REGION 4

Coastal Wetlands Planning Protection & Restoration Act

26th Priority Project List

Region 4

Regional Planning Team Meeting

January 26, 2016
Lafayette, LA

CWPPRA

1. Welcome and Introductions

- RPT Region 4 Leader: Darryl Clark - USFWS

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Announcements

- Copies of the PPL 26 Selection Process & Schedule available at the sign-in table.
- PPL 26 RPT meetings to accept project nominees:
  - **Region IV, Estuarine Fisheries & Habitat Center, Jan. 26, 2016, 11:00 am**
  - Region III, Terrebonne Parish North Branch Library, Jan. 27, 2016, 10:00 am
  - Region I, USFWS SE LA Refuges Complex (Big Branch), Jan. 28, 2016, 8:00 am
  - Region II, USFWS SE LA Refuges Complex, Jan. 28, 2016, immediately following Region I
- Parish representatives must identify themselves during the RPT meetings and **fill out a voting registration form**, including contact information for the primary and secondary voting representatives that will cast votes during the Coastwide Electronic Vote.

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Region 4 Parishes

- Eligible parishes for basins in Region 4 include:
- Calcasieu-Sabine Basin
  - **Cameron Parish**
  - **Calcasieu Parish**
- Mermentau Basin
  - **Cameron Parish**
  - **Vermilion Parish**

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RPT Meetings

- Project proposals should be consistent with the 2012 State Master Plan.
- A project can only be nominated in one basin except for coastwide projects
- Proposals that cross multiple basins, excluding coastwide projects, shall be nominated in one basin only, based on the majority area of project influence.
- Coastwide projects apply across basin boundaries; their benefits are not tied to one basin. They can be nominated from any basin and can be presented in all RPT meetings.

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RPT Meetings

- Presenters without factsheets **MUST** complete a PPL 26 Nomination Sign-Up Sheet for each project nominee (demo projects too).
- Presenters with factsheets, please give a factsheet each to Kaitlyn, Michelle & Kylie or Anne before your presentation.
- Limit project proposals to 5 minutes and Powerpoint presentations to 5 slides.
- Public comments on project proposals will be accepted orally during the RPT meetings and in writing by February 17, 2016.
- Limit comments/questions during meeting to PPL 26 subject proposals and processes.

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Coastwide Projects

- Proposes a technique applicable across the coast (e.g. vegetative planting)
- Nominated at any RPT meeting
- All coastal parishes & agencies will vote on selection of coastwide nominee
- Only one coastwide nominee may be selected from the coastwide nominee pool during the Electronic Coastwide Vote on February 23, 2016.
- The Technical Committee may or may not select a coastwide project in April 2016.

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Demonstration Projects

- Demonstrates a technology which can be transferred to other areas in coastal Louisiana
- Engineering/Environmental Workgroups will validate that demos fit CWPPRA Standard Operating Procedures criteria
- The RPTs select up to 6 demos during the Feb. 23 Coastwide Electronic Vote.
- The Technical Committee selects up to 3 demos in April 2016.
- Workgroups may recommend that no demos move forward to candidate stage
- Previous demo candidates must be ***re-nominated*** for PPL 26.

Coastwide Electronic Vote (Feb 23) to select:

Projects per Basin
(Determined by loss rates, the highest loss rates have the most projects)

4 Barataria
4 Terrebonne
3 Breton Sound
3 Pontchartrain
2 Mermentau
2 Calcasieu/Sabine
2 Teche/Vermilion
1 Atchafalaya
1 Coastwide
22 Total

& up to 6 demos

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Coastwide Electronic Vote

- Parishes of each basin are asked to ***identify*** **TODAY** ***who will vote*** during the Coastwide Electronic Vote.
- Each officially designated parish representative, each Federal agency, and the State (CPRA) will have one vote.
- No additional projects can be nominated after the RPTs.
- No significant changes to projects proposed at the first round of RPT meetings will be allowed (this includes combining projects).
- Public comments will be heard today and written comments must be submitted by 2/17/2016.

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Coastwide Electronic Voting Process

- USACE will send out voting sheets as both Excel spreadsheet and PDF documents 1 week prior to the Coastwide Electronic Vote. Voters will only receive voting sheets for the basins that they are eligible to vote for & the column that they need to mark their vote will be highlighted. Voting instructions will be provided with the voting sheets.
- Parish representatives must **fill out a voting registration form** at the RPT meetings with their email addresses to receive the voting sheets in February.
- Voters must email their voting sheets to kaitlyn.m.carriere@usace.army.mil

All votes must be received by 10:30 am on February 23, 2016.

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Nominee Project Evaluations

- Following the Coastwide Electronic Vote, an agency will be assigned to each project to prepare a Nominee Project factsheet (1 page + map).
- CWPPRA Engineering & Environmental Workgroups review draft features and assign preliminary cost and benefit ranges.
- Work groups will also review demo & coastwide projects and verify that they meet PPL 26 criteria.

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PPL 26 Candidate Project Selection

- CWPPRA Technical Committee meeting, April 5, 2016 at 9:30 am, U.S. Army Corps of Engineers, 7400 Leake Avenue, New Orleans, LA.
- Technical Committee ranks nominees and votes to select 10 candidate projects and up to 3 demos.
- Written public comments should be submitted to Corps of Engineers prior to Tech Comm meeting by March 22, 2016.
- Public comments also accepted orally during meeting.

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PPL 26 Candidate Project Evaluation & Selection

- Candidates evaluated between May and October
- Workgroups conduct site visits and meetings to identify needs and establish project baselines and boundaries.
- Workgroups determine benefits, project features, and cost estimates
- Technical Committee votes to select up to 4 candidate projects and up to 1 demo to recommend for Phase 1.
  - Dec. 7, 2016, Baton Rouge, 9:30 am
- Task Force final decision to select PPL 26 in January 2017.

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PPL 26 Timeline

- **Coastwide Electronic Vote, Feb. 23, 2016**
  - 21 basin-project nominees, 1 coastwide nominee, and 6 demos selected
- **Technical Committee Mtg, Apr. 5, 2016, New Orleans**
  - Selection of 10 candidates and up to 3 demos
- **Technical Committee Mtg, Dec. 7, 2016, Baton Rouge**
  - Recommend up to 4 projects for Phase 1 funding
- **Task Force Mtg, Jan. 2017, New Orleans**
  - Final Selection of projects for Phase 1 funding

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Written Comments

- Send written comments on projects & demos proposed today to the CWPPRA program manager
- **Deadline: February 17, 2016**

Brad Inman
CWPPRA Program Manager
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160

Email: Brad.L.Inman@usace.army.mil

(this information is on the back of the agenda)

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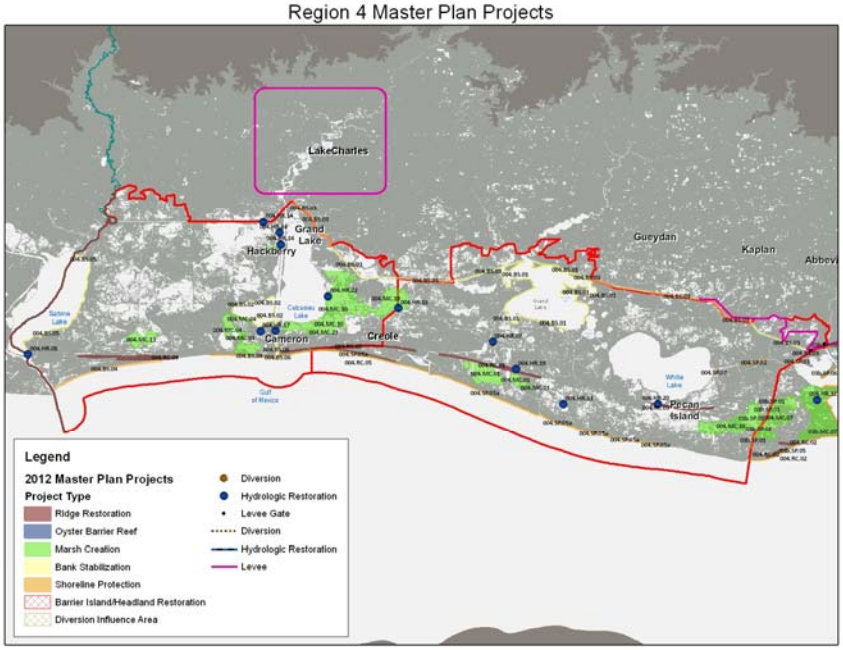
Region 4 Master Plan Projects



CWPPRA

Project Type	Project Name	Project Costs	Project No.
Bank Stabilization	Grand Lake Bank Stabilization: Bank stabilization through earthen fill placement and vegetative plantings of approximately 497,000 feet of perimeter shoreline at Grand Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$74M	004.BS.01
Bank Stabilization	West Cove Bank Stabilization: Bank stabilization through earthen fill placement and vegetative plantings of approximately 106,000 feet of perimeter shoreline in the West Cove area of Calcasieu Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$16M	004.BS.02
Bank Stabilization	GIWW Bank Stabilization (Freshwater Bayou to Calcasieu Ship Channel): Bank stabilization through earthen fill placement and vegetative plantings of approximately 421,000 feet of GIWW bankline between Freshwater Bayou Canal and Calcasieu Ship Channel.	$63M	004.BS.03
Bank Stabilization	Sabine Lake Bank Stabilization: Bank stabilization through earthen fill placement and vegetative plantings of approximately 133,000 feet of the eastern shoreline of Sabine Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$21M	004.BS.05
Bank Stabilization	Calcasieu Ship Channel Bank Stabilization (Gulf to Calcasieu Lake): Bank stabilization through earthen fill and placement of approximately 75,000 feet of Calcasieu Ship Channel bankline from the Gulf of Mexico to Calcasieu Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$12M	004.BS.06
Hydrologic Restoration	Calcasieu Ship Channel Salinity Control Measures: Construction of measures designed to prevent saltwater from entering Calcasieu Lake through the Calcasieu Ship Channel. Measures would control salinity spikes, provide storm surge benefits, and would be constructed in a manner that would allow for the continued functioning, and ideally improvement and increased viability of the Calcasieu Ship Channel and the Port of Lake Charles.	$398M	004.HR.06
Hydrologic Restoration	Little Pecan Bayou Sill: Construction of a saltwater sill at the confluence of Little Pecan Bayou and the Mermentau River to retain freshwater and reduce saltwater intrusion in the Mermentau watershed.	$5M	004.HR.07

CWPPRA

Project Type	Project Name	Project Costs	Project No.
Hydrologic Restoration	Sabine Pass Hydrologic Restoration: Isolation of the southern end of Sabine Lake from the Sabine Ship Channel through a rock dike to retain freshwater in Sabine Lake and reduce saltwater intrusion from the ship channel.	$33M	004.HR.08
Hydrologic Restoration	Tom's Bayou Hydrologic Restoration: Construction of a sheetpile crested weir at Tom's Bayou to provide salinity control for Rainey Marsh.	$1M	004.HR.12
Hydrologic Restoration	Deep Lake Hydrologic Restoration: Dredging of a 700-foot spillway structure (with 100-foot width and 15-foot depth) north of Deep Lake to increase freshwater exchange within the Rockefeller Wildlife Management Area and Game Preserve.	$2M	004.HR.13
Hydrologic Restoration	Alkali Ditch Area Hydrologic Restoration: Construction of structures at Alkali Ditch, Crab Gully, and Black Lake Bayou to provide salinity control in the Calcasieu watershed.	$38M	004.HR.14
Hydrologic Restoration	Oyster Bayou Hydrologic Restoration: Construction of a salinity barrier at Oyster Bayou south of West Cove, Calcasieu Lake to reduce saltwater intrusion into the Calcasieu watershed.	$5M	004.HR.17
Hydrologic Restoration	Mermentau Basin Hydrologic Restoration (East of Calcasieu Lake): Construction of a water control structure east of Calcasieu Lake with operation to introduce freshwater to wetlands west of Highway LA-27 near Creole.	$7M	004.HR.18
Hydrologic Restoration	Mermentau Basin Hydrologic Restoration (South of Grand Lake): Construction of a water control structure south of Grand Lake with operation to introduce freshwater to wetlands south of Highway LA-82 near Grand Chenier.	$7M	004.HR.19

CWPPRA

Project Type	Project Name	Project Costs	Project No.
Hydrologic Restoration	Mermentau Basin Hydrologic Restoration (South of White Lake): Construction of a water control structure south of White Lake with operation to introduce freshwater to wetlands south of Highway LA-82 near Pecan Island.	$7M	004.HR.20
Hydrologic Restoration	East Calcasieu Lake Hydrologic Restoration: Dredging of a 1,500-foot spillway structure (with 200-foot width and 15-foot depth) in the Cameron-Creole Levee at East Calcasieu Lake to increase freshwater exchange with adjacent wetlands.	$5M	004.HR.22
Marsh Creation	East Rainey Marsh Creation: Creation of approximately 3,080 acres of marsh in the eastern portion of Rainey Marsh to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$429M	03b.MC.07
Marsh Creation	South Grand Chenier Marsh Creation: Creation of approximately 7,330 acres of marsh south of Highway LA-82 near Grand Chenier to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$708M	004.MC.01
Marsh Creation	Mud Lake Marsh Creation: Creation of approximately 3,910 acres of marsh at Mud Lake south of West Cove, Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$581M	004.MC.04
Marsh Creation	West Rainey Marsh Creation: Creation of approximately 3,550 acres of marsh at Rainey Marsh near the southeast bank of the Freshwater Bayou Canal to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$615M	004.MC.07
Marsh Creation	Southeast Calcasieu Lake Marsh Creation: Creation of approximately 7,600 acres of marsh southeast of Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$666M	004.MC.10

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Project Type	Project Name	Project Costs	Project No.
Marsh Creation	Cameron Meadows Marsh Creation: Creation of approximately 3,290 acres of marsh at Cameron Meadows north of Johnsons Bayou to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$290M	004.MC.13
Marsh Creation	East Pecan Island Marsh Creation: Creation of approximately 7,340 acres of marsh between Pecan Island and the west bank of the Freshwater Bayou Canal to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$1,180M	004.MC.16
Marsh Creation	Calcasieu Ship Channel Marsh Creation: Creation of approximately 2,640 acres of marsh south of Calcasieu Lake near Cameron to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$185M	004.MC.23
Marsh Creation	East Calcasieu Lake Marsh Creation: Creation of approximately 14,840 acres of marsh in the eastern Cameron-Creole watershed to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$2,484M	004.MC.19
Marsh Creation	Kelso Bayou Marsh Creation: Creation of approximately 260 acres of marsh at Kelso Bayou immediately west of Calcasieu Ship Channel to create new wetland habitat, restore degraded marsh, and reduce wave erosion.	$32M	004.MC.25
Ridge Restoration	Grand Chenier Ridge Restoration: Restoration of approximately 86,000 feet (200 acres) of historic ridge at Grand Chenier Ridge to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	$11M	004.RC.01
Ridge Restoration	Cheniere au Tigre Ridge Restoration: Restoration of approximately 60,000 feet (140 acres) of historic ridge along Bill Ridge and Cheniere au Tigre near the Gulf shoreline to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	$10M	004.RC.02

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Project Type	Project Name	Project Costs	Project No.
Ridge Restoration	Pecan Island Ridge Restoration: Restoration of approximately 44,000 feet (100 acres) of historic ridge along Pecan Island Ridge to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	$8M	004.RC.03
Ridge Restoration	Hackberry Ridge Restoration: Restoration of approximately 130,000 feet (300 acres) of historic ridge along Blue Buck and Hackberry Ridges to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	$2M	004.RC.04
Ridge Restoration	Front Ridge Restoration: Restoration of approximately 147,000 feet (340 acres) of historic ridge along Front Ridge east of Cameron to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	$26M	004.RC.05
Shoreline Protection	Freshwater Bayou Shoreline Protection (Belle Isle Canal to Lock): Shoreline protection through rock breakwaters of approximately 41,000 feet of Freshwater Bayou shoreline from Belle Isle Canal to Freshwater Bayou Lock to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$43M	03b.SP.01
Shoreline Protection	Gulf Shoreline Protection (Freshwater Bayou to Southwest Pass): Shoreline protection through rock breakwaters of approximately 90,000 feet of Gulf shoreline from Freshwater Bayou to Southwest Pass (near Marsh Island) to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$96M	03b.SP.05
Shoreline Protection	Calcasieu-Sabine Shoreline Protection-Component A: Shoreline protection through rock breakwaters of approximately 38,000 feet of Gulf shoreline between Sabine River and Calcasieu Ship Channel to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$48M	004.BS.04a
Shoreline Protection	Freshwater Bayou Canal Shoreline Protection: Shoreline protection through rock breakwaters of approximately 11,000 feet of Freshwater Bayou Canal bankline at Little Vermilion Bay to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$13M	004.SP.03

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Project Type	Project Name	Project Costs	Project No.
Shoreline Protection	Gulf Shoreline Protection (Calcasieu River to Rockefeller): Shoreline protection through rock and low wave-action breakwaters of approximately 290,000 feet of Gulf shoreline between Calcasieu River and Freshwater Bayou to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$401M	004.SP.05a
Shoreline Protection	Northeast White Lake Shoreline Protection: Shoreline Protection through rock breakwaters of approximately 3,000 feet of White Lake shoreline near Schooner Bayou Canal to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$4M	004.SP.07
Shoreline Protection	Southwest Pass Shoreline Protection (West Side): Shoreline protection through rock breakwaters of approximately 37,000 feet of shoreline along Southwest Pass immediately west of Marsh Island to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$40M	03b.SP.08
Shoreline Protection	Schooner Bayou Canal Shoreline Protection: Shoreline protection through rock breakwaters of approximately 21,000 feet of Schooner Bayou Canal bankline from Highway 82 to North Prong to preserve shoreline integrity and reduce wetland degradation from wave erosion.	$23M	004.SP.02

ATTENDANCE RECORD

DATE	SPONSORING ORGANIZATION	LOCATION
January 26, 2016 11:00 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	Estuarine Fisheries & Habitat Center 646 Cajundome Blvd Lafayette, LA

PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION IV

PARTICIPANT REGISTER

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
KEVIN LONG	MANAGER - LAKE ARTHUR CLUB	318-221-3516
Ripley Comeaux	Manager/owner Lake Arthur Club	318-464-8315
Felton Dore	Camp Owner	337.856-4521
Taylor Sloey	Senior Restoration Ecologist - Coastal Environmental	402-580-9007
BARRY HEBERT	BIOLOGIST - LDWF	225 765 0833
Randy Moertle	MANAGER - McIlhenny Co.	(985) 856-3630
Brad Crawford	EPA	214 665 7255
Jane Watson	EPA	214665 6653
KAREN McCORMICK	EPA	214-665-8365
Chad Courville	Main Corporation	337.264.1695
Sharon Osowski	EPA	214-665-7506
JOHN FORET	NOAA	337.291.2107
Scooter Trosclair	LDWF	337-491-2000
Jason Knill	NOAA	2257575411
Donna Ragusa	NOAA	225-316-8958
JOHN PETITBON	USACE	504-862-2732
Scott Wandell	USACE	504-862-1878
Stu Brown	CPRA	225 342 4736
Kent Ballfrass	CPRA	225-342-4753
Tammy Falmore	USACE	504-862-1002
Darrell Bajreux	Vermilion	3376520636
Kevin Roy	USFWS	337-291-3120

LMV FORM 583-R
JAN 88

ATTENDANCE RECORD

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PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION IV

PARTICIPANT REGISTER

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
Cindy Steyer	CPRA & NRCS	225-665-4453 x111
Erich Swenson	RA 5 LSU	225 578 2730
Brian Lezina	Asst Admin CPRA	225 342-1475
Angela Love	SIME - Env. Lead	337-408-3103
Twyla Cheatwood	NOAA Fisheries	225-389-0508
DAWN DAVIS	NOAA Fisheries	225 389 0508
Cassidy Lejeune	Biologist, Ducks Unlimited	337-654-1312
Whitney Broussard	Research Scientist, LL	337-501-6580
R.J. BOUTTE	FENSTERMAKER	337-237-2200
Rene Escuriex	"	"
Kim Galjour	Petro Partners, Inc.	337-654-5430
Billy Broussard	Vermilion Corp	3378930268
Ron Boustany	NRCS	337 291-3067
Natalie McElyea	LSU AgCenter	337-781-4508
Angela Trahan	U.S. FWS	337 291-3137
Charles Sasser	LSU	225 603 8960
Gabe Giffin	LDWF - PIO	985 351 2785
Ryan Bourriaque	CPRA	337-735-5718
Mary Carroll	CPRA	337-735-5718
BURT Brunlieu	Delta	225-614-4110
Tyler Clavier	CPRA Estuaries	225-342-5570
Lauren Ehman	CPRA	337 721-3600

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JAN 88

ATTENDANCE RECORD

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PURPOSE

MEETING OF THE REGIONAL PLANNING TEAM REGION IV

PARTICIPANT REGISTER

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
Kevin Sagrera	UPPT	303-4585
Michael Boltright	Marine CARDeno	504 430 8700
Darryl Clark	USFWS - Tech Cons. Rep	337-291-3111
Robert Miller	Numerical Modeler Fenstermaker	337 237 1200
Nikki Cavalier	CWPPRA Public Outreach	337-266-8626
Lonny Paille	FWS	
Troy Mallach	NRCS	337/291-3064

LMV FORM 583-R
JAN 88

Region 4 – MERMENTAU BASIN

Project Number	Project Proposals
R4-ME-01	Sweeney Tract Marsh Creation and Nourishment
R4-ME-02	Chenier at Alligator Lake and Marsh Nourishment
R4-ME-03	Umbrella Bay Bankline Stabilization
R4- ME-04	Gulf Shoreline Protection at Hog Bayou
R4-ME-05	East Pecan Island Marsh Creation
R4-ME-06	Price Lake Marsh Creation
R4-ME-07	North Big Marsh Restoration Project
R4-ME-08	South Pecan-Mulberry Island West Marsh Creation and Terracing
R4-ME-09	Southeast Pecan Island Marsh Creation and Terracing
R4-ME-10	East End Lock Modification/Replacement

Region 4 – CALCASIEU-SABINE BASIN

R4-CS-01	East Holly Beach Shoreline Protection
R4-CS-02	No Name Bayou East Marsh Creation and Nourishment
R4-CS-03	North Mud Lake Marsh Creation and Nourishment
R4-CS-04	East Prong – Grand Bayou Marsh Creation and Terracing
R4-CS-05	West Cove Bank Stabilization and Marsh Creation
R4-CS-06	East Cameron Meadows Marsh Creation
R4-CS-07	Southeast Calcasieu Lake Marsh Creation

Region 4 – MERMENTAU BASIN

R4-ME-01

Sweeney Tract Marsh Creation and Nourishment

R4 - ME-01

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name:
Sweeney Tract Marsh Creation and Nourishment

Project Location:
Region 4, Mermentau Basin, Cameron Parish

Problem:
Marshes within the Hog Bayou Watershed mapping unit are stressed due to limited freshwater input and seasonal salinity spikes exacerbated by construction of the Mermentau Ship Channel. Other contributors to land loss in the area are subsidence, inundation, compaction, and erosion of organic soils. Currently, the project area is characterized as large, open water with degraded areas of wetland vegetation. The dredging of the Mermentau Ship Channel increased tidal amplitude and saltwater intrusion into the watershed. In addition to these direct losses, significant interior marsh loss has resulted from saltwater intrusion and hydrologic changes associated with storm damage and blocked drainages (inundation). The 1984 to 2014 interior marsh loss rate derived from USGS for the area is -1.50 % per year. The subsidence rate provided by the 2012 Louisiana State Master Plan Appendix C indicates a loss of 0.24 ft. of elevation within the 20-yr project life.

Goals:
The primary goals of this project are to restore marsh habitat in open water areas via marsh creation. Specific goals are: 1) Create and nourish approximately 730 acres of saline marsh, and 2) Create approximately 13,000 linear feet (6.9 acres) of tidal creeks to facilitate intertidal flow.

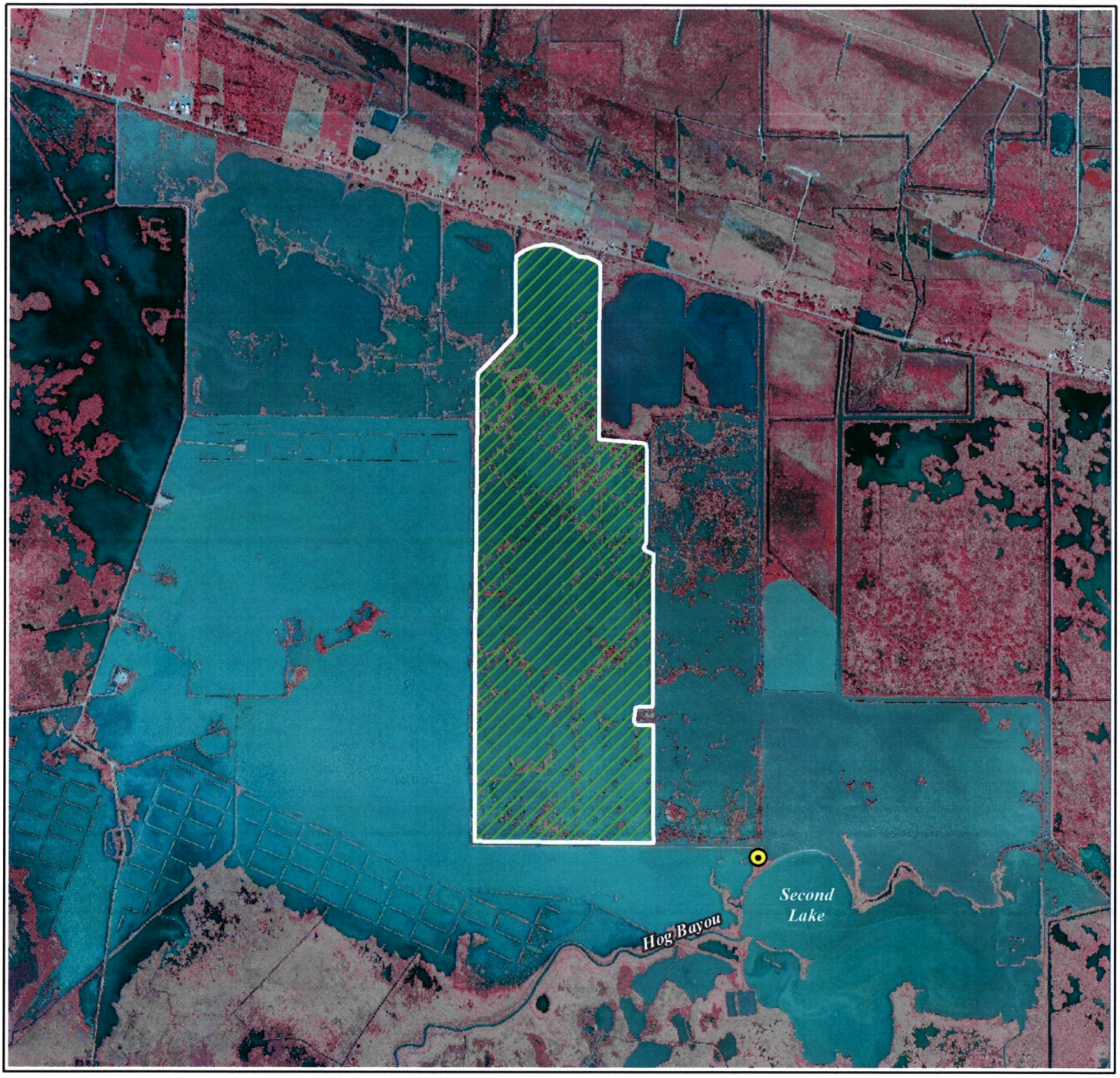
Proposed Solution:
Sediment mined from offshore would be placed to create 590 acres of saline marsh and nourish 133 acres of existing marsh. Material would be placed to achieve a settled target elevation of +1.27 feet NAVD88 (GEOID99) based on CRMS station 0614. Temporary containment dikes will be constructed to contain the fill material. To help facilitate estuarine fisheries access, containment dikes will be degraded within three years if the dikes do not naturally degrade, and approximately 13,000 linear feet (6.9 acres) of tidal creeks will be constructed. To improve hydrology of the area, two 48-inch flap-gated culverts would be installed to replace nonfunctional structures northwest of Second Lake and about 500 linear feet of closed conveyance channel would be cleaned out to facilitate water flow to and from the structures.

Project Benefits:
The project would result in approximately 525 net acres over the 20-year project life.

Identification of Potential Issues
The proposed project has potential piping plover (route from borrow source) issues.

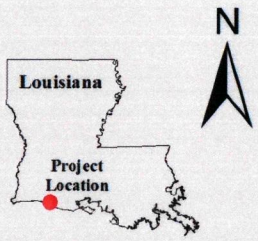
Preliminary Construction Costs
The estimated construction cost including 25% contingency is $21,190,400. The fully-funded cost range is $25M-$30M.

Preparer(s) of Fact Sheet:
John Foret, NOAA's National Marine Fisheries Service, (337) 291-3107; john.foret@noaa.gov
Donna Rogers, NOAA's National Marine Fisheries Service, (225) 636-2095; donna.rogers@noaa.gov



Sweeny Tract Marsh Creation and Nourishment

PPL 26 Nominee



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Hydrologic Improvement *

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5 Kilometers

0.5 0 0.5 Miles

Scale 1:35,000

USGS
science for a changing world

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Assessment Branch
Baton Rouge, La

Image Source:
2012 DOQQ

Map ID: USGS-NWRC 2015-11-0031
Map Date: August 13, 2015

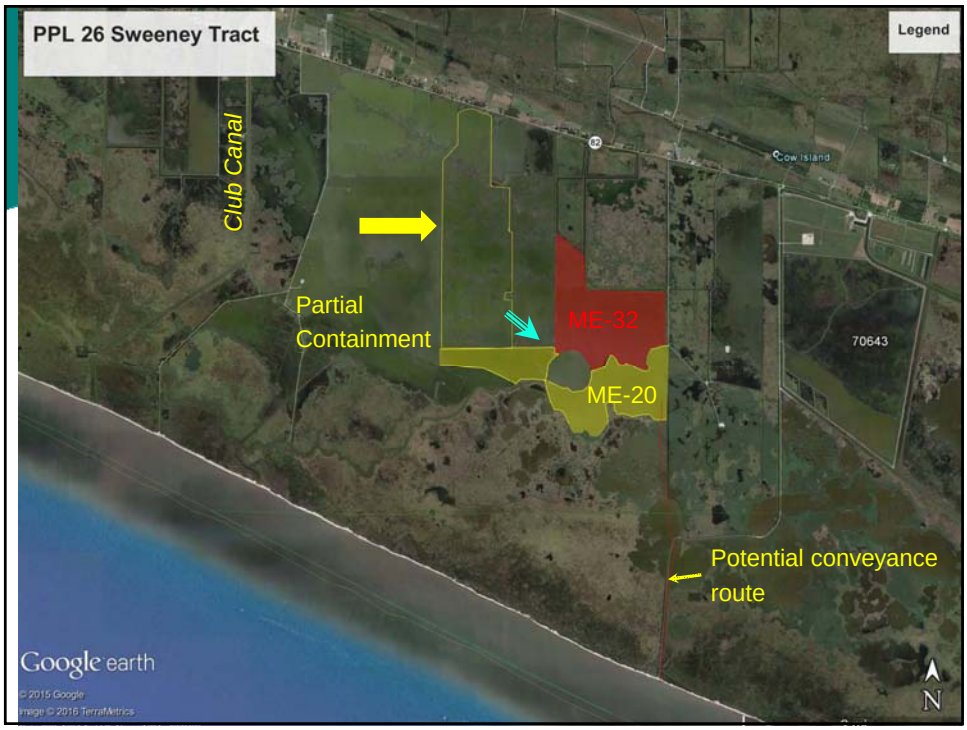
Science, Service, Stewardship

Sweeney Tract Marsh Creation and Nourishment (Cameron Parish)

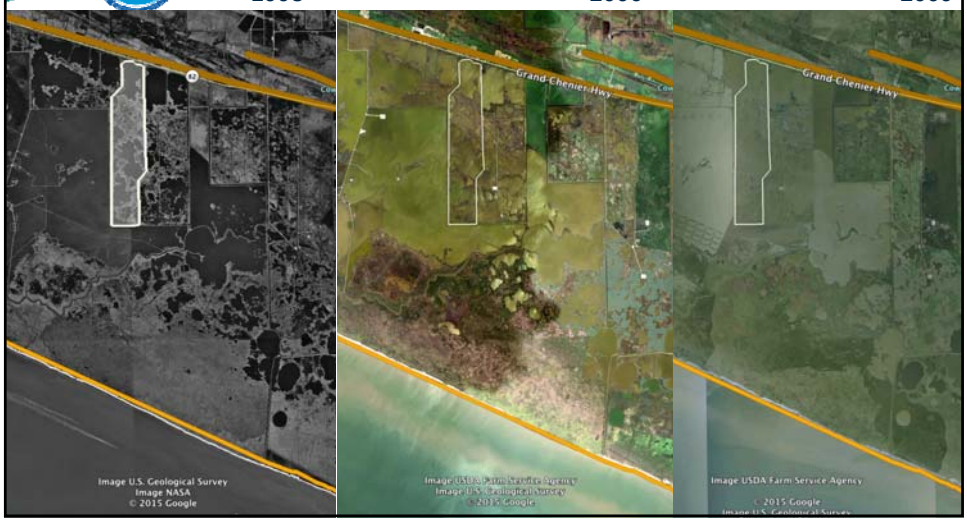
Region IV – Mermentau Basin

NOAA FISHERIES SERVICE

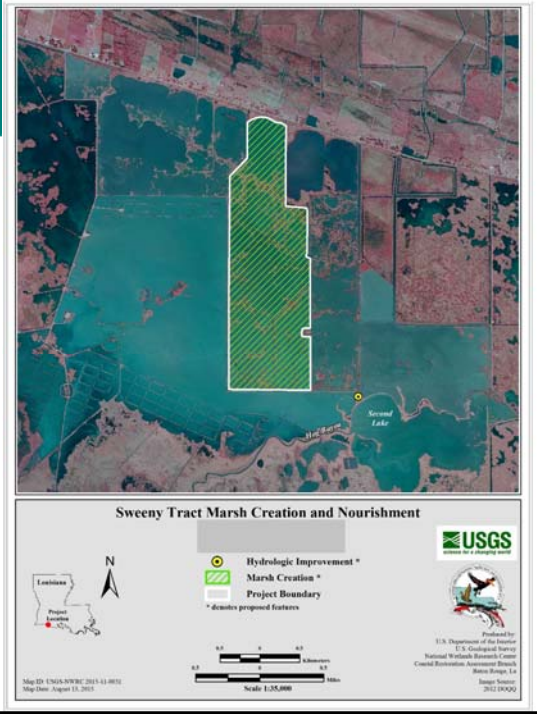
January 26, 2016



NOAA FISHERIES SERVICE



NOAA FISHERIES SERVICE



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NOAA
FISHERIES
SERVICE

Project Features

- Total Acres = 730 acres
- Approximately 9,000 LF of tidal channels
- Utilizes material from Gulf of Mexico
- Project is ***expandable***
- Re-establishes marsh platform with ponds/tidal channels between LA Highway 82 and the Gulf of Mexico
- Synergy with ME-20 & ME-32
- Consistent with State Master Plan
- Provides protection to Grand Chenier
- Construction Cost with 25% contingency = $21.2 million

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R4-ME-02

Chenier at Alligator Lake and Marsh Nourishment

R4 – ME-02

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name:
Chenier at Alligator Lake and Marsh Nourishment

Project Location:
Region 4, Mermentau Basin, Cameron Parish

Problem:
Marshes within the Rockefeller Price Lake Unit are stressed due to recent breaches into the unit by the Gulf of Mexico. Historical shoreline erosion rates have averages 49'/year (long-term), 60'/year (short-term), and most recently 85' in 120 days. The Price Lake Unit was initially breached during Hurricane Rita (2005), however, up until 2015, the shell hash beach maintained a low-level separation from the Gulf. During the fall of 2015, frontal passages breached through the beach rim and the resulting crevasses have increased water levels and salinity into the marshes of Price Lake unit and northward to State Highway 82. Weekly salinity readings have risen from 1-3 ppt at Price Lake Road to 9 ppt. Approximately 3,400 acres of the Price Lake Unit are now threatened to be lost via increased inundation and scour, with the remaining 3,500 acres threatened if no action is taken.

Goals:
The primary goals of this project are to restore marsh habitat in Price Lake Unit via the construction of a chenier and nourishment of a back marsh area. Specific goals are: 1) Create approximately 90 acres of chenier habitat, and 2) Nourish approximately 450 acres of saline marsh.

Proposed Solution:
Sediment mined from offshore would be placed to create 90 acres of a chenier (elevation of +4') and nourish 450 acres of existing saline marsh immediately north and adjacent to the newly created chenier. Material would be placed to achieve a settled target elevation of +2.0 feet NAVD88 (GEOID99) based on CRMS station 0614. The western edge of the proposed features will join to the planned ME-20 access corridor back fill area, while the eastern edge will join to the existing Price Lake Unit southern levee. Existing breaches will be plugged with sand prior to chenier construction.

Project Benefits:
The project would result in approximately 350 net acres over the 20-year project life.

Identification of Potential Issues
The proposed project has potential piping plover (route from borrow source) issues.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $15,700,000. The fully-funded cost range is $20M-$25M.

Preparer(s) of Fact Sheet:

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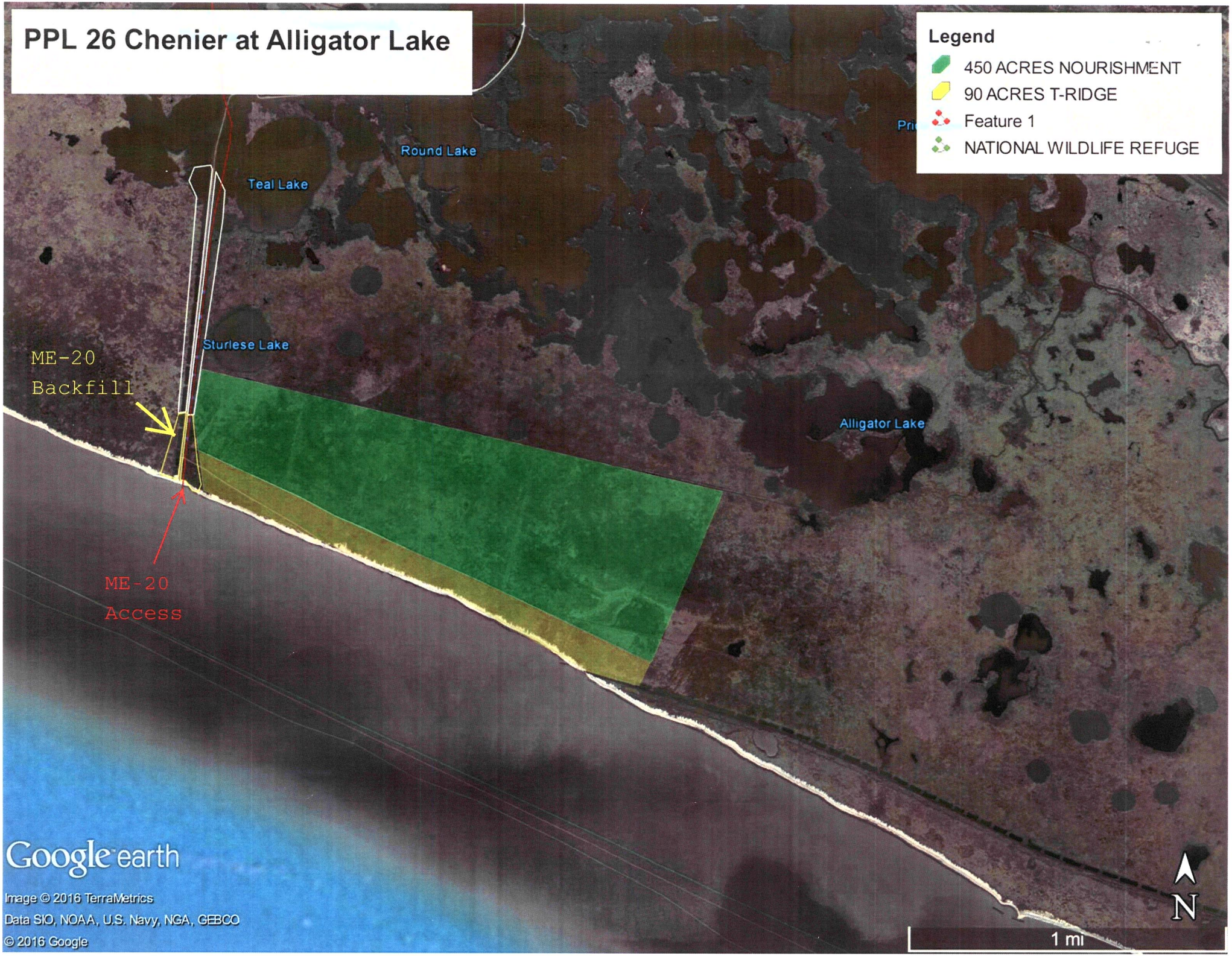
PPL 26 Chenier at Alligator Lake
Legend
450 ACRES NOURISHMENT
90 ACRES T-RIDGE
Feature 1
NATIONAL WILDLIFE REFUGE
Round Lake
Teal Lake
Sturlese Lake
Alligator Lake
ME-20
Backfill
ME-20
Access
Google earth
Image © 2016 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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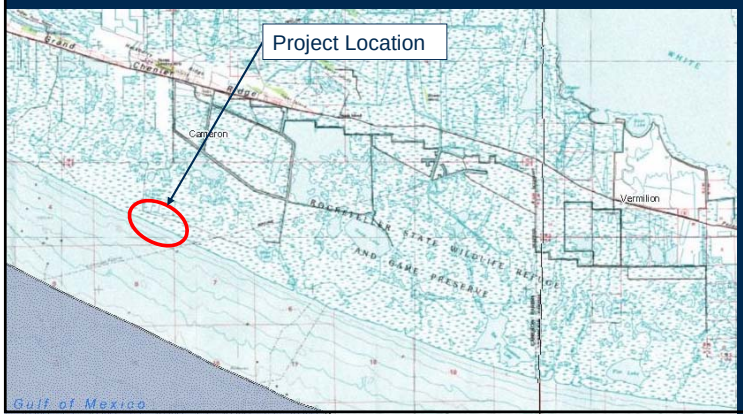
Science, Service, Stewardship

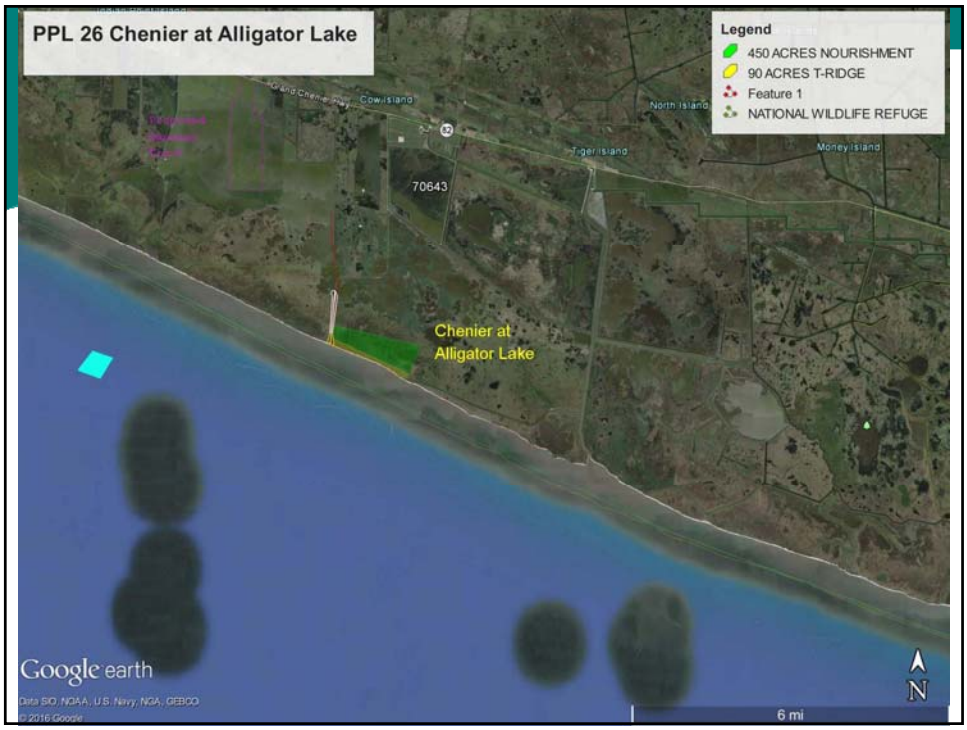
Chenier at Alligator Lake and Marsh Nourishment (Cameron Parish)

Region IV – Mermentau Basin



NOAA FISHERIES SERVICE

January 26, 2016




NOAA
FISHERIES
SERVICE
2005
Cameron
2013
Cameron
3


PPL 26 Chenier at Alligator Lake
Legend
450 ACRES NOURISHMENT
90 ACRES T-RIDGE
Feature 1
NATIONAL WILDLIFE REFUGE
Round Lake
Teal Lake
Mullet Lake
Alligator Lake
ME-20
Backfill
ME-20
Access
Google earth
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5


PPL 26 Chenier at Alligator Lake
Legend
450 ACRES NOURISHMENT
90 ACRES T-RIDGE
Feature 1
NATIONAL WILDLIFE REFUGE
Round Lake
Teal Lake
Shirese Lake
Alligator Lake
ME-20
Backfill
ME-20
Access
Google earth
Image © 2016 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2016 Google
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NOAA
FISHERIES
SERVICE

Project Features

- Total Acres = 540 acres
- Creation of an approximate 90 acre chenier and 450 acres marsh nourishment
- Utilizes material from Gulf of Mexico
- Project is ***expandable***
- Creates a chenier to provide a backstop for beach rim material
- Re-establishes marsh platform with ponds/tidal channels between LA Highway 82 and the Gulf of Mexico
- Synergy with ME-20
- Consistent with State Master Plan
- Provides protection to Grand Chenier
- Construction Cost with 25% contingency = $15.7 million

7

R4-ME-03

Umbrella Bay Bankline Stabilization

R4-ME-03

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name: Umbrella Bay Bankline Stabilization Project

Louisiana's 2012 Coastal Master Plan
Bank Stabilization – 004.BS.01

Project Location
Region 4, Mermentau Basin, Cameron Parish, Eastern Grand Lake, Umbrella Bay

Problem
The project area experiences shoreline erosion estimated at an average of 5 feet per, based on 1993 to 2013 GIS analysis). Approximately 81 acres of marsh will be lost over the next 20 years in the project area. Shoreline breaches have caused small interior lakes to become part of Grand Lake; continued shore loss will increase connectivity with Grand Lake and introduce greater energy to the interior marsh.

Goals
1) Reduce shoreline erosion along the eastern Grand Lake at Umbrella Bay
2) Prevent shoreline breaches into interior ponds.

The project would protect prime waterfowl habitat between Grand and White Lakes recognized by the State. The White Lake Preserve and experimental Whooping Crane colony is 3-5 miles eastward in the northwestern portion of White Lake. If Umbrella Bay erosion continues to Mallard Bay, Umbrella Point would become an island threatening prime waterfowl and rare species habitat.

The project will also benefit the black rail, a species petitioned for listing as a threatened/endangered species. The project would also benefit State species of concern including the peregrine falcon, sandhill crane, and glossy ibis. Resident waterfowl (mottled duck), migratory waterfowl, king rail, and little blue heron would also benefit.

Proposed Solution
The project consists of constructing 35,100 linear feet (6.6 miles) of a 60-ft-wide earthen foreshore berm. The earthen berm would be vegetated with 4 rows of Roseau cane, panicum sprigs or other vegetation, planted on 5-foot centers to jump start the natural revegetation process (28,080 plugs).

Preliminary Project Benefits
The berm would prevent the loss of 81 ac of shoreline marsh, and would provide an additional 8 acres at the end of the project life (89 acre total net benefit).

Preliminary Construction Costs
The estimated construction cost including 25% contingency is $5.5.

Preparers of Fact Sheet

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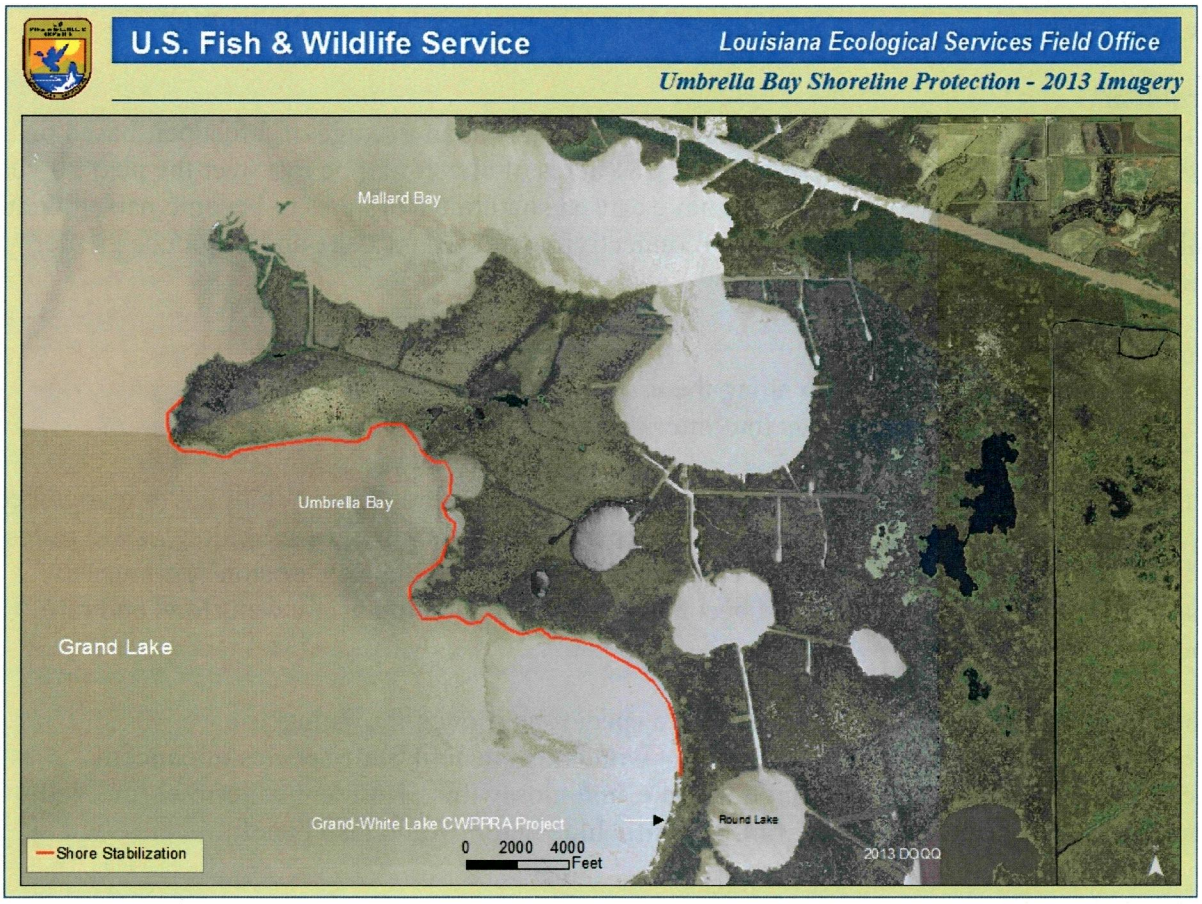
Kevin Long, Lake Arthur Club, 318-221-3517, Kevin@longpetro.com



R4-ME-04

Gulf Shoreline Protection at Hog Bayou

R4-ME-04

PPL26 PROJECT NOMINEE FACT SHEET
January 2016

Gulf Shoreline Protection at Hog Bayou

Louisiana's 2012 Coastal Master Plan
Marsh Creation – 004.SP.05a

Project Location
Region 4, Mermentau Basin, Cameron Parish

Problem
Between the Rockefeller Refuge and the Mermentau River Ship Channel, the Gulf of Mexico shoreline erosion rate varies. Because of sediment trapping east of the Mermentau River jetties, the erosion rate is reduced to as little as 8 feet per year immediately adjacent to the jetty. But the rate gradually increases to 33 feet per year one mile east of the jetty. Further east, in the vicinity of Beach Prong (a branch of Hog Bayou) the shoreline loss rate is 42 feet per year. By 2050, the Gulf shore will have retreated northward of upper Hog Bayou near Beach Prong, and will be approaching a segment of Hog Bayou near its junction with the Lower Mermentau River. Sediment overwash and siltation of the bayou may impact the entire watershed as the upper watershed has been impacted by Beach Prong as discussed below.

Because Beach Prong is intermittently open to the Gulf, the portion of Hog Bayou west of Beach Prong has silted in significantly. Consequently, drainage of the upper Hog Bayou watershed is periodically impaired when Beach Prong is silted in. This results in prolonged periods of high water and inundation stress on marsh vegetation. High water levels or drainage of storm tides periodically cause Beach Prong to blow out. Although this helps to reduce drainage problems, it allows Gulf water to exchange with these interior marshes which can trap high salinity water in the marsh when Beach Prong inevitably closes in again.

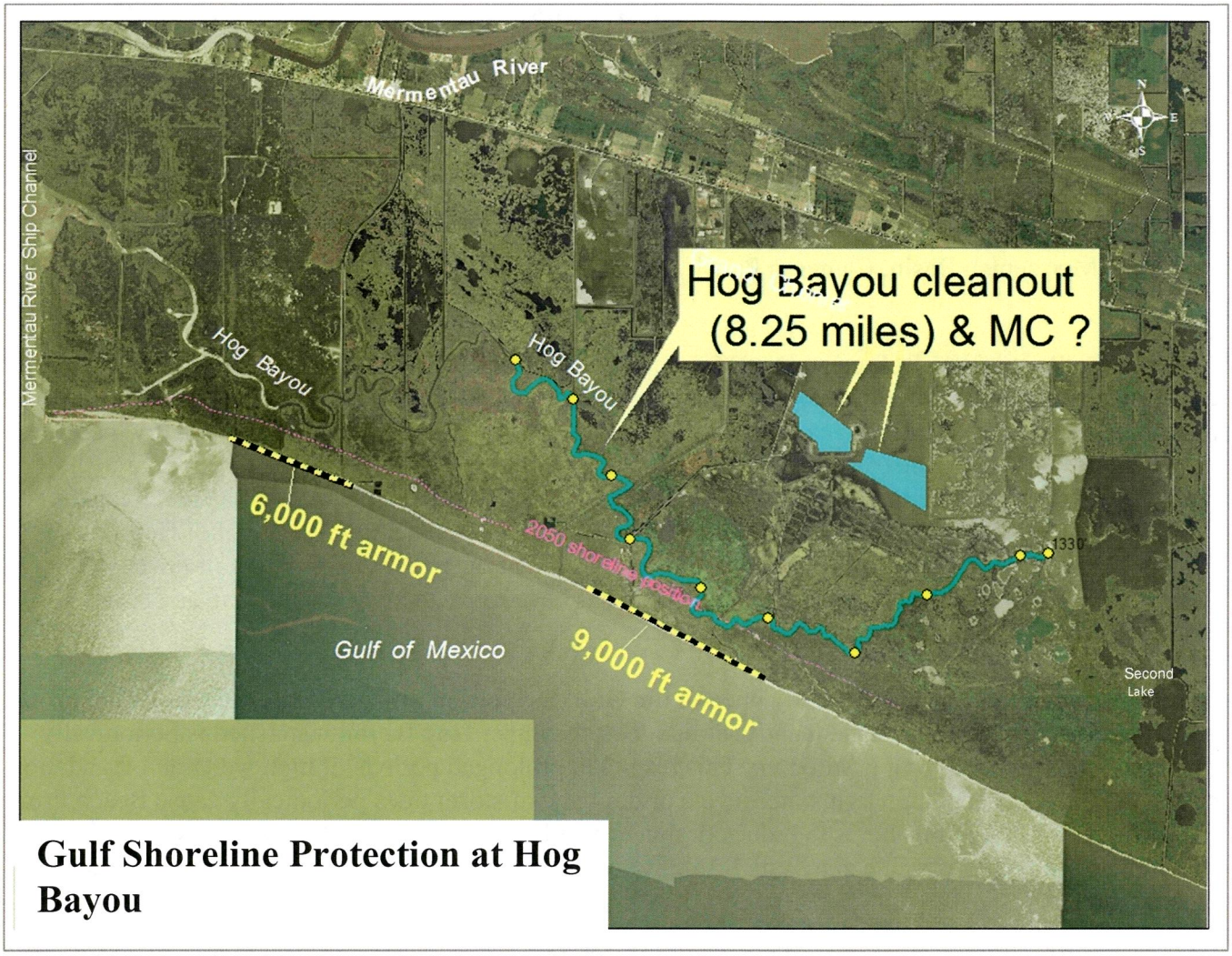
Proposed Solution
To prevent the Gulf from eroding into Hog Bayou, 15,000 linear feet of Gulf shoreline protection consisting of lightweight aggregate core foreshore structures would be installed (as per ME-18) to preclude this system-wide hydrologic impact. In Phase I, dredging of a portion of Hog Bayou will be evaluated to improve water exchange and circulation for upper watershed marshes.

Goals
The project goal is to halt erosion of the Gulf shoreline erosion along critical reaches (15,000 linear ft) where continued erosion will threaten the integrity of the upper Hog Bayou watershed (19,000 acres).

Preliminary Project Benefits: Shoreline protection features would save 254 acres over the project life.

Preliminary Construction Costs:
The estimated construction cost including 25% contingency for spray dredging, is $36M.

Preparer(s) of Fact Sheet:
Ronny Paille: U.S. Fish and Wildlife Service; 337-291-3117



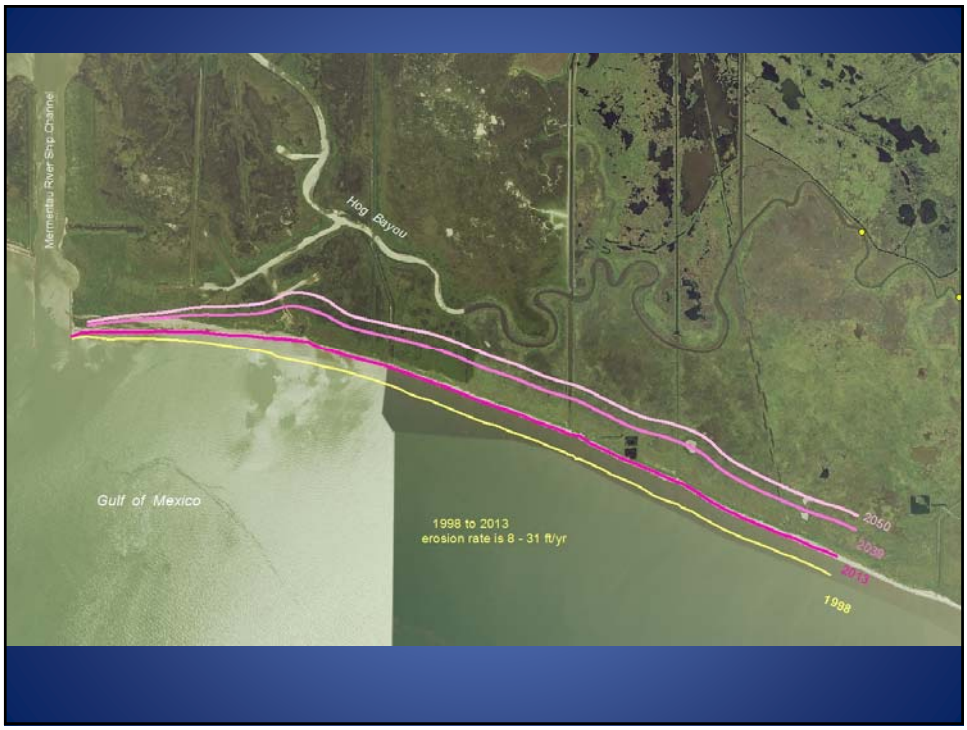
Gulf Shoreline Protection at Hog Bayou

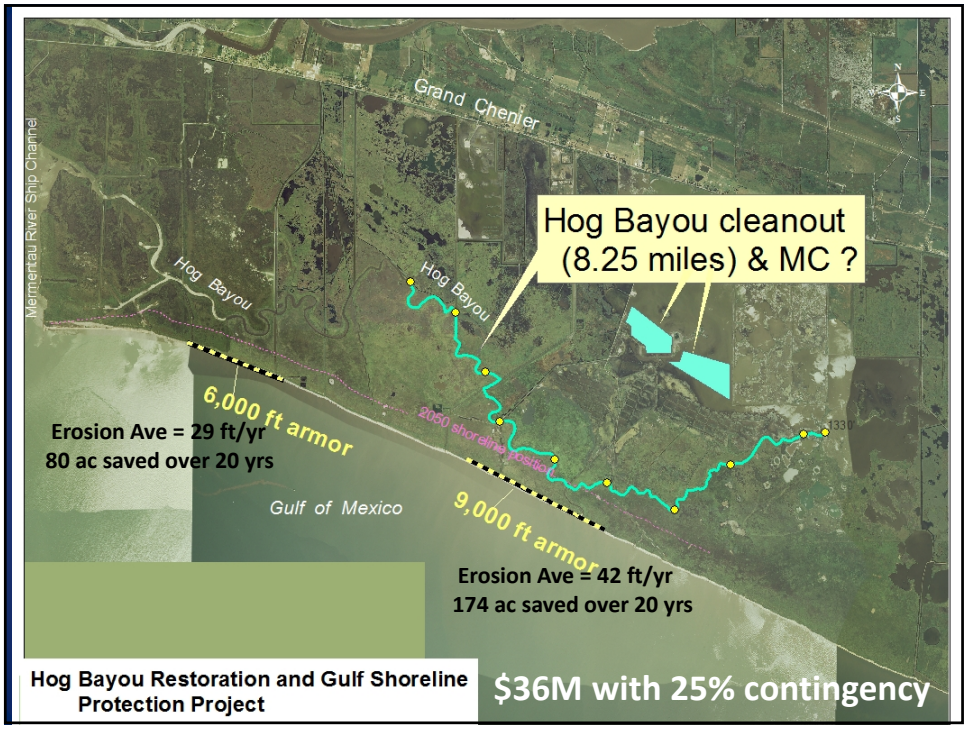
Gulf Shoreline Protection at Hog Bayou

PPL26 Nominee

Ronny Paille
U.S. Fish and Wildlife Service
January 2016


Hog Bayou
1998 to 2013
erosion rate = 42 ft/yr
2050
2039
2013
1998


Mermentau River Ship Channel
Hog Bayou
Gulf of Mexico
1998 to 2013
erosion rate is 8 - 31 ft/yr
2050
2039
2013
1998


Grand Chenier
Hog Bayou cleanout
(8.25 miles) & MC ?
Hog Bayou
Hog Bayou
Mermentau River Ship Channel
6,000 ft armor
Erosion Ave = 29 ft/yr
80 ac saved over 20 yrs
2050 shoreline position
Gulf of Mexico
9,000 ft armor
Erosion Ave = 42 ft/yr
174 ac saved over 20 yrs
Hog Bayou Restoration and Gulf Shoreline Protection Project
$36M with 25% contingency

R4-ME-05

East Pecan Island Marsh Creation

K4-ME-05

PPL 26 PROJECT FACT SHEET
January 26, 2016

Project Name
East Pecan Island Marsh Creation

Master Plan Strategy
East Pecan Island Marsh Creation 004.MC.16. Creation of approximately 7,340 acres of marsh between Pecan Island and the west bank of the Freshwater Bayou Canal to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
The project is located in Region 4, Mermentau Basin, Vermilion Parish, and west of the Freshwater Bayou Navigation Channel.

Problem
The marshes to the west of the Freshwater Bayou Navigation Channel have experienced severe land loss and habitat conversion. What was once a productive fresh water marsh has been converted to open water due to the negative effects of exchange from the Freshwater Bayou Navigation Canal on soils followed by major hurricane impacts.

Goals
The primary goal of this project is to create marsh through dedicated dredging and vegetative plantings on the western side of the Freshwater Bayou Navigation Channel. This project will also help to reduce the potential for exchange between the target marshes and the Freshwater Bayou Navigation Channel by working synergistically with the ME-31 Freshwater Bayou Marsh Creation Project.

Proposed Solutions:
This project intends to create and nourish 506 acres of marsh using approximately 3.5 million cubic yards of marsh fill material borrowed from offshore within state waters. Some historical ponds will be retained and creeks will be included to promote exchange with the surrounding marsh and provide marsh functionality. Half of the acreage will be planted to encourage rapid vegetation. Earthen containment dikes will be gapped upon construction completion and included in the operations and maintenance.

Preliminary Project Benefits
The project will result in approximately 450 net acres of marsh over the 20-year project life. It will work synergistically with two existing CWPPRA projects: the Freshwater Bayou Wetland Protection project (ME-04, constructed) and the Freshwater Bayou Marsh Creation project (ME-31, in engineering and design).

Preliminary Construction Costs
The estimated cost + 25% contingency is $27M. The fully funded range is $30M - $35M.

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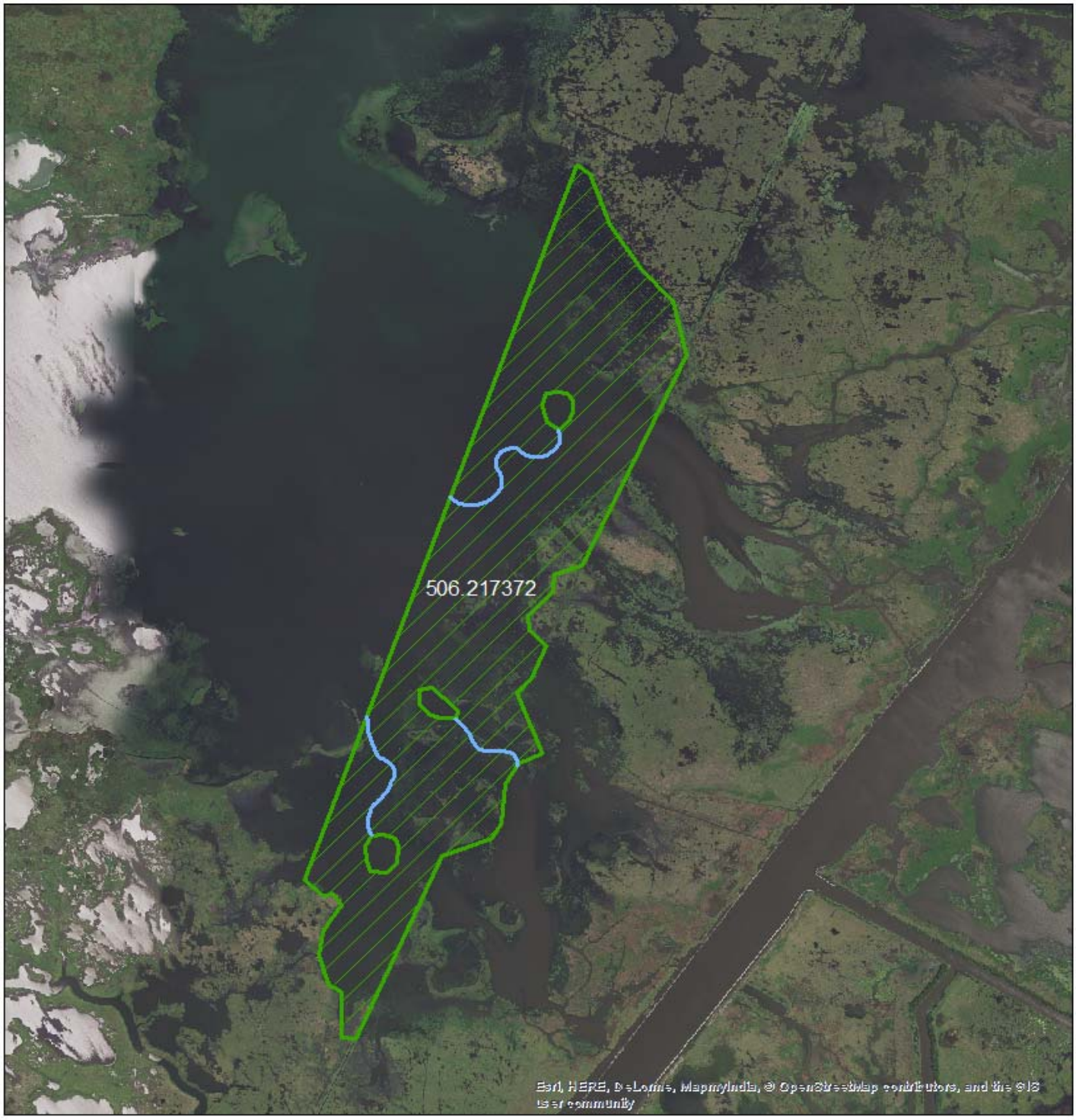


East Pecan Island Marsh Creation (PPL26)

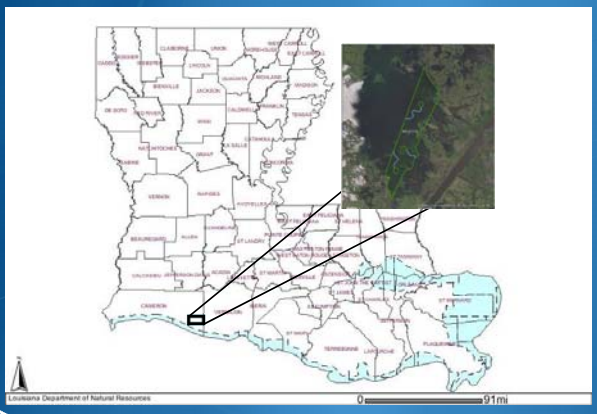
Tidal Creeks
Marsh Creation

N

Basemap: 2015 NAIP DOQQ - Vermilion Parish
Produced by: EPA Region 6, Dallas, TX

0 0.1 0.2 0.4 0.6 0.8
Miles

East Pecan Island Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

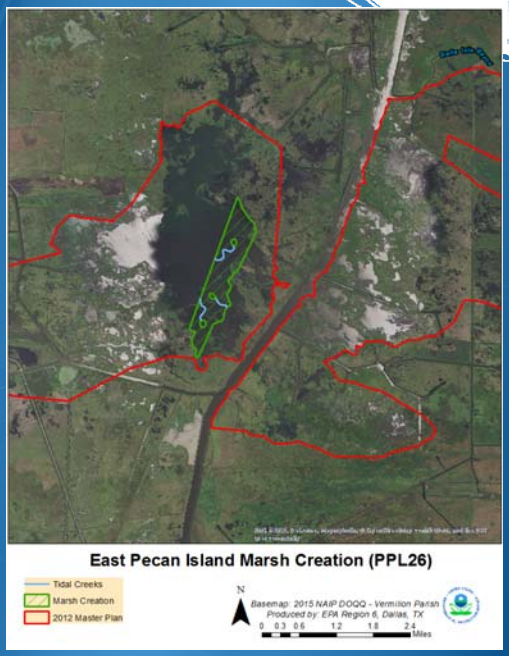
Mater Plan Solution

004.MC.16 East Pecan Island Marsh Creation: Creation of approximately 7,340 acres of marsh between Pecan Island and the west bank of the Freshwater Bayou Canal to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Master Plan Consistency

004.MC.16 East Pecan Island Marsh Creation

Co-sponsored between EPA and USACE



Problem

- Marsh loss and altered area hydrology due to:
  - Subsidence
  - Saltwater intrusion
  - Enlargement of Freshwater Bayou
  - Increased tidal exchange with interior marshes
- Resulted in marsh losses that left the area very shallow open water

Historical Reference

CWPPRA Historical Topography
USGS 1954 1:31,680 Topographic Maps

Project Features

East Pecan Island Marsh Creation (PPL26)

Project Goals

Increase emergent marsh in shallow open water by:

- Creating 506 ac MC using approximately 3.5M cubic yards borrowed from offshore borrow
- Retain historical ponds and add creeks for functionality (14 ac)
- Cost + 25% contingency = $27 million

R4-ME-06

Price Lake Marsh Creation

ME-05

PPL26 PROJECT FACT SHEET
January 26, 2016

Project Name
Price Lake Marsh Creation

Master Plan Strategy
South Grand Chenier Marsh Creation 004.MC.01. Creation of approximately 7,330 acres of marsh south of Highway LA-82 near Grand Chenier to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
The project is located in Region 4, Mermentau Basin, within the Rockefeller Wildlife Refuge, southeast of Grand Chenier in Cameron Parish, Louisiana.

Problem
Refuge managers intentionally burned this brackish wiregrass marsh in the mid-1960s to create better waterfowl habitat. The burn was followed by a flooding event that resulted in the total die-off of the emergent marsh, resulting in pond formation. Other contributors to land loss in the area are subsidence, compaction, and erosion of organic soils. Currently, the project area is characterized as large open water with degraded areas of wetland vegetation, low organic production, and large areas of wave fetch.

Goals
The primary project goal is to create new wetland habitat, restore degraded marsh, and reduce wave erosion. The project would promote the expansion of emergent marsh and submerged aquatic vegetation throughout the project area. Primary focus is marsh creation to increase organic production and reduce tidal prism. Sediment would be mined from the Gulf of Mexico to create/nourish 409 acres of marsh.

Identification of Potential Issues
The proposed project has potential borrow source and utility/pipeline issues.

Preliminary Construction Costs
The total fully-funded cost is estimated at $24M. The fully funded range is $25M - $30M.

Preparer of Fact Sheet
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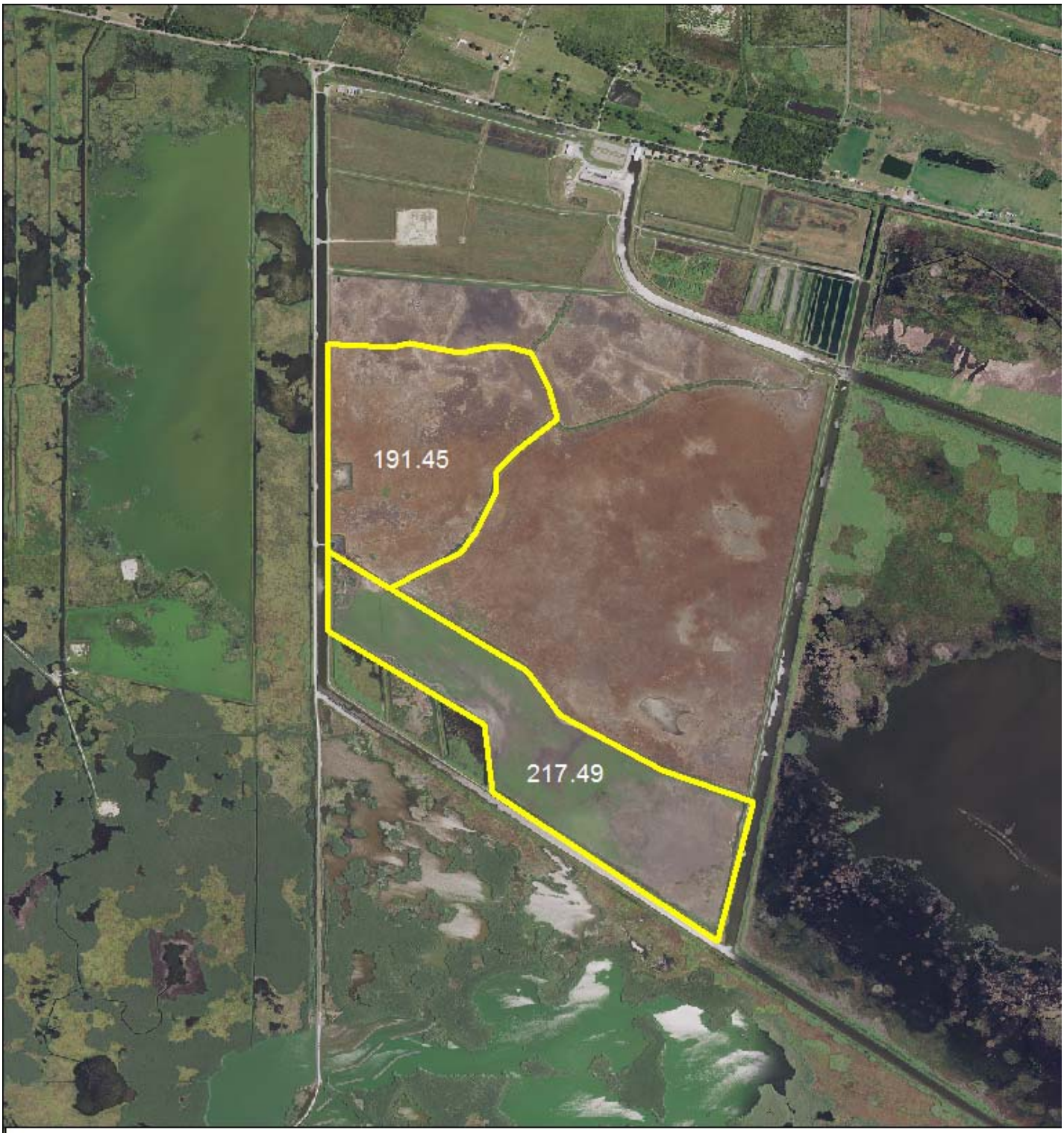
Sharon Osowski, Ph.D., EPA; (214) 665-7506; osowski.sharon@epa.gov



Price Lake Marsh Creation (PPL26)

Price Lake Marsh Creation

N

Basemap: 2015 NAIP DOQQ - Vermilion Parish
Produced by: EPA Region 6, Dallas, TX

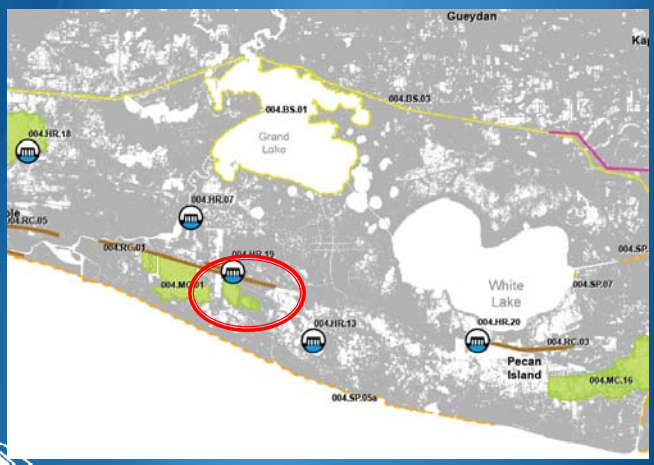
0 0.175 0.35 0.7 1.05 Miles

Price Lake Marsh Creation

Coastal Wetlands Planning, Protection and Restoration Act

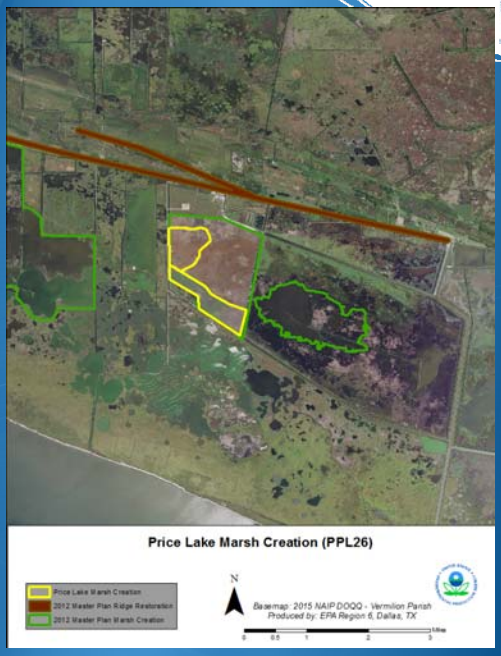
Master Plan Solution

004.MC.01: South Grand Chenier Marsh Creation: Creation of approximately 7,330 acres of marsh south of Highway LA-82 near Grand Chenier to create new wetland habitat, restore degraded marsh, and reduce wave erosion.



Master Plan Consistency

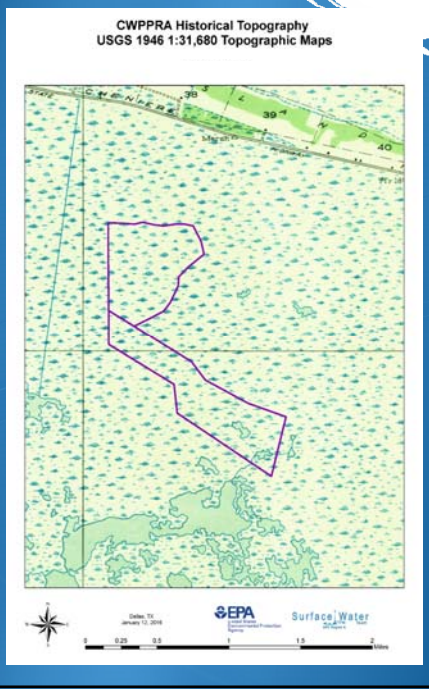
004.MC.01 South Grand Chenier Marsh Creation



Problem

- Stressed due to limited freshwater input and seasonal salinity spikes.
- Subsidence, compaction, erosion
- Large open water with degraded areas of wetland vegetation,
- Low organic production
- These areas were historically saw grass marshes that were killed by saltwater intrusion, produced-water discharge, and nutria herbivory.

Historical Reference



Project Features

Project Goals

- Create/nourish 416 acres emergent marsh with sediment from the Gulf of Mexico
- Estimated preliminary cost w/25% contingency is $24 million

R4-ME-07

North Big Marsh Restoration Project

ME-01

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

North Big Marsh Restoration Project

State Master Plan Consistency
This project is located within and consistent with the State Master Plan "East Pecan Island Marsh Creation" project (No. 004.MC.16) - marsh creation between Pecan Island and Freshwater Bayou Canal.

Project Location
Region 4, Vermilion Parish, Northeast Pecan Island, west of Freshwater Bayou Canal.

Problem

The Big Marsh unit lost a total of 11% marsh (-3,810 acres) from 1932 to 1990 with the greatest loss during the 1956-1979 period from the dredging of Freshwater Bayou Canal. That canal caused wake erosion, altered hydrology and increased loses due to storm activity. Although the Coast 2050 study predicted an additional 10% loss (3,000 acres) by 2050, that loss has accelerated due to Hurricanes Rita (2005) and Ike (2008). A large approximately 4,700-acre shallow open water area has developed in the center of Big Marsh mostly due to those hurricanes. Big Marsh Unit land loss was -0.27%/year from 1985 to 2008 (USGS). The 36,000-acre Big Marsh unit consisted of 57% (21,360 acres) fresh, 25% (9,330 acres) intermediate, 3% (1,180 acres) brackish marshes, and 10% (3,600 acres) open water, and 530 acres of other habitats in 1998 (Coast 2050 Report).

Goals
1) Restore and nourish 450 acres of fresh and intermediate marsh in the northern portion of Big Marsh; 2) Introduce freshwater from White Lake.

Proposed Project Features
Restore 360 acres and nourish 90 acres to benefit 450 acres of fresh to intermediate marsh in Big Marsh west of Freshwater Bayou Canal with dredged material from the Gulf of Mexico. Introduce freshwater (~100 cfs) via 3, 48-inch-diameter culverts at Hwy 82 from White Lake. Marsh creation area water depths range from 1.5 to 2.0 feet. Retention dikes will be gapped or degraded and tidal creeks constructed post-construction to restore area hydrology and allow fisheries access and improve wetland productivity.

Preliminary Project Benefits
1) The total net marsh acreage benefited directly over the 20-year project life would be approximately 353 acres assuming an erosion rate of -0.27 %/year. 2) The project would restore the northern portion of Big Marsh and provide protection to marshes to the north and west. 3) The project would restore intermediate marsh habitat for the Black Rail and the Louisiana eyed silk moth candidate species, the glossy ibis at-risk species, mottled duck other waterfowl, king rail, wood stork, little blue heron, seaside sparrow, lesser snow goose, greater white-fronted goose, and Canada goose Joint Venture species of concern.

Identification of Potential Issues
No significant issues have been identified for this project.

Preliminary Construction Costs
The estimated construction cost is $20 M to $25 M.

Preparers of Fact Sheet
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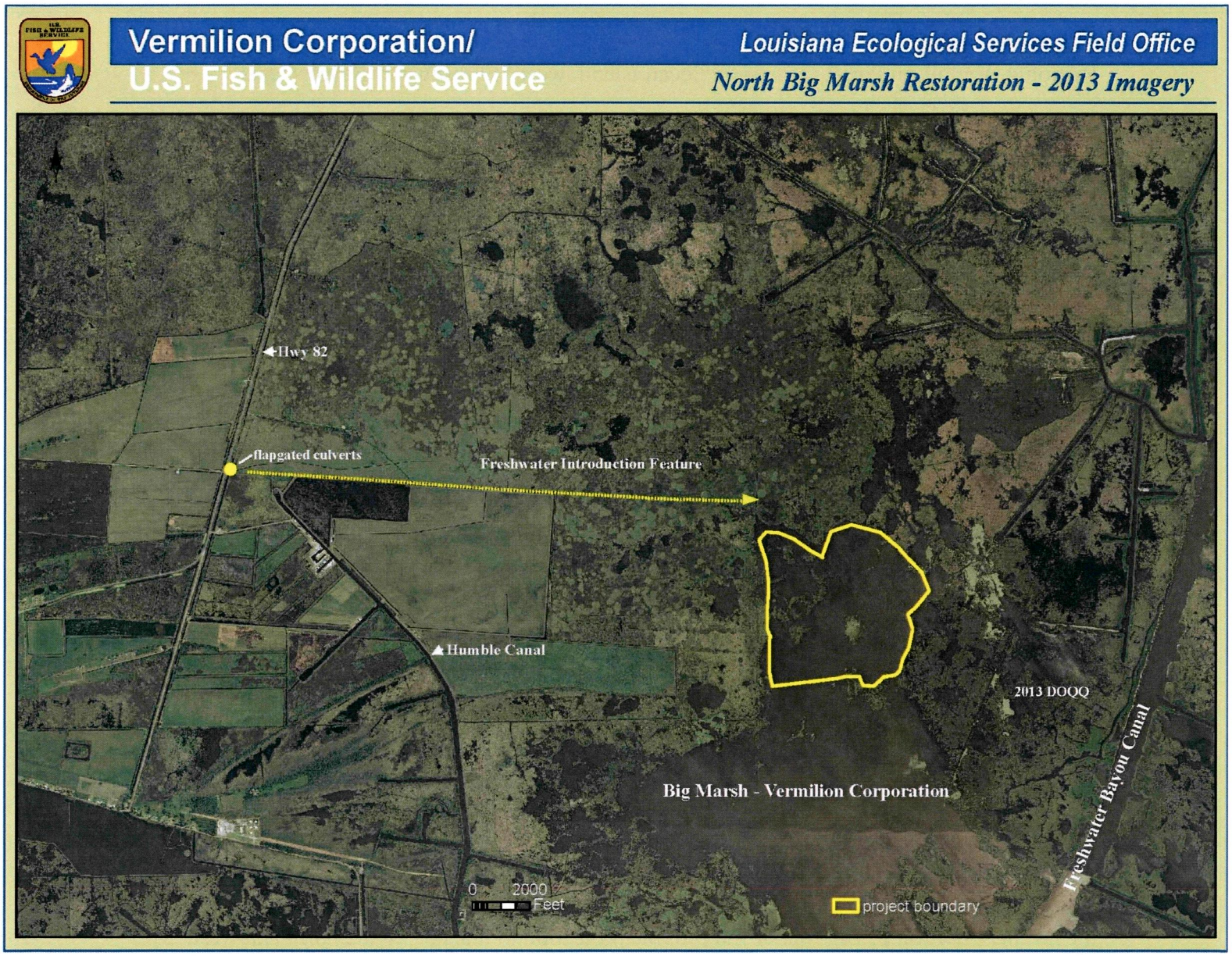
Darryl Clark, U.S. Fish and Wildlife Service, 337-291-3111 Darryl_Clark@fws.gov



North Big Marsh Restoration Project PPL 26 Nominee

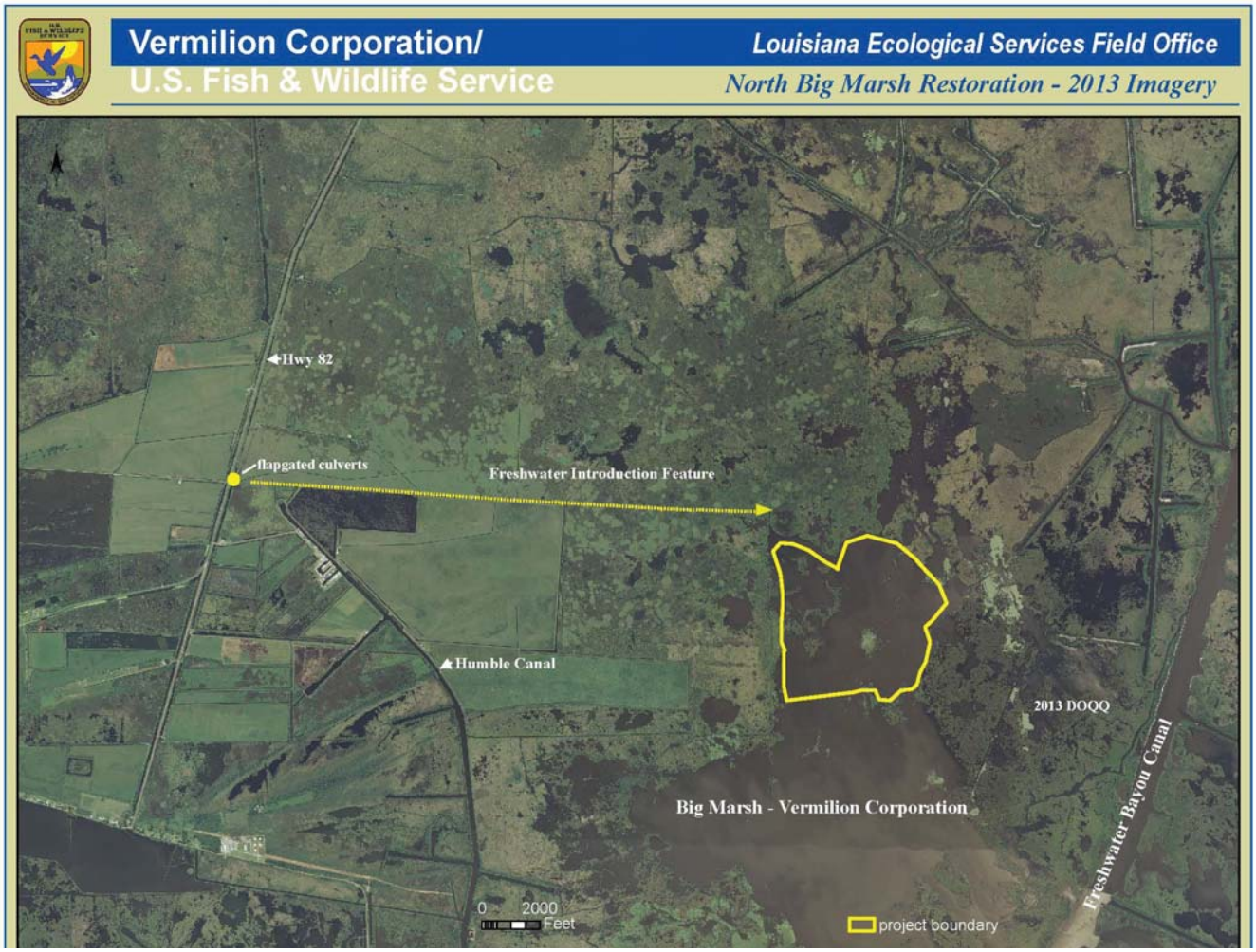
Problem

- Big Marsh unit lost 11% marsh (-3,810 acres) (1932 to 1990). Greatest loss after FW Bayou Canal dredging (1956-1979).
- Coast 2050 Study predicted another 10% loss to 2050 (3,000 acres), recent loss has accelerated due to hurricanes.
- A large 4,700-acre shallow open water area developed mostly due to Hurricanes Rita (2005) & Ike (2008).
- Current 1985 to 2008 land loss rate is -0.27%/year

Goals

- 1) Restore & nourish 450 acres of fresh & intermediate marsh in North Big Marsh;
- 2) Introduce freshwater from White Lake.

Sponsors – Vermilion Corp., FWS



- **Features** – 1) Restore & nourish over 450 acres of fresh to intermediate marsh in Big Marsh west of Freshwater Bayou Canal with dredged material from the Gulf of Mexico.
- 2) Introduce freshwater (~100 cfs) via 3, 48-inch-diameter culverts at Hwy 82 from White Lake.
- **Preliminary Project Benefits** – 1) Total net marsh acreage benefited over the 20-year project life would be 353 acres at the loss rate of 0.27 %/year.
- 2) The project would restore the northern portion of Big Marsh & provide protection to adjacent marshes.
- **Cost** - Estimated construction cost is $20 to $25 M.

R4-ME-08

South Pecan-Mulberry Island West Marsh Creation and Terracing

ME-08

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016
Revised Combined Project

South Pecan-Mulberry Island West Marsh Creation and Terracing Project

State Master Plan Consistency
"East Pecan Island Marsh Creation" - No. 004.MC.16. Marsh creation southeast of Pecan Island and west of Freshwater Bayou Canal.

Project Location
Region 4, Vermilion Parish, South of Pecan Island, west of Freshwater Bayou Canal.

Problem
Area wetland loss has been caused by impoundments, saltwater intrusion and storm events (Coast 2050), as well as increased tidal exchange and reduced freshwater retention associated with the Freshwater Bayou Canal and Humble Canal. Hwy 82 forms a hydrologic barrier that isolates the Lakes and Chenier Subasins of the Mermentau Basin.

Twenty-five percent (25%) of the 46,370 acres of marshes south of Pecan Island, from Freshwater Bayou Canal to Rollover Bayou have converted to open water from 1932 to 1990 (11,520 acres) (Coast 2050). Another 20% (6,980 acres) of the 34,850-acre marsh present in 1990 is predicted to be lost by 2050. 1985 to 2008 loss rates in the mapping unit were 0.43%/year.

Goals
Improve hydrologic conditions and restore and nourish intermediate to brackish marshes via marsh creation and earthen terraces southeast of Pecan Island. The hydrologic features (water control structures) would promote a north to south flow-through hydrologic system. The marsh creation and terrace features would restore wetland habitat, increase aquatic vegetation, and reduce wave erosion.

The project would restore marsh habitat for the black rail and the Louisiana eyed silk moth candidate species, glossy ibis at-risk species, and mottled duck other waterfowl, king rail, seaside sparrow, greater white-fronted goose, and Canada goose - FWS Joint Venture species of concern.

Proposed Project Features
1) Marsh creation of 331 acres of marshes; 2) construction of 45,300 linear feet of earthen terraces (36 acres), and 3) installation of approximately seven water control structures to restore hydrology. The marsh creation would be from dredged material from the Gulf of Mexico. Area water depths range from 1.0 to 1.5 feet. Retention dikes will be gapped or degraded and tidal creeks constructed post-construction to restore area hydrology, allow fisheries access, and improve wetland productivity.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The total area benefitted is approximately 2,000 acres.

2) *How many acres of wetlands will be protected/created over the project life*? Initial construction of 331 acres marsh creation and 36 acres terraces (367 acres total). After 20 years based on a reduction of the 0.43%/year loss rate, the project would protect/create approximately **347 net acres**.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).* The anticipated loss rate reduction throughout the area of direct benefit is estimated to be *50-74%.*

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* The project would protect the Pecan Island Front Ridge Chenier.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect Louisiana Highway 82 and the community of Pecan Island.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would have a synergistic effect with the constructed Pecan Island Terracing project (ME-14).

Identification of Potential Issues
There are pipelines in the area and O&M will be required.

Preliminary Construction Costs
The estimated construction cost, including 25% contingency, is approximately $22.3 M.

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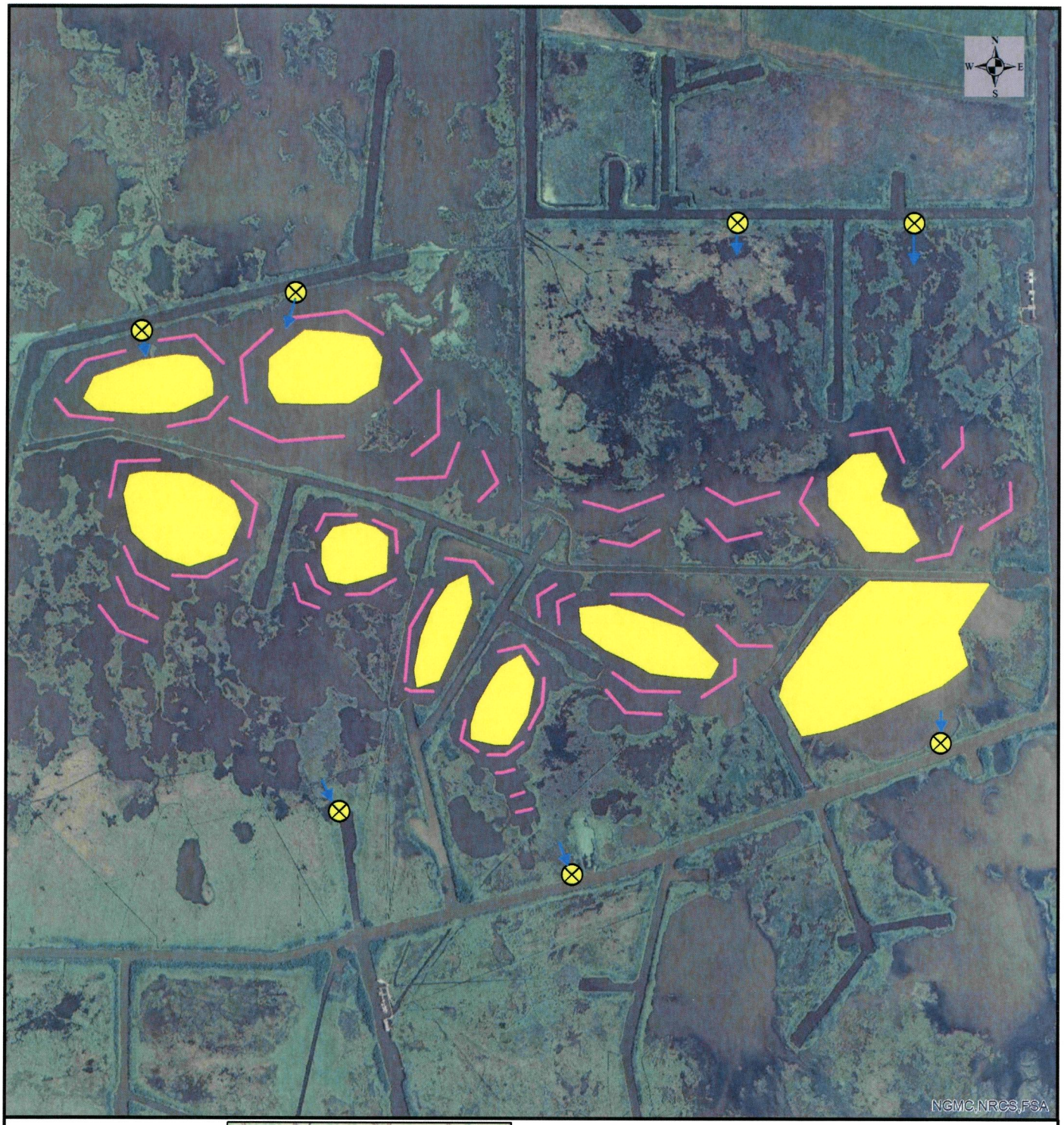
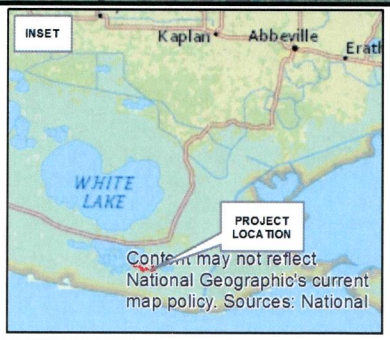


USDA

Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source: NAIP 2013

Map Date: JANUARY 27, 2016



PPL 26 SOUTH PECAN AND MULBERRY ISLAND WEST MARSH CREATION AND TERRACING VERMILION PARISH, LA

NRCS - Vermilion Corp - FWS
Combined PPL 26 Project

0 1,000 2,000
Feet

Legend
- MARSH CREATION
- TERRACING
- WATER_CONTROL_STRUCTURE

R4-ME-09

Southeast Pecan Island Marsh Creation and Terracing

ME-09

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name
Southeast Pecan Island Marsh Creation and Terracing

Master Plan Strategy
East Pecan Island Marsh Creation – 004.MC.16

Project Location
Region 4, Mermentau Basin, Vermilion Parish, east of Pecan Island and south of Highway 82.

Problem
Virtually all of the project area marshes have experienced increased tidal exchange, saltwater intrusion, and reduced freshwater retention associated with the Freshwater Bayou Canal and Humble Canal. Highway 82 traverses cheniers wherever possible, however, low spots between cheniers historically allowed drainage from the Lakes Subbasin south into the Chenier Subbasin. Currently, Highway 82 forms a hydrologic barrier that isolates those sub basins from freshwater runoff.

Goals
The project goals are to restore/improve hydrologic conditions and promote the expansion of emergent marsh vegetation throughout the project area. The proposed hydrologic features would promote a flow-through system to improve hydrologic conditions in the project area. The marsh creation and terrace features would create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Proposed Solution
The project would construct approximately 253 acres of marsh creation and 55,000 linear feet of terraces.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? The total area benefitted is approximately 1,000 acres.

2) *How many acres of wetlands will be protected/created over the project life*? The project would protect/create approximately **274 net acres** (233 MC + 41 Terraces).

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).* The anticipated loss rate reduction throughout the area of direct benefit is estimated to be *50-74%.*

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* The project would protect the Front Ridge Chenier.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect Louisiana Highway 82.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would provide additional freshwater across Highway 82 and have a synergistic effect with the constructed Pecan Island Terracing project (ME-14).

Identification of Potential Issues
There are pipelines in the area and O&M will be required.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $22,875,000.

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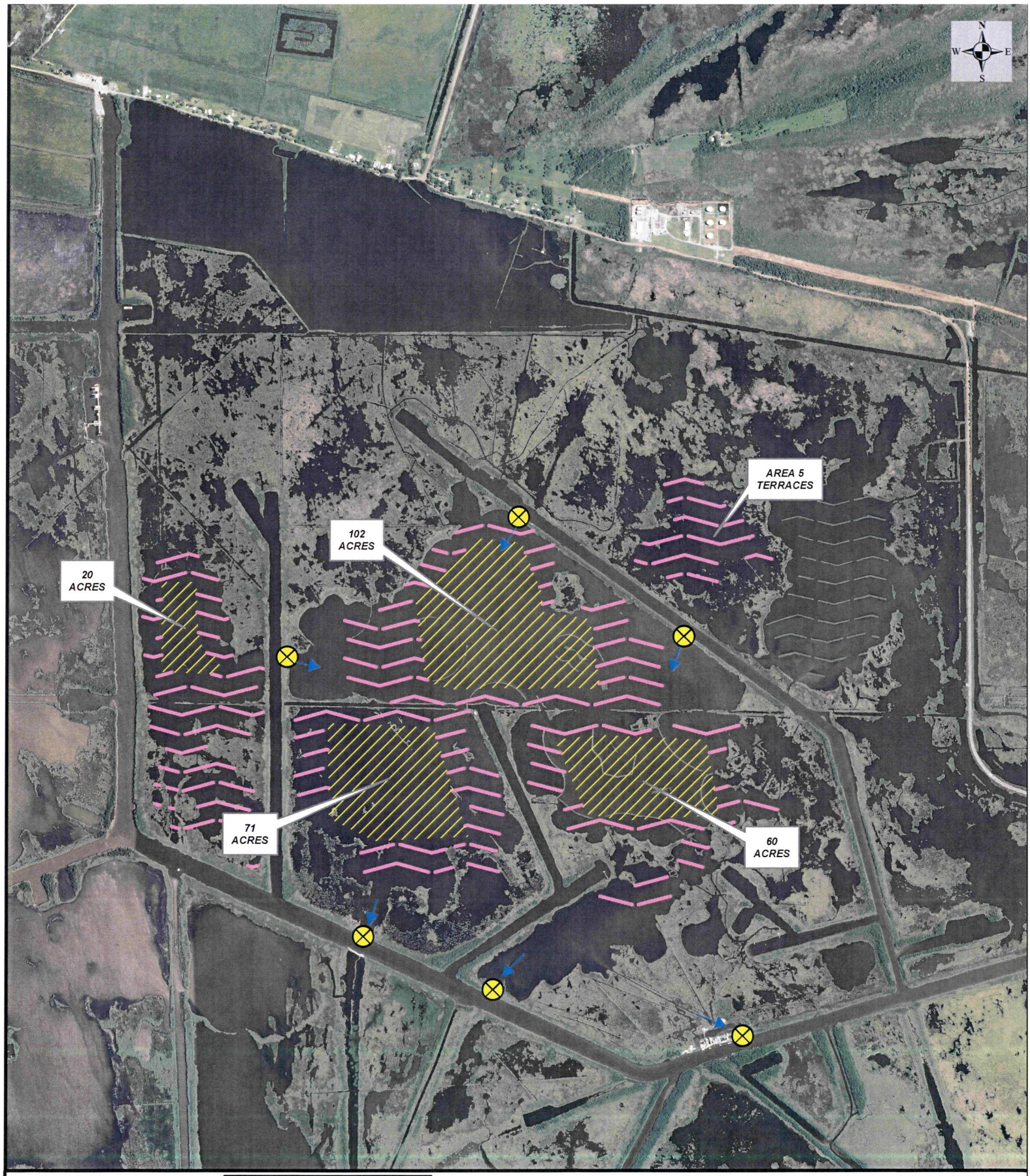
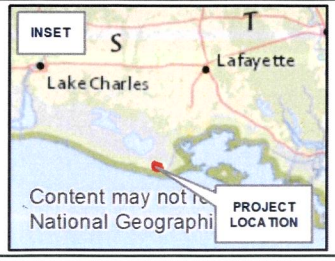


USDA

Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source: NAIP 2013
Map Date: JANJUARY 25, 2016



PPL-26
SOUTHEAST PECAN ISLAND
MARSH CREATION AND TERRACING
VERMILION PARISH, LA

0 1,000 2,000
Feet

Legend
TERRACES
MARSH CREATION
AREA_5_TERRACES
WATER_CONTROL_STRUCTURE

R4-ME-10

East End Lock Modification/Replacement

ME - 10

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name
East End Lock Modification/Replacement

Master Plan Strategy
Deep Lake Hydrologic Restoration 004.HR.13

Project Location
Region 4, Mermentau Basin, Cameron Parish, Rockefeller Wildlife Refuge

Problem
Construction of La. Highway 82 restricts drainage of local communities and marshes north of the highway to outlets located on Rockefeller Wildlife Refuge. That restriction can result in prolonged periods of inundation during high rainfalls and flooding events.

Goals
The proposed project will reduce prolong periods of inundation to relieve flooding stress and restore the function, value, and sustainability to thousands of acres of marsh. The proposed project will also allow Rockefeller Wildlife Refuge to accommodate additional water flow during flooding events to relieve flooding of local communities.

Proposed Project Features
The proposed project would replace the current 39 foot-wide lock system with a proposed new lock system that would be between 60 and 80 feet wide. The current lock system is over 40 years old, is in desperate need of replacement, and cannot adequately relieve flooding in much of the Mermentau Basin.

Preliminary Project Benefits
1) What is the total acreage benefited both directly and indirectly? Drainage through this area is important to the entire Mermentau Basin.

2) *How many acres of wetlands will be protected/created over the project life*? Has not yet been determined.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).* The anticipated loss rate reduction throughout the area of direct benefit is estimated to be <25%.

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.* Proposed project improves drainage across La. Highway 82.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would restore the East End Lock which is a necessary outlet for Superior Canal.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*?

Identification of Potential Issues
There are no issues identified at this time.

Preliminary Construction Costs
The estimated construction cost including 25% contingency is approximately $20 million.

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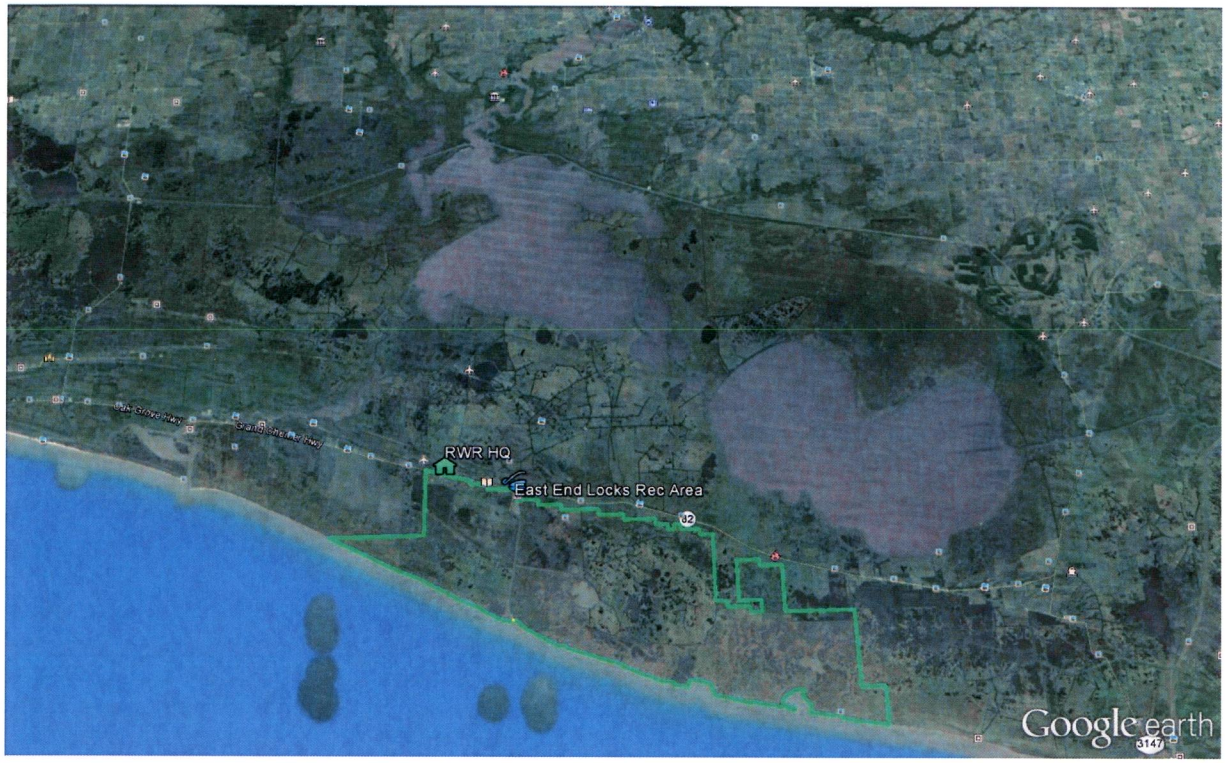

Rockefeller Wildlife Refuge and East End Locks System

Region 4 – CALCASIEU-SABINE BASIN

R4-CS-01

East Holly Beach Shoreline Protection

CS-01

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name
East Holly Beach Gulf Shoreline Protection

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, South of State Highway 82, west of the Calcasieu Ship Channel.

Problem
The project will be designed to reduce erosion of the Gulf Shoreline and protect the State's Beach Nourishment project (CS-33 SF). Recent loss rates (1998-2008) were calculated from aerial photography at 26.5 ft/yr.

Goals
The project is designed to reduce wave energies on the gulf shoreline west of the Calcasieu Ship Channel and trap sediment between the breakwaters and shoreline. The total area benefited is approximately 248 acres of beach, dune, supratidal, and subtidal habitat created by the (CS-33 SF) state surplus project. The proposed project maintains a beach rim component of the coastal ecosystem and has a positive net impact on critical infrastructure (Highway 82). The project would also protect and restore critical habitat for the piping plover, a threatened/endangered species.

Proposed Solution
The project proposes approximately 15,454 linear feet (2.9 miles) of breakwaters similar to the Raccoon Island (TE-29) and the Chenier Au Tigre Demonstration (TV-16) projects. Breakwaters will be designed to protect the most critical shoreline area along Highway 82 using all the lessons learned from the Holly Beach Breakwater Enhancement and Sand Management Project (CS-31). Approximately 26 round rubble breakwaters (300 ft length with 300 ft gaps), placed 250 feet offshore and built to 3.8 ft NGVD will be created. This project will protect approximately 248 acres of headland habitat created by the CS-33SF project using approximately 2 million cubic yards of sand from an offshore borrow site.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly*?
The total area benefitted is estimated at 248 acres (15,454 x 700/43,560).

2) *How many acres of wetlands will be protected/created over the project life*?
The project would protect approximately 153 net acres (15,454 x 430/43,560).

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (<25%, 25-49%, 50-74% and >75%).*
The anticipated loss rate reduction throughout the area of direct benefit is estimated to be *>75%.*

4) *Do any project features maintain or restore structural components of the coastal ecosystem such as barrier islands, natural or artificial levee ridges, beach and lake rims, cheniers, etc.*

The proposed project would maintain a beach rim component of the coastal ecosystem. This area has also been designated as critical habitat for the threatened piping plover by the Fish and Wildlife Service.

5) *What is the net impact of the project on critical and non-critical infrastructure*?
The proposed project would provide protection to Louisiana Highway 82 and the Gulf shoreline.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*?
The proposed project is synergistic with the state surplus project (CS-33 SF) that recently created beach and dune habitat in this area using sand from offshore borrow sites.

Identification of Potential Issues
Issues to consider for this project include listed species such as the piping plover (critical habitat) and red knot. O&M is another consideration.

Preliminary Cost
The fully-funded cost range is $30M-$35M.

Preparers of Fact Sheet
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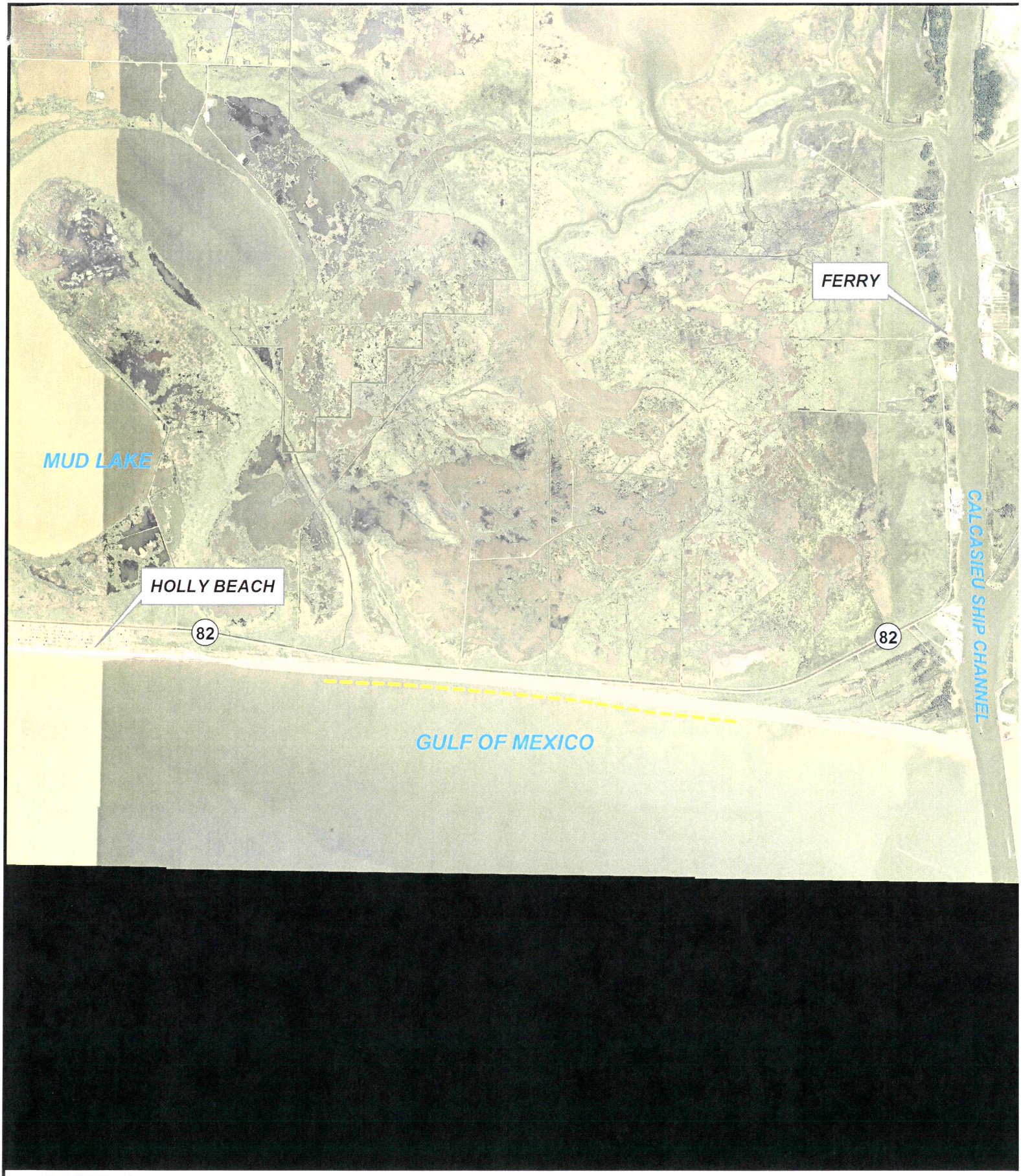

USDA

Map Produced By:
United States Department of Agriculture
Natural Resources Conservation Service
Alexandria, LA

Data Source: NAIP 2013

Map Date: JANUARY 21, 2016

PPL-26
EAST HOLLY BEACH GULF SHORELINE PROTECTION

0 4,000 8,000 Feet

Legend
CS_33_SF
26_354_FT_BW_250_FT_GAPS

Project Priority List 26 Nomination

Cameron Parish Police Jury:
East Holly Beach Shoreline Protection

East Holly Beach Gulf Shoreline Protection

- 15,000 linear feet (2.8 miles) of breakwaters similar to the Holly Beach Breakwater Project (CS- 01) to protect the most critical shoreline area along Highway 82.
- The area benefited is approx. 267 acres of beach and supratidal habitat created by (CS-33 SF) the state surplus project.
- The CS-33SF report concludes that those 267 created acres would be lost 20 years after construction.
- Area designated as critical habitat for threatened piping plover.


Tropical Storm (2010)


January 2014


General locations of the designated critical habitat for the Wintering Piping Plover.
Calcasieu Parish, LA
Jefferson Davis Parish, LA
Acadia Parish, LA
Lake Charles
Abbeville
Constance Beach
Cameron Parish, LA
Vermilion Parish, LA
Sabine Lake
Holly Beach
Cameron
Grand Lk
White Lake
Rollover Bayou
Freshwater Bayou Canal
Sabine Pass
LA-1
LA-1
LA-1
Gulf of Mexico
General Area
AR
MS
AL
TX
LA
Distance: Miles
0
15
30
N
Legend
City / Town
Major Road / Highway
Land
Critical Habitat
Use Constraints: This map is intended to be used as a guide to identify the general areas where Wintering Piping Plover critical habitat has been designated. Included within the designation of critical habitat are all land areas to the mean lower low water. Refer to the narrative unit descriptions as the precise legal definition of critical habitat.
Louisiana Unit: 1
Some locations have been slightly enlarged for display purposes only.


FERRY
MUD LAKE
HOLLY BEACH
HWY 82
GULF OF MEXICO
PPL-26: East Holly Beach Shoreline Protection
ROCK_BREAKWATER
ROADS
0
5,000
10,000
Feet

R4-CS-02

No Name Bayou East Marsh Creation and Nourishment

CS-02

PPL26 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name:
No Name Bayou East Marsh Creation and Nourishment

Louisiana's 2012 Coastal Master Plan:
Marsh Creation – 004.MC.23

Project Location:
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem:
The Calcasieu Ship Channel, west of the project area, provides an avenue for the rapid movement of high-salinity water into the marshes around Calcasieu Lake. This movement increased salinity in the area, resulting in plant death and marsh loss. The weakened marshes located between the East Fork of the Calcasieu River and Calcasieu Lake have been decimated by hurricanes. Marshes that once provided a buffer to the southwest rim of Calcasieu Lake are now shallow open water areas.

Proposed Solution:
The proposed project's primary feature is to create and/or nourish approximately 525 acres of marsh (500 acres created, 25 acres nourished) south of Calcasieu Lake. In order to achieve this, sediment will be dredged from a borrow area in Calcasieu Lake adjacent to the CS-54 borrow area and hydraulically pumped into the shallow water marsh creation area. It may be necessary to clean out approximately 4,500 LF of the Cameron Creole Watershed Levee borrow channel to facilitate water movement into the newly created area. Approximately 12,000 LF of tidal creeks will be constructed in the newly created/nourished area. Minimal containment dikes will be constructed around the marsh creation area to keep material on site during pumping. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be excavated. Additionally, 250 acres of vegetative plantings will occur within the newly created areas.

Goals:
The project goal is to create and/or nourish approximately 525 ac of marsh (500 ac created, 25 ac nourished) of emergent brackish marsh using sediment from a borrow area in Calcasieu Lake. If available, material from the Calcasieu Ship Channel maintenance cycles would also be considered.

Preliminary Construction Costs:
The estimated construction cost including 25% contingency is $21,231,250. The fully funded cost range is $25M-$30M.

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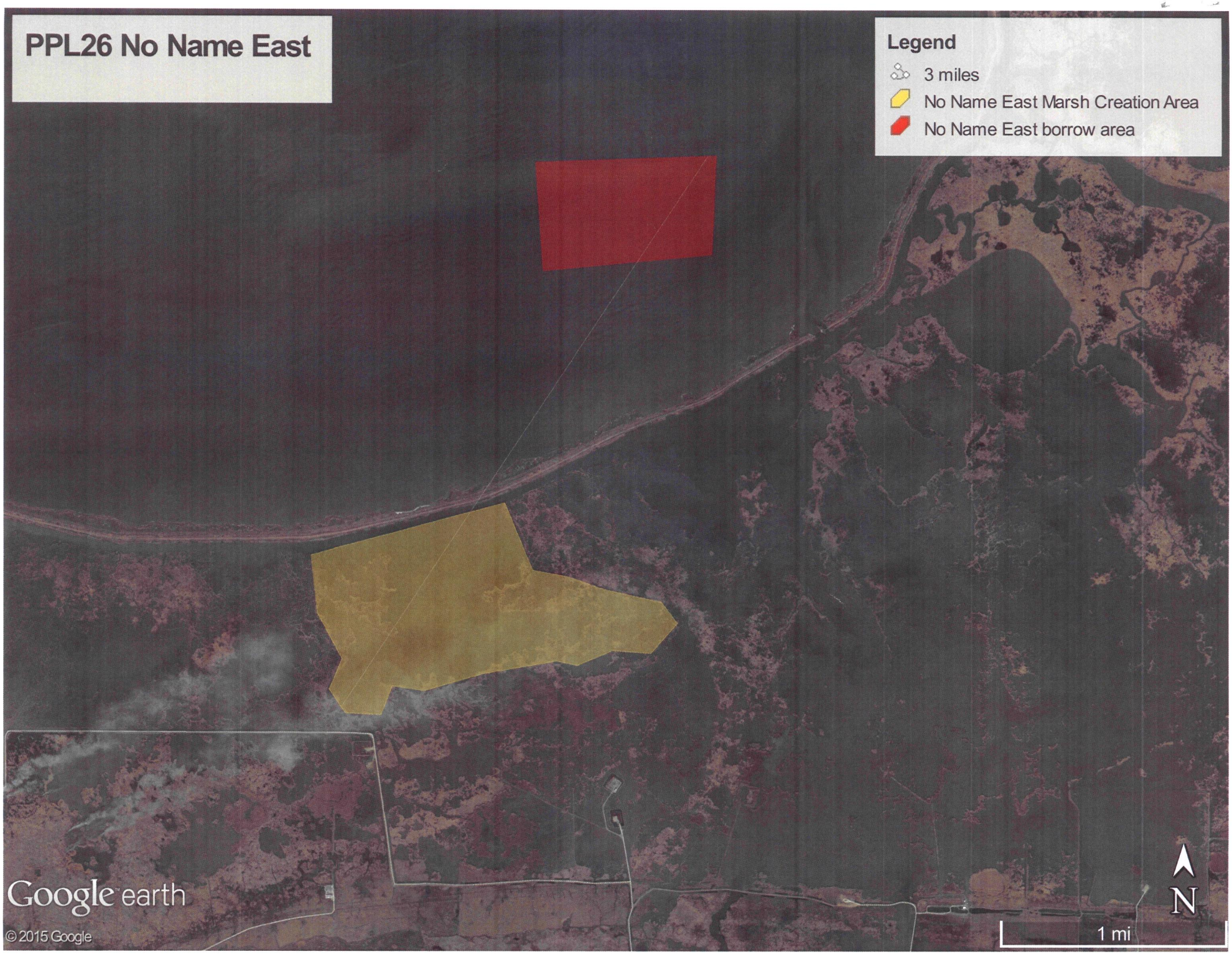

PPL26 No Name East
Legend
3 miles
No Name East Marsh Creation Area
No Name East borrow area
Google earth
© 2015 Google
N
1 mi

NOAA FISHERIES
Restoration Center

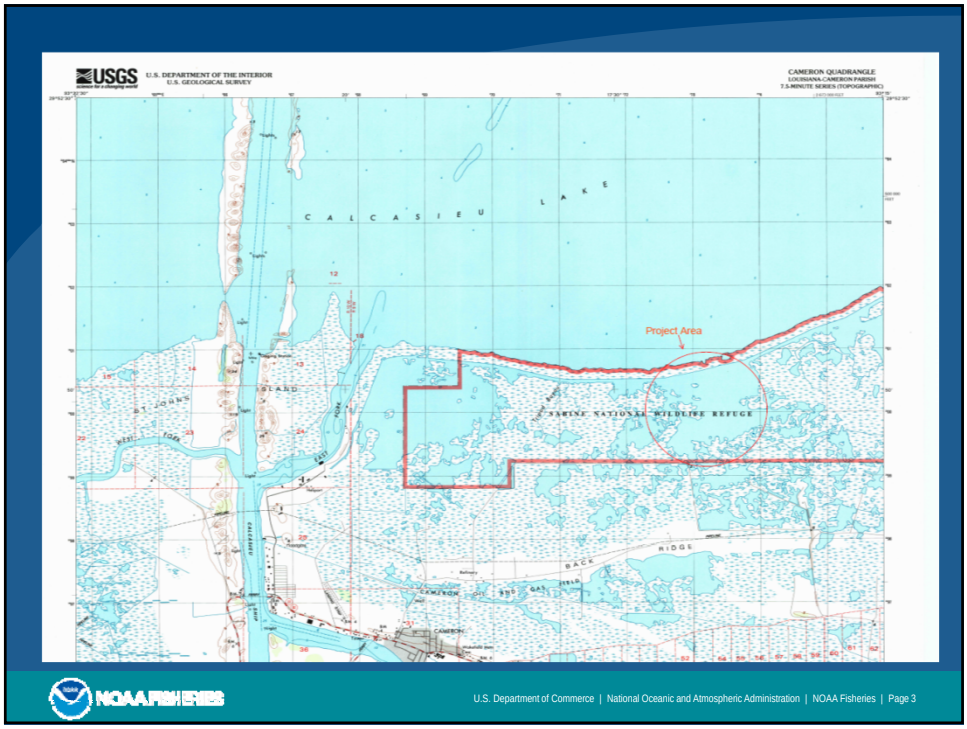
No Name East Marsh Creation

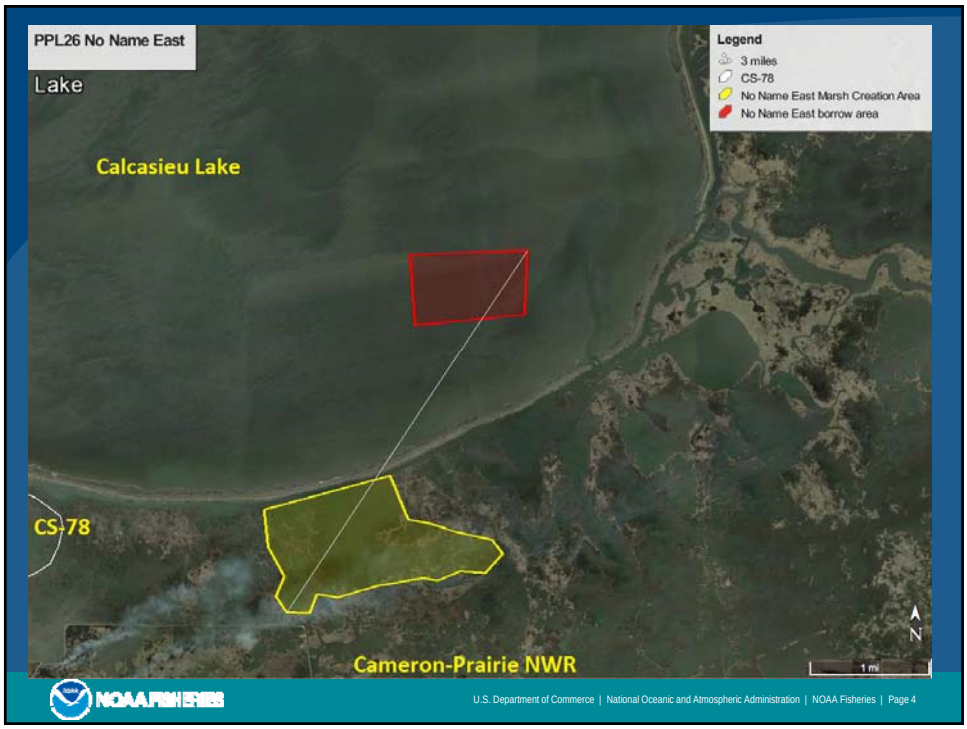
Region 4 – Calcasieu-Sabine Basin
Calcasieu Parish

January 26, 2016

Problem

- High land loss in Calcasieu-Sabine Basin marshes
- High salinity waters from Calcasieu Ship Channel
- Conversion of marsh to shallow open water areas


USGS
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
CAMERON QUADRANGLE
LOUISIANA-CAMERON PARISH
7.5-MINUTE SERIES (TOPOGRAPHIC)
CALCASIEU LAKE
Project Area
SABINE NATIONAL WILDLIFE REFUGE
ISLAND
ST JOHNS
RIDGE
BACK
CAMERON


PPL26 No Name East
Lake
Calcasieu Lake
Legend
3 miles
CS-78
No Name East Marsh Creation Area
No Name East borrow area
CS-78
Cameron-Prairie NWR
N
1 mi

Project Features

- 525 total acres
- Create 500 acres & nourish 25 acres marsh
- Tidal creeks and ponds
- Calcasieu Lake borrow area – short pump distance (3 mile)
- 440 net acres marsh
- Construction cost with 25% contingency = $21,200,000

R4-CS-03

North Mud Lake Marsh Creation and Nourishment

PPL26 PROJECT NOMINEE FACT SHEET
February 2, 2016

Project Name
North Mud Lake Marsh Creation and Nourishment

Louisiana's 2012 Coastal Master Plan
Marsh Creation – 004.MC.04

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish

Problem
Historically, the wetlands in this portion of Cameron Parish have been significantly altered by hydrologic modifications, saltwater intrusion, and conversion of marsh to open water. Anthropogenic factors such as the construction of the Calcasieu Ship Channel and LA Highway 27 have caused significant hydrologic changes to this system. In addition, rapid fluid extraction may have contributed to the surface down warping within this area. These factors contributed to the weakening of the wetland plant community, such that the community could not respond to increasing salinities and flood duration. The conversion of wetlands to open water also occurred during increased tidal action (i.e. tropical events), the wetland vegetation is physically removed, leaving open water areas. Salinity levels and flood duration have been improved with time, however water depths are not conducive for the reestablishment of emergent vegetation. In addition, SAV habitat in the project is also limited by wave action within the large, open water area.

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 500 ac (450 ac created, 50 ac nourished) of marsh, and approximately 10,000 linear ft of tidal creeks in that area of marsh north of Mud Lake. In order to achieve this, sediment will be hydraulically pumped from the upland disposal area of the Calcasieu Ship Channel (Long Island) into the shallow water marsh creation area. The upland disposal area will be mined to approximately +2, reestablishing approximately 200 acres as emergent marsh from its current state (upland disposal). Containment dikes will be constructed around the marsh creation area to keep material on site during pumping and the tidal creeks and ponds will be constructed. Once pumping has been completed, the containment dikes will be degraded to the current platform elevation and gaps will be made in the containment dike, hydraulically connecting the constructed tidal creeks to the adjacent water. Additionally, the newly constructed marsh will be assessed to determine if vegetative plantings will be necessary. Funds are budgeted to plant 50% of the created marsh acres at the receiving areas (225 ac).

Goals
The project goal is to create and/or nourish approximately 700 ac (450 ac created, 50 ac nourished in placement areas and 200 created from upland disposal source) of emergent brackish marsh using sediment from the upland disposal areas along the Calcasieu Ship Channel.

Preliminary Construction Costs
The estimated construction cost range including 25% contingency is $22.9 million. The fully funded cost range is $25M-$30M.

Preparer(s) of Fact Sheet:
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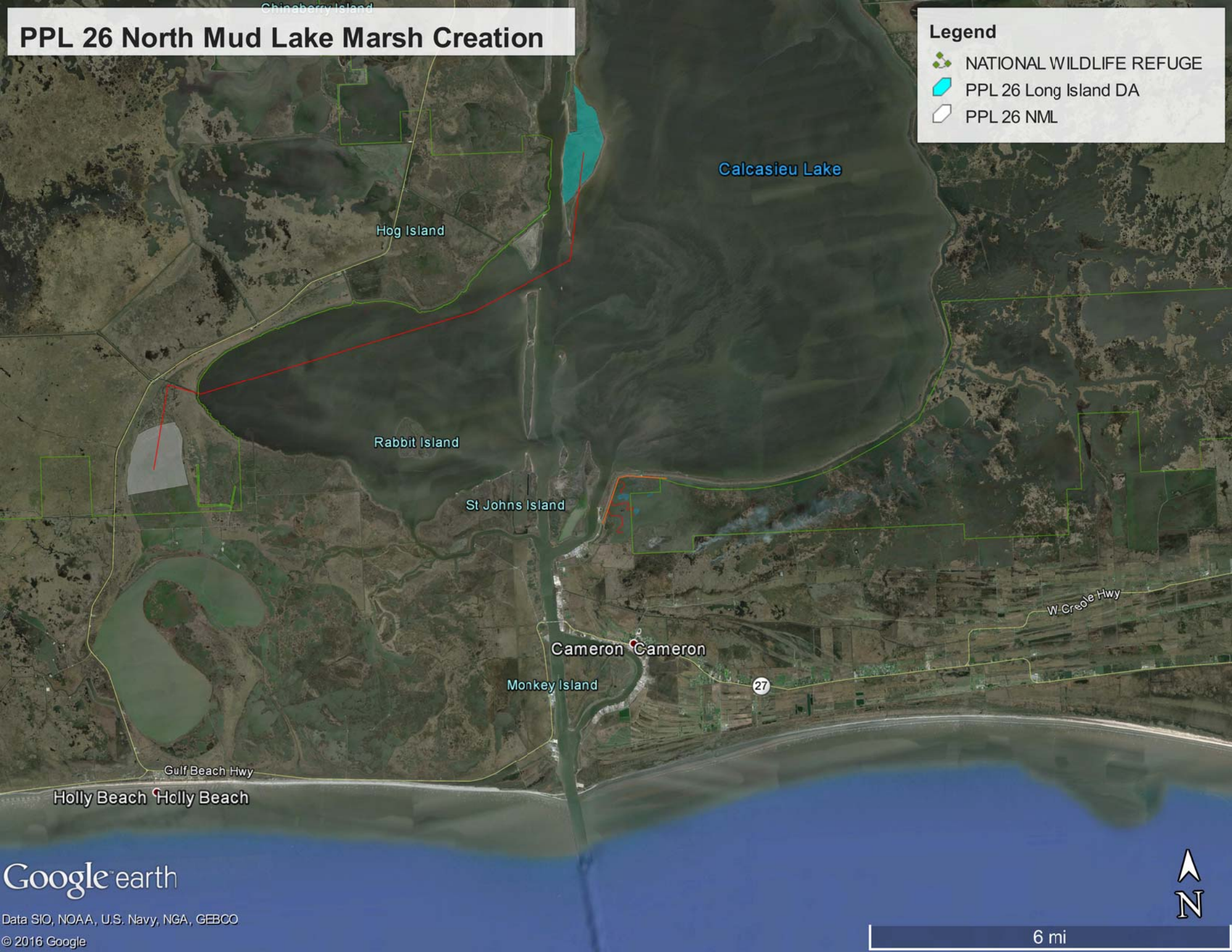
PPL 26 North Mud Lake Marsh Creation
Legend
NATIONAL WILDLIFE REFUGE
PPL 26 Long Island DA
PPL 26 NML
Calcasieu Lake
Hog Island
Rabbit Island
St Johns Island
Monkey Island
Cameron
Cameron
W Creole Hwy
27
Gulf Beach Hwy
Holly Beach
Holly Beach
Google earth
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6 mi

R4-CS-04

East Prong – Grand Bayou Marsh Creation and Terracing

CS-0884

PPL25 PROJECT NOMINEE FACT SHEET
January 26, 2016

Project Name: East Prong - Grand Bayou Marsh Creation & Terracing Project

Project Location: Region 4, Calcasieu-Sabine Basin, Cameron Parish, 6 miles northeast from Cameron, LA, on the Cameron Prairie NWR north of East Prong.

Problem: Historically this area was dominated by saw grass marsh. Loss of the historical saw grass marsh in this area is attributable to saltwater intrusion from the Calcasieu Ship Channel (CSC) in the 1950s. Hurricane Audrey (1957) exacerbated the impacts to the dying saw grass system, clearing away the dead and deteriorated saw grass stands. A combination of these human-induced hydrologic changes and accompanied severe storm events has resulted in virtually all of the habitat changes and land losses in the Calcasieu-Sabine Basin (Hydrologic Investigation of the Chenier Plain Report 2002). The CCWP was implemented by the NRCS in 1989 to reduce saltwater intrusion and stimulate restoration through revegetation. Land loss is estimated to be 1.33 percent/year based on USGS data from 1985 to 2009.

Goals: Project goals include restoring and nourishing marsh to elevations that are sustainable, constructing terraces, and reestablishing channel depths to benefit fish and wildlife resources in the Cameron Prairie NWR. The proposed project will reduce wind induced erosion and will buffer higher saline waters from penetrating further inland protecting fresher marshes. Restoring brackish marshes in the Cameron Creole Watershed is a conservation strategy identified by the FWS' *Vision for a Healthy Gulf of Mexico Watershed,* and would benefit Fish and Wildlife Service trust resources such as migratory waterfowl, shorebirds, and wading birds including Cameron Prairie NWR priority species such as the mottled duck and greater white fronted goose. Additionally, restoring these marshes may be beneficial to at-risk species such as black rail, diamondback terrapin, and Louisiana-eyed silkmoth by providing refugia for those species.

Proposed Solution: It is estimated that 2.6 million cubic yards (cyds) of dedicated dredge material is needed to restore 435 acres of brackish marsh. Approximately 25,000 linear feet of terraces will be constructed in open water areas to the east to reduce fetch, buffer fresher marshes from higher salinity waters, increase abundance of submerged aquatic vegetation. Approximately 379,000 cyds of material is available through dredging of the natural bayous: assuming a 5-foot bottom depth, a 12-foot bottom width, and a 1:5 side slope. Spray dredging can nourish 100 feet out from the marsh bank line resulting in approximately 127 acres of nourished marsh. In addition, dredging the bayous would increase the storage capacity of those bayous and reestablish the natural tidal hydrologic pattern of the watershed.

Project Benefits: The project would restore 445 acres (435+15) and nourish 127 acres of brackish marsh in the CCW and reestablish a more natural tidal hydrology. Approximately 410 (88%) net acres of brackish marsh would be created and protected over the 20-year project life.

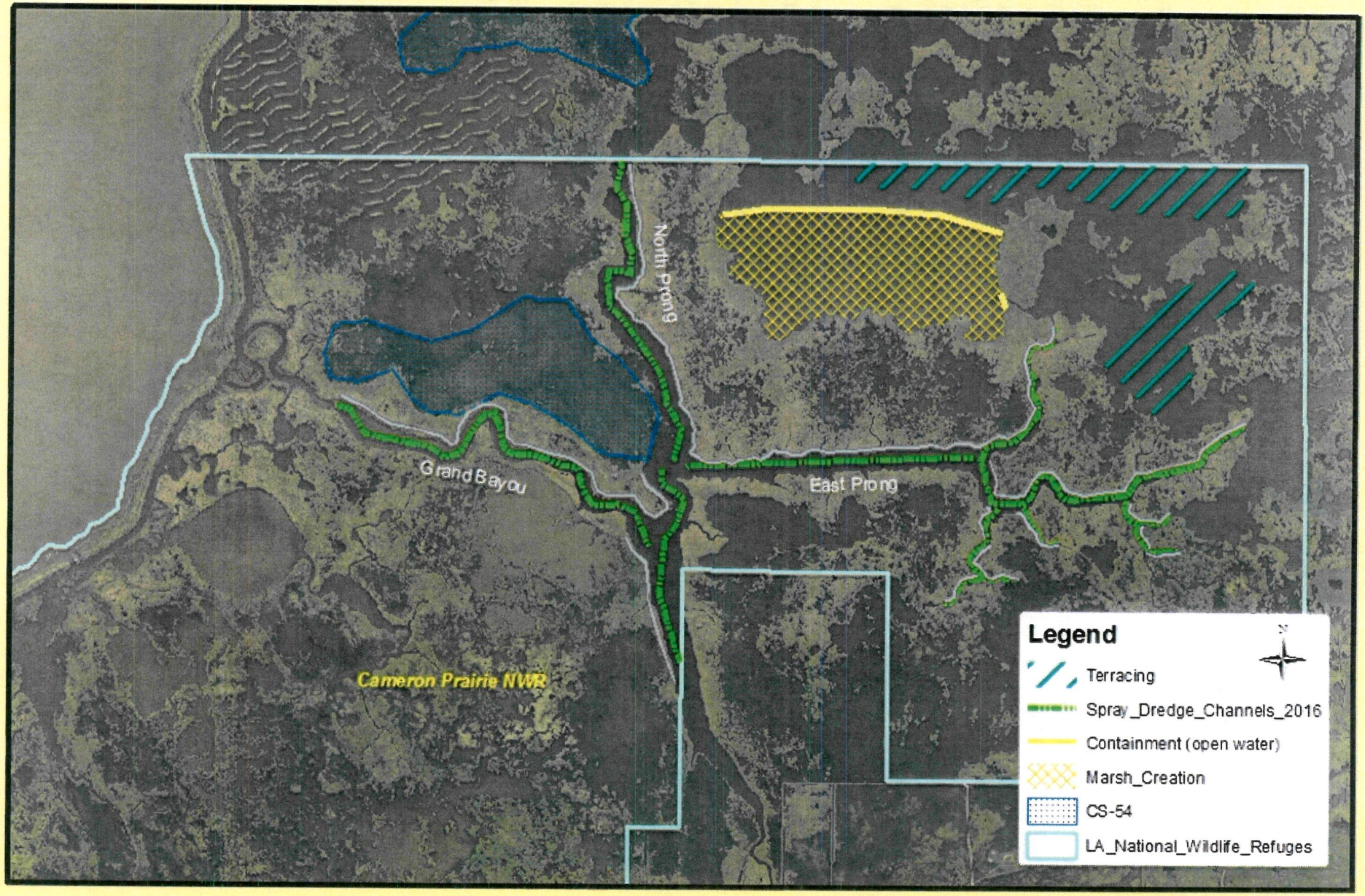
Project Costs: construction cost including 25% contingency is approximately $23 million.

Preparer of Fact Sheet: Angela Trahan, Fish and Wildlife Service, (337) 291-3137, Angela_Trahan@fws.gov

Fish and Wildlife Service

Louisiana Ecological Services Office

East Prong Marsh Creation Project

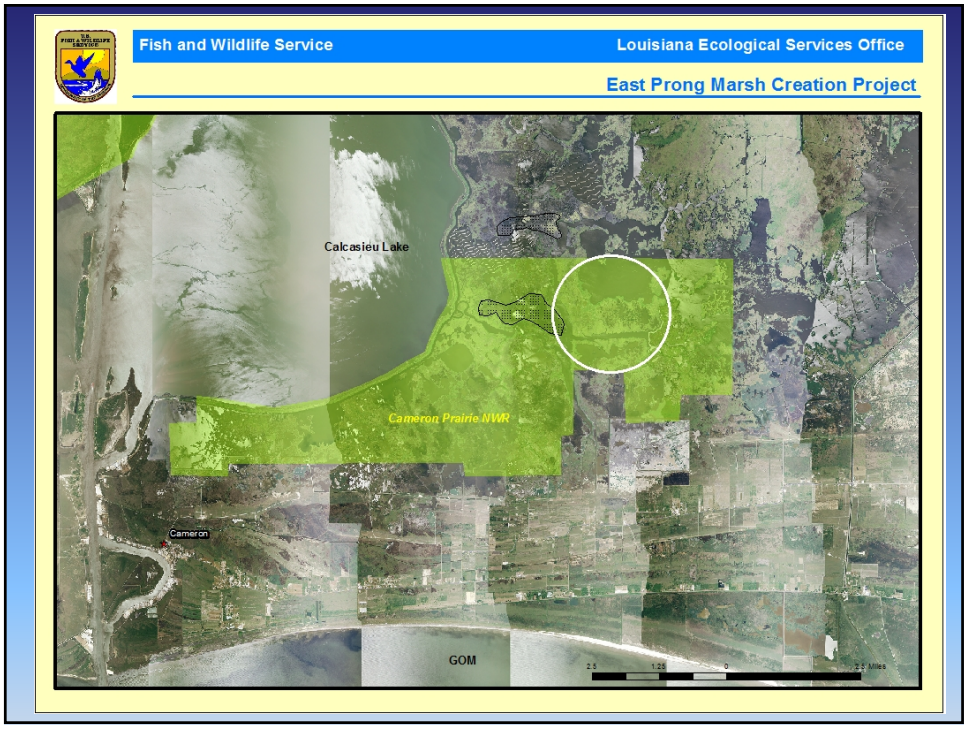


2013 DOQQ, 20160107; ACT

East Prong
Marsh Creation & Terracing

PPL 26

Region 4, Calcasieu - Sabine Basin



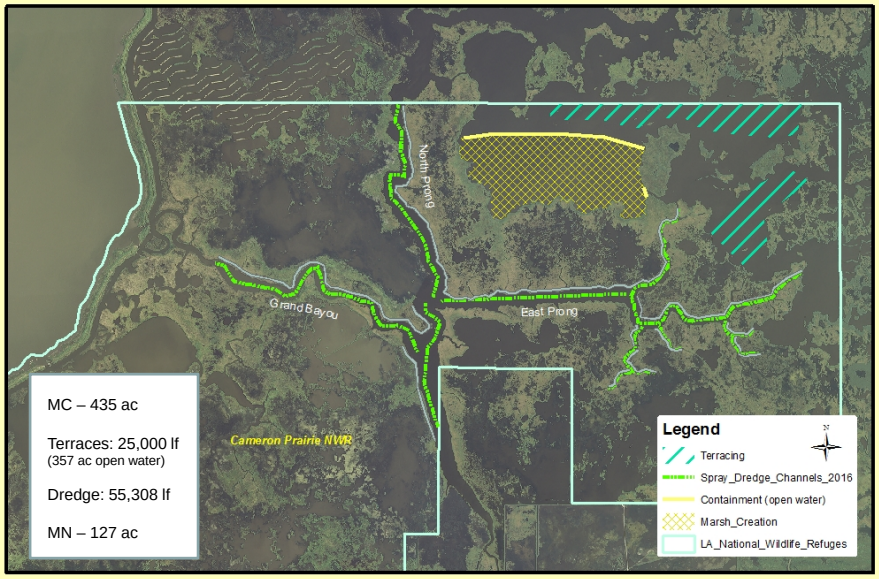
East Prong Marsh Creation & Terracing

Problem: salt water intrusion, wave induced erosion, storm-induced impacts, and prolonged inundation

Goal: restore marshes within large open water areas and along the bayous restoring the natural hydrology

Fish and Wildlife Service — Louisiana Ecological Services Office

East Prong Marsh Creation Project



East Prong Marsh Creation & Terracing

- Estimated Cost (25% contingency): $23 M

R4-CS-05

West Cove Bank Stabilization and Marsh Creation

PPL26 PROJECT FACT SHEET
January 26, 2016

Project Name
West Cove Bank Stabilization and Marsh Creation

Master Plan Strategy
West Cove Bank Stabilization 004.BS.02. Bank stabilization through earthen fill placement and vegetative plantings of approximately 106,000 feet of perimeter shoreline in the West Cove area of Calcasieu Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, within the Sabine National Wildlife Refuge

Problem
Erosion is a problem along the shores of West Cove and erosion-related breaching of the shoreline exposes the fragile interior marshes to increased water exchange and saltwater intrusion. The Calcasieu Ship Channel, located to the east of the project area, provides an avenue for the rapid movement of high-salinity water into the marshes around West Cove. West Cove has experienced a shoreline erosion rate of approximately 5.9 ft/yr. If not addressed, wind generated waves within the open water areas will cause an increase in shoreline erosion.

Goals
The project goal is to provide bank stabilization through an earthen filled berm and vegetative plantings approximately 33,000 linear feet along the north shoreline in the West Cove area of Calcasieu Lake and to create/nourish approximately 642 acres of emergent brackish marsh in open water areas north of the proposed bank stabilization and south of Hwy. 27, using beneficial use sediment dredged from the Calcasieu Ship Channel or by utilizing sediment from as upland disposal sites of the Calcasieu River.

Proposed Solution
This project will provide approximately 33,000 linear feet of bank stabilization along the northern shoreline of West Cove through an earthen berm and vegetative plantings which will preserve shoreline integrity and reduce wetland loss from wave erosion. This project will also create and/or nourish 642 acres of emergent brackish marsh utilizing either beneficial use of material hydraulically pumped from the Calcasieu Ship Channel, or sediment from upland disposal sites of the Calcasieu River, and placed into shallow open water sites within the project area. Those sites would have constructed earthen dikes that will be used to contain dredged material on site. Material would be pumped to a healthy marsh elevation as deemed by healthy marsh survey. Once material is in place and adequately dewatered, containment dikes will be adequately gapped to allow tidal exchange of nutrients and aquatic organisms with the marsh.

Project Benefits
- Provide approximately 33,000 linear feet of bank stabilization along the northern shoreline of West Cove through an earthen berm and vegetative plantings, and
- Create and/or nourish approximately 642 acres of emergent brackish marsh through beneficial use of the sediment dredged from the Calcasieu Ship Channel or sediment from an upland disposal sites of the Calcasieu River.

Preliminary Construction Costs
Beneficial use of dredge sediment material from the Calcasieu Ship Channel:
The preliminary project cost estimate with 25% contingency is approximately $19 million. The fully funded cost range is $20M - $25M.

Mining the upland disposal site east of West Cove:
Project preliminary cost estimate with 25% contingency is approximately $18 million and the fully funded range is $20M - $25M.

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West Cove Bank Stabilization

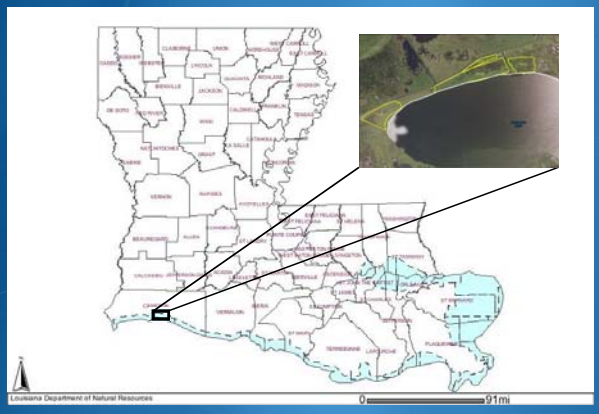
Bank Stabilization
Marsh Creation

N

Basem ap: 2015 NAIP DOQQ
Produced by: EPA Region 6, Dallas, TX

0 0.2 0.4 0.8 1.2 Miles

West Cove Bank Stabilization and Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

Master Plan Solution

004.BS.02: West Cove Bank Stabilization: Bank stabilization through earthen fill placement and vegetative plantings of approximately 106,000 feet of perimeter shoreline in the West Cove area of Calcasieu Lake to preserve shoreline integrity and reduce wetland degradation from wave erosion.

Master Plan Consistency

- 004.BS.02 West Cove Bank Stabilization
- Joint sponsored project between EPA and USACE

Problem

- Project area has experienced both shoreline erosion and wetland loss
- Compound effects driving loss:
  - Shoreline erosion along West Cove due increased wave energy and high ship traffic in the Calcasieu Ship channel.
  - Subsidence, storm losses, sea level rise, and human intervention
  - Erosion-related breaching of shoreline exposing interior marsh to increased water exchange

Historical Reference

CWPPRA Historical Topography
USGS 1935 1:31,680 Topographic Maps

Project Features

Project Goals

- Provide approximately 33,000 feet of earthen bank stabilization along the northern shoreline of the West Cove
- Create/nourish 642 acres of marsh using either beneficial use of dredged material from the Calcasieu Ship Channel or by mining the upland disposal site of the Calcasieu River.
- Provide additional protection of Hwy. 27, north of West Cove, as an evacuation route
- Estimated cost + 25% contingency = $19M
- Fully funded range = $25M-$30M

R4-CS-06

East Cameron Meadows Marsh Creation

CS-06

PPL 26 PROJECT FACT SHEET
January 26, 2016

Project Name
East Cameron Meadows Marsh Creation

Master Plan Strategy
Cameron Meadows Marsh Creation 004.MC.13. Creation of approximately 3,290 acres of at Cameron Meadows north of Johnsons Bayou to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
Region 4, Calcasieu-Sabine Basin, Cameron Parish, south of Cameron Meadows Gas Field

Problem
Cameron Meadows has experienced severe land loss and habitat conversion which is attributed to subsidence, sediment deprivation, and construction of access, pipeline canals and gas extraction beginning in the 1930's. Interior marsh loss has also been a result of saltwater intrusion and hydrologic modifications due to marsh impoundment. Areas that were once productive intermediate marsh were converted to brackish marsh and also into areas of shallow open water due to Hurricanes Rita, Ike and Gustav during the active hurricane seasons of 2005 and 2007.

Goals
The project goals are to create approximately 500 acres of new marsh in areas of open water and restore coastal marsh habitat.

Proposed Solution
This project will create and/or nourish 500 acres of marsh utilizing dredged material from a borrow site located in the Gulf of Mexico. Material would be pumped to a healthy marsh elevation as deemed by healthy marsh survey. Once material is in place and adequately dewatered, containment dikes will be adequately gapped to allow tidal exchange of nutrients and aquatic organisms with the marsh. Additionally the project site would be planted in order to reestablish the plant productivity within the marsh.

Project Benefits
- Create and/or nourish approximately 500 acres of emergent brackish marsh through dredging material from a borrow site located in the Gulf of Mexico.

Preliminary Construction Costs
The estimated cost + 25% is $25.0 million. The fully funded range is $30M - $35M.

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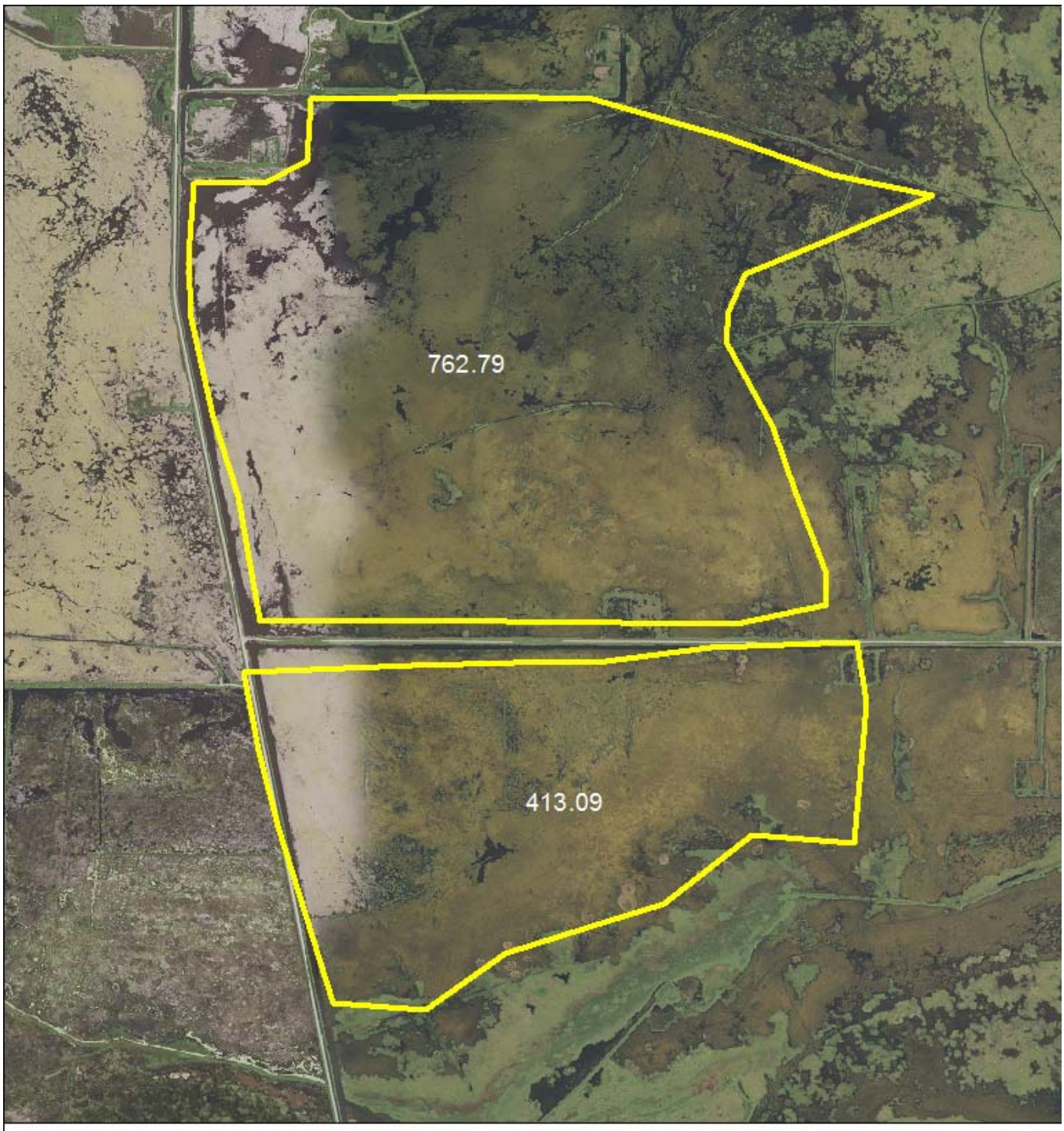


East Cameron Meadows (PPL26)

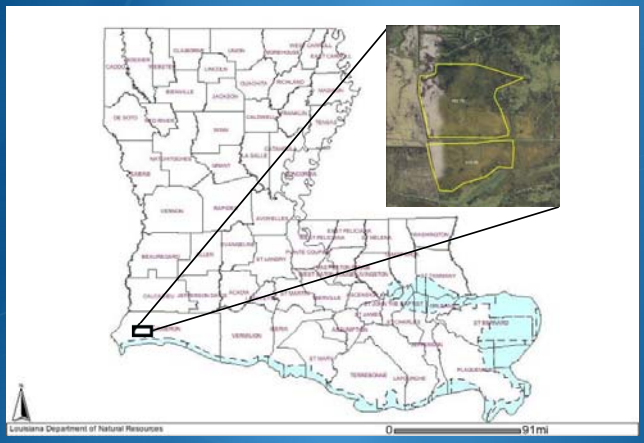
Project Marsh Creation

N

Basemap: 2015 NAIP DOQQ - Vermilion Parish
Produced by: EPA Region 6, Dallas, TX

Miles
0 0.125 0.25 0.5 0.75

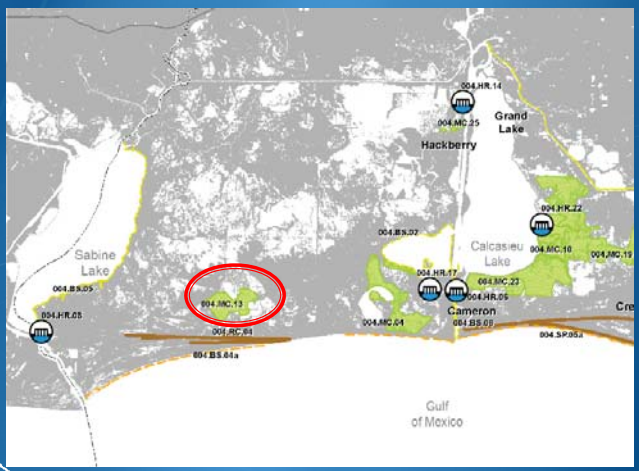
East Cameron Meadows Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

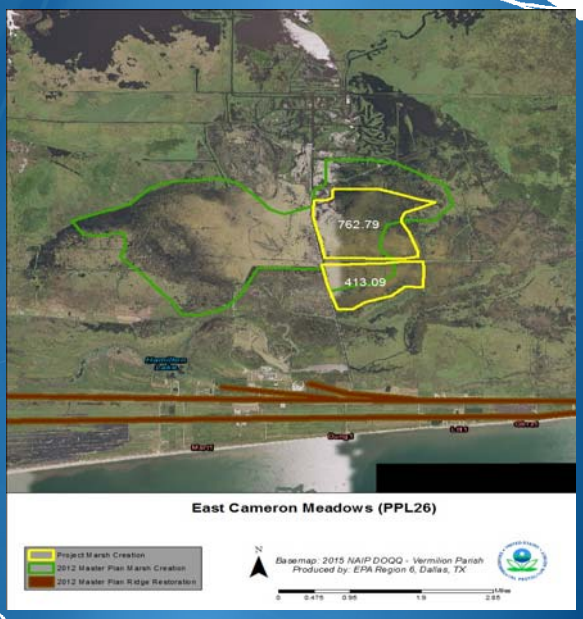
Master Plan Solution

004.MC.13: Cameron Meadows Marsh Creation: Creation of approximately 3,290 acres of at Cameron Meadows north of Johnsons Bayou to create new wetland habitat, restore degraded marsh, and reduce wave erosion.



Master Plan Consistency

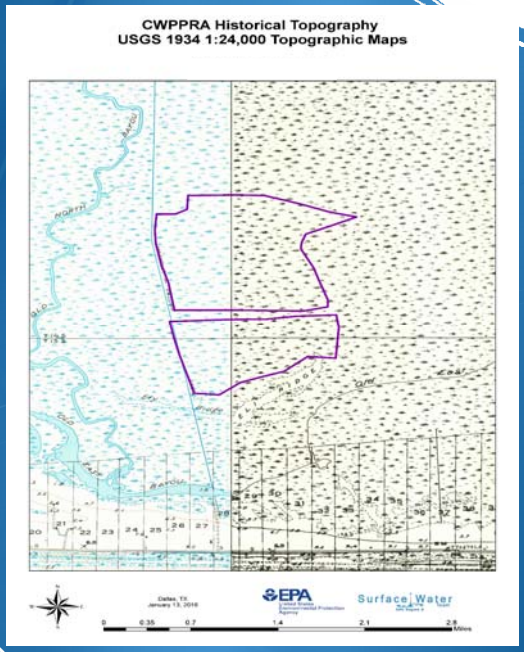
004.MC.13: Cameron Meadows Marsh Creation



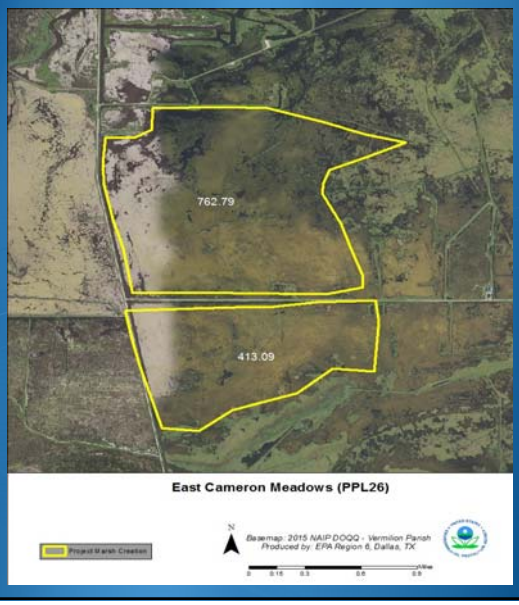
Problem

- Marsh loss and altered area hydrology due to:
  - Subsidence
  - Sediment deprivation
  - Saltwater intrusion
  - Construction of access/pipeline canals
  - Hurricanes in 2005 and 2007
- Resulted in marsh losses that left the area very shallow open water

Historical Reference



Project Features



Project Goals

- Create/nourish ~500 acres emergent marsh with sediment from Gulf of Mexico
- Estimated preliminary cost w/25% contingency is $25 million
- Fully funded cost range $30M-$35M.

R4-CS-07

Southeast Calcasieu Lake Marsh Creation

CS-07

PPL26 PROJECT FACT SHEET
January 26, 2016

Project Name
Southeast Calcasieu Lake Marsh Creation

Master Plan Strategy
Southeast Calcasieu Lake Marsh Creation 004.MC.10. Create approximately 7,600 acres of marsh southeast of Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

Project Location
Region 4, Calcasieu/Sabine Basin, Cameron Parish, east of Calcasieu Lake.

Problem
The interior Chenier Plain is characterized by fresh to brackish marshes and interior lakes that are fed by the Vermilion, Mermentau, Calcasieu and Sabine rivers. Over the decades, these marshes have been overwhelmed by saltwater intrusion due to navigation features and reduced freshwater retention associated with the Calcasieu Ship Channel, Sabine Waterway, the Mermentau Navigation Channel, Freshwater Bayou Canal and the GIWW. These channels allowed salt water from the Gulf to penetrate deeply into formerly fresher marshes, leading to widespread marsh loss, while the jetty systems interrupted the flow of sediment from east to west. In addition, man-made alterations to marsh hydrology have impeded their ability to adapt and repair themselves through natural processes.

Goals
The project goals are to create/nourish approximately 500 acres of new marsh in areas of open water and restore coastal marsh habitat.

Proposed Solution
This project will create and/or nourish approximately 500 acres of marsh utilizing dredged material from Calcasieu Lake. Material would be pumped to a healthy marsh elevation as deemed by healthy marsh survey. Once material is in place and adequately dewatered, containment dikes will be adequately gapped to allow tidal exchange of nutrients and aquatic organisms with the marsh.

Project Benefits
- Create and/or nourish approximately 500 acres of emergent brackish marsh by dredging material from Calcasieu Lake

Preliminary Construction Costs
The estimated cost + 25% contingency is $27.5M. The fully funded range is $30M - $35M.

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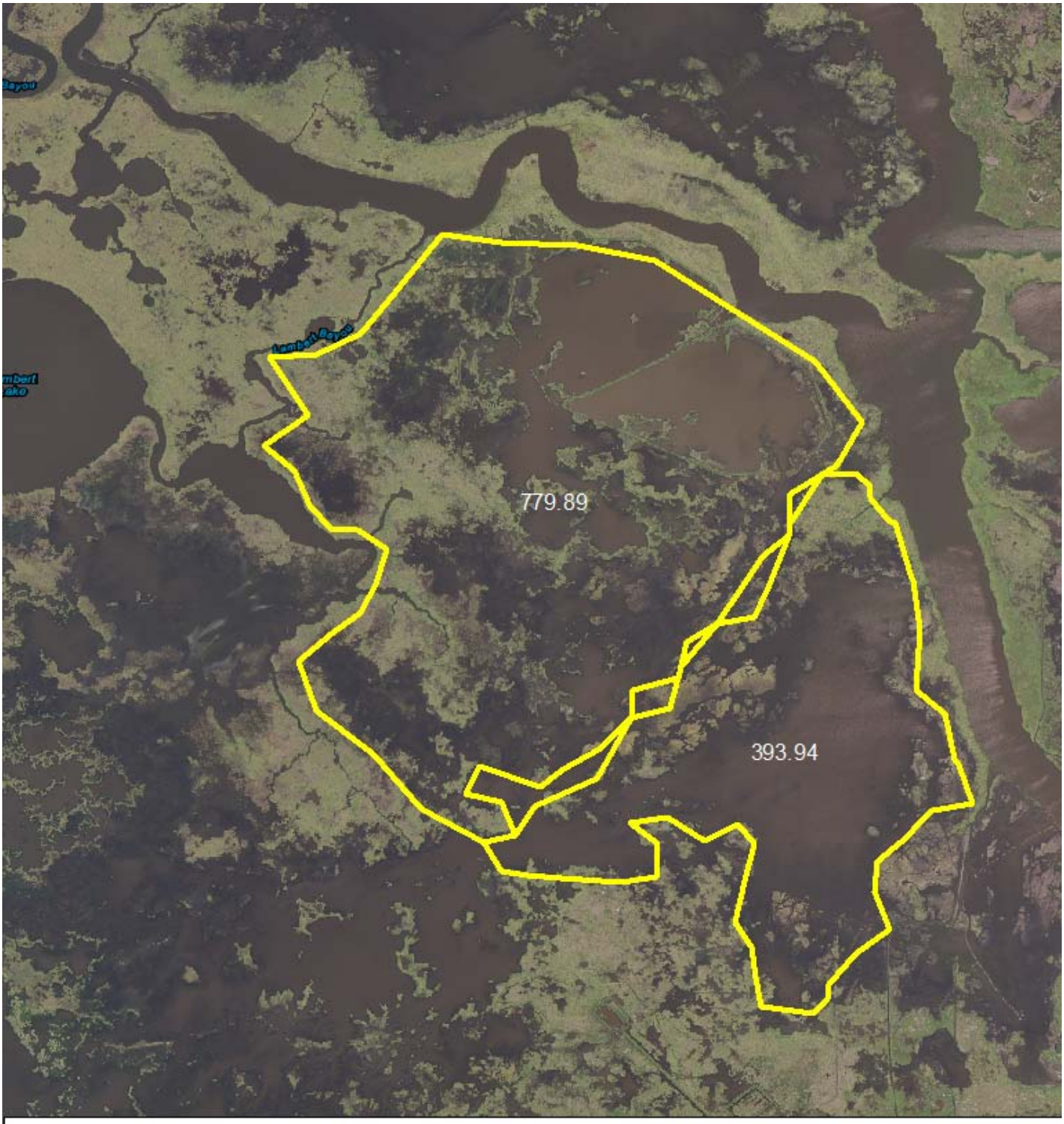


SE Calcasieu Lake Marsh Creation (PPL26)

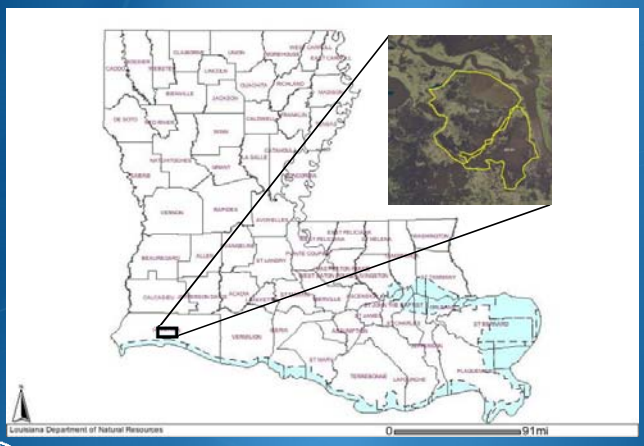
Marsh Creation Area

N

Basemap: 2015 NAIP DOQQ - Vermilion Parish
Produced by: EPA Region 6, Dallas, TX

0 0.175 0.35 0.7 1.05 Miles

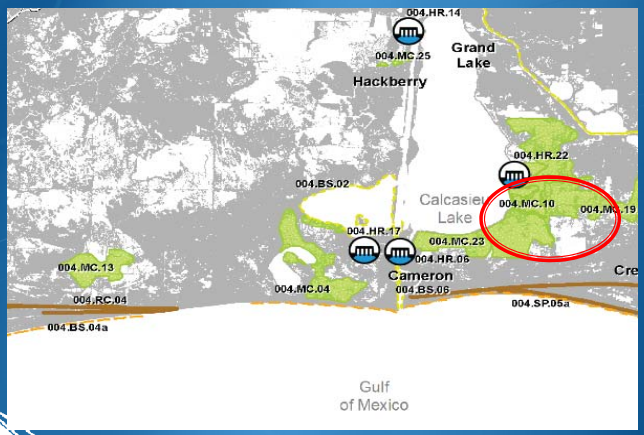
Southeast Calcasieu Lake Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

Master Plan Solution

004.MC.10: Southeast Calcasieu Lake Marsh Creation: Create approximately 7,600 acres of marsh southeast of Calcasieu Lake to create new wetland habitat, restore degraded marsh, and reduce wave erosion.

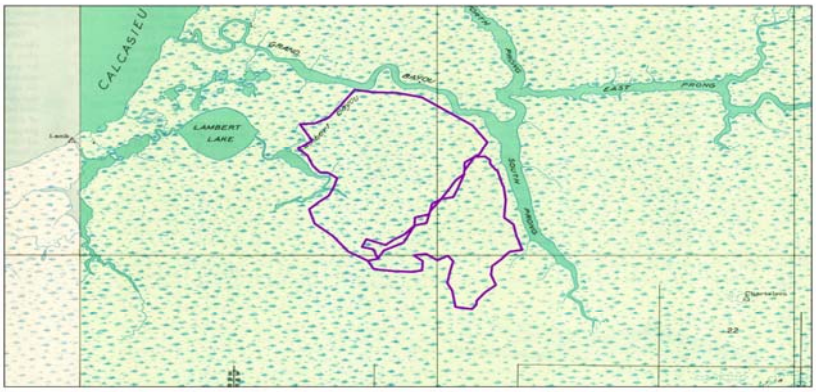


Master Plan Consistency

Problem

- Wetland loss is the result of extensive hydrologic alterations to wetland building and maintenance processes.
- Interior marsh loss due to:
  - Navigation features
  - Subsidence
  - Saltwater intrusion
  - Increased tidal action
  - Shoreline erosion along Calcasieu Lake

Historical Reference



CWPPRA Historical Topography
USGS 1935 1:31,680 Topographic Maps

Project Features

SE Calcasieu Lake Marsh Creation (PPL26)

Project Goals

- Create/nourish approximately 500 acres emergent marsh with sediment from Calcasieu Lake
- Estimated preliminary cost w/25% contingency is $27.5 million
- Fully funded cost range $30M-$35M.