State of Louisiana
Department of Natural Resources
Coastal Engineering Division

2005/2006 Annual Inspection Report

for

POINT AU FER ISLAND HYDROLOGIC RESTORATION (TE-22)

State Project Number TE-22
Priority Project List 2

August 17, 2006
Terrebonne Parish

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Table of Contents

Appendices

I. Introduction

The Point Au Fer Island Hydrologic Restoration Project encompasses 5,230 acres of intermediate and brackish marsh and open water on Point Au Fer Island located approximately 30 miles south of Morgan City, Louisiana, in Terrebonne Parish. Point Au Fer Island lies approximately 6 miles southeast of the mouth of the Atchafalaya River. The island is bordered by the Gulf of Mexico to the south, Atchafalaya Bay to the west, Four League Bay to the north and northeast, and Oyster Bayou tidal pass to the east (See Attachment I). The Point Au Fer Island Project consists of three (3) phases. Phase I was designed to restore the natural hydrology of the project area by constructing seven canal plugs on the interior of the project area and refurbishment of one (1) existing plug located at the end of the Transco Pipeline Canal. Phase II consisted of a shoreline protection project including approximately 3,600 linear feet of rock dike along the southern portion of the island near the Gulf of Mexico. Phase III extended the rock dike constructed in Phase II approximately 3,030 linear feet to the east side and 625 linear feet to the west (see Attachment I).

Construction of the Point Au Fer Island Hydrologic Restoration 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. The Project was approved on the second Priority Project List.

The property associated with the Point Au Fer Island Hydrologic Restoration Project is owned by the Terrebonne Parish School Board, Point au Fer LLC, and the Roman Catholic Church - Arch Diocese of New Orleans.

In 2003, the CWPPRA Task Force determined that, due to LDNR being the responsible party for the operation and maintenance phase of the vast majority of the CWPPRA projects, CWPPRA authorized LDNR, through SPR 15950, to be the responsible party for all Post Storm/Hurricane Assessments. After Hurricanes Katrina and Rita, every project appeared to be impacted by the storms; therefore, LDNR determined that all projects should be assessed for damages (Broussard, 2006). The inspection included a visual observation of all constructed project features and recommended possible corrective actions should maintenance be required. The annual inspection of the Point au Fer Island Project usually occurs in the first quarter (March/April) of each year; however, due to the devastation and destruction caused by Hurricanes Katrina and Rita, a damage assessment was performed immediately following the storms in October 2005. With concurrence from the federal partner (National Marine Fisheries Service – NMFS), LDNR has decided not to perform the field inspection scheduled for March 2006 but rather use the field information gathered on the damage assessment field trip in October 2005 to produce the 2006 annual inspection report.

I. Inspection Purpose and Procedures

The purpose of the annual inspection of the Point Au Fer Island Hydrologic Restoration Project (TE-22) is to evaluate the constructed project features in order to identify any deficiencies. The inspection results are used to prepare a report detailing the condition of the project features and recommending any corrective actions considered necessary. Should it be determined that corrective actions are needed, LDNR shall provide, in the report, a detailed cost estimate for engineering, design, supervision, inspection, construction, and 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 Attachment II. A summary of past operation and maintenance projects completed since construction of the Point Au Fer Island Hydrologic Restoration Project is outlined in Section IV of this report.

Due to logistics and locations of project features, two (2) inspections were required to complete the damage assessment of the Point Au Fer Island Project. On October 6, 2005, canal plugs constructed in Phase I and recently completed breach repairs were inspected by LDNR representatives (Daniel Dearmond, Shane Triche and Maury Chatellier). On October 10, 2005, the remaining features of the project were inspected by LDNR representatives (Daniel Dearmond, Shane Triche, Elaine Lear, Chris Willians and Whitney Johnson). This trip included inspection of the rock shoreline dike along the Gulf of Mexico and the breach repair at Mobil and Transco Canal. The federal sponsor and landowner representatives were invited on both trips but were unable to attend. The inspections included a visual inspection of Phase I, II and III of the Point Au Fer Island Project (TE-22) as well as recently repaired breaches along the Gulf of Mexico.

III. Project Description and History

The marsh habitat on Point Au Fer Island is predominately brackish marsh with intermediate marsh in the interior of the island. In the years leading up to construction of the project, certain areas of Point Au Fer Island had become weakened with avenues for saltwater intrusion from the Gulf of Mexico threatening (Monitoring Plan, 1998). The Mobil Canal levee (Phase II area) had been breached during Hurricane Andrew, and the southern end of Transco Canal (Phase I area) had almost been breached by the Gulf of Mexico.

The project was designed and constructed in order to reduce marsh loss and the potential for saltwater intrusion from storm surges and high tides (Phase I), to restore hydrologic circulation close to conditions present before dredging of the pipeline canals (Phase I), and to reduce the chance of breaching of the shoreline between the Gulf of Mexico and Mobil Canal during overwash events (Phase II and III). The specific goals established to evaluate the effectiveness of the project were to (1) reduce the rate of marsh loss (Phase I), (2) reduce the

rate of canal widening (Phase I), and (3) maintain or decrease local shoreline erosion rate within the project area (Phase II and III) (Comprehensive Monitoring Report No. 1, 2001).

The Point Au Fer Island Hydrologic Restoration Project was constructed in three (3) phases. Phase I consisted of seven (7) canal plugs located in two pipeline canals. Four (4) timber plugs, Plugs No. 1, 2, 7, and 8, were constructed in Hester Canal (east-west). One (1) timber plug, Plug No. 6, and two (2) reef shell plugs, Plugs No. 3A and 4, were constructed in Transco Canal (north-south). Construction of the Phase I canal plugs was completed in December 1995. Phase II consisted of approximately 3,600 linear feet of rock shoreline protection of Areas 1, 2, and 3 along the Gulf of Mexico adjacent to the Mobil Canal. Phase II construction was completed in May 1997. Phase III consisted of extending the rock shoreline protection 3,037 linear feet to the east (Area 4) and 625 linear feet to the west (Area 5). Prior to construction, a change order added an additional lift of rock over 388 linear feet of the Phase II shoreline protection to compensate for a previous breach area located near the east end of Phase II. Additionally, Phase I Plug No. 4 was rebuilt with dredged material, and Petraflex mats (articulated concrete mats, 8’ x 20’ x 9”) were placed along the shoreline to the west and east of the existing Transco Canal steel bulkhead/rock plug at the Gulf. A total of 67 mats were placed on the west side and 58 mats were placed on the east side of the Transco Canal bulkhead. Phase III construction was completed in June 2000 (Final Report, 2000).

The principle project features include:

Phase I: Construction of timber and shell plugs in Hester and Transco Canals.

- Plug No. 1 – 200 linear feet (LF), Timber bulkhead plug in the Hester Canal located near Mosquito Bay.
- Plug No. 2 – 270 LF, Timber bulkhead plug in Hester Canal just west of Transco Canal.
- Plug No. 3A – 240 LF, Reef shell construction located in the Transco Canal north of Hester Canal.
- Plug No. 4 – 225 LF, Reef shell construction located in Transco Canal at the Gulf of Mexico. Petraflex Mats – 67 mats on west side and 58 mats on east side of Transco Canal steel bulkhead at the Gulf located approximately 200 feet south of Plug No. 4.
- Plug No. 6 – 180 LF, Timber bulkhead plug located in Transco Canal just south of Hester Canal.
- Plug No. 7 – 200 LF, Timber bulkhead plug located in Hester Canal just east of Transco Canal.
- Plug No. 8 – 180 LF, Timber bulkhead plug located at the east end of Hester Canal near Bay Castagnier.

Phase II: 3,600 linear feet of rock shoreline protection of the beach separating the Gulf of Mexico from the Mobile Canal.

- Area 1 – 1,800 linear feet of rock dike protecting the beach along the Gulf of Mexico separating Mobil Canal and the Gulf.

- Area 2 – 400 linear feet of rock dike protecting the beach along the Gulf of Mexico near the west end of Mobil Canal.

- Area 3 – 1,400 linear feet of rock dike along the shoreline of the Gulf between Area 1 and Area 2, constructed with funds provided by Mobil Oil Company.

Phase III: Modifications/additions to the rock shoreline protection of the beach separating the Gulf of Mexico from the Mobil Canal.

- Area 4 – 3,037 linear feet extension of the Phase II rock structure on the east end.

- Area 5 – 625 linear feet extension of the Phase II rock structure on the west end.

- Additional 16 inch lift of rock placed over 388 feet of the Phase II rock structure near the east end of Phase II.

The Point Au Fer Island Hydrologic Restoration Project (TE-22) has a twenty-year (20 year) economic life which began in December 1995 (Phase I), May 1997 (Phase II), and June 2000 (Phase III). Attached is the three (3) year projected budget for the project (See Attachment II).

IV. Summary of Past Operation and Maintenance Projects

Below is a summary of completed maintenance projects and operation tasks performed since completion of the Point Au Fer Island Hydrologic Restoration Project (TE-22).

June 2000 – Phase I Plug No. 4 was rebuilt with dredged material, and Petraflex mats (articulated concrete mats, 8’ x 20’ x 9”) were placed along the shoreline to the west and east of the existing Transco Canal steel bulkhead/rock plug at the Gulf of Mexico. A total of 67 mats were placed on the west side and 58 mats were placed on the east side of the Transco Canal bulkhead. This work was performed by Johnny F. Smith Truck & Dragline Service, Inc. of Slidell, LA as part of the Phase III construction contract and funded out of the project O&M budget. The total construction cost for this maintenance event was $237,874.

In 2005, construction was completed on the repair of a breach located at the east end of Area 4, Phase III rock shoreline protection; repair of a breach around the south end of Plug No. 8 in Hester Canal (Phase I); and repair of an impending breach behind the east mats along the Gulf shoreline at the Transco Canal bulkhead near Plug No. 4 (Phase I). Luhr Brothers Construction was awarded the contract to complete this project in the amount of $391,382. Design and Construction oversight services were provided by Picciolla & Associates, Inc. of Cutoff, Louisiana.

V. Inspection Results

General Observations:

From storm reports, Hurricane Rita produced her strongest winds from the south and southeast causing high storm surges in the project area. It was evident from the water remaining on the interior marshes of the island that the entire project area was inundated with several feet of water for a period of time. At the time of the inspection and after flood waters had receeded, several inches of water continued to cover the interior marsh. We concluded from visual observations that it is possible that the interior marsh had settled due to the overbearing weight of waters from the storm surge produced by Hurricane Rita. Also, the marsh vegetation appeared to be burnt from high salinity flood waters inundating the project area.

TE-22 Point Au Fer Island Project (Phase I II& III)

Inspection Results:
The timber and reef shell canal plugs constructed under Phase I on the interior of Point Au Fer Island appeared to be in good condition with no significant damage from Hurricane Rita. However, a visual inspection of the steel bulkhead and rock dike shoreline located at the end of Transco Canal along the Gulf of Mexico constructed under Phase III revealed minor displacement of rock rip rap along the rock dike which was recently repaired under a maintenance contract in 2005. We also observed minor displacement of rock rip rap along the rock shoreline adjacent to Mobil Canal along the Gulf of Mexico. This rock dike was recently constructed to repair existing breaches in the shoreline. It appeared, in all cases, that continuous wave action and storm surge brought on by Hurricane Rita displaced the newly constructed rock rip rap and moved approximately 12 to 24 inches of sand/shell from offshore inland approximately 100 to 150 feet directly behind the rock dike covering the marsh. From visual observations, rock displacement was minimal and some shoreline erosion was noted. (See photos below)

TE-22 – steel sheetpile bulkhead and rock dike located at the end of Transco Canal along the Gulf of Mexico.

TE-22 – photo of accumulation of sand material behind the rock dike along the Gulf of Mexico adjacent to the rock plug at the end of Transco Pipeline Canal.

TE-22 –Photo of displaced rock rip rap along rock dike located on the east side of the steel sheetpile bulkhead at the end of Transco Canal along the Gulf of Mexico.

TE-22 –Photo of displaced rock rip rap along rock dike located adjacent to the east end of Mobile Canal along the Gulf of Mexico.

VI. Conclusions and Recommendations

From visual observation of the existing project features, we found minor displacement of the rock riprap, mainly on recently constructed rock breach repairs completed in 2005. Since these damages are considered minor and do not adversely affect the project as a whole, we do not recommend any further actions at this time. No FEMA claims are warranted.

References:

Broussard, G. M., 2006. *Damage Assessment Report for Hurricanes Katrina and Rita,* Louisiana Department of Natural Resources, Coastal Engineering Division.

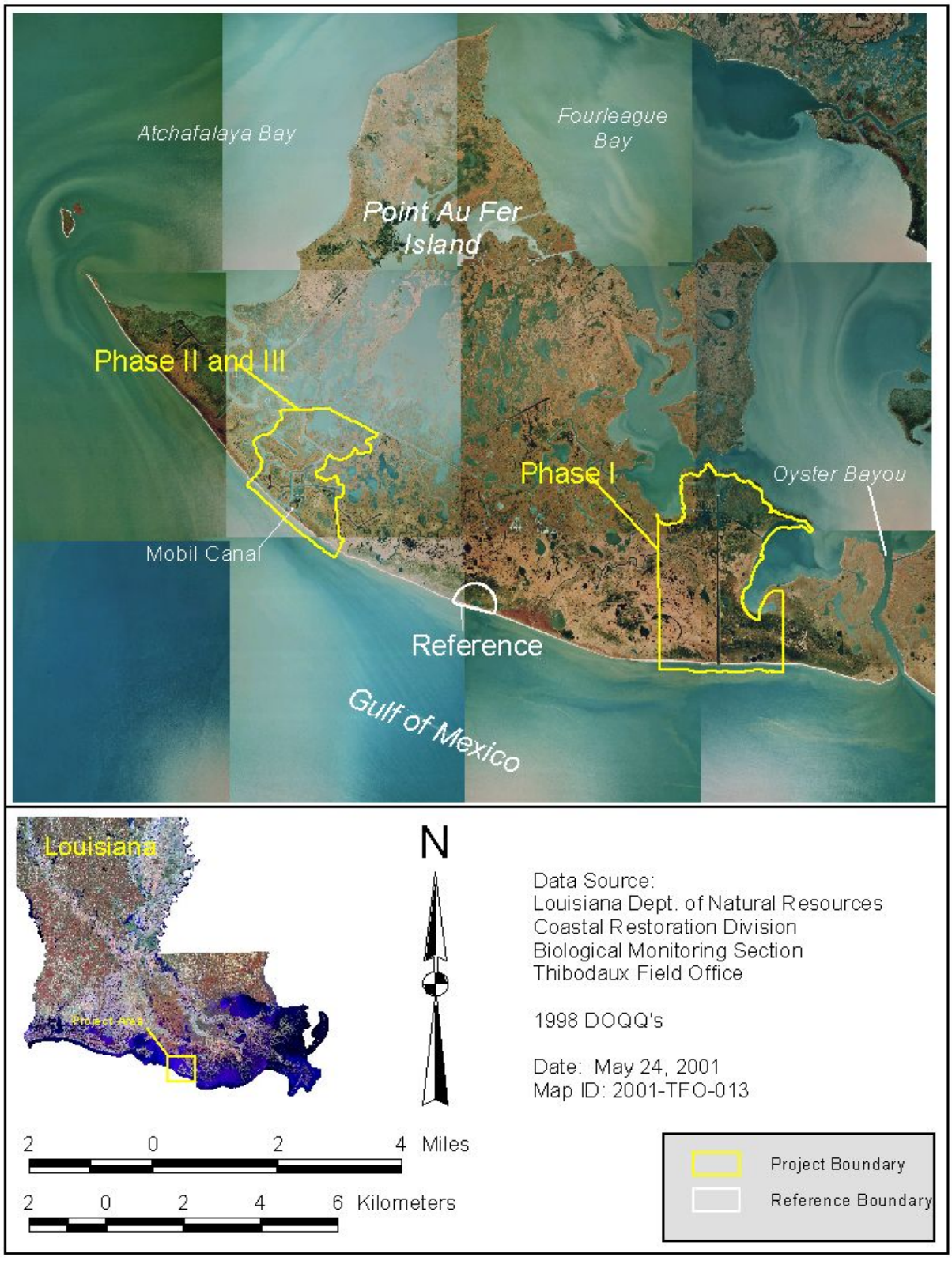
Picciolla & Associates, 2000. *Final Report*, Lake Chapeau Sediment Delivery Input/ Hydrologic Restoration Project and Point au Fer island Hydrologic Restoration.

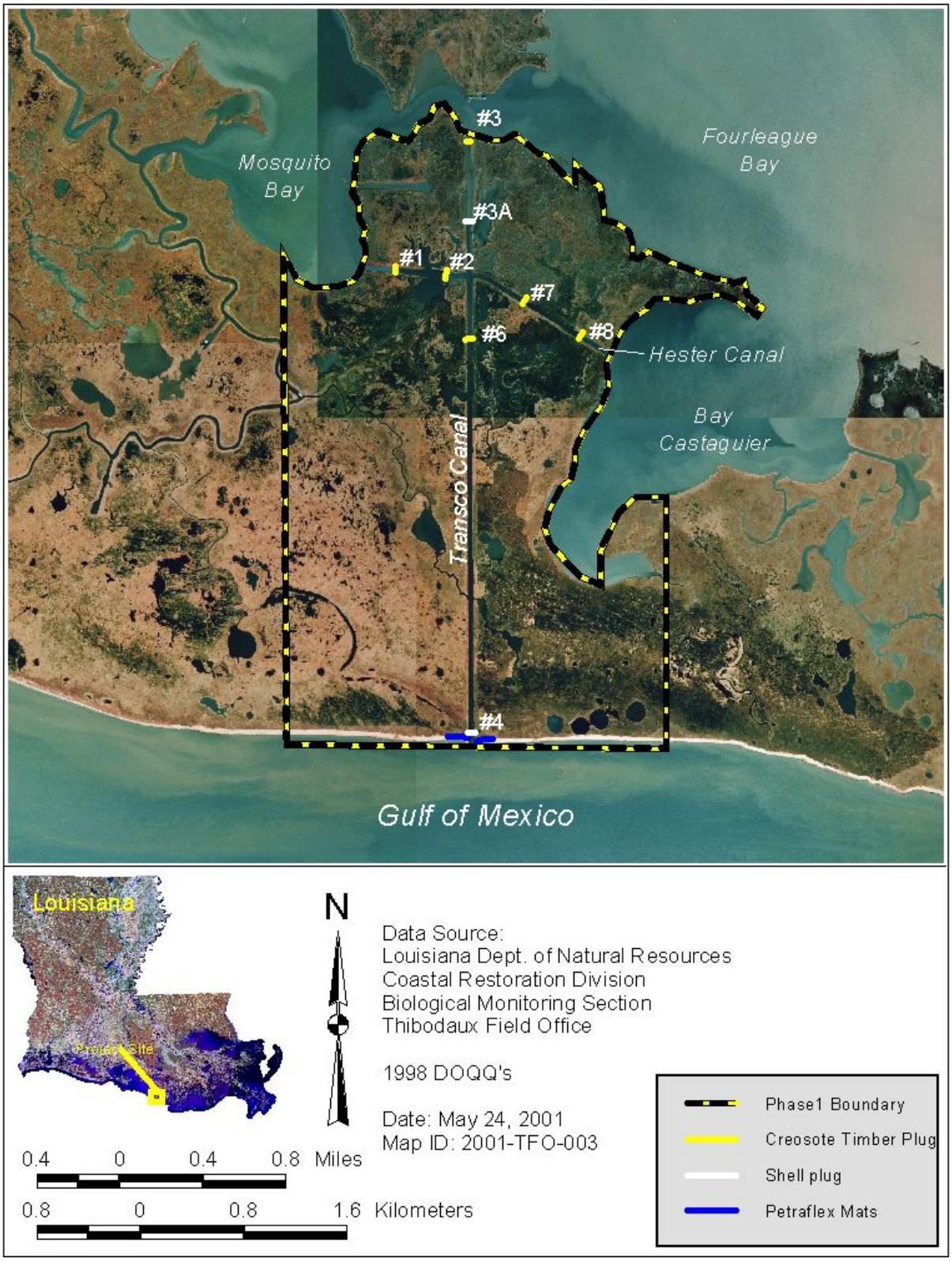
Rapp J.M., Clark N.M., Kane S., 2001. *Comprehensive Monitoring Report No.1*, Point au Fer Island Restoration (TE-22), Louisiana Department of Natural Resources, Coastal Restoration Division.

Smith K., 2003. *Monitoring Plan*, Point au Fer Island, Louisiana Department of Natural Resources, Coastal Restoration Division.

Attachment I

Project Features Map


Atchafalaya Bay
Fourleague Bay
Point Au Fer Island
Phase II and III
Phase I
Oyster Bayou
Mobil Canal
Reference
Gulf of Mexico
Louisiana
N
Data Source:
Louisiana Dept. of Natural Resources
Coastal Restoration Division
Biological Monitoring Section
Thibodaux Field Office
1998 DOQQ's
Date: May 24, 2001
Map ID: 2001-TFO-013
2 0 2 4 Miles
2 0 2 4 6 Kilometers
Project Boundary
Reference Boundary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Fourleague Bay
Mosquito Bay
#3A
#1
#2
#7
#6
#8
Hester Canal
Bay Castaguier
Transco Canal
#4
Gulf of Mexico
Louisiana
Project Site
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Data Source:
Louisiana Dept. of Natural Resources
Coastal Restoration Division
Biological Monitoring Section
Thibodaux Field Office
1998 DOQQ's
Date: May 24, 2001
Map ID: 2001-TFO-003
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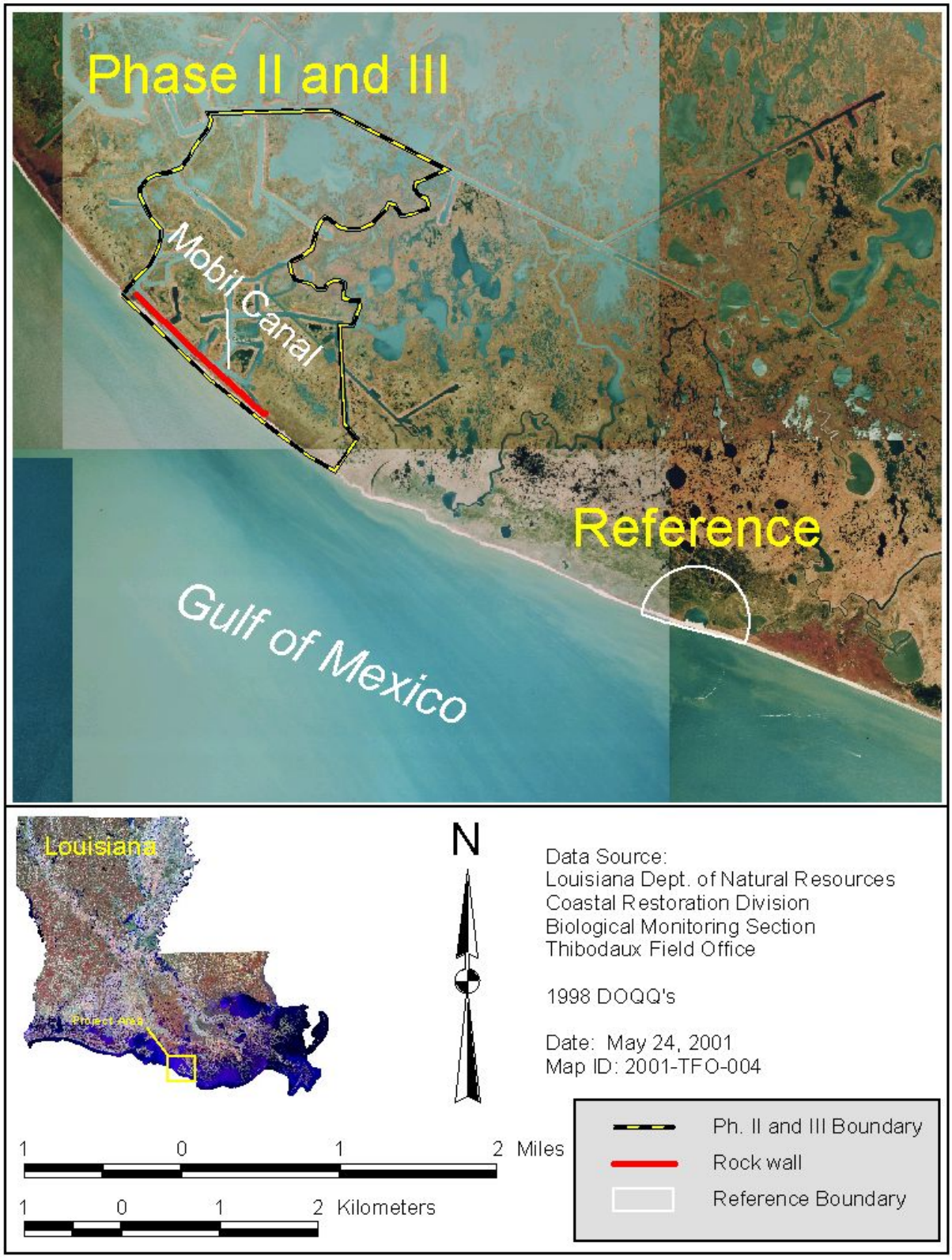
0.8 0 0.8 1.6 Kilometers
Phase1 Boundary
Creosote Timber Plug
Shell plug
Petraflex Mats


Phase II and III
Mobil Canal
Reference
Gulf of Mexico
Louisiana
Project Area
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Data Source:
Louisiana Dept. of Natural Resources
Coastal Restoration Division
Biological Monitoring Section
Thibodaux Field Office
1998 DOQQ's
Date: May 24, 2001
Map ID: 2001-TFO-004
1 0 1 2 Miles
1 0 1 2 Kilometers
Ph. II and III Boundary
Rock wall
Reference Boundary

Attachment II

Three Year Budge Projections and Worksheets

Point Au Fer Island Hydrologic Restoration/ TE-22 / PPL 2

Three-Year Operations & Maintenance Budgets 07/01/2006 - 06/30/09

Project Manager	O & M Manager	Federal Sponsor	Prepared By
Brian Babin	*Shane Triche*	*NMFS*	*Brian Babin*

	2006/2007	2007/2008	2008/2009
Maintenance Inspection	$ 5,250.00	$ 5,407.00	$ 5,569.00
Structure Operation			
Administration		$ -	$ -
Maintenance/Rehabilitation			

06/07 Description:

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

07/08 Description

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

08/09 Description: Secondary Monument Installation

E&D			$ 5,540.00
Construction			$ -
Construction Oversight			$ -
		Sub Total - Maint. And Rehab.	$ 5,540.00

	2006/2007	2007/2008	2008/2009
Annual O&M Budgets	**$ 5,250.00**	**$ 5,407.00**	**$ 11,109.00**

O &M Budget (3 yr Total)	**$21,766.00**
Unexpended O & M Funds	**$105,839.86**
Remaining O & M Budget (Projected)	**$84,071.86**

OPERATIONS & MAINTENANCE BUDGET WORKSHEET

Project: TE-22 Point Au Fer Island Hydrologic Restoration

FY 06/07 –

Administration	$	0
O&M Inspection & Report	$	5,250
Operation:	$	0
Maintenance:	$	0

Operation and Maintenance Assumptions:

None

FY 07/08 –

Administration	$	0
O&M Inspection & Report	$	5,407
Operation:	$	0
Maintenance:	$	0

Operation and Maintenance Assumptions:

None

FY 08/09 –

Administration	$	1,500
O&M Inspection & Report	$	5,569
Operation:	$	0
Maintenance:	$	5,540

Operation and Maintenance Assumptions:

Possible secondary monument replacement and/or adjustment:

2 days @ 1,420 = $2,840
data process and deliverables: $1,200
Reimbursable expenses (Boats, equipment, etc.): $1,500
DNR Administration: $1,500