

Figure S1. Locations of the sampling sites coloured by A) water column depth, B) habitat type and C) sediment mud content (%).

Table S1. AIC values of the regression models for TBI score versus water column depth and sediment mud content.

	Number of Polynomials	AIC
Water column depth	1	19.14
	2	15.73
	3	16.30
	4	17.66
Sediment mud content	1	22.92
	2	23.79
	3	24.59
	4	26.51

Table S2. Ten of the most highly abundant taxa per group (average abundance per core).

Habitat													
Large burrows		Infaunal molluscs		Seagrass		Shelly		Small burrows		Tube mat			
<i>Paradoneis lyra</i>	18	Lysianassidae	14	Oligochaeta	25	<i>Spiophanes bombyx</i>	24	<i>Micromaldane sp</i>	84	<i>Micromaldane sp</i>	127		
<i>Pseudopolydora paucibranchiata</i>	6	<i>Austrovenus stutchburyi</i>	11	<i>Pseudopolydora paucibranchiata</i>	18	<i>Phoxocephalidae</i>	13	<i>Euchone</i>	62	<i>Euchone</i>	95		
<i>Cossura consimilis</i>	6	<i>Leodamus cylindrifer</i>	10	<i>Torridoharpinia hurleyi</i>	18	<i>Ischyroceridae</i>	9	<i>Pseudopolydora paucibranchiata</i>	52	<i>Pseudopolydora paucibranchiata</i>	93		
Cirratulidae	1	<i>Prionospio aucklandica</i>	10	<i>Prionospio aucklandica</i>	12	<i>Prionospio spp</i>	9	Oligochaeta	28	Oligochaeta	25		
<i>Prionospio yuriel</i>	1	<i>Notoacmea scapha</i>	10	<i>Paradoneis lyra</i>	10	<i>Macroclymenella stewartensis</i>	8	<i>Ischyroceridae</i>	20	<i>Ischyroceridae</i>	19		
Dorvilleidae	1	<i>Capitella spp</i>	9	<i>Heteromastus filiformis</i>	10	<i>Notomastus</i>	6	<i>Corophium</i>	16	<i>Corophium</i>	15		
<i>Heteromastus filiformis</i>	1	<i>Paravireia sp</i>	8	Cirratulidae	8	<i>Zemysia zelandica</i>	6	<i>Sphaerosyllis</i>	13	Exogoninae	13		
Aricidea	1	<i>Anthopleura au-reoradiata</i>	7	Exogoninae	7	<i>Urothoidae</i>	6	<i>Pseudopotamilla</i>	11	<i>Pseudopotamilla</i>	13		
<i>Arthritica bifurca</i>	1	<i>Ceratonereis</i>	6	<i>Linucula hartvigiana</i>	7	<i>Armandia maculata</i>	3	Ostracoda	10	Ostracoda	12		
<i>Torridoharpinia hurleyi</i>	1	<i>Lasaea parengaensis</i>	5	<i>Boccardia syrtis</i>	7	<i>Euchone</i>	3	Tanaidacea	8	Tanaidacea	8		
Mud (%)													
0 – 3		3 – 10		10 – 30		>35							
<i>Pseudopotamilla</i>	47	<i>Euchone</i>	81	<i>Euchone</i>	130	<i>Paradoneis lyra</i>	18						
Ischyroceridae	42	<i>Micromaldane sp</i>	56	<i>Pseudopolydora paucibranchiata</i>	36	<i>Pseudopolydora paucibranchiata</i>	6						
<i>Spiophanes bombyx</i>	17	Ischyroceridae	40	<i>Pseudopotamilla</i>	30	<i>Cossura consimilis</i>	6						
<i>Euchone</i>	14	<i>Pseudopolydora paucibranchiata</i>	25	Ischyroceridae	23	Cirratulidae	1						
<i>Macroclymenella stewartensis</i>	8	Tanaidacea	25	Exogoninae	13	<i>Prionospio yuriel</i>	1						
Phoxocephalidae	8	Oligochaeta	24	Cirratulidae	11	Dorvilleidae	1						
Lysianassidae	6	<i>Pseudopotamilla</i>	18	<i>Macroclymenella stewartensis</i>	9	<i>Heteromastus filiformis</i>	1						
<i>Zemysia zelandica</i>	6	<i>Spiochaetopterus sp</i>	12	<i>Paradoneis lyra</i>	9	Aricidea	1						

Oligochaeta	5	<i>Corophium</i>	11	Anthuroidea	7	<i>Arthritica bi-furca</i>	1				
<i>Prionospio aucklandica</i>	5	<i>Torridoharpinia hurleyi</i>	10	Onuphidae	6	<i>Torridoharpinia hurleyi</i>	1				
Depth (m)											
Intertidal		1 – 3		3 – 6		6 – 10		10 – 15			
Lysianassidae	14	Oligochaeta	26	<i>Micromaldane sp</i>	139	Ischyroceridae	103	<i>Euchone</i>	126	<i>Pseudopotamilla</i>	94
<i>Austrovenus stutchburyi</i>	11	<i>Pseudopolydora paucibranchiata</i>	21	<i>Euchone</i>	97	<i>Euchone</i>	73	Ischyroceridae	43	<i>Spiophanes bombyx</i>	38
<i>Notoacmea scapha</i>	10	<i>Torridoharpinia hurleyi</i>	16	<i>Pseudopolydora paucibranchiata</i>	84	<i>Pseudopota-milla</i>	36	<i>Pseudopota-milla</i>	33	Ischyroceridae	32
<i>Prionospio aucklandica</i>	10	<i>Prionospio aucklandica</i>	13	Oligochaeta	46	Tanaidacea	33	<i>Spiochae-topterus sp</i>	14	<i>Euchone</i>	16
<i>Leodamus cylindrifer</i>	10	<i>Paradoneis lyra</i>	11	Ischyroceridae	29	Exogoninae	20	Cirratulidae	13	<i>Macroclymenella stewartensis</i>	16
<i>Capitella spp</i>	9	<i>Heteromastus filiformis</i>	10	<i>Corophium</i>	26	Dexaminidae	9	Exogoninae	12	Phoxocephalidae	16
<i>Paravireia sp</i>	8	Exogoninae	9	Exogoninae	20	<i>Spiochae-topterus sp</i>	8	Tanaidacea	11	<i>Zemysia zelandica</i>	9
<i>Anthopleura aureoradiata</i>	7	Cirratulidae	9	Ostracoda	16	<i>Macroclymenella stewartensis</i>	7	<i>Torridoharpinia hurleyi</i>	11	<i>Prionospio spp</i>	8
<i>Ceratonereis</i>	6	<i>Sphaerosyllis semiverrucosa</i>	8	Tanaidacea	13	Anthuroidea	6	Dexaminidae	8	<i>Pseudopolydora paucibranchiata</i>	7
<i>Lasaea parengaensis</i>	5	<i>Linucula hartvigiana</i>	7	Nematoda	10	<i>Asychis</i>	6	Oligochaeta	7	<i>Notomastus</i>	7

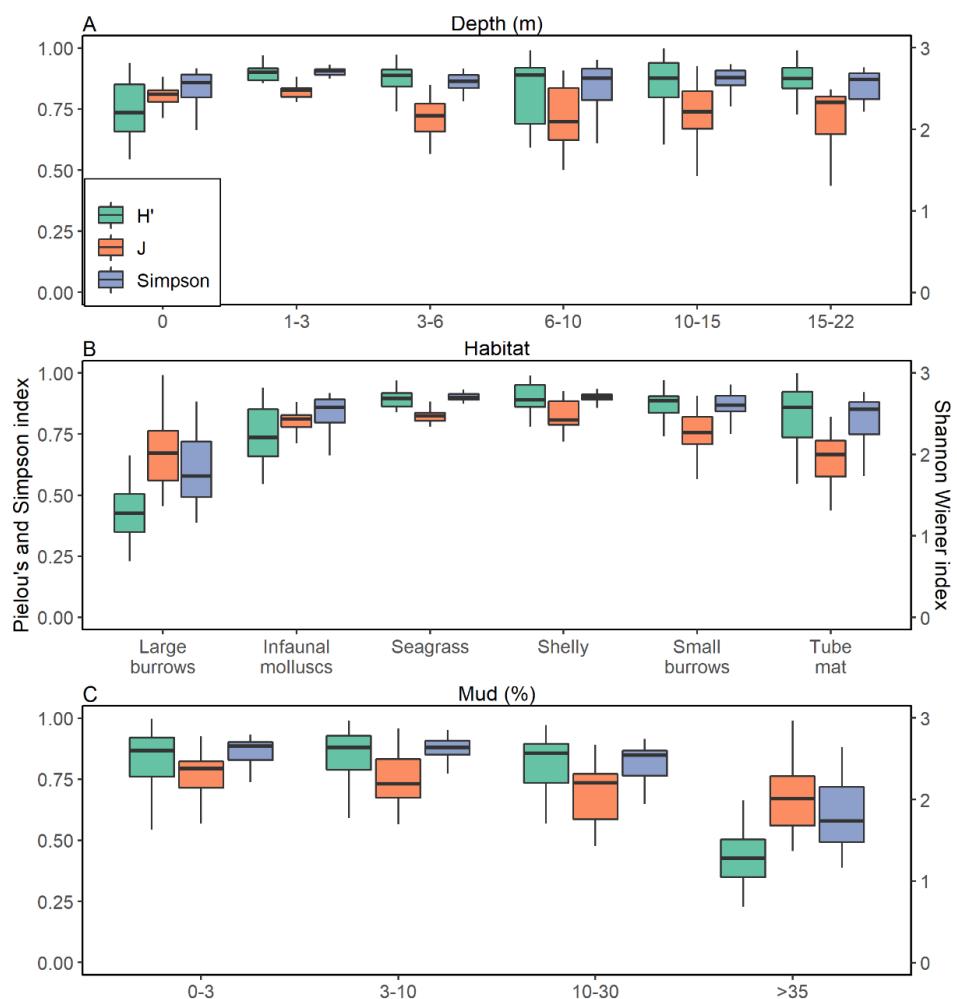


Figure S2. Pielou's evenness (J), Simpson index and Shannon Wiener diversity index (H') as a function of A) water column depth, B) habitat type and C) sediment mud content.

Table S3. Results of the Kruskal-Wallis tests investigating the difference in univariate diversity indices as a function of water column depth, sediment mud content and habitat type.

	Chi square	p	Post-hoc (Dunn Test)
Water column depth			
Shannon Wiener diversity index	26.83	<0.001	0 < (1-3 = 3-6 = 6-10 = 10-15 = 15-22)
Pielous' evenness	20.63	0.001	0 > 3-6, 1-3 > (3-6 = 6-10)
Simpson index	6.99	0.085	
Sediment mud content			
Shannon Wiener diversity index	55.49	<0.001	(0-3 = 3-10 = 10-30) > >35
Pielous' evenness	10.93	0.012	
Simpson index	52.60	<0.001	(0-3 = 3-10) > 10-30 > >35
Habitat type			
Shannon Wiener diversity index	81.48	<0.001	Lb < Im < (Sg = Sh = Sm), Tm ≠ Lb
Pielous' evenness	79.03	<0.001	Lb < (Sg, Sh, Im), Tm < (Sg, Sh, Sb, Im)
Simpson index	74.36	<0.001	Lb < (Sg, Sh, Sm, Tm, Im), Tm < Sg (Im = Tm) < Sh