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Supplementary Material

Sediment effects on interstitial faunal distribution in Brazilian sandy beaches: a multi-phylum approach

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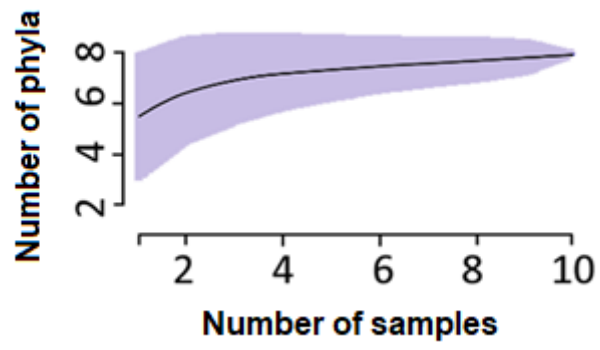


Fig. S1. Rarefaction curve based on the number of phyla (y-axis) after samples accumulation (x-axis).

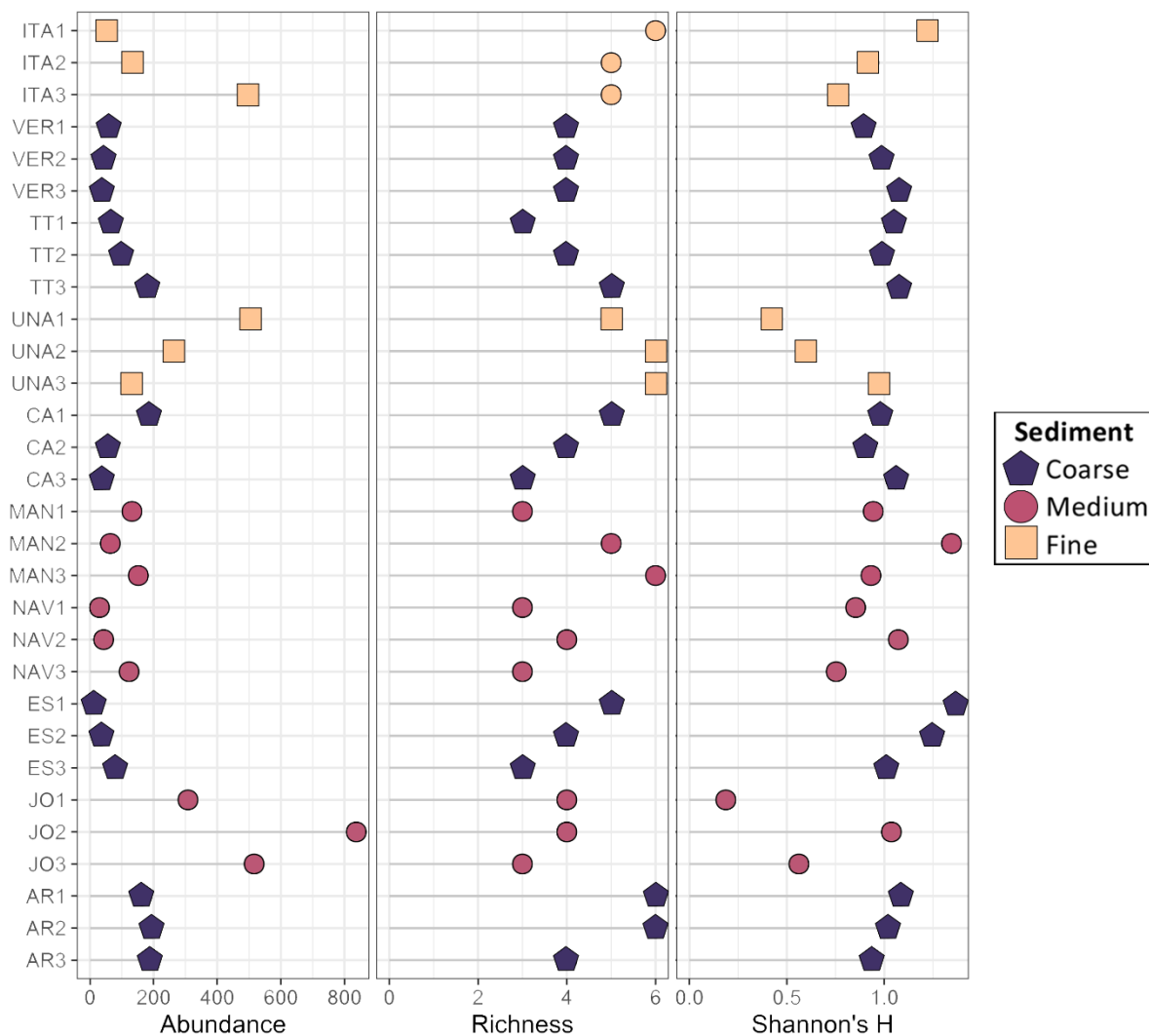


Fig. S2. Abundance, richness and Shannon's H obtained for each site of the transect. The lollipop graph represents the indices (x-axis) for each location (y-axis). The locations are colour coded according to the grain size classification. AR, Armação, CA, Caravelas, ES, Estaleiro, ITA, Itamambuca, JO, Joaquina, MAN, Praia Mansa, NAV, Navegantes, TT, Toque Toque Pequeno, UNA, Barra do Una, VER, Praia Vermelha do Norte.

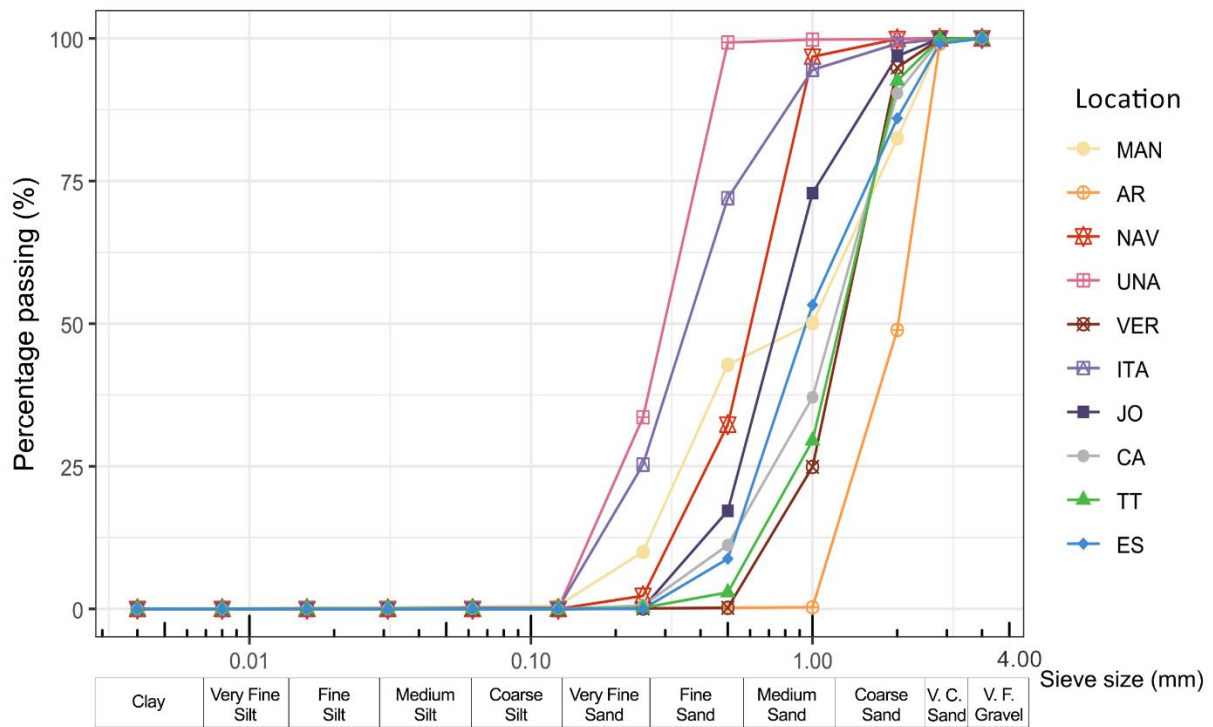


Fig. S3. Granulometric curve of all ten samples analysed. The percentage of passing sediments is indicated on the y-axis, and the sieve size (mm) is indicated on the x-axis. The categories of grain size classification are indicated below the x-axis. Each line represents a location according to its colour, indicated in the legend. Abbreviation as in Table S1. V.C., very coarse. V.F., very fine.

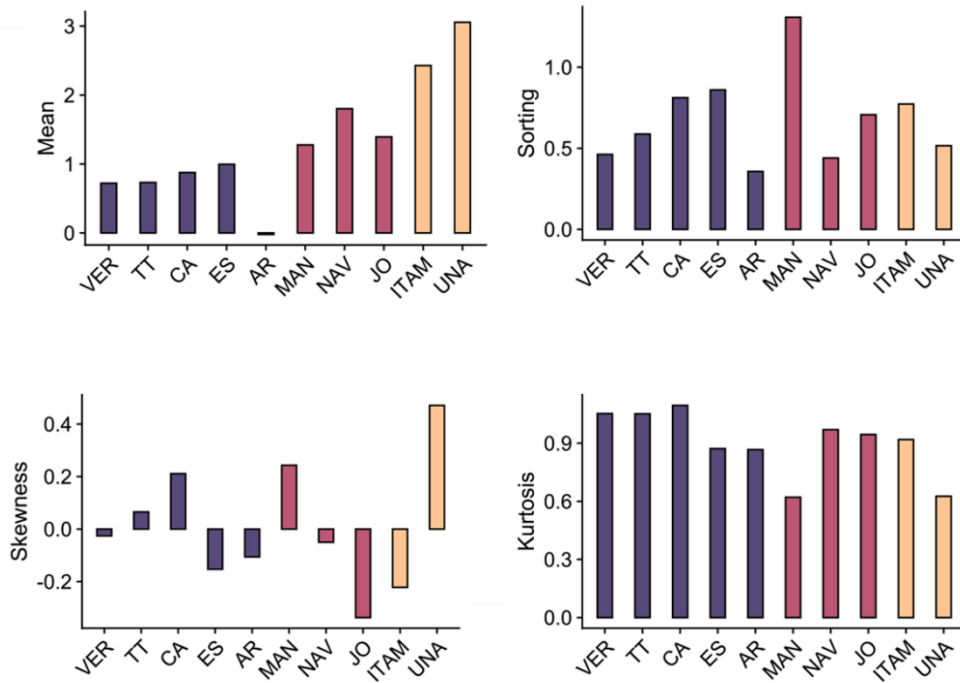


Fig. S4. Sediment metrics obtained for each sample. a) Mean grain size (ϕ), sorting (σ), skewness (Sk) and kurtosis (k) computed for each sediment sample. The bar colors indicate the grain size classification as in the legend.

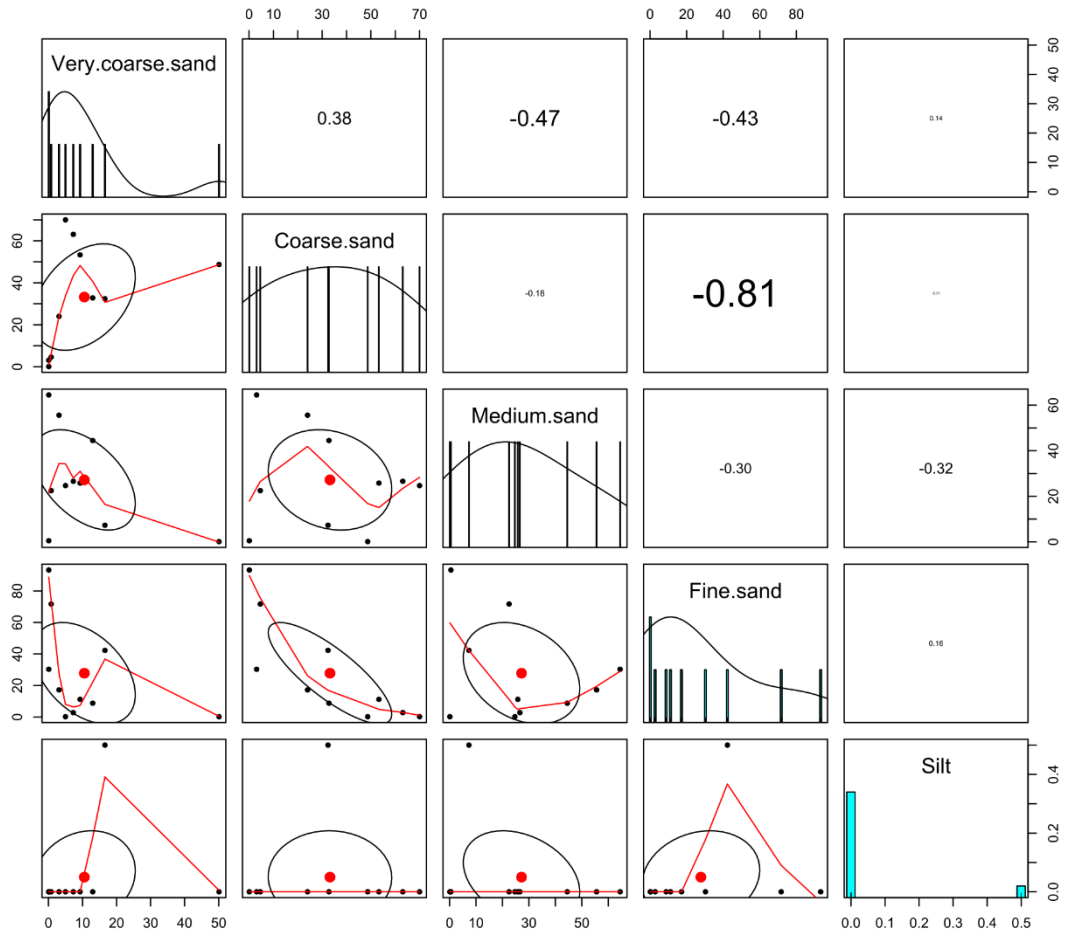


Fig. S5. Collinearity values between sediment fractions used for Redundancy Analysis (RDA).

Table S1. Geographic coordinates and date of collection of each sampling location.

Location	Abbreviation	State, City	Longitude	Latitude	Month
Praia Vermelha	VER	São Paulo, Ubatuba	-45.03566480	-23.41899566	January 2022
Toque Toque Pequeno	TT	São Paulo, São Sebastião	-45.53665756	-23.81403790	January 2022
Baía Caravelas	CA	Paraná, Matinhos	-48.48822771	-25.73178505	December 2021
Estaleiro	ES	Santa Catarina, Balneário Camburiú	-48.58083594	-27.02709235	December 2021
Armação	AR	Santa Catarina, Florianópolis	-48.50592483	-27.74716449	December 2021
Praia Mansa	MAN	Paraná, Matinhos	-48.53962984	-25.84546742	December 2021
Navegantes	NAV	Santa Catarina, Florianópolis	-48.641770	-26.889266	December 2021
Joaquina	JO	Santa Catarina, Florianópolis	-48.45028108	-27.62571883	December 2021
Barra do Una	UNA	São Paulo, São Sebastião	-47.06849179	-24.44135705	January 2022
Itamambuca	ITA	São Paulo, São Sebastião	-45.00733631	-23.40465327	January 2022

Abbreviations are provided for each sandy beach.

Table S2. Abundance of phyla in each site and replica for location.

Location	Site	Replica	Ann	Platy	Acoela	Nemat	Moll	Gastro	Arthro	Nem
VER	1	1	8	2	0	0	0	0	0	0
VER	1	2	9	0	0	0	0	0	10	0
VER	1	3	7	0	0	0	0	0	17	1
VER	2	1	10	2	0	0	0	0	0	0
VER	2	2	7	0	0	0	0	0	3	2
VER	2	3	13	6	0	0	0	0	2	0
VER	3	1	6	0	0	0	0	0	13	0
VER	3	2	8	3	0	0	0	0	4	1
VER	3	3	1	2	0	0	0	0	2	0
TT	1	1	6	0	0	10	0	0	5	0
TT	1	2	3	0	0	16	0	0	0	0
TT	1	3	3	0	0	5	0	0	15	0
TT	2	1	0	0	0	39	0	0	0	1
TT	2	2	4	0	0	12	0	0	21	0
TT	2	3	6	0	0	9	0	0	4	2
TT	3	1	14	0	0	28	0	0	0	0
TT	3	2	9	0	0	9	0	0	0	0
TT	3	3	25	0	0	65	24	0	3	3
CA	1	1	0	19	5	5	0	0	2	0
CA	1	2	0	10	0	105	0	0	4	0
CA	1	3	3	10	0	11	0	0	12	0
CA	2	1	0	4	0	7	0	0	0	0
CA	2	2	4	24	0	6	0	0	1	0
CA	2	3	2	5	0	5	0	0	0	0
CA	3	1	1	5	0	5	0	0	0	0
CA	3	2	4	7	0	13	0	0	0	0
CA	3	3	0	0	0	0	0	0	0	0
ES	1	1	0	1	0	1	0	0	1	0
ES	1	2	1	0	0	1	0	0	0	0
ES	1	3	4	0	0	1	0	0	0	1
ES	2	1	1	1	0	7	0	0	0	0
ES	2	2	1	7	0	4	0	0	0	0
ES	2	3	10	1	0	1	0	0	0	2
ES	3	1	6	4	0	26	0	0	0	0
ES	3	2	13	9	0	8	0	0	0	0
ES	3	3	2	2	0	7	0	0	0	0
AR	1	1	16	56	0	1	2	0	2	0
AR	1	2	8	24	0	0	0	0	0	2
AR	1	3	20	30	0	0	5	0	13	0
AR	2	1	13	35	0	1	0	0	0	0
AR	2	2	20	9	0	0	0	0	0	0
AR	2	3	8	56	0	0	12	0	9	2
AR	3	1	6	66	0	0	0	0	0	0
AR	3	2	10	40	0	0	0	0	23	0
AR	3	3	25	28	0	0	0	0	0	3
MAN	1	1	3	32	0	7	0	0	0	0
MAN	1	2	8	3	0	0	0	0	0	0
MAN	1	3	19	44	0	25	0	0	0	0
MAN	2	1	1	4	0	7	0	2	0	0
MAN	2	2	11	6	0	15	0	4	1	0
MAN	2	3	1	3	0	0	0	0	0	0
MAN	3	1	8	10	0	17	0	0	0	2
MAN	3	2	6	41	0	0	0	0	0	0
MAN	3	3	8	54	1	4	1	0	0	0
NAV	1	1	0	4	0	1	0	0	0	0
NAV	1	2	0	4	0	12	0	0	2	0
NAV	1	3	0	2	0	5	0	0	0	0
NAV	2	1	0	0	0	0	0	0	0	0
NAV	2	2	2	8	0	0	0	0	6	0
NAV	2	3	0	17	0	10	0	0	0	0
NAV	3	1	0	7	0	2	0	0	2	0
NAV	3	2	0	14	0	2	0	0	3	0
NAV	3	3	0	62	0	31	0	0	0	0
JO	1	1	0	20	0	3	0	0	5	1

Location	Site	Replica	Ann	Platy	Acoela	Nemat	Moll	Gastro	Arthro	Nem
JO	1	2	0	119	0	0	0	0	0	0
JO	1	3	2	162	0	1	0	0	1	0
JO	2	1	0	248	0	196	0	0	115	0
JO	2	2	0	25	0	0	0	0	0	0
JO	2	3	0	129	0	74	0	0	36	0
JO	3	1	0	120	0	36	0	0	27	0
JO	3	2	0	276	0	17	0	0	0	0
JO	3	3	0	40	0	8	0	0	0	0
UNA	1	1	0	7	0	207	1	0	13	0
UNA	1	2	0	9	1	55	0	0	1	0
UNA	1	3	0	11	0	190	2	0	6	0
UNA	2	1	0	17	1	50	0	0	0	0
UNA	2	2	0	6	1	115	0	0	7	0
UNA	2	3	0	6	0	56	3	0	0	0
UNA	3	1	0	8	0	50	2	0	5	0
UNA	3	2	2	5	0	25	1	0	5	0
UNA	3	3	0	7	2	16	2	0	1	0
ITA	1	1	3	5	0	12	0	0	2	0
ITA	1	2	5	5	0	15	0	0	0	1
ITA	1	3	0	1	0	2	1	0	0	0
ITA	2	1	5	16	0	24	0	0	1	1
ITA	2	2	1	35	0	10	0	0	0	0
ITA	2	3	4	15	0	25	0	0	0	0
ITA	3	1	0	19	0	32	0	0	0	0
ITA	3	2	1	27	0	100	2	0	0	0
ITA	3	3	4	105	4	200	0	0	0	0

Numbers represent the number of specimens found in each replicate of each site for all sandy beaches. AR, Armação; CA, Caravelas; ES, Estaleiro; ITA, Itamambuca; JO, Joaquina; MAN, Praia Mansa; NAV, Navegantes; TT, Toque Toque Pequeno; UNA, Barra do Una; VER, Praia Vermelha do Norte. Ann, Annelida; Platy, Platyhelminthes; Nemat, Nematoda; Moll, Mollusca; Gastro, Gastrotricha; Arthro, Athropoda; Nem, Nemertea.

Table S3. List of minor taxonomic levels within each phylum found in the samples.

Location	AR	CA	ES	ITA	JO	MAN	NAV	TT	UNA	VER
<i>Annelida</i>										
<i>Saccocirrus</i>	119	13	38	19	0	9	0	61	0	62
Spionidae	0	0	0	2	2	19	2	3	1	0
Nerillidae	5	0	0	0	0	19	0	0	0	0
Protodrilidae	0	0	0	0	0	4	0	0	0	4
Pisionidens	2	1	0	2	0	14	0	6	1	3
<i>Phatyhelminthes</i>										
<i>Kata</i>	296	26	11	1	267	17	0	0	0	2
Proseriata	43	53	13	214	816	168	116	0	71	13
Rhabdocoela	5	5	1	13	56	12	2	0	5	0
<i>Acoelomorpha</i>										
Acoela	0	5	0	4	0	1	0	0	5	0
<i>Nematoda</i>										
Nematoda	2	157	56	420	335	75	63	193	764	0
<i>Mollusca</i>										
Bivalve	19	0	0	3	0	1	0	24	11	0
<i>Gastrotricha</i>										
Macrodasyida	0	0	0	0	0	6	0	0	0	0
<i>Arthropoda</i>										
Copepoda	47	19	1	3	184	1	13	48	38	51
<i>Nemertea</i>										
<i>Otocyphlonemertes</i>	7	0	3	2	1	2	0	6	0	4

The numbers represent the counts of each class, order or genus identified.