* |
| [Ni-Fe] hydrogenase group 3d | 0.07\* | 0\* |
| [Ni-Fe] hydrogenase group 4 | 1 | 1 |

**Table S3. P-values of marker gene distributions between sites.** A Wilcoxon rank sum test was used to non-parametrically test for significant differences in functional marker gene distributions between our study sites. P-values of less than 0.05 are considered significant.