

Project Name: Oyster Reef Restoration in the Suwannee Sound Region

Organization: Florida Department of Agriculture and Consumer Services

Project Narrative: Productive oyster reefs in the Suwannee Sound play an essential role in sustaining ecological relationships within the estuarine ecosystem, as well as the Gulf of Mexico (GOM). Beyond the fact that oysters and oyster reef communities represent important food sources for many species of commercially important fish and invertebrates, functioning oyster reefs are also recognized as critical structural and community components which stabilize and sustain a broad array of ecological relationships. When oysters, oyster reef habitat, and oyster population dynamics are injured, impaired or damaged, the result can be widespread throughout broader ecosystems and extend beyond local geographical boundaries. Many commercially valuable, recreationally important, and ecologically critical species within the GOM depend upon or spend a portion of their life cycles associated with oyster reef communities. Because of this complexity of food webs and life cycles, restoring functioning oyster communities is the cornerstone for any broad-scope aquatic resource restoration plan and a prudent management decision. This project will replace substrate, re-seed oyster populations and re-establish reef infrastructure using a combination of proven techniques to rehabilitate subtidal and intertidal oyster reef habitat in the Suwannee Sound region in Levy and Dixie Counties, Florida. Placing substrate or "cultch" in bays where natural reproduction occurs, and re-seeding oyster population with juvenile stocks from natural sources are among the most effective techniques used throughout the GOM to 1) create reef infrastructure, 2) stimulate spat setting, 3) sustain oyster fisheries, 4) enhance community functions, 5) increase natural productivity and 6) accelerate the recovery process. The Florida Department of Agriculture and Consumer Services (DACS) has been involved in rehabilitating oyster reefs for more than sixty years and provides a multi-dimensional approach built on decades of experience. DACS has the equipment, staff and expertise to obtain, stockpile, transport and deposit suitable substrate materials (processed shell) and to locate and transplant native seed stocks to successfully restore the structure and function of debilitated oyster reefs.



DACS has a history of completing restoration projects following devastating natural disasters, such as hurricanes, floods and droughts {Management of Oyster Resources in Apalachicola Bay Following Hurricane Elena, *Journal of Shellfish Research*. (1988); Biological and Economic Assessment of an Oyster Resource Development Project in Apalachicola Bay, Florida, *Journal of*

Shellfish Research (1990); and Final Report - Restoration of Oyster Reefs Impacted by Hurricanes (2008)}. DACS is uniquely positioned to provide a single operational unit, with the infrastructure in place to effectively complete oyster reef construction projects; is currently engaged in multi-faceted programs to restore oyster habitat in numerous Florida estuaries; and manages a network of contractors with the knowledge, skills, ability and equipment to work effectively. This experience ensures that all critical components, including biological, environmental, hydrological, physical, logistical and operational parameters are considered.



Restoring the foundation and structural integrity of estuarine habitat should be a priority and a critical piece of the GOM restoration strategy. Restoring oyster habitat acts as an essential building block to offset the potentially injurious impacts from petroleum-based pollutants on estuarine and marine trophic systems. Rebuilding oyster reef infrastructure contributes to a “bottom up approach” to repairing injured, impaired and damaged natural resources along Florida’s Gulf Coast. Improved habitat will form the foundation for oysters, as an engineering species, to contribute to wide reaching fishery and ecological benefits throughout estuarine, coastal and open Gulf ecosystems. Economic benefits are realized through harvesting, processing, and marketing fishery products and felt locally and regionally by all who enjoy high-quality, wholesome Florida seafood; depend upon commercial fisheries for employment and income; and recreate in Florida’s waters. Ecological benefits are realized through an array of ecological services in the form of increased fishery and wildlife habitat; increased biodiversity and trophic dynamics; increased filtering capacity to improve water quality and recycle nutrients; and increased structural stability to reduce coastal erosion and to protect near shore resources.

Projected Restoration Sites in Suwannee Sound Region

Reef Names: **Big Suwannee Reef (Great Suwannee Reef)**
Little Suwannee Reef (Lone Cabbage Reef)

Reef Description: The Suwannee Reef complex is the prominent topographic feature in Suwannee Sound and includes numerous subtidal and intertidal oyster reefs, sandy shoals, and mud flats. Restoration sites include the remaining reef structure and severely debilitated portions of the extant reef.

GPS Coordinates: 29:13.68N / 83:05.50W

Proposed Restoration Area / Water depth 100 acres / 2-6'

Cultch Material: Natural and fossil shell

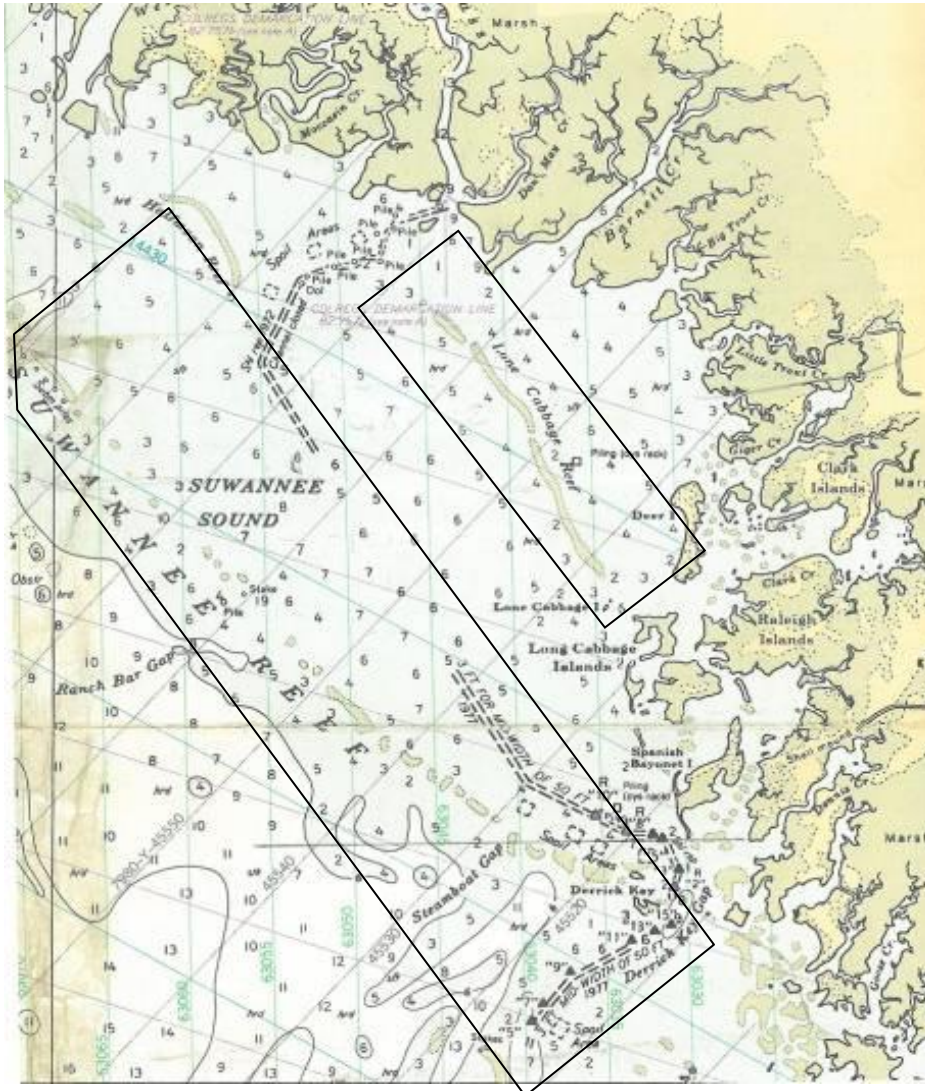
Cultch Deposition Method: Crane, dredge and high pressure water jets

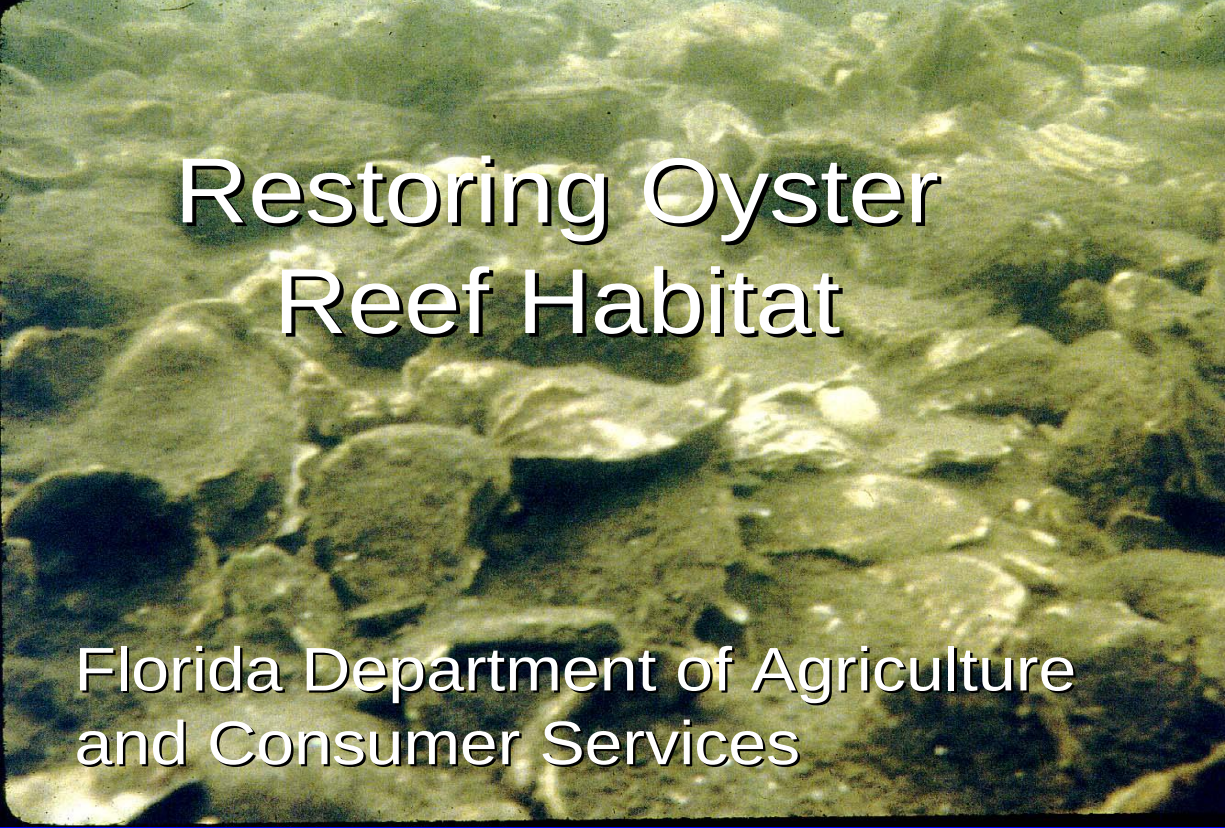
Deposition rate: Variable

Re-seeding (Harvest and transplant)	Live oysters (500,000 bushels)
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Duration of operations	5 years
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Map showing restoration areas on the Suwannee Reef and Lone Cabbage Reef in Levy County, Florida





Restoring Oyster Reef Habitat

Florida Department of Agriculture
and Consumer Services