

Graduate Research Day 2013

Florida Atlantic University

Charles E. Schmidt College of Science

Molecular Comparison of Zooxanthellae Communities in Hermatypic Corals Proximal to St. Lucie Inlet, Florida

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Coral reef ecosystems adjacent to coastal human populations are subject to increased environmental fluctuations compared to remote reef locations. Environmental variability is further exacerbated for corals existing at their northernmost regional limits. This presents a significant implication to the longevity of coral-algal symbioses, as the endosymbiotic community composition is determined by species-specific environmental optima. Phototrophic dinoflagellates from the genus *Symbiodinium* translocate a large proportion of energy to the coral host necessary for calcification and reproduction. Therefore, the identity and composition of *Symbiodinium* populations (along with other symbiont taxa) directly contributes to the holobiont's capabilities. Gathering baseline community ecology of corals at their latitudinal limit is necessary to elucidate potential resilience to abiotic shifts including climate change. Anthropogenic and storm runoff from Lake Okeechobee and St. Lucie River could be an abiotic perturbation affecting corals at St. Lucie Reef, Stuart, Florida. If so, will differences in *Symbiodinium* types, abundance, and physiologies be evident along a water quality gradient? Through amplification of the internal transcribed spacer region 2 (ITS-2), this study will examine potential differences in *Symbiodinium* assemblages within the coral host over time and space, relative to the St. Lucie Inlet. Additionally, these northern reefs of Florida may have an evolutionary advantage to changing climate and could reflect future compositions of colonies at southern reefs. Data supporting diverse symbiotic assemblages at St. Lucie Reef will be of utmost importance in runoff management at St. Lucie Inlet.

Zooxanthellae Diversity and Abundance in Corals at St. Lucie Reef, FL

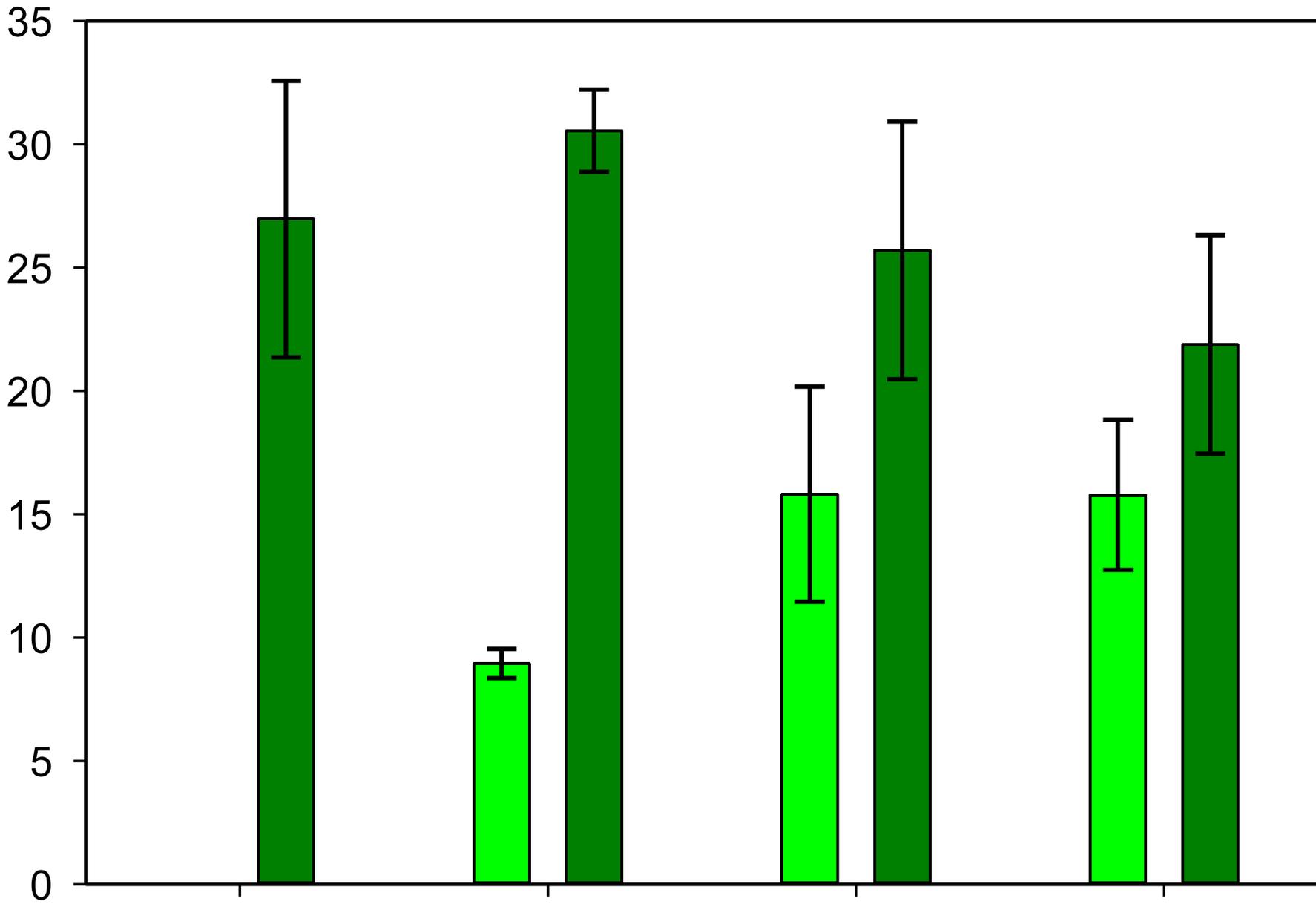


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