



2015-2016

FLORIDA SEA GRANT PROGRAM HIGHLIGHTS

WITH TRAINING, SOUTH FLORIDA RESIDENTS TAKE ACTIVE ROLE IN MONITORING LOCAL WATERS

Two Florida Sea Grant faculty are developing water quality monitoring projects in South Florida that enlist residents and volunteers on the front lines of citizen science.

Both programs train individuals to take monthly water samples at adopted sites, analyze the samples, and input their readings in an online database. They see the results in real time and the data are

given to local resource managers to fill gaps where county or state monitoring does not exist.

Lisa Krinsky, Florida Sea Grant agent with UF/IFAS Extension in Miami-Dade County, has developed Biscayne Bay Water Watch to raise awareness about harmful

continued inside



Biscayne Bay has suffered a series of algal blooms. Biscayne Bay Water Watch helps citizens monitor various regions of the bay for triggers that might cause blooms.

MONITORING LOCAL WATERS *continued*

algal blooms and other water quality issues in the Bay and surrounding waters.

“We needed a way to help educate the public about the issues and the concerns regarding Biscayne Bay,” said Krimsky.

She added that it also provides water quality data to areas that are no longer being monitored in the county due to reductions in funding.

Further south in the Florida Keys, Shelly Krueger, Florida Sea Grant agent with UF/IFAS Extension in Monroe County, is developing a similar program, Florida Keys Water Watch. Her program monitors residential canals, most of which were dug in the 1950s and 1960s to provide waterfront living for a growing population. The canals were built in such a way that water circulation was obstructed, posing a threat to marine life and causing other long-term environmental impacts.

“Several years ago, Monroe County completed the Monroe County Canal management plan and after surveying more than 500 canals, they found that about a third of them were in a state of what they called poor water quality based on low dissolved oxygen,” Krueger said.

She takes the data collected by the volunteers and presents it to the county’s Environmental Protection Agency and the Monroe County Board of Commissioners.

“With the data, they can see what’s happening in the nearshore waters because ultimately

these nearshore waters are adjacent to the third largest coral reef in the world,” she said.

Both programs are actively seeking volunteers. Walt Fahey, a retired dentist and resident of Marathon Key, uses the data he collects to inform citizens in his neighborhood about best practices for keeping their boat basin clean.

“The Water Watch program has really given us numbers, that’s something that people can relate to,” Fahey said. “I send out newsletters that explain dissolved oxygen in the water and let them know where the levels are at.”

He also added that although he has a science background, you do not need one to become a volunteer. As part of the program, Krimsky and Krueger provide a four-hour training that explains each step of the testing process.

Krimsky said that although her program requires access to a boat, since the sites are located along the Bay, there are still other ways to volunteer in Miami.

“There are always possibilities and ways to participate through volunteering, through sponsoring sites monetarily, or just through donations and active learning and passing the message along in terms of Biscayne Bay Water Watch,” she said. “The more people know about water quality and the health issues that affect the Bay, the more power we’re going to have behind it to do something.”

Editor’s note: Lisa Krimsky has recently been promoted to a Regional Specialized Agent in Water Resources with UF/IFAS Extension.

The Naturally EscaRosa phone app helps residents and visitors to the Florida Panhandle find outdoor activities while learning about the coastal habitat around them.

NATURALLY ESCAROSA

NEW FREE PHONE APP HELPS PROMOTE ECOTOURISM IN THE FLORIDA PANHANDLE

The Florida Panhandle is home to some of the world's most beautiful coastlines. Less developed than South Florida, the region is a great place for a quiet, nature-themed getaway. However, first-time visitors might not always know where to start their vacation. Luckily, there's an app for that: **Naturally EscaRosa**.

Florida Sea Grant faculty have partnered with local businesses to develop a campaign that promotes ecotourism in Escambia and Santa Rosa counties. Part of the campaign consists of an app and website to help visitors traverse the counties' many offerings. The free app works on iPhones and Android phones, tablets and notebooks.

"With the advancements in technology, more people access information via their phone," said Rick O'Connor, Florida Sea Grant Agent

with UF/IFAS Extension in Escambia County. "Surveying local residents confirmed that apps are very popular and many times their first choice when searching for specific topics. Nature and farm tourism is increasing in popularity and the app will help those new to the area, and those who have been around for a while, discover what our area has to offer."

With the app, visitors can discover locations in either county or can search by six categories: agriculture, trails, paddling, wildlife, water sports and fishing.

The app increases coastal literacy to visitors and residents in the area. This resource is a way to attract responsible tourism and promote businesses that support healthy coastal environments and nature-based recreation, O'Connor said.

For more information, visit www.naturallyescarosa.com

4,625 average daily views through Florida Sea Grant social media channels



138 seafood industry workers trained in safe seafood handling





Savanna Barry surveys local boaters to learn more about their habits and knowledge of the local environment.

BOATING BLISS

FLORIDA SEA GRANT FINDING WAYS FOR BOATERS TO LIVE IN HARMONY WITH THE ENVIRONMENT

With more than 900,000 registered vessels, Florida ranks among the nation's top three boating states. However, boaters may pose a risk to wildlife such as sea turtles and right whales, and the fragile seagrass meadows that lie along Florida's coast.

Florida Sea Grant is funding several research and outreach projects to help boaters live in harmony with the environment.

Along the Big Bend of Florida, Savanna Barry, the Florida Sea Grant agent with UF/IFAS Extension for the Nature Coast, is leading the initiative to teach the importance of seagrass in the Nature Coast counties.

To keep it healthy, Barry is educating boaters about the impact of propeller scarring on seagrass. Seagrasses provide homes and nurseries to more than 70 percent of commercial and recreational fish species. They also provide food for sea turtles and thousands of other marine life, increase water clarity and improve general water quality, Barry said.

She says once seagrass is lost to poor boating practices such as prop scarring and grounding, Florida loses a resource vital to its economy. Barry is asking boaters in her area to participate in a brief voluntary survey that will help her gauge boater habits and seagrass knowledge.

Further south in Estero Bay, Florida Sea Grant's boating specialist Bob Swett is also working to keep seagrasses thriving. He has created a GIS model for the Florida Department of Environmental Protection to use for boating

and waterway planning purposes. The model helps planners visualize where seagrass restoration would best work, and where navigational signs should be placed to help boaters avoid the seagrass.

But seagrass isn't the only potential victim of careless boating. So is the endangered North Atlantic right whale, with an estimated population of only 450. That is partly due to the fact that right whale habitat off the coast of northeast Florida is also a popular naval and shipping port destination, frequented by both commercial and recreational traffic.

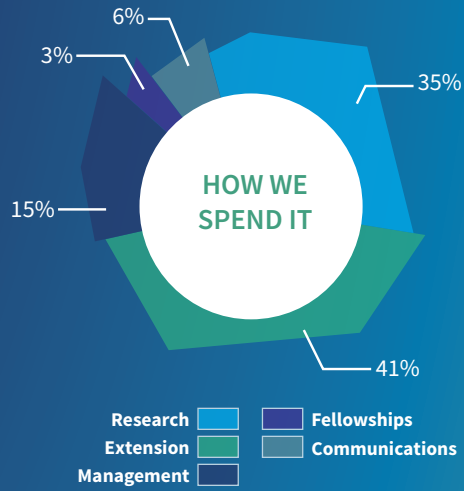
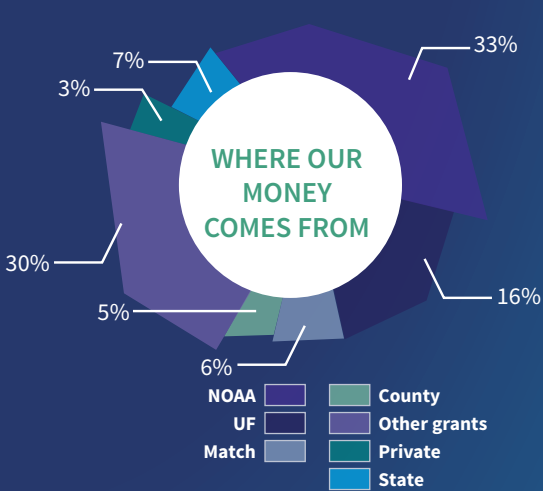
To get a better idea of how to manage competing environmental and economic interests, Florida Sea Grant researcher Nancy Montes surveyed more than 5,000 boaters and used aerial surveys in the area to understand recreational and commercial boating habits, and compared them with the migration patterns of the right whales in the region.

Since contact with right whales is illegal, Montes is hoping that her findings will help place law enforcement in the areas where boaters are more likely to interact with right whales.

In addition, her survey results found that educational efforts should focus on informing recreational boaters as to why they should keep away.

"If boaters understand the rule, and think more people are complying with it, they are more likely to follow it," said Montes, who recently defended her dissertation on the subject.

FLORIDA SEA GRANT CUMULATIVE BUDGET \$6,586,099



73 students

supported on research grants

&

\$195,000

awarded *in scholarships*

81

students
found jobs in their field

515

water-dependent
businesses sustained



16

new clean marinas
established in Florida

&

\$53 million

annual economic impact

600 jobs

provided by clam farming

47 **lawn care professionals**

trained in Florida

Friendly Landscaping Program in Collier County

7 **communities**

adopted policies to protect waterfront and waterway access

ANTICIPATING RISING SEAS

SEA GRANT RESEARCH
HELPS LOCAL COMMUNITIES
PLAN FOR SEA-LEVEL RISE

Florida Sea Grant coastal planning specialist Thomas Ruppert organizes sea-level rise workshops for city planners, lawyers and private consultants around the state.

Sea-level rise is a growing threat to the homes and businesses in coastal cities around the state. To prepare, Florida Sea Grant agents and researchers are working with local governments to create sound city plans.

In Satellite Beach, Florida Sea Grant researcher Jason Evans is mapping how vulnerable public facilities such as stormwater drainage systems, fire stations and wastewater treatment plants are to rising seas.

The elevations of the structures he records will give Evans insight into how exposed buildings can be adapted to withstand future floods. He hopes communities can use this data to become more resilient to coastal hazards.

In the densely-populated Tampa Bay area, Florida Sea Grant agent Libby Carnahan has brought together a group of scientists and government officials to incorporate climate change into city and county planning efforts.

In just 18 months the Tampa Bay Climate Science Advisory Panel published *Recommended Projection of Sea-Level Rise in the Tampa Bay Region* to inform sea-level rise adaptation planning throughout the region.

The report was unanimously adopted by the Tampa Bay Regional Planning Council and distributed to local governments.

As a result, four government entities and one regional water utility company have incorporated sea-level rise projections into their updated comprehensive city plans.

Tom Ankersen, Florida Sea Grant's legal specialist, is giving rural communities legal advice to plan for sea-level rise-induced flooding. With his help, the small town of Yankeetown formally adopted a science and business plan that will help preserve threatened coastal environments.

In the Everglades, Florida Sea Grant researcher Tiffany Troxler is studying the effects of sea-level rise on the degradation of Everglades peat soils. Peat soils are critical to maintaining wetland elevation relative to rising seas, and help prevent too much salt water from getting into freshwater ecosystems.

"The results will be used to guide water management options that could slow the rate of peat collapse by hydrating susceptible areas, without using more water than is necessary to achieve that outcome," Troxler said.



Mechanical clam harvesting will help Florida be competitive with other shellfish-producing states.

SENSIBLE REGULATIONS

FLORIDA SEA GRANT RESEARCH LEADS TO NEW STATE LAW FOR CLAM HARVESTING

Florida's \$53 million clam aquaculture industry supports about 600 jobs, mainly in the town of Cedar Key.

Until recently in Florida, the potential impacts from mechanical harvesters were unknown and prohibited for use. Instead, farmers grew and collected clams in bags that are placed on the sea floor.

"The bag method works very well in Florida for growing hard clams and serves as the harvesting device as it retains the clams," said Leslie Sturmer, Florida Sea Grant shellfish aquaculture specialist with UF/IFAS Extension.

"But other bivalves being evaluated for culture, such as the sunray venus clam, perform better using a bottom plant method. This limits harvesting to hand methods, such as raking, which are just back breaking."

Due to her efforts, a bill allowing the use of mechanical harvesting devices was passed by the Florida Legislature and signed into law by Governor Rick Scott in 2015. These devices are

expected to increase harvest efficiency around the state.

Before proposing the bill, Sturmer first had to measure the potential environmental impacts to Florida waters.

She and her team evaluated a pump-driven harvester device that delivers pressurized water through nozzles to dislodge clams from bottom sediments, testing to see its effect on turbidity, soil properties, persistence of harvest tracks, and quality of clams harvested. These results were compared to the harvesting of clams using the bag method.

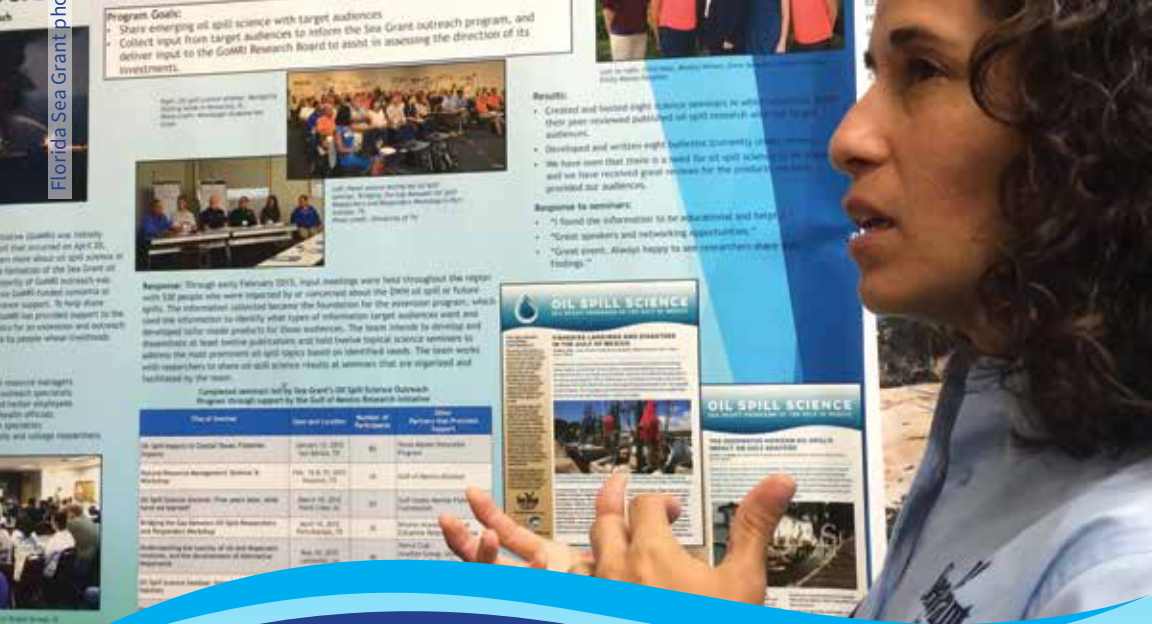
The results indicated that mechanical harvesting had only minor, short-lived effects on water quality and sediment disturbance when compared to the harvesting of clams from bottom bags.

"Mechanical harvesting will allow the Florida shellfish aquaculture industry to increase efficiency, diversify and expand, and become competitive with other shellfish-producing states," Sturmer said.

303 citizen scientists
trained to monitor water quality in sensitive habitats in the Florida Keys.

6 communities
learned adaptation strategies for sea-level rise

51,427 acres of coastal habitat enhanced



Monica Wilson helps residents and business leaders in the Gulf of Mexico learn about the effects of the spill.

OIL SPILL QUESTIONS ANSWERED

SEA GRANT OIL SPILL SCIENCE OUTREACH TEAM TRANSLATES DEEPWATER HORIZON SCIENCE TO GULF COAST RESIDENTS

In 2010, approximately 172 million gallons of oil spilled into the Gulf of Mexico due to the Deepwater Horizon explosion. Roughly 1.8 million gallons of dispersants were used to break up the oil, reducing the amount reaching the shoreline. Six years after the spill, questions linger about the impacts on the environment.

Florida Sea Grant’s oil spill specialist Monica Wilson has been answering these questions ever since she came on board in 2014.

Wilson works with three other specialists, one from each of the Sea Grant programs in the Gulf of Mexico (Mississippi-Alabama, Louisiana and Texas) to disseminate key oil spill research results to Gulf Coast residents and stakeholders.

Each specialist brings different expertise to foster a more comprehensive understanding of oil spill science. Wilson specializes in how oil moves throughout the water.

“Tracking oil can be vital to minimizing the overall effects and damage to the surrounding environment and communities,” Wilson said.

The oil spill outreach initiative was made possible by the Gulf of Mexico Research Initiative, which awarded Florida Sea Grant \$308,206 to fund the new program. The award

is part of a larger \$1.52 million project shared with the other Sea Grant programs involved.

“These funds are critical to being able to translate the results of a huge scientific effort for a wide range of businesses and communities whose livelihoods depend on a healthy Gulf,” said Florida Sea Grant director Karl Havens.

In less than two years, the team has facilitated 11 science seminars, delivered 75 presentations around the Gulf, published 10 extension publications, and built a network of more than 1,200 people to share the latest science.

Through this program, many questions posed by coastal audiences have been answered. More than 2,700 people who have interacted with the team have increased their understanding of the oil spill on Gulf ecosystem and coastal communities. Due to the success of the two-year pilot project GoMRI has elected to renew the Sea Grant oil spill outreach program through 2019.



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