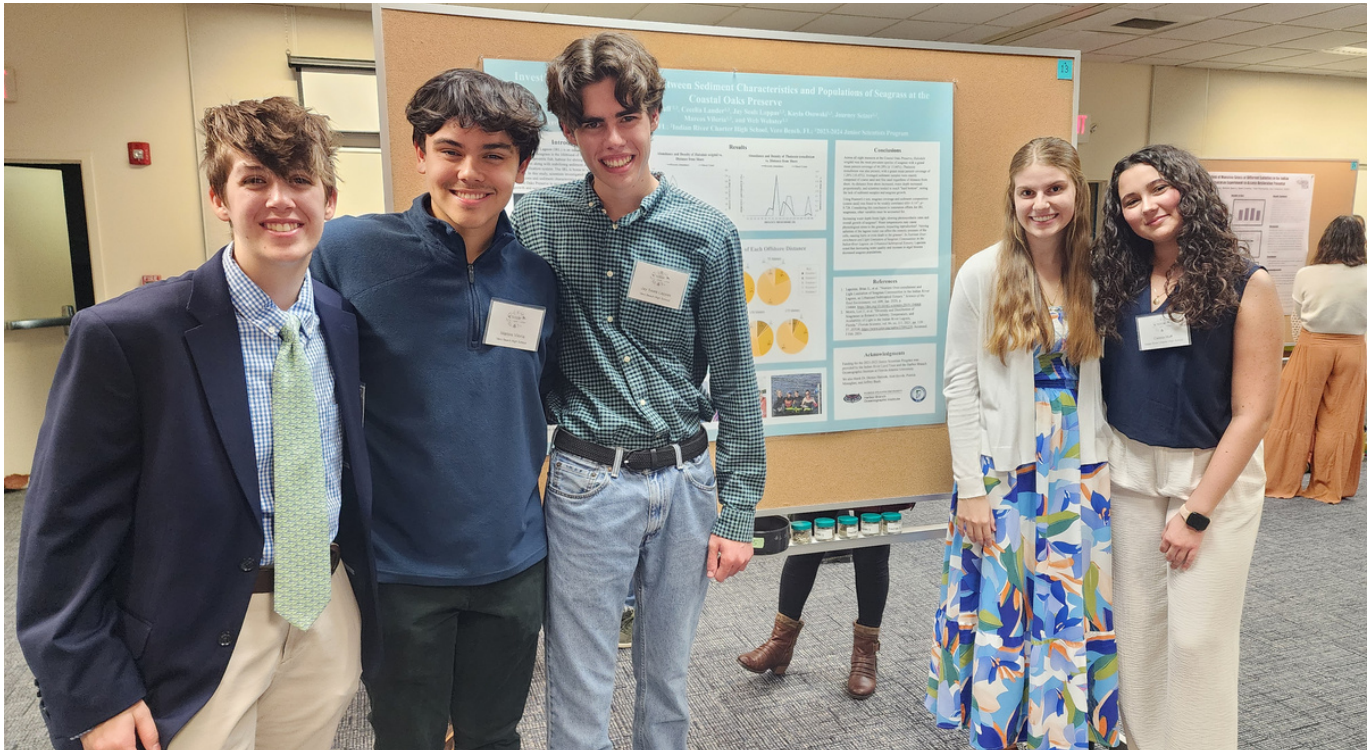


JUNIOR SCIENTIST FELLOWS CONTINUE TO AMAZE AT 2024 LAGOON SYMPOSIUM!



THE JUNIOR SCIENTIST FELLOWS

This year, 19 local high school students participated in the program with 3 returning Seniors and 17 new Juniors! The Fellows were enthusiastic and learned a lot while working on three research projects relevant to the Land Trust's management of Coastal Oaks Preserve. Each group recently had the opportunity to present their scientific posters as a part of FAU Harbor Branch Oceanographic Institute's Indian River Lagoon Symposium.

The Fellows continue to be a great partnership for the Land Trust and are an important and vital piece of our efforts to manage and restore our properties appropriately and effectively.

PROJECT ONE:

INVESTIGATING THE RELATIONSHIP BETWEEN SEDIMENT CHARACTERISTICS AND POPULATIONS OF SEAGRASS AT THE COASTAL OAKS PRESERVE

Lydia Dalglish, Calista Huff, Cecelia Lander, Jay Seals Lappas, Kayla Osowski, Journey Setzer, Marcos Vilorio, and Web Webster



RESEARCH SUMMARY

Junior Scientist Program fellows investigated seagrass and sediment relationship in the Indian River Lagoon (IRL). Seagrass serves as a natural water filter, sediment stabilizer, and an important food source for many organisms. Students collected data on seagrass populations at eight transects along the Coastal Oaks Preserve and analyzed sediment at the respective sites. *Halodule wrightii* was the most prevalent species of seagrass with a grand mean percent coverage of $44.28 \pm 15.68\%$. *Thalassia testudinum* was also present, with a grand mean percent coverage of $1.26 \pm 0.45\%$. Averaged sediment samples were mainly composed of coarse sand and fine sand regardless of distance from shore. This data will benefit restoration efforts for the IRL by identifying ideal environments where seagrass populations thrive.

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PROJECT TWO:

NATIVE PLANT SPECIES DOMINATE A RESTORED TIDAL MARSH IN THE COASTAL OAKS PRESERVE

SOPHIE DENNINGER, ELIZA DINENBERG, JACOB KOMARNICKI, OWEN LONG, BILLY WADE, GIANNA WALKER, AND KENNEDY WILE



RESEARCH SUMMARY

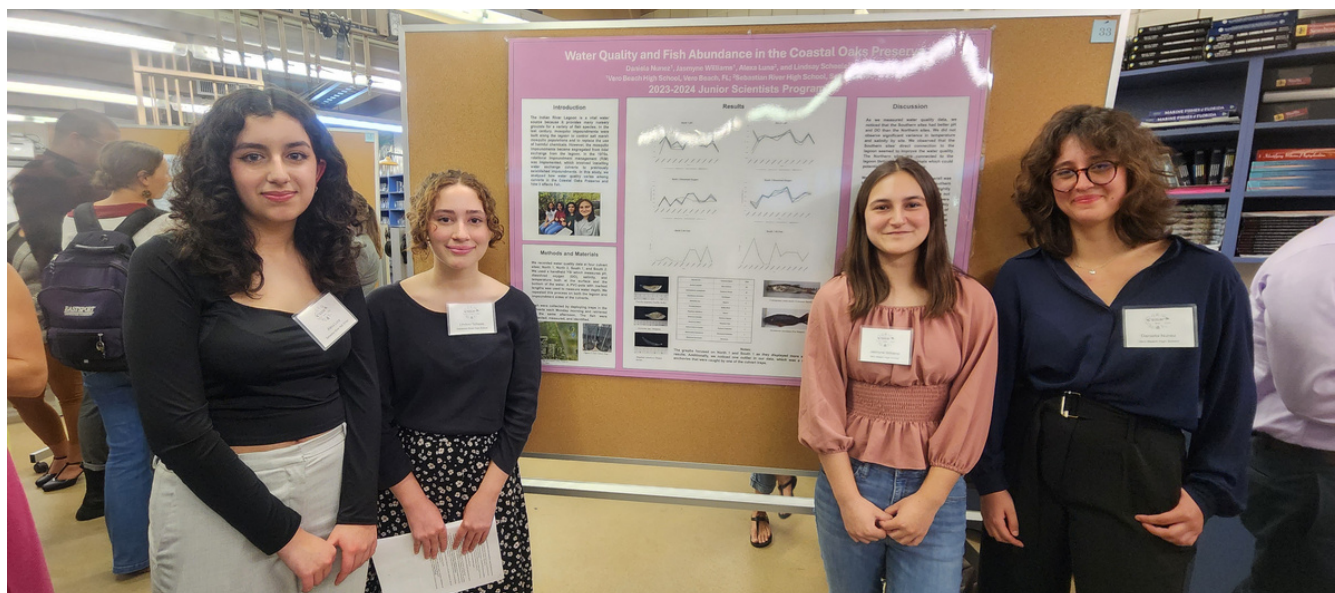
The Coastal Oaks Preserve, located on the Indian River Lagoon, has a tidal marsh restoration site that was previously dominated by exotic Brazilian Pepper trees. The 7-acre site was mulched by the Indian River Land Trust in 2021 to remove the invasive non-native species. This site has been monitored annually to assess the abundance of native and non-native plant species. In Fall 2023, ten 50-meter transects were established and 1-m² quadrats were used to monitor the abundance and distribution of plant species. Since 2022, there has been substantial growth of native species throughout the entire site, namely salt marsh sedges and members of the Asteraceae family. The site has displayed a great increase of native species each year, and we conclude that annual monitoring of the species composition of the Coastal Oaks restoration site is not necessary. However, from 2021-2023 the Oak tree population decreased by 19.7%, and we recommend that the oak trees should continue to be monitored in future restoration site projects.

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PROJECT THREE:

THE RELATIONS BETWEEN WATER QUALITY AND FISH IN THE IMPOUNDMENTS OF THE COASTAL OAKS PRESERVE

Daniela Nunez, Jasmyne Williams, Alexa Luna, and Lindsay Scheele



RESEARCH SUMMARY

The Indian River Lagoon is a vital water source and provides nursery grounds for a variety of fish species. In the last century, mosquito impoundments were built along the Indian River Lagoon to control salt marsh mosquito populations and to replace the use of harmful chemicals. However, the impoundments became segregated from tidal exchange. Rotational impoundment management (RIM) was implemented in the 1970s, which involved adding water exchange culverts to previously established impoundments. In this study, we analyzed four of those culverts and looked at how water quality varies among culverts inside the Coastal Oaks Preserve (COP) and its effect on fish. We measured water quality parameters including temperature, salinity, dissolved oxygen, and pH. We also utilized culvert traps to catch fish traveling within culverts. We concluded that the addition of culverts to the COP will positively influence water quality and fish diversity and abundance.

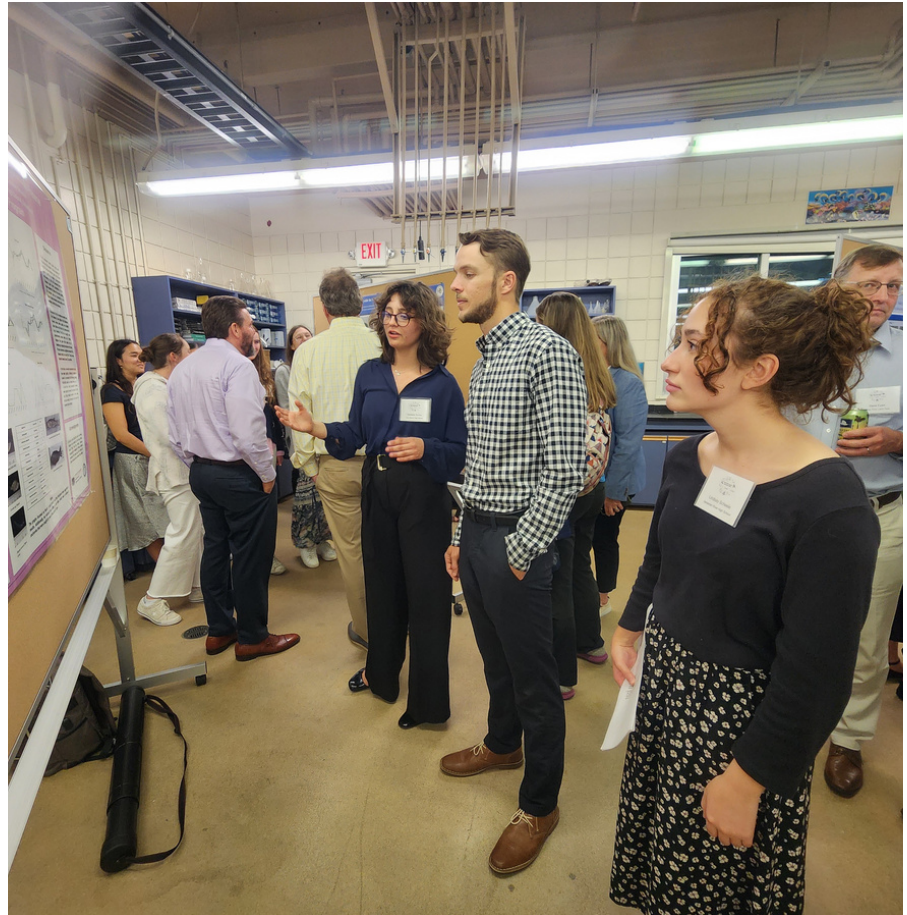
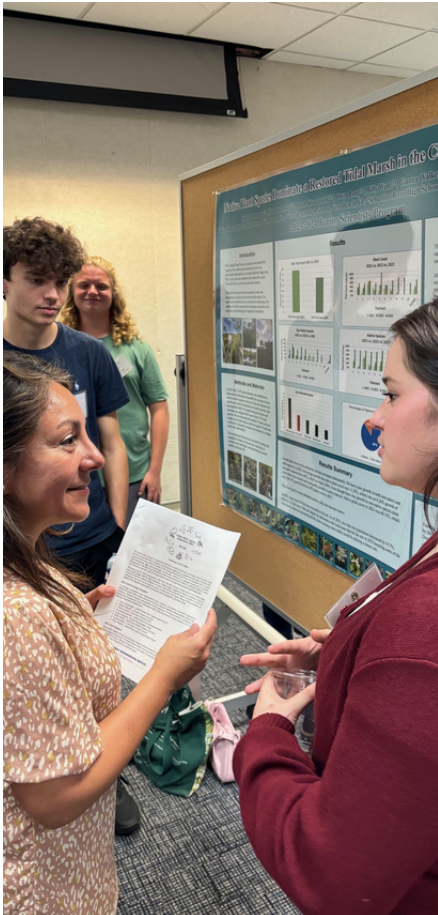
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THE INDIAN RIVER LAGOON SYMPOSIUM POSTER SESSION



February 22, 2024

FLORIDA ATLANTIC UNIVERSITY
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