ATTENDANCE RECORD

DATE(S)	SPONSORING ORGANIZATION	LOCATION
February 5, 2020 9:30 A.M.	COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	Port of Morgan City - Office 7327 Hwy 182, Morgan City, LA

PURPOSE **MEETING OF THE REGIONAL PLANNING TEAM REGION III**

PARTICIPANT REGISTER

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
Kacie Wright	CWPPRA Outreach	337-266-8626
Jennifer Guidry	CWPPRA outreach	337 266 8623
Jennifer Smith	NOAA	225-954-6654
Lonnie Fontenot	Jesco (Lacinute-Yaker)	337-802-7508
ADRIENNE GRAEBEL	CIOT - CONTRACTOR FOR USGS	337-266-8642
JASON KROLL	NOAA	225.757-5411
MARY BLACK	TPCG - COASTAL RESTORATION	985-873-6889
JOHN FORET	FENSTERMAKER	337-237-2200
FRANCES FIELDS	APACHE LA. MINERALS LLC	985-879-3528
TIM ALLEN	" "	" "
Brad Crawford	EPA	214 665 7253
PATRICK WILLIAMS	NOAA	225-380-0058
RALPH LIBERSAT	VERMILION PARISH	337-652-6557
Greg Duconge	CL+F	337 519-3006
DANNY HEBERT	LDWF	225 765 0233
Chad J Courville	Miami Corporation	337.264.1655
January Murray	NOAA	225-380-0089
Lance Campbell	LDWF	337-735-8668
Charles Sasser	LSU	225-578-6375
Ronny Paille	FWS	337-291-3117
Alton Jones	USGS	
Scott Green	Scott Green Properties	985 714-2505

LMV FORM 583-R
JAN 88

ATTENDANCE RECORD

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PURPOSE **MEETING OF THE REGIONAL PLANNING TEAM REGION III**

PARTICIPANT REGISTER

NAME	JOB TITLE AND ORGANIZATION	PHONE NUMBER
LOLAND BROUSSARD	DU	337-443-4310
Eric Whitney	NRCS	337-291-3069
Jackie Jones	NRCS	337-291-3055
Mark Hester	UL Lafayette	504 237-1175
Angela Trahan	NRCS	337 291 3142
Cindy Cutrera	Port of Morgan City	985-384-0850
Michael Brocato	SMWD	985.380.5500
MACHARIE	POMC	985-384-0850
Tai Terry	Port of Morgan City	" "
Harold Schaffler	Sierra club	5374171550
Wendy Billeaud	St. Mary Parish Govt	337-828-4100
Leslie Suaye	Ducks Unlimited	985-853-3020
Robert Dakus	USFWS	337-257-4345
ANDRE COMEAUX		337-278-0686
Adam Linson	CPRA	985-342-4485
Dawn Davis	NOAA	225 380 0041
JOHN PETITBON	USACE	504 862-2732
Josh Anderson	NRCS - Thibodaux	985-446-6293
Kellyn La Cour	CPRA -	225-342-4467

LMV FORM 583-R
JAN 88

Coastal Wetlands Planning Protection & Restoration Act

30th Priority Project List

Region 3

Regional Planning Team Meeting

February 5, 2020
Morgan City, LA

1. Welcome and Introductions

- RPT Region 3 Leader: Ron Boustany - NRCS

CWPPRA

Announcements

- Copies of the PPL 30 Selection Process & Schedule available at the sign-in table.
- PPL 30 RPT meetings to accept project nominees:
  - Region IV, Port of Lake Charles, Feb. 4, 2020, 10:00 am
  - **Region III, Port of Morgan City - Office, Feb. 5, 2020, 9:30 am**
  - Region II, USFWS SE LA Refuges Complex (Big Branch), Feb. 6, 2020, 10:00 am
  - Region I, USFWS SE LA Refuges Complex, Feb. 6, 2020, immediately following Region II
- For parishes that do not have a voting registration form filled out already - 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.

CWPPRA

Region 3 Parishes

- Eligible parishes for basins in Region 3 include:
- Terrebonne Basin
  - **St. Mary Parish**
  - **Terrebonne Parish**
  - **Assumption Parish**
  - **Lafourche Parish**
  - **Iberia Parish**
  - **St. Martin Parish**
- Atchafalaya Basin
  - **St. Mary Parish**
  - **Iberia Parish**
  - **Terrebonne Parish**
- Teche-Vermilion Basin
  - **St. Mary Parish**
  - **Iberia Parish**
  - **Vermilion Parish**

CWPPRA

RPT Meetings

- Project proposals should be consistent with the 2017 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.
- If similar projects are proposed within the same area:
  - RPT representatives (CWPPRA agencies and only the parishes located within the project's basin) will determine if those projects are sufficiently different
    - If sufficiently different:
      - Each project will move forward
    - If not sufficiently different:
      - Projects will be combined
      - Federal sponsor will be determined prior to coastwide vote (February 20th).
  - *This decision will be made at the meeting where the projects are proposed*

CWPPRA

RPT Meetings

- Presenters without factsheets **MUST** complete a PPL 30 Nomination Sign-Up Sheet for <u>each</u> project nominee (demo projects too).
- Presenters with factsheets, please give a factsheet each to Alice, Michelle & Lonnie <u>before</u> 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 13, 2020.
- Limit comments/questions during meeting to PPL 30 subject proposals and processes.

CWPPRA

Coastwide Projects

- Proposes a technique applicable across the coast (e.g. vegetative planting)
- Nominated at any RPT meeting
- Engineering/Environmental Workgroups will validate that coastwide projects fit CWPPRA Standard Operating Procedures criteria
- 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 20, 2020.
- The Technical Committee may or may not select a coastwide project in April 2020.

CWPPRA

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 February 20th Coastwide Electronic Vote.
- The Technical Committee selects up to 3 demos in April 2020.
- Workgroups may recommend that no demos move forward to candidate stage
- Previous demo candidates must be ***re-nominated*** for PPL 30.

Coastwide Electronic Vote (February. 20th) 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

CWPPRA

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 February 13, 2020.

CWPPRA

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.

- Voters must email their voting sheets to kaitlyn.m.carriere@usace.army.mil

All votes must be received by 10:30 am on February 20, 2020.

CWPPRA

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 30 criteria.

CWPPRA

PPL 30 Candidate Project 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

CWPPRA

PPL 30 Timeline

- **Coastwide Electronic Vote, Feb. 20, 2020**
  - **21 basin-project nominees, 1 coastwide nominee, and 6 demos selected**
- **Technical Committee Mtg, Apr., 2020, New Orleans**
  - **Selection of 10 candidates and up to 3 demos**
- **Technical Committee Mtg, Dec., 2020, New Orleans**
  - **Typically recommend up to 4 projects for Phase 1 funding**
- **Task Force Mtg, Jan. 2021, New Orleans**
  - **Final Selection of projects for Phase 1 funding**

Written Comments

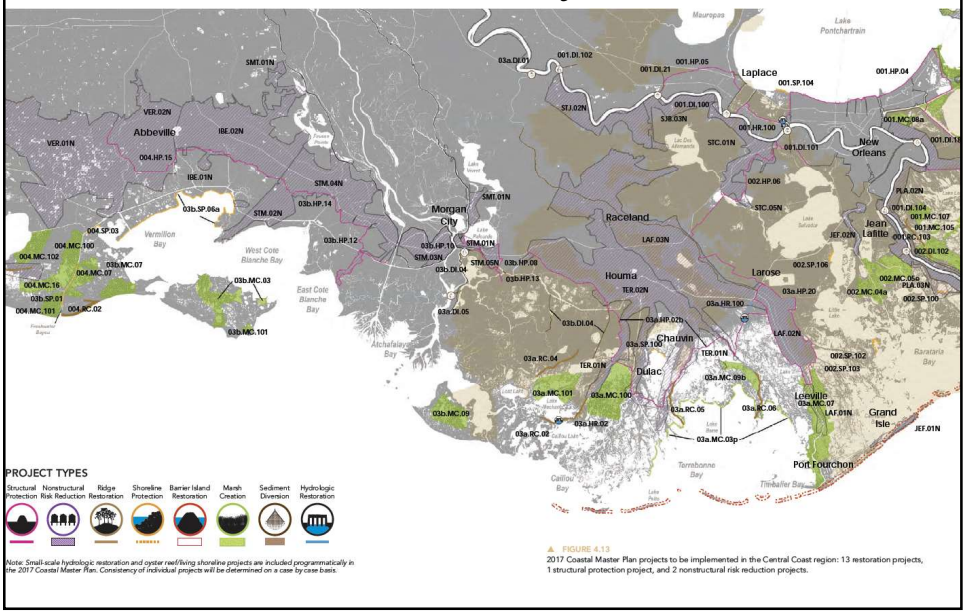
- Send written comments on projects & demos proposed today to the CWPPRA program manager
- **Deadline: February 13, 2020**

Brad Inman
Projects and Restoration Branch Chief
U.S. Army Corps of Engineers
7400 Leake Avenue
New Orleans, Louisiana 70118

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

(this information is on the back of the agenda)

2017 State Master Plan
Central Coast Projects



Note: Small-scale hydrologic restoration and oyster reef/living shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case by case basis.

FIGURE 4.13
2017 Coastal Master Plan projects to be implemented in the Central Coast region: 13 restoration projects, 1 structural protection project, and 2 nonstructural risk reduction projects.

Central Coast Projects

Project Type	Project No.	Project Description	Implementation Period	Project Costs
Hydrologic Restoration	03a.HR.02	Central Terrebonne Hydrologic Restoration: Construction of a rock plug in Grand Pass with a 150-foot by 15-foot navigable section to prevent saltwater intrusion from Caillou Lake into Lake Mechant.	Years 1-10	$19,000,000
Marsh Creation	03a.MC.03p	Terrebone Bay Rim Marsh Creation Study: Planning, engineering, and design of marsh creation features to provide benefits to communities in Terrebonne Parish and the Morganza to the Gulf protection system.	Years 1-10	$90,600,000
Ridge Restoration	03a.RC.04	Mauvais Bois Ridge Restoration: Restoration of approximately 43,400 feet of historic ridge to an elevation of 5 feet NAVD88 at Mauvais Bois to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation.	Years 1-10	$9,900,000
	03a.RC.06	Bayou Pointe Aux Chenes Ridge Restoration: Restoration of approximately 43,600 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along the southern portions of Bayou Pointe Aux Chenes.	Years 1-10	$10,600,000
Sediment Diversion	03a.DI.01	Bayou Lafourche Diversion: Diversion of the Mississippi River into Bayou Lafourche to increase freshwater flow down Bayou Lafourche with 1,000 cfs capacity (modeled with continuous operation at 1,000 cfs, independent of Mississippi River flow).	Years 1-10	$196,100,000
Nonstructural Risk Reduction	TER.01N	Terrebonne - Lower Nonstructural Risk Reduction: Project includes floodproofing non-residential properties where 100-year flood depths are 1-3 feet, elevating residential properties where 100-year flood depths are 3-14 feet, and acquiring residential properties where 100-year flood depths are greater than 14 feet.	Years 1-30	$87,700,000
	TER.02N	Terrebonne - Houma Nonstructural Risk Reduction: Project includes floodproofing non-residential properties where 100-year flood depths are 1-3 feet, elevating residential properties where 100-year flood depths are 3-14 feet, and acquiring residential properties where 100-year flood depths are greater than 14 feet.	Years 1-30	$1,264,000,000
Structural Protection	03a.HP.02b	Morganza to the Gulf: Construction of a levee to an elevation between 15 and 26.5 feet NAVD88 around Houma and Terrebonne Ridge communities from Larose to Humphreys Canal. Project features 471,500 feet of earthen levee, 39,600 feet of T-wall, (22) 6-foot sluice gates, (1) 30-foot stop log, (2) 20-foot stop logs, (13) 56-foot sector gates, (1) 250-foot sector gate, (1) 175-foot sector gate, (1) 125-foot sector gate, (1) 110-foot sector gate, (1) 30-foot sector gate, (1) 110-foot lock gate, (1) 30-foot roller gate, (4) 40-foot roller gates, (1) 56-foot barge gate, (1) 30-foot barge gate, and (4) pump stations.	Years 1-30	$8,281,900,000
Hydrologic Restoration	03a.HR.100	Grand Bayou Hydrologic Restoration: Dredging of Margaret's Bayou and Grand Bayou in conjunction with the construction of a fixed crest structure at Grand Bayou and the installation of (5) 48-inch flap-gated culverts on the western bank of Grand Bayou.	Years 11-30	$8,700,000
Marsh Creation	03a.MC.07	Belle Pass-Golden Meadow Marsh Creation: Creation of approximately 23,200 acres of marsh from Belle Pass to Golden Meadow to create new wetland habitat and restore degraded marsh.	Years 11-30	$1,625,800,000
	03a.MC.09b	North Terrebonne Bay Marsh Creation - Component B: Creation of approximately 5,400 acres of marsh south of Montegut between Bayou St. Jean Charles and Bayou Pointe Aux Chenes to create new wetland habitat and restore degraded marsh.	Years 11-30	$299,200,000
	03a.MC.100	South Terrebonne Marsh Creation: Creation of approximately 23,600 acres of marsh south of Dulac between Bayou Dularge and Houma Navigation Canal to create new wetland habitat and restore degraded marsh.	Years 11-30	$1,813,300,000
Marsh Creation (continued)	03a.MC.101	North Lake Mechant Marsh Creation: Creation of approximately 12,100 acres of marsh between Lake Decade and Lake Mechant to create new wetland habitat and restore degraded marsh.	Years 11-30	$1,023,400,000
Ridge Restoration	03a.RC.02	Bayou Dularge Ridge Restoration: Restoration of approximately 53,200 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along Bayou Dularge.	Years 11-30	$9,600,000
	03a.RC.05	Bayou Terrebonne Ridge Restoration: Restoration of approximately 40,700 feet of historic ridge to an elevation of 5 feet NAVD88 to provide coastal upland habitat, restore natural hydrology, and provide wave and storm surge attenuation along the southern portions of Bayou Terrebonne.	Years 11-30	$8,800,000
Shoreline Protection	03a.SP.100	North Lake Boudreaux Shoreline Protection: Shoreline protection through rock breakwaters designed to an elevation of 3.5 feet NAVD88 along approximately 15,400 feet of the northern shore of Lake Boudreaux east of Hog Point to preserve shoreline integrity and reduce wetland degradation from wave erosion.	Years 11-30	$29,300,000

Region 3-

Atchafalaya Basin

R3-AT-01 (inconsistent with the State Master Plan)

CWPPRA PPL 30 Nomination Sign-Up Sheet

Complete a sign-up sheet for each project you nominate. Please print neatly!

Name of Project: Pt Au Fer Reef Restoration

Is this a demonstration project? Yes (No)

If not, please provide the below information.

Region: *(Circle one)* 1 2 (3) 4 Coastwide

Basin: *(Circle one)* Pontchartrain Barataria Terrebonne Calcasieu-Sabine

Breton Sound (Atchafalaya) Mermentau

(Teche-Vermilion)

Did you provide a factsheet? Yes (No)

Contact Information:

Name: Harold Schoeffler

Phone Number: 337 417 5500

Email: _____

Region 3-

Teche-Vermilion Basin

R3 TV-01

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
West Branch Marsh Creation on Marsh Island, LA

Louisiana's 2017 Coastal Master Plan
Marsh Creation – 03b.MC.03

Project Location
Region 4, Teche-Vermilion Basin, Marsh Island in Iberia Parish, LA

Problem
Earliest reports of deteriorating marsh at the project area describe the geology and human alterations of Marsh Island. Orton (1959) describes how the construction of Dynamite Ditch (linked to the east branch of Oyster Bayou) prior to 1932 may have led to the increased salinity along the western branch of Oyster Bayou. The construction of Dynamite Ditch appears to have initiated 90 years of multiple recorded stresses on the marsh, including marsh fires, and muskrat, nutria and waterfowl eat-outs.

Ted O'Neil conducted a survey of muskrat in the area during 1941 and 1942, when populations were so numerous as to completely denude (eatout) hundreds of acres of marsh. He described the proposed project area as healthy saltmarsh where lower salinity marshes had previously been. The marsh was solid and well drained into the 1960s, and classified as intermediate (low salinity) marsh in 1979. While the marsh is primarily brackish marsh, the variations record the areas propensity for (or susceptibility to) change.

The geology differs from the sandy foundation of areas immediately to the south and west, and peaty soils farther north which may contribute to this area being more susceptible to the combined saltwater and water level fluctuations. Attempts at managing water level on the island – while successful at minimizing water fluctuations and increasing SAV – did little to slow the marsh loss (Nyman 1990 and Merino et al. 2005).

None of these stresses, however, are comparable to the marsh losses of the 2000's. The vast majority of land loss in this area primarily occurred after 2002. The conversion to open water is visible in March 2004 (Google Earth), and rapidly declines concurrent with the significant hurricanes of 2005 and 2008. Many tropical systems in the 2000's have caused storm induced scouring, folding, or sub-sediment wash out. There are no opportunities for the necessary quantities of sediment to reach this portion of the island naturally, but the foundation should be ideal for recreating marsh with dredged soils.

Goals
The project goals include: re-creating the continuous band of marsh that once existed in the West Branch Oyster Bayou area on Marsh Island, restoring intertidal marsh habitat between Oyster Lake and East Branch Oyster Bayou. The project should be designed and constructed to maximize wetland benefits throughout the twenty year project life.

Proposed Solution
The proposed solution is create and/or nourish approximately 568 acres (383 acres created and 185 acres nourished). The project is conceptualized to be constructed in two separate fill cells. The western most cell (285 acres total) is proposed in its entirety as a fill cell. The eastern most cell is an area in which approximately half of total investigated area (half of 566 acres = 283 acres) will be selected for marsh creation. Opportunities for project expansion will be investigated as the project moves forward through the implementation process. Sediment would be hydraulically dredged from a Gulf of Mexico borrow areas into these shallow marsh creation areas. Containment dikes would be constructed around the marsh creation area to retain material on-site during pumping. Tidal creeks and ponds may be incorporated into the design process, where applicable. Containment dikes would be degraded to the current platform elevation and gapped to improve hydrologic connectivity. Creation areas may be planted with native vegetation if necessary.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
The project area comprised of marsh creation and nourishment is 568 acres (383 acres created and 185 acres nourished).

2) *How many acres of wetlands will be protected/created over the project life?*
The net acres benefit range is 350-400 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
A 50% loss rate reduction is assumed for the marsh creation and nourishment area over the project life.

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?*
Yes. Marsh Island is a critical barrier coastal feature for this portion of Louisiana.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would provide positive impacts to critical infrastructure. The loss of wetlands in this area increases the vulnerability of infrastructure to wave energy. Protecting/creating wetlands in this area may also assist in reducing storm damages to infrastructure.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
The project provides a synergistic effect with other CWPPRA project investments in the area. TV-14 and TV-21.

Considerations
Pipelines and other infrastructure, as well as oyster resources in the vicinity are considerations in the project design.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency range is $25M - $30M.

Preparer(s) of Fact Sheet:
Jennifer Smith; NOAA Fisheries Service, 225-757-5230, Jennifer.Smith@noaa.gov
Jason Kroll; NOAA Fisheries Service, 225-757-5411, Jason.Kroll@noaa.gov

PPL30 West Branch Marsh Creation Project

on Marsh Island, LA

383 Acres Marsh Creation
185 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 01-21-2020

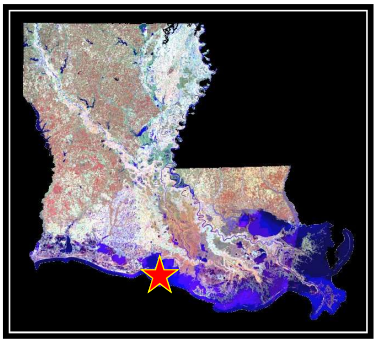
Legend

Marsh Creation

Borrow Area

West Branch
Marsh Creation Project
on Marsh Island, Louisiana

NOAA FISHERIES



REGION 3– Teche Vermilion Basin

Presenter: Jason Kroll, Civil Engineer, NOAA

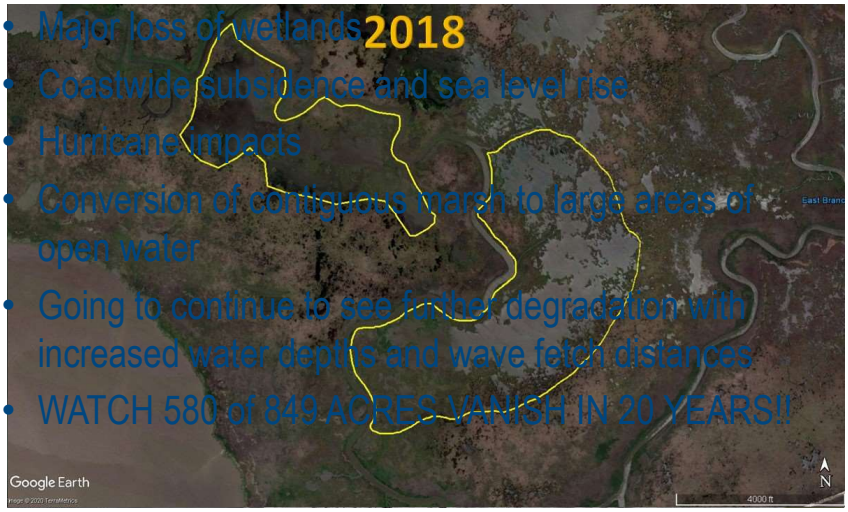
Special Thanks
Lance, Vaughn, Tyson at LDWF
CPRA
Jenny Smith and NOAA Team

PPL30 CWPPRA Regional Planning Team Meeting
Morgan City, Louisiana
February 5, 2020

Project Location

Project Area Problem

- Major loss of wetlands
- Coastwide subsidence and sea level rise
- Hurricane impacts
- Conversion of contiguous marsh to large areas of open water
- Going to continue to see further degradation with increased water depths and wave fetch distances
- WATCH 580 of 849 ACRES VANISH IN 20 YEARS!!



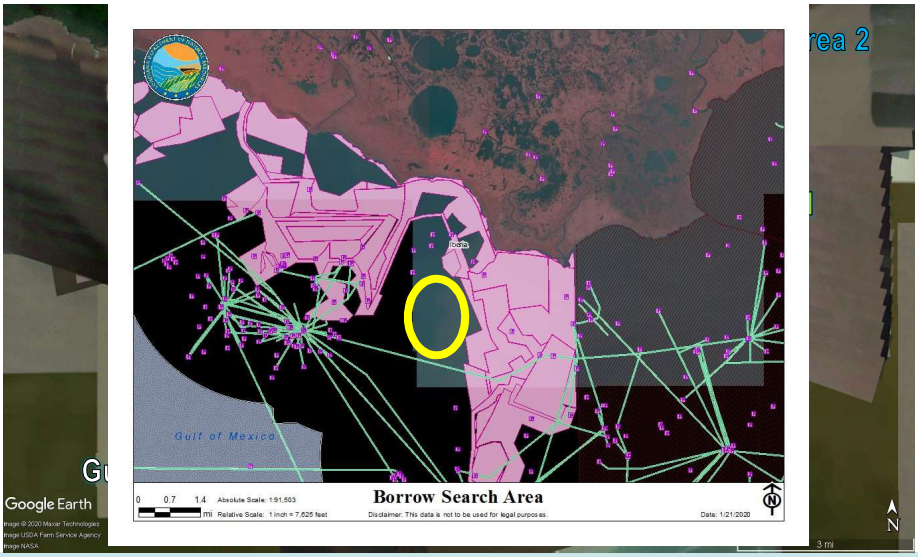
Project Goals

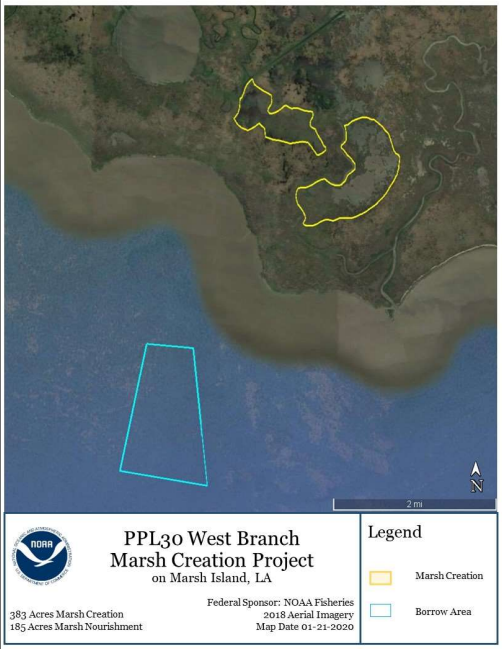
- Marsh Creation and Nourishment
  - Re-create the continuous band of marsh that once existed in this targeted area.
  - Restore intertidal marsh habitat Between Oyster Lake and East Branch Oyster Bayou.
  - Design and construct resilient wetlands to maximize wetland benefits throughout the 20 year project life.

Restoration Solution

- 568 Acres of Marsh Creation/Nourishment
  - All of the western cell and about half of the eastern cell as shown on the maps.
  - 383 Acres of marsh creation & 185 Acres of marsh nourishment
  - Hydraulically dredge material from Gulf of Mexico.
  - Contained fill areas with dike gapping after construction

Restoration Solution





Project Map

- Synergistic with 03b .MC.03 and 30b.MC.101 of the 2017 State Master Plan
- Gulf of Mexico Borrow Area
- 568 Acres TOTAL of Marsh Creation/Nourishment
- Approximately 383 acres Creation and 185 acres Nourishment

Summary of Features, Cost, and Benefits

- 568 Acres Total
  - 383 acres Marsh Creation
  - 185 acres Nourishment
- Construction Cost + 25% Contingency $25M - $30M
- Net Benefits: 350-400 acres

Contact information:
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jennifer.smith@noaa.gov
Jason Kroll, 225-757-5411
jason.kroll@noaa.gov

R3 TV-02

PPL30 PROJECT FACT SHEET
February 5, 2020

Project Name
Southeast Marsh Island Marsh Creation and Nourishment

Master Plan Strategy
Southeast Marsh Island (2017 Master Plan 03b.MC.101): Creation of approximately 1,200 acres of marsh on the eastern tip of Marsh Island to create new wetland habitat and restore degraded marsh.

Project Location
Region 3, Teche-Vermilion Basin, Iberia Parish, Southeast end of Marsh Island Wildlife Refuge.

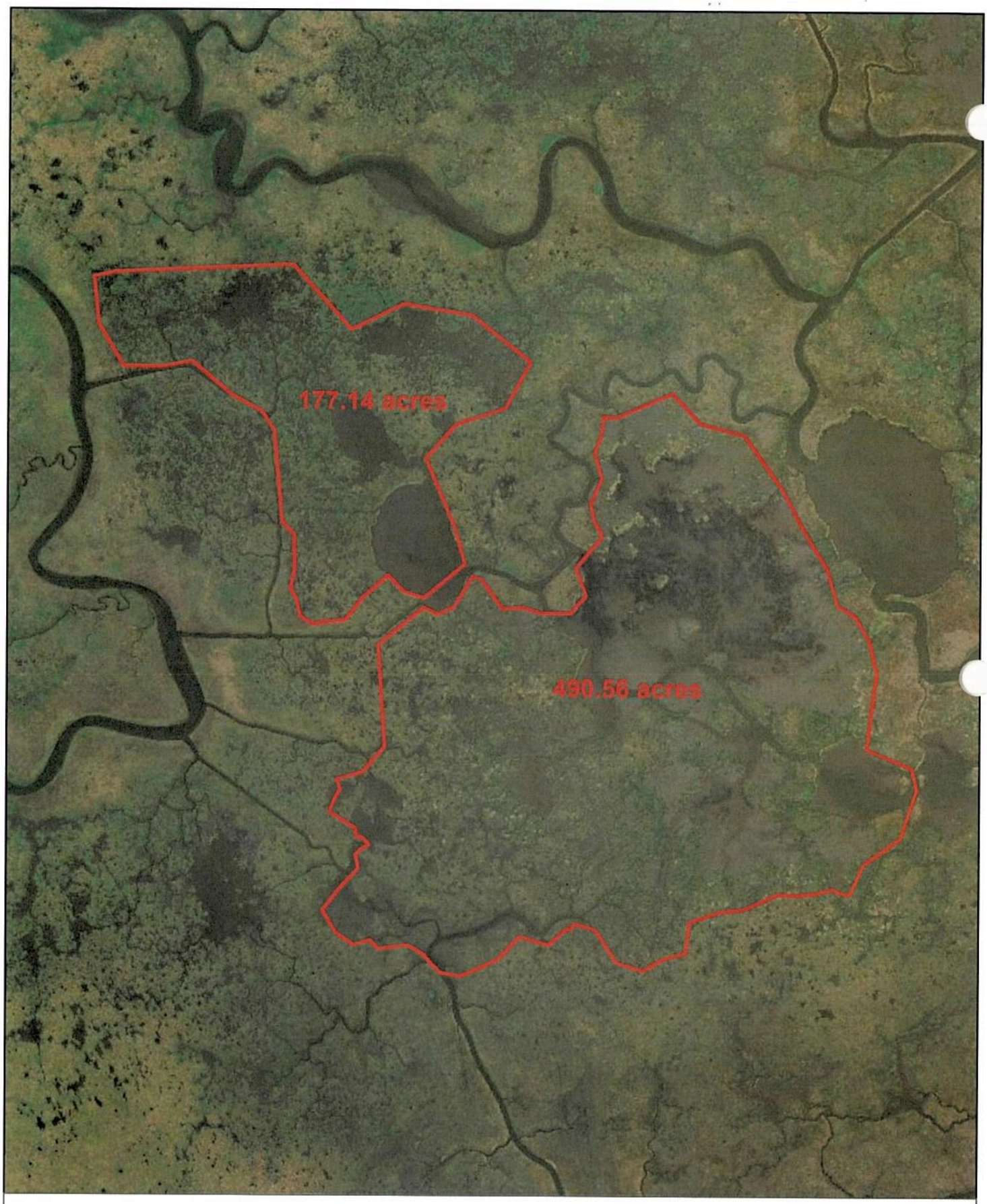
Problem
Areas of emergent marsh in Marsh Island interior have been converted to open water, primarily due to hurricane activity and subsidence. Marsh Island provides protection to tens of thousands of wetland acres and over 75 miles of shorelines on the mainland to the north, west and east of the island (Iberia, Vermilion and St. Mary parishes). It provides crucial protection to over 10,000 acres of susceptible/fragile marsh to the west and northwest of the project. Marsh Island has been projected to lose 12.9% of its marsh habitat through 2050. Areas targeted by this project are those with the greatest historic land loss and are proximal to East Cote Blanche Bay.

Proposed Solution
The project would utilize hydraulic dredging from a borrow site (located in the bay and potentially the same one used for TV-21 or the Gulf of Mexico) to create/nourish approximately 668 acres of emergent marsh by completely filling in open water and deteriorated areas. Unconfined or limited confinement techniques will be used allowing finer material to flow through the interior marsh areas and provide nourishment. Efforts will be made to limit water quality impacts and minimize impacts to potential oyster bed areas. This project would complement the constructed Marsh Island Hydrologic Restoration (TV-14) and the East Marsh Island Marsh Creation (TV-21) projects on the east-end of Marsh Island.

Project Benefits
Create/nourish approximately 668 acres of emergent marsh using dredged sediment.

Project Costs
The estimated construction cost including 25% contingency is $20M - $25M.

Preparer(s) of Fact Sheet:
Brad Crawford, P.E.; EPA; (214) 665-7255; crawford.brad@epa.gov
Sharon L. Osowski, Ph.D.; EPA; (214) 665-7506; osowski.sharon@epa.gov
Patricia A. Taylor, Ph.D., P.E.; EPA; (214) 665-6403; taylor.patricia-a@epa.gov

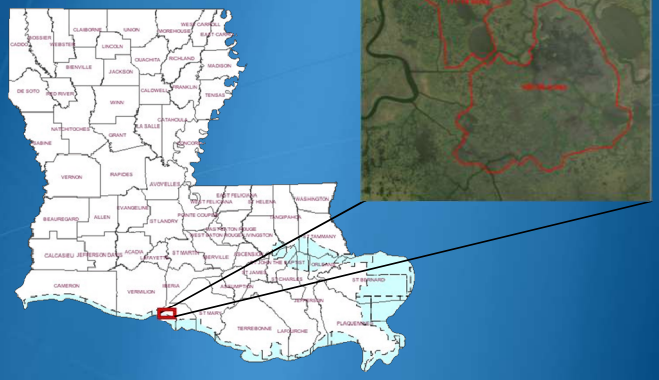


0 0.25 0.5 Miles

Southeast Marsh Island Marsh Creation

Basemap: Bing Aerial Imagery 2019

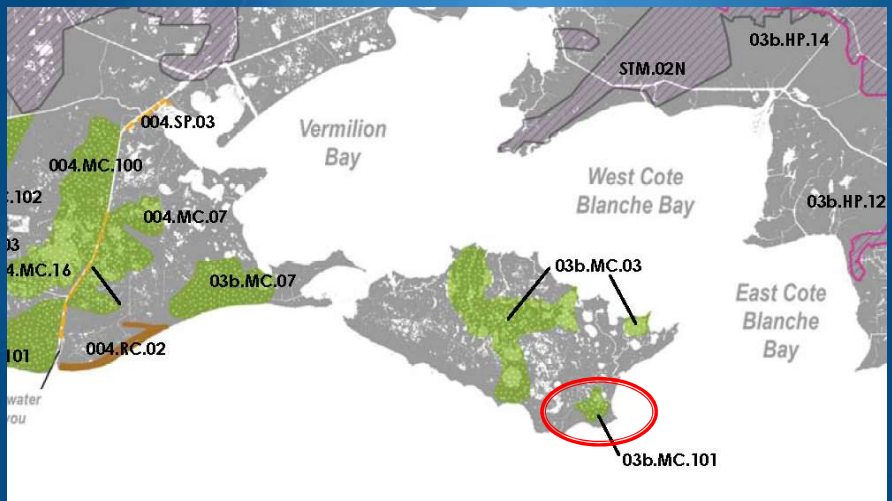
SE Marsh Island Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

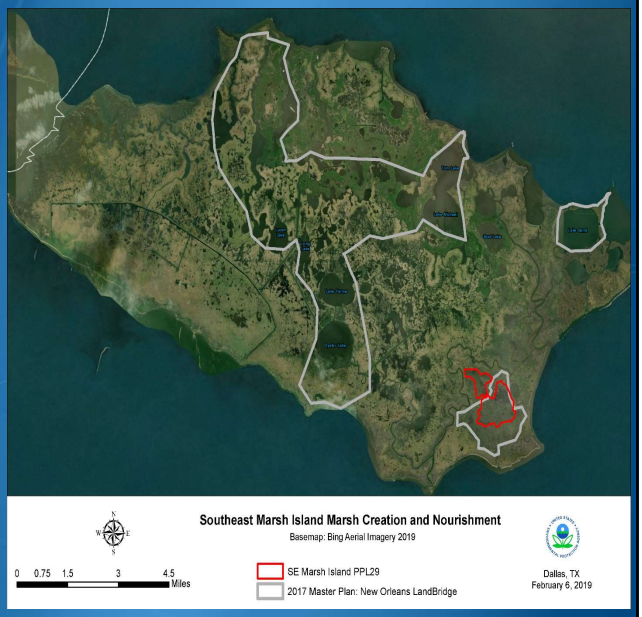
2017 Master Plan Solution

03b.MC.101 Southeast Marsh Island Marsh Creation : Creation of approximately 1,200 acres of marsh on the eastern tip of Marsh Island to create new wetland habitat and restore degraded marsh.



2017 Master Plan Consistency & Project Synergy

- 03b.MC.101 Southeast Marsh Island Marsh Creation
- Synergistic with TV-21 & TV-14
- TV 21 borrow source may be used for this proposal



Problems/Concerns

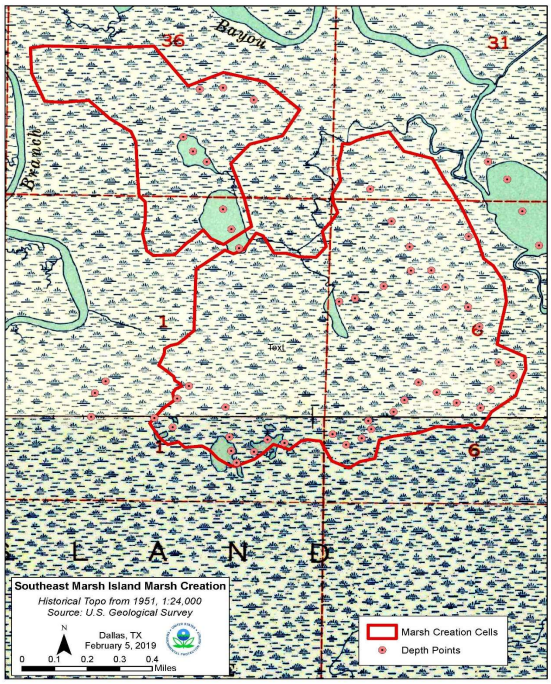
- Subsidence, storm and hurricane activity have increased wetland loss
- Iberia Parish could lose an additional 12% of its land area over the next 50 years and face severe storm surge flood risk (2017 MP).
- 90% or more of Marsh Island would experience 15ft + storm surge and would be lost in 50 years under the medium scenario (2017MP)

Project Significance

- Marsh Island provides protection to tens of thousands of wetland acres and over 75 miles of shorelines on the mainland to the north, west and east of the island (Iberia, Vermilion and St. Mary parishes).
- Provide crucial protection to over 10,000 acres of susceptible/fragile marsh to the west and northwest of the project.

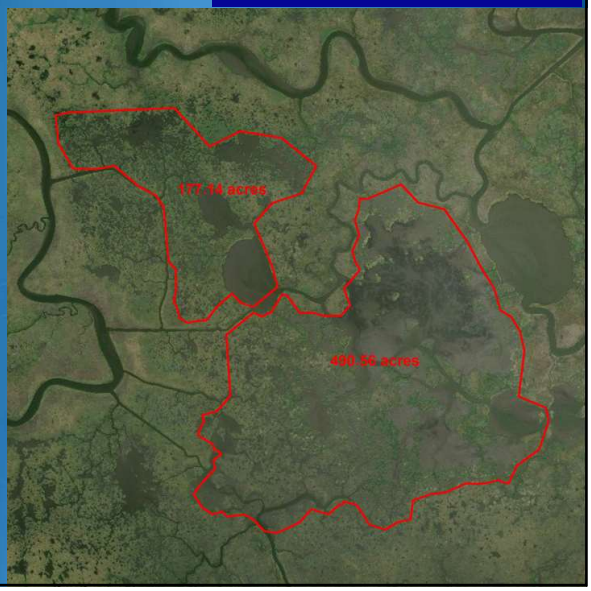
Historical Reference

- 1951 Topo
- Mostly solid marsh



Project Features

- Create/nourish 668 acres emergent marsh with sediment from bay or offshore
- Restore degraded wetland habitat
- Provide increased protection from storm surge and flooding
- Marsh Island serves to protect more inland areas in Iberia Parish
- Construction plus 25% contingency = $20-25M



R3 TV-03

PPL30 PROJECT NOMINEE FACT SHEET
February 2020

South Humble Canal SP and MC Project

Louisiana's 2017 Coastal Master Plan
Marsh Creation – 004.MC.07

Project Location
Region 4, Teche-Vermilion Basin – Vermilion Parish

Problem
Like other marshes along the Freshwater Bayou Channel, the project area marshes are impacted by altered hydrology and vessel-induced water exchange and shoreline erosion. As the former spoil banks and marshes along the banks of Freshwater Bayou Channel continue to disintegrate, those problems are increasing. Additionally, storm surge has converted interior marshes to open lakes. As the hydrologic connections between these lakes and the channel become better established, the interior marshes experience increased fetch and wave erosion, increased turbidity, loss of submerged aquatic vegetation, and export of organic soil material.

Goals
The project goal is to dampen channel-related hydrologic impacts to interior marshes and lakes by strategically located marsh creation, construction of earthen terraces, and installation of revetment along the east bank of Freshwater Bayou Channel.

Proposed Solution
Revetment would be placed along 5,910 feet of the Freshwater Bayou Channel shoreline. Where channel bank openings allow water exchange, 500 feet of foreshore rock dike with two water exchange openings would be constructed to reduce water exchange. Using a small dredge, material from Freshwater Bayou Canal would be dredged to create approximately 35 acres of marsh in 12 semi-confined cells at sites that would block water exchange routes or prevent future hydrologic connections between the channel and interior lakes. To further dampen channel-related water exchange and trap sediment, 6,980 feet of earthen terraces would be installed in interior ponds adjacent to the channel.

Preliminary Project Benefits:

1) *What is the total acreage benefited both directly and indirectly?* Approximately 72 acres of marsh would be benefitted directly (35 ac from marsh creation, 6 acres from marsh nourishment, 4 acres created via terracing, and 27 acres protected by rock armoring). Indirect benefits may occur in adjoining open water areas due to sediment trapped, reduced interior marsh shoreline erosion, and restoration of SAV beds.

2) *How many acres of wetlands will be protected/created over the project life?* The total net acres protected/created over the project life is approximately 64 acres (27 ac from rock armor, 33 ac from marsh creation/nourishment, and 4 ac from terracing).

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?* The anticipated loss rate reduction throughout the area of direct benefit is estimated to be 100% for rock armor and 50% for marsh creation and terracing.

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?* Yes, the project would help to repair and protect the artificial Freshwater Bayou Channel shoreline.

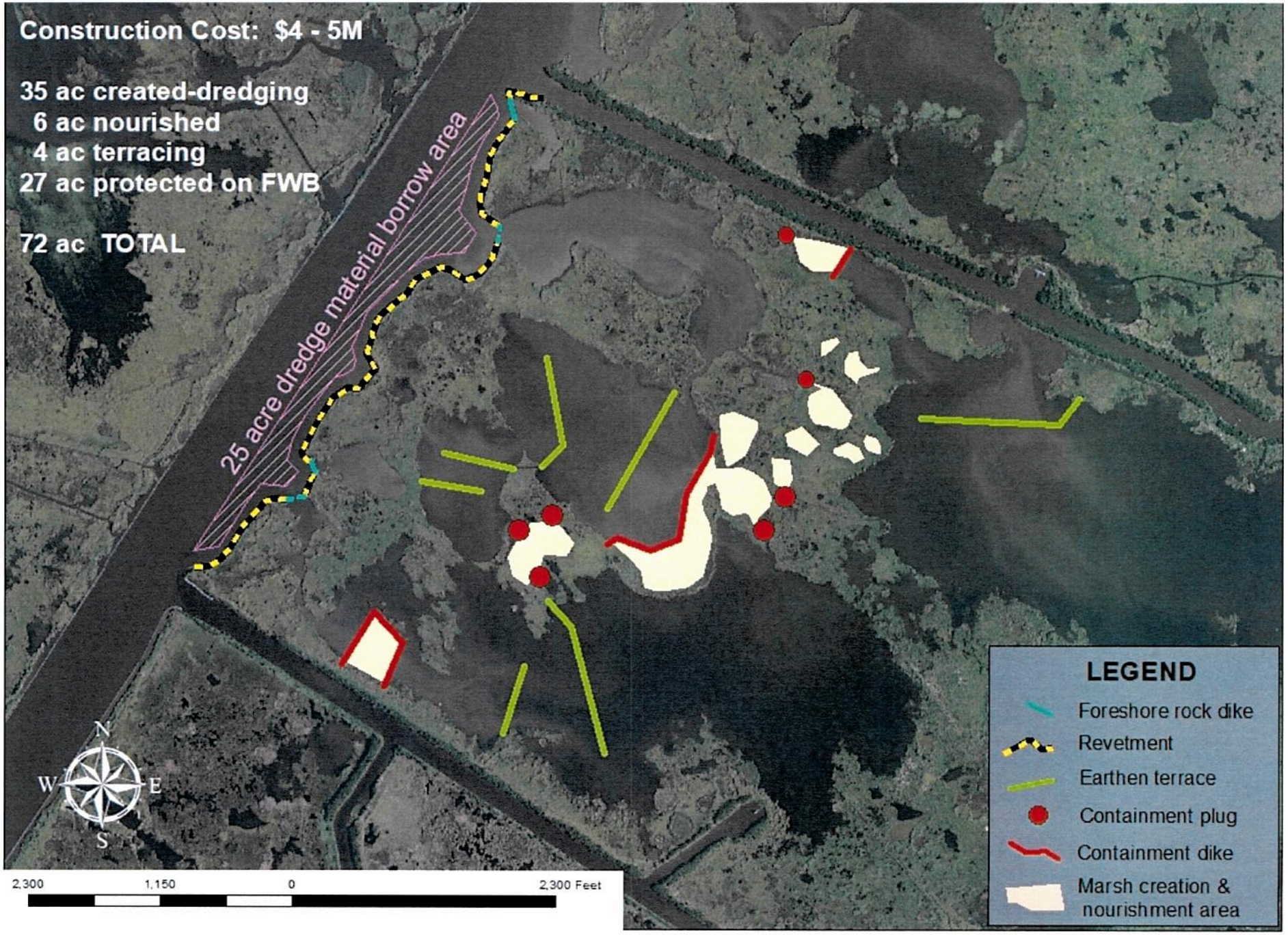
5) *What is the net impact of the project on critical and non-critical infrastructure?* None.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?* None.

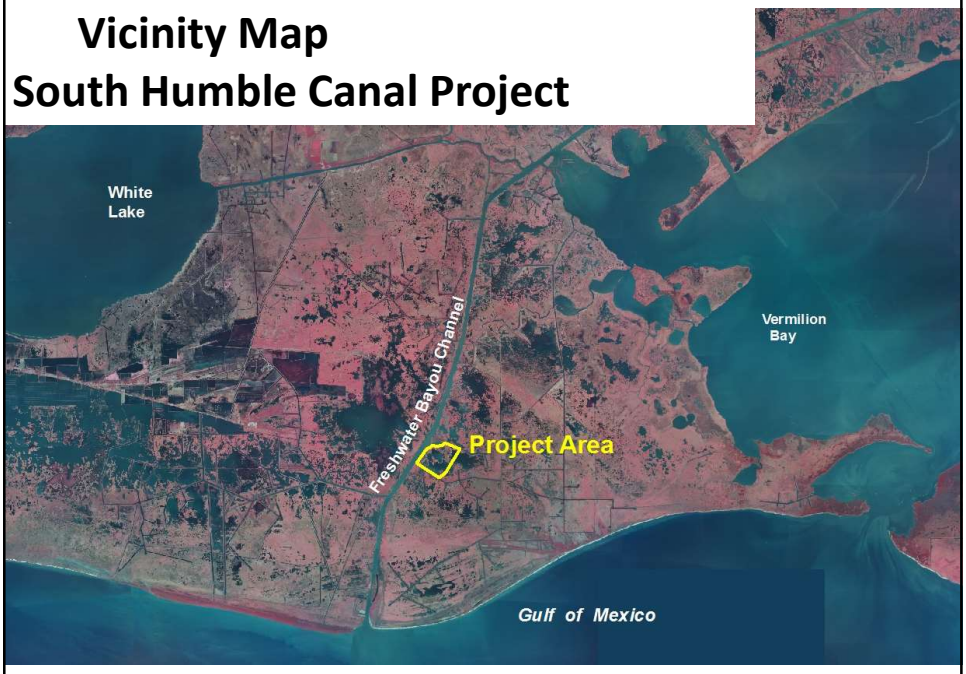
Preliminary Construction Costs:
The estimated construction cost including 25% contingency is $4 to 5M.

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

PPL 29 Nominee: South Humble Canal MC & SP Project



Vicinity Map
South Humble Canal Project

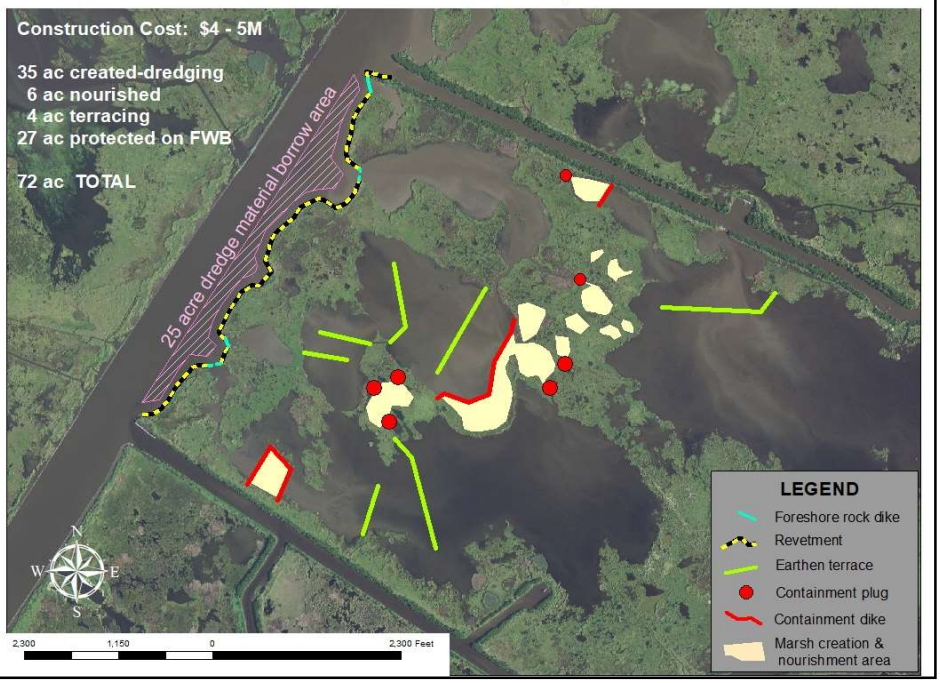


2004 (pre-Rita)

2010

2018

PPL 29 Nominee: South Humble Canal MC & SP Project



R3 TV-04

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
Boston and Oaks Canals Hydrologic Restoration and Shore Protection

Project Location
Region 3, Teche/Vermillion Basin, Vermilion Paris; approximately 9 miles south of Delcambre, Louisiana in Vermilion Parish between the GIWW and Vermilion Bay.

Problem
Marshes in this area are subject to losses from subsidence, a net sediment deficit, seasonal saltwater intrusion, shoreline erosion, altered hydrology from levees and increased connectivity with the Gulf Intracoastal Waterway (GIWW). The area is immediately adjacent to the GIWW where it is subjected to some of the heaviest boat traffic in the contiguous US. Boat traffic in the GIWW causes erosion within the identified area which results in a net export of material; i.e. "sucking chest wound". Although much of the marsh in the area has been fairly stable, this location has been subject to losses due to the constant movement of water in and out of the project area. Areas to the east and south are subjected to shoreline erosion from daily winds/waves coming from Vermillion Bay as well as erosion during severe weather events.

Goals
The goals of the project will be to reconfigure the hydrology from a net sediment and nutrient export environment to a net import of material to facilitate the natural recovery of the marsh system. A second goal will be to protect portions of the Vermilion Bay shoreline most vulnerable to erosion and potential breach into the interior marsh.

Proposed Solution
A combination fixed crest weir with a boat bay and flap-gated culverts will be installed at a large opening to the GIWW to reduce the surge and withdraw of water from barge traffic in the GIWW and overall volume transfer of water and export of material across the boundary separating the GIWW from the interior marsh. The one-way flap-gated culverts, which will be installed within the fixed-crest weir, will ensure a net positive flow of material into the marsh. Two sets of outlet culverts systems will be installed on the opposite end of the marsh to pull this water through the system allowing for the trapping and deposition of material as it moves through the marsh. The exact size of this proposed feature will be confirmed in Phase I, but, for now, the project is assuming it will be built with 50 ft width by 5 ft depth which is about an 83% reduction in cross-sectional area. In addition, 9,500 linear feet of shoreline protection will be installed in two vulnerable locations of the perimeter adjacent to Vermilion Bay to maintain the integrity of the bay shoreline.

Preliminary Project Benefits
Preliminary benefit estimates for the project are 131 acres from hydrologic restoration and 28 acres from shoreline protection for a total of 159 acres.

Preliminary Construction Costs
The construction + 25% cost range is $5-10M.

Preparer(s) of Fact Sheet:
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John Foret, CH Fenstermaker & Associates, (337) 237-2200, jdforet@fenstermaker.com
Eric Whitney, Engineer, NRCS, (337) 291-3069, eric.whitney@usda.gov

USDA

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

Data Source: NAIP 2019

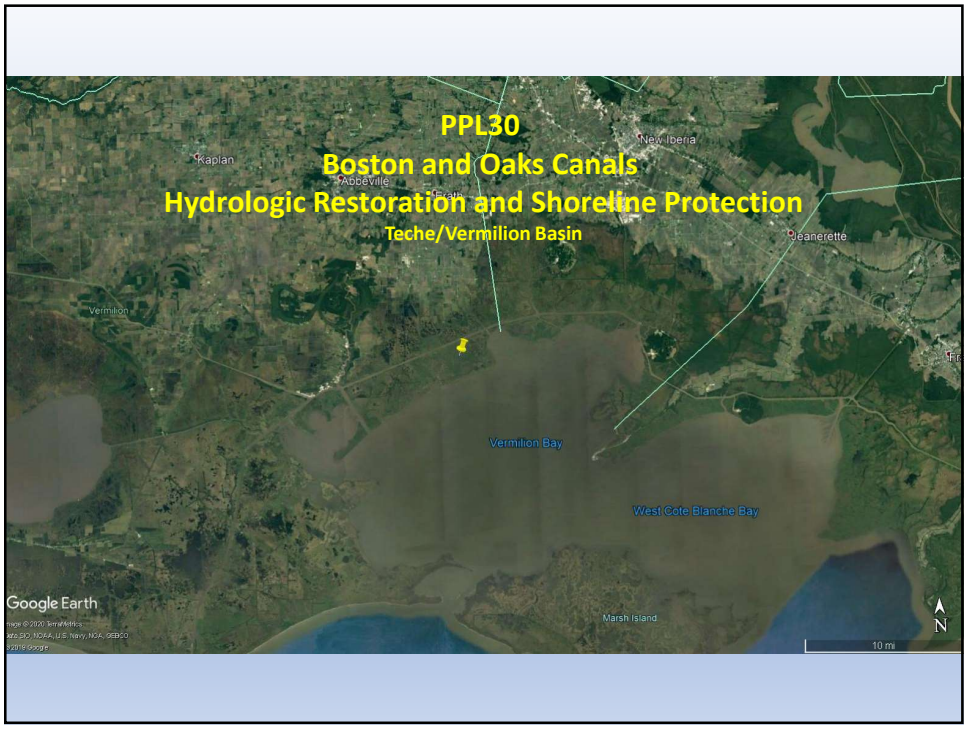
Map Date: JANUARY 16, 2020

PPL 30
BOSTON AND OAKS CANALS
HYDROLOGIC RESTORATION AND
SHORELINE PROTECTION
VERMILION PARISH, LA

N
W E
S

0 2,000 4,000
Feet

Legend
SHORELINE_PROTECTION
FIXED_CREST_WEIR_WITH_BOAT_BAY
BostonCanalArea



PPL30
Boston and Oaks Canals
Hydrologic Restoration and
Shoreline Protection

Project Objectives:

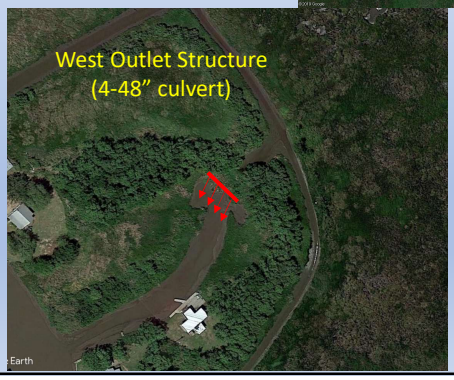
- Restore the hydrology to promote net import of material to facilitate natural recovery of the marsh
- Stop shoreline erosion in critical areas

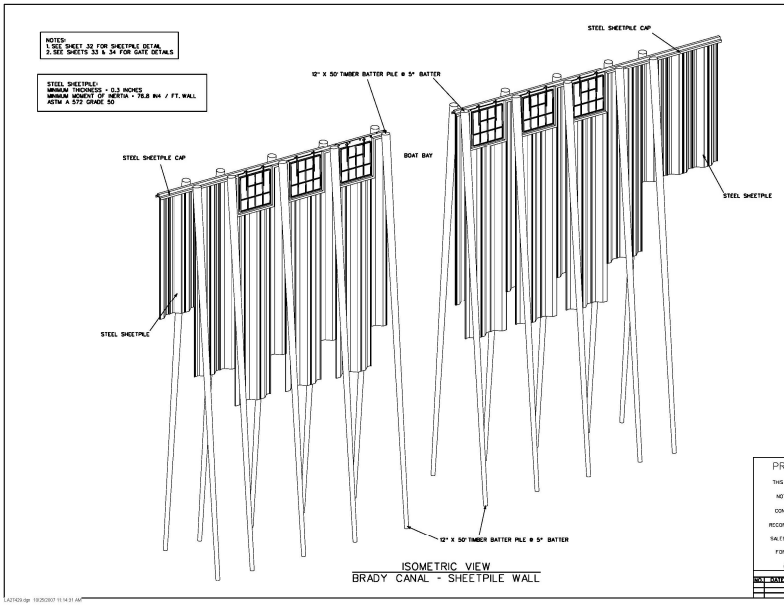
Project Benefits:
The project is estimated to restore 131 acres from hydrologic restoration and 28 acres from shoreline protection

Preliminary Cost:
Construction + 25% = $5-10M

PPL30
Boston and Oaks
Canals HR and SP

Hydrologic Features
Locations






300 ft
400 ft
South shoreline
East shoreline
400 ft
Google Earth
Google Earth

R3 TV-05

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
North Marsh Restoration (North Increment)

Project Location
Region 3, Teche-Vermilion,Vermilion Parish

Problem
Project area wetlands are undergoing losses at -0.86%/year based on 1985 to 2018 USGS data. Marshes in this area are subject to losses from subsidence/sediment deficit, seasonal saltwater intrusion, shoreline erosion, and altered hydrology from levees and increased connectivity with Freshwater Bayou Canal. Interior marshes are fragmenting with erosion and submergence. The result is plant stress reducing marsh productivity. Disturbances to the landscape from hurricanes and herbivory have resulted in the breakup and export of interior marsh. Erosion is leading to higher water turbidity within the interior ponds, increased pond width and depth, and decreasing coverage of submerged aquatic vegetation. It is unlikely these areas will recover unaided. If left to deteriorate, the project vicinity could coalesce with Freshwater Bayou risking conversion of larger interior marsh areas to open water.

Goals
The project goal is to create and nourish approximately 239 acres of marsh, protect 5,952 feet of shoreline, and construct approximately 16,100 linear feet of terraces (~16 emergent acres).

Proposed Solution
There will be 190 and 49 acres of marsh creation and nourishment, respectively, using dedicated dredging of sediment mined from the Gulf of Mexico and confined disposal. The borrow area would be designed to avoid adverse impacts to the Gulf shoreline and sited to not mine the same area as ME-31. In addition to marsh creation, approximately 5,952 linear feet of foreshore rock dike would be constructed in three segments along Freshwater Bayou Canal to protect the channel bank lines from erosion. The dike segments tie into existing spoil banks to maintain access to existing oil and gas canals and slips. Additionally, three gaps in the rock are included to maintain tidal exchange and fish access. The gaps are protected by an offset section of rock. The rock dike would be constructed similarly to the recent CIAP project on the west side of the channel. Also, 16,100 linear feet of terraces would be constructed. The terrace slopes and crown would be planted with appropriate marsh vegetation. Containment dikes would be gapped.

The project is the first increment of three within a conceptual comprehensive plan to address critical wetland loss on the east side of Freshwater Bayou Canal. The plan uses three restoration techniques that are scaled to be cost competitive given practicalities of options for borrow areas.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly?*
This total project area is 532 ac (239 MC/MN + 248 Terraces + 45 SP).

2) *How many acres of wetlands will be protected/created over the project life?*
Approximately 217 ac of marsh will be protected/created over the project life.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the projects life for the marsh creation and terracing features and 100% reduction in shoreline erosion for the foreshore rock dike.

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?*
No.

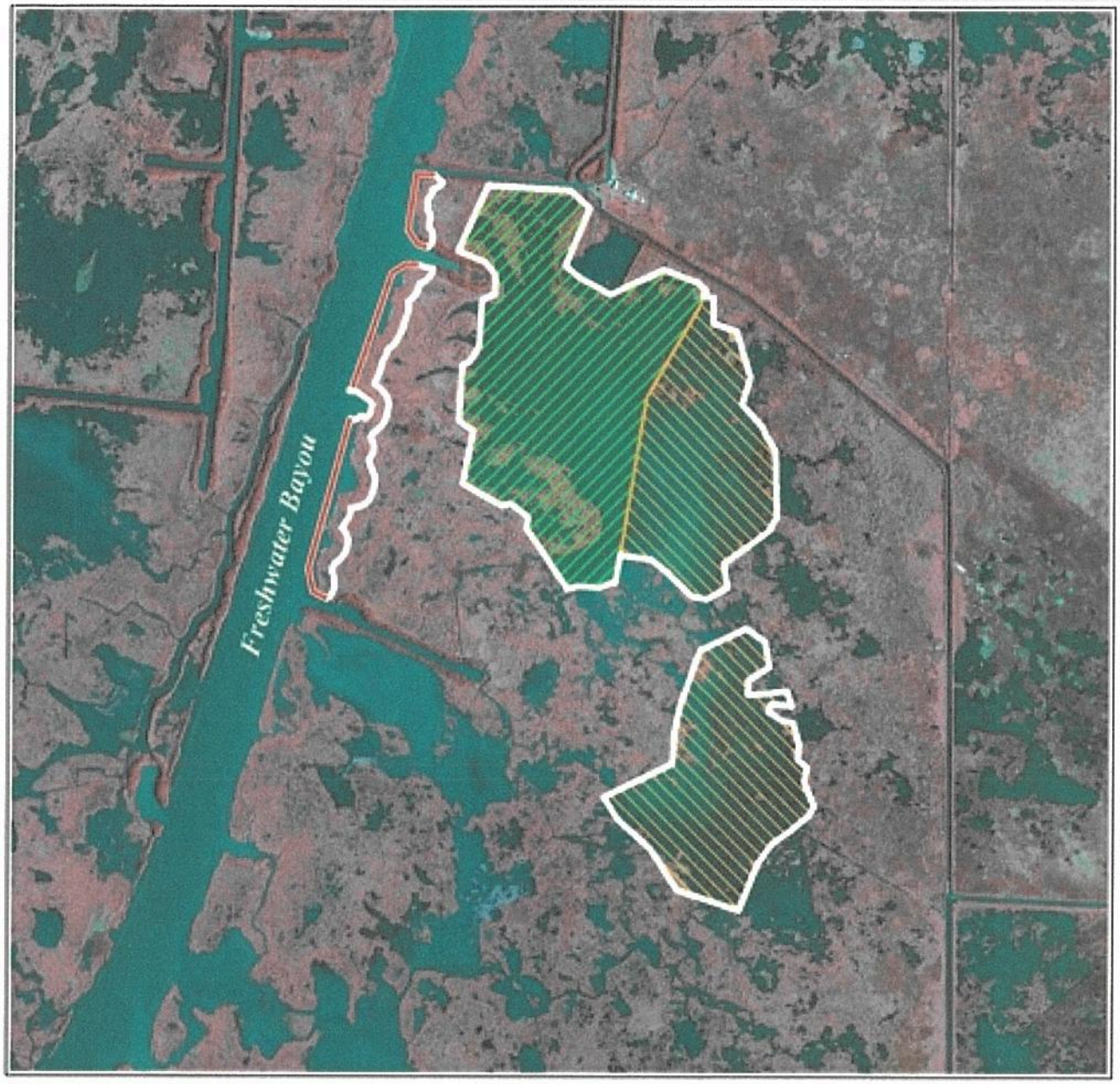
5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project would have moderate net positive impact to both critical (i.e., Freshwater Bayou Canal) and non-critical (i.e., minor oil and gas facilities) infrastructure. If marshes are left to deteriorate, the project area would eventually coalesce with Freshwater Bayou Canal. Oil and gas companies have facilities and pipelines in this area, which would benefit from an increase in marsh acreage.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project would provide a synergistic effect with the Cole's Bayou Marsh Restoration Project (TV-63), the Little Vermilion Bay Sediment Trapping Project (TV-12), Freshwater Bayou Bank Stabilization Project (TV-11), Freshwater Bayou Canal (ME-31), and Surplus Marsh Creation near Freshwater Bayou (ME-0025-SF).

Considerations
The proposed project has potential utility/pipeline considerations.

Preliminary Construction Costs
The estimated construction cost + 25% contingency range is $25M-$30M.

Preparer(s) of Fact Sheet:
Patrick Williams, NOAA Fisheries, 225-380-0058, patrick.williams@noaa.gov
Jason Kroll, NOAA Restoration Center, 225-757-5411, jason.kroll@noaa.gov



North Marsh Restoration (North Increment)

PPL30 Nominee

USGS
science for a changing world

N

Shoreline Protection *

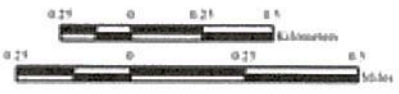
Marsh Creation/Nourishment *

Terrace Field *

Project Boundary

* denotes proposed features

Map Produced By
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal and Oceanic Restoration Branch
Baton Rouge, LA



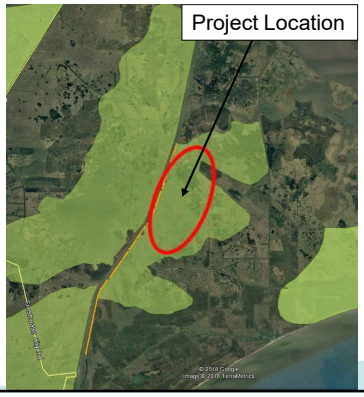
Map ID: 2018-11-0029
Map Date: July 11, 2018

Scale: 1:25,000

Image Source:
2017 NAIP

PPL30 North Marsh Restoration
(North Increment)

NOAA FISHERIES



REGION 3 – Teche-Vermilion Basin

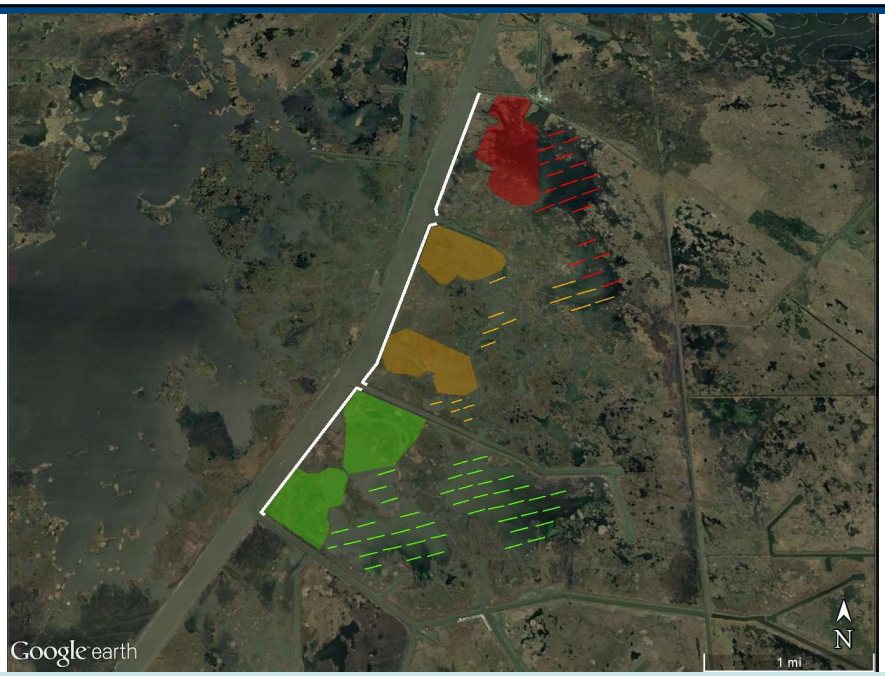
Presenter: Patrick Williams, NOAA

Special Thanks
Randy Moertle
Rainey Conservation Alliance
Billy Broussard
Vermilion Corporation

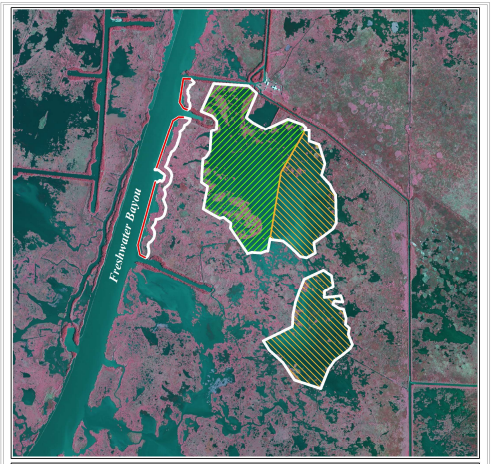
PPL30 CWPPRA Regional Planning Team Meeting
Morgan City, Louisiana
February 5, 2020


82
3147
Freshwater City Rd
9.2 miles
9.7 miles
9.4 miles
11.4 miles
Google earth
© 2018 Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
6 mi
N


Borrow for 200 ac
Borrow for 100 ac
82
47
Freshwater City Rd
TerraMetrics
5 mi
N



NOAA FISHERIES



NOAA FISHERIES

Summary

- Marsh Creation = 189 ac
- Marsh Nourishment = 50 ac
- Shoreline Protection = 5,952 ft
- Terracing = 16,100 LF/16 ac
- Net acres = 217 ac
- Gulf of Mexico Borrow
- Construction + 25% Contingency Cost Range: $25 - $30M

Region 3-

Terrebonne Basin

R3 TE-01

PPL30 PROJECT NOMINEE FACT SHEET
February 5th, 2020

Project Name
East Jug Lake Marsh Creation Project

Project Location
Region 3, Terrebonne Basin, Terrebonne Parish, west of Lake De Cade

Problem
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering compaction, contributing to high subsidence. Historically, subsidence, saltwater intrusion, hurricanes, and numerous oil and gas pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amount to approximately 130,000 acres over the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate in the area is -0.71%/year based on CRMS0398 data from 2006 to 2019.

Goals
The project goals are to create and/or nourish 480 acres of intermediate marsh.

Proposed Solution
Sediments from Lake De Cade will be hydraulically dredged and pumped via pipeline to create/nourish 480 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh and within the intertidal range. Containment dikes will be constructed around each marsh creation cell. Where practicable, material will be borrowed from perimeter lakes and bayous. Containment dikes will be gapped at the end of construction or by TY3.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 480 acres would be benefited directly and indirectly. Direct benefits include 280 acres of marsh creation and 200 acres of marsh nourishment. Indirect benefits could occur to surrounding marsh and open water areas.

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres protected/created over the project life is approximately 250-300 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 interior loss rate reduction throughout the area of direct benefit is estimated to be 50%.

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 help to maintain portions of the Turtle Bayou and Jug Lake shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect numerous camps along Bayou De Cade as well as some oil and gas infrastructure in the area.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would work synergistically with the North Lake Mechant Landbridge Restoration Project (TE-44), the Lost Lake Project Marsh Creation Hydrologic Restoration (TE-72), and the future Bayou De Cade Marsh Creation Project (TE-138).

Considerations

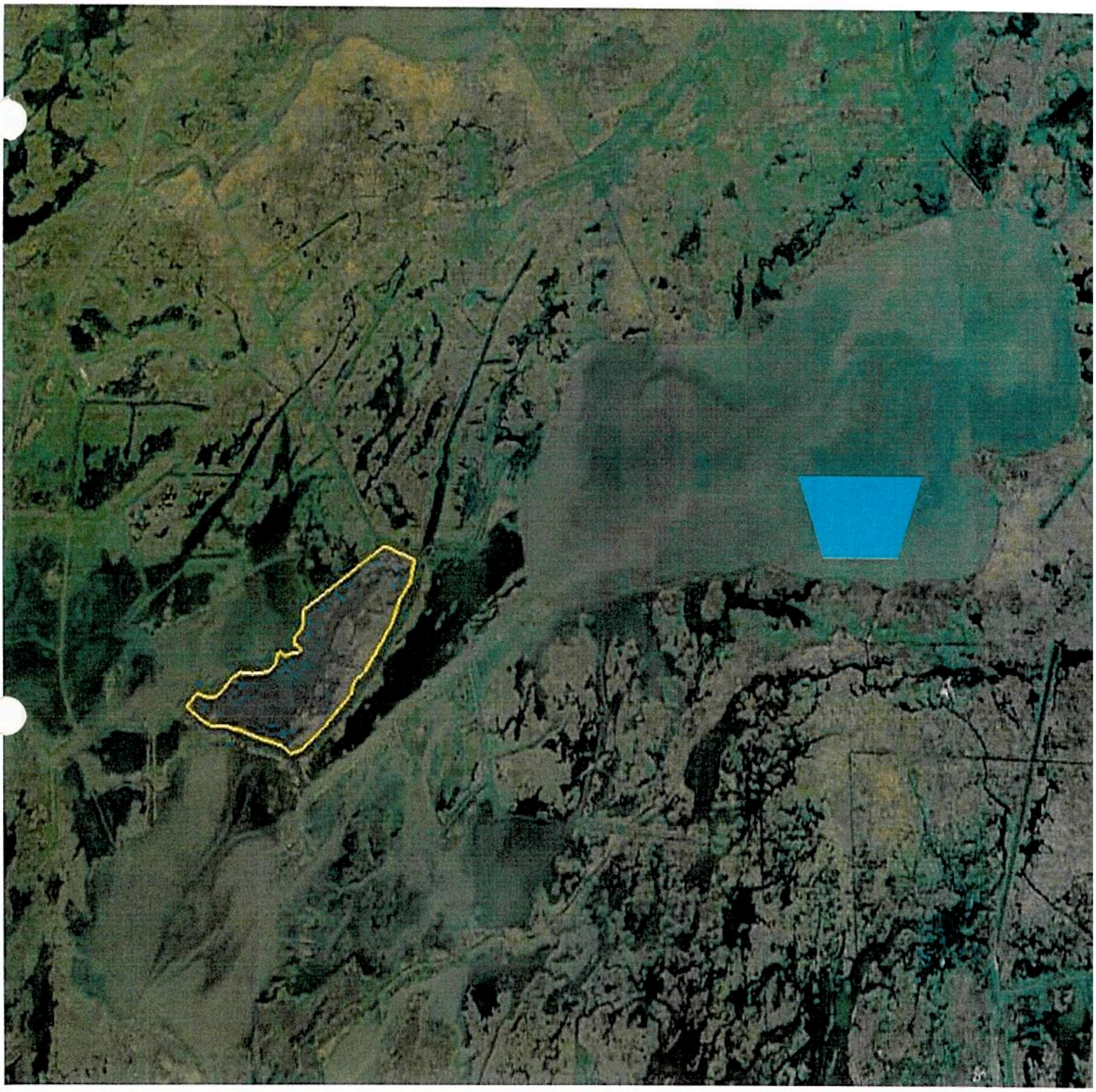
Considerations for this project include pipelines/utilities. Only one landowner.

Preliminary Cost

The fully-funded cost range is $20M - $25M.

Preparer of Fact Sheet

Jennifer Smith, NOAA, (225) 757-5230, jennifer.smith@noaa.gov



PPL30 East Jug Lake Marsh Creation

280 Acres Marsh Creation
200 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2019 Aerial Imagery
Map Date 03-20-2019

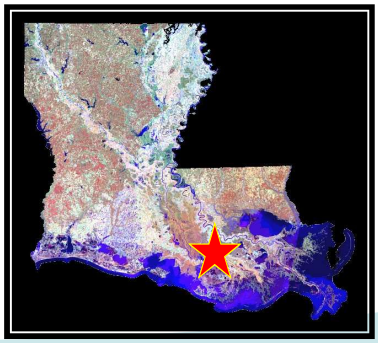
Legend

Marsh Creation

Borrow Area

East Jug Lake Marsh Creation Project

NOAA FISHERIES



REGION 3 – Terrebonne Basin

Presenter: Jennifer Smith, Project Manager, NOAA

Special Thanks

Apache Louisiana Minerals, LLC

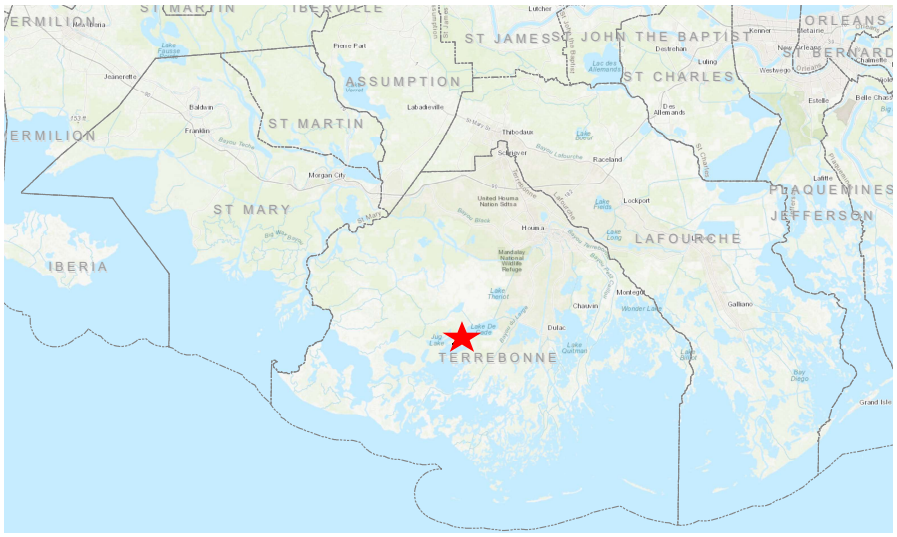
Terrebonne Parish

PPL30 CWPPRA Regional Planning Team Meeting

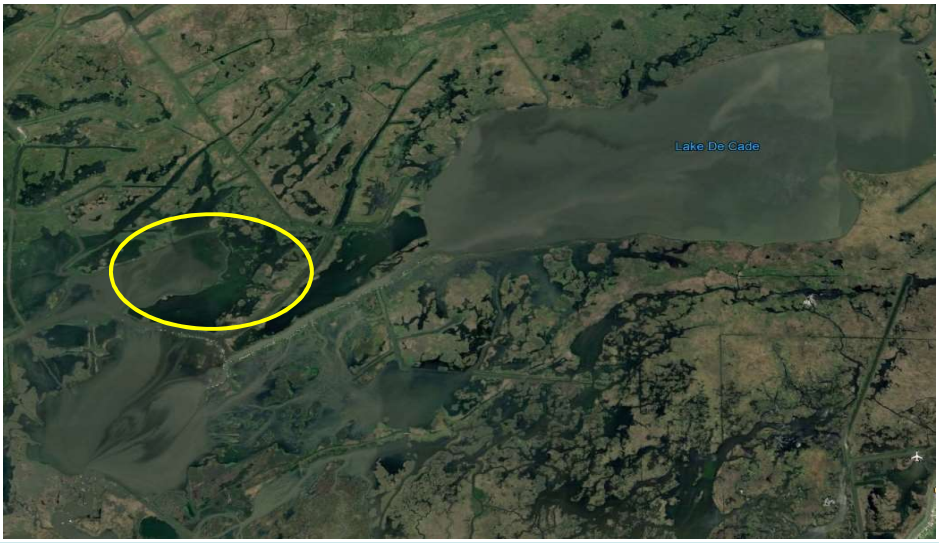
Morgan City, Louisiana

February 5, 2020

Project Location



Project Location



Project Area Problem

- Wetland degradation
  - Sea Level Rise
  - Subsidence
  - Hurricane impacts
  - Conversion of marsh to open water
  - Nutria foraging

Project Goals

- Marsh Creation and Nourishment
  - Restore intertidal marsh habitat
  - Design and construct resilient wetlands to maximize wetland benefits throughout the 20 year project life.

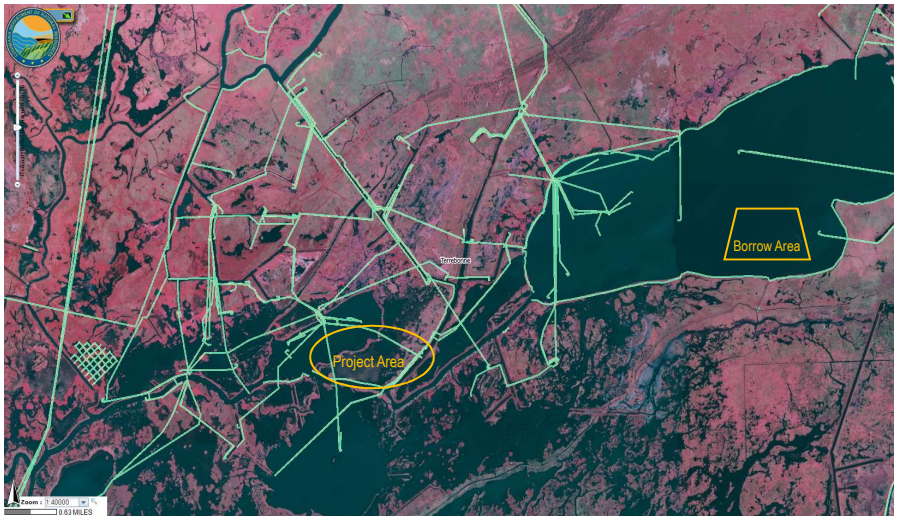
Restoration Solution

- 480 Acres of Marsh Creation/Nourishment
  - 280 Acres of Marsh Creation & 200 Acres of Marsh Nourishment
  - Hydraulically dredge material from Lake De Cade
  - Contained Fill areas with dike gapping after construction
  - Short pumping distance, less than 2.5 miles

Project Map

- 2017 State Master Plan Polygon 03a.MC.101
- Lake De Cade Borrow Area
- 480 Acres TOTAL of Marsh Creation/Nourishment
- Approximately 280 acres Creation and 200 acres Nourishment

Pipelines



Summary of Features, Cost, and Benefits

- **480 Acres Total**
  - 280 acres Marsh Creation
  - 200 acres Nourishment
- **Construction Cost + 25% Contingency $20M - $25M**
- **Net Benefits: 250-300 acres**

Contact information:
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jennifer.smith@noaa.gov
Jason Kroll, 225-757-5411
jason.kroll@noaa.gov

R3-TE-02

PPL30 PROJECT FACT SHEET
February 5, 2020

Project Name
Jug Lake MC

Project Location
Region 3, Terrebonne Basin, Terrebonne Parish, Jug Lake

Problem
The marshes adjacent to Jug Lake have deteriorated dramatically over the past few decades. Coastal restoration actions have focused on maintaining the banks of Jug Lake and improving hydrologic conditions in the area to reduce salinities and improved freshwater flows from the Atchafalaya River. Significant improvements have been made yet there are some areas of large open water that are slow to improve. Land loss in the project area is estimated by USGS to be -0.92%/y with a subsidence of at least 3.6 mm/y. Marsh creation would rapidly recover marshes where land has converted to open water around the periphery of the lake.

Goals
The goal of the project is to create and nourish marsh around the periphery of Jug Lake where the marsh has severely degraded.

Proposed Solution
Sediments will be hydraulically dredged from Lake Decade and pumped via pipeline to create and nourish approximately 440 acres of marsh habitat. The marsh creation areas will be fully contained, and the containment will be degraded on the interior after construction. A significant portion of containment will consist of existing berms adjacent to Jug Lake which will be left intact.

Preliminary Project Benefits
The project will initially create approximately 440 acres of marsh through hydraulically dredge material from Lake Decade.

Preliminary Cost
The estimated construction cost including 25% contingency is $20M - $25M.

Preparer of Fact Sheet
Ron Boustany, NRCS, (337) 291-3067, ron.boustany@usda.gov
Eric Whitney, NRCS, Engineer, (337) 291-3069, eric.whitney@usda.gov

Jug Lake MC

186 ac

118 ac

86 ac

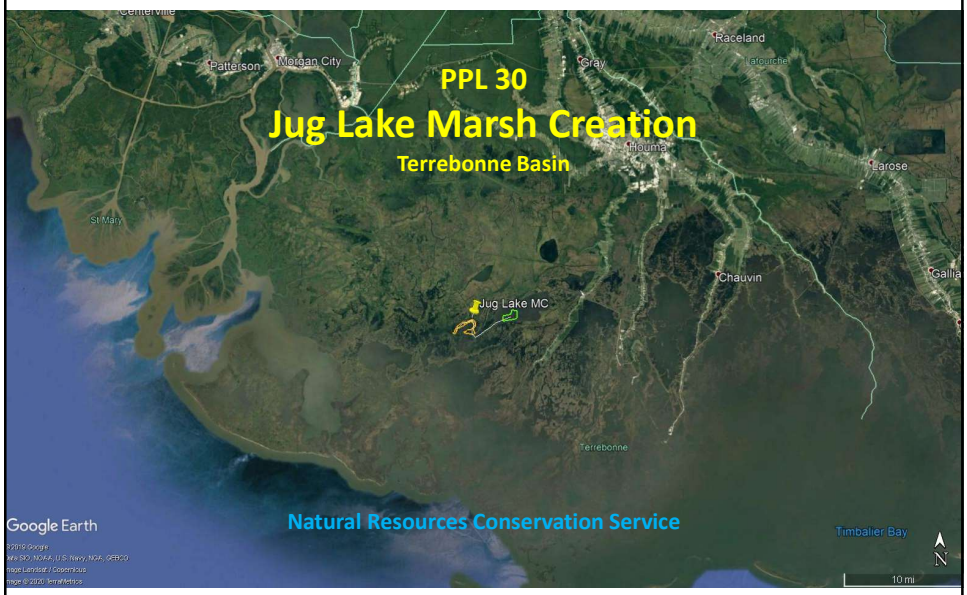
50 ac

Jug Lake

Google Earth

4000 ft

N


PPL 30
Jug Lake Marsh Creation
Terrebonne Basin
Raceland
Patterson
Morgan City
Gray
Houma
Larose
St Mary
Chauvin
Jug Lake MC
Terrebonne
Natural Resources Conservation Service
Timbalier Bay
Google Earth
10 mi
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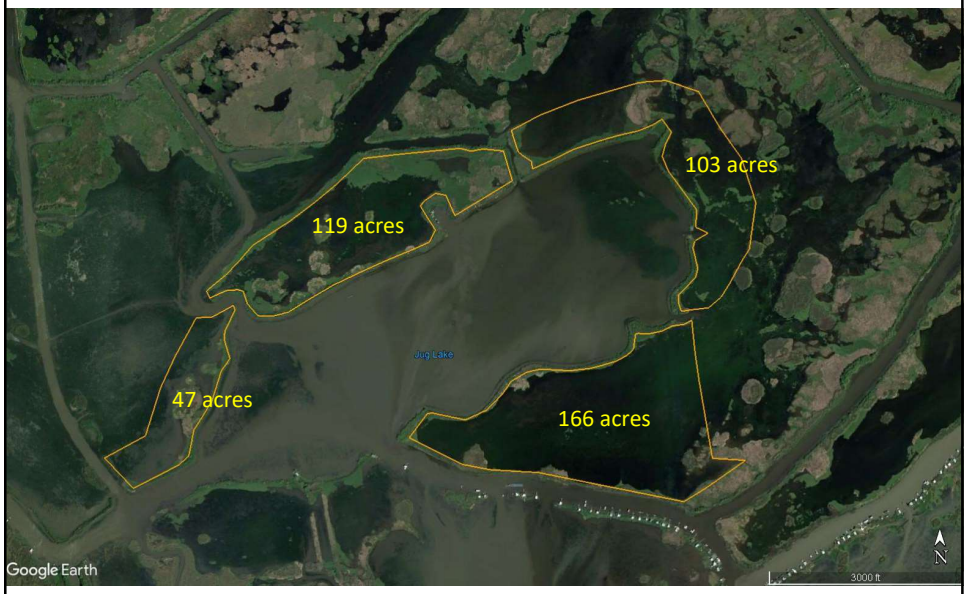
NRCS


103 acres
119 acres
Jug Lake
47 acres
166 acres
Google Earth
3000 ft
N

PPL30
Jug Lake
Marsh Creation

Project Objectives:

- To create/nourish marsh from dedicated dredge material
- To maintain the integrity of the lake rim

Benefits:
The project will create and nourish approximately 400 acres of intermediate marsh

Estimated Construction Cost (+25%):
$20-25 million

R3 TE-03

PPL30 PROJECT FACT SHEET
February 5, 2020

Project Name
South Bayou Decade Marsh Creation

Master Plan Strategy
North Lake Mechant Marsh Creation (2017 Master Plan 03a.MC.101): Creation of approximately 12,100 acres of marsh between Lake Decade and Lake Mechant to create new wetland habitat and restore degraded marsh.

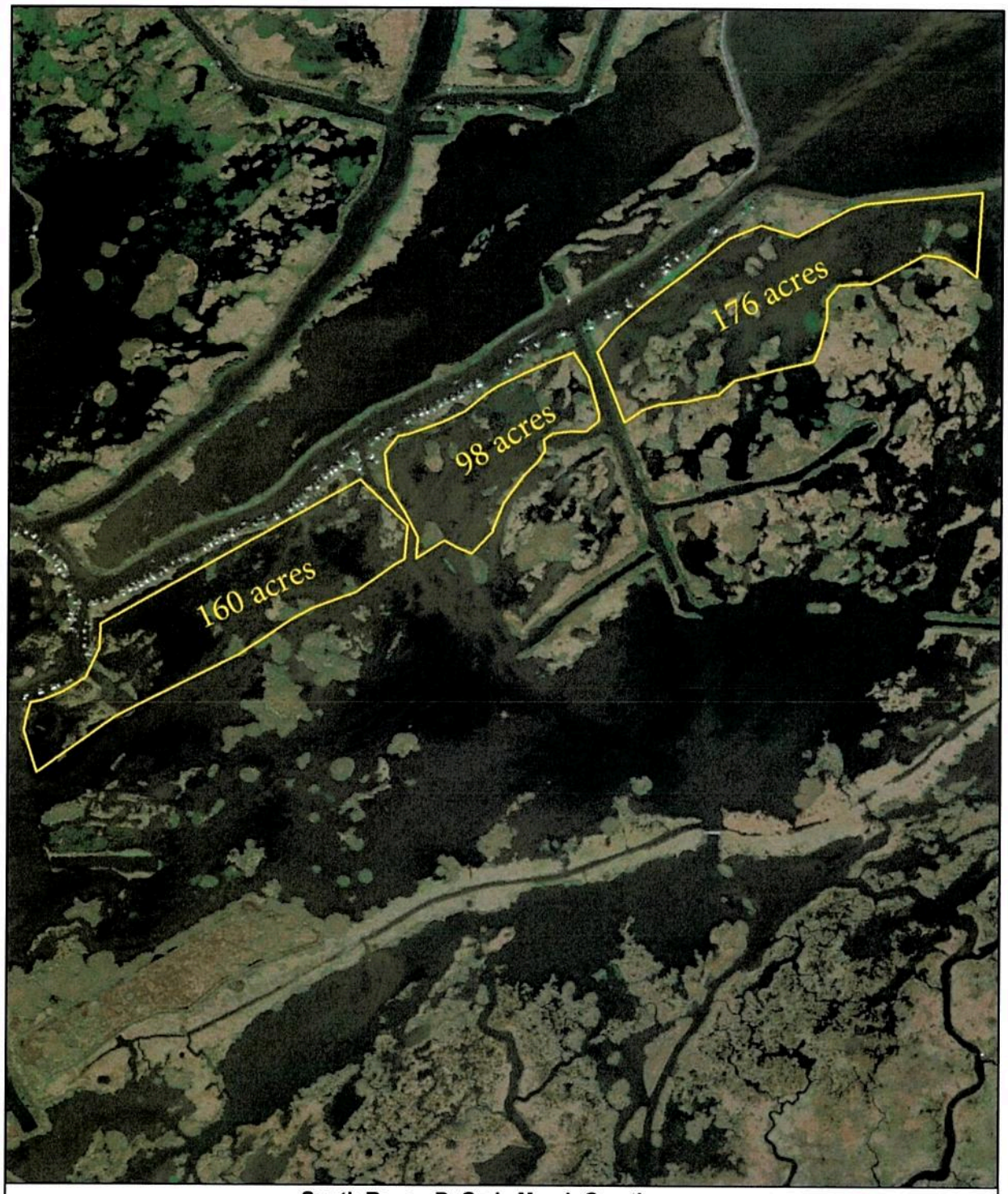
Project Location
Region 3, Terrebonne Basin, Terrebonne Parish, South of Bayou Decade

Problem
The marsh along Bayou Decade have seen a significant amount of deterioration over the past few decades. Wetland loss in the area has been primarily attributed to subsidence, saltwater intrusion and the numerous gas and oil pipelines and canals. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amounts to up to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. Wetland loss in the area is estimated to -0.79%/yr.

Proposed Solution
The proposed project would create/nourish approximately 434 acres (303 acres marsh creation and 131 acres marsh nourishment) of marsh using sediment dredged from Lake Mechant. Temporary containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access.

Project Costs
The estimated construction cost including 25% contingency is $20M - $25M.

Preparer(s) of Fact Sheet:
Brad Crawford, P.E.; (214) 665-7255; Crawford.brad@epa.gov



South Bayou DeCade Marsh Creation

Basemap: Bing Aereal Imagery 2018

N
W E
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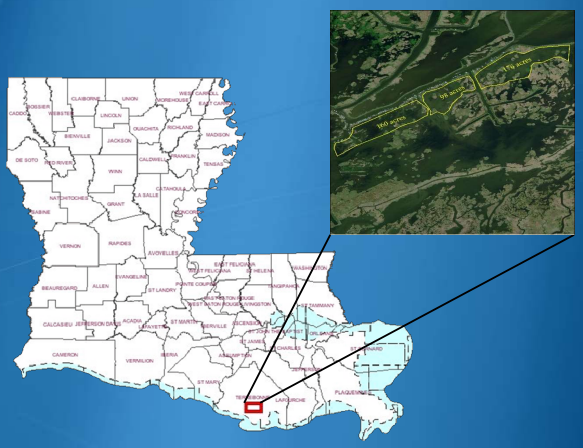
0 0.125 0.25 0.5 0.75 Miles

Marsh Creation Cells

Dallas, Texas
February 5, 2019

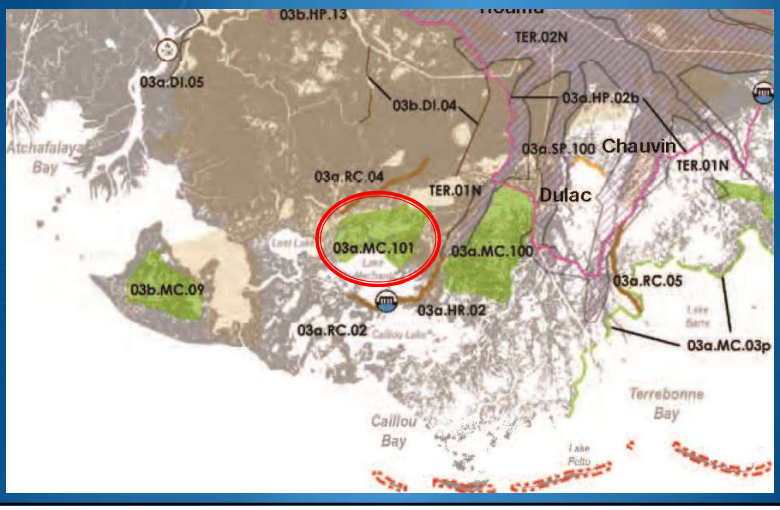
South Bayou Decade Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

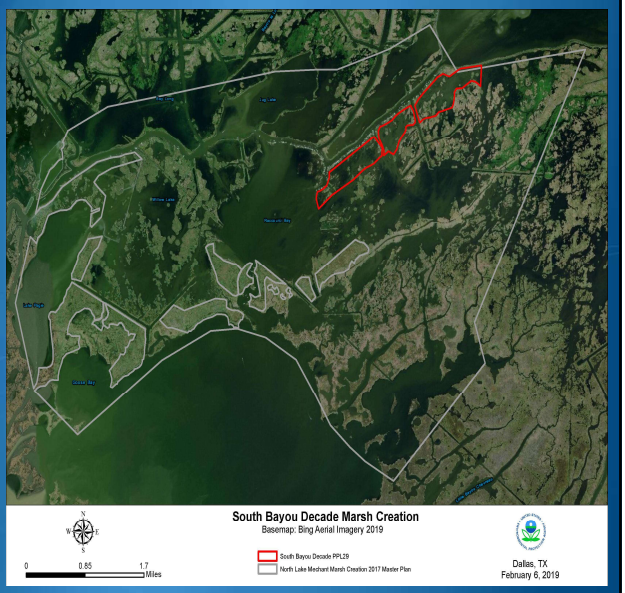
2017 Master Plan Solution

03a.MC.101 North Lake Mechant Marsh Creation : Creation of approximately 12,100 acres of marsh between Lake Decade and Lake Mechant to create new wetland habitat and restore degraded marsh.



2017 Master Plan Consistency

03a.MC.101: Creation of approximately 12,100 acres of marsh between Lake Decade and Lake Mechant to create new wetland habitat and restore degraded marsh.

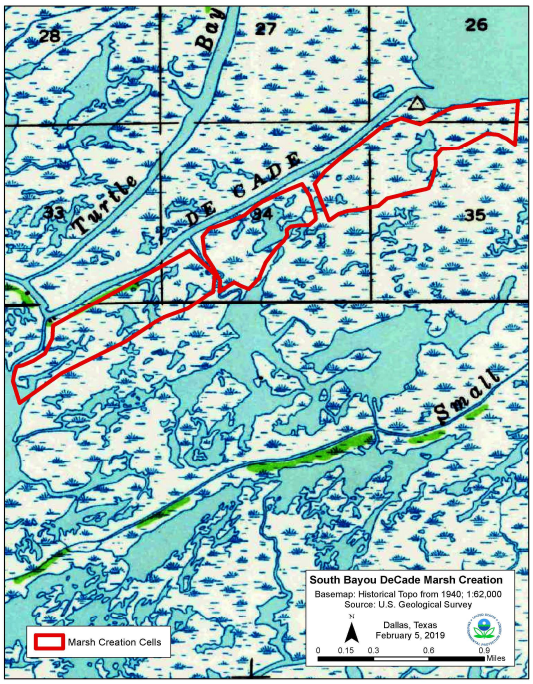


Problems

- This area has experienced wetland loss due to:
  - Subsidence
  - Saltwater intrusion
  - Sediment deprivation
  - Erosion
  - Construction of pipeline canals
- Since 1932, Terrebonne Basin has lost approximately 20% of its wetlands.
- Terrebonne Parish could experience the second highest land loss of any parish (2017 MP)

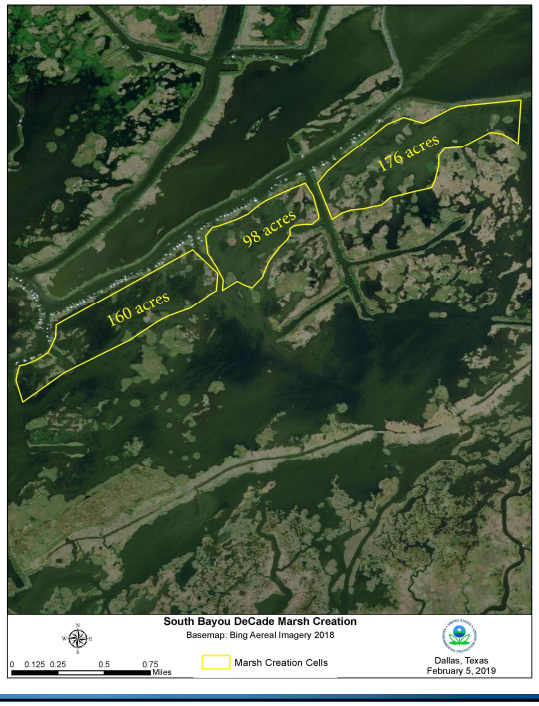
Historical Reference

- Historical topo from 1940
- Project area mostly marsh



Project Features

- Create/nourish 434 acres emergent marsh with sediment from Lake Mechant
- Restore wetland habitat
- Increase the longevity of existing marsh habitat
- Construction plus 25% contingency is $20M-25M



~~R3 TE 04~~ Withdrawn

PPL30 PROJECT NOMINEE FACT SHEET
February 5th, 2020

Project Name
Mechant to De Cade Marsh Creation Project

Project Location
Region 3, Terrebonne Basin, Terrebonne Parish, southwest of Lake De Cade

Problem
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering compaction, contributing to high subsidence. Historically, subsidence, saltwater intrusion, hurricanes, and numerous oil and gas pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amount to approximately 130,000 acres over the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate in the area is -0.71%/year based on CRMS0398 data from 2006 to 2019.

Goals
The project goals are to create and/or nourish 350 acres of intermediate marsh.

Proposed Solution
Sediments from Lake Mechant will be hydraulically dredged and pumped via pipeline to create/nourish 350 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh and within the intertidal range. Containment dikes will be constructed around each marsh creation cell. Where practicable, material will be borrowed from perimeter lakes and bayous. Containment dikes will be gapped at the end of construction or by TY3.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Approximately 480 acres would be benefited directly and indirectly. Direct benefits include 300 acres of marsh creation and 50 acres of marsh nourishment. Indirect benefits could occur to surrounding marsh and open water areas.

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres protected/created over the project life is approximately 250-300 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 interior loss rate reduction throughout the area of direct benefit is estimated to be 50%.

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 help to maintain portions of the Raccourci Bay shoreline.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would help protect numerous camps along Bayou De Cade as well as some oil and gas infrastructure in the area.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would work synergistically with the North Lake Mechant Landbridge Restoration Project (TE-44), the Lost Lake Project Marsh Creation Hydrologic Restoration (TE-72), and the future Bayou De Cade Marsh Creation Project (TE-138).

Considerations

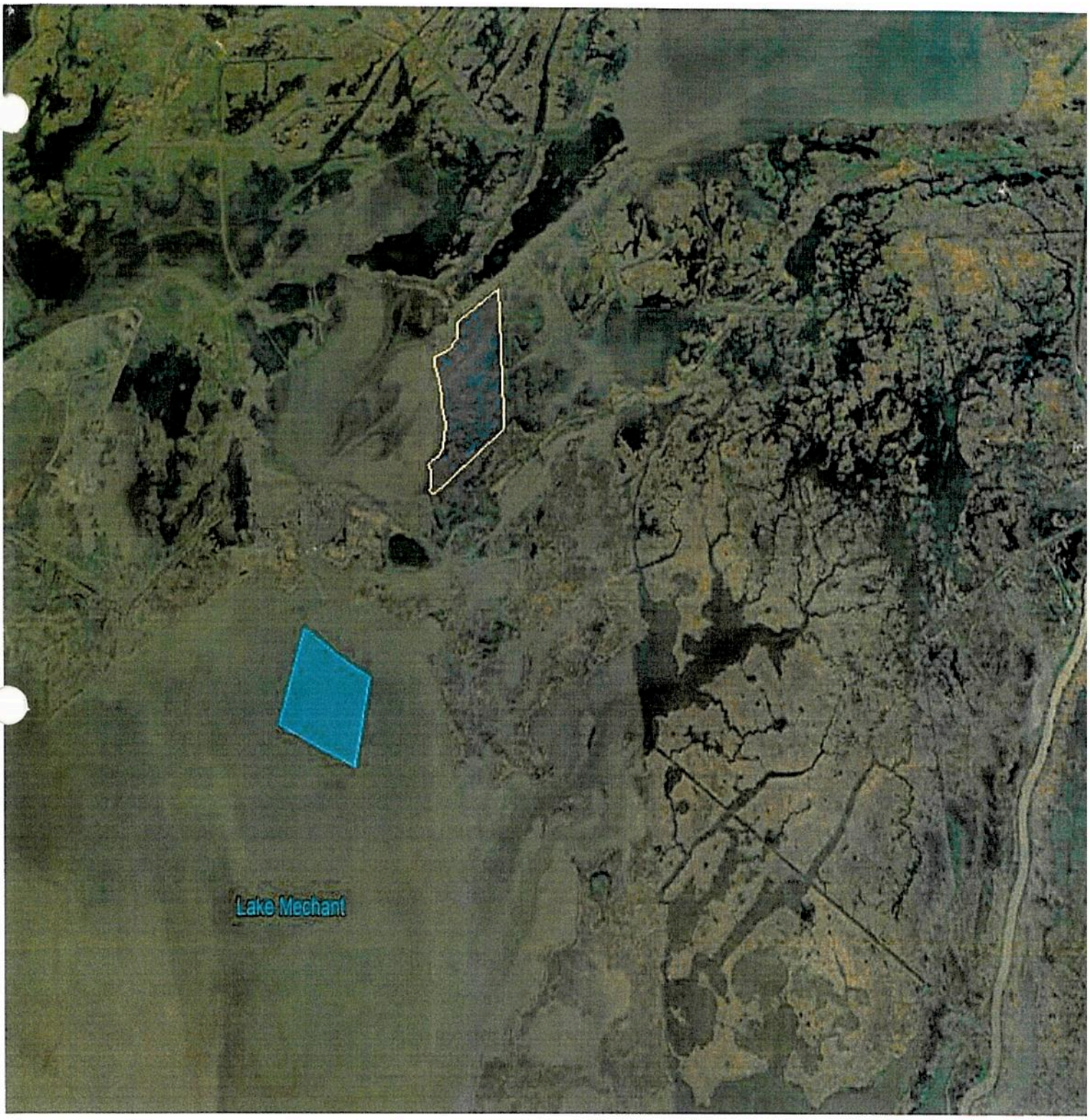
Considerations for this project include pipelines/utilities. Only one landowner. No oyster leases.

Preliminary Cost

The fully-funded cost range is $20M - $25M.

Preparer of Fact Sheet

Jennifer Smith, NOAA, (225) 757-5230, jennifer.smith@noaa.gov



PPL30 Mechant to De Cade Marsh Creation

300 Acres Marsh Creation
50 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2019 Aerial Imagery
Map Date 03-20-2019

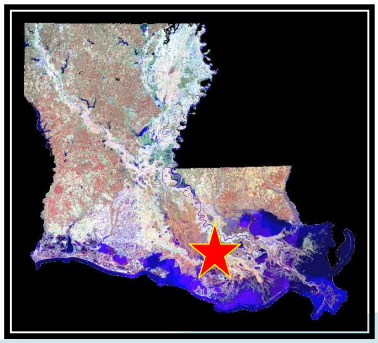
Legend

Marsh Creation

Borrow Area

Mechant to De Cade Marsh Creation Project

NOAA FISHERIES



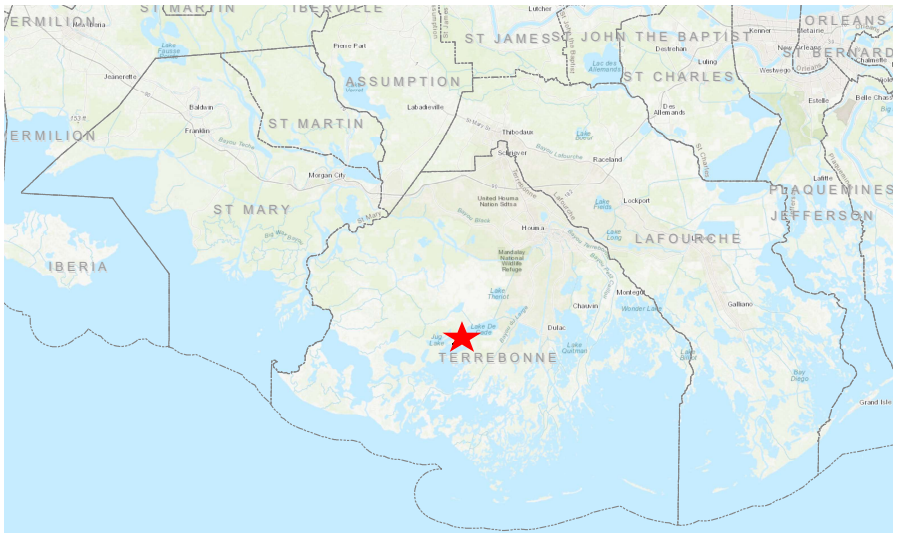
REGION 3 – Terrebonne Basin

Presenter: Jennifer Smith, Project Manager, NOAA

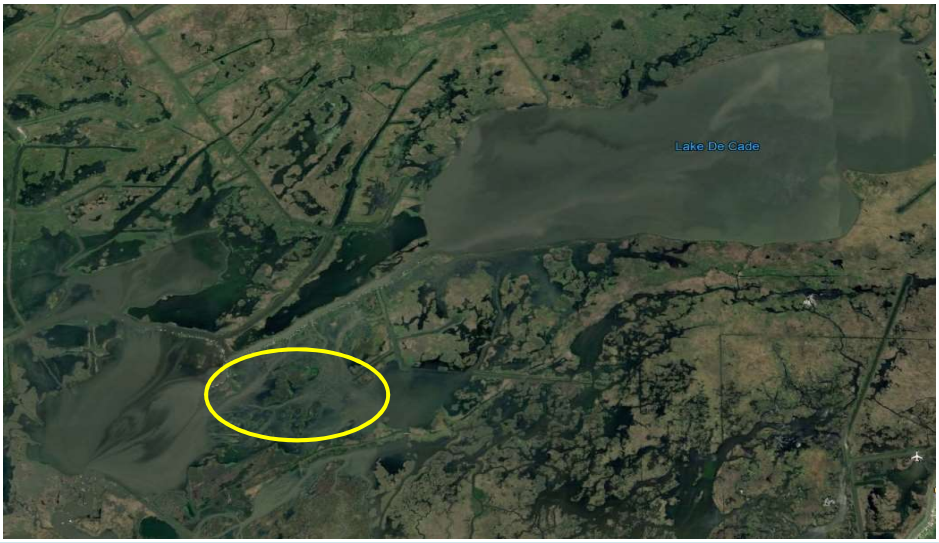
Special Thanks
LL&E, LLC
Ducks Unlimited
Terrebonne Parish

PPL30 CWPPRA Regional Planning Team Meeting
Morgan City, Louisiana
February 5, 2020

Project Location



Project Location



Project Area Problem

- Wetland degradation
  - Sea Level Rise
  - Subsidence
  - Hurricane impacts
  - Conversion of marsh to open water
  - Nutria foraging

Project Goals

- Marsh Creation and Nourishment
  - Restore intertidal marsh habitat
  - Design and construct resilient wetlands to maximize wetland benefits throughout the 20 year project life.

Restoration Solution

- 350 Acres of Marsh Creation/Nourishment
  - 300 Acres of Marsh Creation & 50 Acres of Marsh Nourishment.
  - Hydraulically dredge material from Lake Mechant.
  - Contained Fill areas with dike gapping after construction.
  - Short pumping distance, less than 2.0 miles.
  - No pipeline/no oysters.

Project Map

- 2017 State Master Plan Polygon 03a.MC.101
- Lake Mechant Borrow Area
- 350 Acres TOTAL of Marsh Creation/Nourishment
- Approximately 300 acres Creation and 50 acres Nourishment

Pipelines

Summary of Features, Cost, and Benefits

- **350 Acres Total**
  - 300 acres Marsh Creation
  - 50 acres Nourishment
- **Construction Cost + 25% Contingency $20M - $25M**
- **Net Benefits: 250-300 acres**

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PPL30 PROJECT NOMINEE FACT SHEET
February 05, 2020

Project Name
Bay Raccourci Marsh Creation Increment II

Project Location
Region 3, Mechant/de Cade Basin, Terrebonne Parish. This project is located north of Lake Mechant, south of Bayou Decade along the east bank of Bay Raccourci.

Problem
High saline waters from Lake Mechant have directly contributed to the loss and/or conversion of much of the historically intermediate marshes to low salinity brackish marshes north of Lake Mechant. Subsidence, canal dredging and storm damage have also contributed significantly to the loss of marsh in the area. The zone of intermediate marsh (transition zone between fresh and brackish marshes) is located just north of Lake Mechant. High salinity water entering Bay Raccourci via Bayou Raccourci/Lake Mechant effectively short circuits the TE-44 project and flows unimpeded into lower salinity marshes surrounding Bay Raccourci. After completing construction on the other CWPPRA projects in the area, the water pressure along this shoreline will increase dramatically. This might cause damage to the fragile heavily organic marsh platforms located to the east of Bay Raccourci. USGS calculated a 19984-2011 loss rate of -0.995% per year for the TE-72 Lost Lake Marsh Creation.

Goals
The goal of this project is to slow the movement of saline water north from Lake Mechant through Bay Raccourci to Bayou Decade by creating marsh along the Bay Raccourci shoreline. Strengthen the marsh along Small Bayou LaPoint and some area along Bayou Decade.

Specific goals: 1) Create approximately 290 acres and nourish approximately 30 acres of low salinity brackish/intermediate marsh on east side of Bay Raccourci, south side of Bayou Decade and along Small Bayou LaPoint. 2) Plant newly restored Bay Raccourci shoreline.

Proposed Solution
Sediment from a borrow site in Lake Mechant will be dredged and pumped via pipeline to create/nourish approximately 330 acres of marsh. Dewatering and compaction of dredged sediments should produce elevations conducive to the establishment of emergent marsh within the intertidal range. Earthen containment dikes will be constructed around the perimeter of marsh creation cells. Containment dikes along the Bay Raccourci shoreline will be planted with appropriate vegetation. Containment dikes will be gapped at the end of construction or by target year 3.

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly?*
   Approximately 330 acres would be directly benefited. Direct benefits include 290 acres of marsh creation, 30 acres of marsh nourishment.

2) *How many acres of wetlands will be protected/created over the project life?*

The total net acres protected/created over the project life is 282 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 land loss rate reduction throughout the area of direct benefits is approximately 50% to 74% over the project life.

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?*
This project would help maintain portions of the Bay Raccourci shoreline and a small portion of Bayou Decade where it meets Bayou Raccourci, as well as restore marshes adjacent to Small Point Bayou.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
This project would help protect many small camps along Bayou Raccourci and Bayou Decade.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This project would work synergistically with the constructed TE-44, TE-34, TE-39, TE-72, and the recently funded Bay Raccourci Marsh Creation and Ridge Restoration project.

Considerations
Oil and gas infrastructure (i.e. pipelines) and oyster.

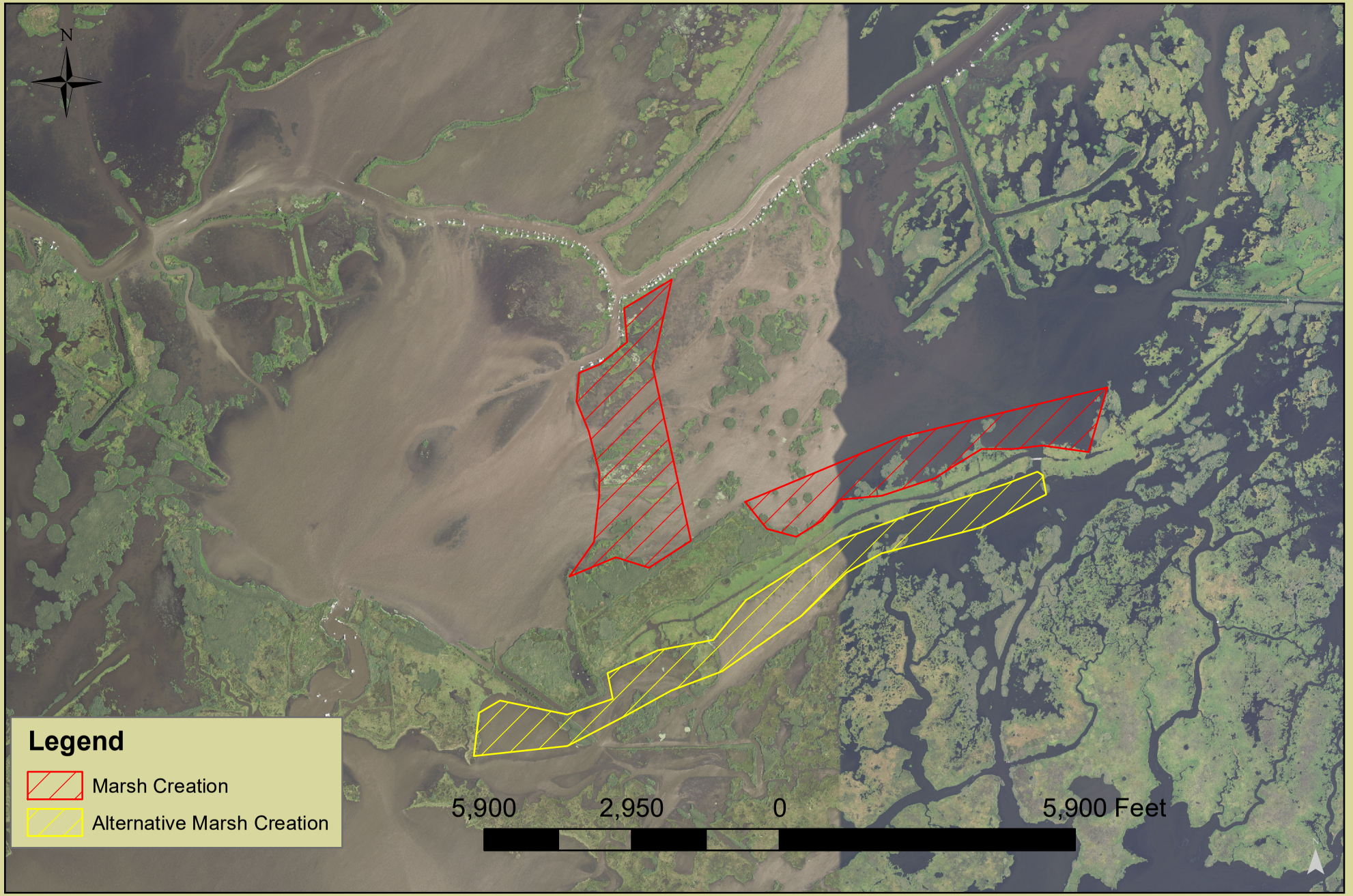
Preliminary Cost
Construction cost plus 25% contingency is estimated to be $20 - $25M.

Preparer(s) of Fact Sheet:
Robert Dubois, Fish and Wildlife Service, 337-291-3127 Robert_Dubois@fws.gov

U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

BAY RACCOURCI MARSH CREATION INCREMENT II



BAY RACCOURCI MARSH CREATION INCREMENT II

BAY RACCOURCI MARSH CREATION INCREMENT II

Problem:

- **Subsidence, canal dredging, saltwater intrusion, wind and wave induced shoreline erosion and altered hydrology**
- **Saline water short circuits the TE-44 project from Lake Mechant through Bayou Raccourci to Bay Raccourci**
- **With many of the outlets restricted or closed soon the pressure on this last section will increase tremendously.**

BAY RACCOURCI MARSH INCREMENT II

Solution:

- **Hydraulically dredge material from Lake Mechant to create intertidal marsh north and east of Bay Raccourci.**
- **Plant the shoreline with appropriate vegetation**

BAY RACCOURCI
MARSH INCREMENT II

Goal:

- **Hydraulically dredge material from Lake Mechant to create 250 acres and nourish 50 acres of intertidal marsh north and east of Bay Raccourci.**
- **Plant the shoreline with appropriate vegetation**

Cost plus 25% contingency- $20-$25M

Species of Concern and Rare Species

- Least Bittern
- Black Rail
- Mottled Duck
- Brown Pelican
- King Rail

R3 TE-06

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
South Falgout Canal Marsh Creation and Terraces

Project Location
Region 3, Terrebonne Basin, Terrebonne Parish, East of Theriot and south of Falgout Canal

Problem
The marshes south of Falgout Canal have been severely degraded for quite some time now. Most of the area has completely converted to open water with exception to a few oil and gas canals. The area continues to lose marsh at a rate of -0.61 %/y and the state estimates the area is subsiding at 8.8 mm/y. Recently, Terrebonne Parish has completed a segment of the Morganza to the Gulf levee protection system and in this area they have installed two freshwater diversion structures to move water from Falgout Canal to the south. This action presents an excellent opportunity for creating sustainable marsh by taking advantage of the newly introduced freshwater, nutrients and sediments into the area.

Goals
The primary goals of this project are to 1) create/restore marsh habitat in the open water areas via marsh creation, marsh nourishment and terracing, 2) reduce fetch and wave energy in open water areas via the construction of terraces and 3) utilize terracing to enhance the capture of sediments and nutrients introduced through the diversion structures.

Proposed Solution
1. Sediments will be hydraulically dredged and pumped via pipeline from a borrow site located in the outfall of Miners Canal to create/nourish approximately 337 acres of marsh
2. Approximately 35,000 linear feet (18 acres) of terraces will be constructed. The terraces will be strategically placed to both create marsh where needed, reduce fetch in the open water areas and capture nutrients and sediment moving through the diversion structures.
3. Containment dikes will be gapped, and the terraces will be planted.

Project Benefits
The project is expected to initially create/nourish approximately 337 acres of marsh and an additional 18 acres of marsh through terraces.

Preliminary Cost
The construction cost range is $25M - $30M.

Preparer of Fact Sheet
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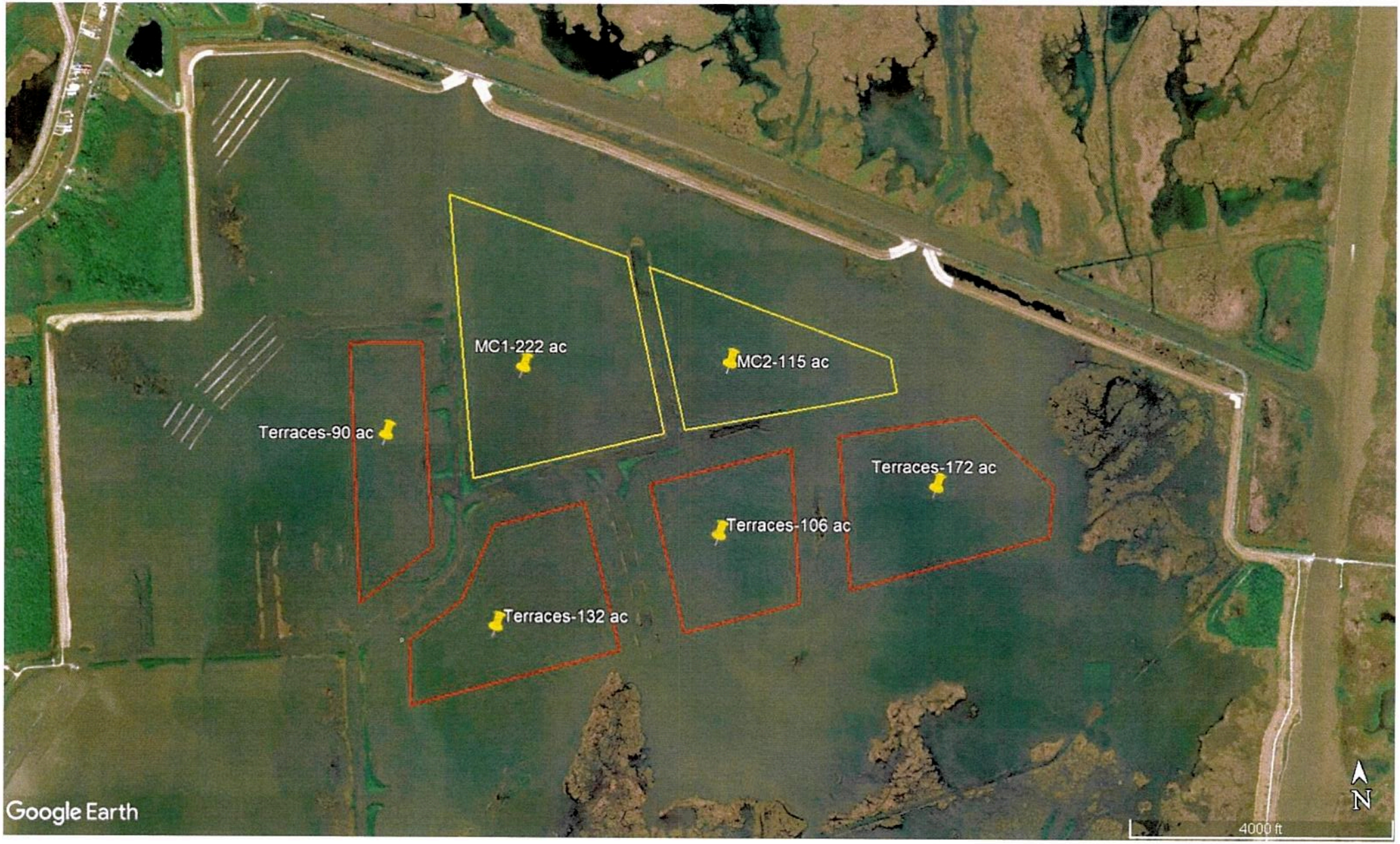
Eric Whitney, NRCS, Engineer, (337) 291-3069, eric.whitney@usda.gov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Terraces-90 ac
Terraces-172 ac
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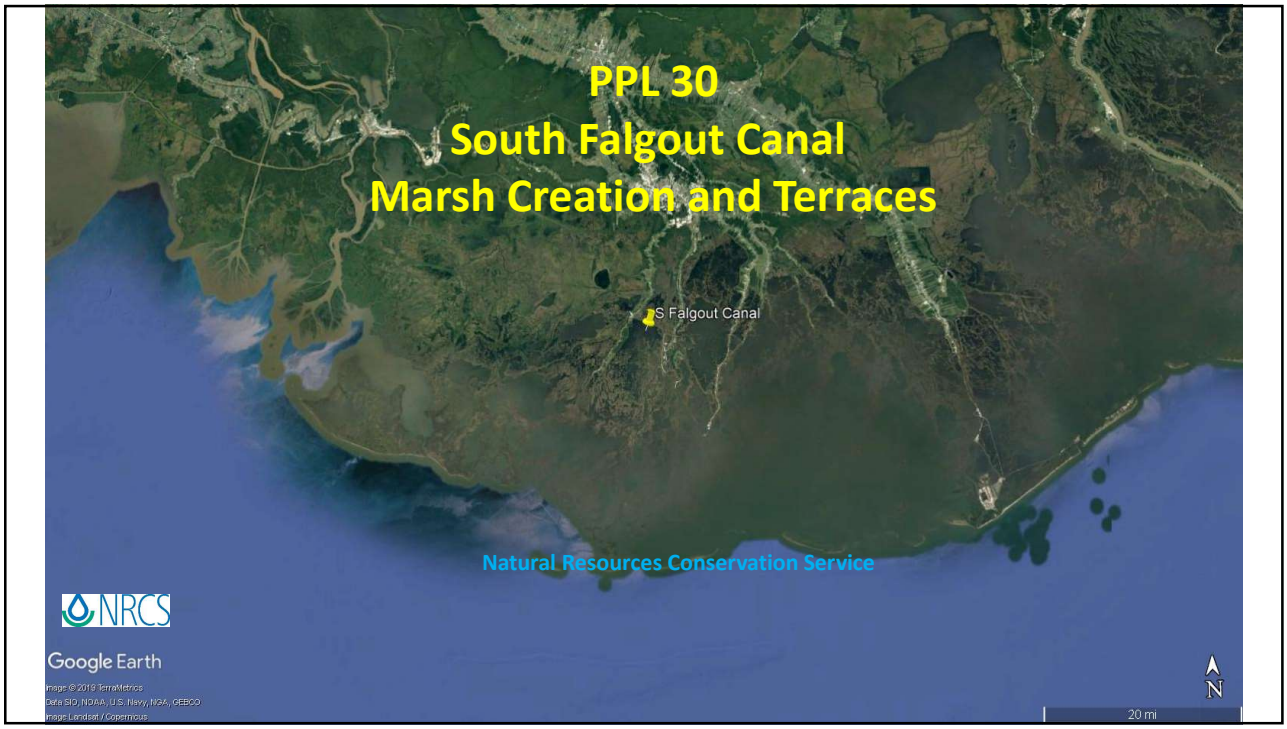
PPL 30
South Falgout Canal
Marsh Creation and Terraces
S Falgout Canal
Natural Resources Conservation Service
NRCS
Google Earth
Image © 2019 TerraMetrics
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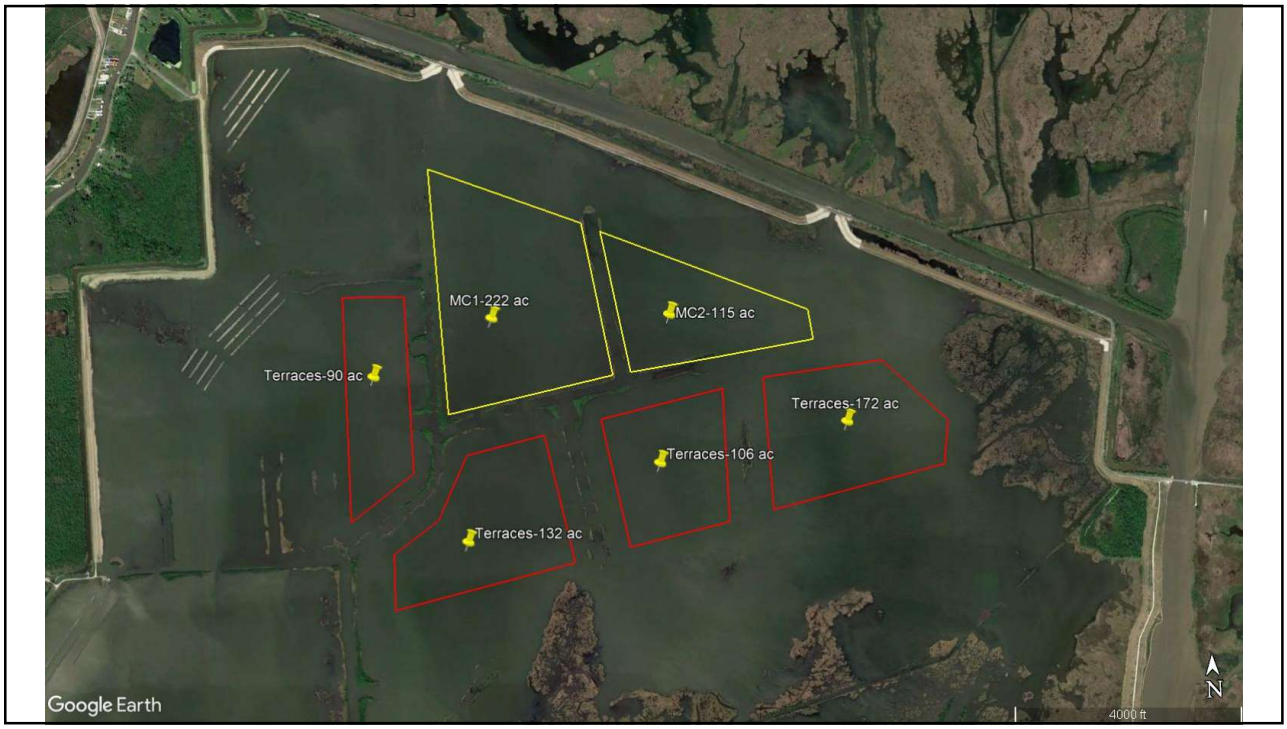
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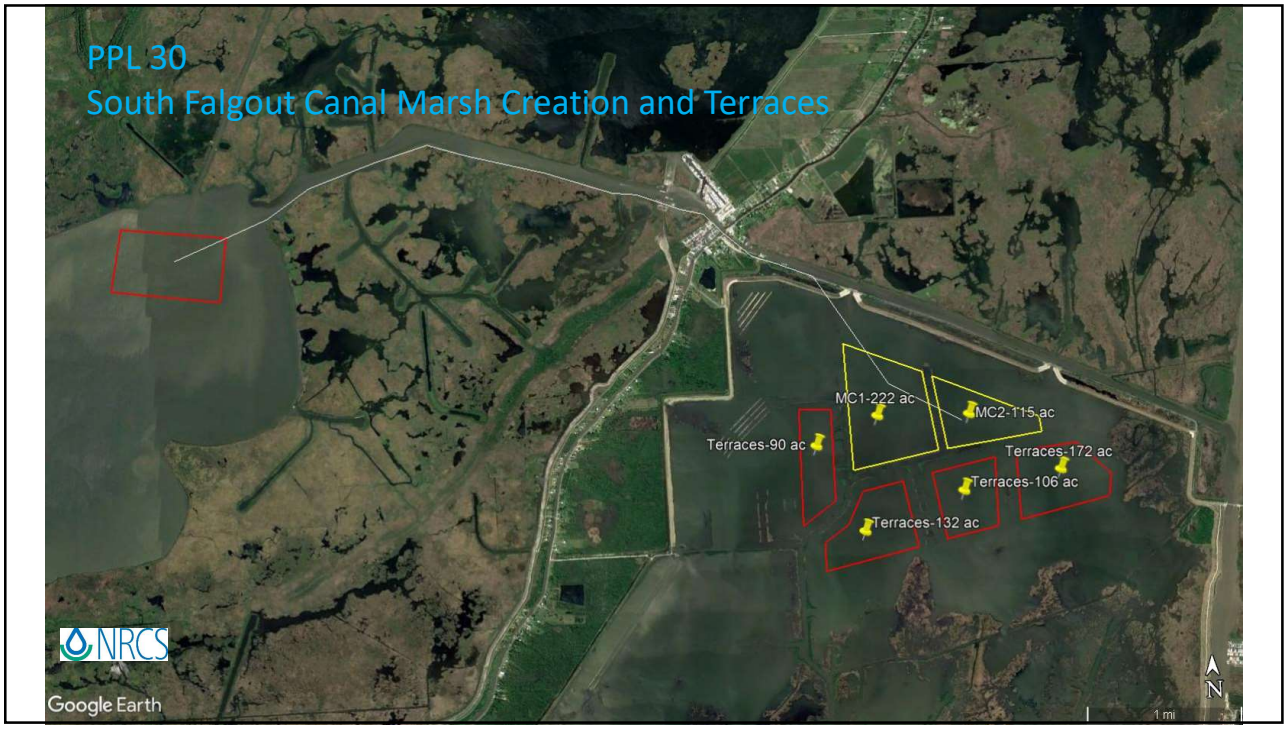
PPL 30
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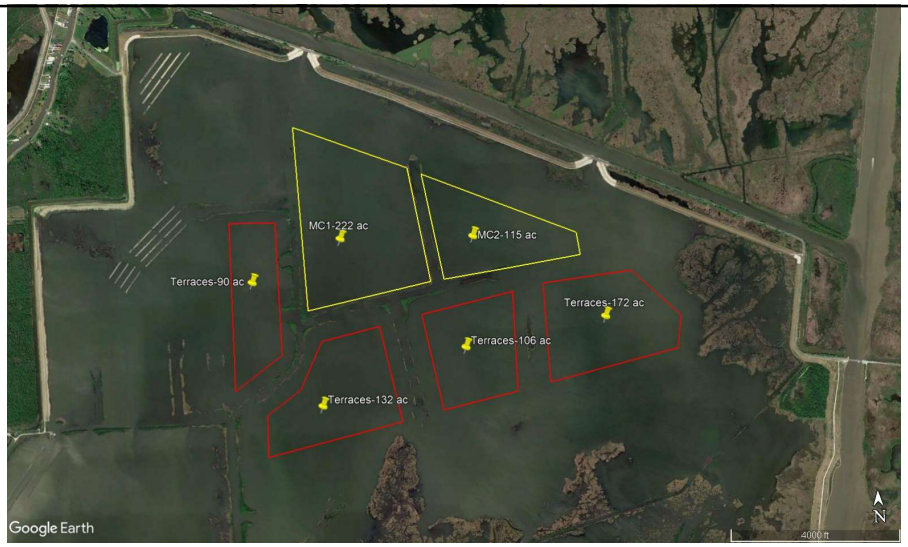


PPL-30
South Falgout Canal Marsh Creation and Terraces

Project Objectives:

- Create marsh habitat via marsh creation nourishment and terracing
- Reduce interior erosion via the construction of terraces
- Use terraces to enhance the capture of sediments and nutrients from diversion structures
- Dredge the outfall of Miners Canal to maintain freshwater flow to the lower basin

Project Features and Benefits:

- Create 337 acres of marsh
- Install approximately 35,000 lf of terraces (27 acres)

Project Cost:

- $25-30 million

NRCS

R3 TE-07

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
Port Fourchon Marsh Creation Project

Project Location
Region 3, Terrebonne Basin, Lafourche Parish

Problem
Historic wetland loss in the project area stems from subsidence, sediment deprivation, and construction of pipeline canals. According to USGS data, nearly 324,000 ac of land were lost between 1932 and 2010 within the basin, which had the highest land loss rate in the state from 1985 to 2004. Wetlands have been replaced by open water where canals are dug, while spoil banks convert them to upland habitat. Bounded by Bayou Lafourche to the east and Timbalier Bay to the west the project area is also subject to shoreline erosion. Land loss rate is estimated at -1.56%

Goals
The primary goals of this project are to restore degraded wetland habitat and provide increased protection from storm surge and flooding. Specific goals of the project are to create approximately 472 acres and nourish approximately 380 acres of marsh with dredged material from Belle Pass. The project would also evaluate the use of Belle Pass sediment for coastal Restoration. The Environmental Protection Agency's strategic plan goals include "Work with partners to protect and restore wetlands and coastal and ocean water resources."

Proposed Solution
Create/nourish 825 acres of wetlands by converting open water into marsh and nourishing existing marsh remnants with sediment hydraulically dredged from a borrow source in Belle Pass. Temporary containment dikes will be constructed and gapped within three years of construction to allow greater tidal exchange and estuarine organism access

Preliminary Project Benefits
1) *What is the total acreage benefited both directly and indirectly*? Total marsh creation and marsh nourishment is 852 acres.

2) *How many acres of wetlands will be protected/created over the project life*? The total net acres protected/created over the project life is approximately 542 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%.

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.* Yes. The project would help maintain the Bayou Lafourche ridge.

5) *What is the net impact of the project on critical and non-critical infrastructure*? The project would protect LA Highway 1, Port Fourchon, and the communities and infrastructure adjacent to Bayou Lafourche. The project would also complement the expansion efforts for Port Fourchon which would benefit to the local economy.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects*? The project would provide a synergistic effect with the West Fourchon Marsh Creation & Nourishment (TE-134), West Belle Pass Headland Restoration (TE-23), and the Caminada Headland Dune, Beach and Back Barrier restoration projects (BA-171, BA-45, BA-149).

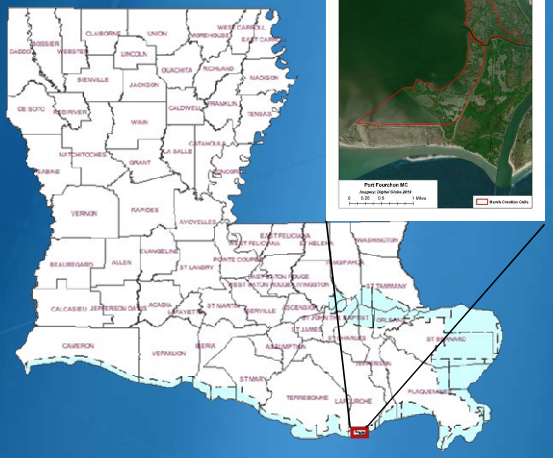
Considerations
Consideration include the Port Fourchon expansion and oil and gas infrastructure, including pipelines.

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

Preparer of Fact Sheet
Brad Crawford, EPA; (214) 665-7255, Crawford.brad@epa.gov


Port Fourchon MC
Imagery: Digital Globe 2019
0 0.25 0.5 1 Miles
Marsh Creation Cells

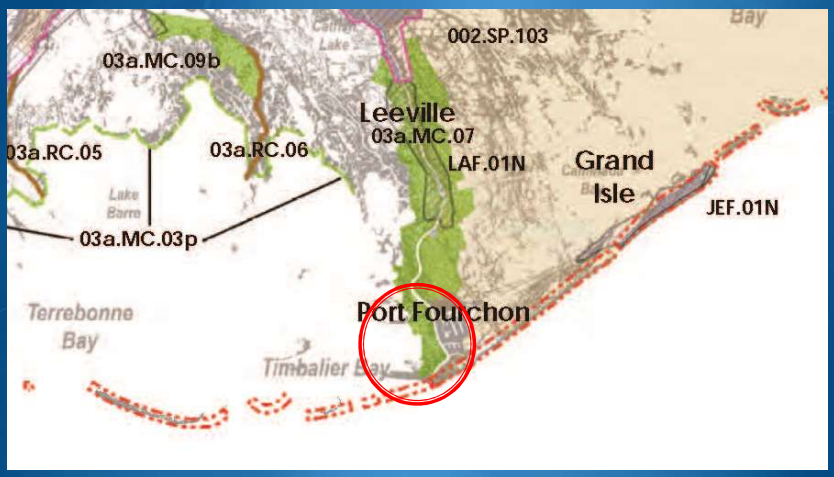
Port Fourchon Marsh Creation



Coastal Wetlands Planning, Protection and Restoration Act

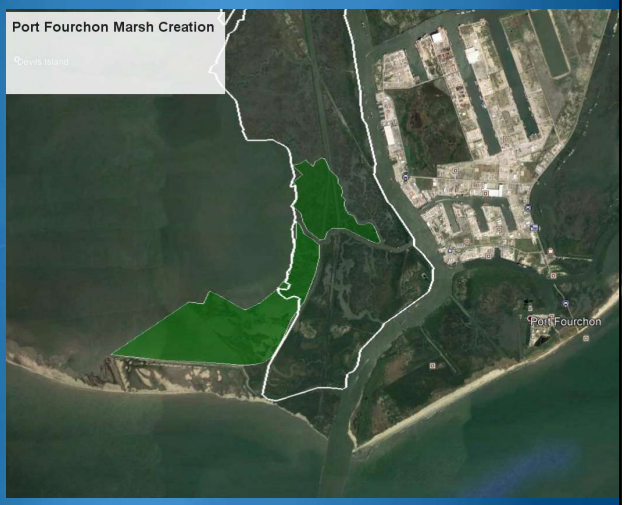
2017 Master Plan Solution

03a.MC.07 Belle Pass-Golden Meadow Marsh Creation: Creation of approximately 24,800 acres of marsh from Belle Pass to Golden Meadow to create new wetland habitat and restore degraded marsh.



2017 Master Plan Consistency & Project Synergy

- 03a.MC.07 Belle Pass-Golden Meadow Marsh Creation
- Synergistic with TE-134 & BA-194
- Borrow from Bayou Lafourche

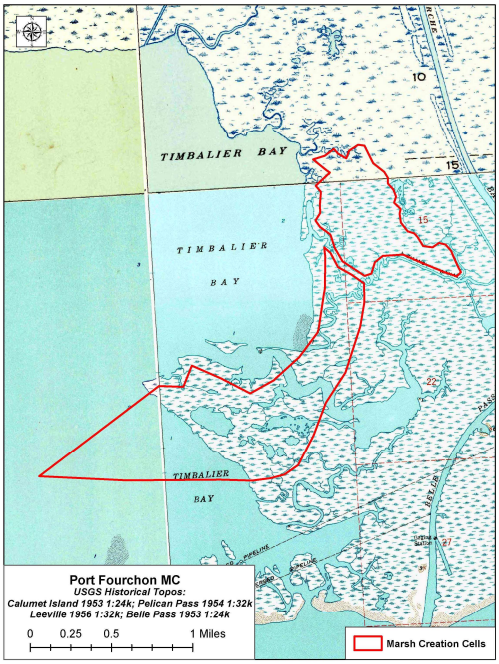


Problems

- This area has experienced wetland loss due to:
  - Subsidence
  - Sediment deprivation
  - Erosion
  - Construction of pipeline canals
- Since 1932, Terrebonne lost ~20% of its wetlands
- Current Loss rate = ~4,500-6,500 acres/year
- LaFourche Parish could be at risk for increased storm surge and flooding in the next 50 years (2017 MP).

Historical Reference

- Historical topo from 1953
- Mostly solid marsh



Project Features

- 852 Acres (492 acres MC + 360 acres MN)
- Benefical Use of Belle Pass borrow

Project Goals

- Create/nourish 852 acres emergent marsh with sediment from Belle Pass
- Provide protection for the community and infrastructure of the Port Fourchon area
- Prove viability of using Port sediment for Coastal Restoration
- Construction + 25% contingency = $30M-$35M

R3 TE-08

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
West Louisiana Highway 1 Marsh Creation

Project Location
Region 3, Terrebonne Basin, Lafourche Parish

Problem
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering and compaction, contributing to high subsidence, and a network of old distributary ridges extending southward from Houma. Historically, subsidence and numerous oil and gas canals and pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amounts to up to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate for the project area is -0.86%/year based on USGS hyper temporal data from 1984 to 2019.

Goals
The project goals are to create and/or nourish up to 313 acres of emergent brackish marsh

Proposed Solution
The proposed project's primary feature is to create and/or nourish approximately 313 acres of emergent brackish marsh (260 marsh creation and 54 marsh nourishment). In order to achieve this, sediment will be hydraulically pumped from a borrow source in Catfish Lake. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction. The project will include planting smooth cordgrass plugs installed in strategic locations based on 10% of the acreage.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is approximately 313 acres (260 acres of marsh creation and 54 acres of marsh nourishment).

2) *How many acres of wetlands will be protected/created over the project life?*
   The net acre benefit range is 200-250 acres after 20 years.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
   A 50% loss rate reduction is assumed for the marsh creation and nourishment.

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 will help restore the backside of the natural Bayou Lafourche bank.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to LA 1 south of Golden Meadow. The project would also provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. Minor oil and gas facilities and pipelines in the area would benefit from an increase in marsh acreage.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This is an area of need due to the lack of previous restoration efforts.

Considerations
The proposed project has potential utility/pipeline issues along with oyster leases along the dredge pipeline path.

Preliminary Construction Costs
The estimated construction cost plus contingency is $20M - $25M.

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, dawn.davis@noaa.gov

West Louisiana Highway 1 Marsh Creation
(PPL30 Nominee)

USGS
science for a changing world

Marsh Creation *

Project Boundary

* denotes proposed features

0.5 0 0.5
Kilometers
0.5 0 0.5
Miles

Scale 1:35,000

Produced by:
U.S. Department of the Interior
U.S. Geological Survey
Wetland and Aquatic Research Center
Coastal and Ocean Restoreation Branch
Baton Rouge, La

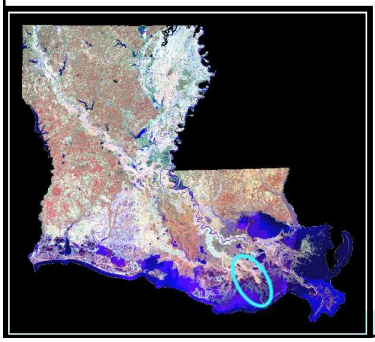
Image Source:
2017 NAIP Photography

Map ID: USGS-NWRC 2019-11-0019
Map Date: July 30, 2019

Golden Meadow to Fourchon

West La 1
Bayou Pierre et Lee
& Hackberry Bay Marsh
Creation and Nourishment
Nominees

NOAA FISHERIES
Habitat Conservation Division



REGION 3 – Terrebonne Basin

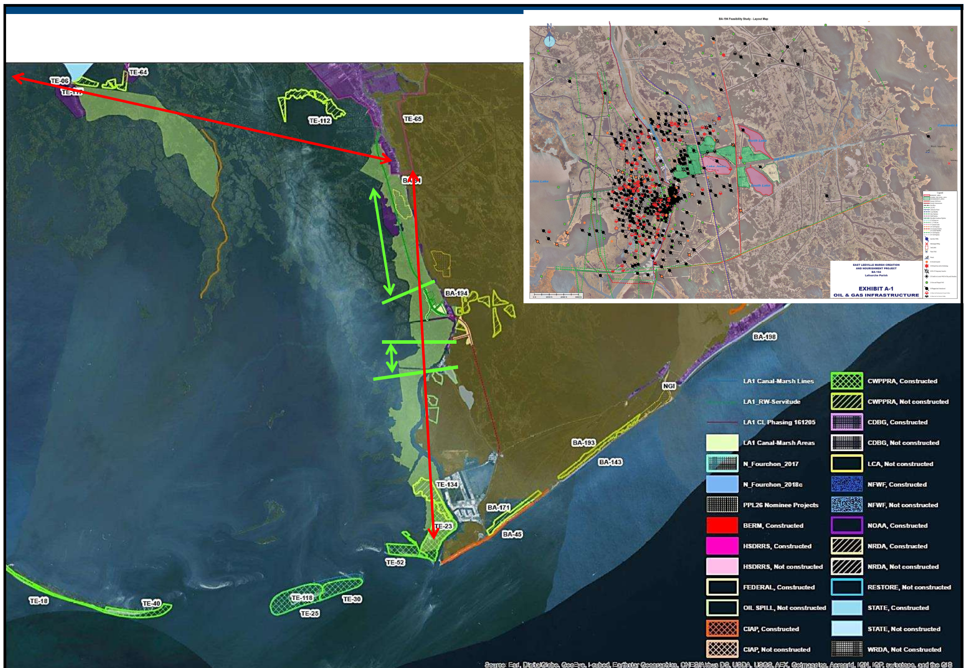
Presenter: Dawn Davis, Fishery Biologist

PPL30 CWPPRA Regional Planning Team Meeting
Morgan City, Louisiana
February 5, 2020

Project Area Problem:

- High land loss rates in Terrebonne Basin, 20% since 1932 and currently 4,500-6,500 acres lost per year
- High subsidence in the area, 0.5 ft/20 yr, 2017 Coastal Master Plan (mod 8.8 mm/yr rate)
- Limited protection to either side of LA Hwy 1
- Wetland loss rate for the project area is -0.9 to -1.1% per year based on USGS hyper temporal data

NOAA FISHERIES


EAST LEEVILLE MARSH CREATION
AND NOURISHMENT PROJECT
BA-194
Lafourche Parish
EXHIBIT A-1
OIL & GAS INFRASTRUCTURE
TE-112
TE-65
BA-194
BA-198
NGI
BA-193
BA-143
TE-134
BA-171
TE-23
BA-45
TE-52
TE-18
TE-40
TE-118
TE-30
TE-25
LA1 Canal-Marsh Lines
LA1_RW-Servitude
LA1 CL Phasing 161205
LA1 Canal-Marsh Areas
N_Fourchon_2017
N_Fourchon_2018c
PPL26 Nominee Projects
BERM, Constructed
HSDRRS, Constructed
HSDRRS, Not constructed
FEDERAL, Constructed
OIL SPILL, Not constructed
CIAP, Constructed
CIAP, Not constructed
CWPPRA, Constructed
CWPPRA, Not constructed
CDBG, Constructed
CDBG, Not constructed
LCA, Not constructed
NFWF, Constructed
NFWF, Not constructed
NOAA, Constructed
NRDA, Constructed
NRDA, Not constructed
RESTORE, Not constructed
STATE, Constructed
STATE, Not constructed
WRDA, Not Constructed


Golden Meadow
Mendicant Island
Queen Bess Island
Grand Terre
Beauregard Island
Isle Grande
Andre Island
Fifi Island
Fornation Islands
Grand Isle
Grand Isle
Northwest Island
Philo Brice Islands
Elmers Island
Bull Islands
Devils Island
Timbalier Bay
Pelican Island
Casse-tete Island
Calumet Island
Island
Gateway-to-the-Gulf-Expy
Image Landsat / Copernicus
Google earth

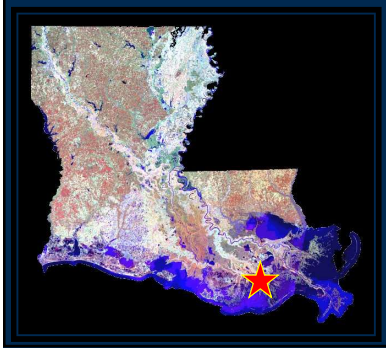
Science, Service, Stewardship

Habitat Conservation Division

West Louisiana Highway 1 Marsh Creation

Region 3 – Terrebonne Basin

Presenter: Dawn Davis, Fishery Biologist

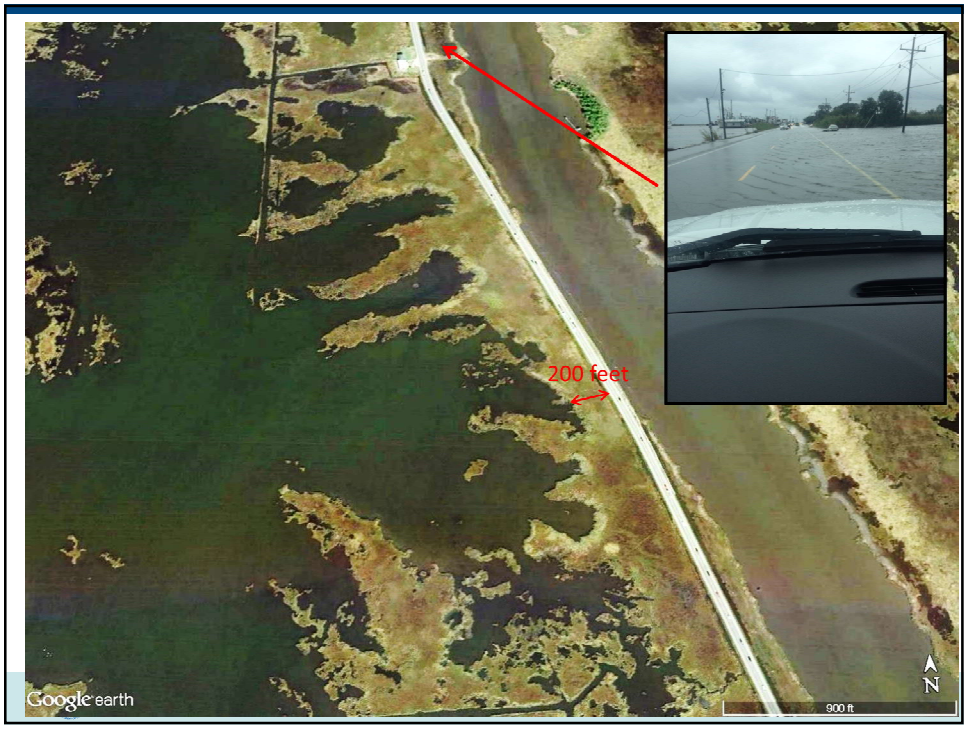


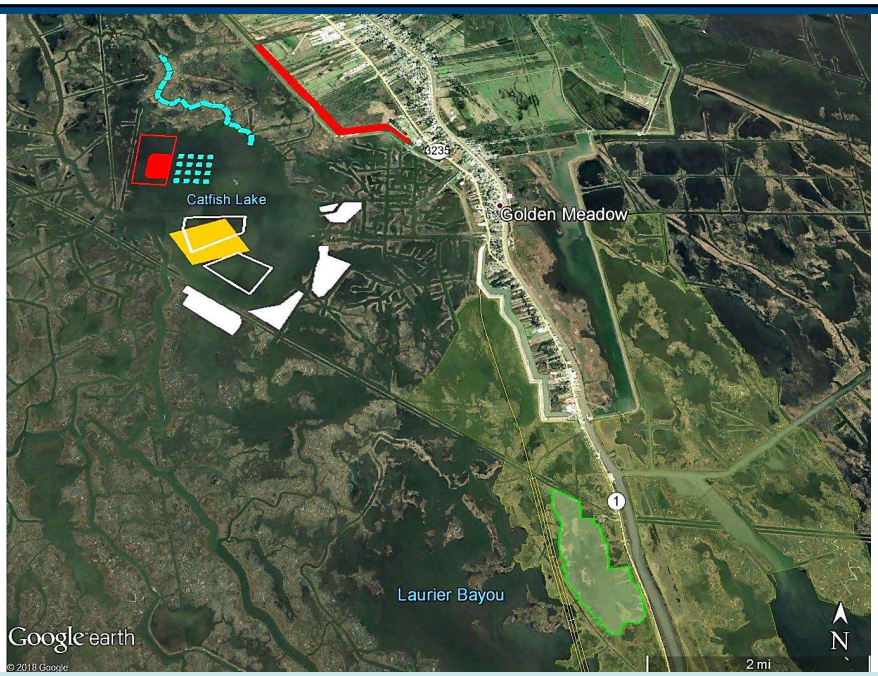
PPL30 CWPPRA Regional Planning Team Meeting

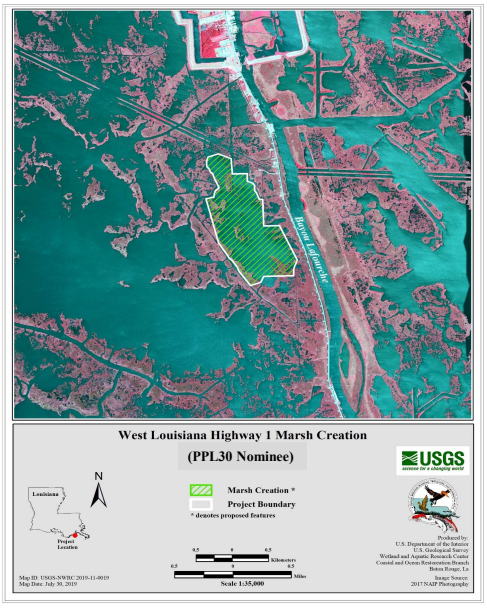
Morgan City, LA

NOAA FISHERIES SERVICE

February 5, 2020







Project Features and Benefits

- Project area: 313 acres
- 260 acres of marsh creation and 54 acres of marsh nourishment
- Borrow from Catfish Lake
- 2017 Coastal Master Plan, Marsh Creation Subunit – 03a.MC.07, Belle Pass-Golden Meadow Marsh Creation
- Supports "T9" Concept (Twin Pipelines) for Lafourche Parish, 5th Annual Coastal Restoration Workshop
- Promotes protection to LA HWY 1

Summary

- Total: 313 ac
  - Marsh Creation: 260 ac
  - Marsh Nourishment: 54 ac
- Estimated net acres: 200-250 ac
- Estimated construction cost plus contingency: $20M - $25M

Contact information:
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NOAA FISHERIES

R3 TE-09

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
Bayou Pierre et Lee Marsh Creation and Nourishment

Project Location
Region 3, Terrebonne Basin, Lafourche Parish

Problem
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering and compaction, contributing to high subsidence, and a network of old distributary ridges extending southward from Houma. Historically, subsidence and numerous oil and gas canals and pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amounts to up to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate for the project area is -1.05%/year based on the Timbalier Bay subunit from 1985 to 2016.

Goals
The project goal is to create and nourish approximately 375 acres (ac) of brackish emergent marsh (326 ac creation, 49 ac nourishment). The project would work synergistically with the West LA Highway 1 Marsh Creation project. The Golden Meadow to Fourchon polygon holistic concept is to restore and bolster the structural framework of the marsh and provide synergy with adjacent infrastructure, flood protection, and communities limited to areas that remain unaddressed (by CWPPRA and other programs) while considering regional sediment management and infrastructure.

Proposed Solution
The proposed project goals are to create approximately 326 ac and nourish 49 ac of marsh. Sediment would be hydraulically dredged from Little Lake via pipeline. The borrow area would be designed to avoid adverse impacts to the existing shorelines of Little Lake. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction. The project will include planting smooth cordgrass plugs installed in strategic locations based on 10% of the acreage. During both Phase 0 and Phase 1, opportunities would be explored to increase the amount of marsh creation.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 375 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 250-300 ac of marsh will be protected/created over the project life.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*
The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the projects life.

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 will help maintain and restore natural bayous between Grand Bayou and Bayou Lafourche.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to LA 1 south of Golden Meadow. The project would also provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. Minor oil and gas facilities and pipelines in the area would benefit from an increase in marsh acreage.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This is an area of need due to the lack of previous restoration efforts. The project will have synergy with the existing and planned mitigation for the elevated Louisiana Highway 1 project.

Considerations
The proposed project has potential utility/pipeline considerations.

Preliminary Construction Costs
The estimated construction cost +25% contingency is $15M-$20M.

Preparer(s) of Fact Sheet:
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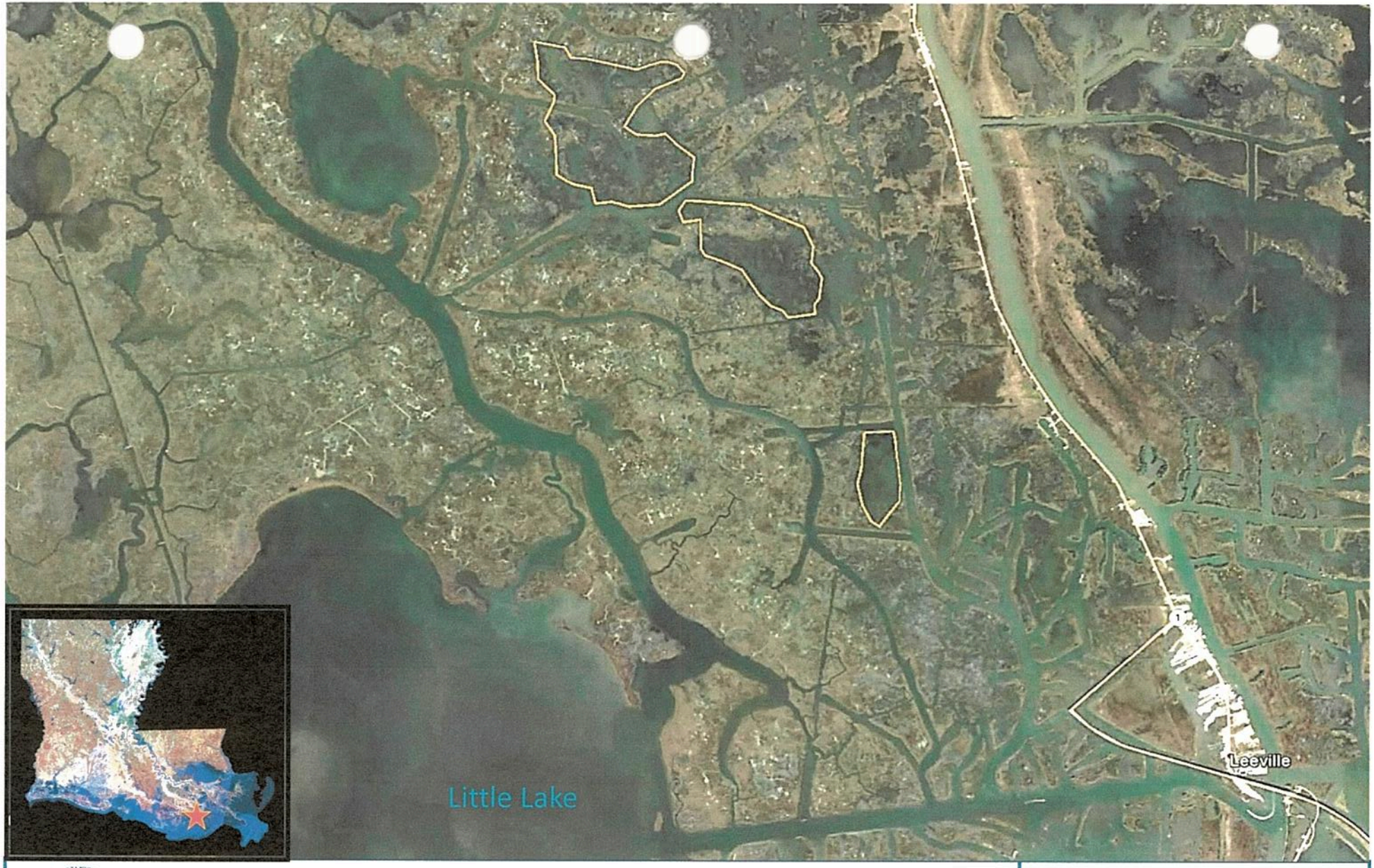
Brandon Howard, NOAA Fisheries, 225-380-0050, Brandon.Howard@noaa.gov



PPL30 Bayou Pierre et Lee Marsh Creation and Nourishment

326 Acres Marsh Creation
49 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2020

Legend

Marsh Creation

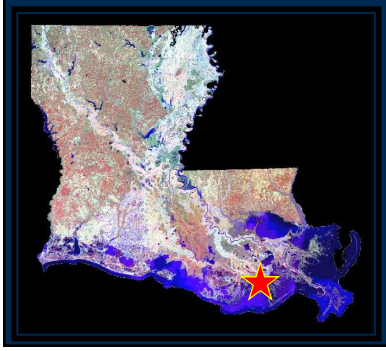
Science, Service, Stewardship

Habitat Conservation Division

Bayou Pierre et Lee Marsh Creation and Nourishment

Region 3 – Terrebonne Basin

Presenter: Dawn Davis, Fishery Biologist

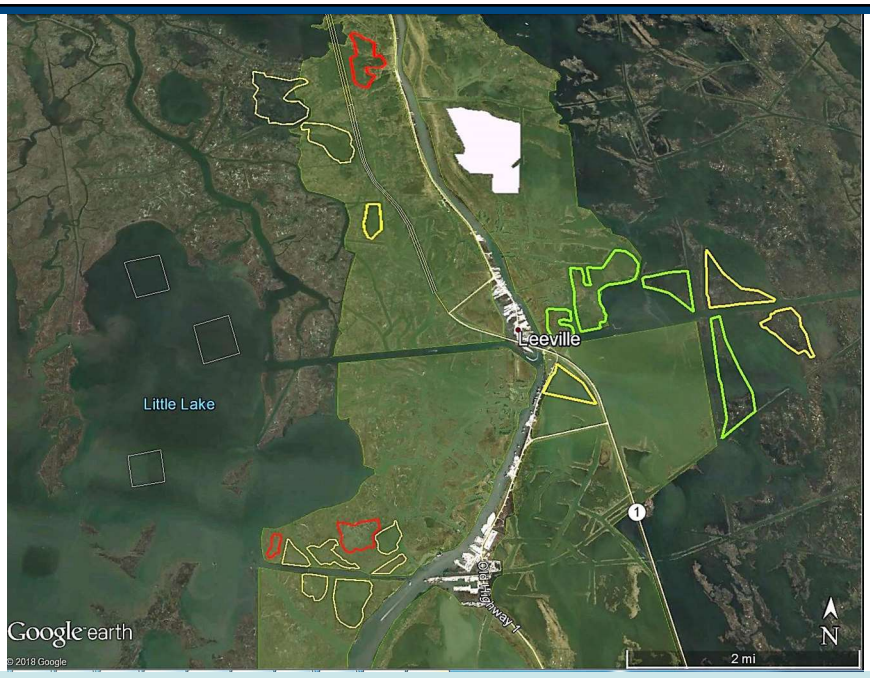


PPL30 CWPPRA Regional Planning Team Meeting

Morgan City, LA

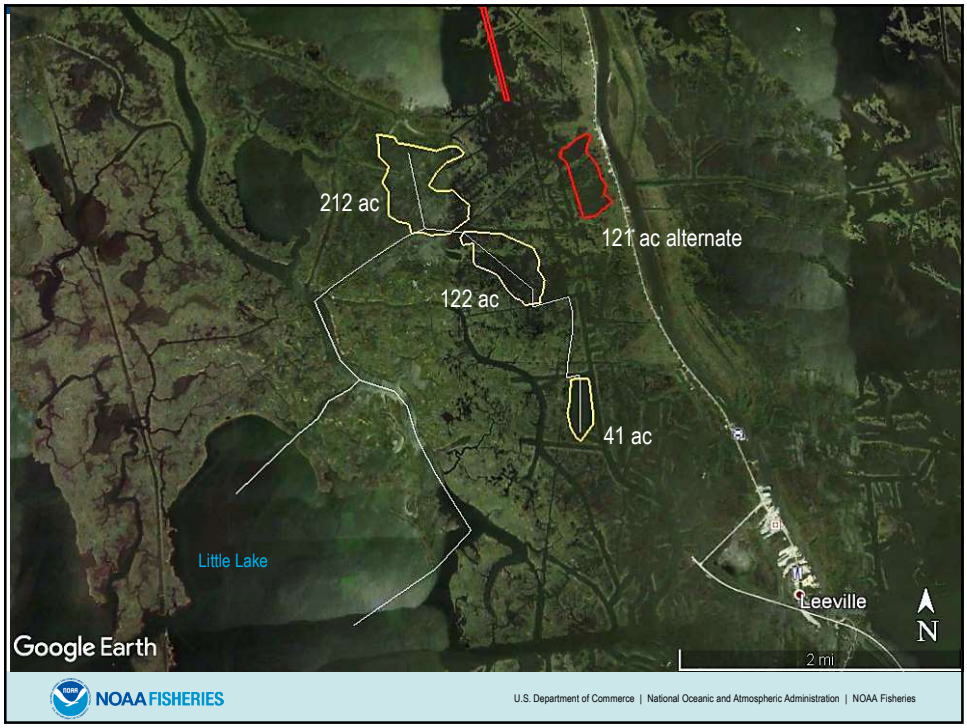
NOAA FISHERIES SERVICE

February 5, 2020



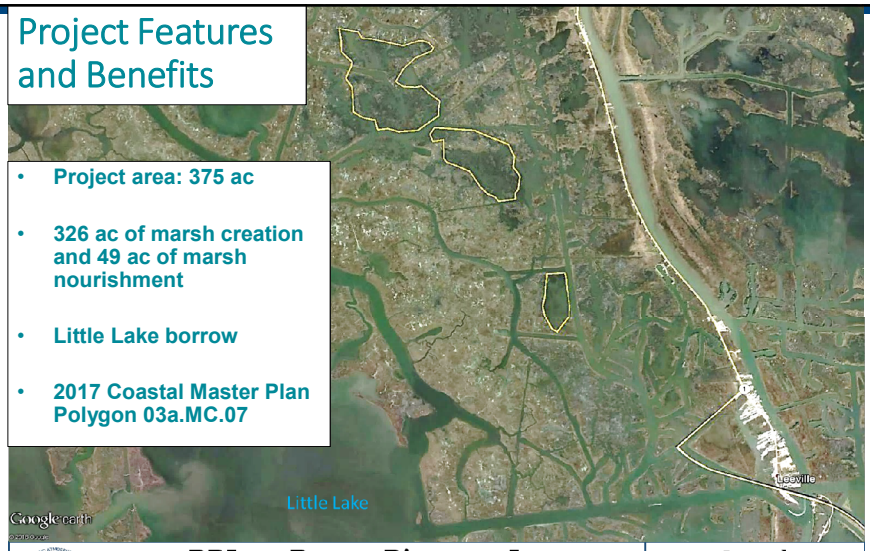
NOAA FISHERIES

U.S. Department of Commerce | National Oceanic and Atmospheric Administration | NOAA Fisheries



Project Features and Benefits

- **Project area: 375 ac**
- **326 ac of marsh creation and 49 ac of marsh nourishment**
- **Little Lake borrow**
- **2017 Coastal Master Plan Polygon 03a.MC.07**



PPL30 Bayou Pierre et Lee Marsh Creation and Nourishment

326 Acres Marsh Creation
49 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2020

Legend

Marsh Creation

NOAA FISHERIES

U.S. Department of Commerce | National Oceanic and Atmospheric Administration | NOAA Fisheries

Summary

- Total: 375 ac
  - Marsh Creation: 326 ac
  - Marsh Nourishment: 49 ac
- Little Lake Borrow
- Estimated Net Acre: 250-300 ac
- Estimated Construction Cost with Contingency: $15M - $20M

Contact information:
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R3 TE-10

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name
Hackberry Marsh Creation and Nourishment

Project Location
Region 3, Terrebonne Basin, Lafourche Parish

Problem
The Terrebonne Basin is an abandoned delta complex, characterized by a thick section of unconsolidated sediments that are undergoing dewatering and compaction, contributing to high subsidence, and a network of old distributary ridges extending southward from Houma. Historically, subsidence and numerous oil and gas canals and pipelines in the area have contributed significantly to wetland losses. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres/year. This loss amounts to up to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate for the project area is -1.05%/year based on the Timbalier Bay subunit from 1985 to 2016.

Goals
The project goal is to create and nourish approximately 187 acres (ac) of brackish emergent marsh (165 ac creation, 22 ac nourishment). The Golden Meadow to Fourchon polygon holistic concept is restore and bolster the structural framework of the marsh and provide synergy with adjacent infrastructure, flood protection, and communities limited to areas that remain unaddressed (by CWPPRA and other programs) while considering regional sediment management and infrastructure.

Proposed Solution
The proposed project goals are to create approximately 165 ac and nourish 22 ac of marsh. Sediment would be hydraulically dredged using a small barge from Little Lake via pipeline. The borrow area would be designed to avoid adverse impacts to the existing shorelines of Little Lake. Containment dikes will be constructed around the marsh creation area to retain sediment during pumping. The containment dikes will be degraded and/or gapped no later than three years post construction. The need to include plantings along the edge of the disposal areas adjacent to open water will be assessed. During both Phase 0 and Phase 1, opportunities would be explored to increase the amount of marsh creation.

Preliminary Project Benefits

1) *What is the total acreage benefited both directly and indirectly?*
   This total project area is 187 ac.

2) *How many acres of wetlands will be protected/created over the project life?*
   Approximately 150 – 200 ac of marsh will be protected/created over the project life.

3) *What is the anticipated loss rate reduction throughout the area of direct benefits over the project life (e.g., 50% reduction in the background loss rate)?*

The anticipated land loss rate reduction throughout the area of direct benefits will be 50% over the projects life.

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 will help maintain or restore the structural integrity of the Hackberry Bay shoreline and natural Bayou Lafourche bank.

5) *What is the net impact of the project on critical and non-critical infrastructure?*
The project will provide additional protection to LA 1 south of Golden Meadow. The project would also provide positive impacts to non-critical (i.e., minor oil and gas facilities) infrastructure. Minor oil and gas facilities and pipelines in the area would benefit from an increase in marsh acreage. The project will help protect the community of Leeville.

6) *To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?*
This is an area of need due to the lack of previous restoration efforts.

Considerations
The proposed project has potential utility/pipeline considerations.

Preliminary Construction Costs
The estimated construction cost plus 25% contingency is $15M-$20M.

Preparer(s) of Fact Sheet:
Dawn Davis, NOAA Fisheries, 225-380-0041, Dawn.Davis@noaa.gov
Brandon Howard, NOAA Fisheries, 225-380-0050, Brandon.Howard@noaa.gov

PPL30 Hackberry Marsh Creation and Nourishment

165 Acres Marsh Creation
22 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2020

Legend

Marsh Creation

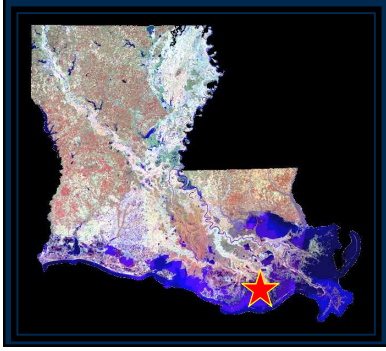
Science, Service, Stewardship

Habitat Conservation Division

Hackberry Marsh Creation and Nourishment

Region 3 – Terrebonne Basin

Presenter: Dawn Davis, Fishery Biologist



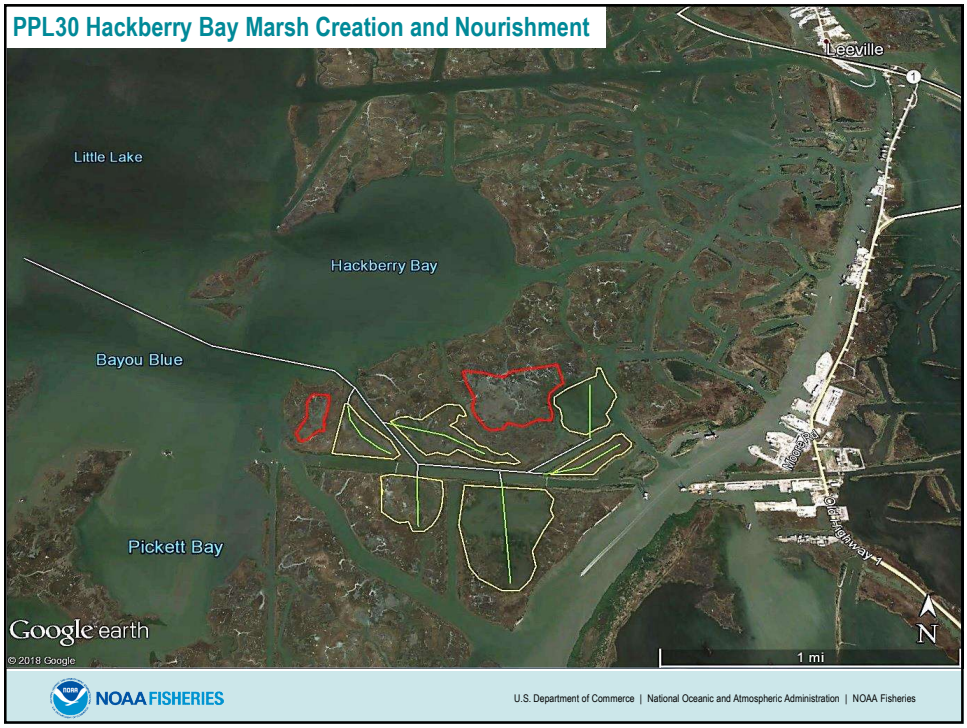
PPL30 CWPPRA Regional Planning Team Meeting

Morgan City, LA

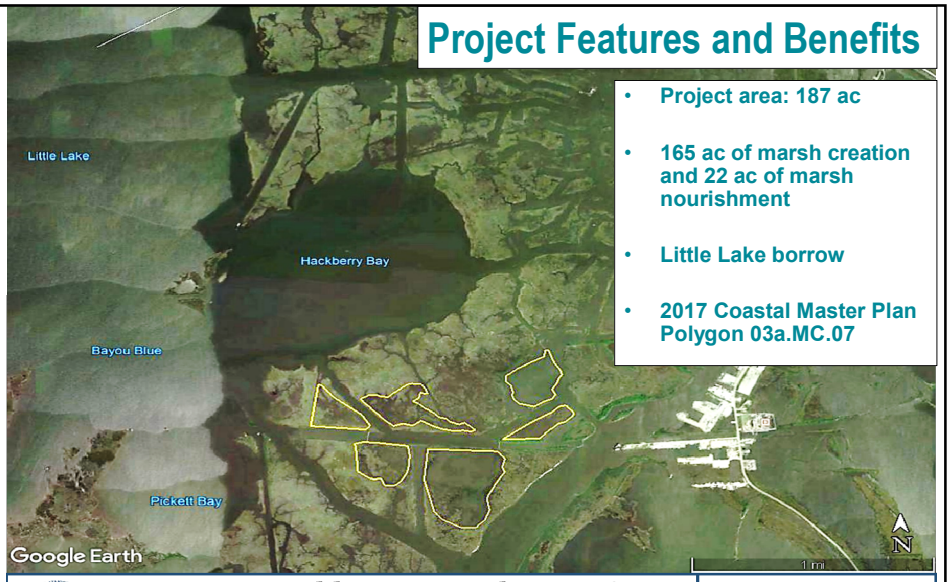
NOAA FISHERIES SERVICE

February 6, 2020

NOAA



Project Features and Benefits



- Project area: 187 ac
- 165 ac of marsh creation and 22 ac of marsh nourishment
- Little Lake borrow
- 2017 Coastal Master Plan Polygon 03a.MC.07

PPL30 Hackberry Marsh Creation and Nourishment

165 Acres Marsh Creation
22 Acres Marsh Nourishment

Federal Sponsor: NOAA Fisheries
2018 Aerial Imagery
Map Date 2-4-2020

Legend

Marsh Creation

Summary

- Total: 187 ac
  - Marsh Creation: 165 ac
  - Marsh Nourishment: 22 ac
- Little Lake Borrow
- Estimated Net Acre: 150-200 ac
- Estimated Construction Costs plus Contingency: $15M - $20M

Contact information:
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R3 TE-11

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name: North Lake Boudreaux Shoreline Protection and Marsh Creation

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish, South of Houma, Northern Shoreline of Lake Boudreaux

Problem:
Historic aerial photography indicates significant marsh loss in the project area north of Lake Boudreaux. Subsidence, canal dredging, saltwater intrusion, and altered hydrology (levees) are all important factors contributing to the loss of marsh habitat within and surrounding the project area. High saline waters enter Lake Boudreaux via Robinson and Boudreaux Canals impacting low salinity marshes north of Lake Boudreaux. USGS calculated a 1985-2016 area loss rate of -1.52% per year. Shoreline erosion rates in the areas without rock or a maintained earthen shoreline ranged from 60 ft./yr. to 9 ft./yr. Much of the lake shoreline has shoreline protection through the Corps and Parish Mitigation projects and CWPPRA West Lake Boudreaux TE-46 project. There are approximately 8,800 feet of shoreline between and adjacent to these existing projects that are in need of protection.

Goals:
The goals of the project are to: 1) protect approximately 8,800 feet of critical shoreline, 2) protect approximately 55 acres of marsh habitat, 3) create approximately 220 acres of marsh and nourish an additional 80 acres of marsh with material dredged from Lake Boudreaux, and 4) create 35,000 LF of terraces (19 acres of marsh).

Service goals include the creation of habitat or improvement of habitat for rare species, species of concern, and threatened and endangered species. The creation of brackish intertidal marsh habitat would benefit several species that are currently on the lists of rare species and species of concern. These include, but are not limited to Least Bittern, Black Rail, Mottled Duck, Brown Pelican, King Rail, and Saltwater topminnow.

Proposed Solutions:
The current proposed project would include 8,800 ft. of rock foreshore dike built to a settled height of +3.0 NAVD 88 along Lake Boudreaux shoreline at the -2 ft. contour. The proposed project would also create 200 acres of marsh and nourish an additional 50 acres of marsh using sediment hydraulically dredged from Lake Boudreaux. Existing canal spoil banks, emergent marsh, and segments of containment dikes will be used to contain the dredge material. Containment dikes will be degraded and/or gapped as necessary to reestablish hydrologic connectivity with adjacent wetlands. The current proposal would also create 35,000 LF of terraces (20 acres of marsh) in the open water area north and east of the lake which would protect the Ward 7 levee.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Approximately 480 acres would be benefited.

2) How many acres of wetlands will be protected/created over the project life? The total net acres protected/created over the project life are approximately 195 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%). Loss rate reduction should 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. This project would contribute to protection of the Lake Boudreaux shoreline and the Ward 7 Levee.

5) What is the net impact of the project on critical and non-critical infrastructure? Oil and gas facilities would be protected along with the newly constructed Terrebonne Non-Federal Levee, and Ward 7 Levee. The project would also help protect the city of Houma, Chauvin, and Boudreaux.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? This project would work synergistically with TE-46 and the Terrebonne Parish Ward 7 mitigation.

Identification of Potential Issues:
There could be pipelines in the marsh creation and terracing areas.

Preliminary Construction Costs:
The estimated construction cost range is $20-25 M.

Preparer(s) of Fact Sheet:
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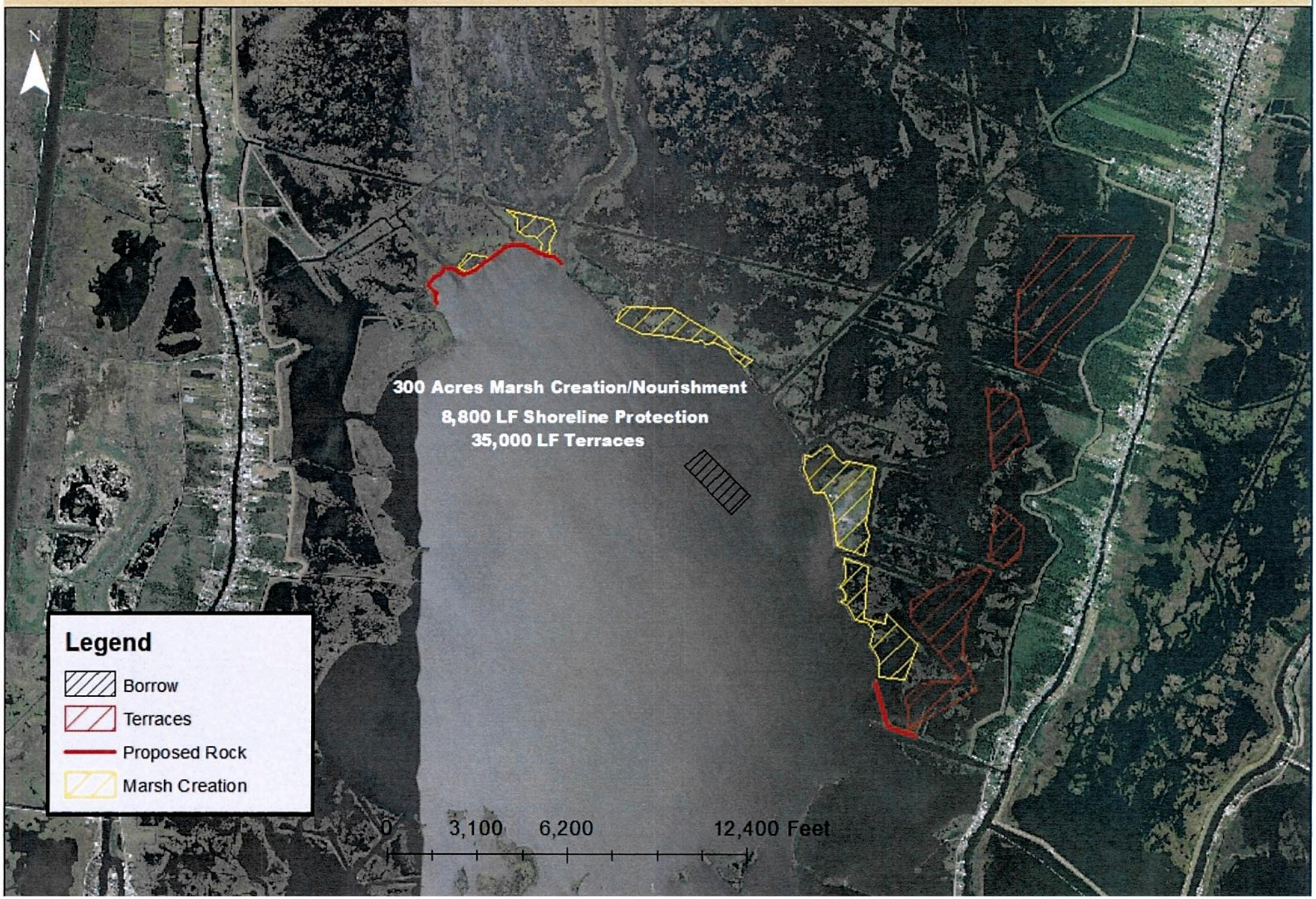
U.S Fish and Wildlife Service - Louisiana Ecological Sevices Field Office

PPL30 - North Lake Boudreaux Marsh Creation and Shoreline Protection

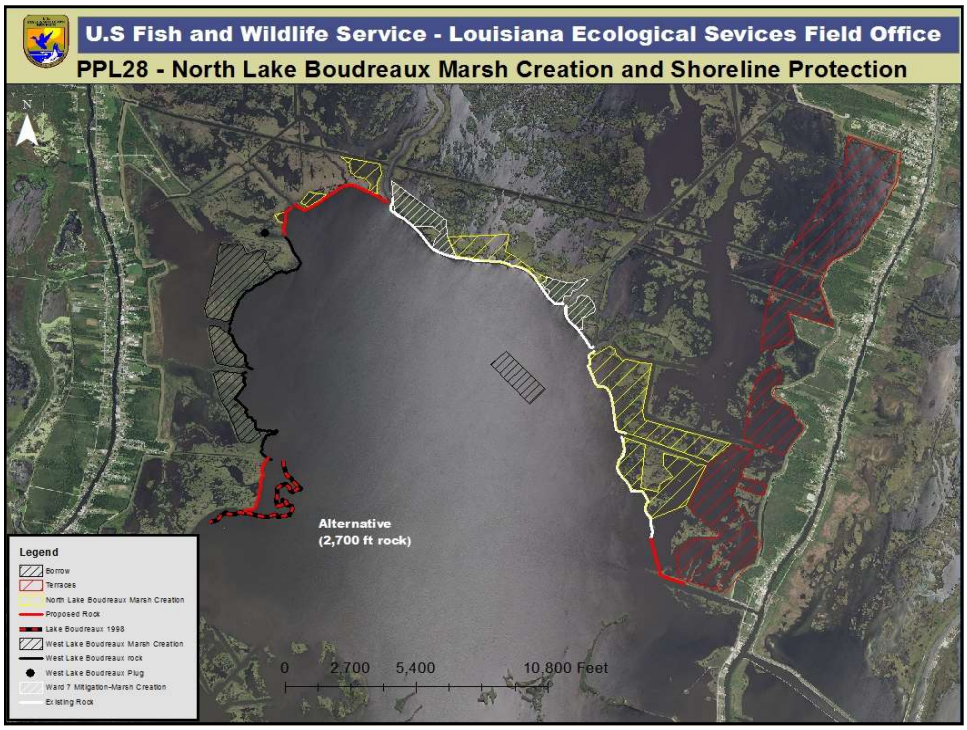


PPL30 NORTH LAKE BOUDREAUX MARSH CREATION AND SHORELINE PROTECTION

NORTH LAKE BOUDREAUX MARSH CREATION AND SHORELINE PROTECTION

Problem:

- **Subsidence, canal dredging, saltwater intrusion, and altered hydrology**
- **Shoreline Erosion**
- **Erosion rates between 9-60 ft./yr.**


U.S Fish and Wildlife Service - Louisiana Ecological Sevices Field Office
PPL28 - North Lake Boudreaux Marsh Creation and Shoreline Protection
N
Alternative
(2,700 ft rock)
Legend
Borrow
Terraces
North Lake Boudreaux Marsh Creation
Proposed Rock
Lake Boudreaux 1998
West Lake Boudreaux Marsh Creation
West Lake Boudreaux rock
West Lake Boudreaux Plug
Ward 7 Mitigation-Marsh Creation
Existing Rock
0 2,700 5,400 10,800 Feet


U.S Fish and Wildlife Service - Louisiana Ecological Sevices Field Office
PPL30 - North Lake Boudreaux Marsh Creation and Shoreline Protection
250 Acres Marsh Creation/Nourishment
8,800 LF Shoreline Protection
35,000 LF Terraces
Legend
Borrow
Terraces
Proposed Rock
Marsh Creation
0 3,100 6,200 12,400 Feet

NORTH LAKE BOUDREAUX MARSH CREATION AND SHORELINE PROTECTION

Solution:

- **Build 8,300 ft. of foreshore rock dike along the -2 ft. contour and built to a height of +3.0 ft.**
- **Hydraulically dredge material from Lake Boudreaux water bottom to create 200 acres and nourish 50 acres of marsh.**
- **Construct 35,000 lf of Terraces (30 acres of Marsh).**

NORTH LAKE BOUDREAUX MARSH CREATION AND SHORELINE PROTECTION

Goals:

- Protect +11,000 feet of critical shoreline and 75-100 acres of marsh.
- Create 200 acres of marsh.
- Nourish 50 acres of marsh.
- Create 35,000 lf of terraces (30 acres of marsh).

Net Acres:

- Total net acres = 195 acres marsh (not including shoreline protection)

Potential Issues:

- There are two existing borrow site that could be utilized if needed.

Preliminary Construction Costs

- The estimated construction cost range plus 25% contingency $20-25M.

Species of Concern and Rare Species

- Least Bittern
- Black Rail
- Mottled Duck
- Brown Pelican
- Louisiana Eyed Silkmoth
- King Rail

R3 TE-12

PPL 30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name:
Bayou Barre Marsh Creation and Terracing

Project Location:
Region 3, Terrebonne Basin, Terrebonne Parish. Southeast Montegut between Wonder Lake and Madison Bay.

Problem:
The marshes near the Madison Bay area have experienced tremendous wetland loss due to a variety of factors, including subsidence, saltwater intrusion, a lack of sediment supply, and oil and gas activities. The loss of the marshes have exposed significant infrastructure to open water conditions and has made the area less suitable for various wildlife and fisheries. The 1985 to 2016 loss rate for the Wonder Lake area is 1.67%/yr. With high wetland loss in the vicinity, the Morganza Hurricane Protection Levee to the north of the project area has become extremely susceptible to high wave energies with the increase in fetch.

Goals :
This project would strategically tie together three ridges (Bayou Terrebonne Ridge, Bayou St. Jean Charles Ridge, and Point au Chene Ridge) and two other unconstructed CWPPRA projects (Maddison Bay Marsh Creation and Terracing project and Island Road Marsh Creation project).

Specific goals: 1) Create 315 acres of brackish intertidal marsh, 2) nourish 25 acres of brackish intertidal marsh, and 3) construct 13,000 LF of terraces (3.5 acres).

Service goals include the creation of habitat or improvement of habitat for rare species, species of concern, and threatened and endangered species. The creation of brackish intertidal marsh habitat would be beneficial to several species that are currently on the lists of rare species and species of concern. These include, but are not limited to Least Bittern, Black Rail, Mottled Duck, Brown Pelican, King Rail, Louisiana Eyed Silkmoth and Saltwater topminnow. Keeping these species off the threatened and endangered list is a goal of FWS because at that point ALL Federal agencies must then address those species.

Proposed Solution:
This project would propose to create/nourish approximately 339 acres of emergent marsh by utilizing a small hydraulic dredge to pump material from Maddison Bay borrow area. The distance required to pump that material could be kept under 15,000 feet. That material would be placed in shallow open water areas between Wonder Lake and Maddison Bay. Utilizing a small dredge would reduce the height of the containment dikes needed to create marsh in open water areas. At this time there are remnant dikes that are still in tack surrounding most of the marsh creation cells. Dredge material would be placed to a height conducive for the creation of healthy intertidal marsh. All constructed containment dikes would be sufficiently gapped or degraded no later than 3 years post construction to allow for fisheries access.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly?
This total project area is 400 acres.

2) How many acres of wetlands will be protected/created over the project life?
Approximately 277 ac of brackish marsh will be protected/created over the 20 year project life.

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 land loss rate reduction throughout the area of direct benefits would be 50-74% over the 20 year project life.

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 help restore portions of the Wonder Lake shoreline and portions of the Bayou Barre bankline.

5) What is the net impact of the project on critical and non-critical infrastructure?
This project would help protect the Morganza Hurricane Protection Levee, Point Barre road, several camps, and some oil and gas infrastructure.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects?
This project would work synergistically with two other projects (Maddison Bay Marsh Creation and Terracing project and Island Road Marsh Creation project) which would tie together three ridges (Bayou Terrebonne Ridge, Bayou St. Jean Charles Ridge, and Pointe aux Chene Ridge).

Identification of Potential Issues:
There would most likely be some pipeline issues, numerous oyster leases, and poor soils within the project area.

Preliminary Construction Costs:
The estimated construction cost including 25% contingency is $20-$25M.

Preparer(s) of Fact Sheet:
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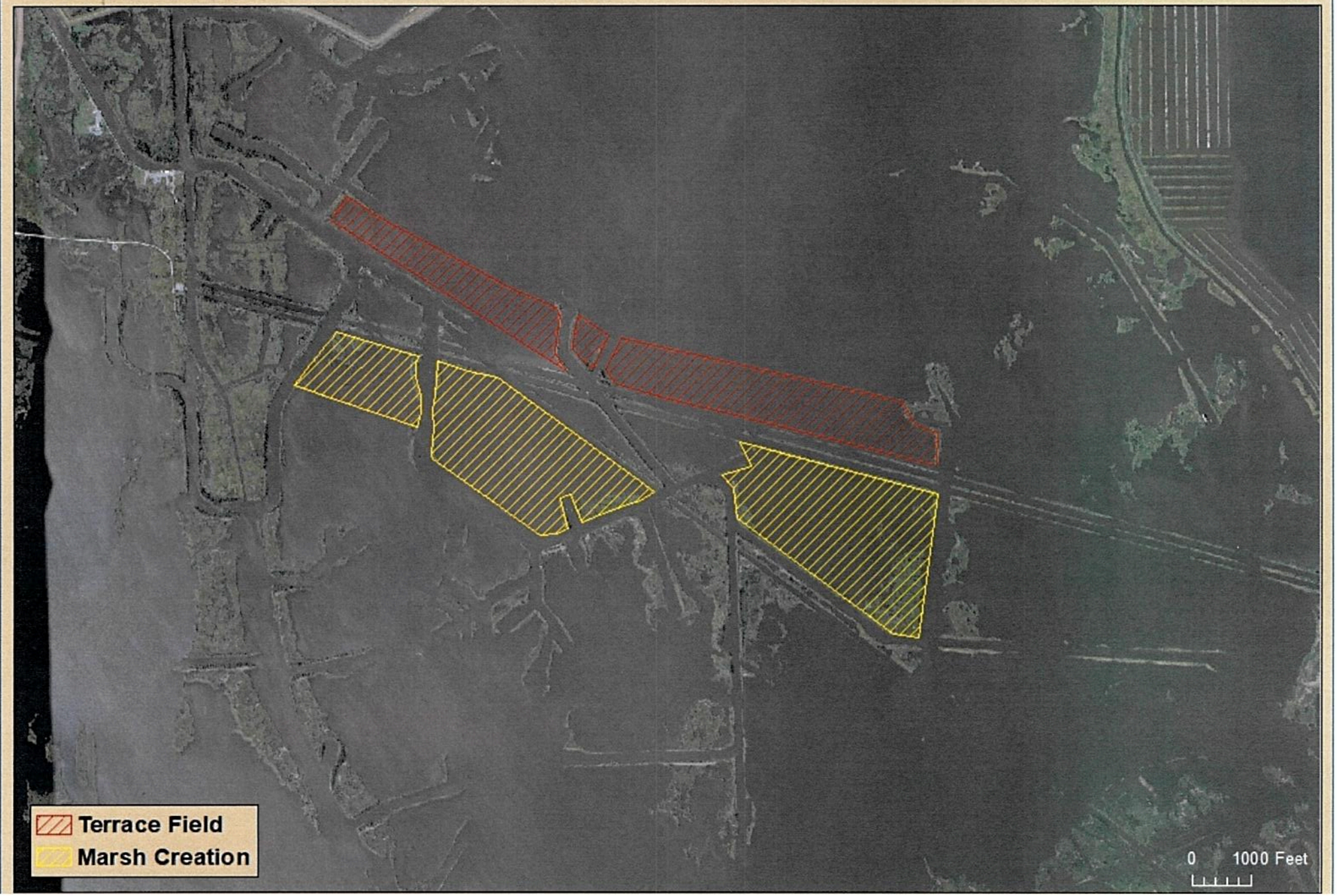
Fish & Wildlife Service

Louisiana Ecological Services Field Office

PPL 30 Bayou Barre Marsh Creation

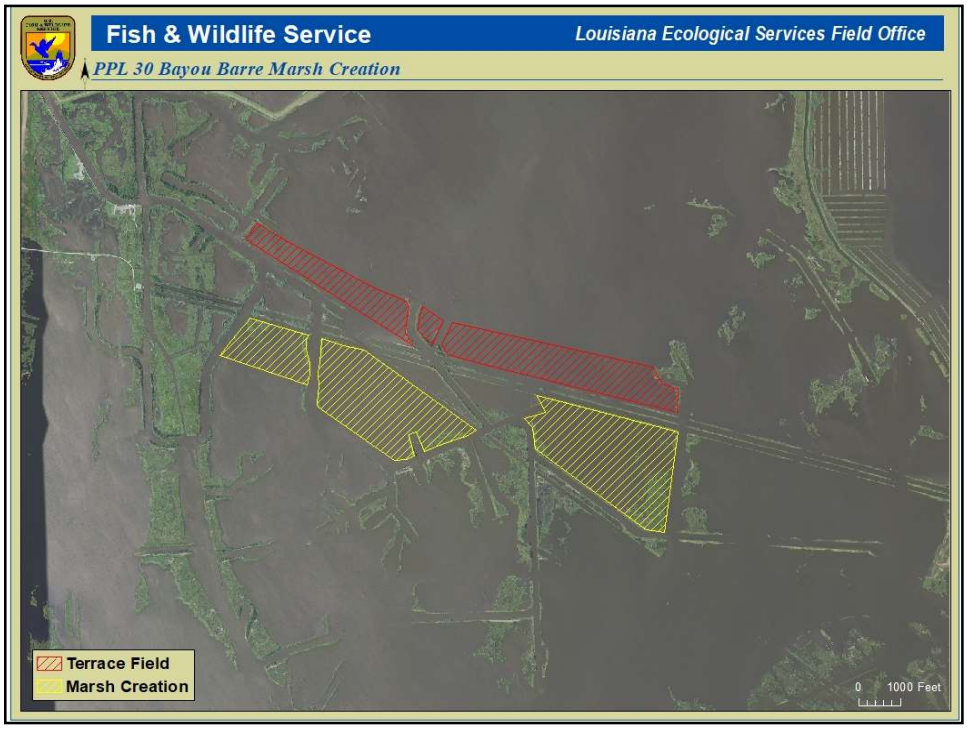


BAYOU BARRE MARSH CREATION AND TERRACING

BAYOU BARRE MARSH CREATION AND TERRACING

Problem:

- Project area wetlands loss is due to subsidence, saltwater intrusion, a lack of sediment supply, and oil and gas activities.
- The 1985 to 2016 loss rate 1.67%/yr. (Wonder Lake)
- Losses have exposed infrastructure to open water conditions and has made habitats in the area less suitable for various fish and wildlife species.



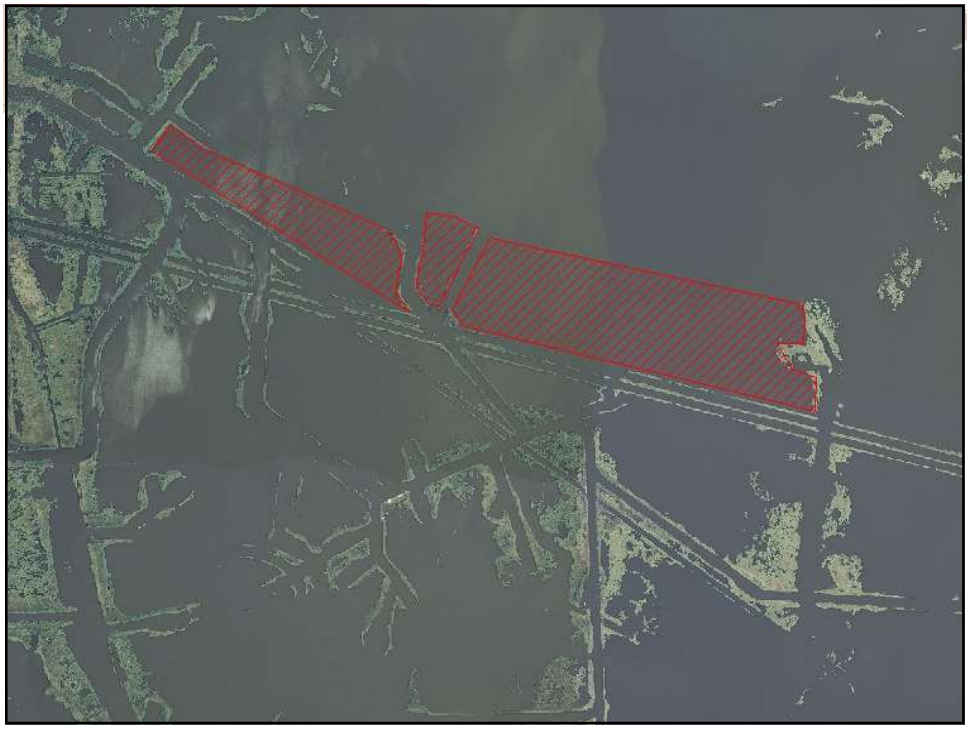
BAYOU BARRE MARSH CREATION AND TERRACING

Concerns:

1) Maddison Bay project was placed on the Inactive list.

2) Issues with crossing pipeline (CPRA)
- We have recently crossed pipeline with very little cover (Bayou Bonfouca)
- Private pipeline companies have said this would not be a problem in this area with the depth of water above the pipeline to float the disposal pipeline

3) Issues with poor soils and constructing containment dikes
- With the small dredge (16-18 inch dredge) overbuilt containment dikes are not needed. Low velocity pumping allows water/material being pumped to remain at lower levels.
- The area we are looking at building marsh are mostly surrounded by some type of levee or containment dike. We have a base for the containment dikes…material is preloaded.



BAYOU BARRE MARSH CREATION AND TERRACING

- This area is an incredible area of need. No CWPPRA project has been constructed in the entire Eastern Terrebonne area.
- This project would show that we can tie together three ridges (Bayou Terrebonne Ridge, Bayou St. Jean Charles Ridge, and Point au Chene Ridge) which would be very strategic in this area.
- Tie synergistically with two other CWPPRA projects (Maddison Bay Marsh Creation and Terracing project-Inactive and Island Road Marsh Creation project-Phase *I*)

BAYOU BARRE MARSH CREATION AND TERRACING

Goals:

- Create 315 acres of marsh.
- Nourish 25 acres of marsh.
- Create 13,000 LF of terraces

Net Acres:

- Total net acres = 273 acres marsh including 4 acres of terraces

Potential Issues:

- Multiple pipelines, poor soils, and mindset of "we can not build anything in that area because….."

Preliminary Construction Costs

- The estimated construction cost range plus 25% contingency is $20-$25M.

Species of Concern and Rare Species

- Least Bittern
- Black Rail
- Mottled Duck
- Brown Pelican
- King Rail

R3 TE-13

PPL30 PROJECT NOMINEE FACT SHEET
February 5, 2020

Project Name: Southwest Golden Meadow Marsh Creation

Project Location:
Region 3, Terrebonne Basin, Lafourche Parish, South and West of Golden Meadow

Problem:
Historic aerial photography indicates significant marsh loss in the project area west of Golden Meadow near Catfish Lake. Subsidence, canal dredging, saltwater intrusion, and altered hydrology (levees) are all important factors contributing to the loss of marsh habitat within and surrounding the project area. Since 1932, the Terrebonne Basin has lost approximately 20% of its wetlands. Current loss rates range from approximately 4,500 to 6,500 acres /year. This loss amounts to 130,000 acres during the next 20 years. One-third of the Terrebonne Basin's remaining wetlands would be lost to open water by the year 2040. The wetland loss rate for areas near the project area is -1.05%/year based on USGS hyper temporal data from 1984 to 2016.

Goals:
The goals of the project are to: 1) protect approximately 10,000 feet of hurricane protection levee, 2) create approximately 280 acres of marsh and nourish an additional 50 acres of marsh with material dredged from large open water south and west of project.

Service goals include the creation of habitat or improvement of habitat for rare species, species of concern, and threatened and endangered species. The creation of brackish intertidal marsh habitat would benefit several species that are currently on the lists of rare species and species of concern. These include, but are not limited to Least Bittern, Black Rail, Mottled Duck, Brown Pelican, King Rail, and Saltwater topminnow.

Proposed Solutions:
The current proposed project would create 280 acres of marsh and nourish an additional 50 acres of marsh using sediment hydraulically dredged from an unnamed lake south and west of the project area. Existing canal spoil banks, emergent marsh, and segments of containment dikes will be used to contain the dredge material. Containment dikes will be degraded and/or gapped as necessary to reestablish hydrologic connectivity with adjacent wetlands.

Preliminary Project Benefits:
1) What is the total acreage benefited both directly and indirectly? Approximately 350 acres would be benefited.

2) How many acres of wetlands will be protected/created over the project life? The total net acres protected/created over the project life are approximately 256 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%). Loss rate reduction should 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.

This project would contribute to the protection of the Larose to Golden Meadow Hurricane Protection Levee. Directly protect several homes and business.

5) What is the net impact of the project on critical and non-critical infrastructure? Would protect the Larose to Golden Meadow Hurricane Protection Levee and several homes and business outside of the levee system.

6) To what extent does the project provide a synergistic effect with other approved and/or constructed restoration projects? Would work with the Catfish Lake MC and Shoreline Protection project (Phase I funding) and North Catfish Lake Marsh Creation project (Phase I).

Identification of Potential Issues:
Could be oyster leases located in the borrow site.

Preliminary Construction Costs:
The estimated construction cost range plus 25% contingency is $15-$20M.

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U.S. Fish & Wildlife Service

Louisiana Ecological Services Field Office

Southwest Golden Meadow Marsh Creation

PPL30
SOUTHWEST GOLDEN MEADOW MARSH CREATION

SOUTHWEST GOLDEN MEADOW MARSH CREATION

Problem:

- **Subsidence, canal dredging, saltwater intrusion, and altered hydrology**
- **Shoreline Erosion**
- **Erosion rates between 9-60 ft./yr.**

SOUTHWEST GOLDEN MEADOW MARSH CREATION

Solution:

- **Create 280 acres and nourish 50 acres of marsh.**
- **Hydraulically dredge material from open water area south and west of project site.**

SOUTHWEST GOLDEN MEADOW MARSH CREATION

Goals:

- Protect +10,000 feet of critical Hurricane Protection Levee.
- Create 280 acres of marsh.
- Nourish 50 acres of marsh.

Net Acres:

- Total net acres = 256 acres marsh

Potential Issues:

- Potential oyster leases in borrow area.

Preliminary Construction Costs

- The estimated construction cost range plus 25% contingency $20-25M.

Species of Concern and Rare Species

- Least Bittern
- Black Rail
- Mottled Duck
- Brown Pelican
- Louisiana Eyed Silkmoth
- King Rail