



**Coastal Protection and Restoration
Authority of Louisiana**

**Office of Coastal Protection and
Restoration**

**2007/2008 Annual Inspection
Report**

For

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

State Project Number ME-14
Priority Project List 7

March 6, 2008
Vermilion Parish

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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 March 6, 2008 under clear skies and mild temperatures. In attendance were Stan Aucoin, Mel Guidry of LDNR and John Foret representing National Marine Fisheries. 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

The earthen terraces are in good condition. 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. Installation of a staff gauge in the vicinity is recommended. Maintenance items to be addressed in CY 2008:

- Install staff gauge

Appendix A
Project Features Map



Appendix B

Photographs



Photo 1, Typical earthen terrace.



Photo 2, Typical eroded terrace.

Appendix C

Three Year Budget Projection

PECAN ISLAND TERRACING/ ME-14 / PPL 7
Three-Year Operations & Maintenance Budgets 07/01/2008 - 06/30/2011

<u>Project Manager</u> Pat Landry	<u>O & M Manager</u> Mel Guidry	<u>Federal Sponsor</u> NMFS	<u>Prepared By</u> Mel Guidry
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	2008/2009	2009/2010	2010/2011
Maintenance Inspection	\$ 5,570.00	\$ 5,737.00	\$ 5,909.00
Structure Operation			
Administration		\$ -	\$ -

Maintenance/Rehabilitation

08/09 Description: Add a staff gage.

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

09/10 Description:

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

10/11 Description:

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

	2008/2009	2009/2010	2010/2011
Total O&M Budgets	<u>\$ 13,070.00</u>	<u>\$ 5,737.00</u>	<u>\$ 5,909.00</u>

O & M Budget (3 yr Total)	<u>\$ 24,716.00</u>
Unexpended O & M Budget	<u>\$ 187,760.63</u>
Remaining O & M Budget (Projected)	<u>\$ 163,044.63</u>

Annual Inspection Report
 PECAN ISLAND TERRACING PROJECT
 State Project No. ME-14

OPERATION AND MAINTENANCE BUDGET WORKSHEET
 PECAN ISLAND TERRACES PROJECT / PROJECT NO. ME-14 / PPL NO. 7

DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
O&M Inspection and Report	EACH	1	\$5,570.00	\$5,570.00
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 SPONSOR Admin.	LUMP	1	\$0.00	\$0.00
SURVEY Admin.	LUMP	0	\$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
	Add staff gage.				
	Secondary Monument	EACH	0	\$0.00	\$0.00
	Staff Gauge / Recorders	EACH	1	\$7,500.00	\$7,500.00
	Marsh Elevation / Topography	LUMP	0	\$0.00	\$0.00
	TBM Installation	EACH	0	\$0.00	\$0.00
	OTHER				\$0.00
TOTAL SURVEY COSTS:					\$7,500.00

GEOTECHNICAL

GEOTECH DESCRIPTION:	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	ESTIMATED TOTAL
	Borings	EACH	0	\$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	TON / FT	TONS	UNIT PRICE
	Rock Rip rap	0	0.0	0	\$0.00
	Aggregate Surface Course	0	0.0	0	\$0.00
		0	0.0	0	\$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: \$13,070.00

Appendix D

Field Inspection Form

Annual Inspection Report
 PECAN ISLAND TERRACING PROJECT
 State Project No. ME-14

MAINTENANCE INSPECTION REPORT CHECK SHEET

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

Date of Inspection: March 6, 2008 Time: 10:30 am

Structure No.

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

Structure Description: Earthen Terraces

Water Level Inside: _____ Outside: _____

Type of Inspection: Annual

Weather Conditions: Clear and Mild

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				
Cables	N/A				
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