

Ecosphere

Quantifying the direct and indirect relationships linking the environment, seagrass, and their associated fauna

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Appendix S3

Table S1 – Coefficient values and significance of relationships in the SEM linking the environment, the seagrass bed, and the associated infauna.

Response	Predictor	Estimate	P.Value	Std.Estimate	Significance
density	current	0.0793	0.146	0.0782	
density	water temperature	-0.0891	0.1134	-0.0877	
density	gravel	0.3272	0	0.3221	***
density	mud	-0.2279	1.00E-04	-0.2259	***
belowground biomass	current	0.0099	0.8493	0.0099	
belowground biomass	water temperature	-0.1072	0.0468	-0.1074	*
belowground biomass	gravel	0.0025	0.9636	0.0025	
belowground biomass	mud	0.1703	0.0019	0.1716	**
belowground biomass	density	0.4031	0	0.4099	***
aboveground biomass	current	0.4128	0	0.4042	***
aboveground biomass	water temperature	0.1064	0.0419	0.1041	*
aboveground biomass	gravel	0.0548	0.299	0.0536	
aboveground biomass	mud	0.1932	3.00E-04	0.1902	***
aboveground biomass	density	0.2323	0	0.2307	***
organic matter	current	-0.2017	0	-0.2014	***
organic matter	water temperature	0.076	0.0388	0.0758	*
organic matter	mud	0.7174	0	0.72	***
organic matter	gravel	0.0526	0.1513	0.0525	
organic matter	density	-0.0866	0.0297	-0.0877	*
organic matter	belowground biomass	0.0726	0.0546	0.0722	
organic matter	aboveground biomass	0.1419	3.00E-04	0.1447	***
species richness	current	-0.1256	0.0196	-0.1408	*

species richness	water temperature	0.1342	0.0067	0.1503	**
species richness	gravel	0.1242	0.0117	0.139	*
species richness	mud	-0.0251	0.7337	-0.0283	
species richness	density	0.036	0.5	0.0409	
species richness	belowground biomass	0.0034	0.947	0.0038	
species richness	aboveground biomass	0.1182	0.0258	0.1354	*
species richness	organic matter	0.2919	1.00E-04	0.3278	***
abundance	current	0.0343	0.4626	0.0358	
abundance	water temperature	0.455	0	0.4748	***
abundance	gravel	-0.1846	0	-0.1925	***
abundance	mud	-0.2979	0	-0.3128	***
abundance	density	-3.00E-04	0.9942	-4.00E-04	
abundance	belowground biomass	-0.0808	0.0671	-0.0842	
abundance	aboveground biomass	0.2208	0	0.2356	***
abundance	organic matter	0.1326	0.0425	0.1387	*
PCA1	current	0.0334	0.0011	0.0872	**
PCA1	water temperature	0.0391	3.00E-04	0.102	***
PCA1	gravel	-0.1587	0	-0.4135	***
PCA1	mud	-0.0834	0	-0.2188	***
PCA1	density	0.0063	0.5258	0.0168	
PCA1	belowground biomass	-0.0217	0.0234	-0.0564	*
PCA1	aboveground biomass	0.0278	0.007	0.074	**
PCA1	organic matter	0.0258	0.0721	0.0675	
PCA1	species richness	-0.1332	0	-0.3101	***
PCA1	abundance	0.2211	0	0.5523	***
PCA2	current	0.0021	0.8472	0.0077	
PCA2	water temperature	-0.063	0	-0.2311	***
PCA2	gravel	-0.1112	0	-0.4073	***
PCA2	mud	-0.0527	7.00E-04	-0.1945	***
PCA2	density	0.0414	1.00E-04	0.1539	***
PCA2	belowground biomass	-0.0169	0.0995	-0.0618	
PCA2	aboveground biomass	-0.0791	0	-0.2965	***
PCA2	organic matter	-0.0488	0.0017	-0.1793	**
PCA2	species richness	0.0101	0.4368	0.0329	
PCA2	abundance	-0.0983	0	-0.3453	***
~~abundance	~~species richness	0.4891	0	0.4891	***
~~belowground biomass	~~aboveground biomass	0.0591	0.1438	0.0591	

Table S2 – Coefficient values and significance of relationships in the SEM linking the environment, the seagrass bed and the associated epifauna.

Response	Predictor	Estimate	P.Value	Std.Estimate	Significance
density	current	0.1412	0.0159	0.1368	*
density	water temperature	-0.0127	0.8266	-0.0124	
aboveground biomass	current	0.4301	0	0.4138	***
aboveground biomass	water temperature	0.0777	0.1279	0.0749	
aboveground biomass	density	0.2187	0	0.2172	***
epiphytes	current	-0.1705	0.0047	-0.166	**
epiphytes	water temperature	-0.15	0.0056	-0.1463	**
epiphytes	aboveground biomass	-0.2479	0	-0.2508	***
epiphytes	density	0.0781	0.1425	0.0785	
species richness	current	-0.2684	0	-0.2647	***
species richness	water temperature	0.0329	0.5529	0.0325	
species richness	density	-0.2241	0	-0.2283	***
species richness	aboveground biomass	0.1542	0.0129	0.1581	*
species richness	epiphytes	0.0676	0.2365	0.0686	
abundance	current	-0.2561	0	-0.2564	***
abundance	water temperature	0.0611	0.2635	0.0612	
abundance	density	-0.1122	0.0363	-0.1159	*
abundance	aboveground biomass	0.0256	0.6728	0.0267	
abundance	epiphytes	0.1407	0.0126	0.1448	*
~~abundance	~~species richness	0.4633	0	0.4633	***
PCA1	current	0.1188	0	0.3239	***
PCA1	water temperature	0.0995	0	0.2715	***
PCA1	density	-0.021	0.2039	-0.059	
PCA1	aboveground biomass	-0.0921	0	-0.2608	***
PCA1	epiphytes	0.1275	0	0.357	***
PCA1	abundance	0.119	0	0.324	***
PCA2	current	-0.0308	0.0005	-0.1085	***
PCA2	water temperature	-0.0274	0.0006	-0.0967	***
PCA2	density	-0.0242	0.1094	-0.088	
PCA2	aboveground biomass	-0.0702	0.0002	-0.2573	***
PCA2	epiphytes	0.1007	0	0.3647	***
PCA2	abundance	0.0545	0.0129	0.1919	*
PCA2	PCA1	-0.1785	0	-0.2308	***