



**State of Louisiana  
Department of Natural Resources  
Coastal Engineering Division**

## **2005/2006 Annual Inspection Report**

For

### **GRAND-WHITE LAKES LANDBRIDGE PROTECTION PROJECT (ME-19)**

State Project Number ME-19  
Priority Project List 10

October 12, 2005  
Cameron Parish

Prepared by:

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## **I. Introduction**

The Grand-White Lake Land Bridge Protection project is a shoreline protection project from the 10<sup>th</sup> priority list of the Coastal Wetlands Planning, Protection, and Restoration Act, comprised of 1,530 acres (619 ha) of fresh marsh and open water in Cameron Parish, Louisiana. The project area includes Round Lake, a portion of the southwest Grand Lake shoreline, and the northern half of the shoreline of Collicon Lake. The project is located in the Mermentau Basin Lake's Sub-basin on the southeast shoreline of Grand Lake, from the old Gulf Intracoastal Waterway (GIWW) to the level of the northern edge of Round Lake, and eastward above Corp Mound Bayou to the eastern shore of Collicon Lake. Currently, 29% (451 acres/183 ha) of the project area is classified as fresh marsh, 71% (1,079 ac/437 ha) is open water, and less than 1% as bottomland shrub/scrub (United States Geological Survey/National Wetlands Research Center [USGS/NWRC] 1988/90).

Wind induced erosion of the southeast shoreline of Grand Lake (15 mi/24.1 km northwest fetch) and the west shoreline of Collicon Lake (2 mi/3.2 km southeast fetch) has removed the lake rims and is endangering the narrow land bridge between the two lakes. The 3,000 ac (1,214 ha) Collicon Lake is in danger of breaching (< 500 ft) into the eastern portion of Grand Lake endangering the 13,281 acre (5374.6 ha) Grand-White Lake Land Bridge area. Should this breach occur, the size of Grand Lake will increase by over 4,800 acres (1,943 ha) and the size of the land bridge will be reduced by 2 miles (3.2 km). The small strip of marsh separating Collicon and Round Lake would also be lost and the entire 1,530 ac (619 ha) project area will become part of Grand Lake. Shoreline erosion would accelerate in the marsh between the former Collicon Lake and Alligator Lake and Lake le Bleu which will also be in jeopardy of being converted to the open waters of Grand Lake. Measurements of shoreline loss at 10 transects at the southeast portion of Grand Lake yielded loss rates from 23.9/7.3 to 36.2/11 ft/m per year (Clark et al. 1999).

The Grand-White Lakes Landbridge 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 tenth Priority Project List. The Grand-White Lakes Landbridge Project has a twenty –year (20 year) economic life, which began in September 2004.

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

The purpose of the annual inspection of the Grand-White Lakes Landbridge Protection Project (ME-19) 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.

In 2003, the CWPPRA Task Force determined, due to the fact that LDNR was responsible for the operation and maintenance phase of the vast majority of CWPPRA projects, that LDNR would be the responsible party for all Post Storm/Hurricane Assessments. After Hurricanes Katrina and Rita, every project appeared to have been impacted by the storms; therefore, LDNR determined that all projects should be assessed for damages (Broussard, 2006). With concurrence from the federal sponsor, LDNR has decided to use the information obtained during this post hurricane assessment in this Annual Maintenance Inspection.

An inspection of the Grand-White Lakes Landbridge Protection Project (ME-19) was held on October 12, 2005 under clear skies and mild temperatures. In attendance were Mel Guidry, Stan Aucoin, Pat Landry, Christine Thibodeaux, Amanda Phillips, and Ken Duffy all from LDNR. All parties met at the boat launch on the Superior Canal, and traveled north to the Grand-White Lakes Landbridge Protection Project Site. The annual inspection began at approximately 10:00 a.m. at the southeastern end of the rock dike along Grand Lake.

The field inspection included a complete visual inspection of all project features. Staff gauge readings were used to determine approximate elevations of water, earthen terraces, rock dike, and other project features. Photographs were taken at each project feature (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 Grand-White Lakes Landbridge Project (ME-19) consists of two project features, specifically shoreline protection and terracing. The shoreline protection rock dike was completed in November 2003 and the earthen terraces in Collicon Lake were completed in September 2004. This purpose of this project is to protect fresh marsh by stopping or slowing erosion along the southeastern shore of Grand Lake and the western shoreline of Collicon Lake, thereby preventing the coalescence of these lakes. The principle project features of the Grand-White Lakes Landbridge Project include the following:

- A. **Grand Lake Shoreline Protection:** Excavation of a barge access canal lakeward of and parallel to the foreshore dike. The access canal spoil will be used to create marsh behind the foreshore dike. Placement of approximately 12,000 ft. of limestone rock as a foreshore dike 150-250 ft.

lakeward of the shoreline, with 25 ft. gaps every 700-1,000 ft. The gaps left in the foreshore dike and marsh creation area will provide for water exchange and fish access.

- B. **Collicon Lake Terraces:** Construction of two rows of 200 ft. long terrace segments with 50 ft. gaps between each segment. Total length of terraces will be 25,000 ft. Terraces will be planted with various types of vegetation and seeds. The southern shoreline of Round Lake will be planted with giant cutgrass or other suitable vegetation.

The specific goals of the project are:

1. Stopping erosion along the southeastern shoreline of Grand Lake and the north and western shorelines of Collicon Lake.
2. Creating a total of 17 acres of emergent marsh along the southeastern shoreline of Grand Lake and 10 acres of emergent marsh along the north and western shorelines of Collicon Lake.
3. Reducing erosion along the southern shoreline of Round Lake by 50 per cent.

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

**General Maintenance:** No maintenance has been necessary on this project.

#### **2005 Structure Operations:**

There are no active operations associated with this project.

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

##### **Grand Lake Shoreline Protection**

The foreshore rock dike feature is in excellent condition and appears to be in same condition as to what existed prior to Hurricane RITA. No maintenance is required at this time. (Photos: Appendix B, Photos 1 & 2)

##### **Collicon Lake Terraces**

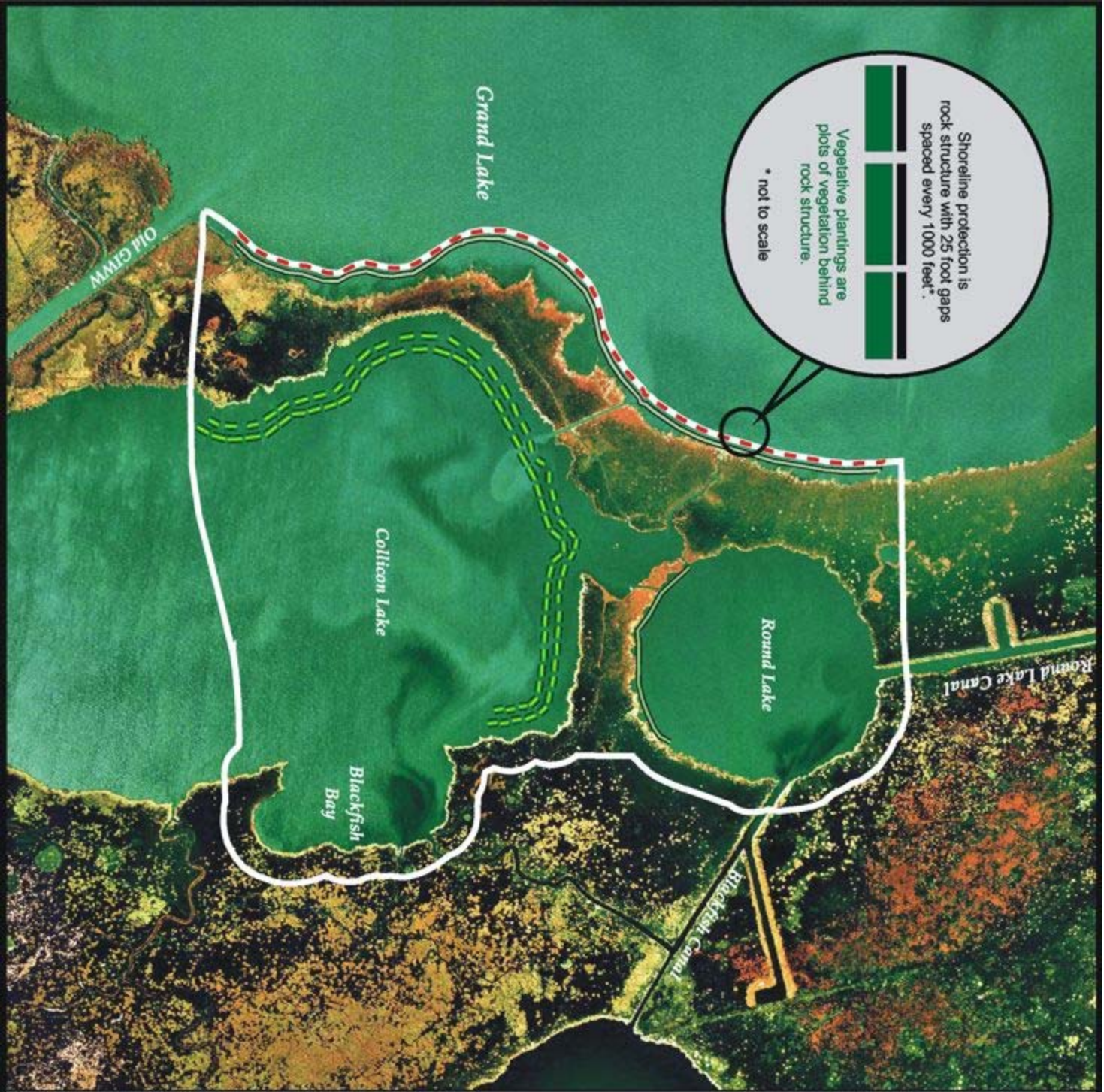
The condition of the shallow water earthen terraces feature of the project was unable to be determined due to the high water conditions. Previous O & M Annual Inspections did

note marsh side and lake side earthen terraces along Collicon Lake having experienced some erosion with the most extensive occurring on the East side of Collicon Lake. Original giant cutgrass plantings along the terraces were visible although appearing stressed. (Photos: Appendix B, Photos 3 & 4)

## **VI. Conclusions and Recommendations**

Overall, the foreshore rock dike feature of the Grand-White Lake Landbridge Project is in excellent condition and is functioning as designed and did not sustain any discernable damage from Hurricane RITA. The earthen terrace feature along Collicon Lake has experienced some erosion and will be monitored in the future to determine if a maintenance or vegetative planting project is needed.

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



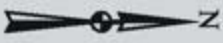
Shoreline protection is rock structure with 25 foot gaps spaced every 1000 feet\*.

Vegetative plantings are plots of vegetation behind rock structure.

\* not to scale

# Grand-White Lakes Landbridge Protection (ME-19)

-  Vegetative Plantings
-  Shoreline Protection
-  Terraces
-  Project Boundary



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: July 28, 2003  
 Map ID: USGS-NWRC 2003-11-484  
 Data accurate as of: March 6, 2003



**Appendix B**  
**Photographs**



Photo 1, Typical rock dike, note high water from Hurricane RITA storm surge.



Photo 2, Rock foreshore dike.



Photo 3, Earthen terraces submerged by high water.



Photo 4, Earthen terraces

## **Appendix C**

### **Three Year Budget Projection**

**GRAND-WHITE LAKES LANDBRIDGE/ ME-19 / PPL 10**  
**Three-Year Operations & Maintenance Budgets 07/01/2005 - 06/30/08**

<u>Project Manager</u> Pat Landry	<u>O &amp; M Manager</u> Mel Guidry	<u>Federal Sponsor</u> USFWS	<u>Prepared By</u> Mel Guidry
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	2005/2006	2006/2007	2007/2008
<b>Maintenance Inspection</b>	\$ 4,955.00	\$ 5,250.00	\$ 5,407.00
<b>Structure Operation</b>			
<b>Administration</b>		\$ -	\$ -

**Maintenance/Rehabilitation**

**05/06 Description:**

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

**06/07 Description:**

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

**07/08 Description:**

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

	2005/2006	2006/2007	2007/2008
<b><u>Total O&amp;M Budgets</u></b>	<b>\$ 4,955.00</b>	<b>\$ 5,250.00</b>	<b>\$ 5,407.00</b>

<b><u>O &amp; M Budget (3 yr Total)</u></b>	<b>\$ 15,612.00</b>
<b><u>Existing O &amp; M Budget</u></b>	<b>\$ 1,125,291.00</b>
<b><u>Remaining O &amp; M Budget (Projected)</u></b>	<b>\$ 1,109,679.00</b>

## **Appendix D**

### **Field Inspection Form**

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: ME-19 Grand-White Lake Landbridge

Date of Inspection: October 12, 2005      Time: 10:00 am

Structure No.

Inspector(s): Mel Guidry, Stan Aucoin, Pat Landry, Amanda Phillips  
Christine Thibodeaux, Ken Duffy, LDNR

Structure Description: Rock Dike and Earthen Terraces

Water Level      Inside: +2.8      Outside: \_\_\_\_\_

Type of Inspection: Annual

Weather Conditions: Sunny 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) Rock Dike	Good			1 & 2	Rock dike is in very good shape.
Earthen Terraces	Fair			3 & 4	Terraces submerged from storm surge, could not determine 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**