Bayou Saint John Marsh Creation Project
A project of the Lake Pontchartrain Basin Foundation, Restore the Earth Foundation and the Orleans Levee District

The Project
Bayou St. John was the original route taken by French explorers in 1718, who camped on its banks before settling in what is now the French Quarter. Though it has lost its original wild beauty, it is a vital part of the urban landscape and an official ‘scenic river’ next to City Park. There is an ongoing movement to restore the bayou’s ecology, and several recent projects have re-established some water flow and fish migration from Lake Pontchartrain.

Most of the bayou is within the levee system around New Orleans, with a flood gate where it meets Lake Pontchartrain. In the spring of 2013, the Orleans Levee District will dredge a channel from the flood gate to the lake to improve water flow. The Lake Pontchartrain Basin Foundation will beneficially use some of the dredged sediment to create a half acre of wetland along the banks.

Sheltered from waves and accessible to the public, the mouth of Bayou St. John is an ideal place to create wetlands. A half-acre pocket of living marsh within the 10-mile concrete seawall will improve water quality and provide habitat for fish, crabs and birds. This natural space where the bayou meets the lake will benefit residents and visitors as an outdoor classroom, bird watching site and fishing spot. Restoring wetlands to the urban lakeshore is a positive step on the road to saving Lake Pontchartrain.

Project Benefits
- Improves aquatic habitat for fish, crab and waterfowl.
- Traps sediment and improves water quality.
- Protects adjacent bulkhead and levee.
- Enhances the historic urban waterway and the Lafitte Corridor.
- Provides a living classroom and wildlife viewing in an urban area.
- Demonstrates new nature-based technologies that can help restore the Louisiana coast.

Project Needs
The Bayou St. John Marsh is a late addition to an already approved dredging project. About $45,000 needs to be raised quickly for construction materials, tools and supplies.

The largest expense is for the retaining wall that will hold the sediment in place, and this uses a new technique that costs a fraction of traditional rock armoring. The cost of moving sediment is covered by the dredge project through disposal savings. The Restore the Earth Foundation has partnered with LPBF to provide planting materials and funds. The accessible urban location means that much of the hand work can be done by local volunteers.

Project Plan
The marsh creation concept is shown in the following pages. Sand from the lake side of the Lakeshore Drive bridge is piled alongside the channel and used to fill non-degradable, plantable Deltalok™ bags. These bags are piled into triangular retaining walls about 50 feet from each bank. Muddier sediment from inside the bridge is placed behind these walls and settles to near the average water level. Degradable sacks filled with a growing medium (‘Gulf Saver’ bags) are placed on the constructed mudflats and planted with marsh vegetation. The Gulf Saver bags are expected to speed up plant growth and establishment of marsh vegetation that will stabilize the new marsh.
Bayou Saint John Wetland Creation Conceptual Plan

Phase 1: Build Walls
A: Dredge sand to piles inside bulkhead.
B: Fill Deltalok bags and move to staging areas.
C: Build wetland containment walls.

As the dredge moves into the sandy shallows from the lake, some of the sediment is piled up on either side of the channel. After draining, the sand is put in a hopper and used to fill sand bags made of plastic ‘geotextile’ fabric. The bags are moved along the bank to a staging area. The bags are piled into triangular ‘walls’ on top of matting that keeps them from sinking into the soft bottom. They are fixed in place by spiked plastic plates (the ‘Deltalok’ technology). The walls will be below water level for the first 10 feet on each end, to limit access from land.
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Phase 2: Fill In
A: Deposit muddy sediment behind containment walls.
B: Plant walls with wetland grasses.

By the time the walls are built, the dredge will have excavated under the bridge. As it moves inward, it will deposit dredged sediment behind the walls. At first the sediment will be loose and full of water. As it settles and compacts, the dredge can add more sediment until it reaches the desired elevation. The new mud flat will not be ready for planting until fall. The walls will be planted with marsh grasses right away to stabilize them and hold in the fresh fill.
Phase 3: Sculpt & Plant

A: Dig out branching network of channels.
B: Plant wetland grasses in Gulf Saver bags.
C: Create gaps in containment walls.

After the sediment has settled over the summer, volunteers will dig out shallow channels in a branching pattern. This will allow water to flow into the marsh interior, and create a more diverse and productive habitat. Cotton sacks filled with enriched soil ('Gulf Saver' bags) will be placed on top of the new mud flat, and planted with smooth cordgrass. The Gulf Saver bags will speed up plant establishment and help lock the new marsh in place before winter storms. Several 10 foot wide sections of the containment wall will be removed down to 1 foot below average water level. These gaps will connect the channels to the lake and allow for daily tidal flow.