

PROTECTING OUR LAGOON WITH SCIENCE: JUNIOR SCIENTIST FELLOWS PRESENT VITAL RESEARCH AT THE 2025 LAGOON SYMPOSIUM!



THE JUNIOR SCIENTIST FELLOWS

This year, 18 local high school students participated in the program with 5 returning Seniors and 13 new Juniors and Seniors! The Fellows were enthusiastic and learned a lot while working in groups on three research projects relevant to the natural resources and the Land Trust's management of Coastal Oaks Preserve. Each group presented the results of their research in scientific posters as a part of FAU Harbor Branch Oceanographic Institute's Indian River Lagoon Symposium.

For 11 years, the Fellows program has been a great partnership for the Land Trust and serves an important role in our efforts to manage and restore our properties appropriately and effectively. We look forward to working with future classes of Junior Scientist Fellows!

PROJECT ONE:

RECRUITMENT PREFERENCE OF LARVAL BARNACLES AT VARYING DEPTHS AND SUBSTRATE ORIENTATIONS

Callista Huff, Ashley Lara, Charlotte Muller, Nate Pagan, Asela Ripley,
Kendall Sparks, Brenton Sturgis, Jasmyne Williams



RESEARCH SUMMARY

Fellows investigated if settlement stage barnacles exhibit a preference for tiles placed at a specific depth and/or at varying orientations (horizontal vs. vertical). Additionally, the study assessed variability in recruitment density across sampling dates. Barnacles are intertidal crustaceans belonging to subclass Cirripedia. At time of settlement, planktonic larval barnacles metamorphose into sessile juveniles that permanently attach to hard substrates. From September 23 through December 9, 2024, this student research group investigated acorn barnacle recruitment onto acrylic tiles suspended from PVC frames at different depths and orientations in the Indian River Lagoon off the Coastal Oaks Preserve. Study results provide insight into local larval population dynamics, particularly the marked temporal and spatial variability in recruitment density.

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PROJECT TWO:

VEGETATIVE SURVEY OF SALT MARSH AND HYDRIC FOREST AHEAD OF RESTORATION EFFORTS

Isabelle Ardizzone, Kendal Arnold, Sophie Denninger, Eliza Dinenberg, Kennedy Wile



RESEARCH SUMMARY

Salt marshes along the Indian River Lagoon are valuable for their contribution to biodiversity, nutrient cycling, and water filtration. These habitats are increasingly threatened by human activities as well as by the invasive Brazilian pepper tree which dominates hydric hammocks and suppresses the growth of native species. Fellows conducted a pre-restoration vegetation survey at the Coastal Oaks Preserve from September to December 2024. During the study, 16 plots were evaluated within a hydric forest and adjacent salt marsh, noting the species present as well as their abundance, height, diameter, and overall cover. Preliminary results have shown that the plant diversity and abundance is higher in the salt marsh than the Brazilian pepper-dominated areas. This information will guide restoration efforts and provide a baseline for future monitoring, with an overall goal of preserving natural habitats.

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PROJECT THREE:

PHYSICAL AND BIOLOGICAL CHARACTERIZATION OF INDIAN RIVER LAGOON SEDIMENTS NEAR THE COASTAL OAKS PRESERVE

Joniah Holson, Veronica Kostan, Matthew Mintel, Emma Prescott, Alexa Spalding



RESEARCH SUMMARY

Fellows investigated the physical and biological attributes of submerged sediments adjacent to the Coastal Oaks Preserve. Core sampling took place from September to December 2024 at two shallow sites, one 10m from a FDOT drainage relief canal, and the other 30m north. Physical characterization of the sediment samples consisted of wet-sieving for grain size analysis, as well as organic and carbonate content determination via muffle furnace combustion. Separate core samples were fixed and stained, then infaunal organisms sorted using stereo microscopes. The largest fraction of sediments at both locations were in the medium sand (0.125mm-0.5mm) and fine sand (0.063mm-0.125mm) size categories. The diversity and abundance of infaunal organisms was low at both sites, with polychaete worms as the dominant group. Such information is important for assessing habitat quality and overall marine ecosystem health.

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THE INDIAN RIVER LAGOON SYMPOSIUM POSTER SESSION

February 20, 2025

FLORIDA ATLANTIC UNIVERSITY
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