Table S1: Model evaluations of the random forest regressions computed for the sediment and nodule characteristics not used for distribution modelling of meiofauna according to the percentage of explained variance and Pearson’s correlation (\* indicating significance). The number of observations that could be integrated into the model is given. Elements refer to their concentration in the sediment and the nodules, respectively. Centimetres refer to the sampling depth in the sediment.

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| --- | --- | --- | --- |
| **Variable** | **% Explained Variance** | **Pearson’s Correlation** | **Number of Observations** |
| **sediment parameters** |  |  |  |
| silicon (1 cm) | -0.23 | -0.17 | 30 |
| titanium (1 cm) | -0.07 | 0.06 | 30 |
| aluminium (1 cm) | -0.16 | -0.08 | 30 |
| manganese (1 cm) | -0.2 | -0.06 | 30 |
| magnesium (1 cm) | -0.27 | -0.19 | 30 |
| calcium (1 cm) | -0.33 | -0.29 | 30 |
| sodium (1 cm) | -0.34 | -0.35 | 30 |
| potassium (1 cm) | -0.02 | 0.11 | 30 |
| barium (1 cm) | -0.3 | -0.26 | 30 |
| copper (1 cm) | -0.29 | -0.36 | 30 |
| chromium (1 cm) | -0.27 | -0.35 | 30 |
| nickel (1 cm) | -0.12 | 0.04 | 30 |
| rubidium (1 cm) | -0.15 | -0.07 | 30 |
| strontium (1 cm) | -0.3 | -0.25 | 30 |
| vanadium (1 cm) | -0.05 | 0.08 | 30 |
| zirconium (1 cm) | -0.05 | 0.09 | 30 |
| silicon (4 cm) | -0.31 | -0.33 | 30 |
| titanium (4 cm) | -0.13 | -0.04 | 30 |
| aluminium (4 cm) | -0.2 | -0.18 | 30 |
| iron (4 cm) | -0.06 | 0.08 | 30 |
| manganese (4 cm) | -0.07 | 0.07 | 30 |
| magnesium (4 cm) | -0.08 | 0.11 | 30 |
| calcium (4 cm) | -0.31 | -0.27 | 30 |
| sodium (4 cm) | -0.25 | -0.13 | 30 |
| potassium (4 cm) | -0.12 | -0.02 | 30 |
| barium (4 cm) | -0.2 | -0.11 | 30 |
| copper (4 cm) | -0.24 | -0.27 | 30 |
| chromium (4 cm) | -0.08 | 0.02 | 30 |
| copper (4 cm) | -0.16 | -0.06 | 30 |
| nickel (4 cm) | -0.06 | 0.11 | 30 |
| rubidium (4 cm) | -0.35 | -0.39\* | 30 |
| strontium (4 cm) | -0.23 | -0.15 | 30 |
| vanadium (4 cm) | -0.41 | -0.53\* | 30 |
| zinc (4 cm) | -0.02 | 0.13 | 30 |
| zirconium (4 cm) | -0.09 | 0.02 | 30 |
| wet bulk density (1 cm) | -0.14 | 0.02 | 133 |
| wet bulk density (4 cm) | -0.16 | -0.09 | 133 |
| shear strength (5 cm) | -0.03 | 0.14 | 133 |
| total organic carbon (4 cm) | -0.24 | -0.22\* | 114 |
| clay | -0.14 | -0.09 | 103 |
| silt | -0.04 | 0.13 | 103 |
| sand | -0.08 | 0.04 | 103 |
| **nodule parameters** |  |  |  |
| copper | -0.01 | 0.16\* | 211 |
| manganese | -0.03 | 0.13 | 211 |
| phosphorus | -0.05 | -0.02 | 211 |
| vanadium | -0.01 | 0.18\* | 211 |
| sum of copper, nickel and cobalt | -0.06 | 0.11 | 211 |