FLORIDA RESTORE ACT CENTERS OF EXCELLENCE PROGRAM

2023 Annual RESTORE Council Report

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Executive Summary

The primary foci for the Florida RESTORE Act Centers of Excellence Program (FLRACEP) in 2023 were to conduct a strategic planning effort and award three new Centers of Excellence from a new Treasury grant. This year also marked the original end-dates for the request for proposals (RFP) III projects, but due to pandemic impacts, most of these will be completed under no-cost extensions in 2024.

Florida Institute of Oceanography (FIO) (grant administrators) and the Program Management Team established milestones towards a new strategic plan. The first milestone was to assess the results and impact of past Florida Centers of Excellence. Each of the 21 projects, which includes completed, in-progress, and just awarded grants, wrote summaries that identified the major results, impact, and additional knowledge gaps for their projects. These are being assembled with relevant metrics in a "Results and Impacts of the First Decade of the Florida RESTORE Act Centers of Excellence Program," for publication in January 2024. This accounting and review of results is an important step towards identifying the areas of research and approaches for the next 5-10 years for the program. In addition, external consultant, Richard Batiuk, from CoastWise Partners, solicited feedback from individual Program Management Team members through a guided conversation, to learn more about their perspectives on FLRACEP and future directions. The summary includes twelve key findings that will be presented to the Program Management Team and FIO for further discussion in January 2024.

The Annual All Hands Meeting in January 2023 took place at the Poynter Institute 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 reporting on research progress. The meeting also included a discussion of research needs for Florida Bay, GRIIDC data management and archiving training, and shared meals for networking and discussions.

FIO submitted a budget amendment for their current grant in late 2022 and an application for a new award to cover RFP IV and future grant awards and administrative costs. In spring 2023, FLRACEP received a new Treasury award that includes the restoration science grants awarded to three research teams that include end-users in all phases of the project. In addition, Treasury approved an amendment for the continuation of the long-term fisheries monitoring and technology development Center of Excellence, "Spawning Habitat and Early-life Linkages to Fisheries" (SHELF).

FIO continued financial and administrative support and oversight for FLRACEP. In addition, a Program Coordinator, Ms. Kristie Erickson, started working for FIO in early January 2023. She is assisting with FLRACEP, including work on a new website, which will be available in early 2024. Staff continued to monitor RFP II, III, and III.5 and drafted and executed the new sub-agreements for RFP IV.

The Office of Gulf Coast Restoration has obligated over $10.83 M in research awards through five RFPs since the inception of the program. We look forward to sharing the decadal review publication in January and finalizing a strategic plan in early 2024.

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 institution 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 to 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 July 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.

Programmatic Elements

Award Recipient

The Florida Institute of Oceanography (FIO) is an Academic Infrastructure Support Organization (AISO) of the State of 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 name 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 Chief Scientist, 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 Chief Scientist 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 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: $1,205,826 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. Randy Wells, Mote Marine Laboratory
  Status: Project will be completed in December 2024
  Award Amount: $364,432 over three (3) years*
  Title: Health and movements of Florida's Gulf dolphins
  Abstract: This project will address important research gaps regarding movement patterns, habitat use, and health for the two dolphin species that regularly inhabit the coastal and/or shelf waters off Florida's west coast, bottlenose (*Tursiops truncatus*) and Atlantic spotted (*Stenella frontalis*). The researchers are conducting capture-release health assessments to establish baselines and serve as the basis for comparison to inshore dolphins to assess health status. Capture will provide opportunities for collection of samples for genetic, environmental contaminant, and diet analyses, as well as for attaching satellite-linked time-depth-recording tags. These tags will provide information on ranging and habitat use patterns, along with dive patterns relative to health. Relationships between dive patterns and health will be investigated as potential behavioral proxies for assessing health of dolphins tagged without capture. Continuation of a long-term collaborative photo-identification matching system and repository, GoMDIS, will facilitate identification of sources of stranded dolphins, and range shifts in response to environmental changes. Findings will be provided to NMFS Southeast Fisheries Science Center, Southeast Regional Office, and Marine Mammal Health and Stranding Response Program, for consideration for management action, and for incorporation into their congressionally mandated Marine Mammal Stock Assessment Report

- **PI Name:** Ms. Kelly Sloan, Sanibel Captiva Conservation Foundation
  Status: Project will be completed in April 2024
  Award Amount: $233,334.34 over three (3) years
  Title: After the Tide: Characterizing the Sublethal Effects of a Catastrophic Red Tide in Nesting Sea Turtles

Abstract: Blooms of toxic algae occur almost annually in the Gulf of Mexico and pose a significant and persistent threat to sea turtles and other marine life. These blooms start naturally in the Gulf but are fed and perpetuated by harmfully high nutrients in the water washing into the Gulf from anthropogenic sources on land. Eutrophication of our waterways is a serious concern and stabilizing the oceanic habitat is critically important in the conservation of many vulnerable species. The bloom that started in October 2017 and ended in early 2019 was so severe that it resulted in the largest number of sea turtle deaths ever attributed to a single red tide event. The mass mortality of sea turtles associated with this event clearly demonstrates the acute impacts of brevetoxicosis. The project is empirically investigating the effects of this bloom on the health and reproductive success of nesting sea turtles. In addition to learning more about the insidious effects of red tide blooms on sea turtles, the data will be used to raise awareness and inform policies that promote heightened water quality standards and healthier oceans.

- **PI Name:** Dr. Hannah Vander Zanden, <u>University Florida</u>
  Award Amount: $395,365 over three (3) years*
  Status: Project will be completed in December 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.

- **PI Name:** Dr. Matthew Deitch, <u>University Florida</u>
  Award Amount: $499,997 over three (3) years*
  Status: Project will be completed in March 2024
  Title: Predicting benefits in Panhandle Estuary Systems: A partnership to quantify impacts, stressors, and outcomes using Adaptive Management Frameworks.
  Abstract: The project supports county staff, local conservation groups, and other stakeholder collaborators in the St. Andrew, St. Joseph, Choctawhatchee, Pensacola, and Perdido Bays to work together to develop Estuary Programs following the USEPA National Estuary Program model. The goal of each Program is to develop a strategy to protect and restore estuaries through management or restoration actions that reduce anthropogenic impacts on these systems. This project will enhance and build on existing partnerships between local academic researchers with expertise in watershed science and estuary science and local Estuary Program developers. These partnerships will provide meaningful scientific input and rigor in identifying and implementing methods to assess impacts and stressors in each system. Project outputs include conceptual models and adaptive management frameworks intended for use in Comprehensive Conservation and Management Plans (CCMPs); and collaborative efforts (e.g., outreach materials, grant proposals) to support long-term Estuary Program goals.

- **PI Name:** Dr. Katherine Mansfield, <u>University of Central Florida</u>
  Award Amount: $339,867 over three (3) years
  Status: Project will be completed February 2024

Title: Understanding genomic, behavioral, and microbial drivers of ontogenetic shifts in early sea turtle foraging ecology and habitat use.
Abstract: The research uses novel technology and approaches to understand early sea turtle habitat use, ecology, and underlying drivers by which young turtles recruit from offshore into West Florida coastal waters in the Gulf of Mexico. This group's prior work shows oceanic turtles from the Shelf exhibit plasticity in habitat selection and global gene expression profiles, which likely accompany plasticity in foraging and gut microbiota. Researchers are determining what the underlying drivers of these shifts through finer-scale genetic characterizations and by establishing a framework for understanding gene-by-environment interactions to better quantify management needs for these protected species.

- **PI Name:** Dr. Cameron Ainsworth, <u>University of South Florida</u>
  Award Amount: $308,279 over two (2) years*
  Status: Project completed in March 2023
  Title: Using ecosystem modeling to understand the impacts of seagrass restoration and red tides on sea turtles, marine mammals and seabirds of the West Florida Shelf.
  Abstract: The project utilized an end-to-end ecosystem model, Atlantis-GOM, to evaluate the ecosystem effects of seagrass coverage under different possible futures of toxic and non-toxic algal bloom frequency and severity in the West Florida Shelf region and the Gulf of Mexico Large Marine Ecosystem. The research assessed both the direct and indirect impacts of seagrass coverage that may manifest through changes in the available amount or quality of prey or through changes in predation risks. The Atlantis-GOM ecosystem model permits a spatial analysis of the ecosystem effects of seagrass coverage and algal blooms within the following broad spatial domains: the Big Bend, the Tampa/Charlotte Harbor area, Southeastern Florida, and the Florida Keys. The spatial distributions of the focal marine mammal, seabird and sea turtle species and species groups, as well as those of their prey and competitors, were represented. The majority of these spatial distributions were provided by a previous Florida RESTORE Act Centers of Excellence Program (FLRACEP) project, which used statistical models to predict distributions based on environmental variables. The outputs of the proposed project will benefit State and Federal end users who manage protected species and habitats. Outputs can help determine the scale of seagrass restoration required to offset negative impacts of increasing algal blooms on mammals, seabirds, and sea turtle populations.

* Requested no-cost extensions to initial grant period.

RFP III.5 - Center of Excellence – Awarded 2020
- **PI Name:** Dr. Anna Braswell, University Florida
  Status: Project will be completed in July 2024
  Award Amount: $349,722.89 over three (3) years*
  Title: Developing a Standardized Framework for Data Integration and Distribution on the West Florida Shelf.
  Abstract: Despite past and ongoing efforts from regional, state, and federal governments to study Florida's marine ecosystems and resources and repeated calls for a standardized approach to map them, there is currently no general framework for guiding research, management, and conservation of benthic resources in Florida. There is a critical need to have a descriptive, spatially-explicit cyberinfrastructure representing Florida's seafloor environments at multiple scales that can serve management, conservation, and research efforts, and that aligns with existing national and international efforts. To build such cyberinfrastructure, we need to reach community agreement on a framework to support effective and dynamic aggregation of current and future seafloor mapping data. This Center of Excellence is managing efforts to: (1) review existing and successful frameworks for marine data integration and distribution around the world, (2) review existing standards, protocols, and guidelines for data collection, integration, and distribution, (3) get community agreement on the structure of a framework for data integration and distribution on the West Florida Shelf, and (4) build tools to support the chosen framework. Three workshops will be organized to get community input. The tools will be open-source, compatible with

existing national and international frameworks, and adhere to FAIR (Findable, Accessible, Interoperable, Reusable) principles.

*Requested a no-cost extension on initial grant period.

RFP IV - Center of Excellence – Awarded in 2023

- **PI Name:** Dr. Cameron Ainsworth, University of South Florida
  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
  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
  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.

Prior Award Recipients

The PMT previously selected ten research projects to address the Coastal Fish and Wildlife 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. Final research reports are available upon request.

Publications

The Florida Centers of Excellence have produced 53 publications to date. The following eight (8) publications were newly reported from the RFP I, II, and III Centers of Excellence in 2023:

Breitbart, M., M. Kerr, M.J. Schram, I. Williams, G. Koziol, E. Peebles, C.D. Stallings, 2023. Evaluation of DNA metabarcoding for identifying fish eggs: a case study on the West Florida Shelf. PeerJ. DOI: 10.77/peerj.15016.

Croteau, A.C., H.N. Gancel, T.G. Gebremicael, J.M. Caffrey, M.J. Deitch, 2023. Implications of changing trends in hydroclimatic and water quality parameters on estuarine habitats in the Gulf Coastal Plain, Frontiers in Ecology and Evolution. 11. https://doi.org/10.3389/fevo.2023.1167767.

Finucci, B., C.F. Cotton, R.D. Grubbs, K.K. Bineesh, and T. Moura, 2022. Chapter 19: Deepwater Chondrichthyans. In Carrier, J.C., C.A. Simpfendorfer, M.R. Heithaus, and K.E. Yopak, Biology of sharks and their relatives, 3rd edition, p. 603-634. CRC Press.

Pfleger, M., R.D. Grubbs, C.F. Cotton, and T.S. Daly-Engel, 2018. Squalus clarkae, sp. nov., a new dogfish shark from the northwest Atlantic and Gulf of Mexico, with comments on the S. mitsukurii species complex. Zootaxa, 4444 (2), p. 101–119. DOI: https://doi.org/10.11646/zootaxa.4444.2.1.

Phillips, K.F, 2022. Juvenile dispersal and genetic connectivity in the sea turtle 'lost years'. Ph.D. Dissertation. University of Central Florida, Department of Biology. Orlando, FL. https://stars.library.ucf.edu/etd2020/1428

Schwarzmann, D., Smith, S.G., Ault, J.S., Leeworthy, V. 2023. Bioeconomics of Florida Recreational Fisheries to Estimate Willingness to Pay for Bag and Size Limits of Spotted Seatrout. Water, 15, 1696. DOI: https://doi.org/10.3390/w15091696.

White, A.L., W.F. Patterson III, and K.M. Boswell, 2022. Distribution of acoustic fish backscatter associated with natural and artificial reefs in the Northeastern Gulf of Mexico. Fisheries Research, 248, p.106199. DOI: https://doi.org/10.1016/j.fishres.2021.106199.

White, A.L., Spring 2023. Spatial distribution of reef-associated fish in the northeastern Gulf of Mexico: an active acoustics approach. Dissertation. Florida International University.

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 2023, a total of $1,238,627.37 was expended, leading to a year-to-date total expenditure of $3,641,668.40 for award RCEGR020005.

	Amended Award Budget RCEGR020005-01-04	Amount Expended in CY 2023 (a/o 11/28/23)	Amount Expended Life of Project
Categories			
Salaries and Fringe	$ 707,183.00	$ 166,886.99	$ 601,495.55
Food and Beverage	$ 5,050.00	$ 2,579.17	$ 2,579.17
Expense – Other	$ 337,210.00	$ 138,800.86	$ 184,534.86
Travel (Domestic)	$ 67,740.00	$ 7,879.56	$ 25,545.28
Telephone/Telecom	$ 3,100.00	$ -	$ -
Computers	$ 2,300.00	$ 2,480.98	$ 2,480.98
Other	$ 43,037.96	$ -	$ -
Contractual (subawards)	$ 4,347,872.23	$ 888,136.83	$ 2,728,367.63
Total Direct Costs	**$ 5,513,493.19**	**$ 1,206,764.39**	**$ 3,545,003.47**
Indirect Costs	$ 150,405.69	$ 31,862.98	$ 96,664.93
Total Budget/Expense	**$ 5,663,898.88**	**$ 1,238,627.37**	**$ 3,641,668.40**

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. FLRACEP plans to submit future amendments under this project to support planned RFP V, as well as future RFPs through 2028.

In calendar year 2023, a total of $161,003.88 was expended.

	Amended Award Budget RCEGR020428-01-00	Amount Expended in CY 2023 (a/o 11/28/23)	Amount Expended Life of Project
Categories			
Salaries and Fringe	$ 829,690.00	$ -	$ -
Food and Beverage	$ 7,500.00	$ -	$ -
Expense – Other	$ 269,895.00	$ -	$ -
Travel (Domestic)	$ 90,500.00	$ -	$ -
Telephone/Telecom	$ -	$ -	$ -
Computers	$ -	$ -	$ -

Other	$	2,000,000.00	$	-	$	-
Contractual (subawards)	$	2,828,653.00	$	146,138.01	$	146,138.01
Total Direct Costs	**$**	**6,026,238.00**	**$**	**146,138.01**	**$**	**146,138.01**
Indirect Costs	$	283,858.00	$	14,865.87	$	14,865.87
Total Budget/Expense	**$**	**6,310,096.00**	**$**	**161,003.88**	**$**	**161,003.88**

Award Subrecipient(s)

As COVID-19 restrictions have been lifted, the Centers of Excellence have started or resumed research project activities. In total, the Centers have expended $1,399,631.25 in calendar year 2023. Due to the impacts that the COVID-19 pandemic had on research and project delays, many Centers of Excellence have requested no-cost extensions to ensure completion of their research projects. These extensions have been granted by the Program Management Team and the FLRACEP received the approval for these no-cost extensions in April 2023.

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://www.fio.usf.edu/research-programs/centers-of-excellence-program/