

SHIFTING MACROPHYTES: THALASSIA AND CAULERPA SUPPORT UNIQUE ECOLOGICAL COMMUNITIES

Adam R. Searles^{1,2,3}, Laura K. Reynolds^{1,2}, Charles W. Martin^{1,3,4}

¹School of Natural Resources and Environment, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL, USA

²Soil Water and Ecosystem Sciences Department, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL, USA

³Nature Coast Biological Station, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, FL, USA

⁴Dauphin Island Sea Lab, University of South Alabama, Mobile, AL, USA

Macroalgae are replacing seagrasses in marine ecosystems across the globe. Macroalgae beds can support unique faunal assemblages compared to seagrasses and can therefore drive changes in community structure and ecological function as they increase in abundance. However, large changes in the relative abundance of marine macrophytes often occur as a result of anthropogenic impacts such as eutrophication and associated light limitation. These background environmental conditions often hamper attempts at isolating the effects of seagrass replacement by macroalgae on ecological communities. To understand how changes in macrophyte abundance may affect ecological communities, we sampled *Thalassia testudinum*, *Caulerpa prolifera*, and *Caulerpa paspaloides* monocultures as well as mixed habitats for benthic invertebrates and fishes in a low-nutrient and minimally-impacted system: Crystal Bay, Florida. Species composition and diversity differed significantly among habitats and sampling times. Temporal changes in species composition reflected seasonal shifts in macrophyte relative abundance. Differences among habitats and seasons were driven primarily by differences in the abundance of several numerically dominant species and, to a lesser extent, species turnover. The results of our sampling efforts suggest that seagrasses and macroalgae support complex, yet unique communities, in Floridian waters.

PRESENTER BIO: Adam R. Searles is a 4th year PhD Candidate in SNRE at UF. His research focuses on the ecological processes driving fauna community differences between seagrasses and macroalgae. His other research interests include global change biology and fisheries ecology.