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Sea Grant Florida

UF IFAS UNIVERSITY of FLORIDA

2017-2018

FLORIDA SEA GRANT PROGRAM HIGHLIGHTS

UF/IFAS photo

A GRAND PLAN FOR HERNANDO COUNTY'S MARINE RESOURCES

SEA GRANT BRINGS LAND-USE EXPERTISE TO PROMPT FIRST-OF-ITS-KIND COASTAL WATERWAY PLAN

Using the bucket brigade method, volunteers and Florida Sea Grant agents line up in single file and pass along 2,450 mesh bags filled with recycled oyster shell from local restaurants. The bags are stacked onto boats, and then into Centipede Bay in Hernando County, an area with a sandy bottom that currently lacks viable fish habitat.

Placed strategically in the shape of a football, the new reef includes gaps to ensure fish can move about freely. The hope is that the new reef like a newly built subdivision, will attract young oysters naturally. As the new residents settle, they will begin to filter the bay s water and provide habitat for fish and other marine life.

The new reef is just a small part of a grander plan for Hernando County s coastal resources.

With technical support from Florida Sea Grant, Hernando county has become Florida s first county seeking to add a long term Strategic Marine Area Plan for its entire

continued inside

UF/IFAS photo

Oyster reef restoration is one of the six main goals in the Hernando County Strategic Marine Area Plan.

A GRAND PLAN *continued*

marine and coastal zone to the county's comprehensive plan.

“To my knowledge this is the most comprehensive and explicit treatment of marine resources for a local government comprehensive plan in Florida,” said Tom Ankersen, Florida Sea Grant's legal specialist and a member of the initiative.

Typically in Florida, a county’s comprehensive plan provides long-range guidance on dry land or shoreline issues to keep growth and development in balance among competing interests, Ankersen said. Management of marine submerged lands has not been factored into the planning equation.

The Strategic Marine Area Plan will address activities in submerged habitats up to 9 nautical miles out from the county’s coast, where state waters end and federal waters begin.

“It extends literally from shoreline to state line,” Ankersen said. "We were unable to find any similar instances of this in Florida."

Hernando County has historically been rural with significant agricultural activity and limestone mining. The economy is also boosted by a large, nature-based recreation and tourism industry dependent on near pristine habitats along its 18-mile Gulf coast.

For more than a year, Ankersen and a team of legal students from the University of Florida Levin College of Law and Sea Grant extension faculty have been engaged with Hernando County officials in the development of approaches for sustaining and improving its marine environments.

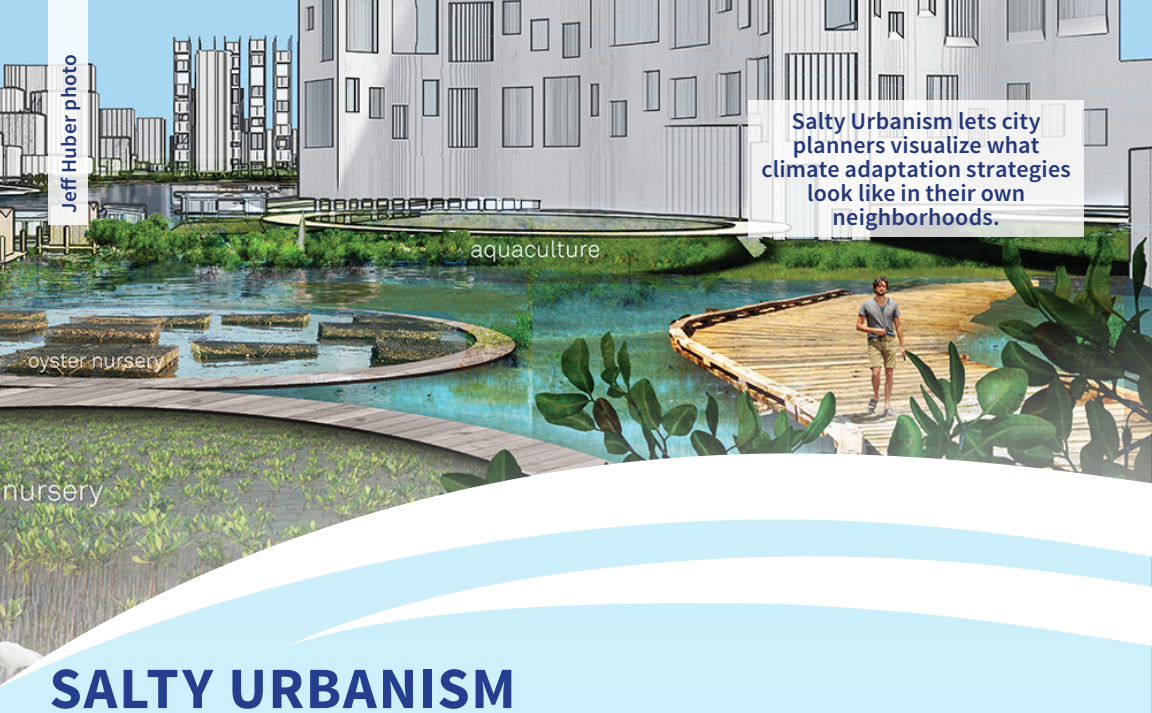
In March 2018, the Hernando County Board of County Commissioners voted to amend the coastal management element of its comprehensive plan with recommendations from the team’s final report and sent it to the state for final review.

The report offers a blueprint for the restoration, enhancement and management of the county's marine waters. It is focused on shoreline stabilization, oyster reef restoration, artificial reefs, hardbottom and seagrass habitats, healthy commercial and recreational fisheries, and navigation and water access.

It also provides a 15-year, science-based spending framework for penalty money paid into the RESTORE Gulf Coast Restoration Trust Fund by BP after the Deepwater Horizon Oil Spill, Ankersen said. The money can now be used specifically for marine enhancement projects that coincide with goals in the plan.

Brittany Hall-Scharf, Florida Sea Grant agent with UF/IFAS Extension in Hernando County has been instrumental with on-the-ground support and in the drafting and editing process. She said the effort demonstrates how Florida Sea Grant applies science-based solutions to problems that affect coastal residents, businesses and communities.

"It was also a great way to show what Florida Sea Grant agents and specialists bring to the table. The simple things we do every day in our jobs have big impacts on the future of our natural resources," Hall-Scharf said.



Salty Urbanism lets city planners visualize what climate adaptation strategies look like in their own neighborhoods.

SALTY URBANISM

FLORIDA SEA GRANT RESEARCHER RETHINKS HOW CITIES CAN ADAPT TO RISING SEAS

By 2060 sea levels are expected to rise by more than 3 feet in South Florida. But city and county planners face the challenge of balancing near-term adaptation costs with long-term sea-level rise projections.

With funding from Florida Sea Grant, Jeff Huber, an associate professor in Florida Atlantic University's School of Architecture, helps to change the way cities approach future urban development. He leads an interdisciplinary team that includes architects, engineers, urban planners and scientists to produce a suite of decision tools, known as the Adaptation Design and Planning Tool (ADaPT) to demystify the concepts of long-term climate change adaptation while improving livability.

Using the low-lying seaside neighborhood of North Beach Village as a model, the team is working closely with the City of Fort Lauderdale to envision four plausible scenarios by 2060: defend, retreat, adjust, or continue business as usual.

Team members first completed a hydrological assessment of North Beach Village to determine the neighborhood's capacity for using green infrastructure and low impact development as a climate adaptation method. Next, they hosted a series of workshops to evaluate options and preferred solutions—like defending low-lying areas with a berm and mangrove forests, or replacing static high rises with amphibious buildings.

Armed with that information, the team is now producing a how-to manual for North Beach Village, complete with policy recommendations, cost considerations, design ideas, and how to plan for various ecotypes.

"We want to show how we transform our relationship with water," Huber said. "Not one that we're fighting, but one that we accept, that we work with and we design with it."

The project was recently recognized as one of just three national awards for Regional and Urban Design from the 2018 American Institute of Architects Institute Honor Awards, the highest honor bestowed on a project by the profession. The judges noted that the submitted design gives "each community a myriad of potential responses that could work for them as they work together," and that the Sea Grant-sponsored framework "could be implemented in any community facing the dilemma of sea-level rise."

203 **seafood industry workers** *trained in safe seafood handling valued at* **$7.5 million**

UF/IFAS photo

Brittany Hall-Scharf helps connect fishing guides to fisheries research along the Nature Coast.

CONSERVATION IN THE COMMUNITY

In just two short years as a Florida Sea Grant agent, Brittany Hall-Scharf has made a big splash in Hernando County.

The Tampa Bay area native has worked hard to gain the support from her new community by involving them in practical projects that help conserve the county's pristine coastline.

Like when she helped rally local fishing guides to participate in critical fisheries research originating out of the new UF/IFAS Nature Coast Biological Station.

"Brittany has developed important relationships with fishing guides in the area," said Micheal Allen, director of the UF/IFAS Nature Coast Biological Station. "We use her as a conduit to get to know them so they can help us collect data for various projects."

Hall-Scharf was also instrumental in crafting and gaining buy-in for the Hernando County Marine Area Strategic Plan, a long-term management strategy for the county's entire marine and coastal zone.

Several of her programs helped inform and outline the six main goals of the plan, which aim to sustain and improve the county's marine environment, tourism industry and water access points.

For example, with grant funding from the Florida Department of Environmental Protection, Hall-Scharf assembled a team of Sea Grant agents and specialists and more than 90 volunteers to deploy a new oyster reef in Centipede Bay.

"The new reef will attract economically and recreationally important fish species such as redfish, snapper and sheepshead," Hall-Scharf said.

Hall-Scharf also used the DEP grant to build two marsh grass nurseries at a local middle school for the "Grasses in Classes" program. In this hands-on curriculum, students learn about the importance of marsh grasses to coastal ecosystems while growing them for future restoration activities.

Local clubs and residents expressed their support by donating supplies and funds for both of the projects.

To address the county's goal to increase water access, Hall-Scharf created a new coastal paddling trail to relieve traffic on the Weeki Wachee River.

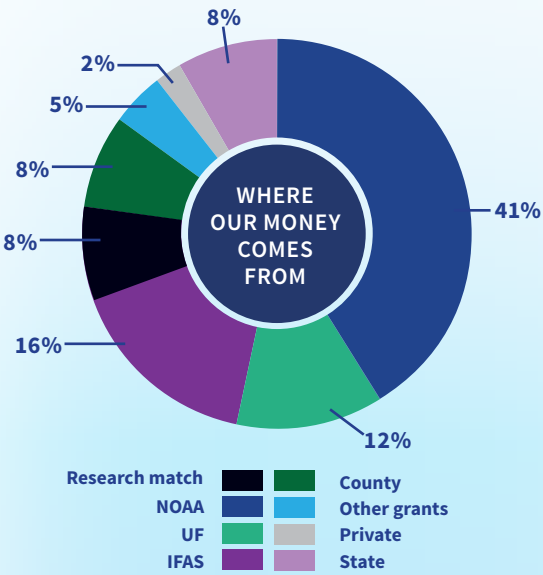
She led efforts by a local Girl Scout troop to create the educational signage at the beginning of the trail to show visitors what wildlife they can expect on their trip.

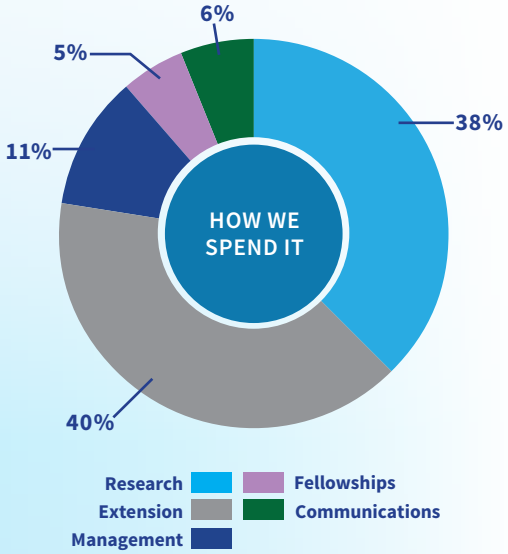
"I hope that my programs encourage everyone to help sustainably manage these resources," Hall-Scharf said.

6 communities *gained water access through Coastal Partnership Initiative*

10,257 acres *of coastal habitat enhanced*

FLORIDA SEA GRANT
2017-18 BUDGET—*$7,530,673*





69 graduate students *supported on coastal science research projects*

$376,500 awarded *in scholarships*

1,000 anglers trained *in sustainable fishing techniques*

$28 million *annual economic impact*

768 water-dependent *businesses sustained*

New sea turtle-friendly lighting saved **$377,000** *in energy costs*

63 students *found jobs in their field*

45 schools *switched from plastic to biodegradable food trays thanks to the Florida Microplastic Awareness Program*

7 new artificial reef deployments *generated $7 million in economic impact*

Submitted photos

Abigail Engleman (top left), Jennifer Adler (bottom left) and Austin Gallagher used modest Sea Grant funds to boost their science communication careers.

SEA GRANT SCHOLARSHIPS

BOOST CAREERS FOR NEXT GENERATION OF SCIENCE COMMUNICATORS

For decades, Florida Sea Grant has supported undergraduate and graduate students through scholarships, fellowships and research assistantships.

Because of the program's unique ability to access some of the top up-and-coming scientists, Florida Sea Grant partners with the Florida Outdoor Writers Association to find the best applicants for its outdoor communications scholarship. This partnership helps young scientists not only conduct their research, but also disseminate it to the public.

The scholars have been combining their FOWA and Sea Grant funds to become some of the top science communicators in their field.

Jennifer Adler was awarded a FOWA Scholarship in 2015 and a Florida Sea Grant scholarship in 2016. Today she is a talented conservation photographer represented by National Geographic Creative. Adler completed her Ph.D. in interdisciplinary ecology at the University of Florida in 2018.

"Sea Grant has been instrumental in my career and helped support my Walking on Water program, which I created as part of my dissertation to help connect the next generation of Floridians to their fresh water," Adler said.

Adler’s Walking on Water program immerses elementary school students in the springs, cameras in hand, and lets them explore the hidden drinking water via the first 360-degree virtual tour of the Floridan Aquifer.

Austin Gallagher, a 2011 FOWA scholar and a 2012 Florida Sea Grant scholar, has recently been named to the Forbes 30 under 30 list. The magazine recognized him for his entrepreneurial work as the CEO and president of Beneath the Waves, a non-profit he founded to advance the conservation of sharks and oceans through research, education and media, such as documentary films.

"I was fortunate to be funded by Florida Sea Grant as a doctoral student, which allowed me to complete an awesome dissertation that has been highly cited and used by local, national, and international policy makers," said Gallagher. He earned his Ph.D. in ecosystem science and policy from the University of Miami.

Abigail Engleman, a Ph.D. student in biological oceanography at Florida State University also received FOWA and Florida Sea Grant scholarships. She has recently been awarded the National Geographic Young Explorers grant for her work in using 3D technology to advance coral reef restoration.

"By bridging the gap between science and communication, we can effectively educate the public on their connection to the sea," she said.

Lionfish derbies

generated

$20k

in annual sales to local restaur

Submitted photo

Equipped with GPS locations of displaced traps, lobstermen in the Florida Keys were able to get back to business quickly.

EYES IN THE SKY

FLORIDA SEA GRANT SAVES KEYS LOBSTER INDUSTRY NEARLY $4 MILLION AFTER HURRICANE IRMA

In 2017, Hurricane Irma displaced more than 150,000 spiny lobster traps in the Florida Keys. But a novel eyes-in-the-sky solution has saved the industry nearly $4 million.

Using two planes, GPS-enabled cameras and professional spotter pilots, Sea Grant helped streamline the process to locate the traps and get lobstermen back in business.

This response quickly got off the ground because of the Florida Keys Commercial Fishermen's Association's strong working relationship with Florida Sea Grant, said Bill Kelly, the association's director.

"This aerial reconnaissance approach provides a strategic road map for gear cleanup and helps in establishing not only locations but also estimated costs and time frames based on previous efforts," Kelly said.

The Association recruited two of its professional spotter pilots and their aircraft. The National Sea Grant Program provided emergency funding to Florida Sea Grant to cover costs. Sea Grant also equipped each plane with GPS-enabled cameras and additional personnel with the funding.

During three days of overflights, each aircraft covered approximately 2,100 miles and took a total of nearly 15,000 GPS enabled photographs. This information was uploaded to geographic information system computers, plotted on nautical charts of the Keys and distributed to fishermen, FWC, law enforcement and local government officials.

"Aerial reconnaissance could be the new response protocol for other coastal communities affected by severe weather," Kelly said.

Florida Keys fishermen, who fuel the second largest economic sector in the Keys, were faced with the time-consuming task of searching for lost gear. Irma hit in September, just a month into the lobster season, which goes from August to March. Spending that period recovering gear, rather than taking in catch, would have been money lost for fishermen and the Florida Keys, Kelly said.

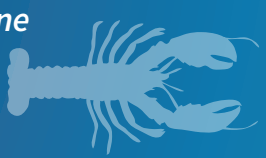
Shelly Krueger, Sea Grant agent for Monroe County, facilitated the reconnaissance effort and data analysis.

"Most commercial fisherman in the Keys earn the majority of their income from the lobster catch. They are a vital part of the Florida Keys — for them to get out fishing soon after the storm helped them financially and reduced the stress of recovery," she said

To date, 60,000 traps have been removed. Krueger continues to recover traps with the Florida Keys National Marine Sanctuary; 705 traps have been removed from the islands and surrounding ocean habitats, along with trap rope, buoys and other debris.

-Courtesy UF/IFAS News

775 lobstermen jobs *are sustained from a trap recovery effort post-Hurricane Irma*



ants

Ana Zangroniz, the Florida Sea Grant agent with UF/IFAS Extension in Miami-Dade County, demonstrates to a Mahogany Youth student how a digital pH meter tests water quality.

CONNECTING KIDS AND NATURE

HANDS-ON EXPERIENCES IN THE OUTDOORS CAN IMPROVE PERFORMANCE INSIDE THE CLASSROOM

Young people in Florida's largest metropolitan areas often have little to no access to the ocean, despite living near the coast. Without experience in the ocean environment, they cannot develop their curiosity for exploring the natural world, nor an appreciation for their role in protecting it.

"For a lot of our kids, their whole world is an eight-block radius," explains Kathleen Elliott, who manages the Mahogany Youth Corporation in Miami with her husband, Robert O'Bryant, the man who founded the nonprofit in 1994.

Mahogany Youth specializes in providing black and Hispanic youth from inner-city neighborhoods with the chance to participate in the outdoors. It can be as simple as learning to catch a fish.

"Robert was a drug counselor for over 20 years working in the juvenile justice department, and discovered that kids he was taking fishing weren't getting into as much trouble," she says.

"Fishing is the hook we use to get the kids' attention. Then we're able to help them with life choices and making good decisions."

The link between frequent nature outings and positive behavioral outcomes among youth points to why Florida Sea Grant is extending its partnership with Mahogany Youth.

In the Florida Keys, the Sea Grant agent with UF/IFAS Extension in Monroe County involved the group in sponge restoration research to learn how cultured sponges can one day help repopulate degraded habitats in Florida Bay. More recently, the Miami-Dade County Sea Grant agent led the group on Biscayne Bay to measure water quality in between mangrove snorkeling adventures.

"So many of our kids have never seen science actually being applied," Elliott says. "To them it's something they read in a book. When we take them out on the water to do water quality testing, they see the application of what they read in the book and it comes alive."

According to Charles Sidman, Florida Sea Grant's research director, he is now working with Mahogany Youth to develop ways to measure the degree to which participating in outdoor programs can curb truancy, failing grades, tardiness and other risk factors identified by public education experts.

"School administrators who support Mahogany Youth programs indicate that students who participate have generally improved their grades and express lower incidents of disruptive behavior in the classroom," he says.

"Through this program hundreds of at-risk kids each year are gaining valuable life skills, an appreciation of coastal and marine environments and the science that is helping to protect them."

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