

Picard, S. and E. Cohen (1996). "Zonation and Infaunal Distribution Along A Salt Marsh Creek".

The rocky intertidal has been shown to have distinct bands of zonation due to various abiotic and biotic factors. There have not been many extensive studies done in soft substrate communities but there is growing evidence of possible zonation patterns of resident organisms in intertidal sediment communities. It was hypothesized that zonation among macrofauna, biomass, sediment size, organics and chlorophyll exists in the salt marsh creek at Morse Mt., Phippsburg, ME. In May, 1996, benthic cores were taken at three sites: high marsh, middle marsh, and low marsh. The cores were analyzed for macrofaunal distribution and abundance, biomass, sediment size, organics, and chlorophyll a. One-way ANOVA's were run on each data set to test for differences between sites. In the macrofaunal cores, seven species were found: *Scolopolus*, *Polydora*, *Neries*, *Viridis*, *Ologichaetes*, *Macoma*, and *Gemma Gemma*. There were significant differences in macrofaunal distribution for the species: *Scolopolus* ($P < 0.0001$), *Polydora* ($P = 0.0033$), and *Neries* ($P = 0.0110$). A significant difference was found between biomass averages between sites ($P = 0.0195$). Three grain sizes were measured, 25, 60, 120 openings/in and a significant difference was found in the 25 openings/in size class ($P = 0.0360$). No significant difference was found in average organic content between sites or average chlorophyll a content. Differences were attributed to differential grain size deposition which causes zonation in organics, macrofaunal distribution and abundance, biomass, and chlorophyll a. Other possible explanations include adult-larval interactions and biological disturbance.