



## Big Mar Wetland Forest Restoration



**Restore the Earth Foundation, Inc. (REF)**, partnering with the **USDA Natural Resource Conservation Service (NRCS)** & the **Lake Pontchartrain Foundation (LPBF)** has been implementing the reforestation of native bald cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatic*) on **newly created land at Big Mar**, non industrial private land, at the Caernarvon diversion site, Louisiana, maximizing social return on restoration investment related to climate. This project has engaged **volunteers from across the US** at this challenging site which supports biodiversity and enhances community benefits in the Mississippi Delta region of coastal Louisiana.

This critical 500 acre site of wetland forest restoration is south of New Orleans, and is part of the 10,000 square mile Lake Pontchartrain Basin, which includes the largest urban areas in the state, many rural communities and vast expanses of degraded marsh and forests. This region is strongly influenced by forces affecting the Gulf of Mexico, including Lake Pontchartrain which is a vast tidal bay connected to the Gulf.

### PROJECT DETAILS

**Location:**

Big Mar at Caernarvon Diversion Site

**Date:**

2010-Present

**Project Attributes:**

- Restoration of fish and wildlife habitat
- Flood and wind reduction
- Land stabilization
- Multiple partners

### PROJECT PARTNERS

- USDA NRCS
- Lake Pontchartrain Basin Foundation
- Coalition to Restore Coastal Louisiana
- Coastal Protection & Restoration Agency, Louisiana



*Five-year old Bald Cypress trunk (tree was 9 months at planting)*

### YEAR ONE



### YEAR TWO



### YEAR THREE





## PROJECT PURPOSE & QUALITY

Big Mar's newly created land, is an actively growing delta which has been expanding at 50 acres a year. The reforestation of the project area benefits from the diverted fresh water, nutrients and sediments from the Mississippi River to coastal bays and marshes in Breton Sound for fish and wildlife enhancement and recreational use.

This reforestation project enhances wetland forest conditions, reduces and reverses erosion, stabilizing existing and newly created land masses. The reforestation contributes to flood and wind damage reduction, improving and restoring wildlife and fish habitat (bald cypress - water tupelo swamps are far superior to other wetland habitat types). Fresh, intermediate, and brackish marshes suffered vastly greater loss in Hurricanes Katrina, Rita, Gustav, and Ike than did cypress - tupelo swamps (Barras 2006, 2008). Hurricane Katrina caused major damage to, or wind throw of, 320-million bottomland hardwood trees in the Pearl River Basin, while contiguous swamps remained largely intact (Chambers et al. 2007). Nature has ecologically engineered forested wetlands as an optimal and sustainable system for reducing the impacts of storm surge.

This project's reforestation and habitat change switches a greenhouse gas source (i.e. continued decomposition and

degradation of marshes), to a long-term (many centuries) sustainable sink of sequestered carbon, through both above- (leaf burial, wood) and belowground tissue production of the resultant forest.

The social return on investment (SROI) exceeds the cost of wetland reforestation in only one year. The three focal ecosystems services are green house gas (GHG) mitigation, nitrogen mitigation and wildlife habitat restoration. (Millennium Ecosystem Assessment, MEA2005). In addition, REF's focus is on keeping project funding in the community, providing substantial community benefits generated through the contract growing and planting of trees and other support services to the project.

REF's working partnership with the Lake Pontchartrain Basin Foundation (LPBF) provides for consultation, project management and scientific monitoring. REF and LPBF has been planting bald cypress in the Big Mar area for four years and has demonstrated successful results related to planting methodology, plant survivability and growth. LPBF has been monitoring tree growth and the geomorphic development of the wetland expansion which is now the Caernarvon Delta. Documentation on these projects is available at [SaveOurLake.org](http://SaveOurLake.org). (see Coastal, Technical documentation).