**S2 Table. Durbin-Watson (D-W) statistics on Ordinary Least Squares (OLS) correlations of faunal variables with geochemical proxy data.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Taxonomic composition** | | | **Ecological composition** | | |
|  | **Lag** | **Autocorrelation** | **D-W Statistic** | ***p*-value** | **Autocorrelation** | **D-W Statistic** | ***p*-value** |
| SQS | 1 | 0.529 | 0.930 | **0.002** | 0.097 | 1.797 | 0.460 |
| 2 | 0.460 | 1.060 | **0.004** | -0.020 | 1.943 | 0.884 |
| 3 | 0.295 | 1.366 | 0.104 | 0.110 | 1.647 | 0.468 |
| 4 | 0.202 | 1.519 | 0.350 | 0.297 | 1.176 | **0.040** |
| 5 | 0.083 | 1.673 | 0.740 | 0.022 | 1.634 | 0.676 |
| Simpson’s Evenness | 1 | 0.373 | 1.254 | **0.014** | 0.071 | 1.827 | 0.536 |
| 2 | 0.087 | 1.809 | 0.602 | -0.042 | 2.025 | 0.888 |
| 3 | 0.006 | 1.957 | 0.880 | -0.076 | 2.090 | 0.550 |
| 4 | 0.320 | 1.308 | 0.118 | 0.282 | 1.346 | 0.140 |
| 5 | 0.144 | 1.618 | 0.670 | -0.029 | 1.920 | 0.598 |
| Richness | 1 | 0.483 | 1.031 | **0.004** | 0.404 | 1.190 | **0.010** |
| 2 | 0.209 | 1.544 | 0.176 | 0.151 | 1.682 | 0.404 |
| 3 | 0.041 | 1.824 | 0.780 | -0.048 | 2.071 | 0.672 |
| 4 | -0.150 | 2.101 | 0.436 | -0.040 | 1.765 | 0.858 |
| 5 | -0.106 | 1.976 | 0.508 | -0.172 | 1.996 | 0.500 |
| NMDS1 | 1 | 0.692 | 0.565 | **0.000** | 0.152 | 1.690 | 0.272 |
| 2 | 0.710 | 0.482 | **0.000** | 0.163 | 1.644 | 0.310 |
| 3 | 0.514 | 0.771 | **0.000** | 0.245 | 1.449 | 0.186 |
| 4 | 0.419 | 0.850 | **0.002** | 0.271 | 1.211 | 0.062 |
| 5 | 0.286 | 1.033 | **0.016** | 0.134 | 1.449 | 0.296 |
| NMDS2 | 1 | 0.341 | 1.219 | **0.006** | 0.109 | 1.744 | 0.310 |
| 2 | 0.086 | 1.668 | 0.322 | 0.281 | 1.367 | **0.042** |
| 3 | -0.008 | 1.799 | 0.710 | -0.101 | 1.953 | 0.980 |
| 4 | -0.023 | 1.817 | 0.854 | 0.168 | 1.338 | 0.096 |
| 5 | 0.112 | 1.543 | 0.430 | 0.216 | 1.235 | 0.096 |