Slopes of length vs. $H_O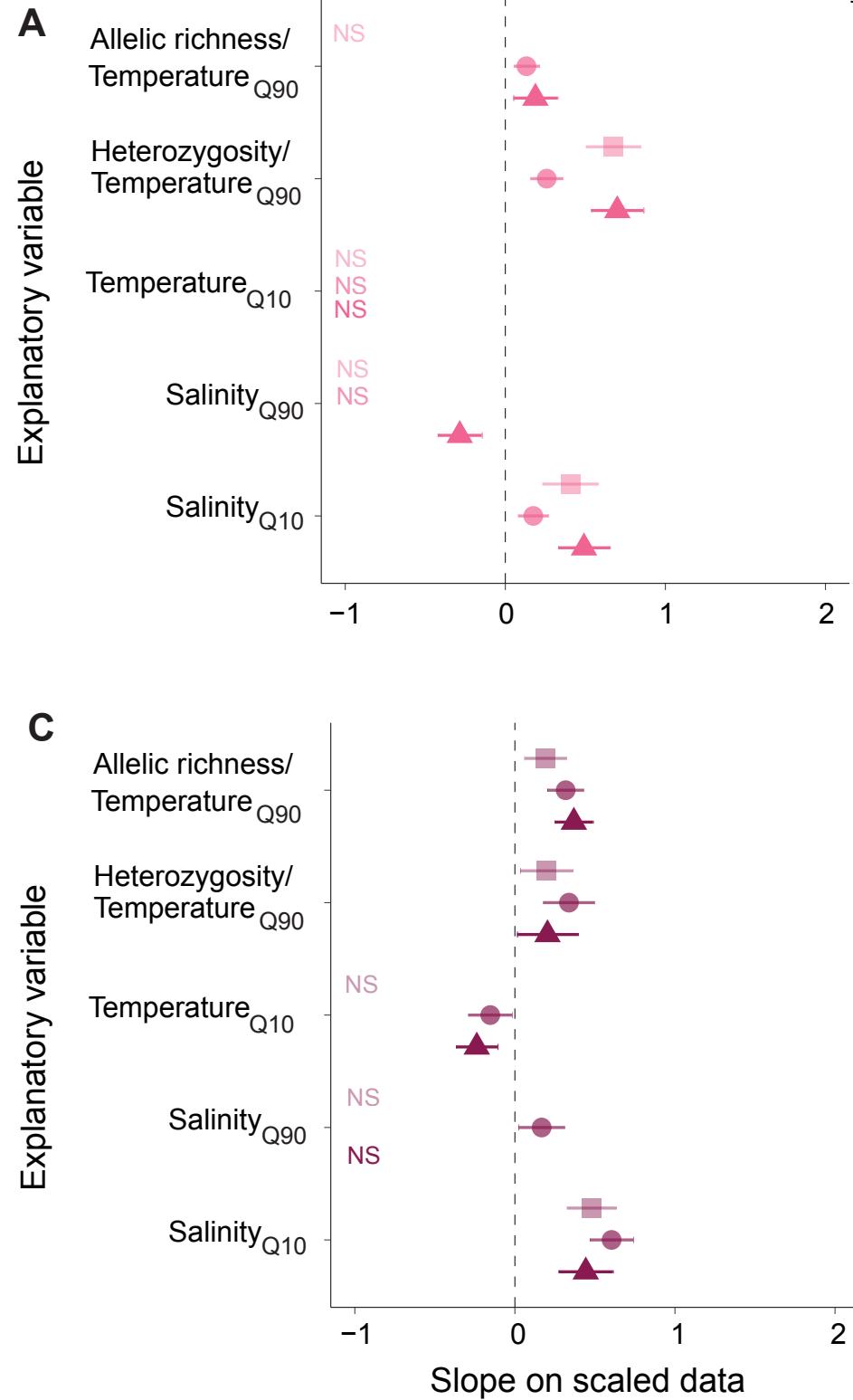$, A_r, and environmental quantiles