

## 1    **Tables and Figures**

2    Table 1. Models explaining the influence of environmental variables on four parasite response variables from oysters sampled across  
3    24 reefs along the coast of Georgia. Explanatory variables from the full models include local variables of oyster height (mm), mud  
4    crab density (no.  $0.25\text{m}^{-2}$ ), reef rugosity, total oyster density (no./ $0.25\text{m}^{-2}$ ), point source temperature ( $^{\circ}\text{C}$ ), and point source salinity,  
5    and landscape variables of the proportion of marsh to open water ratio within a 500m radius buffer surrounding each site, distance to  
6    the nearest inlet (km), and distance to the nearest road (km). The best fitting models ( $\Delta\text{AICc}$  value  $< 2$ ) are shown for each response  
7    variable. The standardized beta coefficients associated with each independent variable are shown for each model . For each model,  
8    degrees of freedom (df), log likelihood,  $\text{AICc}$ ,  $\Delta\text{AICc}$ , marginal  $\text{R}^2$  ( $\text{R}^2_{\text{m}}$ ) and conditional  $\text{R}^2$  ( $\text{R}^2_{\text{c}}$ ) are shown.

Response variable		Model rank	Local					Landscape								
			Oyster height	Mud crab density	Reef rugosity	Total oyster density	Temperature	Salinity	Marsh:Water	Nearest inlet						
<i>P. marinus</i> prevalence	1	0.90	0.49			0.42		-0.94			6	-484.75	981.6	0.00	0.119	0.181
	2	0.90	0.43					-0.90			5	-485.87	981.8	0.22	0.110	0.181
	3	0.92						-0.89			4	-486.92	981.9	0.29	0.096	0.175
	4	0.92				0.35		-0.92			5	-486.21	982.5	0.89	0.101	0.174
<i>P. marinus</i> intensity	1					0.233	-0.08	-0.17			6	-1416.251	2844.7	0	0.094	0.128
	2					0.236		-0.16			5	-1417.297	2844.7	0.05	0.087	0.128
<i>H. nelsoni</i> prevalence	1	0.91				-1.07	-0.70	0.98			6	-395.93	804	0	0.137	0.218
	2	0.91				-1.08		1.08			5	-397.55	805.2	1.22	0.121	0.221
	3	0.90	0.26			-1.04	-0.68	0.99			7	-395.67	805.5	1.52	0.141	0.218
<i>H. nelsoni</i> intensity	1	0.59	-0.12				-0.16				6	-2074.41	4161	0	0.337	0.413
	2	0.59					-0.16				5	-2075.999	4162.1	1.14	0.333	0.421