



**Coastal Protection and Restoration  
Authority of Louisiana**

**Office of Coastal Protection and  
Restoration**

**2010/2011 Annual Inspection  
Report**

For

**PECAN ISLAND TERRACING  
PROJECT  
(ME-14)**

State Project Number ME-14  
Priority Project List 7

June 10, 2011  
Vermilion Parish

Prepared by:

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## **I. Introduction**

The Pecan Island Terracing (ME-14) project is located five miles north of the Gulf of Mexico just south of Pecan Island and Hwy 82 in the Lakes Sub-basin of the Mermentau Basin, Vermilion Parish, Louisiana. The total project area comprises 3,753 acres (1,519 ha) of brackish marsh and open water. Area 1 is primarily open water and was formerly pasture land of approximately 1,938 acres (784 ha). Area 2 consists of 1,715 acres (694 ha) of brackish marsh and open water.

The project features include construction of 197,000 linear feet (60,046 m) of terraces in 500 ft (152.4 m) sections with a 50 ft (15.24 m) break between each terrace, creating approximately 344 terraces. Terraces run east to west in a staggered gap formation. The terraces were constructed by depositing borrow material with a 40 ft (12.19 m) berm for a terrace with 4:1 side slopes and a top width of 10 ft (3.04 m). Initial constructed elevation was approximately 3.75 ft (1.14 m) NAVD 88 which in 5 years should have a final settled elevation approximately 1 ft above marsh elevation. The dredged material was deposited such that the terrace's side slopes were 4:1 to conform to the natural angle of repose for the bottom soil. Breaks were constructed to permit water to move in and out of the interior, which may facilitate the settling of suspended soil particles. *Spartina alterniflora* (smooth cordgrass) plugs were planted every five linear feet on both sides of terrace.

The Pecan Island Terracing 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 seventh Priority Project List. The Pecan Island Terracing Project has a twenty-year (20 year) economic life, which began in September 2003.

## **II. Inspection Purpose and Procedures**

The purpose of the annual inspection of the Pecan Island Terracing Project (ME-14) is to evaluate the constructed project features, 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, LDNR 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, 2003). The annual inspection report also contains a summary of maintenance projects, if any, 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.

An inspection of the Pecan Island Terracing Project (ME-14) was held on June 10, 2011 under partly cloudy skies and warm temperatures. In attendance were Stan Aucoin and Mel Guidry of (OCPR) and John Foret representing (NOAA). All parties met at the CED Lafayette Field

Office and proceeded to the boat launch adjacent to the Pecan Island Terracing Project (ME-14). The group traveled throughout the project area via CED boat inspecting the terraces.

The field inspection included a complete visual inspection of all earthen terraces. Staff gauge readings when available were used to determine approximate water level and earthen terrace elevation. Photographs were taken of various earthen terraces (see Appendix B) and Field Inspection notes were completed in the field to record measurements and any notable deficiencies (see Appendix D).

### **III. Project Description and History**

The Pecan Island Terracing Project area was originally marshland that was transformed into dry pasture land in the mid 1950's by constructing continuous dikes and pumping out the water. Deterioration and loss of the perimeter levees in recent years has converted the entire area into a shallow, open water lake with a few small marsh islands. The project will convert areas of open water back to vegetated marsh through the construction of earthen terraces, which were completed in August, 2003. The terrace construction will include breaks between the terraces to facilitate sediment settling. Submerged aquatic vegetation growth will be promoted in the terrace area due to reduced turbidity and wave action. Vegetative plantings were completed in September, 2003.

The principal project features include:

1. 196,800 Linear Feet of Earthen Terraces
2. Smooth Cordgrass Plantings on Earthen Terraces

The following goals will contribute to the evaluation of the above objective:

1. Increase land to water ratios by constructing approximately 100 acres (41.3 ha) of earthen terraces in Area 1.
2. Increase land to water ratios by creating over 300 acres (121.4 ha) of land within Areas 1 and 2 over 20 years after construction.
3. Increase percent cover of SAV in remaining open water areas to 50% in Area 1 and 15% in Area 2.
4. Establish emergent vegetated marsh on planted terraces.

#### **IV. Summary of Past Operation and Maintenance Projects**

**General Maintenance:** Below is a summary of completed maintenance projects and operation tasks performed since September 2003, the construction completion date of the Pecan Island Terracing Project (ME-14).

No maintenance has been required on this project.

#### **Structure Operations:**

There are no active operations associated with this project.

#### **V. Inspection Results**

##### **Terraces**

Overall the majority of the earthen terraces are in good condition and did not appear to suffer any major damage from Hurricane Ike. Previously noted erosion in past O&M Inspections of the southern sacrificial terraces has worsened. The southern sacrificial terraces are providing less protection for the interior earthen terraces than in previous years. (Photos: Appendix B, Photo 1)

##### **Vegetative Plantings**

The tops of the terraces are approximately 50 per cent covered with vegetation. Species noted include *Spartina alterniflora*, *Juncus*, *Baccharis*, and *Spartina patens*. (Photos: Appendix B, Photo 2)

#### **VI. Conclusions and Recommendations**

Overall, the Pecan Island Terracing Project (ME-14) is functioning as designed and in good condition. The erosion of the southern sacrificial terraces will continued to be monitored. NOAA and OCPR have agreed to investigate possible erosion solutions for these sacrificial terraces, and if feasible will request additional funding for this maintenance event. Installation of a staff gauge in the vicinity is recommended. Maintenance items to be addressed in CY 2012:

- Install staff gauge

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**Appendix A**  
**Project Features Map**



### Pecan Island Terracing (ME-14)

-  Terrace \*
-  Project Boundary
- \* denotes proposed feature



0.5 0 0.5 Miles  
 0.5 0 0.5 1 Kilometers

Map prepared by:  
 U.S. Department of the Interior  
 U.S. Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station

Map Date: November 17, 2002  
 Map ID: USGS/AVWC/2002-11-02A  
 Data accurate as of: November 27, 2002

## **Appendix B**

### **Photographs**



**Photo No. 1,** Southern most earthen terrace showing erosion



**Photo No. 2,** Typical terrace

## **Appendix C**

### **Three Year Budget Projection**

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**PECAN ISLAND TERRACING/ ME-14 / PPL 7**  
**Three-Year Operations & Maintenance Budgets 07/01/2011 - 06/30/2014**

|                                           |                                        |                                |                                  |
|-------------------------------------------|----------------------------------------|--------------------------------|----------------------------------|
| <u>Project Manager</u><br>Darrell Pontiff | <u>O &amp; M Manager</u><br>Mel Guidry | <u>Federal Sponsor</u><br>NMFS | <u>Prepared By</u><br>Mel Guidry |
|-------------------------------------------|----------------------------------------|--------------------------------|----------------------------------|

|                               | 2011/2012 (-8) | 2012/2013 (-9) | 2013/2014 (-10) |
|-------------------------------|----------------|----------------|-----------------|
| <b>Maintenance Inspection</b> | \$ 6,086.00    | \$ 6,269.00    | \$ 6,457.00     |
| <b>Structure Operation</b>    |                |                |                 |
| <b>State Administration</b>   |                | \$ -           | \$ -            |
| <b>Federal Administration</b> |                | \$ -           | \$ -            |

**Maintenance/Rehabilitation**

11/12 Description: Add a staff gage.

|                                      |                    |
|--------------------------------------|--------------------|
| E&D                                  | \$7,500.00         |
| Construction                         |                    |
| Construction Oversight               |                    |
| <b>Sub Total - Maint. And Rehab.</b> | <b>\$ 7,500.00</b> |

12/13 Description:

|                                      |             |
|--------------------------------------|-------------|
| E&D                                  | \$ -        |
| Construction                         | \$ -        |
| Construction Oversight               | \$ -        |
| <b>Sub Total - Maint. And Rehab.</b> | <b>\$ -</b> |

13/14 Description:

|                                      |             |
|--------------------------------------|-------------|
| E&D                                  | \$ -        |
| Construction                         | \$ -        |
| Construction Oversight               | \$ -        |
| <b>Sub Total - Maint. And Rehab.</b> | <b>\$ -</b> |

|                              | 2011/2012 (-8)      | 2012/2013 (-9)     | 2013/2014 (-10)    |
|------------------------------|---------------------|--------------------|--------------------|
| <b>Total O&amp;M Budgets</b> | <b>\$ 13,586.00</b> | <b>\$ 6,269.00</b> | <b>\$ 6,457.00</b> |

|                                               |                      |
|-----------------------------------------------|----------------------|
| <b>O &amp; M Budget (3 yr Total)</b>          | <b>\$ 26,312.00</b>  |
| <b>Unexpended O &amp; M Budget</b>            | <b>\$ 181,136.00</b> |
| <b>Remaining O &amp; M Budget (Projected)</b> | <b>\$ 154,824.00</b> |

**Appendix D**  
**Field Inspection Form**

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MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: Pecan Island Terracing ME-14

Date of Inspection: June 10, 2011 Time: 10:30 am

Structure No.

Inspector(s): Mel Guidry & Stan Aucoin (OCPR)  
 John Foret (NMFS)

Structure Description: Earthen Terraces

Water Level Inside: \_\_\_\_\_ Outside: \_\_\_\_\_

Type of Inspection: Annual

Weather 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 Terraces      | Good      |                 |           | 1,2     | Terraces are in good condition |

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?

## **Appendix E**

### **Locations to be Monitored**