

**TABLE 4.4-3
CORRELATIONS BETWEEN BENTHIC ECOLOGICAL METRICS AND SEDIMENT PROPERTIES**

		Simpson Diversity Index	Abundance	Taxa Richness	Shannon Diversity	Shannon Evenness	Percent Contribution of Dominant Family	Gravel (> 2mm)	V Coarse sand (1 mm)	Coarse sand (0.5 mm)	Medium sand (0.25 mm)	Fine sand (0.125 mm)	V fine sand (0.62 mm)	Silt/clay (< 0.62 mm)	Median (phi)	Quartile deviation (phi)		
Kendall's tau_b	Simpson Diversity Index	Correlation Coefficient	1	-.460(**)	-.254(**)	.708(**)	.764(**)	-.677(**)	-0.086	-0.097	0.108	0.002	-0.033	-0.066	-0.04	-0.002	0.026	
		Sig. (2-tailed)	.	0	0.004	0	0	0	0.362	0.303	0.253	0.982	0.726	0.483	0.67	0.982	0.788	
		N	63	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54
	Abundance	Correlation Coefficient	-.460(**)	1	.489(**)	-.377(**)	-.609(**)	.266(**)	-0.06	0.04	-0.185	-0.015	0.1	0.042	0.155	0.057	0.112	
		Sig. (2-tailed)	0	.	0	0	0	0.002	0.526	0.67	0.05	0.87	0.289	0.66	0.1	0.55	0.241	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Taxa Richness	Correlation Coefficient	-.254(**)	.489(**)	1	-0.068	-.367(**)	0.093	0.029	-0.03	-.327(**)	-0.078	0.111	0.063	.259(**)	0.143	0.161	
		Sig. (2-tailed)	0.004	0	.	0.437	0	0.288	0.765	0.753	0.001	0.415	0.246	0.511	0.007	0.137	0.094	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Shannon Diversity	Correlation Coefficient	.708(**)	-.377(**)	-0.068	1	.704(**)	-.490(**)	-0.02	-0.11	0.03	-0.058	0.058	0.028	0.026	0.076	0.051	
		Sig. (2-tailed)	0	0	0.437	.	0	0	0.834	0.244	0.748	0	0.535	0.535	0.765	0.782	0.424	0.59
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Shannon Evenness	Correlation Coefficient	.764(**)	-.609(**)	-.367(**)	.704(**)	1	-.462(**)	-0.052	-0.089	0.17	0.013	-0.044	-0.069	-0.119	-0.047	-0.043	
		Sig. (2-tailed)	0	0	0	0	.	0	0.581	0.347	0.072	0.887	0.464	0.207	0.617	0.555	0.455	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Percent Contribution of Dominant Family	Correlation Coefficient	-.677(**)	.266(**)	0.093	-.490(**)	-.462(**)	1	0.08	0.092	-0.026	0.091	-0.04	0.003	-0.027	-0.056	-0.071	
		Sig. (2-tailed)	0	0.002	0.288	0	0	.	0.395	0.332	0.782	0.335	0.67	0.976	0.771	0.555	0.455	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Gravel (> 2mm)	Correlation Coefficient	-0.086	-0.06	0.029	-0.02	-0.052	0.08	1	.332(**)	0.176	0.072	-0.132	0.059	-0.013	-0.091	0.055	
		Sig. (2-tailed)	0.362	0.526	0.765	0.834	0.581	0.395	.	0	0.064	0.446	0.165	0.535	0.893	0.339	0.565	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	V Coarse sand (1 mm)	Correlation Coefficient	-0.097	0.04	-0.03	-0.11	-0.089	0.092	.332(**)	1	.431(**)	0.053	-0.124	0.035	-0.03	-0.139	0.009	
		Sig. (2-tailed)	0.303	0.67	0.753	0.244	0.347	0.332	0	.	0	0.58	0.194	0.714	0.754	0.147	0.923	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	Coarse sand (0.5 mm)	Correlation Coefficient	0.108	-0.185	-.327(**)	0.03	0.17	-0.026	0.176	.431(**)	1	.242(*)	-.308(**)	-.218(*)	-.427(**)	-.412(**)	-.222(*)	
		Sig. (2-tailed)	0.253	0.05	0.001	0.748	0.072	0.782	0.064	0	.	0.011	0.001	0.022	0	0	0.02	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	Medium sand (0.25 mm)	Correlation Coefficient	0.002	-0.015	-0.078	-0.058	0.013	0.091	0.072	0.053	.242(*)	1	-.617(**)	-.684(**)	-.306(**)	-.758(**)	-.276(**)	
Sig. (2-tailed)		0.982	0.87	0.415	0.535	0.887	0.335	0.446	0.58	0.011	.	0	0	0.001	0	0.004		
N		54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Fine sand (0.125 mm)	Correlation Coefficient	-0.033	0.1	0.111	0.058	-0.044	-0.04	-0.132	-0.124	-.308(**)	-.617(**)	1	.623(**)	.252(**)	.624(**)	.206(*)		
	Sig. (2-tailed)	0.726	0.289	0.246	0.535	0.638	0.67	0.165	0.194	0.001	0	.	0	0.008	0	0.031		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
V fine sand (0.62 mm)	Correlation Coefficient	-0.066	0.042	0.063	0.028	-0.069	0.003	0.059	0.035	-.218(*)	-.684(**)	.623(**)	1	.254(**)	.699(**)	.229(*)		
	Sig. (2-tailed)	0.483	0.66	0.511	0.765	0.464	0.976	0.535	0.714	0.022	0	0	.	0.007	0	0.017		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Silt/clay (< 0.62 mm)	Correlation Coefficient	-0.04	0.155	.259(**)	0.026	-0.119	-0.027	-0.013	-0.03	-.427(**)	-.306(**)	.252(**)	.254(**)	1	.460(**)	.589(**)		
	Sig. (2-tailed)	0.67	0.1	0.007	0.782	0.207	0.771	0.893	0.754	0	0.001	0.008	0.007	.	0	0		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Median (phi)	Correlation Coefficient	-0.002	0.057	0.143	0.076	-0.047	-0.056	-0.091	-0.139	-.412(**)	-.758(**)	.624(**)	.699(**)	.460(**)	1	.331(**)		
	Sig. (2-tailed)	0.982	0.55	0.137	0.424	0.617	0.555	0.339	0.147	0	0	0	0	.	0	0.001		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Quartile deviation (phi)	Correlation Coefficient	0.026	0.112	0.161	0.051	-0.043	-0.071	0.055	0.009	-.222(*)	-.276(**)	.206(*)	.229(*)	.589(**)	.331(**)	1		
	Sig. (2-tailed)	0.788	0.241	0.094	0.59	0.654	0.455	0.565	0.923	0.02	0.004	0.031	0.017	0	0.001	.		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	

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Spearman's rho	Simpson Diversity Index	Correlation Coefficient	1	-.632(**)	-.370(**)	.879(**)	.925(**)	-.862(**)										
		Sig. (2-tailed)		0	0.003	0	0	0	0.425	0.234	0.275	0.954	0.825	0.523	0.664	0.965	0.736	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	
	Abundance	Correlation Coefficient	-.632(**)	1	.664(**)	-.545(**)	-.795(**)	.390(**)										
		Sig. (2-tailed)	0		0	0	0	0.002	0.519	0.573	0.051	0.955	0.272	0.659	0.09	0.519	0.24	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	
	Taxa Richness	Correlation Coefficient	-.370(**)	.664(**)	1	-.115	-.545(**)	0.128										
		Sig. (2-tailed)	0.003	0		0.371	0	0.319	0.678	0.867	0	0.546	0.231	0.45	0.004	0.158	0.096	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	
	Shannon Diversity	Correlation Coefficient	.879(**)	-.545(**)	-.115	1	.868(**)	-.673(**)										
		Sig. (2-tailed)	0	0	0.371		0	0	0.932	0.235	0.74	0	0.632	0.468	0.818	0.783	0.444	0.635
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Shannon Evenness	Correlation Coefficient	.925(**)	-.795(**)	-.545(**)	.868(**)	1	-.658(**)										
		Sig. (2-tailed)	0	0	0	0		0	0.603	0.257	0.062	0.017	-0.047	-0.086	-0.176	-0.053	-0.086	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Percent Contribution of Dominant Family	Correlation Coefficient	-.862(**)	.390(**)	0.128	-.673(**)	-.658(**)	1										
		Sig. (2-tailed)	0	0.002	0.319	0	0		0.123	0.133	-0.037	0.128	-0.05	0.021	-0.04	-0.072	-0.135	
		N	63	63	63	63	63	63	54	54	54	54	54	54	54	54	54	54
	Gravel (> 2mm)	Correlation Coefficient	-0.111	-0.09	0.058	-0.012	-0.072	0.123	1									
		Sig. (2-tailed)	0.425	0.519	0.678	0.932	0.603	0.375		480(**)	0.248	0.118	-0.187	0.084	-0.035	-0.153	0.06	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	V Coarse sand (1 mm)	Correlation Coefficient	-0.165	0.078	-0.023	-0.164	-0.157	0.133	480(**)	1								
		Sig. (2-tailed)	0.234	0.573	0.867	0.235	0.257	0.337	0		0.133	0.064	-0.173	0.049	-0.049	-0.2	-0.002	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	Coarse sand (0.5 mm)	Correlation Coefficient	0.151	-0.267	-.463(**)	0.046	0.256	-0.037	0.248	.519(**)	1							
		Sig. (2-tailed)	0.275	0.051	0	0.74	0.062	0.791	0.07	0		.332(*)	-.453(**)	-.300(*)	-.589(**)	-.558(**)	-.317(*)	
		N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	Medium sand (0.25 mm)	Correlation Coefficient	-0.008	-0.008	-0.084	-0.067	0.017	0.128	0.118	0.064	.332(*)	1						
Sig. (2-tailed)		0.954	0.955	0.546	0.632	0.901	0.357	0.397	0.643	0.014		-.823(**)	-.846(**)	-.430(**)	-.861(**)	-.384(**)		
N		54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Fine sand (0.125 mm)	Correlation Coefficient	-0.031	0.152	0.166	0.101	-0.047	-0.05	-0.187	-0.173	-.453(**)	-.823(**)	1						
	Sig. (2-tailed)	0.825	0.272	0.231	0.468	0.734	0.717	0.175	0.21	0.001	0		.794(**)	.348(*)	.811(**)	.281(*)		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
V fine sand (0.62 mm)	Correlation Coefficient	-0.089	0.061	0.105	0.032	-0.086	0.021	0.084	0.049	-.300(*)	-.846(**)	.794(**)	1					
	Sig. (2-tailed)	0.523	0.659	0.45	0.818	0.537	0.88	0.548	0.725	0.027	0			.348(**)	.861(**)	.336(*)		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Silt/clay (< 0.62 mm)	Correlation Coefficient	-0.06	0.233	.390(**)	0.038	-0.176	-0.04	-0.035	-0.049	-.589(**)	-.430(**)	.348(*)	.348(**)	1				
	Sig. (2-tailed)	0.664	0.09	0.004	0.783	0.204	0.777	0.801	0.727	0	0.001	0.01	0.01		.609(**)	.761(**)		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Median (phi)	Correlation Coefficient	-0.006	0.09	0.195	0.106	-0.053	-0.072	-0.153	-0.2	-.558(**)	-.861(**)	.811(**)	.861(**)	.609(**)	1			
	Sig. (2-tailed)	0.965	0.519	0.158	0.444	0.703	0.606	0.27	0.148	0	0	0	0			.451(**)		
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
Quartile deviation (phi)	Correlation Coefficient	0.047	0.163	0.229	0.066	-0.086	-0.135	0.06	-0.002	-.317(*)	-.384(**)	.281(*)	.336(*)	.761(**)	.451(**)	1		
	Sig. (2-tailed)	0.736	0.24	0.096	0.635	0.536	0.329	0.665	0.99	0.019	0.004	0.04	0.013	0	0.001			
	N	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).