

Supplementary Materials for the Article:

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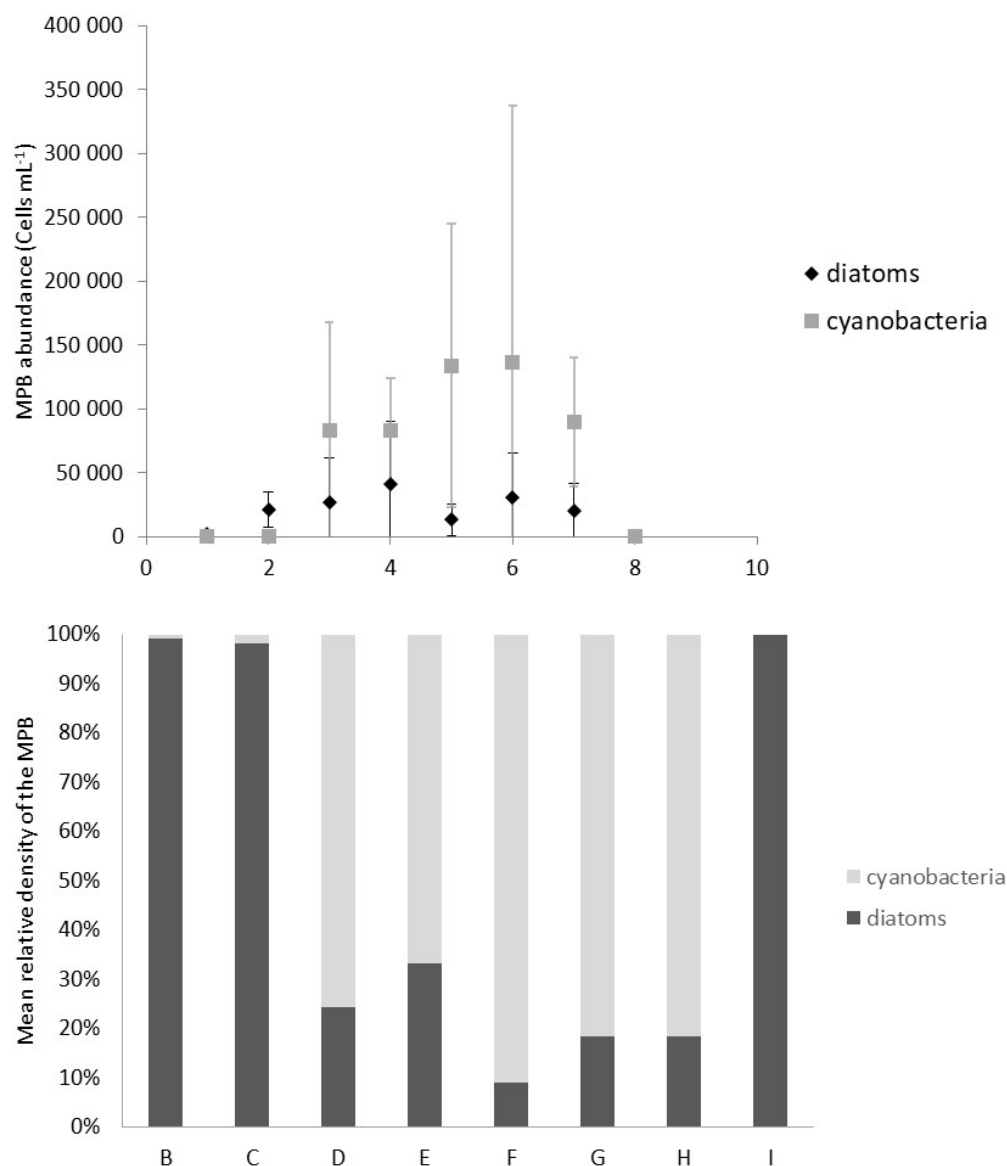


Figure S1: Microphytobenthos (diatoms and cyanobacteria), a) mean abundances (Cells mL⁻¹) and b) mean relative density (%) along the mangrove maturation gradient (transects B-I; mean \pm SD, 2 < n < 6).

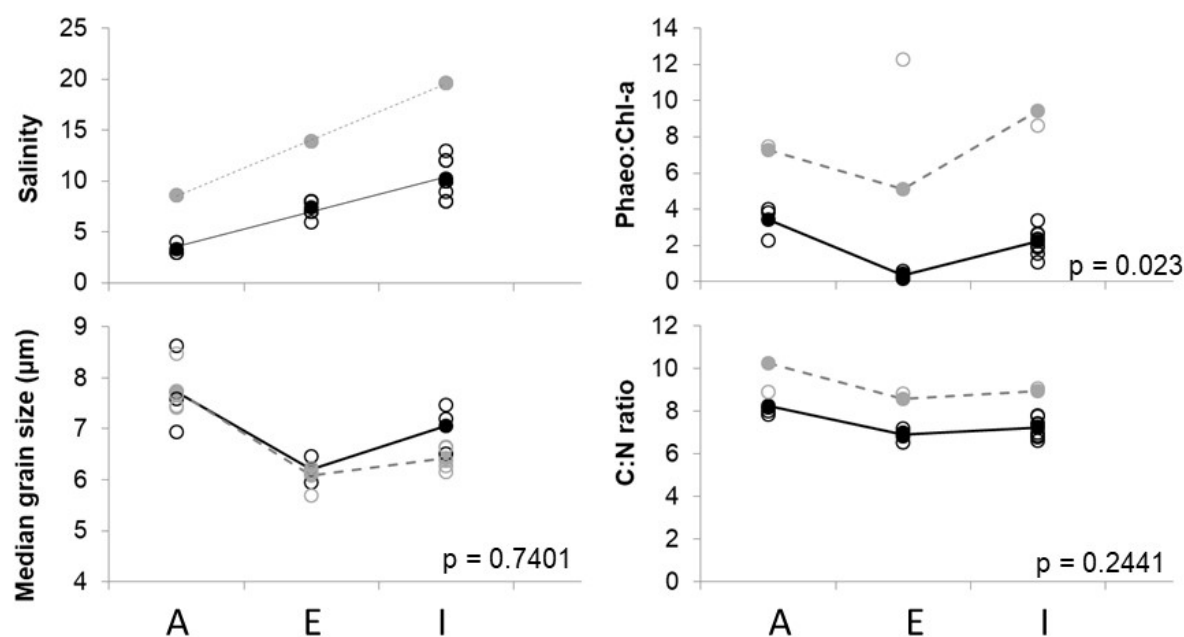


Figure S2: Relationships between mangrove stages and surface sediment (black symbols) and 18 centimeter-depth averaged (grey dots) parameters at transects A, E and I. Empty and filled dots denote replicates and means, respectively. The significance values of the ANCOVAs are shown on the graphs. ANCOVA was not applied to salinity (no core replicates per transect).

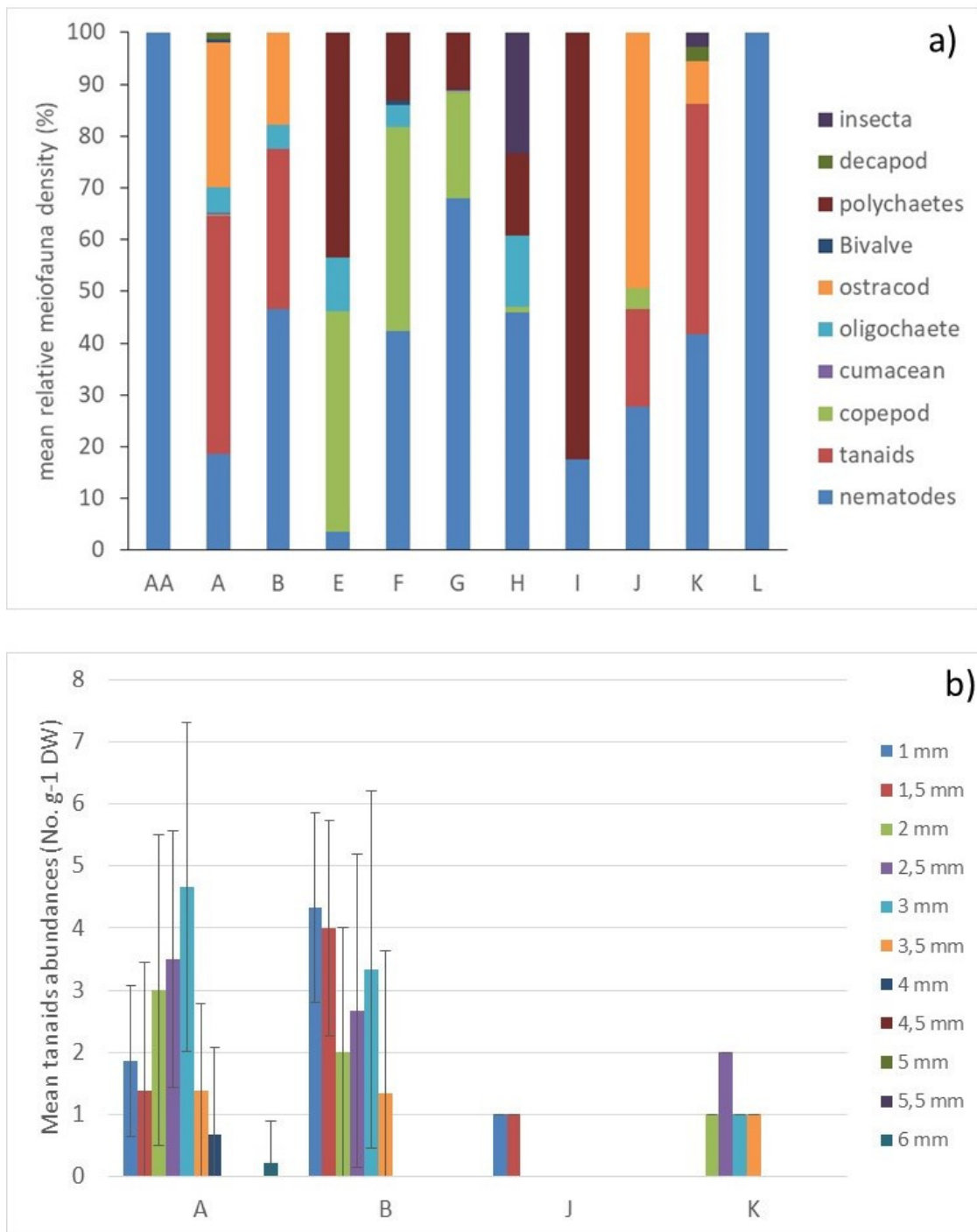


Figure S3: a) mean relative density ($n \leq 9$; %) of the meiofauna OTUs at mobile mud stations (AA, J, K and L) and at some consolidated stations of the mangrove maturation gradient (A, B, E, F, G, H and I). b) mean abundances of tanaids (No g⁻¹ per dry weight of sediment DW) per size class (1 to 6 mm) at the stations (A, B, J, K) containing tanaids (mean \pm SD, $n \leq 6$).

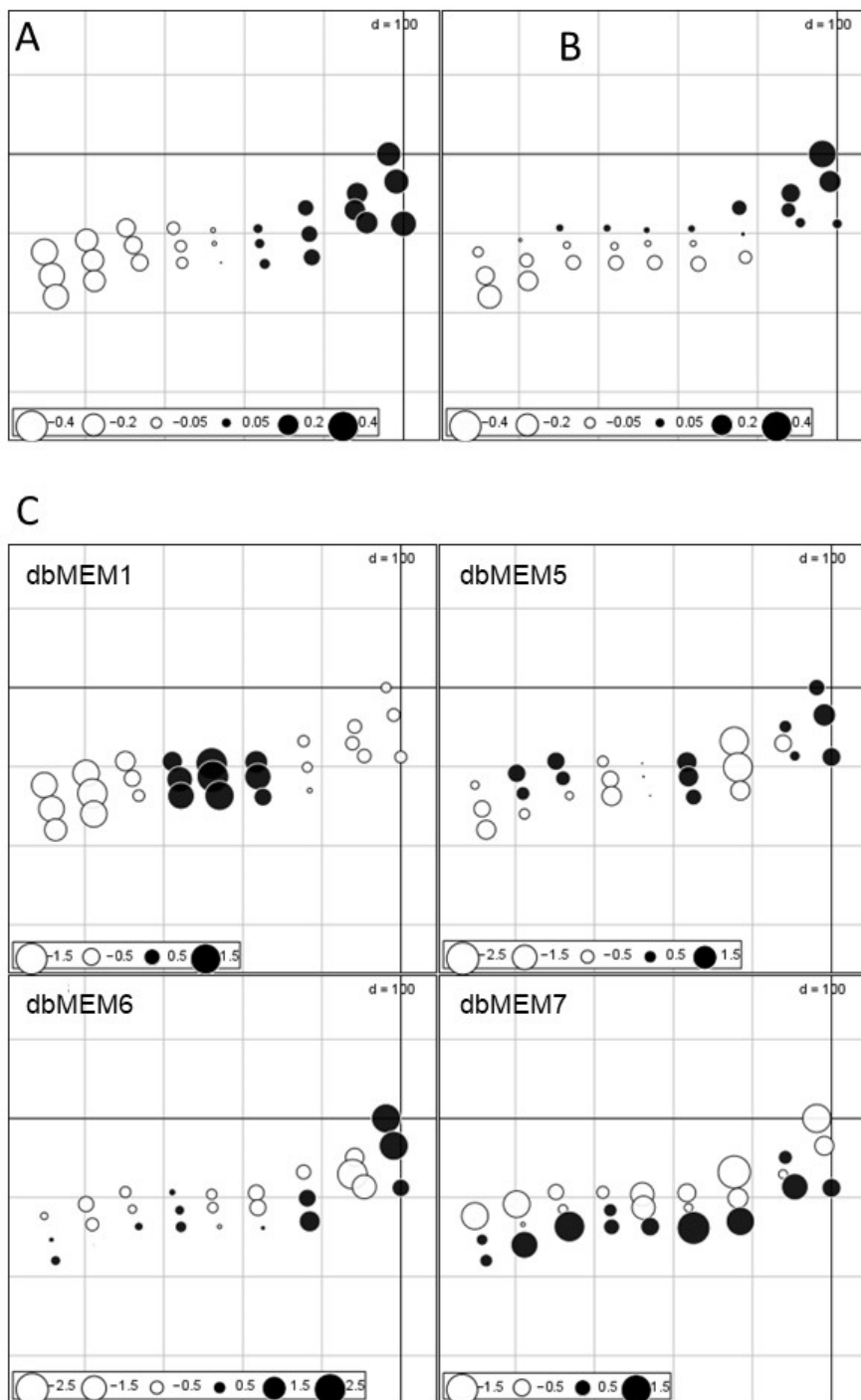


Figure S4: Bubble plot of predicted position (linear constraints) on the only canonical axis for the linear models of Hellinger-transformed abundances as a function of A) East-West and B) South-North coordinates. C) Bubble plots depicting the selected positive dbMEM spatial Eigen functions after forward selection. The dbMEM1, dbMEM5 and dbMEM6 were included in the models for de-trended Hellinger-transformed abundances and biovolumes. The dbMEM7 was only included in the model of abundances.

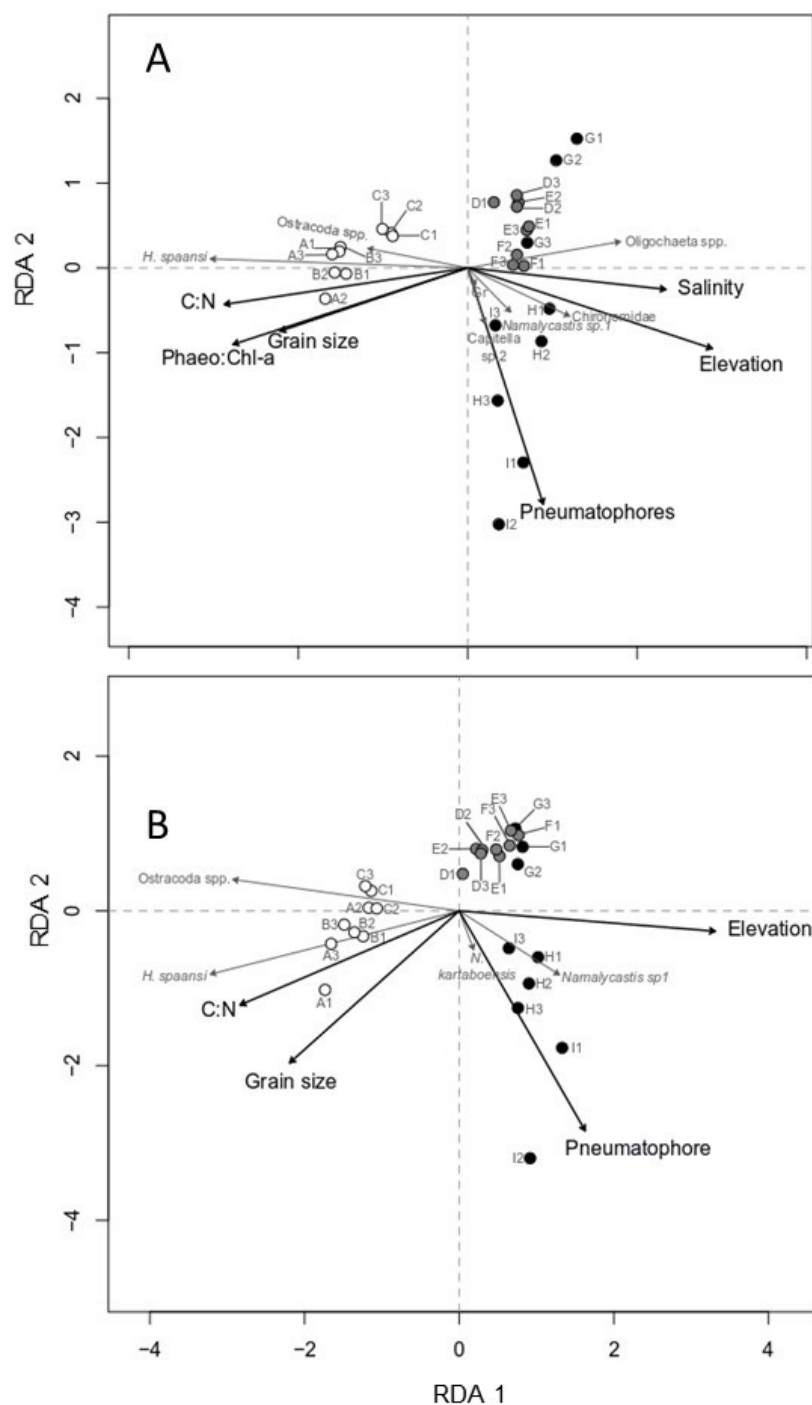


Figure S5: RDA correlation triplot of infaunal community data and selected environmental variables based on Hellinger transformed (A) abundance and (B) biovolume infaunal data. Stations of the three groups of transects are represented by specific colored circles (white: A-C, group 1; grey: D-G, group 2; black: H-I, group 3). “Grain size” refers to median grain size, “Pneumatophore” refers to roots density, “Elevation” refers to substrate height. In the top graph “Gr” denotes three taxa clustered too close to be distinguished *Gastropoda* sp.1, *Bivalvia* sp.1 and *Melitidae* sp.1.

Table S1 : Taxonomic list of the OTUs (nd : not defined)

Phylum	Class	family	OTUs
Annelida	Clitellata	nd	<i>Oligochaeta spp.</i>
Annelida	Polychaeta	Capitellidae	<i>Capitella indet</i>
Annelida	Polychaeta	Capitellidae	<i>Capitella sp.1</i>
Annelida	Polychaeta	Capitellidae	<i>Capitella sp.2</i>
Annelida	Polychaeta	Nereididae	<i>Namalycastis sp.1</i>
Annelida	Polychaeta	Nereididae	<i>Namalycastis kartaboensis</i>
Annelida	Polychaeta	Nereididae	<i>Neanthes sp.1</i>
Annelida	Polychaeta	Capitellidae	<i>Notomastus sp.1</i>
Annelida	Polychaeta	Spionidae	<i>Pseudopolydora sp.1</i>
Annelida	Polychaeta	Pilargidae	<i>Sigambra sp1</i>
Arthropoda	Arachnida	nd	<i>Acarina spp.</i>
Arthropoda	Arachnida	nd	<i>Aranae spp.</i>
Arthropoda	Collembola	Isotomidae	<i>Isotomidae spp</i>
Arthropoda	Insecta	Ceratopogonidae	<i>Ceratopogonidae 1 (larvae)</i>
Arthropoda	Insecta	Chironomidae	<i>Chironomidae 1 (larvae)</i>
Arthropoda	Insecta	nd	<i>Coleoptera ind</i>
Arthropoda	Insecta	nd	<i>Coleoptera sp.2</i>
Arthropoda	Insecta	nd	<i>Coleoptera sp.4</i>
Arthropoda	Insecta	nd	<i>Diptera 1 (adult)</i>
Arthropoda	Insecta	nd	<i>Diptera 2 (adult)</i>
Arthropoda	Insecta	nd	<i>Diptera 3 (adult)</i>
Arthropoda	Insecta	nd	<i>Diptera 4 (adult)</i>
Arthropoda	Insecta	nd	<i>Diptera indet.1 (larvae)</i>
Arthropoda	Insecta	nd	<i>Diptera indet.2 (larvae)</i>
Arthropoda	Insecta	nd	<i>Heteroptera sp.1</i>
Arthropoda	Insecta	nd	<i>Insecta sp.1</i>
Arthropoda	Insecta	nd	<i>Insecta sp.2</i>
Arthropoda	Insecta	nd	<i>Scolitidae sp.1</i>
Arthropoda	Insecta	nd	<i>Tabamidae 1 (larvae)</i>
Arthropoda	Insecta	nd	<i>Thysanoptera sp.1</i>
Arthropoda	Malacostraca	nd	<i>Amphipoda sp.1</i>
Arthropoda	Malacostraca	Parapseudidae	<i>Halmyrapseudes spaansi</i>
Arthropoda	Malacostraca	Parapseudidae	<i>Discapseudes surinamensis</i>
Arthropoda	Malacostraca	melitidae	<i>Melitidae sp.1</i>
Arthropoda	Malacostraca	Melitidae	<i>Melitidae sp.2</i>
Arthropoda	Malacostraca	nd	<i>Isopode sp1</i>

Arthropoda	Malacostraca	nd	<i>Isopode sp2</i>
Arthropoda	Maxillopoda	nd	<i>Copepoda</i>
Arthropoda	Malacostraca	Grapsidae	<i>Goniopsis cruentata</i>
Arthropoda	Malacostraca	Ocypodidae	<i>Uca cumulanta</i>
Arthropoda	Malacostraca	Ocypodidae	<i>Uca mordax</i>
Phylum	Class	family	OTUs
Arthropoda	Malacostraca	Talitridae	<i>Talitridae sp.1</i>
Arthropoda	Ostracoda	nd	<i>Ostracoda spp.</i>
Chordata	Actinopterygii	Gobiidae	<i>Gobionellus oceanicus</i>
Cnidaria	Anthozoa	nd	<i>Octocorallia sp.</i>
Cnidaria	Anthozoa	nd	<i>Hectocorallia sp.</i>
Mollusca	Bivalvia	Cyrenidae	<i>Polymesoda aequilatera</i>
Mollusca	Bivalvia	nd	<i>Bivalvia sp1</i>
Mollusca	Bivalvia	nd	<i>Bivalvia sp2</i>
Mollusca	Bivalvia	nd	<i>Bivalvia sp3</i>
Mollusca	Gastropoda	nd	<i>Gastropoda sp.1</i>
Mollusca	Gastropoda	nd	<i>Gastropoda sp.2</i>
Nematoda	Adenophorea	nd	<i>Adenophorea</i>
Nemerta	Nemerta	nd	<i>Nemerta sp.1</i>
Nemerta	Nemerta	nd	<i>Nemerta sp.2</i>
Plathelminthe	Turbellaria	nd	<i>Turbellaria</i>
Sipuncula	Sipuncula sp.	nd	<i>Sipuncula sp.</i>