



Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2008 Annual Inspection Report

Fritchie Marsh Restoration

State Project Number PO-06
Priority Project List 2

July 13, 2009
St. Tammany Parish

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I. Introduction

The Fritchie Marsh Restoration Project (PO-06) project area contains intermediate and brackish marsh, and is located southeast of Slidell in St. Tammany Parish (Appendix A). The area is bound by US Hwy 190 to the north, US Hwy 90 to the south and east, and LA Hwy 433 to the west and south.

II. Project Description and History

From 1956 to 1984, 2,260-ac (915-ha) of emergent marsh within the Fritchie Marsh project area have been converted to open water, with the greatest loss occurring in the northern project area. This loss reflects a pattern of marsh deterioration from north to south due to a reduction of freshwater and sediment input into the northern part of the project area. Natural hydrologic patterns have been disrupted by the construction of the perimeter highways. These embankments isolate the marsh from the West Pearl River, and have restricted inflow of freshwater, nutrients, and sediment. Additionally, saltwater from Lake Pontchartrain enters the marsh through the W-14 canal and Little Lagoon during high tides and strong winds. As a result, the project area has converted from a predominantly fresh marsh in 1956 to a predominantly brackish marsh in 1990.

The objective of the Fritchie Marsh Restoration Project is to reduce marsh loss by restoring more natural hydrologic conditions in the project area through management of available freshwater. Specific objectives are (1) to increase freshwater flow and promote water exchange into the area from West Pearl River by enlarging the culvert at U.S. Highway 90 and by dredging portions of Salt Bayou and (2) increase freshwater flow into the northern project area by diverting flow from the W-14 canal.

The Fritchie Marsh Restoration Project was constructed in one phase beginning in October 2000 and completed in March 2001. The project has a 20-year economic life which began in March 2001.

The principal project features include:

- A 72-inch diameter by 136-foot long concrete culvert under U.S. Highway 90, rock riprap lining of the Salt Bayou channel bottom and pipe outlets, and installation of 308 linear feet of sheet piling to form a bulkhead.
- Dredging of approximately 5300 linear feet of Salt Bayou.
- Installation of a weir in the W-14 canal. The weir consists of 108 linear feet of sheet pile with a 20-foot wide boat bay.
- Dredging approximately 400 linear feet of the W-14 diversion channel.

In August 2005 Hurricane Katrina passed directly over the Fritchie Marsh Project area. The forces created by this storm caused significant damage to the marsh but not to any of the project features. Large areas of marsh were converted to open water, whereas sections

of sheared marsh were deposited into the natural bayous and canals creating a number of blockages. Existing breaches on the banks of Salt Bayou were enlarged and new breaches were created, which are diverting water away from the natural conveyance channels. The previously established hydrology within the project area has been significantly altered.

III. Inspection Purpose and Procedures

The purpose of the annual inspection of the Fritchie Marsh Restoration Project (PO-06) is to evaluate the constructed project features to identify any deficiencies and prepare a report detailing the condition of project features and recommended corrective actions needed. Should it be determined that corrective actions are needed, OCPR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, and construction contingencies, and an assessment of the urgency of such repairs (O&M Plan July 10, 2002). The annual inspection report also contains a summary of maintenance projects and an estimated projected budget for the upcoming three (3) years for operation, maintenance and rehabilitation. The three (3) year projected operation and maintenance budget is shown in Appendix C. A summary of past operation and maintenance projects completed since completion of the project are outlined in Section II.

An inspection of the Fritchie Marsh Restoration Project (PO-06) was held on November 18, 2008 by Barry Richard of OCPR and Brad Sticker of NRCS. The inspection was conducted from the Highways as boat access was unavailable. A more detailed inspection will take place later in 2009. This inspection was prompted by the coastal Louisiana landfall of Hurricanes Gustav and Ike.

IV. Inspection Results

Hwy 90 Culvert and Stone Revetment

There is no change in this structure from the previous inspection. The bank scour reported in previous inspection reports is still of concern although little change was noted. If this bank were to completely breach, the hydrologic exchange between the marsh and Salt Bayou would be altered.

Salt Bayou Dredging

There was not a detailed inspection performed of this feature. The inspection consisted of the portion of this feature observed from Highway 90. There was no major damage to what was observed.

W-14 Weir

There was no visible damage to this structure and it appears to be operating as designed.

W-14 Diversion Channel Dredging

There was not a detailed inspection performed of this feature as it cannot be observed from a highway and boat access was not available.

V. Conclusions

The project features for the Fritchie Marsh Restoration Project are performing as designed and are showing no signs of damage. Based upon past inspections, a more thorough inspection of Salt Bayou is required and scheduled for later in 2009. The results of this inspection will aid in the decision to survey Salt Bayou or not. This survey will be performed to determine the need for further dredging of Salt Bayou.

VI. Recommendations

Both OCPR and NRCS agree that there is a need to evaluate Salt Bayou to determine if any action shall be taken to restore the previously established hydrology. Dredging of Salt Bayou and repair of the scour at Hwy 90 are under consideration.

Immediate Repairs

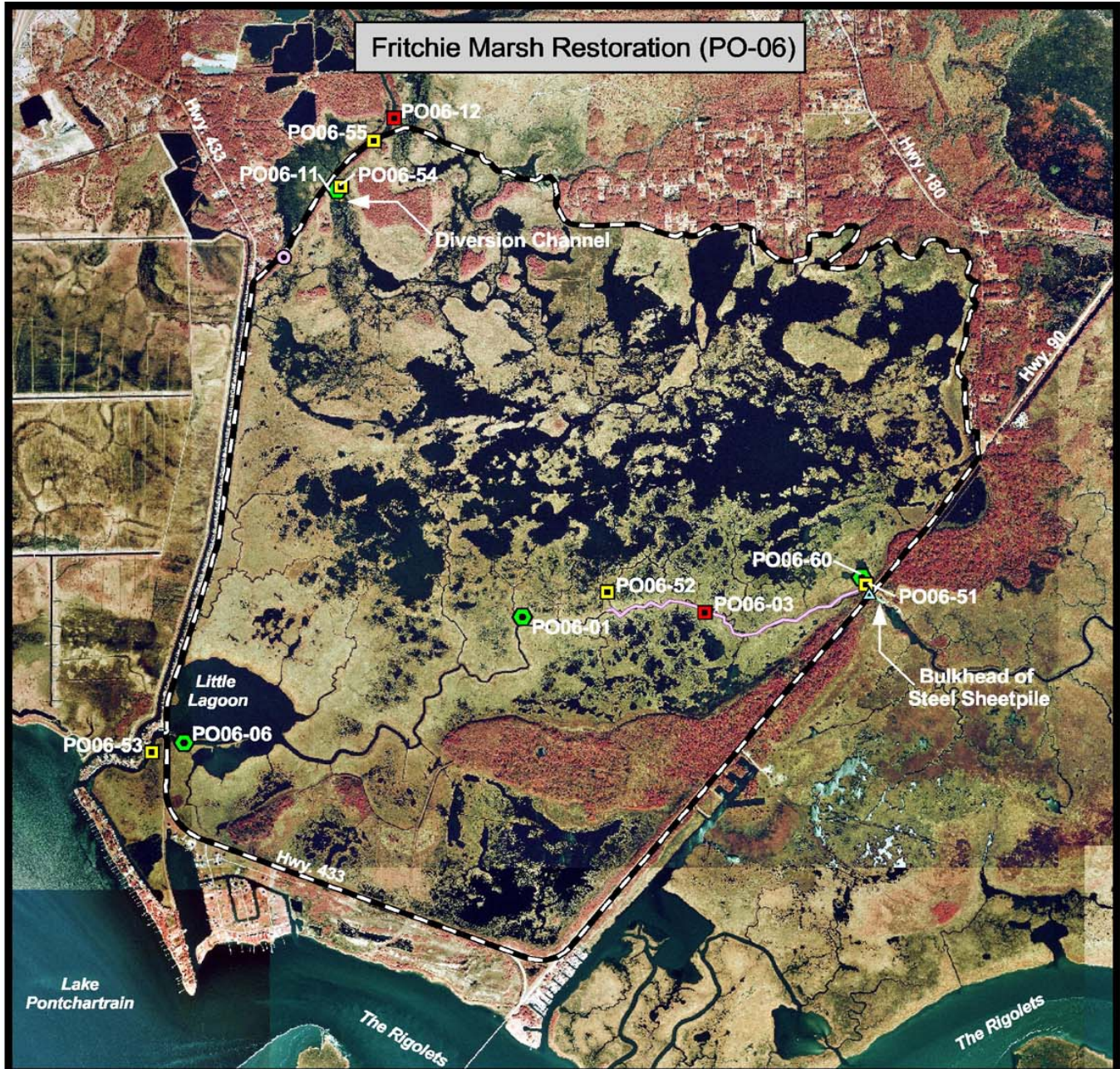
- Possible survey and dredge of Salt Bayou upon further field investigation.

Programmed Maintenance

- None at this time.

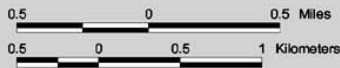
Appendix A

Project Features Map



Data Source:
 U.S. Department of the Interior
 U.S. Geological Survey
 National Wetlands Research Center
 Coastal Restoration Field Station
 Baton Rouge, LA
 and
 Louisiana Department of Natural Resources
 Coastal Restoration Division
 Baton Rouge, LA

1998 DOQQ Imagery
 Map Date: April 23, 2004
 Map ID: USGS-NWRC 2004-04-0148



LEGEND

- PO-06 Project Boundary
- 5300 ft. Dredge Area on Salt Bayou
- 400 ft. Dredge Area on the W-14
- Diversion Channel
- Bulkhead of Steel Sheetpile
- 72" Concrete Culvert
- Steel Sheetpile Weir with Boat Bay
- Water Flow Monitoring Stations
- Staff Gauge Only
- Continuous Recorder

Appendix B

Photographs

There were no photographs taken during this inspection.

Appendix C

Three Year Budget Projection

Fritchie Marsh Restoration / PO-06 / PPL 2
Three-Year Operations & Maintenance Budgets 07/01/2009 - 06/30/2012

Project Manager
 Barry Richard

O & M Manager
 Barry Richard

Federal Sponsor
 NRCS

Prepared By
 Barry Richard

	2009/2010	2010/2011	2011/2012
Maintenance Inspection	\$3,606.00	\$3,700.00	\$3,796.00
General Maintenance	\$0.00	\$0.00	\$0.00
Structure Operation	\$0.00	\$0.00	\$0.00
Administration	\$3,000.00	\$0.00	\$0.00
Maintenance/Rehabilitation			

09/10 Description: Salt Bayou Survey

E&D	\$60,000.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ 60,000.00

10/11 Description

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ -

11/12 Description:

E&D	\$0.00
Construction	\$0.00
Construction Oversight	\$0.00
Sub Total - Maint. And Rehab.	\$ -

	2009/2010	2010/2011	2011/2012
Total O&M Budgets	\$ 66,606.00	\$ 3,700.00	\$ 3,796.00

O & M Budget (3 yr Total)	\$ 74,102.00
Unexpended O & M Budget	\$ 113,000.00
Remaining O & M Budget (Projected)	\$ 38,898.00

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2009/2010
 Fritchie Marsh Restoration / PO-06 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,606.00	\$3,606.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$0.00	\$0.00

ADMINISTRATION

LDNR / CRD Admin.	LUMP	1	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	1	\$3,000.00	\$3,000.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$3,000.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:				
Secondary Monument	EACH	1	\$0.00	\$0.00
Staff Gauge / Recorders	EACH	1	\$0.00	\$0.00
Marsh Elevation / Topography	LUMP	1	\$60,000.00	\$60,000.00
TBM Installation	EACH	1	\$0.00	\$0.00
OTHER				\$0.00
TOTAL SURVEY COSTS:				\$60,000.00

GEOTECHNICAL

GEOTECH DESCRIPTION:				
Borings	EACH	1	\$0.00	\$0.00
OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:				\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:					
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD		0	\$0.00	\$0.00
Navigation Aid	EACH		0	\$0.00	\$0.00
Signage	EACH		0	\$0.00	\$0.00
General Excavation / Fill	CU YD		0	\$0.00	\$0.00
Dredging	CU YD		0	\$0.00	\$0.00
Sheet Piles (Lin Ft or Sq Yds)			0	\$0.00	\$0.00
Timber Piles (each or lump sum)			0	\$0.00	\$0.00
Timber Members (each or lump sum)			0	\$0.00	\$0.00
Hardware	LUMP		1	\$0.00	\$0.00
Materials	LUMP		1	\$0.00	\$0.00
Mob / Demob	LUMP		1	\$0.00	\$0.00
Contingency	LUMP		1	\$0.00	\$0.00
General Structure Maintenance	LUMP		1	\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$66,606.00

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2010/2011
 Fritchie Marsh Restoration / PO-06 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,700.00	\$3,700.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$0.00	\$0.00

ADMINISTRATION

LDNR / CRD Admin.	LUMP	1	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	1	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:				
Secondary Monument	EACH	1	\$0.00	\$0.00
Staff Gauge / Recorders	EACH	1	\$0.00	\$0.00
Marsh Elevation / Topography	LUMP	1	\$0.00	\$0.00
TBM Installation	EACH	1	\$0.00	\$0.00
				\$0.00
TOTAL SURVEY COSTS:				\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:				
Borings	EACH	1	\$0.00	\$0.00
OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:				\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	Salt Bayou Dredging				
Rip Rap	LIN FT	TON / FT	TONS	UNIT PRICE	
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
	0	0.0	0	\$0.00	\$0.00
Filter Cloth / Geogrid Fabric	SQ YD		0	\$0.00	\$0.00
Navigation Aid	EACH		0	\$0.00	\$0.00
Signage	EACH		0	\$0.00	\$0.00
General Excavation / Fill	CU YD		0	\$0.00	\$0.00
Dredging	CU YD		0	\$0.00	\$0.00
Sheet Piles (Lin Ft or Sq Yds)			0	\$0.00	\$0.00
Timber Piles (each or lump sum)			0	\$0.00	\$0.00
Timber Members (each or lump sum)			0	\$0.00	\$0.00
Hardware	LUMP		1	\$0.00	\$0.00
Materials	LUMP		1	\$0.00	\$0.00
Mob / Demob	LUMP		1	\$0.00	\$0.00
Contingency	LUMP		1	\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
OTHER				\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$3,700.00

OPERATION AND MAINTENANCE BUDGET WORKSHEET 2011/2012

Fritchie Marsh Restoration / PO-06 / PPL 2

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$3,796.00	\$3,796.00
General Structure Maintenance	LUMP	1	\$0.00	\$0.00
Engineering and Design	LUMP	1	\$0.00	\$0.00
Operations Contract	LUMP	1	\$0.00	\$0.00
Construction Oversight	LUMP	1	\$0.00	\$0.00

ADMINISTRATION

LDNR / CRD Admin.	LUMP	1	\$0.00	\$0.00
FEDERAL SPONSER Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	1	\$0.00	\$0.00
OTHER				\$0.00
TOTAL ADMINISTRATION COSTS:				\$0.00

MAINTENANCE / CONSTRUCTION

SURVEY

SURVEY DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Secondary Monument	EACH	1	\$0.00	\$0.00
	Staff Gauge / Recorders	EACH	1	\$0.00	\$0.00
	Marsh Elevation / Topography	LUMP	1	\$0.00	\$0.00
	TBM Installation	EACH	1	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL SURVEY COSTS:					\$0.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	1	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL GEOTECHNICAL COSTS:					\$0.00

CONSTRUCTION

CONSTRUCTION DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Rip Rap	LIN FT	TONS	UNIT PRICE	
		0	0	\$0.00	\$0.00
		0	0	\$0.00	\$0.00
		0	0	\$0.00	\$0.00
	Filter Cloth / Geogrid Fabric	SQ YD	0	\$0.00	\$0.00
	Navigation Aid	EACH	0	\$0.00	\$0.00
	Signage	EACH	0	\$0.00	\$0.00
	General Excavation / Fill	CU YD	0	\$0.00	\$0.00
	Dredging	CU YD	0	\$0.00	\$0.00
	Sheet Piles (Lin Ft or Sq Yds)		0	\$0.00	\$0.00
	Timber Piles (each or lump sum)		0	\$0.00	\$0.00
	Timber Members (each or lump sum)		0	\$0.00	\$0.00
	Hardware	LUMP	1	\$0.00	\$0.00
	Materials	LUMP	1	\$0.00	\$0.00
	Mob / Demob	LUMP	1	\$0.00	\$0.00
	Contingency	LUMP	1	\$0.00	\$0.00
	General Structure Maintenance	LUMP	1	\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
	OTHER			\$0.00	\$0.00
TOTAL CONSTRUCTION COSTS:					\$0.00

TOTAL OPERATIONS AND MAINTENANCE BUDGET: \$3,796.00

Appendix D

Field Inspection Form

Annual Inspection Report
 Fritchie Marsh Restoration
 State Project No. PO-06

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **PO-06 Fritchie Marsh**

Date of Inspection: 11/18/2008 Time: 10:15am

Structure No. n/a

Inspector(s): Richard, Sticker

Structure Description: **HWY 90 Culvert & Salt Bayou Bulkhead**

Water Level Inside: N/A Outside: _____

Type of Inspection: Post Storm

Weather Conditions: Warm, partly cloudy

Item	Condition	Physical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	None	None	n/a	
Handrails, Grating, Hardware, etc.	Good	None	None	n/a	
Signage, Supports	Good	None	None	n/a	
Rock RipRap channel lining	Good	None	None	n/a	
W-14 Weir structure	Good	None	None	n/a	
W-14 diversion channel dredge	n/a	n/a	n/a	n/a	
Salt Bayou dredging	n/a	n/a	n/a	n/a	
72" Diameter culvert	Good	None	None	n/a	
HWY 90 road surface	Good	None	None	n/a	