



Friends of Gumbo Limbo inspires people to support stewardship and research of coastal and marine ecosystems, sponsors sea turtle conservation, and advocates for the enhancement of the Gumbo Limbo Nature Center.

Why Gumbo Limbo's Animals Need the Beach & Park District

To Approve the Seawater Pump Project

FAQ'S:

What do the pumps do?

Seawater is the lifeblood of Gumbo Limbo. The pumps bring natural seawater directly from intake pipes offshore at Red Reef Park to the Center's marine aquariums, sea turtle rehabilitation facility and Florida Atlantic University's marine research lab. This system was originally installed in the early nineties.

Why is the seawater supply system important?

Our local marine life lives and thrives in natural seawater. The system ensures the Center's water has a consistent temperature, pH and salinity. These conditions are ideal to grow and display corals, tropical fish and invertebrates and helps injured and diseased sea turtles recover faster. FAU's essential research on sea turtles, sharks, rays and algae depends on this seawater supply.

What's the problem with the current system and pumps?

The design is inadequate to meet the Center's needs, the system is severely obstructed and the pumps are rapidly deteriorating and far exceed their useful life. In a nutshell, the system doesn't deliver enough seawater. Also, the chemistry of the water is often dangerously compromised as the natural gases in the seawater are released under high vacuum in the pipelines. Each year, staff and volunteers must spend countless hours improvising fixes to address the health of the fish.

What are some specific issues regarding the system?

The level of dissolved oxygen in the water supply is often below the recommended minimum of 5 milligrams of oxygen per liter, and it's even lower in the summer months. The seawater is being pulled too great a distance and was originally identified as a problem over 20 years ago. Also, aging infrastructure, likely clogging of the intake pipes, and continual deferred maintenance all are causing the super saturation of gases. As a result, gases enter the tanks as microbubbles, which can be deadly for the Center's fish and invertebrates. Further, the flow rate has been steadily decreasing since 2016. Currently, the system is only capable of delivering between 220 and 240 gallons per minute, almost half the rate of five years ago. This is well below the minimum of 500 gpm and the ideal rate of 1,000 gpm. The current construction bid specifies two pumps, each with capacity of 1,000 gpm.



How will the proposed new system help?

Numerous engineering studies have been performed over the years and mitigation steps have been implemented. Unfortunately, they have failed to resolve the issues. In 2012 FAU conducted a study and the City of Boca Raton also did a study in 2014. They concluded that the entire intake system should be replaced, including new intake lines into the ocean. They recommended a new pumping station with submerged pumps on the ocean side. This would improve the current system, which is located on the west side of A1A, that pulls the seawater all the way to the Center. The project was submitted to several state and federal agencies for permitting approval. The permits were secured in 2019-2020 and are effective until 2022. Bids have been submitted to carry out the project and the proposal has been submitted to the Beach & Park District for its consideration. The new system has been designed to provide the quantity and quality of seawater crucial to the future of Gumbo Limbo.

Are there alternatives to pumping seawater into Gumbo Limbo Nature Center?

Manufactured seawater has periodically been discussed as a lower-cost alternative. It would, however, require a complete replumbing of the existing systems and the addition of massive external filtration systems. It would also necessitate a large holding tank to mix the salt into the water and additional personnel to execute the task. Further, the Center would incur additional costs for pump and filter maintenance on every exhibit.

What happens if the current system fails?

The current system is on life support. A foreseeable natural disaster or other catastrophic failure would necessitate immediately evacuating the sea turtles to other facilities around the state. Additionally, because state law restricts the release of any fish kept in captivity more than 30 days, the Center would have just a few days to find new homes for its fish. Failing that, the majority would need to be euthanized to prevent continued suffering.

Would the community be impacted by such a failure?

Residents and taxpayers have supported Gumbo Limbo since its founding in 1984. As a vital community asset, Gumbo Limbo has educated and inspired thousands of schoolchildren. The number of visitors has doubled in less than a decade to 200,000 per year. The pump system is unique and integral to the popularity and acclaim the Center has earned. If the pumps fail, we fail the Center's animals in our care and the residents who support it.