

Soil and Water Sciences Department Graduate Student Research Seminar

Speaker: Theresa Gruninger
M.S. Thesis Degree Candidate

Advisor(s): Laura Reynolds, Ph.D.
Todd Osborne, Ph.D.

Title: The Influence of Structure on Ecosystem
Processes Among Seagrass Meadows

Date: Friday, October 25th

Time: 3:00 pm – 4:00 pm

Location: McCarty Hall A, Room G186



Many aquatic organisms add structural complexity to an otherwise structure-less water column. Changes to that structure, whether natural or anthropogenic, can have long lasting, ecosystem level impacts. Here, we examine changes in ecosystem functions due to two different types of alterations— propeller scarring within seagrass beds and oyster reef restoration adjacent to seagrasses. Propeller scarring removes seagrass resulting in a decline in habitat structure, which may alter ecosystem processes. Our findings indicate that scarring leads to a reduction in fine-grained sediment and reduces the amount organic matter, total nitrogen and total carbon compared to that of reference sediment. Additionally, removal of habitat through scarring leads to a reduction in faunal abundance, lowered species diversity and significantly changed the community composition. Oyster reef restoration increases structural complexity of the landscape and is seen as a beneficial way to bring back ecosystem goods and services to previously degraded habitats. In our study, we examined reefs at varying health and complexity to explore how they may influence ecosystem processes of adjacent habitats. We found that the increased complexity of the reef greatly enhanced abundance and diversity of fauna found within the nearby seagrass. Adjacent structural complexity significantly influenced community assemblages of fauna. Our research demonstrates how changes in complexity through small-scale structural modifications could have large-scale implications for the ecosystem.

This seminar can be viewed via live or watched later via this link: [Theresa Gruninger](#). Viewers of the live stream may now ask questions by clicking on the message icon at the bottom. Questions will be read at the end during the question and answer portion. In addition, all seminars are archived for viewing on our [SWSD Seminar Page](#).