JUNIOR SCIENTIST FELLOWS CELEBRATE ANOTHER SUCCESSFUL YEAR!

THE JUNIOR SCIENTIST FELLOWS

This year, 15 local high school students engaged in three different research projects. 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.

It was rewarding to watch these students interact and describe their research findings to members of the scientific community and the general public. Each group did a fantastic job in collecting scientific data and providing critical information that will ultimately help the Land Trust continue to manage its properties appropriately and effectively.

PROJECT ONE:
A BIRD CENSUS OF THE COASTAL OAKS PRESERVE

ANNE FRETWELL, CARAH MULLEN, JOSH NEVAREZ, KAYLA OSOWSKI, AND BEN WOOD.

RESEARCH SUMMARY

STARTING IN SEPTEMBER 2022, STUDENT RESEARCHERS TRAVELED TO THE COASTAL OAKS PRESERVE ONCE A WEEK FOR FOUR MONTHS TO DOCUMENT AND IDENTIFY BIRD SPECIES. SPECIES WERE CATEGORIZED INTO SIX DIFFERENT HABITATS: RESTORED UPLANDS, MANGROVE SWAMP, FRESHWATER PONDS, CABBAGE PALMS, PINEWOOD FLATS, AND OAK HAMMOCK. 54 DIFFERENT SPECIES OF BIRDS WERE OBSERVED. THE RESTORED UPLANDS HAD THE GREATEST ABUNDANCE OF BIRDS. BY DOCUMENTING THESE SPECIES, THE INDIAN RIVER LAND TRUST WILL BE ABLE TO TRACK PATTERNS, CHANGES AND UNUSUAL OCCURRENCES IN THIS COMMUNITY. THIS DATA CAN ALSO BE USED TO GUIDE FUTURE RESTORATION EFFORTS WITHIN THE INDIAN RIVER LAGOON AND ITS WETLANDS, AND CAN ASSIST WITH DEVELOPING EDUCATIONAL MATERIALS.

CLICK HERE TO VIEW POSTER

PROJECT TWO:

RECRUITMENT OF NATIVE VEGETATION AT A TIDAL MARSH RESTORATION SITE

AVA KOPCHAK, PJARK SANDER, ARMANDO SILVA, LILY WARD, AND BILLY WADE.

RESEARCH SUMMARY

A SEVEN-ACRE TIDAL MARSH RESTORATION SITE AT THE COASTAL OAKS PRESERVE WAS ESTABLISHED IN LATE 2021 TO COLLECT BASELINE DATA ON THE BIODIVERSITY AND RECRUITMENT OF VEGETATION DURING INITIAL SUCCESSION. BEGINNING IN SEPTEMBER OF 2022, THE STUDENT RESEARCHERS RETURNED TO THE PROPERTY TO RERECORD DATA AND COMPARE RESULTS BETWEEN YEARS. THEIR OBSERVATIONS WERE MOSTLY POSITIVE, NOTING SPECIES RICHNESS OF NATIVE PLANTS INCREASED FROM 35 TO 58, WHILE THE NUMBER OF NON-NATIVE SPECIES DECREASED FROM 13 TO 12. HOWEVER, HURRICANES IAN AND NICOLE HEAVILY IMPACTED THE RESTORATION SITE. THE STUDENT RESEARCHERS OBSERVED A DECLINE IN THE ABUNDANCE OF NON-WETLAND SPECIES AS WELL AS OVERALL PLANT COVER. OVERALL, THE MOST REMARKABLE CHANGE IS THE LARGE SHIFT IN SPECIES COMPOSITION. MANAGEMENT OF NON-NATIVE SPECIES BY THE INDIAN RIVER LAND TRUST HAS HAD A POSITIVE INFLUENCE ON THE RESTORATION SITE AND SHOULD CONTINUE AS NEEDED.

CLICK HERE TO VIEW POSTER

PROJECT THREE:

FISH DIVERSITY AT COASTAL OAKS PRESERVE

DANIELA NUNEZ, ANTHONY MARZOUK, KARA MALONE, SAWYER HELD, AND GABRIEL BURCHETT

RESEARCH SUMMARY

WATER QUALITY SIGNIFICANTLY IMPACTS BIODIVERSITY WITHIN THE INDIAN RIVER LAGOON. PARAMETERS INCLUDING TEMPERATURE, SALINITY, DISSOLVED OXYGEN, PH, AND FISH COUNTS WERE MEASURED BY THE STUDENT RESEARCHERS AROUND THREE CULVERTS THAT FACILITATE THE EXCHANGE OF WATER BETWEEN THE COASTAL OAKS PRESERVE AND THE SURROUNDING LAGOON. FOLLOWING THE OPENING OF THE CULVERTS AND TWO STORM SYSTEMS IN OCTOBER AND NOVEMBER 2022, WATER QUALITY MEASUREMENTS CHANGED WITH SIGNIFICANT IMPROVEMENTS IN DISSOLVED OXYGEN AND FISH ABUNDANCE. THE DRASTIC CHANGES IN WATER QUALITY AND THE EFFECT OF THE STORM SYSTEMS CHALLENGE MANAGEMENT STRATEGIES OF WETLANDS AROUND THE INDIAN RIVER LAGOON. FUTURE MANAGEMENT RECOMMENDATIONS INCLUDE EXTENDED OPEN PERIODS FOR THE CULVERTS, CONSTRUCTING ADDITIONAL CULVERTS ALONG THE IMPOUNDMENT, AND ANALYZING THE EFFECT OF CULVERT LENGTH AND MANGROVE DENSITY ON WATER QUALITY AND FISH ABUNDANCE INSIDE THE COASTAL OAKS PRESERVE.

CLICK HERE TO VIEW POSTER

THE INDIAN RIVER LAGOON SYMPOSIUM POSTER SESSION

February 23, 2023

FLORIDA ATLANTIC UNIVERSITY
HARBOR BRANCH OCEANOGRAPHIC INSTITUTE