



**State of Louisiana**

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

**2014/2015 Annual Inspection  
Report**

for

**HOLLY BEACH SAND  
MANAGEMENT PROJECT  
(CS-31)**

State Project Number CS-31  
Priority Project List 11

November 12, 2014  
Cameron Parish



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## **I. Introduction**

The Holly Beach Sand Management Project (CS-31) consists of approximately 10,849 acres of brackish marsh, intermediate marsh and sand dune in Cameron Parish Louisiana. The project is located between the communities of Holly Beach and Constance Beach on the Gulf of Mexico shoreline in southwest LA and is divided into two areas separated by LA Hwy. 82 (See Appendix A).

The Holly Beach Sand Management 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 eleventh Priority Project List. Funding consisted of fifty percent NRCS funds, twenty-five percent CIAP (Coastal Impact Assistance Program of NOAA) funds, and twenty-five percent from the State of Louisiana. The Holly Beach Project has a twenty –year (20 year) economic life, which began in April 2003.

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

The purpose of the annual inspection of the Holly Beach Sand Management Project (CS-31) 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, 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 Holly Beach Sand Management Project (CS-31) was held on November 12, 2014 under cloudy skies and cold temperatures. In attendance were Dion Broussard of CPRA, Brandon Samson of NRCS, and Darryl Clark of USFWS for other inspections. The annual inspection began at approximately 12:00 p.m. on the western boundary of the project area.

The field inspection included a complete visual inspection of all features. Staff gauge readings where available were used to determine approximate elevations of water, sand dunes, and sand fencing. 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**

Between 1991 and 1995, the Louisiana Department of Natural Resources partnered with the Louisiana Department of Transportation and Development, constructed 85 breakwaters along the

Gulf of Mexico shoreline in southwest LA. In conjunction with the CS-31 project, funded separately, some maintenance/modifications were performed on several of these breakwaters.

The Holly Beach Sand Management Project (CS-31) was constructed between breakwaters 10 and 72 and was completed in April 2003. It involved the construction of a 5.3 mile long, 1.75 million cubic yard beach nourishment beginning approximately 3 miles west of the community of Holly beach and ending approximately 8.3 miles west of Holly Beach. Sand was being blown across La. Hwy. 82 so fencing, as a result of a contract change order, was installed along the first 18,730 linear feet of beach. Another 11,000 linear feet was installed under separate contract with the La. Department of Agriculture and Forestry through their subsidiary, Gulf Coast Soil and Water Conservation District of Lake Charles. Both sides of this sand fence were planted with bitter panicum under a DNR contract. Also involved was the removal of six experimental breakwaters. Construction of the project will help to protect LA Hwy. 82 and the vast marsh area north of same. The principle project features of the Holly Beach Sand Management Project include the following:

- A. **Beach Nourishment:** 5.3 miles of newly constructed beach beginning at approximately breakwater 72 and extending westward to approximately breakwater 10.
- B. **Sand Fence:** Approximately 29,730 linear feet of sand fencing with associated pedestrian and vehicle gaps.

Stabilization of this area is critical since this ridge is the only hydrological barrier separating thousands of acres of low energy, intermediate and brackish marsh along the southern boundary of the Sabine National Wildlife Refuge from the high energy, saline waters of the Gulf of Mexico. The highway revetment has already been undermined in some sections, and the underlying Chenier is in danger of being breached. A breach of this ridge would lead to direct wave erosion and saltwater intrusion into fragile wetlands to the north.

Re-establishing the beach profile using sediment dredged from an old deposited sand bar area approximately 5 miles offshore from what was once the Sabine River, will (1) maintain the integrity and functionality of the Chenier/beach ridge; (2) reduce over-wash occurrences of the Chenier/beach ridge during episodic higher wave energy events in the Gulf of Mexico; (3) provide storm protection to intermediate and brackish marsh habitats north of the Chenier/beach ridge; (4) restore the littoral drift system, thereby reducing down drift erosion rates; and (5) allow for monitoring and quantification of beach profile changes and beach shape development.

The specific goals of the project are:

- 1. Protect approximately 8,600 acres of existing intermediate and brackish wetlands north of La. Hwy. 82 between Holly and Constance Beaches.

2. Protect approximately 300 acres of beach dune and coastal Chenier habitat along the shoreline of the Gulf of Mexico from erosion and degradation due to wave energies.

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

**General Maintenance:** Below is a summary of completed maintenance projects and operation tasks performed since April 2003, the construction completion date of the Holly Beach Sand Management Project (CS-31).

**April 2005** - The LA Dept. of Agriculture along with the Cameron Parish Police Jury installed approximately an additional 10,000 linear feet of sand fencing along with approximately 4,000 plants in April 2005.

**July 2006** – The LA Dept. of Agriculture installed approximately 5,550 plants along the entire length of the beach project.

**October 2006 – Sand Fence Replacement (FEMA Project)** – A maintenance event was performed to replace 46,000 linear feet of sand fence destroyed by Hurricane RITA. The contractor was Landscape Management Services from Lake Charles, LA. Work began on October 9, 2006 and the contract was completed on November 27, 2006. The cost associated with the engineering, design and construction of the Holly Beach Sand Fence Maintenance Project is as follows:

Construction:	\$ 218,473.50
Engineering & Design:	\$ 10,000.00
Construction Admin./Oversight:	\$ 10,000.00
As built:	<u>\$ 8,797.50</u>

**TOTAL CONSTRUCTION COST: \$ 247,271.00**  
(Note: FEMA reimbursed \$222,843)

**September 2011 – Sand Fence Replacement** – A maintenance event was performed to replace 46,000 linear feet of sand fence destroyed by storm surge from Hurricane IKE. The primary contractor was Petron L.L.C. Subcontractors were Lohmann Fencing and Landscape Management Services. Work began on September 9, 2011 and the contract was completed on December 22, 2012. There were 45,434 feet of sand fence constructed and approximately 30,000 bitter panicum plants planted. The cost associated with the engineering, design and construction of the Holly Beach Sand Management Sand Fence Project (Post Hurricane Ike – 2010) is as follows:

Construction:	\$290,989.60
Engineering and Design:	\$10,000.00

Construction Admin./Oversight:	\$16,312.00
As built:	\$11,309.00
<b>TOTAL CONSTRUCTION COST:</b>	<b>\$328,610.60</b>

**Structure Operations:** There are no structural components of the project therefore no operations are required.

## **V. Inspection Results**

### **Beach Nourishment**

There has been substantial loss of beach head. An existing dune is in place and barring a hurricane a new dune should be created in a few years with the installation of the new sand fence. The vegetation included in the sand fence project of 2011 is flourishing in areas of the beach where there is less impact from wave energy. (Photos: Appendix B, Photos 1 – 4).

### **Sand Fence**

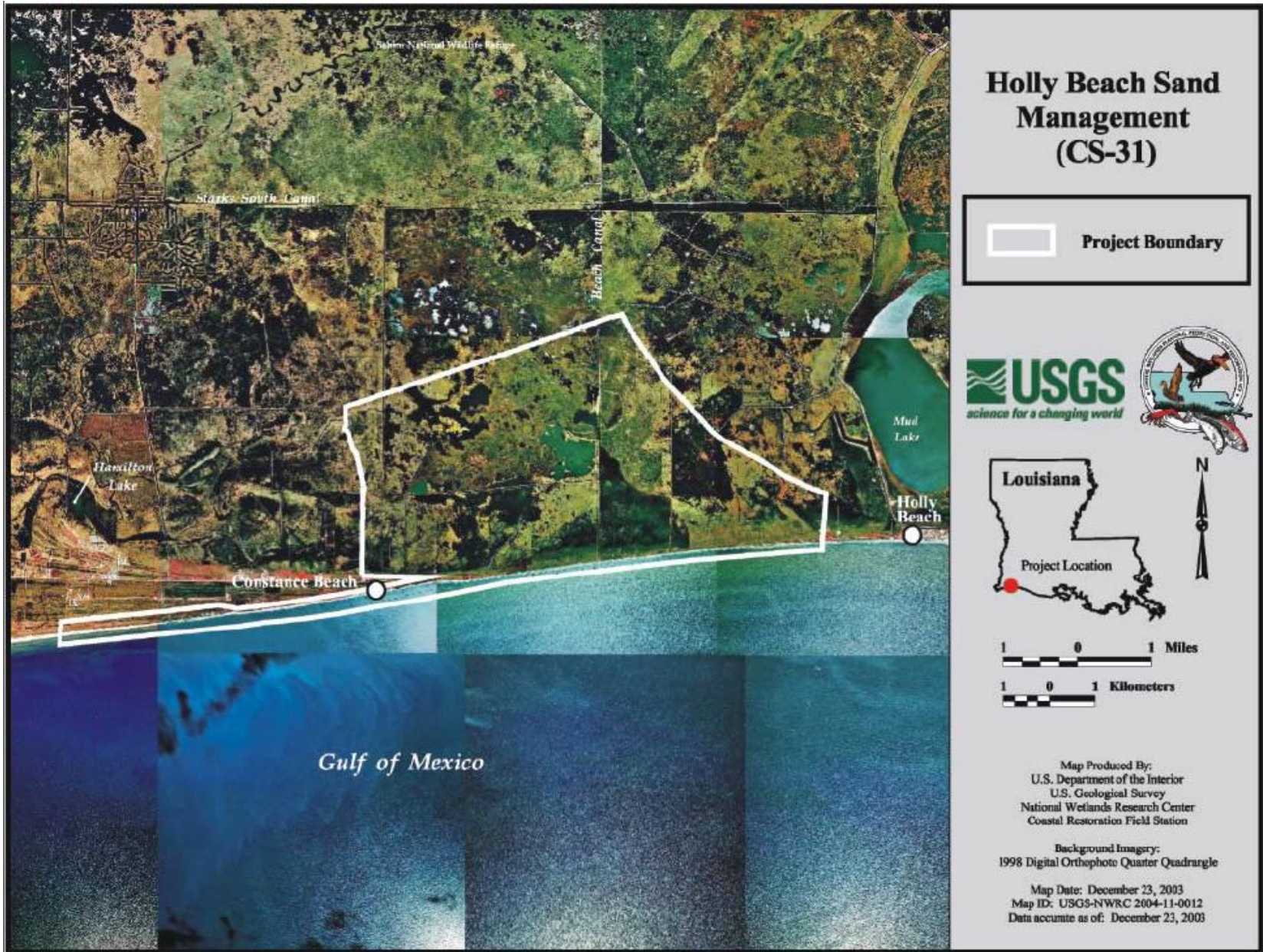
The sand fence has suffered extensive damage due to tidal action. There were many sections of considerable length where the fence fabric was completely removed from the posts. We did not generally see many broken sections of fence material lying on the beach. There are many bare posts remaining.

There are areas of fencing still intact on higher ground that are showing good dune formation, as well as healthy plant growth. (Photos: Appendix B, Photos 1 - 4).

## **VI. Conclusions and Recommendations**

Overall, the Holly Beach Sand Management Project is in fair condition and functioning as designed with problems as noted above. Beach nourishment should be considered in the near future as wind and wave action are scouring the beach and encroaching on LA Highway 82. We will monitor the project and may task a contractor to remove some of the damaged fencing and posts. Making repairs to damaged fence sections would most likely not be a wise decision at this time.

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





## **Appendix B**

### **Photographs**



**Photo No. 1**, Typical sand fence section on westernmost end of project



**Photo No. 2**, Double fence section with plantings thriving



**Photo No. 3,** Long section of damaged fence



**Photo No. 4,** Typical sand fence section on easternmost end of project

## **Appendix C**

### **Three Year Budget Projection**

**HOLLY BEACH SAND MANAGEMENT/ CS-31 / PPL 11**  
**Three-Year Operations & Maintenance Budgets 07/01/2015 - 06/30/2018**

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Pat Landry	Dion Broussard	NRCS	Dion Broussard
	<b>2015/2016 (-13)</b>	<b>2016/2017 (-14)</b>	<b>2017/2018 (-15)</b>
<b>Maintenance Inspection</b>	\$ 6,851.00	\$ 7,057.00	\$ 7,269.00
<b>Structure Operation</b>			
<b>State Administration</b>			\$ -
<b>Federal Administration</b>			\$ -
<b>Maintenance/Rehabilitation</b>			

**15/16 Description:**

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

**16/17 Description:**

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

**17/18 Description:**

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

	<b>2015/2016 (-13)</b>	<b>2016/2017 (-14)</b>	<b>2017/2018 (-15)</b>
<b>Total O&amp;M Budgets</b>	\$ 6,851.00	\$ 7,057.00	\$ 7,269.00

<b>O &amp; M Budget (3 yr Total)</b>	\$ 21,177.00
<b>Unexpended O &amp; M Budget</b>	\$ 103,988.00
<b>Remaining O &amp; M Budget (Projected)</b>	\$ 82,811.00

## **Appendix D**

### **Field Inspection Form**

Annual Inspection Report  
 HOLLY BEACH SAND MANAGEMENT PROJECT  
 State Project No. CS-31

**MAINTENANCE INSPECTION REPORT CHECK SHEET**

Project No. / Name: CS-31 Holly Beach

Date of Inspection: November 12, 2015 Time: 12:00 pm

Structure No.

Inspector(s): Dion Broussard (CPRA)  
 Brandon Samson (NRCS)  
 Darryl Clark (USFWS) for other inspections

Structure Description: Sand fencing and beach fill.

Type of Inspection: Annual

Weather Conditions: overcast, windy & cold

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				
Vegetation	Fair			1-4	Many plants were lost to high water. In places of higher elevation, the plants are flourishing.
Sand Fencing	Poor			1-4	Many sections of fence damaged due to high water.
Signage / Supports	N/A				
Sand (fill)	Poor			1-4	Beach fill is in poor condition.
Earthen Embankment	N/A				

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?