**Appendix**

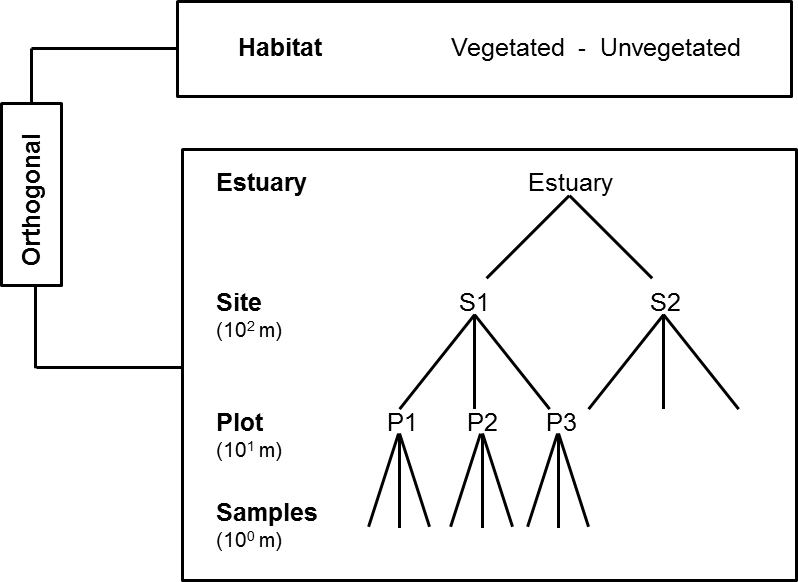


Fig. A1. Sampling design diagram with spatial and habitat scales that correspond to the factors of the ANOVA: Habitats (V, NV) orthogonal to spatial nested scales of Estuaries (BEN, VIB, PAE), Sites (S1, S2) and Plots (P1, P2, P3), with three replicates each.

Table A1. Similarity percentages (SIMPER) analysis with contribution (%) for each taxa that most contributed to dissimilarities among habitats at the mesohaline sector in the estuaries at the cutoff level of 80%.

|  |  |  |  |
| --- | --- | --- | --- |
| **BEN V - BEN NV** |  |  |  |
| **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |
| **Kalliapseudidae** | 39.24 | 51.95 | 51.95 |
| **Oligochaeta** | 12.36 | 16.36 | 68.31 |
| **Capitellidae** | 3.8 | 5.03 | 73.34 |
| **Ampharetidae** | 3.79 | 5.02 | 78.36 |
| **Polychaeta sp1** | 3.4 | 4.5 | 82.86 |
|  |  |  |  |
| **PAE V - PAE NV** |  |  |  |
| **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |
| **Oligochaeta** | 20.02 | 27.98 | 27.98 |
| **Capitellidae** | 13.2 | 18.44 | 46.42 |
| **Nereididae** | 7.22 | 10.09 | 56.51 |
| **Pilargidae** | 4.21 | 5.89 | 62.4 |
| **Ampharetidae** | 4.07 | 5.69 | 68.09 |
| **Nemertea** | 3.89 | 5.44 | 73.52 |
| **Bivalvia not ID** | 2.64 | 3.69 | 77.21 |
| **Spionidae** | 2.63 | 3.67 | 80.88 |
|  |  |  |  |
| **VIB V - VIB NV** |  |  |  |
| **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |
| **Oligochaeta** | 21.25 | 32.28 | 32.28 |
| **Spionidae** | 10.31 | 15.66 | 47.94 |
| **Capitellidae** | 7.4 | 11.24 | 59.18 |
| **Nereididae** | 5.72 | 8.69 | 67.87 |
| **Pilargidae** | 2.64 | 4.01 | 71.88 |
| **Polychaeta sp2** | 2.2 | 3.34 | 75.21 |
| **Bivalvia not ID** | 2.09 | 3.18 | 78.39 |
| **Sipuncula** | 1.95 | 2.96 | 81.35 |

Table A2. Similarity percentages (SIMPER) analysis with contribution (%) for each taxa that most contributed to dissimilarities in NV habitats among estuaries at the cutoff level of 80%.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BEN NV – PAE NV** | | | |  |  | **BEN NV – VIB NV** | | | |
| **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |  |  | **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |
| **Kalliapseudidae** | 49.96 | 56.29 | 56.29 |  |  | **Kalliapseudidae** | 41.34 | 48.25 | 48.25 |
| **Oligochaeta** | 15.05 | 16.95 | 73.24 |  |  | **Spionidae** | 13.7 | 15.99 | 64.24 |
| **Capitellidae** | 5.24 | 5.91 | 79.15 |  |  | **Oligochaeta** | 12.6 | 14.71 | 78.95 |
| **Nereididae** | 3.6 | 4.05 | 83.2 |  |  | **Capitellidae** | 3.48 | 4.06 | 83.01 |
|  |  |  |  |  |  |  |  |  |  |
| **VIB NV - PAE NV** | | | |  |  |  | | | |
| **Species** | **Av.Diss** | **Contrib%** | **Cum.%** |  |  |  |  |  |  |
| **Spionidae** | 30.31 | 38.92 | 38.92 |  |  |  |  |  |  |
| **Capitellidae** | 11.2 | 14.38 | 53.29 |  |  |  |  |  |  |
| **Nereididae** | 7.96 | 10.22 | 63.51 |  |  |  |  |  |  |
| **Oligochaeta** | 5.61 | 7.2 | 70.71 |  |  |  |  |  |  |
| **Bivalvia not ID** | 4.65 | 5.97 | 76.69 |  |  |  |  |  |  |
| **Pilargidae** | 4.43 | 5.69 | 82.37 |  |  |  |  |  |  |

Table A3. Macrofaunal densities (ind.m-2) reported in mangroves and tidal flats in different tropical (\*), subtropical (\*\*) and temperate (\*\*\*) estuaries. Min.= minimum value; max.= maximum value.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **Macrofaunal density**  **(min. – max.)**  **(ind.m−2)** | **Macrofaunal biomass (min. – max.)**  **(g AFDW m-2)** | **Macrofaunal secondary production (min. – max.) (mg m-2 day-1)** | **Habitat** | **Mesh size (mm)** | **Reference** | |
| Rio Grande Marine  Ecoregion of Brazil | Up to 7,250 |  |  | Mangrove\*\* | 0.5 | Netto & Galluci 2003 | |
| Kenya | 265 to 4,125 (mean of 1,933) |  |  | Mangrove\* | 1 | Schrijvers et al.  1995 | |
| Florida | 22,591 to 52,914 |  |  | Mangrove\*\* | 0.5 | Sheridan 1997 | |
| New Zealand | Approx. 8,000 |  |  | Mangrove\*\*\* | 0.5 | Alfaro 2006 | |
| Eastern Brazil Marine  Ecoregion | < 1,000 to 6,000 |  |  | Tidal flats\* | 0.5 | Mariano & Barros, 2014 | |
| Southeastern Brazil Marine  Ecoregion | 500 to 3,000 |  |  | Tidal flats\*\* | 0.5 | Morais et al.  2016 | |
| England (UK) |  | average 8.65 |  | Tidal flats\*\*\* | 0.86 | Fujii 2007 | |
| NW Europe (Netherlands and Belgium) | 0 to 225,568 | 0 to 466.5 |  | Tidal flats\*\*\* | 1 | Ysebaert et al. 2003 | |
| New Zealand |  | approximately 1 | approximately 10 | Intertidal estuary \*\*\* | 0.5 to 8.0 | Cowles et al. 2009 | |
| Eastern Brazil Marine | 3,013 (847 - 10,904) | 2.1805 | 38.3 | Mangrove BEN\* | 1 mm | Present study | |
| Ecoregion | 11,802 (2,655 - 27,740) | 2.8302 | 58.4 | Mangrove VIB\* |  |  | |
|  | 4,391 (1,695 - 8,983) | 4.466 | 65 | Mangrove PAE\* |  |  | |
| (Mean values) | 33,023 (1,808 – 60,056) | 7.6774 | 137.8 | Tidal flats BEN\* |  |  | |
|  | 3,349 (452 – 7,458) | 0.53 | 13.5 | Tidal flats VIB\* |  |  | |
|  | 1,033 (0 – 6,554) | 0.1007 | 3.5 | Tidal flats PAE\* |  |  |

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