Supplementary material

Mercury bioconcentration and translocation in rooted macrophytes from floodplain lakes in the Araguaia River watershed, Brazilian Savanna

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**Table S1.** Proportions of land use and land cover classes around the lakes (%).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sampling**  **site** | **Cerrado** | **Wetland** | **Pasture and agriculture** | **Urban infrasctructure** | **Sandbanks** | **Water** |
| 1 | 30.07 | 1.73 | 65.73 | 0.00 | 1.79 | 0.69 |
| 2 | 41.46 | 3.11 | 50.45 | 0.00 | 2.12 | 2.85 |
| 3 | 49.20 | 8.76 | 35.43 | 0.00 | 3.12 | 3.49 |
| 4 | 57.71 | 3.22 | 32.03 | 0.00 | 3.45 | 3.58 |
| 5 | 54.36 | 8.17 | 30.95 | 0.00 | 3.57 | 2.95 |
| 6 | 75.25 | 1.80 | 16.96 | 0.00 | 2.30 | 3.68 |
| 7 | 66.85 | 3.31 | 23.04 | 0.29 | 2.80 | 3.71 |
| 8 | 74.87 | 5.02 | 13.35 | 0.00 | 2.74 | 4.02 |
| 9 | 73.31 | 3.75 | 16.77 | 0.00 | 2.68 | 3.48 |
| 10 | 55.68 | 8.90 | 26.04 | 0.30 | 5.40 | 3.67 |
| 11 | 57.65 | 17.77 | 16.36 | 0.30 | 4.03 | 3.89 |
| 12 | 48.68 | 38.73 | 6.01 | 0.00 | 3.04 | 3.54 |
| 13 | 37.63 | 52.24 | 4.51 | 0.00 | 2.09 | 3.53 |
| 14 | 29.63 | 56.12 | 7.57 | 0.00 | 3.82 | 2.85 |
| 15 | 35.80 | 44.92 | 9.55 | 0.00 | 3.85 | 5.88 |
| 16 | 31.78 | 53.41 | 8.61 | 0.00 | 1.74 | 4.46 |
| 17 | 38.68 | 42.26 | 11.50 | 0.00 | 3.73 | 3.84 |

**Table S2.** Loadings of axes 1 and 2 of the PCA.

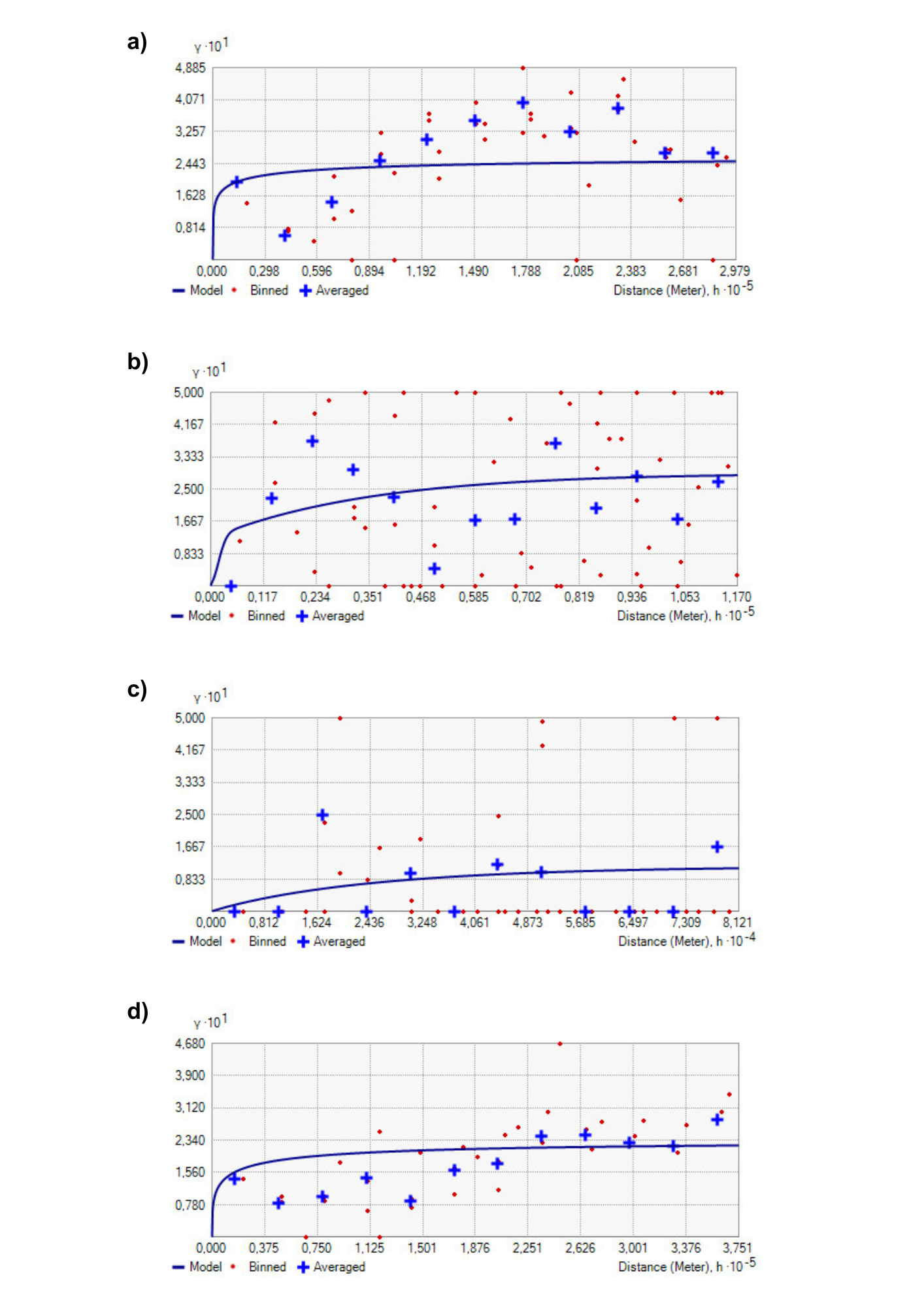
|  |  |  |
| --- | --- | --- |
| **Variables** | **PC1** | **PC2** |
| DO | -0.832 | 0.170 |
| Wetland | -0.800 | 0.341 |
| ORP | -0.740 | 0.172 |
| Sulfate | -0.596 | -0.539 |
| [THg] Aerial | -0.417 | -0.633 |
| [THg] Roots | -0.394 | -0.753 |
| [THg] Water | 0.709 | -0.083 |
| pH | 0.775 | -0.100 |
| LUI | 0.827 | -0.246 |

**DO**: dissolved oxygen, **ORP:** Oxidation-reduction potential; **LUI**: Land Use Index

**Table S3.** Variogram parameters and cross-validation. The variogram parameters are represented in meters.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Cutoff value** | **Variogram** | | | | **Cross-validation** | |
| ***C*** | ***C0*** | ***C0/C*** | ***a*** | ***ME*** | ***RMSSE*** |
| [THg] Water | 1.2 ngL-1 | 0.01 | 0.25 | 0.39 | 300000 | 0.02 | 1 |
| TF - Macrophyte | 0.115 | 0 | 0.29 | 0 | 79950 | 0.01 | 1 |
| BCF - Aerial | 1 | 0 | 0.11 | 0 | 80000 | 0.02 | 1 |
| BCF - Roots | 1 | 0 | 0.23 | 0 | 310000 | 0.01 | 1 |

***C***: sill; ***C0***: nugget; ***C/C0***: spatial dependence; ***a:*** *range;* ***ME:*** *mean error;* ***RMSSE:*** root-mean-square standardized error



**Figure S1.** Experimental variograms representing the models: (a) THg in water; (b) translocation factor in macrophytes; (c) bioconcentration in aerial tissues; and (d) bioconcentration in roots.