FLORIDA RESTORE ACT CENTERS OF EXCELLENCE PROGRAM

2025 Annual RESTORE Council Report

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Executive Summary

The primary focus for the Florida RESTORE Act Centers of Excellence Program (FLRACEP) in 2025 was to award four new Centers of Excellence from a new Treasury grant. This year also closed out the final (RFP) III projects. All but one project from RFP III and III.5 projects performance periods end December 31, 2024, with final reporting due in early 2025.

Staff met with Treasury to determine performance measures and milestones update for semi-annual reporting (August). New Performance measures have been established and incorporated into the semi-annual reporting within RGMS. PMT updated Bylaws and Rules and Policies in June. A grant amendment for additional facilities support in the form of vessel time was prepared and submitted (April) to Treasury based on the awarded RFP V project needs to access sites in the De Soto Canyon area (executed October 2025). The amendment was also submitted for an extended performance period on the grant (RGMS-RCE020428) to accommodate both the RFP V awarded projects beyond their projected end-dates (in anticipation of possible requests for extension) and to close-out the grant. The new requested end date is September 30, 2029.

The Annual All Hands Meeting in January 2025 took place at the University of South Florida's University Student Center in St. Petersburg, Florida, with a virtual option for the broader community. Over a day and a half, the current and newly awarded Centers of Excellence leads, and several students, reported on research progress. The meeting also included program updates and shared meals for networking and discussions. On January 29th all the Centers of Excellence leads who had active projects after March 2024 presented their research. The Program Management Team attended and held Q&A and discussion sessions with the researchers. On January 30th the Program Management Team met virtually with the FLRACEP administrative team for the annual meeting. Topics included the progress and any follow-up recommended by the PMT for active projects, RFP V review and selection process, updates to the 10-Year Strategic Plan, and financial reporting. A summary of the PMT meeting notes and updated strategic plan was created by the Program Director and shared with the PMT.

A new competitive research grant competition was announced in June 2024. FIO submitted a budget amendment to support request for proposals (RFP) V in July 2024. Letters of intent were received in late August, and full proposals are due in early January 2025. The total available funding $4.2 M (not including ship time). The FLRACEP administrative team extended the deadline for RFP V full proposals to January 10th to allow people to ask final questions and work with their sponsored research offices to submit the proposals outside of holiday closures. This also allowed more time for hurricane-impacted researchers. FLRACEP received 10 full proposals. A Science Review Panel of 8 experts on the RFP V research topics was assembled in January. Each participant was offered an honorarium for the reviews of 3-4 proposals. After signing a COI and non-disclosure agreement, the participants received a folder with the proposals, rubric for scoring, and guidelines. An introductory meeting was held in early February with all SRP members to review the guidance and process. Written reviews were collected prior to the panel sessions, which were held on February 18th and 19th. Each proposal was discussed and merits weighed to reach consensus statements and a recommendation for funding. The consensus statements were provided to the PMT along with the full proposals. These were discussed in a meeting on February 28th and decisions on funding made. Award letters were sent to P.I.s in March. Sub-award packages were updated and assembled and provided to awarded institutions on March 18th. The FLRACEP Director held a P.I. on March 31st to have each P.I. introduce their project and discuss field plans. This is the first of continued meetings to help coordinate and facilitate work amongst the RFP V awards since they are working in the same region and have synergistic goals.

The Office of Gulf Coast Restoration has obligated over $13.6 M in research awards through five RFPs since the inception of the program.

Background

On August 20, 2015, the Department of the Treasury issued the Florida Institute of Oceanography its first award for the project titled "Florida RESTORE Act Centers of Excellence Program (FLRACEP)" to solicit and issue sub-awards for Florida Centers of Excellence research grants for the eligible disciplines:

1. Coastal fisheries and wildlife ecosystem research and monitoring in the Gulf Coast Region;
2. Comprehensive observation, monitoring, and mapping of the Gulf of Mexico.

Priority objectives within these eligible disciplines are defined by the FLRACEP Program Management Team (PMT) in each request for proposals (RFP).

In 2015, FLRACEP selected ten research grant projects at eight Florida institutions under RFP I via the peer-reviewed, competitive process detailed in the program Rules and Policies. These projects were completed in 2018 and have resulted in 45 publications to date.

RFP II awarded a two-year pilot award to the University of South Florida, for long-term fisheries monitoring Center of Excellence in 2016. The Center is investigating 'Spawning Habitat and Early-life Linkages to Fisheries' (SHELF) and could potentially span 15 years pending successful program reviews. The first of these reviews was conducted in 2018, which extended the SHELF project through February 2023. The SHELF team, led by Dr. Ernst Peebles, submitted a report on SHELF II in the summer of 2022. A Scientific Review Panel of fisheries experts from across the U.S. assembled in St. Petersburg to review the report and the proposal for SHELF III, under the new leadership of Dr. Chris Stallings (who was a co-investigator on SHELF previously). Based on the Science Review Panel findings and the Program Management Team's assessment, the proposal was awarded an additional 3.5 years of funding to advance technologies used to collect and barcode fish eggs collected throughout the year to improve the understanding of seasonal spawning dynamics and conduct targeted studies, including linking adult abundances to egg production. SHELF III started in February 2023 and will continue through August 2026.

RFP III was announced in January 2019 for $2 million in Centers of Excellence grants across three RA disciplines. As in prior RFPs, disciplines 2 and 5 were eligible, with the addition of RA 1 (Coastal sustainability, restoration and protection, including solutions and technology that allow citizens to live in a safe and sustainable manner in a coastal delta in the Gulf Coast Region). Six funded Centers of Excellence were awarded, with projects completed in 2023 or with a no-cost extension through late 2024, due to impacts of the COVID-19 pandemic. An additional RFP III.5 to develop benthic habitat mapping data integration framework for the west Florida Shelf was funded in 2020 and will be completed in December 2024.

In 2023, FLRACEP awarded over $2.8M in funding to researchers through RFP IV. Each project will focus on understanding the impacts of restoration projects along the Florida Gulf coast. End-user collaborators, required as part of the project team, will work with the researchers from the project's inception to ensure the applicability of the research to future restoration efforts. The recipients started research in the summer or fall of 2023. The program office and new awardees submitted an abstract to the 2024 Gulf of Mexico Conference to discuss the collaborative grants process that included scoping with the other Gulf state Centers of Excellence for potential future synergistic synthesis.

In 2024, FLRACEP released a new request for proposals (RFP V) to fund research, observation, or monitoring technology demonstrations that improve our understanding of De Soto Canyon and connected northeastern West Florida Shelf and escarpment ecosystems. Three to five projects will be selected through a competitive peer-review process of full proposals, with the PMT making final decisions. Up to $4 million is anticipated to be available for these projects, which will be selected in February 2025 and are anticipated to start in April 2025. The projects will be two to three years in length.

In 2025, FLRACEP awarded just over $4.2 M (not including ship time) in funding to researchers through RFP V. Each project will focus on research, observation, or monitoring technology demonstrations that improve our understanding of De Soto Canyon and connected northeastern West Florida Shelf and escarpment ecosystems. Study outcomes include improved understanding of mesophotic coral, vertically-migrating prey, large deep-sea fishes, and the critically endangered Rice's whale habitat and ecosystems. The three-year projects began in late spring/summer 2025 and FIO will facilitate close collaboration between the projects to build synergistic activities and improve the synthesis of results for management applications. The program office and new awardees submitted an abstract to the 2025 Gulf of America Conference to discuss the collaborative grants process that included scoping with the other Gulf state Centers of Excellence for potential future synergistic synthesis. Preparations for the Annual All Hands Meeting and following PMT closed session meeting has begun and is scheduled for January 28-29, 2026. A grant amendment was prepared and executed for additional facilities support in the form of vessel time as well as for extended performance period on the grant (RGMS-RCE020428) to accommodate the RFP V awarded projects beyond their projected end-dates (in anticipation of possible requests for extension) and to close-out the grant. The new requested end date is September 30, 2029. In August there was a change of the Authorizing official and program director for the FLRACEP program. Dr. Nicole Raineault left FIO. Her replacement as Authorizing official was Interim Director Dr. David Naar and the new Program Director is Kristin Erickson. In November a new FIO Director, Michael Kahle, was hired, and became the new AO.

Programmatic Elements

Award Recipient

The Florida Institute of Oceanography (FIO) is an institute within the University of South Florida established by the Florida Board of Governors (BOG). Under a Memorandum of Understanding ratified by the member organizations and approved by the BOG, the University of South Florida (USF) assumes the role of host university, and fiscal accounting functions are administered by USF and overseen by the USF Board of Trustees. FIO was named the Gulf Coast State Entity to administer Florida's RESTORE Act Centers of Excellence Program. The FLRACEP includes the following organizational elements:

PROGRAM OFFICE: FIO serves as the FLRACEP Program Office. The FIO Director is the Principal Investigator (PI) for the FLRACEP Program. As the PI, the FIO Director is responsible for program funds and performance. The FLRACEP's organization includes a Program Director, who reports to the FIO Director and is responsible for programmatic tasks that the Gulf coast state entities must perform. These programmatic responsibilities include coordination of competitive selection process for Florida Center of Excellence grants; developing award terms and conditions, and monitoring performance based on required deliverables and metrics; coordination with other Gulf restoration programs as mandated by the guidelines and RESTORE Act; and monitoring the success of the Centers of Excellence. The Program Director also represents the Florida Centers of Excellence on regional coordination efforts (e.g., NOAA RESTORE Science Program advisory working group, etc.). The FLRACEP Program Office works directly with the FIO Manager of Fiscal and Business to ensure funds are appropriately allocated for use.

PROGRAM MANAGEMENT TEAM (PMT): This is an independent body that provides the FLRACEP guidance and engages in the development of program strategic plan, funding strategies, solicitation reviews, and

funding approval. The PMT includes the FIO Director and other senior-level advisors elected by the PMT members. The PMT were selected based on their knowledge of Florida and Gulf of Mexico regional science, technology, and the FLRACEP program needs. Program Management Team members are not eligible to submit or participate on FLRACEP grants or contracts. The duties of the PMT include developing and approving science concepts to solicit FLRACEP Requests for Proposals, reviewing and ranking Letters of Intent, selecting proposals to receive funding, participating in annual all-hands meetings, and other ad hoc tasks as determined by the PMT Chair and FLRACEP Program Office.

SCIENCE REVIEW PANEL (SRP): The SRP is an ad hoc team responsible for technical review of grant proposals. The SRP is nominated by the FIO Director and approved by the PMT members; the Panel will consist of science and technology experts not involved in any proposals, from in and outside Florida. In the event of a conflict regarding the FIO Director, then the PMT shall select the SRP members.

CENTERS OF EXCELLENCE: FLRACEP establishes Centers of Excellence through a competitive award process to produce outputs and outcomes that address the eligible disciplines. The Requests for Proposals (RFP) and subsequent award terms and conditions define the Principal Investigator and Grantee institution roles and responsibilities. Each Center of Excellence project must produce at least one peer-reviewed journal article at the conclusion of the project.

PARTNERS: Program partners to be engaged both informally and under formal agreements include, but are not limited to: other Gulf coast state entities and their CERGPs; other RESTORE Act components (sections 1603 and 1604); National Fish and Wildlife Foundation Gulf Environmental Benefit Fund; National Academies of Science Gulf Research Program; Natural Resources Damage Assessment and Restoration Program; Gulf of Mexico Research Initiative; North American Wetlands Conservation Act, Gulf Program Fund; Florida Department of Environmental Protection; Florida Fish and Wildlife Conservation Commission; Florida Gulf Coast Counties; and other programs that may be funded by future litigation or settlements.

Award Subrecipients

Current Award Recipients

Grant number RCEGR020005 was awarded in July of 2016. This award funds the long-term RPF II Center of Excellence, as well as seven additional research projects under the RFP III and RFP III.5 solicitation. The award was extended to March 1, 2027 to allow the continuance of the SHELF project. A brief description of all the current sub-recipients is detailed below (status reports are available upon request):

RFP II - Center of Excellence (Continuance awarded 2023)

- **PI Name:** Dr. Christopher Stallings, University of South Florida
  Award Amount: $1,272,357 (additional 66,531 included via amendment for post-hurricane work) over three and a half (3.5) years (research project may be renewed upon scientific review and approval by the Program Management Team).
  Title: Spawning Habitat and Early-Life Linkages to Fisheries (SHELF, phase III)
  Abstract: This project is applying novel approaches to long-term monitoring of fisheries in the eastern Gulf of Mexico. The monitoring program consists of seasonal surveys of planktonic fish eggs that are collected as they drift in the waters of the West Florida Shelf (WFS), offshore of Florida's Gulf Coast. The eggs are identified using DNA barcoding, which is a novel approach. A specific objective of the monitoring effort, in addition to locating important fish spawning areas, is to produce a time series that will detect changes in the amount or location of spawning by individual fish species, and to detect changes in fish-egg community composition over time, such as that brought about by climate change, fishing, or changes in habitat quality. Targeted studies will test the ability to link adult abundances to egg production and further test and refine the methodology.

RFP III - Centers of Excellence – Awarded 2019

- **PI Name:** Dr. Hannah Vander Zanden, University of Florida
  Award Amount: $394,954.52 over three (3) years*
  Status: Project will be completed December 31, 2024
  Title: Tissue Clocks: new methods for ageing and decoding sea turtle life histories
  Abstract: Loggerhead sea turtles were negatively impacted by the Deepwater Horizon Oil Spill in addition to suffering effects from numerous other anthropogenic stressors, such as fisheries bycatch, climate change, and red tide events in U.S. waters of the Gulf of Mexico (GoM). Population models designed to quantify the effects of these stressors, as well as to evaluate the resultant impacts to coastal ecosystems of declining sea turtle recruitment or population size, require accurate estimates of age, growth, longevity, and mortality. Furthermore, there are vast gaps in our knowledge of marine habitats and environments utilized by different loggerhead life stages and the timing of transition between habitats. The project uses novel radio and stable isotope techniques to validate loggerhead sea turtle age and longevity estimates, as well expand the types of long-term trophic records that can be obtained from various loggerhead tissues (e.g., eye lenses, bone, and scutes). Objectives of the study include: 1) evaluating eye lenses as a new method to age sea turtles and track lifetime isotopic histories, 2) characterizing scute growth rates, and 3) developing region-specific population models for the GoM using updated parameters estimated with results of this study. Approaches developed and data generated during this study will have direct conservation benefits to loggerhead sea turtles in the GoM. These approaches will be applicable to the conservation of loggerheads in other global regions, as well as for the study of other sea turtle species around the globe.

* Requested no-cost extensions to initial grant period. Extended NCE date March 31, 2025

Grant number RCEGR020428 was awarded on April 1, 2023. This award supports seven research projects under the RFP IV and RFP V solicitations. The award was extended to September 30, 2029 to allow for additional facilities support in the form of vessel time as well as for extended performance period to accommodate the RFP V awarded projects beyond their projected end-dates (in anticipation of possible requests for extension) and to close-out the grant. A brief description of all the current sub-recipients is detailed below (status reports are available upon request):

RFP IV - Center of Excellence – Awarded in 2023

- **PI Name:** Dr. Cameron Ainsworth, University of South Florida
  Status: Project will be completed in April 2025
  Award Amount: $272,233 over two (2) years
  Title: Estimating combined effects of FL TIG restoration projects in Florida using an end-to-end ecosystem model
  Abstract: The Deepwater Horizon Trustees have so far approved 279 restoration activities Gulf-wide, of which 157 have occurred in Florida. These projects are intended in the aggregate to shepherd the marine ecosystem towards a more desirable state. Yet, this state has not been explicitly defined despite a mature body of study on ecosystem metrics of structure and function. This two-year study will model the cumulative effects of FL TIG-administered restoration projects using an end-to-end ecosystem model GOM Atlantis. This project will be aided by analysis of a spatially expansive monitoring dataset of community composition throughout the entirety of Big Bend seagrass ecosystems. Statistical models will be used to account for fish and invertebrate community effects as a result of restoration of seagrass, oyster, mangrove, macroalgae and salt marsh habitats. A multivariate approach will evaluate the concept of the habitat mosaic in which cooccurrence of different types of habitats has beneficial effects on populations. Results from statistical models will help parameterize fish habitat affinities in Atlantis to help us understand species composition changes in restored habitats.

- **PI Name:** Dr. Jessica Graham, Florida State University-Panama City
  Status: Project will be completed in April 2026
  Award Amount: $1,640,996 over three (3) years

Title: Assessing restoration success and ecosystem services across the Panhandle Region to assist in restoration target setting
Abstract: Large-scale investments into coastal restoration have resulted from penalty funds associated with the 2010 Deepwater Horizon oil spill restoration settlement and disaster area declarations. Florida is also investing sizeable funds to improve community resilience. Many of these investments have supported implementation of Nature-Based Solutions (NBS) including living shorelines. A collaborative team will evaluate the success of living shoreline restoration projects in three estuarine systems across the Florida Panhandle to better inform restoration targets and assess local and regionalized ecosystem services. Partners will monitor and assess existing restoration project performance by combining historical shoreline mapping, existing monitoring data, and newly collected data from existing restoration sites to determine living shoreline restoration success and additional benefits such as nitrogen storage and removal, fish community composition, and economic impact to the local economy. This information will be used by each Estuary Program to highlight benefits of NBS, message both ecological and economic benefits to multiple audiences, and inform best management practices for future coastal restoration in the Florida Panhandle and inform restoration targets.

- **PI Name:** Dr. Brad Rosenheim, University of South Florida
  Status: Project will be completed in April 2026
  Award Amount: $915,424 over three (3) years
  Title: Evaluation of past Florida Gulf Coast mangrove restorations as a basis for future restoration success and resiliency
  Abstract: Mangroves are important ecosystems along the Florida Gulf Coast, providing diverse services related to habitat, surge protection, and carbon sequestration. However, pressure from increasing coastal infrastructure demands restoration of mangroves in areas where they have been removed or degraded. This Center of Excellence will compare restored and natural mangrove systems on the Florida Gulf Coast to determine success and resilience of restored systems on the decadal time scale. The research aims to extend the time frame for evaluating success of a mangrove restoration project from 5 years to decadal time scales to allow assessment of mangrove soil health and vegetative biomass. The establishment of mangrove soil provides stability to the mangrove ecosystem and resilience to pressures related to sea-level rise and coastal development. This study will focus on the identification of optimal elevation, inundation, and nutrient thresholds that maximize the aboveground biomass and carbon sequestration in restored mangrove ecosystems. The team includes restoration practitioners at the Florida Fish and Wildlife Conservation Commission and TerraCarbon LLC to ensure that the research has applied use toward maximizing the success and ecosystem stability of future mangrove restoration projects. The work carries significance not only to immediate and ongoing restoration projects, but also to the study of blue carbon (coastal wetlands) ecosystems worldwide. This project will develop a better understanding of how to restore and manage Florida's.

RFP V - Center of Excellence – Awarded in 2025

Entity: University of South Florida
Principal Investigator: Dr. Yonggang Liu
Date of Award: April 3, 2025
Award amount: $993,306
Length of award: 3 years
Title: Characterizing Rice's Whale Habitat on the Northern West Florida Shelf Using a Moored Array, Ship Transects, Remote Sensing, and Numerical Modeling

Abstract: This project is a collaborative, interdisciplinary effort to address RESTORE Act Disciplines 2 and 5 of FLRACEP RFP V. The northern West Florida Shelf (nWFS) has been largely overlooked for moored observations, and the coastal ocean circulation is poorly known, despite its importance in marine ecosystem studies including the Rice's Whale. In this project, moored and shipboard oceanographic observations are employed together with numerical models and remote sensing to characterize ocean circulation and ecosystem

function and connectivity in critical Rice's Whale habitat on the nWFS, specifically the shelf escarpment and De Soto Canyon region. The moored array consists of two surface and two subsurface moorings, highly leveraging the infrastructure, equipment, and expertise from the existing) Coastal Ocean Monitoring and Prediction System (COMPS) program of the University of South Florida (USF). Time series of key met/ocean variables will be collected and combined with a high resolution numerical model to provide realistic four-dimensional ocean circulation information that can be used to study the connectivity of the ecosystem on the nWFS. One indirect influence in Rice's whale habitat selection is the food availability in the form of phytoplankton and zooplankton abundance, which is strongly controlled by environmental factors. The process-oriented study will focus on the local and remote forcing that drives the complex interactions between oceanographic processes (e.g., mesoscale dynamics) and zooplankton spatiotemporal variations, abundance and distribution on the nWFS to better understand the zooplankton-micronekton trophic link in the study region. The transport pathways of water mass and nutrients will be identified, the distribution of the organisms characterized, and the trophic interactions better understood. The collected oceanographic data will be shared with and can be used by the other FLRACEP projects (SHELF, gliders, marine mammal surveys, passive acoustics).

Entity: University of South Florida
Principal Investigator: Mr. Chad Lembke
Date of Award: April 3, 2025
Award amount: $999,978
Length of award: 3 years

Title: Systematic Observations of Rice's Whales, Their Prey, and the Oceanographic Conditions of the Northeastern Gulf of America

Abstract: We propose to combine moored, shipboard, and unmanned oceanographic systems to systematically monitor and analyze ecosystem level distribution and ecology of the critically endangered Rice's whales in the northeastern Gulf of Mexico. We will focus on filling key knowledge gaps utilizing a combination of traditional and leading-edge methods. This project will also collect essential data on their prey distributions, and threats from anthropogenic activities, particularly vessel strikes.
To systematically monitor for Rice's whales and their prey, our approach integrates monitoring with acoustic techniques across multiple platforms, including a passive acoustic monitoring (PAM) mooring field, shipboard active acoustic surveys, and autonomous underwater gliders (AUGs). For PAM, a proven Rice's whale monitoring tool, we will leverage and support an existing mooring field in the northeastern Gulf, which will record cetacean vocalizations and vessel traffic. In tandem, AUGs equipped with PAM systems will be deployed periodically to expand survey coverage within and beyond the mooring field, collecting real-time data. Active acoustics will be used to map the spatial and temporal dynamics of prey distributions in core habitats that will be correlated to whale presence. Both shipboard surveys and AUGs will use wideband capable echosounders to understand diel prey dynamics throughout the water column. Additionally, we will integrate vessel Automatic Identification System data with anthropogenic sounds detected by the PAM systems to to assess potential real-time methods for reducing vessel strike vulnerability. Collectively, newly collected and legacy data will be analyzed in the context of global and regional circulation models to better understand the physical and biological factors influencing Rice's whale movements and habitat use.
With these data sets related to whale presence, prey distribution, anthropogenic influences, and oceanic drivers, the body of knowledge for understanding Rice's whales will be enhanced with the potential for guiding future management strategies and practices.

Entity: Florida State University
Principal Investigator: Dr. Dean Grubbs
Date of Award: April 3, 2025
Award amount: $1,288,986
Length of award: 3 years

Title: Understanding long-term community structure and population dynamics of large deep-sea fishes from De Soto Canyon to the West Florida Escarpment

Abstract: This project builds on work conducted during 2011-2020 to describe deep-sea communities of large demersal fishes in the DeSoto Canyon region and to examine the scale of effects of the Deepwater Horizon (DWH) oil spill on sentinel species. We used novel techniques to sample larger, mobile deep-water fishes in the northern Gulf of Mexico, including Desoto Canyon and areas adjacent to the Macondo wellhead, at depths of 200 to 2,000m. Nearly 6,000 fishes from 110 species were sampled and examined for spatial and temporal patterns in abundance, polycyclic aromatic hydrocarbon (PAH) metabolism, mercury bioaccumulation, trophic position, and life history parameters that may reflect physiological effects of oil. Data from these efforts suggest effects from exposure were negatively correlated with distance from the wellhead. In some species, effects didn't manifest until three years post-spill; effects reversed in some species but remained persistent and were even increasing in others 8 years after the spill. Longer term data from this project will allow an assessment of recovery 18 years following the DWH spill.

Entity: Florida Atlantic University
Principal Investigator: Dr. Mingshun Jiang
Date of Award: April 3, 2025
Award amount: $999,664
Length of award: 3 years

Title: Influences of Upwelling and Riverine Nutrient Plumes of the Mesophotic Coral Ecosystems of the West Florida Shelf

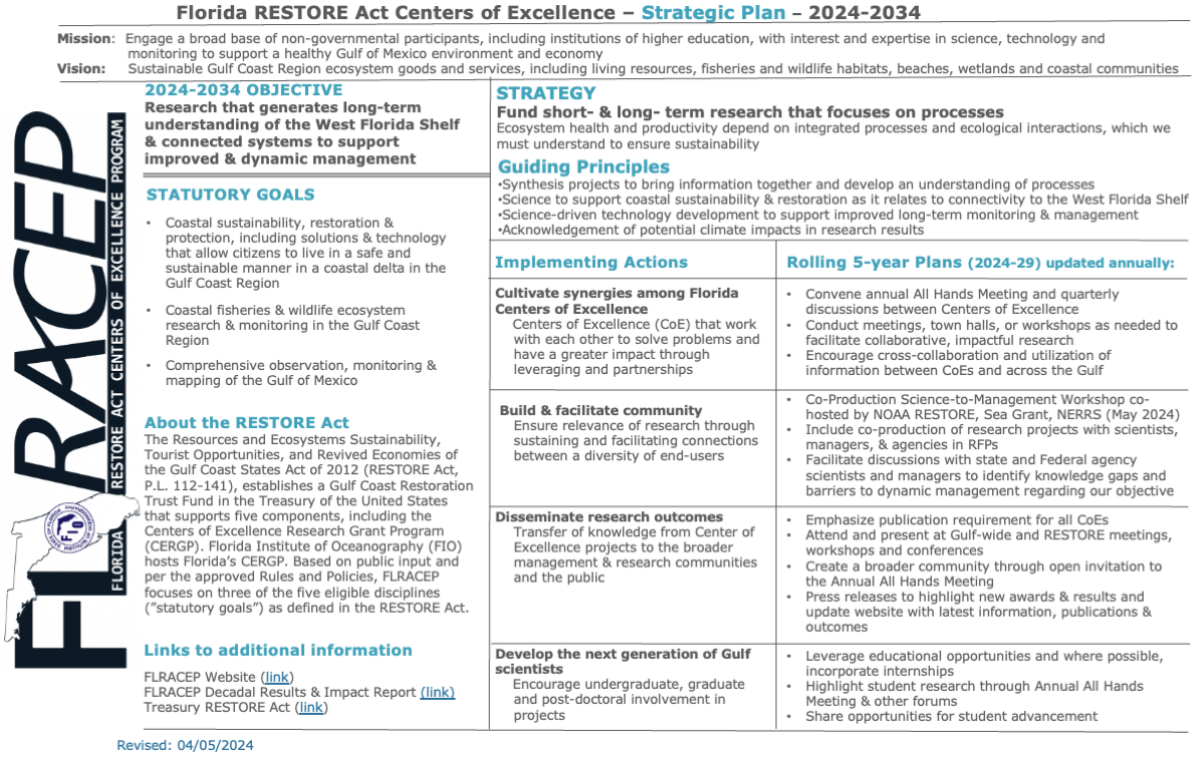
Abstract: Mesophotic coral ecosystems (MCEs) occur in the Gulf of Mexico (GOM) from 30-150m depth and are economically and ecologically important habitats, supporting extensive hard-bottom communities and providing valuable ecosystem services including valuable fisheries. Yet these MCE are understudied in terms of habitat and benthic community characterizations and understanding of drivers and processes influencing their productivity, health, and resilience. Unlike shallow reefs, primary productivity and carbon export are the main food sources for MCEs. Nutrients may come from upwelling from the deep ocean or from terrigenous inputs. On the West Florida Shelf (WFS), upwelling from the De Soto Canyon and the west Florida slope, sediment fluxes, or coastal transport (e.g. Mississippi river plumes) my supply these nutrients to the MCE on the WFS. The drivers and volume of the upwelling and sediment fluxes are not well understood or quantified; however, there are indications that these plumes move seasonally over the northern WFS, potentially providing food to the MCE in this area. In addition, flows from the Apalachicola River also appear to flow over this region in the spring. These potential food flows however, do not reach the MCE on the southern part of the WFS. The overarching goal of our project is to improve our understanding the dynamics and drivers of nutrient supply and sediment flux over the WFS, and their impacts on water column and benthic productivity. We propose a comprehensive multi-disciplinary study that will use preexisting and new information on physical and biological aspects of the WFS ecosystem, combined with physicalgeochemical and connectivity models to address our goal. We will partner with key stakeholders and end-users to disseminate research findings and help improve management decision making and other conservation efforts. This project addresses RESTORE Act discipline 2: coastal fisheries and wildlife ecosystem research and monitoring.

Prior Award Recipients

The PMT previously selected ten research projects to address the coastal fisheries and wildlife ecosystem research and monitoring eligible activity under RFP I for 2-year research grant awards, and one project from an existing Center of Excellence (USF) to address long-term fisheries monitoring as a part of the comprehensive observation, monitoring, and mapping of the Gulf of Mexico eligible activity under RFP II. In addition, one RFP III project was completed in 2023. Three projects from RFP III and one project from RFP III.5 involving wildlife science & framework development were completed in 2024. Final research reports are available upon request. A summary of all of the Centers of Excellence projects, past and ongoing, is available in the "Results and Impacts of the First Decade of the Florida RESTORE Act Centers of Excellence Program" (**DOI: https://zenodo.org/doi/10.5281/zenodo.10735728**).

Strategic Plan

The Florida Centers of Excellence finalized a new 10-year Strategic Plan to support a resilient Gulf environment and economy. The next decade of Centers of Excellence projects will focus on research that generates a long-term understanding of the West Florida Shelf and connected systems to support improved and dynamic management.



Florida RESTORE Act Centers of Excellence – Strategic Plan – 2024-2034

Mission: Engage a broad base of non-governmental participants, including institutions of higher education, with interest and expertise in science, technology and monitoring to support a healthy Gulf of Mexico environment and economy

Vision: Sustainable Gulf Coast Region ecosystem goods and services, including living resources, fisheries and wildlife habitats, beaches, wetlands and coastal communities

FLRACEP — FLORIDA RESTORE ACT CENTERS OF EXCELLENCE PROGRAM

2024-2034 OBJECTIVE

Research that generates long-term understanding of the West Florida Shelf & connected systems to support improved & dynamic management

STATUTORY GOALS

- Coastal sustainability, restoration & protection, including solutions & technology that allow citizens to live in a safe and sustainable manner in a coastal delta in the Gulf Coast Region
- Coastal fisheries & wildlife ecosystem research & monitoring in the Gulf Coast Region
- Comprehensive observation, monitoring & mapping of the Gulf of Mexico

About the RESTORE Act

The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 (RESTORE Act, P.L. 112-141), establishes a Gulf Coast Restoration Trust Fund in the Treasury of the United States that supports five components, including the Centers of Excellence Research Grant Program (CERGP). Florida Institute of Oceanography (FIO) hosts Florida's CERGP. Based on public input and per the approved Rules and Policies, FLRACEP focuses on three of the five eligible disciplines ("statutory goals") as defined in the RESTORE Act.

Links to additional information

FLRACEP Website (link)
FLRACEP Decadal Results & Impact Report (link)
Treasury RESTORE Act (link)

STRATEGY

Fund short- & long- term research that focuses on processes

Ecosystem health and productivity depend on integrated processes and ecological interactions, which we must understand to ensure sustainability

Guiding Principles

- Synthesis projects to bring information together and develop an understanding of processes
- Science to support coastal sustainability & restoration as it relates to connectivity to the West Florida Shelf
- Science-driven technology development to support improved long-term monitoring & management
- Acknowledgement of potential climate impacts in research results

Implementing Actions	Rolling 5-year Plans (2024-29) updated annually:
Cultivate synergies among Florida Centers of Excellence Centers of Excellence (CoE) that work with each other to solve problems and have a greater impact through leveraging and partnerships	• Convene annual All Hands Meeting and quarterly discussions between Centers of Excellence • Conduct meetings, town halls, or workshops as needed to facilitate collaborative, impactful research • Encourage cross-collaboration and utilization of information between CoEs and across the Gulf
Build & facilitate community Ensure relevance of research through sustaining and facilitating connections between a diversity of end-users	• Co-Production Science-to-Management Workshop co-hosted by NOAA RESTORE, Sea Grant, NERRS (May 2024) • Include co-production of research projects with scientists, managers, & agencies in RFPs • Facilitate discussions with state and Federal agency scientists and managers to identify knowledge gaps and barriers to dynamic management regarding our objective
Disseminate research outcomes Transfer of knowledge from Center of Excellence projects to the broader management & research communities and the public	• Emphasize publication requirement for all CoEs • Attend and present at Gulf-wide and RESTORE meetings, workshops and conferences • Create a broader community through open invitation to the Annual All Hands Meeting • Press releases to highlight new awards & results and update website with latest information, publications & outcomes
Develop the next generation of Gulf scientists Encourage undergraduate, graduate and post-doctoral involvement in projects	• Leverage educational opportunities and where possible, incorporate internships • Highlight student research through Annual All Hands Meeting & other forums • Share opportunities for student advancement

Revised: 04/05/2024

Publications

The Florida Centers of Excellence have produced 57 publications to date. The following one (3) new publication was reported from the Centers of Excellence in 2025:

Ainsworth, C.H., Repeta, H.C. and Scott, R.L. (2025), You Can't Reach the Lost Valley by Boat: Navigating Bottom-Up Restoration Pathways. Fish Fish. https://doi.org/10.1111/faf.12897

Keel, K., M. Kerr, L.Y. Lui, Y. Lui, J.P. Kilborn, G. Zapfe, E.B. Peebles, C.D. Stallings, M. Breitbart. 2025. Spatial and Temporal Heterogeneity of Fish Spawning Dynamics on the West Florida Shelf During Fall. Fisheries Oceanography. https://doi.org/10.1111/fog.12731

Phillips K.F., N.F. Putman, K.L. Mansfield. 2025. New insights on sea turtle behaviour during the 'lost years'. Proceedings of the Royal Society B (2025) 292: 20242367. https://doi.org/10.1098/rspb.2024.2367

Financial Elements

Award Recipient

Budget Narrative – Award RCEGR02005: Treasury's award in February of 2019 totaling $1,951,733 for the 2019-2023 performance period included $750,000 to fund the second phase of the University of South Florida (USF) SHELF Center of Excellence. In 2019, FLRACEP requested two additional amendments with funds to support the six research projects under RFP III and one project under RFP III.5 and extended the performance

period to January 31, 2024. The total amount of funds FLRACEP requested from Treasury was $4,458,072.88. In April 2023, FLRACEP requested an additional amendment to fund SHELF III and extend the performance period to March 1, 2027, for a new total award amount of $5,663,898.88.

In calendar year 2025, a total of $533,609.16 was expended, leading to a year-to-date total expenditure of $4,938,350.70 for award RCEGR020005.

	Amended Award Budget RCEGR020005-01-04	**Amount Expended in CY 2025 (a/o 11/19/25)**	**Amount Expended Life of Project**
Categories			
Salaries and Fringe	$ 707,183.00	$ 68,836.14	$ 815,476.45
Food and Beverage	$ 5,050.00	$ 0.00	$ 2,579.17
Expense – Other	$ 337,210.00	$ 0.00	$ 189,534.86
Travel (Domestic)	$ 67,740.00	$ 1,367.51	$ 28,292.56
Telephone/Telecom	$ 3,100.00	$ 0.00	$ 0.00
Computers	$ 2,300.00	$ 0.00	$ 2,480.98
Other	$ 43,037.96	$ 0.00	$ 0.00
Contractual (subawards)	$ 4,347,872.23	$ 432,942.38	$ 3,641,732.06
Total Direct Costs	**$ 5,513,493.19**	**$ 503,136.03**	**$ 4,680,096.08**
Indirect Costs	$ 150,405.69	$ 30,473.13	$ 258,254.62
Total Budget/Expense	**$ 5,663,898.88**	**$ 533,609.16**	**$ 4,938,350.70**

Budget Narrative – Award RCEGR020428: Treasury's award in April of 2023 totaling $6,310,096.00 for the 2023-2028 performance period included $2,828,653 to fund three new projects under RFP IV and allocated $2,000,000 for Centers of Excellence use of FIO research vessels and/or Keys Marine Lab facilities in Layton, Florida. In 2025, there were two amendments funded - RCEGR020428-01-01 in April adding $4,565,000 for awards under RFP V and RCEGR020428-01-02 in September adding $4,873,948 for ship time support to PIs under SHELF III and RFP V. These amendments have increased the total award amount to $15,749,044.

In calendar year 2025, a total of $1,952,603.81 was expended, leading to a year-to-date total expenditure of $2,747,261.51 for award RCEGR020428.

	Amended Award Budget RCEGR020428-01-02	**Amount Expended in CY 2025 (a/o 11/19/25)**	**Amount Expended Life of Project**
Categories			
Salaries and Fringe	$ 829,690.00	$ 134,796.28	$ 257,874.76
Food and Beverage	$ 5,000.00	$ 0.00	$ 2,578.33
Expense – Other	$ 269,895.00	$ 19,500.00	$ 43,701.50
Travel (Domestic)	$ 90,500.00	$ 0.00	$ 1,822.17
Telephone/Telecom	$ 0.00	$ 0.00	$ 0.00
Computers	$ 0.00	$ 0.00	$ 0.00
Other	$ 7,026,448.00	$ 558,650.00	$ 725,955.00
Contractual (subawards)	$ 6,828,653.00	$ 962,205.87	$ 1,535,112.22
Total Direct Costs	**$ 15,050,186.00**	**$ 1,842,457.15**	**$ 2,567,043.98**
Indirect Costs	$ 698,858.00	$ 110,146.66	$ 180,217.53
Total Budget/Expense	**$ 15,749,044.00**	**$ 1,952,603.81**	**$ 2,747,261.51**

Gulf Coast Ecosystem Restoration Council Element

Leveraging Multipliers

No FLRACEP projects or elements have leveraged RESTORE Act funding streams to the best of our knowledge, due in part to the differences in priority areas, timing of projects, and areas of focus. FLRACEP staff continue to work with other restoration science funding entities to explore opportunities for collaboration and leveraging.

This report will be made available on: https://florida-restore-act-centers-of-excellence-program-fio-maps.hub.arcgis.com/pages/publications-and-reports