Biodiversity and Conservation

Biodiversity associated with restored small-scale mussel habitats has restoration decision implications

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Online Resource 1

Online Resource 1.1: Table of the results of the repeated measure 3-way ANOVAs performed on the sediment characteristics, grain size (a. clay, b. silt, and b. coarse sand) and d. organic content. Significant *P* values are in bold.

Sediment variables: repeated measures ANOVA					
a. Clay					
	df	**SS**	***MS***	***F***	***P***
Addition of mussels	1	2482.4	2482	220.525	**< 0.001**
Location	3	932	310.7	27.597	**< 0.001**
Sampling period	1	4.2	4.2	0.374	0.542
Mussels × Location	3	123.4	41.1	3.655	**0.015**
Mussels × Sampling period	1	0.5	0.5	0.041	0.839
Location × Sampling period	3	133.7	44.6	3.958	**0.010**
Mussel × Location × Sampling period	3	54.8	18.3	1.623	0.188
Residuals	107	1204.5	11.3		
Totals	122				
b. Silt					
Addition of mussels	1	18939	18939	207.212	**< 0.001**
Location	3	28878	9626	105.32	**< 0.001**
Sampling period	1	49	49	0.538	0.465
Mussels × Location	3	1323	441	4.826	**0.003**
Mussels × Sampling period	1	184	184	2.009	0.159
Location × Sampling period	3	677	226	2.469	0.065
Mussel × Location × Sampling period	3	360	120	1.313	0.274
Residuals	107	9779	91		
Totals	122				
c. Coarse sand					
Addition of mussels	1	7306	7306	125.796	**< 0.001**
Location	3	15553	5184	89.264	**< 0.001**
Sampling period	1	34	34	0.597	0.444
Mussels × Location	3	2615	872	15.006	**< 0.001**
Mussels × Sampling period	1	4	4	0.067	0.796
Location × Sampling period	3	200	67	1.149	0.333
Mussel × Location × Sampling period	3	562	187	3.225	**0.026**
Residuals	92	6214	58		
Totals	107				
d. Organic Content					
Addition of mussels	1	559.7	559.7	97.536	**< 0.001**
Location	3	123.9	41.3	7.195	**< 0.001**
Sampling period	1	6.3	6.3	1.104	0.295
Mussels × Location	3	79.1	26.4	4.597	**0.004**
Mussels × Sampling period	1	4.3	4.300	0.744	0.390
Location × Sampling period	3	73.100	24.4	4.248	**0.007**
Mussel × Location × Sampling period	3	1.5	0.5	0.089	0.966
Residuals	107	711.5	5.7		
Totals	122				

Online Resource 1.2: Table of the results of PERMANOVAs based on Bray- Curtis dissimilarities for the three faunal classifications a. infauna, b. epifauna, c. pelagic fauna. Significant *P* values are in bold.

PERMANOVA					
Source	**df**	**SS**	***MS***	***F***	***P***
a. Infauna					
Location	3	6.817	2.272	9.620	**0.001**
Addition of mussels	1	3.776	3.776	15.986	**0.001**
Sampling period	1	1.225	1.225	5.186	**0.001**
Location × Mussels	3	2.848	0.949	4.019	**0.001**
Location × Sampling period	3	2.071	0.691	2.923	**0.001**
Mussels × Sampling period	1	0.705	0.705	2.986	**0.001**
Location × Mussels × Sampling period	3	1.060	0.354	1.510	**0.010**
Residuals	121				
Total	136				
b. Epifauna					
Location	3	4.376	1.458	13.776	**0.001**
Addition of mussels	1	1.144	1.144	10.805	**0.001**
Sampling period	1	0.209	0.209	1.975	0.088
Location × Mussels	3	3.005	1.002	9.460	**0.001**
Location × Sampling period	3	0.658	0.219	2.070	**0.015**
Mussels × Sampling period	1	0.263	0.263	2.485	**0.024**
Location × Mussels × Sampling period	3	0.558	0.186	1.755	**0.039**
Residuals	29	3.070	0.106		
Total	44	13.282			
c. Pelagic fauna					
Location	1	0.5847	0.5847	5.1978	**0.005**
Addition of mussels	1	0.8957	0.8958	7.963	**0.001**
Sampling period	1	1.3167	1.3167	11.705	**0.001**
Location × Mussels	1	0.3751	0.3751	3.3349	**0.018**
Location × Sampling period	1	0.7599	0.7599	6.7553	**0.002**
Mussels × Sampling period	1	0.2252	0.2252	2.0022	0.074
Location × Mussels × Sampling period	1	0.2325	0.2325	2.067	0.081
Residuals	15	1.6873	0.1125		
Total	22	6.0772			

Online Resource 1.3: Table of the linear mixed effects model results for the three faunal classifications a. infauna, b. epifauna, c. pelagic fauna. Significant *P* values are in bold.

Linear mixed models					
a. Infauna					
		Abundance	**Diversity**	**Richness**	**Evenness**
	df	***P***	***P***	***P***	***P***
Addition of mussels	4	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
Location	6	**< 0.001**	**< 0.001**	**< 0.001**	**< 0.001**
Sampling period	1	**0.001**	**0.016**	**< 0.001**	0.119
Mussels × Location	3	0.19	**0.003**	**0.005**	**< 0.001**
Mussels × Sampling Period	1	**0.026**	0.297	**< 0.001**	0.139
Location x Sampling Period	3	0.242	0.238	**0.044**	**0.005**
Mussels x Location x Sampling Period	3	0.636	0.48	0.181	0.161
b. Epifauna					
Addition of mussels	1	**0.036**	**0.038**	0.105	0.489
Location	3	**0.036**	**0.004**	0.149	0.605
Sampling period	1	0.987	0.309	0.339	0.587
Mussels × Location	3	**< 0.001**	**0.013**	**0.044**	**< 0.001**
Mussels × Sampling Period	1	0.075	0.911	0.309	0.189
Location x Sampling Period	3	0.24	0.625	0.451	0.266
Mussels x Location x Sampling Period	3	0.125	0.102	0.649	**0.054**
c. Pelagic Fauna					
Addition of mussels	1	0.716	0.946	0.721	0.708
Location	1	**0.018**	0.667	**< 0.001**	0.193
Sampling period	1	**0.008**	0.082	**0.010**	0.054
Mussels × Location	1	0.190	0.269	0.571	0.874
Mussels × Sampling Period	1	0.488	0.189	0.095	0.624
Location x Sampling Period	1	**0.016**	0.156	**0.002**	**0.008**
Mussels x Location x Sampling Period	1	0.260	0.255	**0.030**	0.540