**State of Louisiana**

**Coastal Protection and Restoration Authority of Louisiana (CPRA)**

# 2011/2012 Annual Inspection Report

for

# LITTLE VERMILION BAY SEDITMENT TRAPPING PROJECT (TV-12)

State Project Number TV-12
Priority Project List 5

April 12, 2012
Vermilion Parish

Prepared by:

Stan Aucoin, Engineering Tech.
CPRA
Lafayette Field Office
635 Cajundome Blvd.
Lafayette, LA 70596

# Table of Contents



## Appendices

# I. Introduction

The Little Vermilion Bay Sediment Trapping Project (TV-12) is located in the northwest corner of Vermilion Bay approximately three and three quarters (3¾) miles south west of Intracoastal City in Vermilion Parish. The project consists of dredging approximately 21,300 linear feet of distributary channels and create approximately 33 acres of terraces. The channels and terraces are intended to trap sediments from Freshwater Bayou to create vegetative wetlands and dissipate wave energy in this open water area and combat land loss being experienced as a result of wave action. The project will create marsh using trapped sediment material. The terraces were planted in an effort to establish vegetation in an area that was previously open water.

The Little Vermilion Bay Sediment Trapping Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the fifth Priority Project List. The Little Vermilion Bay Project has a twenty –year (20 year) economic life, which began in July 1999.

# II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Little Vermilion Bay Sediment Trapping Project (TV-12) 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, CPRA 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, 2002). The annual inspection report also contains a summary of maintenance projects which were completed since completion of constructed project features 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 Little Vermilion Bay Project are outlined in Section IV.

An inspection of the Little Vermilion Bay Sediment Trapping Project (TV-12) was held on April 12, 2012 under partly cloudy skies and warm temperatures. In attendance were Stan Aucoin and Jody White of CPRA and John Foret of NMFS. The annual inspection began at the northwestern most terraces of Little Vermilion Bay.

The field inspection included a complete visual inspection of the entire project site. Staff gauge readings were used, when available, to determine approximate elevations of water and earthen terraces. Photographs were taken at each project feature (see Appendix B) and Field Inspection notes were completed in the field to record measurements and deficiencies (see Appendix D).

# III. Project Description and History

Recent erosion rates in Little Vermilion Bay of 8 feet per year are expected to continue, thereby causing the loss of emergent wetlands in surrounding the bay. The marshes separating Freshwater Bayou from Little Vermilion Bay have eroded to the point that 750 feet of the navigation channel are currently directly exposed to wave energy from Little Vermilion Bay. Another 1000 feet of Freshwater Bayou are currently separated from Little Vermilion Bay by 100 foot wide strip of eroding marsh. It is therefore likely that 1,750 feet of Freshwater Bayou will soon be exposed to open bay wave energy. Actions are needed to stop and reverse marsh erosion that is exposing a vital shipping corridor on Freshwater Bayou to wave energy from Little Vermilion Bay.

The principal project features include:

1. 21,300 Linear Feet of Earthen Terraces

2. Smooth Cordgrass Plantings on Terraces

# IV. Summary of Past Operation and Maintenance Projects

**General Maintenance:** Below is a summary of completed maintenance projects and operation tasks performed since July 1999, the construction completion date of the Little Vermilion Bay Sediment Trapping Project.

**December 2011 Staff Gauge:**
Installed a staff gauge on Channel Marker #1 at N 29°44’51.26”, W 92°11’59.14”.

**Structure Operations:**

There are no active operations associated with this project.

# V. Inspection Results

**Site 1—Earthen terraces**

The terraces remain in very good condition with the exception of the terraces nearest Freshwater Bayou Canal (FWB) and the southernmost sacrificial terrace. Still, only three terraces remain on this southern row. The terraces nearest FWB continue to erode as the bankline along Freshwater Bayou continues to worsen. Measurements from 2010 aerial photography show this opening to have widened to over 1700 feet with about 500 linear feet

of narrow marsh left along the northeast corner that remains vulnerable. Consideration is still being given to what will be the best method to reduce the opening to FWB. Additional funding will be required. Surveys have been performed assisting in the estimation of the costs associated with possible actions. (Photos: Appendix B, Photos 1-2)

**Site 2—Vegetation plantings**

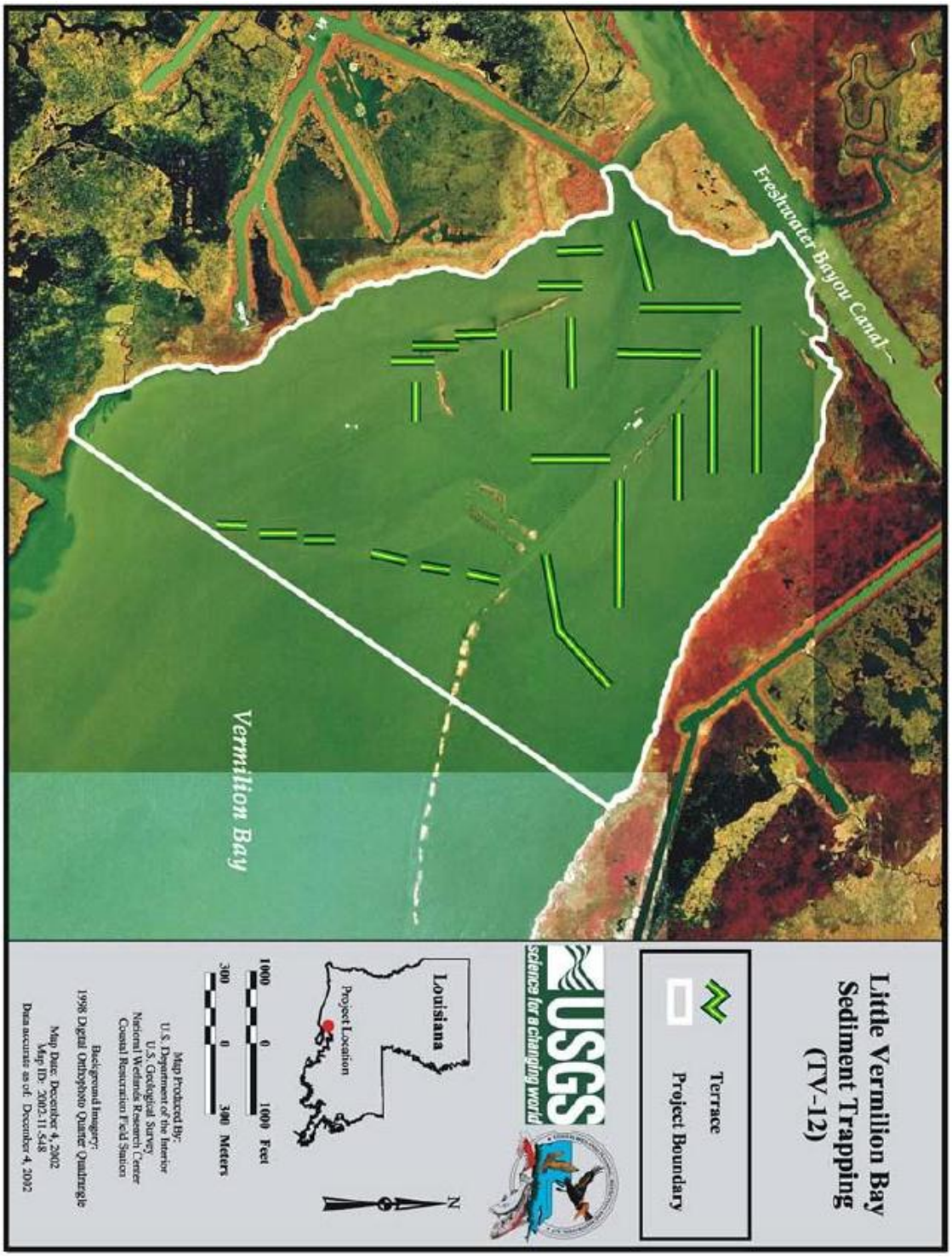
Vegetation has expanded significantly from the original plantings and appears strong. Emergent vegetation between the terraces is also becoming established. No maintenance with regard to vegetation needed at this time.

## VI. Conclusions and Recommendations

The Little Vermilion Bay Sediment Trapping Project is in very good condition and still functioning as intended. Emergent vegetation is becoming established. Narrowing the opening into FWB and re-establishing the sacrificial terraces to the south will allow this project to continue to be successful.

# Appendix A

# Project Features Map


Freshwater Bayou Canal
Vermilion Bay
Little Vermilion Bay
Sediment Trapping
(TV-12)
Terrace
Project Boundary
USGS
Science for a changing world
Louisiana
Project Location
N
1000 0 1000 Feet
300 0 300 Meters
Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Background Imagery:
1998 Digital Orthophoto Quarter Quadrangle
Map Date: December 4, 2002
Map ID: 2002-11-548
Data accurate as of: December 4, 2002

# Appendix B

# Photographs

**Photo No.** 1—typical terrace

**Photo No. 2**—terrace near Freshwater Bayou Canal

# Appendix C

# Three Year Budget Projection

## LITTLE VERMILION/ TV12 / PPL 5

### Three-Year Operations & Maintenance Budgets 07/01/2012 - 06/30/2015

| Project Manager | O & M Manager | Federal Sponsor | Prepared By |
|---|---|---|---|
| *Pat Landry* | *Stan Aucoin* | *NMFS* | *Stan Aucoin* |

| | 2012/2013 (-13) | 2013/2014 (-14) | 2014/2015 (-15) |
|---|---|---|---|
| ***Maintenance Inspection*** | $ 6,269.00 | $ 6,457.00 | $ 6,651.00 |
| ***Structure Operation*** | | | |
| ***State Administration*** | | $ - | $ - |
| ***Federal Administration*** | | $ - | $ - |
| ***Maintenance/Rehabilitation*** | | | |

12/13 Description:

| | |
|---|---|
| *E&D* | |
| *Construction* | |
| *Construction Oversight* | |
| *Sub Total - Maint. And Rehab.* | $ - |

13/14 Description

| | |
|---|---|
| *E&D* | $ - |
| *Construction* | $ - |
| *Construction Oversight* | $ - |
| *Sub Total - Maint. And Rehab.* | $ - |

14/15 Description:

| | |
|---|---|
| *E&D* | $ - |
| *Construction* | $ - |
| *Construction Oversight* | $ - |
| *Sub Total - Maint. And Rehab.* | $ - |

| | 2012/2013 (-13) | 2013/2014 (-14) | 2014/2015 (-15) |
|---|---|---|---|
| ***Total O&M Budgets*** | $ 6,269.00 | $ 6,457.00 | $ 6,651.00 |

| | |
|---|---|
| **O &M Budget (3 yr Total)** | **$ 19,377.00** |
| **Unexpended O & M Budget** | **$ 166,685.00** |
| **Remaining O & M Budget (Projected)** | **$ 147,308.00** |

# Appendix D

# Field Inspection Form

Annual Inspection Report
LITTLE VERMILION BAY SEDIMENT TRAPPING PROJECT
State Project No. TV-12

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: TV-12 Little Vermilion Bay

Date of Inspection: April 12, 2012 Time: 10:10 am

Structure No. N/A

Inspector(s): Stan Aucoin, Jody White (CPRA)
John Foret (NMFS)

Structure Description: Terraces/Vegetation

Water Level NAVD +0.9

Type of Inspection: Annual

Weater Conditions: Partly cloudy and warm

| Item | Condition | Physical Damage | Corrosion | Photo # | Observations and Remarks |
|---|---|---|---|---|---|
| Steel Bulkhead / Caps | N/A | | | | |
| Steel Grating | N/A | | | | |
| Stop Logs | N/A | | | | |
| Hardware | N/A | | | | |
| Timber Piles | N/A | | | | |
| Timber Wales | N/A | | | | |
| Galv. Pile Caps | N/A | | | | |
| Vegetation | Good | | | | |
| Signage /Supports | N/A | | | | |
| Rip Rap (fill) | N/A | | | | |
| Earthen Embankment (terraces) | Excellent | | | 1,2 | Terraces are in good condition, although some erosion is occurring. |

What are the conditions of the existing levees?
Are there any noticeable breaches?
Settlement of rock plugs and rock weirs?
Position of stoplogs at the time of the inspection?
Are there any signs of vandalism?