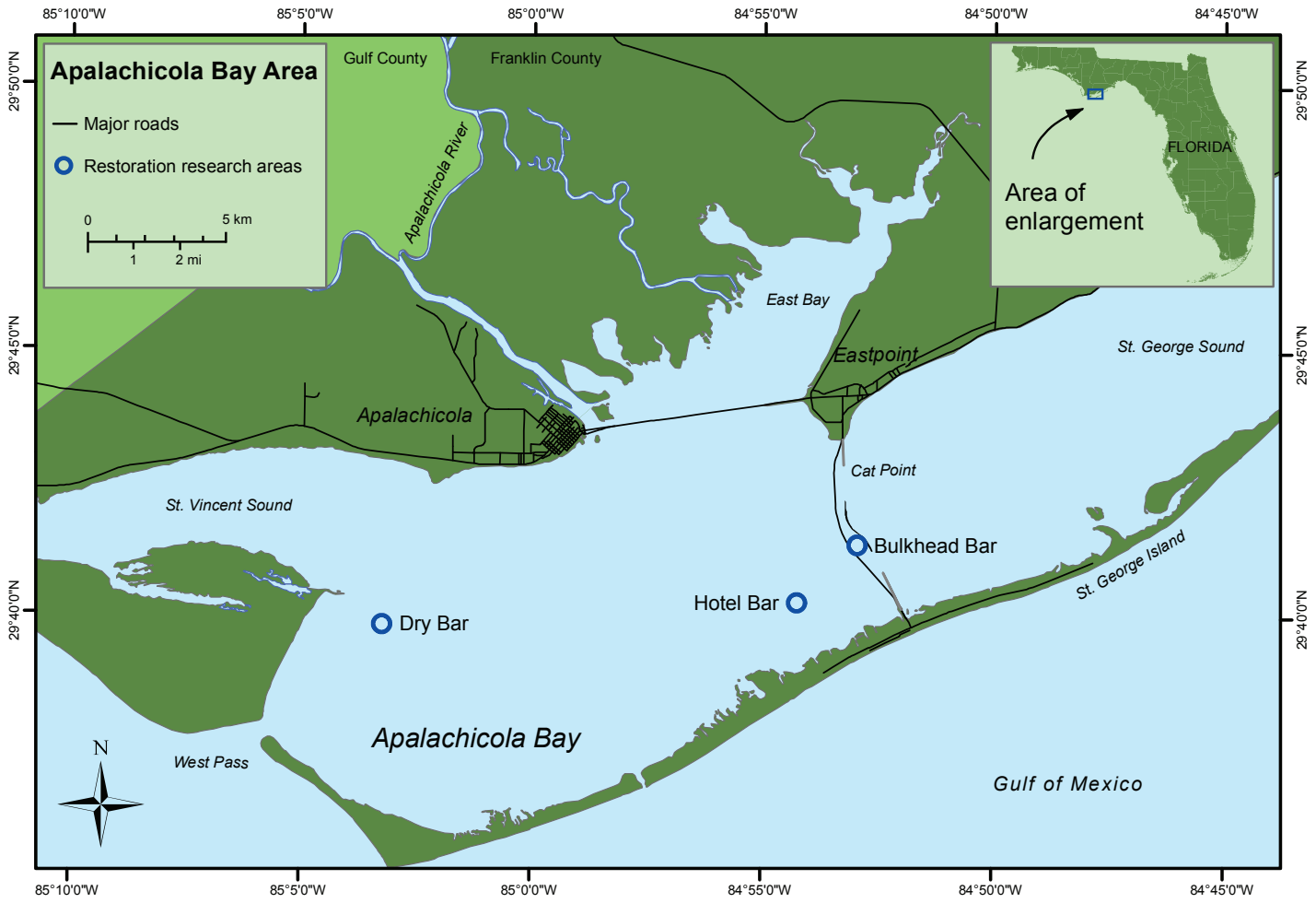

Map of Apalachicola Bay, Fla., showing locations of experimental oyster reef areas for this project. These reef areas are monitored to collect information that will optimize future restoration and management efforts in the bay. (Florida Sea Grant figure)

Oyster Restoration Research in Apalachicola Bay

The University of Florida Oyster Recovery Team conducted research to identify factors affecting recovery of the Apalachicola Bay oyster fishery after its catastrophic collapse in fall 2012. Adequate freshwater flow from the Apalachicola River into the bay was identified as a primary driver that helps to maintain the mid-range salinity levels that foster oyster growth and productivity, and deter predators, pathogens and parasites. Also critical to sustaining the oyster resource is:

(a) The physical stability of oyster reefs over time in order to provide needed substrate for oyster larvae to settle on as spat and grow into adult oysters, and

(b) Sustainable harvesting practices.

The recovery team's report also indicated that reshelling of 1,000 acres of reef with substantially limited harvest would be required to stabilize and begin to reestablish the reefs.

The goal of this research project is to optimize restoration and management approaches to support the seafood industry in the long term.

The Research Approach

This project examines effects of using different amounts of "planted shell" substrate to restore historical reefs in the three areas of the bay representing summer and winter bars. There are three 10-acre reef areas. Each area has five experimental plots planted with 0, 100, 200, 300, or 400 cubic

yards of fossil shell per acre, for a total of fifteen 2-acre plots. The purpose is to identify optimal and cost-effective shell substrate density for future large-scale restoration projects.

The experimental reefs areas are located within portions of Dry Bar, at Hotel Bar, and Bulkhead (see map), and are less than half of 1% of the public oyster bars in Apalachicola Bay. Shell planting densities are being evaluated at each location.

It's a Partnership

This project, supported by the National Fish and Wildlife Foundation, is a collaborative effort among state management agencies and UF, with input and support from the seafood worker community. Project partners include the Florida Fish and Wildlife Conservation Commission (FWC; project lead), Florida Department of Agriculture and Consumer Services (FDACS), Florida Sea Grant (FSG), the Department of Environmental and Global Health through the University of Florida College of Public Health and Health Professions (UF/EGH), and the UF Institute of Food and Agricultural Sciences (UF/IFAS).

FWC will assess oyster density and size structure, and the number of predators (for example, crabs and oyster drills) present on the experimental reefs. FDACS will provide oversight and deployment of the reefs at the start of the experiment. UF/EGH will examine oyster health and condition, and water quality data. UF/IFAS will conduct community outreach. Florida Sea Grant will manage the UF portions of the project and coordinate communications.

Expected Outcomes

We expect to find the optimal density of planted oyster shells for successful reef restoration. This is important because there is a limited amount of shell material available for large-scale restoration projects, even considering both recently harvested or "green" shells, and fossilized shells.

The project team will hold biannual community meetings in Apalachicola to share project findings and updates, and discuss outcomes relative to the restoration and management of the oyster resource. Project outreach will also include updates to SMARRT (Seafood Management Assistance Resource and Recovery Team) and the Franklin County Seafood Workers Association.

Ultimately results of this work support the concept of a co-management of the resource, where best science is used to inform decisions, and where community input is included in decision-making.

Community Support is Important

For a project of this duration and scale to be successful, support from the seafood worker community is essential. The experimental reefs will be closed during this project period, and should not be harvested or disturbed. Actions that jeopardize the project will impact desired outcomes, learning opportunities, and the potential for supporting future large-scale restoration needed to support the future of the oyster industry in Apalachicola Bay.

Learn more at http://franklin.ifas.ufl.edu

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http://www.nfwf.org/

Who can you contact for information? The following people are part of the project research team and can be contacted about this project.

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