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Brevard Zoo Launches Study on Oyster Reproductive Health in Indian River Lagoon

MELBOURNE, Fla., April 28, 2025— Brevard Zoo's Restore Our Shores (ROS) conservation team is diving deeper into the issue of oyster reproductive health in the Indian River Lagoon. The team has launched a study with the goal to help guide ROS and its partners determine the ideal oyster reef locations for future restoration. This research is made possible thanks to a grant from [Restore America's Estuaries](#) with funding from the [United States Environmental Protection Agency](#).

"Oyster population health has not been examined recently in the Brevard County area," said Hope Leonard, the ROS Conservation Restoration Coordinator. "Through this project, we hope to examine whether the oysters here have any underlying health issues that could limit oyster restoration and population in the future."

Oysters can provide habitat, improve water quality, prevent shoreline erosion, and add a potential food source to the lagoon, Hope said. They have historically been a vital part of the lagoon ecosystem in Brevard County and key in Indian River Lagoon recovery plans.

With over harvesting, habitat decline and people-driven pressure on the lagoon, oyster spat (oyster larvae) saw declines in the late 1980's, therefore decreasing the natural water filtration and reducing nutrient cycling in the lagoon. Over the last 10 years, the Zoo's ROS team has worked to reduce nutrient pollution in the lagoon by increasing oyster habitat and bolstering oyster populations through oyster reef building and community-driven oyster gardening program.

Oysters in the Brevard County area of the lagoon are still inconsistent in their spawning. It's not fully understood whether oyster reproduction has been limited by local environmental factors or disease - but the ROS team hopes to learn more in the next year.

"Understanding more about the challenges that this species faces here in Brevard will help ROS and other restoration organizations make informed decisions on future oyster

restoration projects and promote actions that may need to be taken to support these keystone species," Hope said.

The Zoo's ROS team will evaluate the rate at which oyster spat, or larvae, settle on oyster shells on a monthly basis. Along with several partners, the team will also take a closer look at overall oyster population health by pulling adult samples from the lagoon to look at their overall condition, hemolymph (the invertebrate equivalent to blood) and tissues. Data from the sites' environment – like air temperature, water temperature, water level, salinity dissolved oxygen and pH – will be gathered to see if any correlations can be made. Through this project, the Zoo's ROS team hopes to learn more about oyster settlement patterns and their reproductive health in Brevard County. This study is a part of the Indian River Lagoon Oyster Reproductive Health and Restoration Project. While the research outline above will help future oyster restoration projects, we'll also be supporting Brevard County's plan to construct 14.5 acres of oyster reef with this plan.

The Zoo is already ahead on goal one of this project by collecting recycled oyster shell through its [Shuck and Share program](#), which solicits restaurants, seafood festivals and shellfish distributors to collect discarded oyster shells for us to use in reef-building projects.

The ROS team has also started constructing half an acre (21,780 sq. ft.) of oyster habitat in the Brevard County portion of the lagoon this year. The results of this oyster reef habitat will hopefully give us additional context to the oyster reproductive health study. This reef, like all reefs constructed through the Brevard County's Save Our Indian River Lagoon Project Plan, will be evaluated for success for a minimum of five years.

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Brevard Zoo is home to more than 800 animals representing 170 species from all over the world. As a not-for-profit organization, it is a leader in the fields of animal wellness, education and conservation. More information is available at [BrevardZoo.org](https://www.brevardzoo.org).