

## NSU's research facility brings hope for Florida reefs

New facility expands coral research  
Eileen Soler • Waterfront Times

Nova Southeastern University has opened its doors to a new endeavor — the nation's only scientific research facility dedicated solely to the understanding and ecology of coral reef ecosystems.

The \$50 million Center of Excellence for Coral Reef Ecosystems Research at John U. Lloyd Beach State Park in Dania Beach is an 86,000-square-foot addition to NSU's Oceanographic Center, located on the property since the mid 1960s.

The new facility houses nine research laboratories, a marine science library, a string of outdoor coral nurseries and a 15,000- gallon

saltwater system that pumps ocean water to dozens of laboratory aquarium tanks.

It is also the new home of the school's unofficial mascot, Leon the Lionfish, who was plucked three years ago from the ocean nearby.



Photo | Eileen Soler

Abby Renegar, a research assistant and doctorate candidate at Nova Southeastern University's new Center of Excellence for Coral Reef Ecosystems Research, shows a preserved staghorn coral used for research to reproduce and re-forest the ocean reef.

“We’ve come a long way from the days of trudging buckets of seawater from the ocean to portable labs,” said Abby Renegar, a research assistant and doctorate candidate in the new Coral Histology Lab. “We couldn’t be in a better location.”

A fleet of ocean research vessels is docked just outside along the Intracoastal. Everything needed for ocean dives, from wet suits to oxygen tanks, is available on site.

Richard Dodge, dean of the center and the executive director of NSU’s National Coral Reef Institute, said the new facility provides state-of-the-art space for education and research, plus economic insurance for South Florida’s marine industry.

“Research is extremely valuable for ecology, biology and economy. The reefs of Florida contribute \$6 billion to local business through 71,000 jobs in five counties. When we better understand, manage, protect and use the reefs, we get a healthy reef system and a healthy economy,” Dodge said.

Clive Johnson, a retired boat captain who now serves on the Dania Beach Marine Advisory Board, said research and conservation is vital to diving, boating, fishing and all marine business.

“Twenty years ago we’d go out fishing near the reefs and always catch something big, but now we hardly get anything because the reefs are getting smaller and smaller. If you don’t have the fish you won’t get the divers, the boaters or fishing. Our tourists won’t come back,” Johnson said.

Dodge said 25 percent of all fish worldwide spend a part of their life cycle in the reefs. That makes Florida’s 350 square miles of reef, which makes up 84 percent of the nation’s reefs, connected to all things in the ocean.

About 1,400 fish, plant and marine animal species live on the reef.

“We really need to be one big happy family,” Dodge said. We need to get a handle on that.”

Partially funded with a \$15 million grant from the United States Department of Commerce, the center created 300 construction jobs, 22 new teaching positions and employment for 50 graduate students. Students and teachers started moving in during June. Grand opening festivities were scheduled to be held Sept. 27 as Waterfront Times went to press.

Multidisciplinary research at the center aims to reveal how reefs recover from injury and damage; how climate change and water flow affect the reefs, and the effects of pollution including oil intrusion. Additionally, students and research teams are using the facility to map the extent and nature of coral reefs worldwide, while others are cultivating coral species in nurseries for reintroduction in the

ocean.

“It is our contribution to study, protect and conserve the reef for the next generation. We don’t want the reefs to be like the buffalo. We can’t use and abuse it until none is left,” Dodge said.

Renegar said one of the university’s most recent and ongoing successes is the reproduction and transplantation of staghorn corals, which are a threatened species native to South Florida.

“Here, we can replicate light, water motion, currents, temperature and other conditions of the ocean to reproduce coral and enhance the growth without worrying about predators,” Renegar said.

In February 2010, researchers collected staghorn coral fragments from 50 reef colonies throughout the natural reef system in hopes of restoring one section of staghorn reef along the ocean floor that had mysteriously died. Within 18 months, 30 different genotypes had been cultivated before being used to replenish the site, which is now flourishing.

Research assistant and graduate student Dusty Marshall concentrates on the effect of climate on coral growth.

One of the coral specimen slices in the Stony Coral Lab is a 300 year-old star coral found in 2005 off the coast of Hollywood. Like trees, the age of a coral is determined by growth rings.

Marshall compares x-rays made of the coral slices cut from several corals, the actual pieces of the corals and historical records from a parallel time period to try to determine what environmental factors influenced the coral life.

Marshall said the new facility is already speeding up research. Previously, work was done out of several small buildings and a couple of portable classrooms.

“Now we can research, x-ray and process information faster because we don’t have to go to three different buildings to get it done. It’s pretty fantastic,” Marshall said.