



SCCF

Sanibel-Captiva Conservation Foundation

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Trustees

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- Linda Uhler
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- Don Rice
Treasurer

October 22, 2012

Judie Zimomra, Sanibel City Manager
800 Dunlop Road
Sanibel, FL 33957

Dear Judie:

- Bill Burch
- Claude Crawford, Ph.D.
- Doris Holzheimer
- Janie Howland
- Donald (Chip) Lesch
- Philip Puschel
- Robbie Roepstorff
- Martha Siders
- Edward C. Wheeler, MD
- Carol Zell

Erick Lindblad
Executive Director

SCCF is dedicated to the conservation of coastal habitats and aquatic resources on Sanibel and Captiva and in the surrounding watershed through:

- Marine Research
- Land Acquisition
- Natural Resource Policy
- Native Plant Nursery
- Environmental Education
- Sea Turtle Conservation
- Wildlife Habitat Management

Because of the City's extraordinary support of the SCCF Marine Laboratory, especially its essential help funding the RECON sensors, we want you, Mayor Ruane, Vice Mayor Denham and the City Council to have this copy of the progress report we're calling "Sound Science". It's a look back on the occasion of the Marine Lab's 10th anniversary, and a summary of our strategic priorities for the future. A few highlights we hope you will enjoy include:

- the "Marine Lab by the Numbers" page, graphically showing the Lab's work to date,
- the grants, publications and collaborations that bear witness to our progress toward regional and national significance, and
- an update on the River, Estuary and Coastal Observing Network (RECON) sensors. In speaking with fellow marine scientists across the country, it's clear we are trailblazers in this technology because of our scientists. Other scientists are reaching out for guidance on our approach because of its many successes and are deploying similar systems elsewhere. RECON is the backbone of the sound science that informs SCCF's public policy work.

We have also enclosed a DVD of our 2012 Chrysalis Award video introduction for you to watch. Selected by Southwest Florida's leading business partnership, SCCF won this award for Eco-Innovation. The video intro succinctly sets forth why our research and monitoring makes a difference for the entire watershed affecting our island waters and beyond.

As you read this report, please know we have an ongoing need for program support as well as help with our planned strategic growth. By demonstrating cooperative relationships like ours to funding agencies, we have been able to stay very competitive. Examples of this are the three multi-year restoration grant programs we have been awarded since 2009. We were one of just five awardees in these nationwide competitions against 150 applicants. By being able to cite that we have public-private partnerships like the one with the City in our grant requests, we can seize opportunities – and tackle challenges - as they arise. We are committed to that remaining true going forward, and hope we can visit about that with you.

Sincerely,

Erick Lindblad
SCCF Executive Director

Eric C. Milbrandt, Ph.D.
SCCF Marine Laboratory Director



Recycled Paper



SCCF

Sanibel-Captiva Conservation Foundation

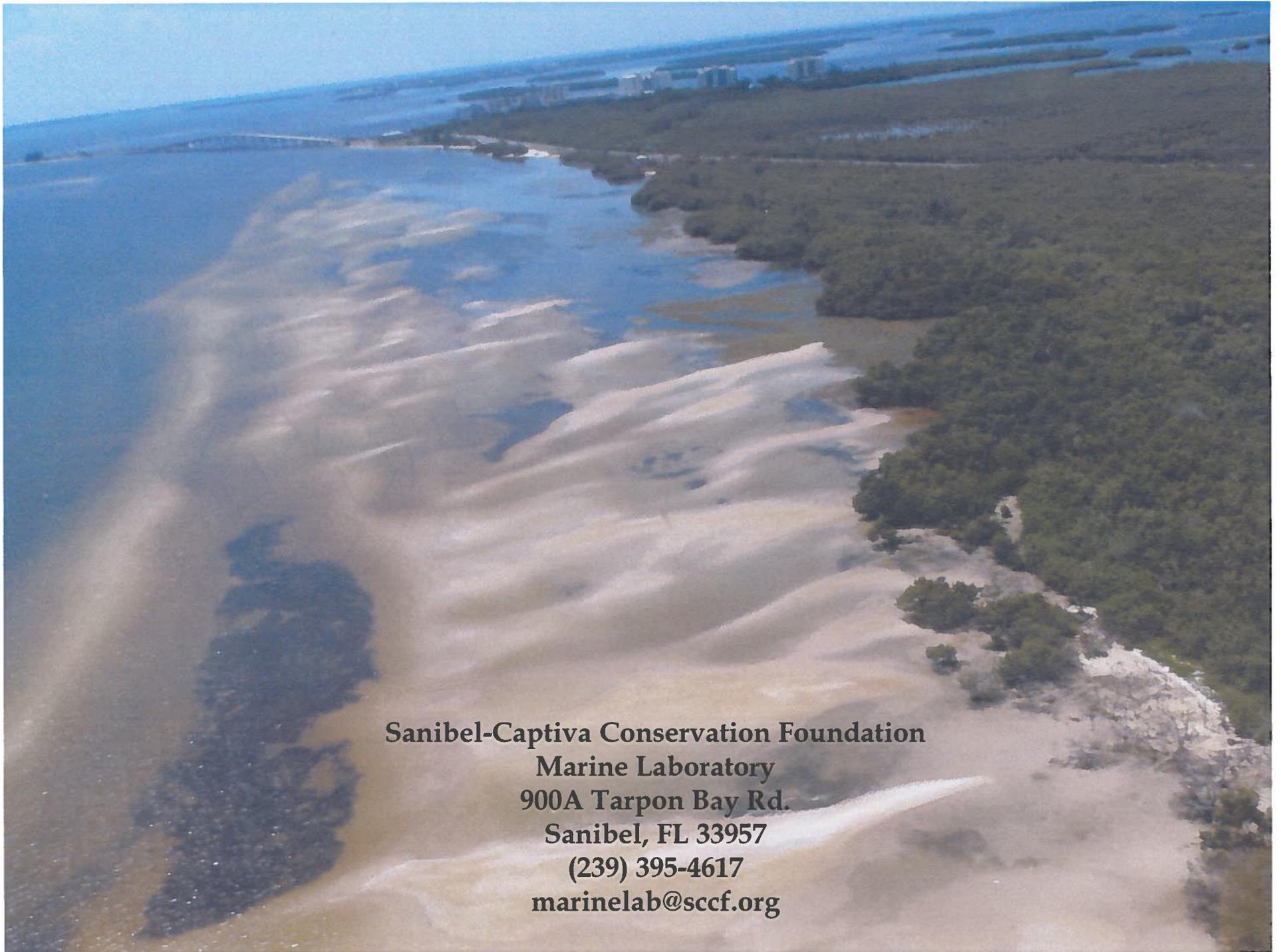
Marine Laboratory

Sound Science

2012 Progress Report and Strategic Priorities

Specially prepared for the City of Sanibel

October 2012



Sanibel-Captiva Conservation Foundation
Marine Laboratory
900A Tarpon Bay Rd.
Sanibel, FL 33957
(239) 395-4617
marinelab@sccf.org



SCCF's Mission

"The Sanibel-Captiva Conservation Foundation is dedicated to the conservation of coastal habitats and aquatic resources on Sanibel and Captiva and in the surrounding watershed."

Ten years ago, the Sanibel-Captiva Conservation Foundation Marine Laboratory opened its doors. It was the vision of our Board of Trustees to solve our community's biggest environmental problems using scientific approaches.

A decline in water quality and habitat losses threaten our barrier islands and affect the activities that we have enjoyed for decades, like fishing, shelling, walking the beach, and kayaking through the mangroves. During our first 10 years, we have taken direct actions to protect these valuable ecosystems. With the establishment of the River, Estuary and Coastal Observing Network (RECON), a first-of-its-kind network of water quality sensors producing innovative research on seagrass, mangroves and shellfish communities, the SCCF Marine Lab has been ahead of the curve, accomplishing more with less. For example, the Marine Lab was started when a \$2 million fundraising goal was met to operate the Lab for 5 years. The staff and Board, through grant writing and smart investment, stretched that initial fund to 10 years.

We need your continuing support to protect the marine life around the islands by understanding how water management and the climate are affecting these sensitive ecosystems. Our findings are routinely used to make decisions affecting the environment. To meet these challenges, we are asking for your support to meet the research and educational outreach needs for Sanibel and Captiva. With you, we look forward to the next decade, keeping the waters surrounding Sanibel and Captiva Islands pristine and productive.

Sincerely Yours,



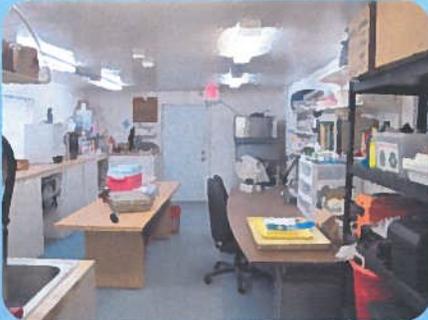
Paul Roth
PRESIDENT, BOARD OF TRUSTEES

Erick Lindblad
EXECUTIVE DIRECTOR

Eric Milbrandt, Ph.D.
DIRECTOR, SCCF MARINE LABORATORY

The SCCF Marine Laboratory

Water quality has always been a core mission of SCCF, but the Marine Laboratory as we know it today was only formalized in 2002. The lab is currently located in a repurposed shell shop, on Tarpon Bay within J.N. "Ding" Darling National Wildlife Refuge (right).



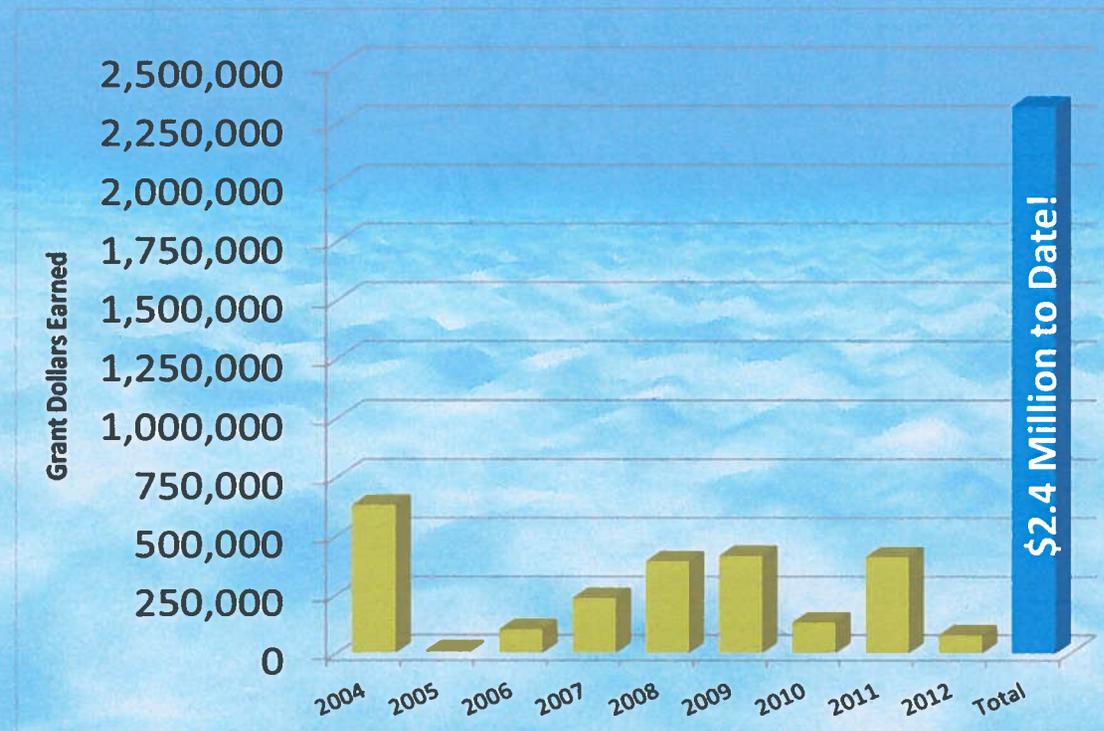
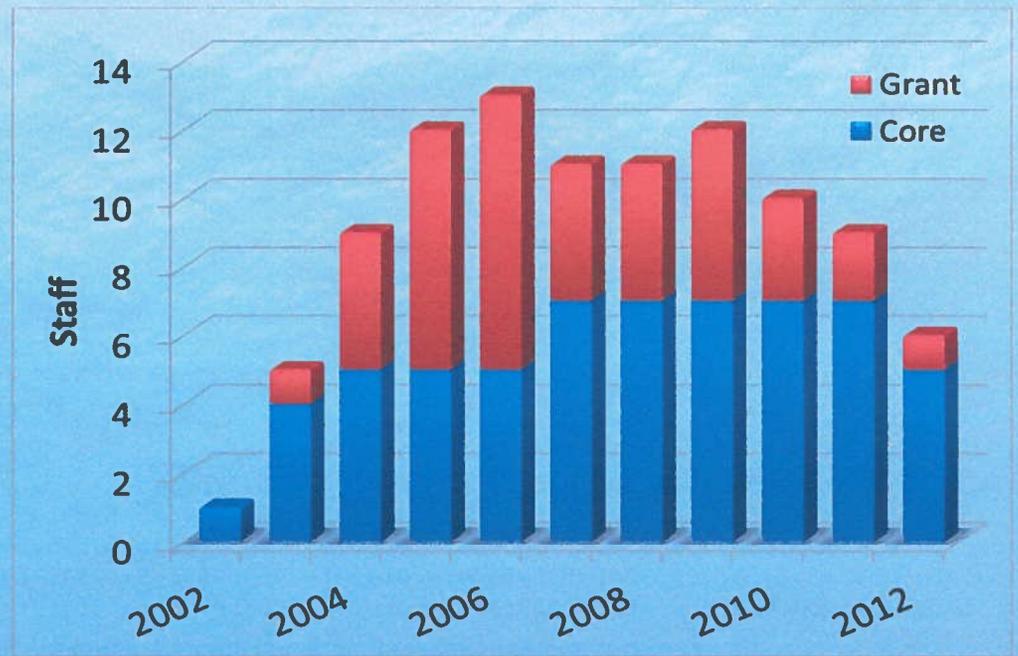
The current Marine Lab consists of two small labs, a workshop, and staff offices. The wet lab (above left) is used to sort field specimens and filter water samples. The analytical lab (above right) is equipped with microscopes and a variety of water analysis equipment. A rented trailer was parked next to the lab in 2008 to provide additional space. A small out building (right) has been converted into a workshop and is used to maintain the RECON sensors. Currently, because of space limitations, we have no public atrium to highlight our accomplishments and research.



A fish grow-out facility behind the lab (ended in 2006) is now used for growing mangrove seedlings and seagrass for restoration projects (far left). A shed was built to provide temperature controlled space (left) outfitted with six large tanks used for conducting experiments and trials for a variety of research projects.

Staff

The SCCF Marine Lab has had over 25 staff members and a long-term core staff of six during its 10-year history. The staff is grouped into two categories, core and grant-funded. The core staff is subsidized by competitive grant awards from staff-designed projects. Grant-funded employees are hired for specific projects and funded directly with grant funds. Grant positions are short term, averaging 1-3 years. Graduate students and interns are essential. Strategically, economically-prudent additions to the core staff may be needed to expand our research opportunities.



Grants

The SCCF Marine Lab has received 65 grants totaling \$2.4 million since we opened our doors in 2002. Grant dollars vary by year; the funds from the Annual Fund Drive allow the Lab to maintain consistent staff and compete for grants from federal, state, and local sources. These support local research related to specific environmental problems, concerns, and projects on Sanibel and Captiva Islands and in the surrounding watershed. Obtaining grants would not be possible without core funding.

Our Research

The Marine Lab conducts research on local habitats, specializing in determining status and long-term trends. Core research is funded by contributions while sponsored research is supported by competitive grants awarded to study a specific problem.



The Marine Lab identifies and investigates specific problems, such as massive amounts of drift algae washing up on our beaches and clam die-offs. The City of Sanibel and J.N. "Ding" Darling NWR rely on our data and guidance.



The Marine Lab plays a significant role in improving habitats and education through grass-roots restoration efforts. By planting mangroves and creating oyster reefs, the Marine Lab has improved habitat quality, productivity and water clarity.



Program Spotlight

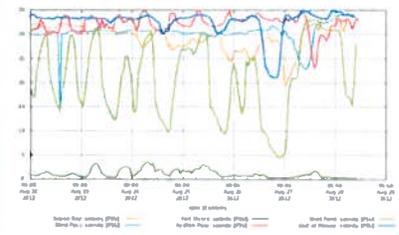


Seagrass beds function as a nursery for many sport fish and invertebrates like pink shrimp. We are fortunate to have lush and protected seagrass around Sanibel and Captiva but they face multiple threats. Seagrass beds are monitored in the Caloosahatchee and Pine Island Sound, including the J. N. "Ding" Darling Refuge.

RECON collects weather and water quality data autonomously 24 hours-a-day, 7 days-a-week, and 365 days-a-year. The Marine Lab has the only real-time water quality data in the region.



Graphing and real-time capabilities allow us to monitor disturbances such as stormwater and Lake Okeechobee releases and other climatological events. Data are used in weekly estuary condition reports published to influence water management.



Publications

The Lab has published 27 scientific articles in peer-reviewed journals such as *Limnology & Oceanography* and *Estuaries and Coasts*.

Publication titles include:

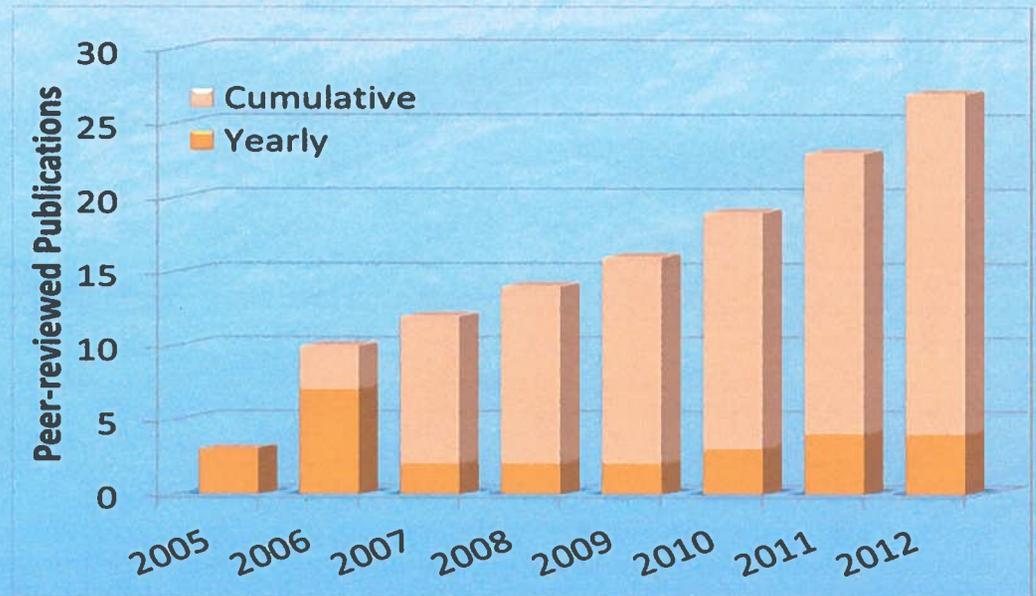
Evaluation of bacteriological and nutrient concerns in nearshore waters of a barrier island in SW Florida. *Marine Pollution Bulletin*

Local and regional effects of reopening a tidal inlet on estuarine water quality, seagrass habitat, and fish assemblages. *Continental Shelf Research*

The effects of reduced tidal flushing on mangrove structure and function across a disturbance gradient. *Estuaries and Coasts*

Impact and response of southwest Florida mangroves to the 2004 hurricane season. *Estuaries*

Evidence for the production of marine fluorescence dissolved organic matter in coastal environments and a possible mechanism for formation and dispersion. *Limnology & Oceanography*



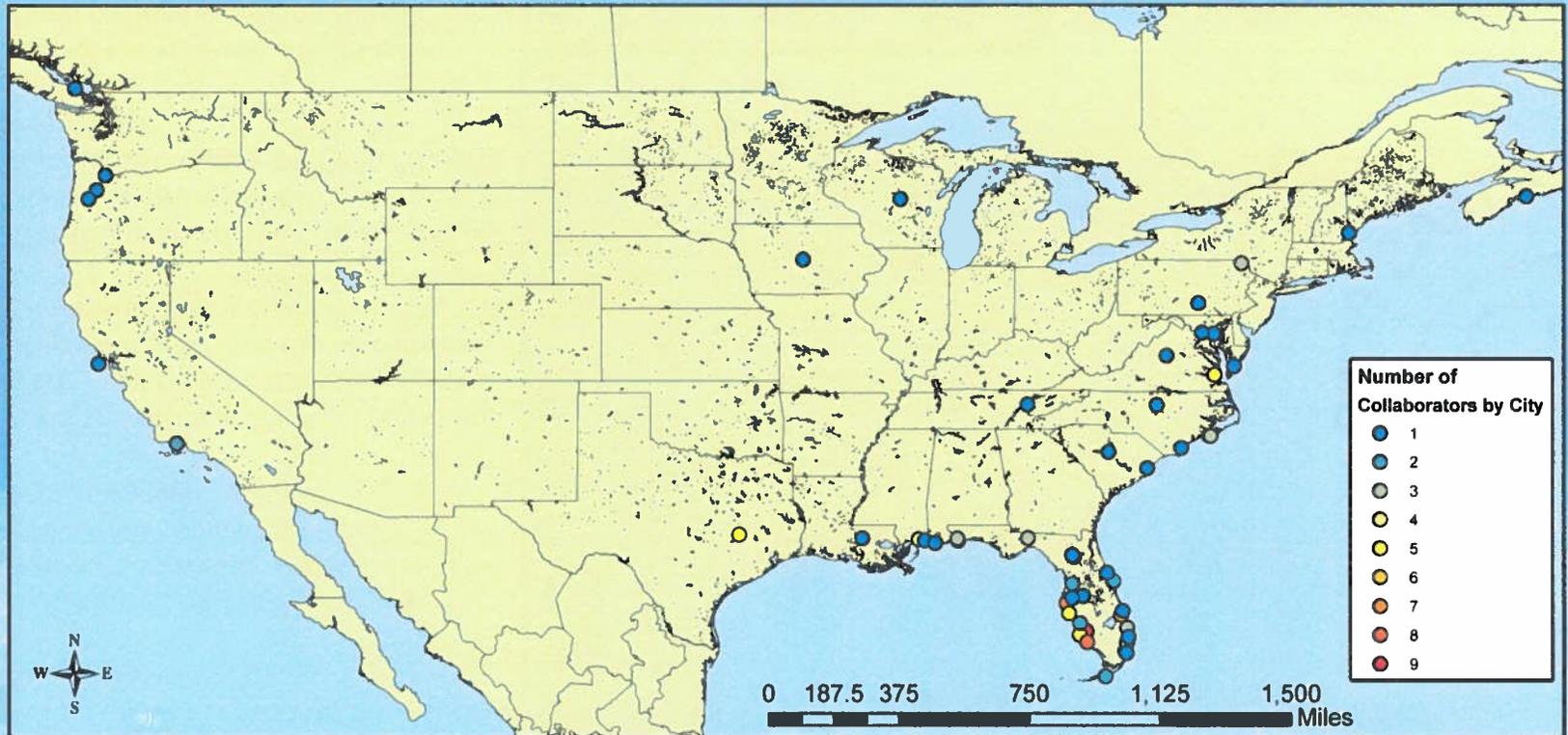
The Lab has contributed to and has been highlighted in hundreds of local news stories.



Our expertise is frequently sought by the media to answer questions related to ongoing local environmental issues. Covering topics from red tide events to algae on the beaches.

Collaboration

The Marine Lab's focus is on local issues, however, we have established thriving collaborations with the scientific community throughout the United States and Canada through grants, projects, and publications. This network of collaborating scientists enhances the Lab's ability to conduct research and improves our ability to acquire grants. This also provides critical peer review of our research.



A Selection of Collaborating Entities

Florida Gulf Coast University
Florida Institute of Oceanography
Keys Marine Lab
University of South Florida
Florida Atlantic University
Harbor Branch Oceanographic Institution

Iowa State University
Fort Pierce Marine Lab (Smithsonian)
Florida Fish and Wildlife
Texas A&M University
Nova Southeastern University
Rosenstiel School of Oceanography
Jackson Estuarine Lab

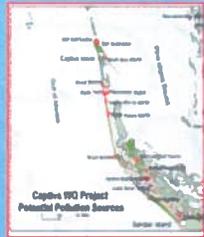
Mote Marine Laboratory
New College of Florida
Oregon Health Sciences University
Moss Landing Marine Lab
Baruch Marine Lab
Archbold Field Station
Atlantic Oceanographic and Met. Lab

Case Study: Captiva Water Quality



Activities undertaken to reduce stormwater effects through landscaping and septic system improvements.

Captiva beaches were closed on several occasions due to high bacteria levels.



Detailed reports were prepared summarizing our findings and recommendations were made to improve water quality.

The Captiva Community Panel sought the Lab's water quality expertise and together obtained grant funds.



Individual water samples were analyzed and results were obtained.



Staff designed an intensive sampling plan and invested in specialized equipment to aid in the study.



Staff conducted sampling for a two year period. Over 1,000 samples were collected.



The Marine Lab by the Numbers



243,034 RECON Samples Logged



2,295 ft. of Mangroves Restored



5,972 Water Samples



234 Hours Scientific Diving

96 Algae Species IDs

10 miles of Seafloor Surveyed



637 sq. meters of Oyster Reefs Built



2,986 L of Water Filtered



1,371 Seine Nets Pulled



80 miles of Seagrass Beds Surveyed

75 tons of Oyster Shell Bagged



The Future: Focusing Our Resources on Upcoming Challenges

Strengths

- Strong private donor support
- Experienced staff with an extensive knowledge of local marine habitats and issues
- Member of the Southern Association of Marine Labs and the Florida Institute of Oceanography

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Weaknesses

- Staff size limits the number and scope of projects that can be undertaken
- Current lab facility inhibits productivity
- Lack of awareness in some sectors of the Lab's importance, function, and role in community

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Opportunities

- Maximize research and outreach initiatives to bring regional and national funding to SCCF
- Attractive place for visiting scientists from prestigious Universities
- Restore Act funding from Deepwater Horizon

O

Threats

- Lower number of available grant funding opportunities and greater competition
- Challenged to keep pace with emerging scientific approaches with current technologies and staff

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OBJECTIVES

Objective One
Provide leadership in scientific research on the features, health, water quality and biodiversity of Florida's subtropical barrier islands



Objective Two
Design and build a core facility to meet research and public outreach needs with green building and technologies



Objective Three
Improve the Lab's capabilities and versatility through the acquisition of a vessel capable of offshore work and acquisition of newer laboratory technologies.



Objective Five
Expand a Visiting Scientist program to attract distinguished and productive collaborations



Objective Four
Meet a growing need for marine education and public outreach

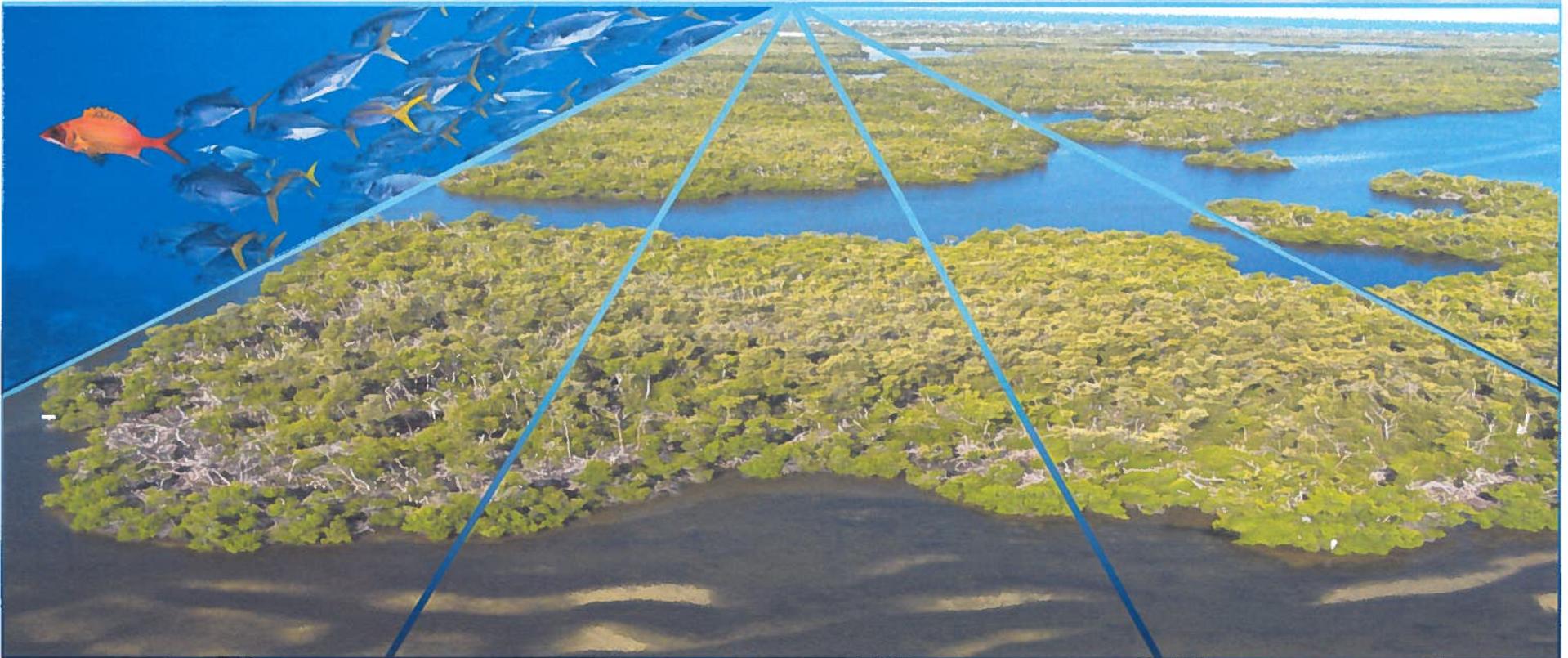


OBJECTIVE ONE: PROVIDE SCIENTIFIC LEADERSHIP

- Continue to serve as the primary scientific partner and marine research facility on the islands supporting the J. N. "Ding" Darling NWR and the City of Sanibel
- Ensure that research-based science is the basis of Florida's environmental policy and driver of policy positions taken by SCCF

- Maintain and enhance RECON, a technologically-advanced observing system for decision making and source of data to enhance ongoing efforts
- Inspire good stewardship through scientific expertise and community outreach

2022

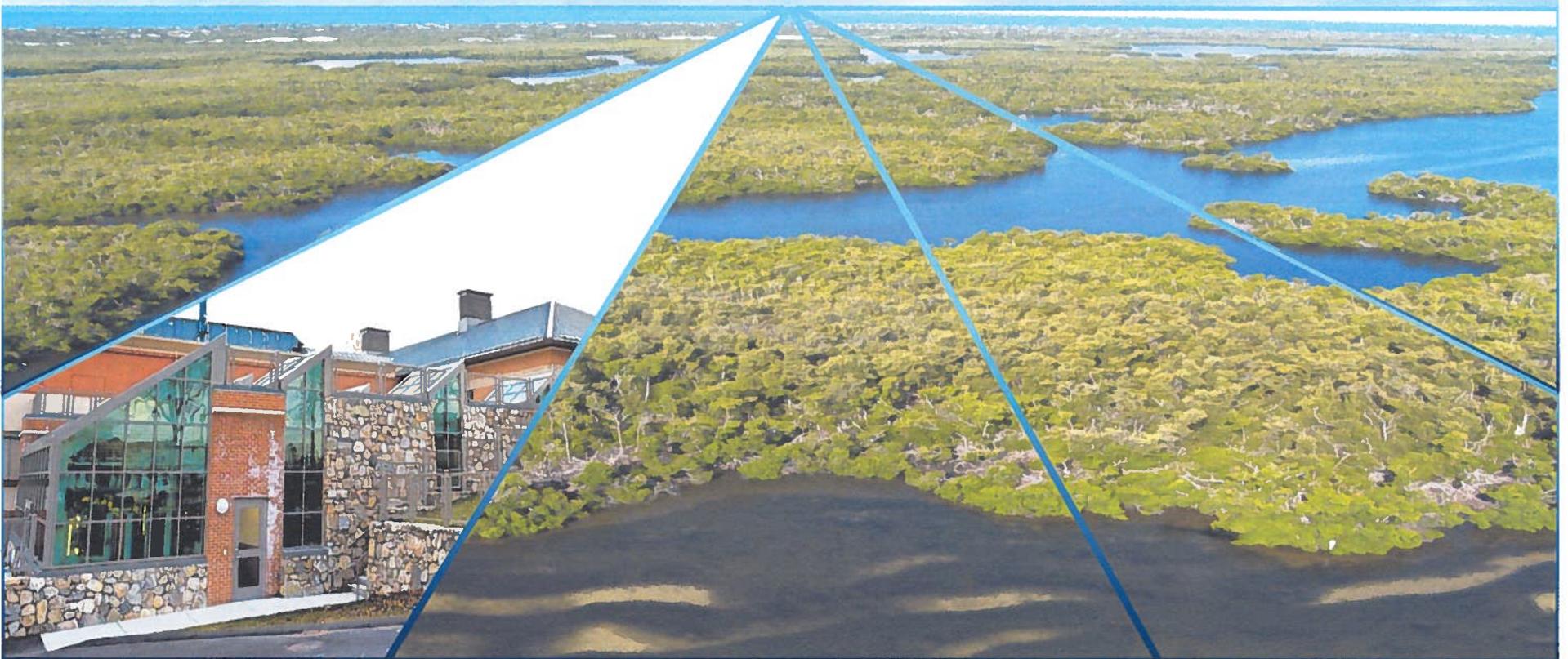


OBJECTIVE TWO: BUILD A CORE FACILITY

- Build an efficient, state-of-the-art lab and a dedicated meeting space
- Update lab facilities for optimal design efficiency and research functionality
- Provide a facility conducive to informal marine education and public outreach

- Create a facility plan consistent with our strategy to create a 'Conservation Center'
- Ensure the new facility meets storm surge requirements to protect all equipment and scientific work products during hurricanes (current facility is only 4' above sea level)

2022



OBJECTIVE THREE: UPGRADE VESSELS AND EQUIPMENT

- Acquire an offshore-capable vessel to expand research in the Gulf of Mexico
- Ensure this vessel will allow us to function independently, rather than relying on county and university resources

- Keep up with advancements in scientific methods through investment in new technologies
- Obtain additional laboratory equipment allowing more in-house analysis and research capability

2022

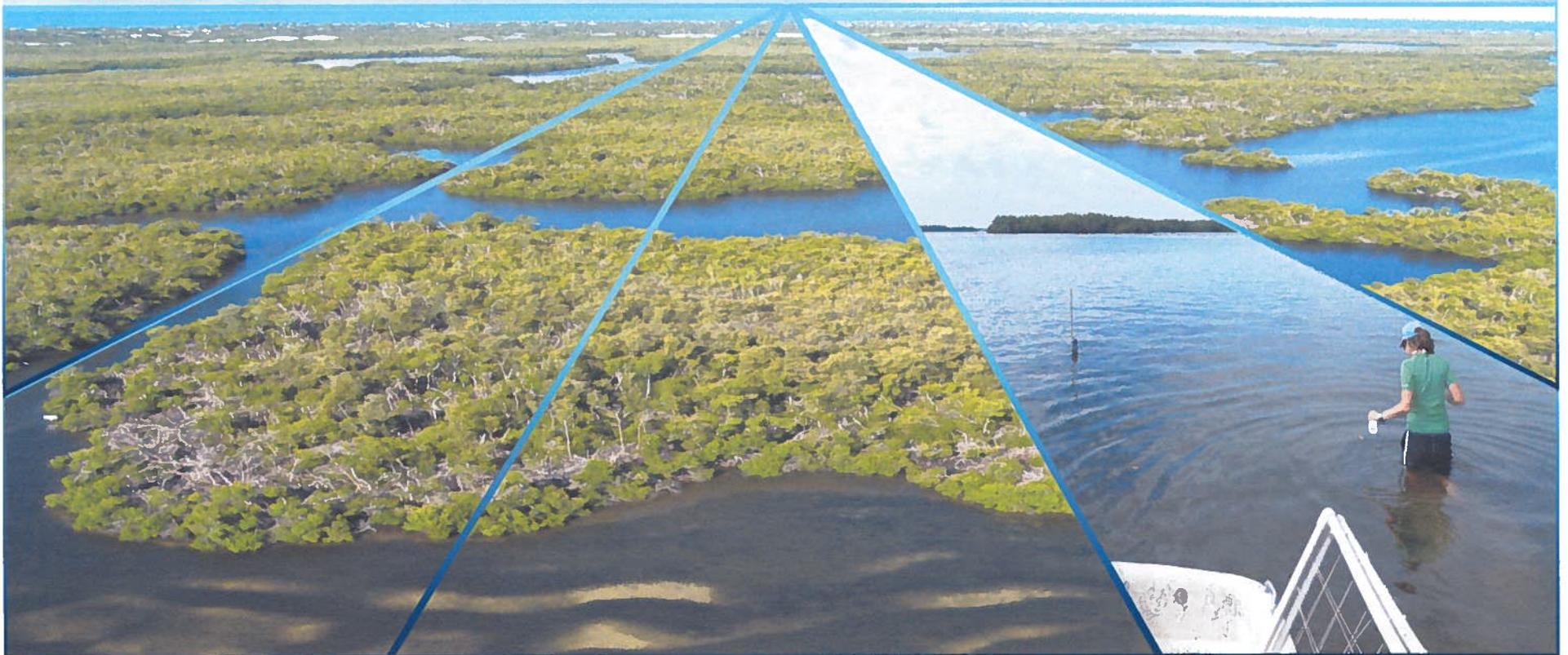


OBJECTIVE FOUR: MEET EDUCATIONAL NEEDS IN MARINE SCIENCE

- Meet the growing need for marine education and public outreach to address the numerous inquiries about marine life and other emerging issues
- Provide opportunities for promising young scientists through internships and graduate student projects

- Create Nature Center displays and an interactive kiosk highlighting environmental impacts in the Caloosahatchee, Gulf of Mexico, and surrounding watersheds, and the role of science in facing these challenges
- Expand engagement with the public through homeowners and businesses

2022



OBJECTIVE FIVE: EXPAND OUR VISITING SCIENTIST PROGRAM

- Expand intellectual capital by offering flexible lab and office space for visiting scientists and students
- Host workshops and lecture series with visiting scientists to benefit the community

- Enhance local research efforts by inviting scientists to share their unique skills and expertise
- Use research conducted by visiting scientists to expand research at minimal expense to SCCF

2022



Thank You for Your Support!

