

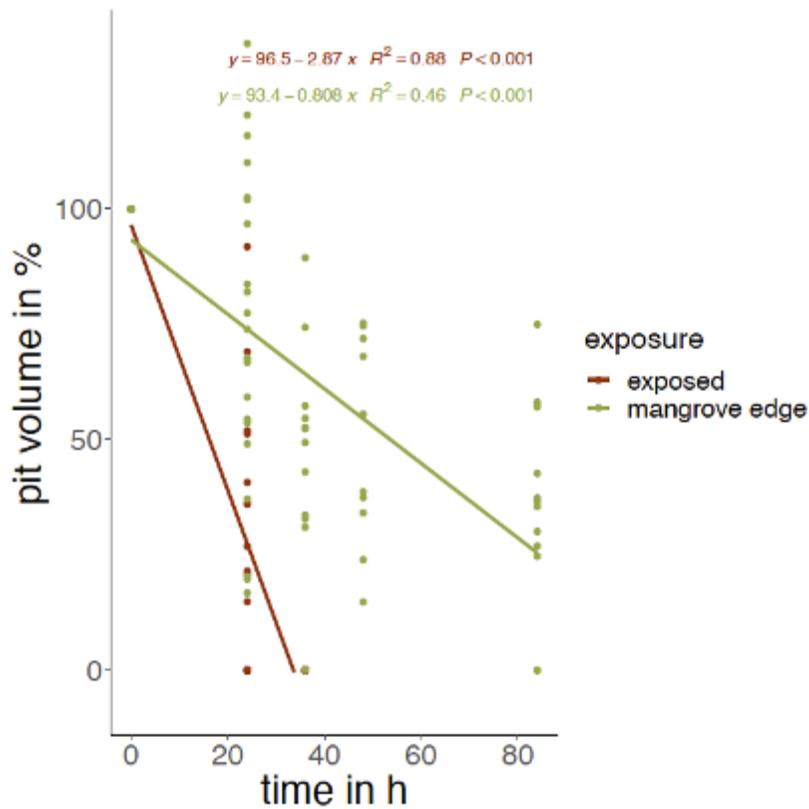
## Appendix 9.1 Exclosure effects on environmental parameters

time	top cm	abiotic	meso-predator exclusion		effect of exclosure		no exclosure		unit	post-hoc (excl, effect, control)
			mean	se	mean	se	mean	se		
2019	top5	SD50	238.55	4.43	233.69	5.32	240.22	4.41	µm	a, a, a
2019	top5	SSILT	2.12	0.12	2.00	0.10	1.91	0.10	% <63 µm	a, a, a
2019	top5	LOI	0.76	0.04	0.95	0.04	1.08	0.30	%	a, a, a
2021	top1	SD50	217.87	1.93	223.12	4.40	231.93	4.69	µm	a, ab, b
2021	top1	SSILT	3.81	0.19	3.25	0.20	2.81	0.17	% <63 µm	a, b, b
2021	top1	LOI	1.01	0.02	0.95	0.03	0.90	0.03	%	a, ab, b
2021	top5	SD50	221.43	3.18	221.14	4.62	232.86	3.91	µm	a, a, a
2021	top5	SSILT	2.97	0.10	2.70	0.13	2.45	0.13	% <63 µm	a, ab, b
2021	top5	LOI	0.88	0.02	0.81	0.02	0.80	0.03	%	a, b, b
2021		ray pits	0.00	0.00	0.48	0.06	0.33	0.06	fraction of plots	a, b, b
2021		sedimentation	5.74	0.28	6.39	0.25	6.72	0.23	cm	a, ab, b
2021		erosion	4.72	0.32	6.35	0.35	6.75	0.26	cm	a, b, b
2021		net surface change	1.03	0.32	0.04	0.44	-0.02	0.38	cm	a, a, a

**Appendix 9.2** The distribution of these pits related to the environmental predictors: distance to creek (Dst\_crk), distance to mangroves (Dst\_mng), distance to subtidal (Dst\_sbt) and elevation (Elv) was best described according concentrated foraging patterns (negative binomial distribution) versus random distribution (normal distribution).

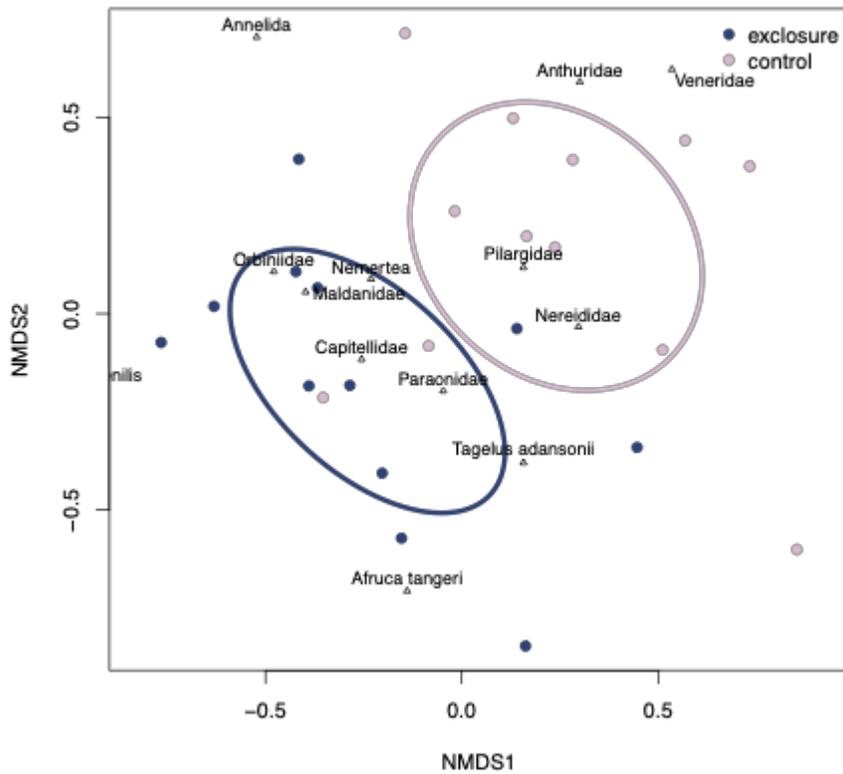
model	(Int)	Dst_crk	Dst_mng	Elv	class	df	logLik	AICc	delta	weight
negative binomial	18.82	-0.03842	-0.05459	0.2632	negbin	5	-106.478	224	0	1
lineair model	16.58	-0.03281	-0.05313	0.2229	glm	4	-123.533	255.7	31.75	0
poisson	-167.9	-0.4107	0.3311	-3.585	lm	5	-246.685	504.4	280.41	0

### Appendix 9.3



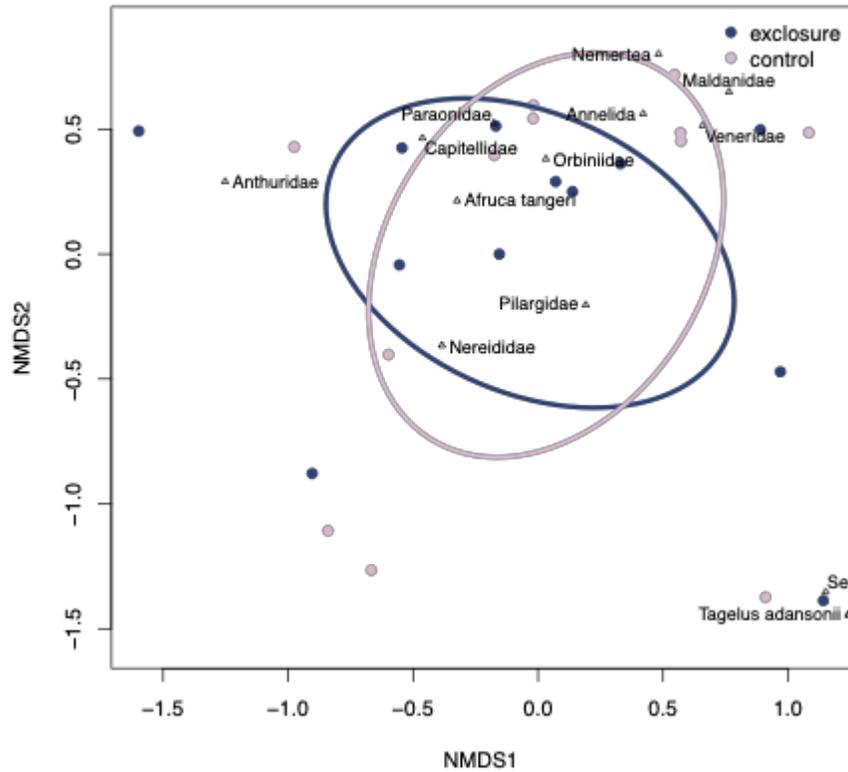
Measurement of ray pit longevity (i.e., volume decay) at exposed and more sheltered by the tidal flat (mangrove edge) locations reveal a shorter longevity of the ray pits at exposed sites. The locations were chosen based on a comparable elevation, on average +8.9 cm at the mangrove edge compared to exposed location.

## Appendix 9.4



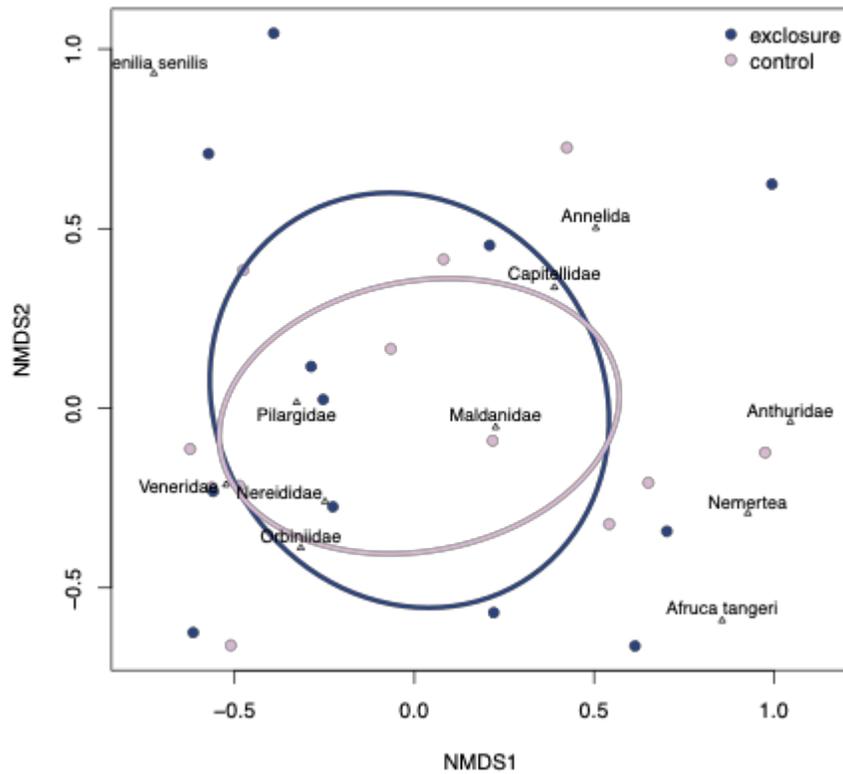
Macrozoobenthos Non-Metric Multidimensional Scaling (nMDS) on species abundance February 2021 with Bray-Curtis dissimilarity indices.  $F = 3.515$   $p < 0.01$ .

## Appendix 9.5



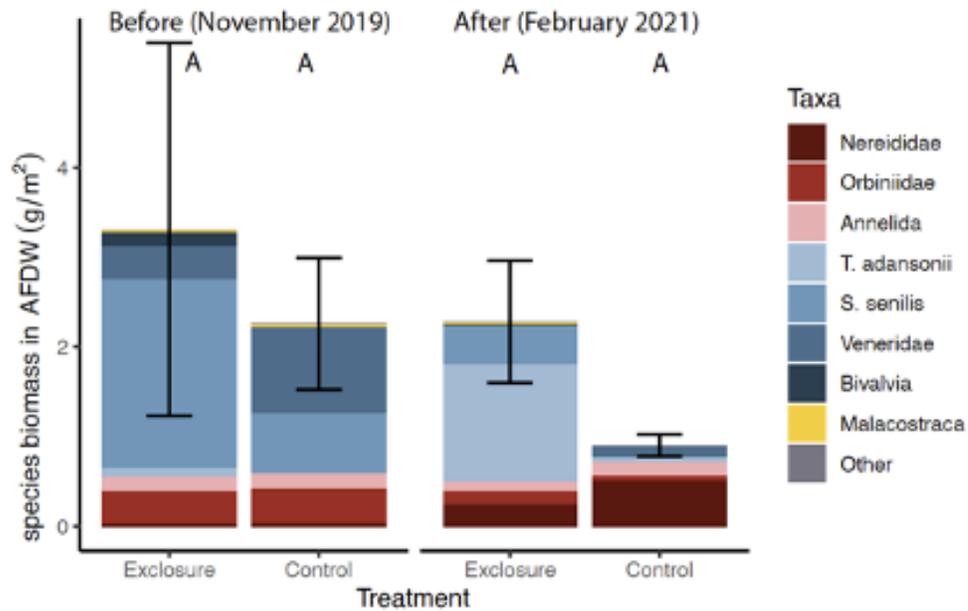
Macrozoobenthos Non-Metric Multidimensional Scaling (nMDS) on species biomass November 2019 with Bray-Curtis dissimilarity indices.  $F = 0.755$   $p = 0.672$ .

## Appendix 9.6



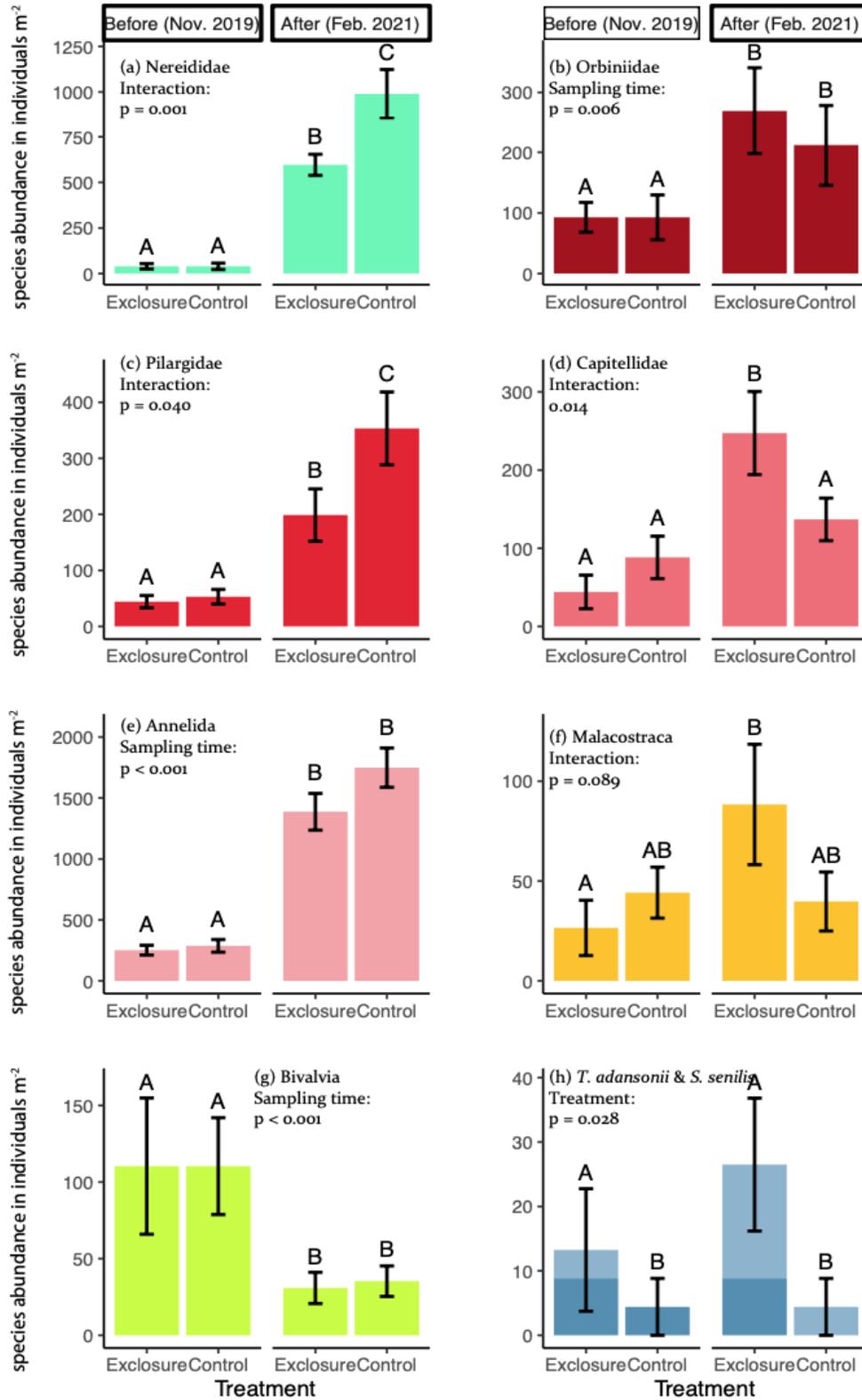
Macrozoobenthos Non-Metric Multidimensional Scaling (nMDS) on species abundance  
November 2019 with Bray-Curtis dissimilarity indices.  $F = 0.535$   $p = 0.814$ .

## Appendix 9.7



Exclosure effects on total species biomass in ash free dry weight (AFDW gm<sup>2</sup>). Data is shown in mean stacked per taxa ± sum SE of all taxa.

## Appendix 9.8



Exclosure effects on species abundance. Data is shown in mean  $\pm$  SE.

## Appendix 10.1