

Bill Goff

**SUMMARY
OF THE
FIFTH CWPPRA CANDIDATE PRIORITY PROJECT LIST**



CWPPRA AGENCIES

State of Louisiana, Corps of Engineers, National Marine Fisheries Service, Fish and
Wildlife Service, Environmental Protection Agency,
and Natural Resources Conservation Service

DECEMBER 1995

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION**

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Note

This document provides a summary of the candidate projects that were reviewed in 1995 for the CWPPRA fifth priority list. Cost figures and project benefit information originates from the CWPPRA Engineering and Environmental Work Groups respectively, and as of January 1996 have not been accepted by the CWPPRA Task Force. Thus, the cost and benefit information included herein are not finalized. Further refinements and modifications to the projects on this list may be anticipated.

TABLE OF CONTENTS

Summary Table of Candidate Projects	1
PONTCHARTRAIN BASIN	3
PPO-2A/G Lake Borgne Shore Protection	4
XPO-54 Bonnet Carre' Outfall Management	6
XPO-69 Marsh Creation at Bayou Chevee	8
BRETON SOUND BASIN	11
XBS-17 Will's Point Wetland Creation	12
MISSISSIPPI RIVER BASIN	15
PMR-8 Pass a Loutre Sediment Mining	16
XMR-10B Channel Armor Gap West	18
BARATARIA BASIN	21
BA-3C/PBA-12B Combined Naomi and BBWW East Bank Protection	22
Ba-3C Naomi Outfall Management	24
PBA-12B Barataria Bay East Bank Protection	26
PBA-20 Bayou Lafourche Siphon w/o cutoff structure	28
PBA-20i Bayou Lafourche Siphon with cutoff structure	30
XBA-48a Myrtle Grove Siphon	32
XBA-73 Jesuit Band Marsh Creation	34

TERREBONNE BASIN 37

PTE-15b(IV) 1	Isle Dernieres New Cut Closure Only w/o Ship Shoal Sand	38
PTE-15b(IV)	New Cut Closure / East Trinity Restoration with Ship Shoal Sand	40
PTE-15b(IV) 2	New Cut Closure / East Trinity Restoration w/o Ship Shoal Sand	42
PTE-26a	Bayou De Cade Hydrologic Restoration	44
TE-10, XTE 49	Grand Bayou / GIWW Diversion	46
XTE-45	Timbalier Island Restoration	48
XTE-69	Marsh Creation near Falgout Canal	50

ATCHAFALAYA BASIN 53

XAT-3	Point Chevreuil Shoreline Protection	54
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TECHE / VERMILION BASIN 57

PTV-10/XTV-25	Oaks/Avery Canal Hydrologic Restoration	58
PTV-19	Little Vermilion Bay Sediment Trapping	60
T/V-5/7	Marsh Island Hydrologic Restoration	62
XTV-30	Vegetation Plantings in the Chenier Plain	64
PTV-7b	Vegetative Plantings in Little Vermilion Bay	66
PTV-8	Cypremort Pt. to Avery Island Vegetative Plantings	68
ME-6	Big Burn Marsh Creation	70
XME-38b	White Lake Vegetative Plantings	72
C/S-15	Broussard Lake Vegetative Plantings	74

MERMENTAU BASIN 77

XME-22	Pecan Island Terracing	78
XME-29	Freshwater Bayou Bank Stabilization	80

CWPPRA Fifth Priority List Project Ranking
(Preliminary - Not approved by the CWPPRA Task Force as of 2/6/96)

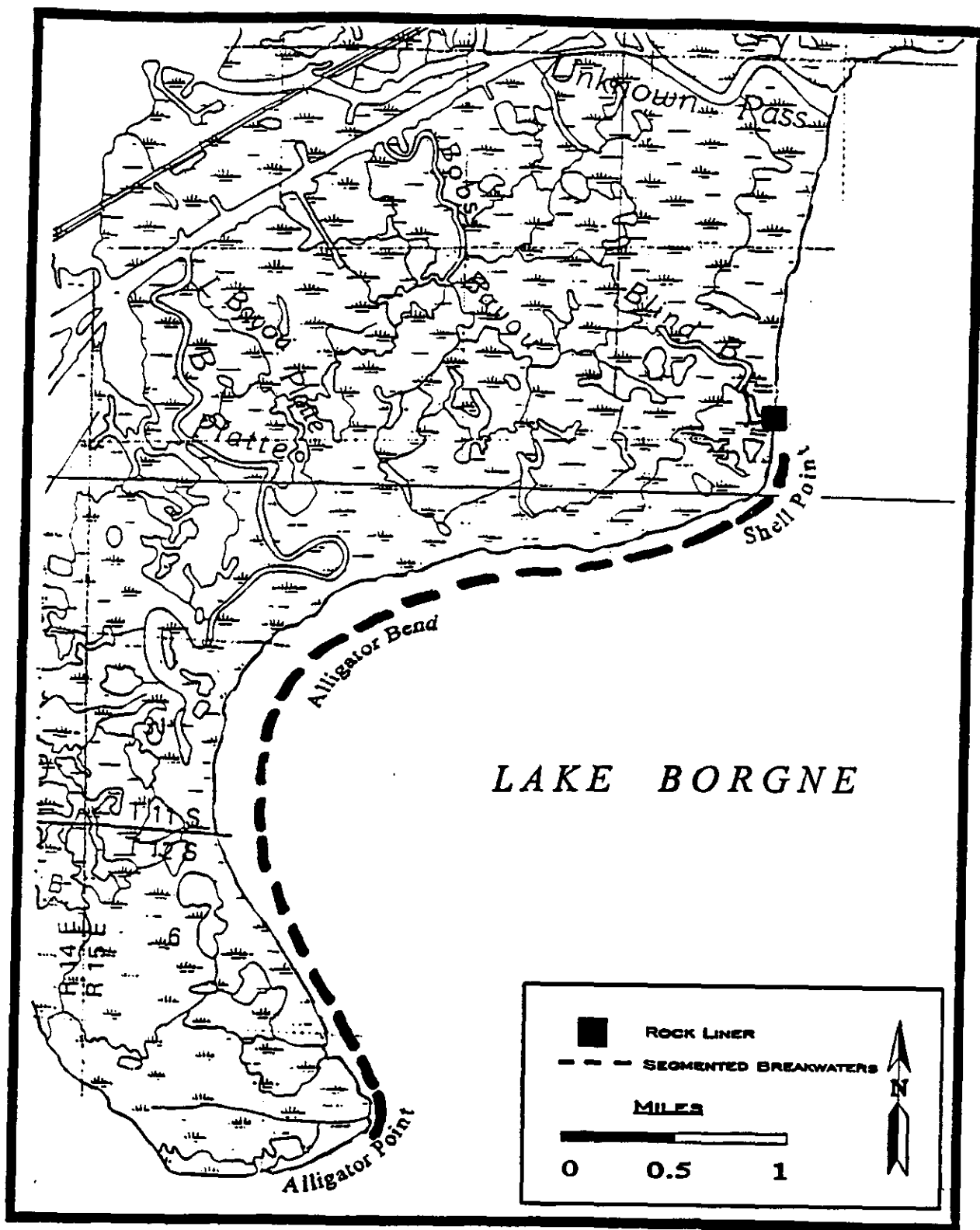
Rank	Project Number	Project Name	Federal Sponsor	Fully Funded Cost	Project Area (ac)	Benefited Acres	AAHU's	Ranking Criteria Score
1	BA-3C	Naomi Outfall Management	NRCS	\$1,744,000	26,603	636	379	8.51
2	BA-3C/PBA-12B	Naomi Outfall/BBWW Bank Protection	NRCS	\$4,090,000	31,980	900	676	8.06
3	TE-10/XTE-49	Grand Bayou/GIWW Freshwater Div.	USFWS	\$5,136,000	26,530	1,575	771	7.99
4	PTV-19	Little Vermillion Bay Sediment Trapping	NMFS	\$940,000	964	441	149	7.93
5	TV-5/7	Marsh Island Hydrologic Restoration	USACE	\$4,056,000	6,697	408	453	7.46
6	CS-16	Black Bayou Culverts	USACE	\$9,051,000	75,421	837	592	7.11
7	PBA-20 i	Bayou Lafourche Siphon w/Cutoff Struct.	EPA	\$23,671,000	45,951	1,729	1,069	6.90
8	PBA-48A	Siphon at Myrtle Grove	NMFS	\$15,526,000	15,894	1,117	527	6.78
9	CS-11B	Sweet Lake/Willow Lake Hydrologic Rest.	NRCS	\$4,763,000	5,796	320	261	6.63
10	XME-22	Pecan Island Terracing	NMFS	\$2,220,000	1,950	378	240	6.42
11	XP0-69	Marsh Creation at Bayou Chevee	USACE	\$2,891,000	231	199	121	6.37
12	XMR10-B	Channel Armor Gap West	USACE	\$4,552,000	4,800	630	357	6.25
13	PPO-2A/G	Lake Borgne Shore Protection	NRCS	\$6,194,000	3,546	378	131	6.18
14	PBA-20	B. Lafourche Siphon w/o Cutoff Struct.	EPA	\$22,256,000	45,951	428	499	6.08
15	XME-29	Freshwater Bayou Bank Stabilization	NRCS	\$3,999,000	1,724	511	248	5.93
16	XTV-30	Vegetative Plantings in the Chenier Plain	NRCS	\$1,829,000	2,501	767	246	5.72
17	PTV-10/XTV-25	OakA/Avery Canal Hydrologic Restoration	NRCS	\$2,673,000	5,365	16	118	5.55
18	PBA-12B	Barateria Bay WW East Bank Prot.	NRCS	\$2,303,000	2,790	223	129	5.44
19	PMR-8	Pass a Loutre Sediment Mining	USACE	\$1,816,000	300	120	125	5.38
20	XBS-17	Wills Point Marsh Creation	USACE	\$4,528,000	530	271	157	5.27
21	XTE-45	Timbalier Barrier Island Restoration	NMFS	\$6,582,000	723	211	230	5.10
22	PTE-15B (IV) 2	Isle Dernieres (without Ship Shoal sand)	EPA	\$12,022,000	282	468	384	4.86
23	XTE-69	Marsh Creation near Falgout Canal	USACE	\$4,310,000	348	189	122	4.42
24	PTE-15B (IV) 1	Isle Dernieres (New Cut only)	EPA	\$5,861,000	282	134	118	4.38
25	XBA-73	Jesuit Bend Marsh Creation	USACE	\$5,213,000	250	175	97	4.38
26	PTE-26A	Bayou DeCade Hydrologic Restoration	NRCS	\$4,154,000	3,794	81	74	4.30
27	PTE-15B (IV)	Isle Dernieres (New Cut and E. Trinity)	EPA	\$19,000,000	282	468	384	4.28
28	XPO-54	Bonnet Carre Outfall Management	USACE	\$15,248,000	11,368	188	66	2.98
29	XAT-3	Point Chevreuil Shore Protection	NRCS	\$2,559,000	60	59	16	2.12

CWPPRA Fifth Priority List Project Ranking Variables
(Preliminary - Not approved by the CWPPRA Task Force as of 2/6/96)

Rank	Project Number	Project Name	Cost-									
			Average Annual Cost	Average Annual Cost/AAHU	effectiveness Index (weighted)	Longevity/ Sustainability (weighted)	Restoration Plan Support (weighted)	Supporting Partnerships (weighted)	Public Support (weighted)	Risk & Uncertainty (weighted)	Total Weighted Variables	
1	BA-3C	Naomi Outfall Management	\$129,000	\$340	5.50	1.07	1.50	0.00	0.15	0.29	8.51	
2	BA-3C/PBA-12B	Naomi Outfall/BBWW Bank Protection	\$339,000	\$501	5.04	0.92	1.50	0.00	0.35	0.25	8.06	
3	TE-10/XTE-49	Grand Bayou/GIWW Freshwater Div.	\$397,000	\$515	5.00	0.71	1.50	0.00	0.50	0.28	7.99	
4	PTV-19	Little Vermilion Bay Sediment Trapping	\$86,000	\$577	4.87	1.03	1.50	0.00	0.15	0.39	7.93	
5	TV-5/7	Marsh Island Hydrologic Restoration	\$366,000	\$808	4.47	1.05	1.50	0.00	0.00	0.44	7.46	
6	CS-16	Black Bayou Culverts	\$863,000	\$1,458	3.76	1.44	1.50	0.00	0.15	0.26	7.11	
7	PBA-20 i	Bayou Lafourche Siphon w/Cutoff Struct.	\$2,434,000	\$2,277	3.23	1.44	1.50	0.00	0.50	0.24	6.90	
8	PBA-48A	Siphon at Myrtle Grove	\$1,468,000	\$2,786	2.99	1.50	1.50	0.00	0.35	0.44	6.78	
9	CS-11B	Sweet Lake/Willow Lake Hydrologic Rest.	\$456,000	\$1,747	3.55	0.88	1.50	0.00	0.35	0.36	6.63	
10	XME-22	Pecan Island Terracing	\$217,000	\$904	4.33	1.11	0.45	0.00	0.15	0.38	6.42	
11	XPO-69	Marsh Creation at Bayou Chevee	\$286,000	\$2,364	3.18	1.31	1.50	0.00	0.00	0.37	6.37	
12	XMR10-B	Channel Armor Gap West	\$444,000	\$1,244	3.95	1.44	0.45	0.00	0.00	0.41	6.25	
13	PPO-2A/G	Lake Borgne Shore Protection	\$602,000	\$4,595	2.39	1.44	1.50	0.00	0.50	0.36	6.18	
14	PBA-20	B. Lafourche Siphon w/o Cutoff Struct.	\$2,285,000	\$4,579	2.39	1.44	1.50	0.00	0.50	0.25	6.08	
15	XME-29	Freshwater Bayou Bank Stabilization	\$392,000	\$1,581	3.66	1.18	0.45	0.00	0.15	0.49	5.93	
16	XTV-30	Vegetative Plantings in the Chenier Plain	\$171,000	\$695	4.65	0.32	0.45	0.00	0.15	0.15	5.72	
17	PTV-10/XTV-25	Oaks/Avery Canal Hydrologic Restoration	\$216,000	\$1,831	3.49	0.86	0.45	0.00	0.35	0.40	5.55	
18	PBA-12B	Barataria Bay WW East Bank Prot.	\$220,200	\$1,707	3.57	0.94	0.45	0.00	0.15	0.33	5.44	
19	PMR-8	Pass a Loure Sediment Mining	\$179,000	\$1,432	3.78	0.84	0.45	0.00	0.00	0.31	5.38	
20	XBS-17	Willis Point Marsh Creation	\$451,000	\$2,873	2.95	1.44	0.45	0.00	0.00	0.43	5.27	
21	XTE-45	Timbalier Barrier Island Restoration	\$657,000	\$2,857	2.96	0.54	1.50	0.00	0.00	0.11	5.10	
22	PTV-15B (IV) 2	Isle Dernieres (without Ship Shoal sand)	\$1,298,000	\$3,380	2.76	0.47	1.50	0.00	0.00	0.13	4.86	
23	XTE-69	Marsh Creation near Falgout Canal	\$430,000	\$3,525	2.71	0.94	0.45	0.00	0.00	0.31	4.42	
24	PTE-15B (IV) 1	Isle Dernieres (New Cut only)	\$598,000	\$5,068	2.27	0.47	1.50	0.00	0.00	0.14	4.38	
25	XBA-73	Jesuit Bend Marsh Creation	\$522,000	\$5,381	2.20	1.37	0.45	0.00	0.00	0.36	4.38	
26	PTE-26A	Bayou DeCade Hydrologic Restoration	\$350,000	\$4,730	2.36	0.34	1.50	0.00	0.00	0.10	4.30	
27	PTE-15B (IV)	Isle Dernieres (New Cut and E. Trinity)	\$2,067,000	\$5,383	2.20	0.47	1.50	0.00	0.00	0.11	4.28	
28	XPO-54	Bonnet Carre Outfall Management	\$949,000	\$14,379	1.03	0.45	1.50	0.00	0.00	0.00	2.98	
29	XAT-3	Point Chevreuil Shore Protection	\$228,000	\$14,250	1.04	0.30	0.45	0.00	0.00	0.34	2.12	

PONTCHARTRAIN BASIN

PPO-2A/G	Lake Borgne Shore Protection	4
XPO-54	Bonnet Carré Outfall Management	6
XPO-69	Marsh Creation at Bayou Chevee	8



PPO-2 a/g Lake Borgne Shore Protection

Project Name: PPO-2 a/g Lake Borgne Shore Protection

Federal Sponsor: NRCS

Location and Size:

This project is located in Orleans Parish on the land bridge separating Lake Borgne and Lake Pontchartrain between Alligator Point and Shell Point. The total project area is 3,546 ac (2,804 ac of brackish marsh and 742 ac of water).

Problems:

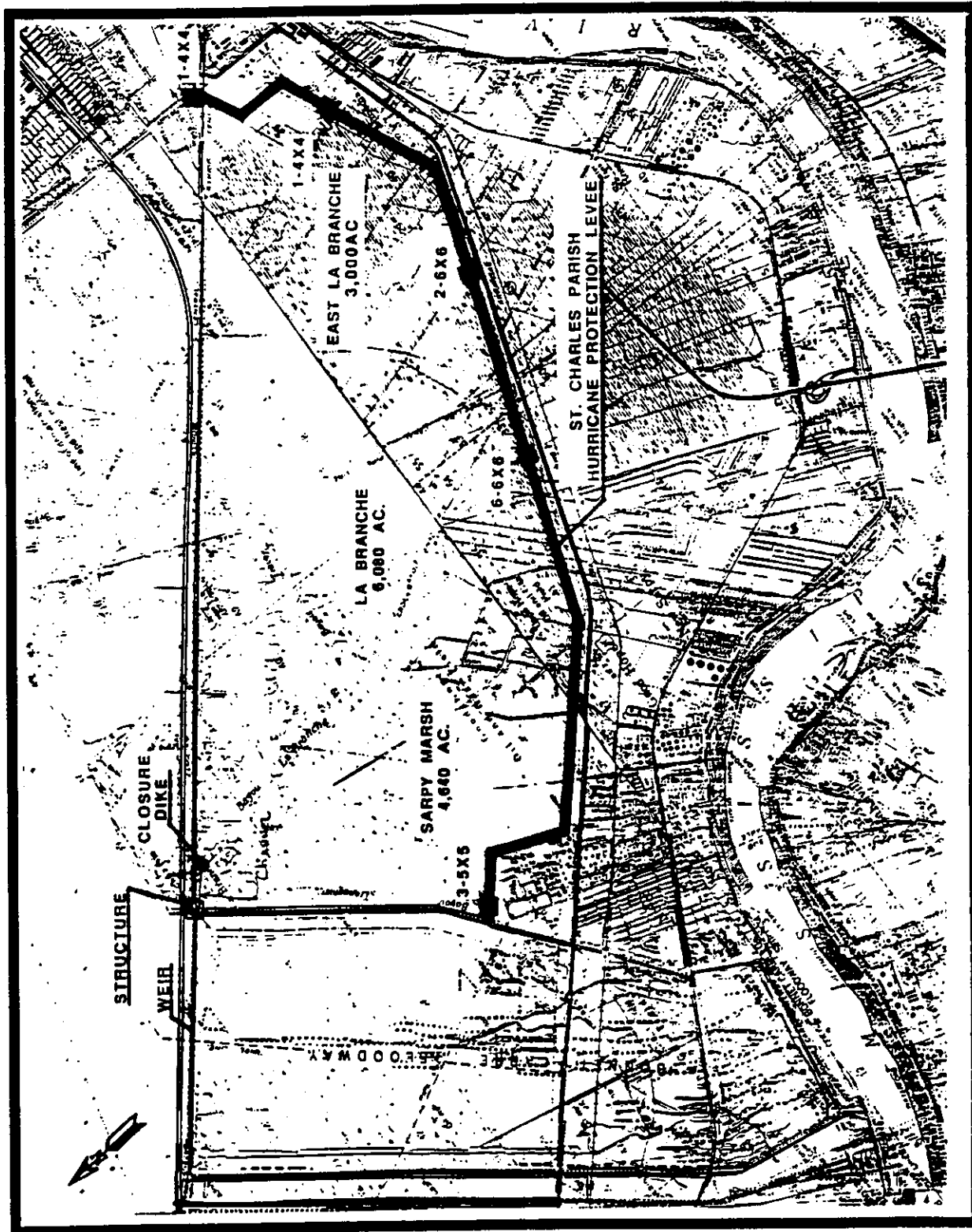
Shoreline erosion from Alligator Pt. to Shell Pt. and tidal scour in Blind Bayou.

Components:

The project calls for placing segmented breakwaters along approximately 5 miles of lake shore. Breakwaters will be placed approximately 300 ft offshore in 2 to 3 ft of water. Breakwater dimensions will be 7 ft high, 5 ft wide at crown and 175 ft long and spaced 200 ft apart. A rock liner will be installed in the mouth of Blind Bayou.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 6,149,000	\$ 4,595	131	107 ac	271 ac	378 ac



XPO-54 Bonnet Carre' Outfall Management (expanded)

Project Name: XPO-54 Bonnet Carré Outfall Management (expanded)

Federal Sponsor: USACOE

Location and Size:

The Project is located in the Bonnet Carré Spillway and in the western portion of the LaBranche wetlands between Hwy. 61 and Lake Pontchartrain in St. Charles Parish. The project consist of two wetland types: cypress/tupelo swamp, and fresh marsh. The total project area is 11,368 ac (8,511 ac of marsh/swamp, and 2,857 ac of water).

Problems:

Subsidence caused by freshwater, nutrient, and sediment starvation resulting from levee construction on the Mississippi River and saltwater intrusion into the La Branche Wetlands from Lake Pontchartrain.

Components:

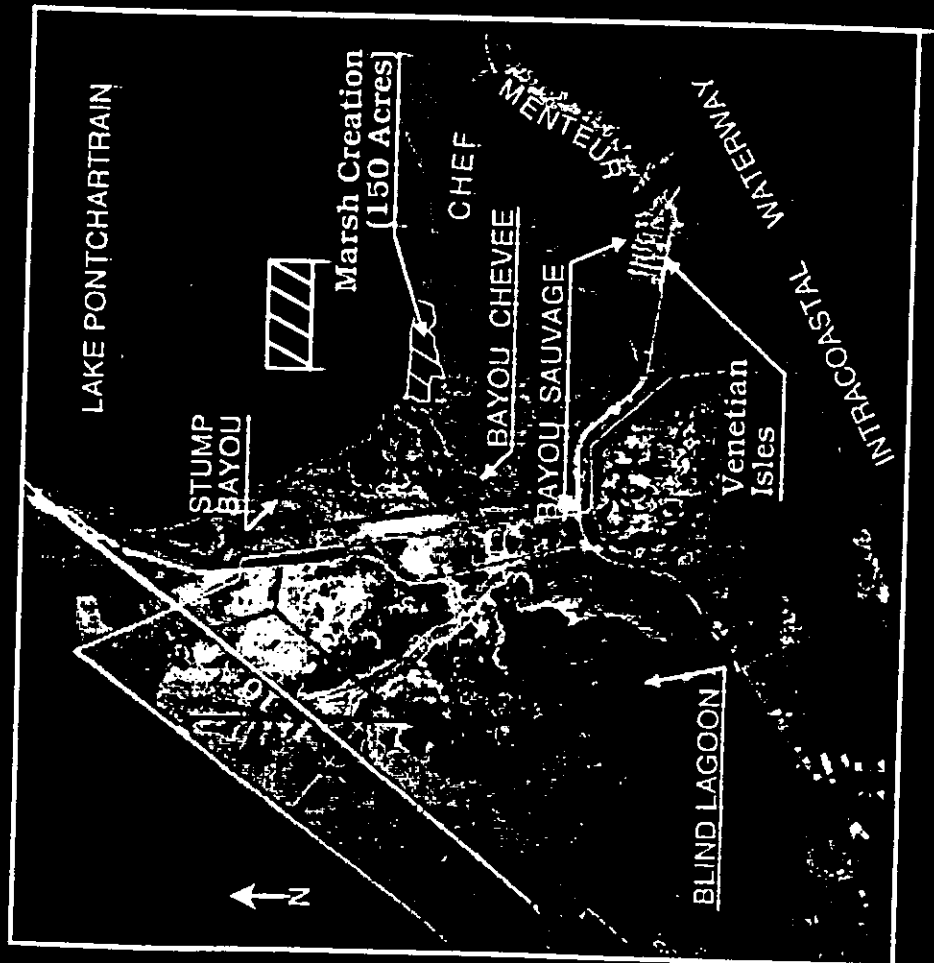
The project calls for a stone weir across the northern part of the Bonnet Carré Spillway, gated culverts through the eastern spillway levee to bring water into the La Branche Wetlands, and a canal closure with a boat bay across Bayou La Branche.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 15,248,000	\$ 14,379	66	163 ac	25 ac	188 ac

Marsh Creation at Bayou Chevee (XPO - 69)

 Borrow Area



XPO-69 Marsh Creation at Bayou Chevee

Project Name: XPO-69 Marsh Creation at Bayou Chevee

Federal Sponsor: USACOE

Location and Size:

This project is located in the Bayou Chevee marsh area approximately two miles west of Chef Menteur Pass on the Bayou Sauvage National Wildlife Refuge in Orleans Parish. The total project area is 231 ac (71 ac of brackish marsh and 160 ac water).

Problems:

Shoreline erosion and subsidence.

Components:

A 4,750 ft earthen dike will be built across the cove north of the severely eroding Bayou Chevee marsh. Dredged material from Lake Pontchartrain will be pumped behind this temporary retention dike to a final settled height conducive to marsh creation (147 ac created initially). Vegetation will be planted one year after construction to allow for revegetation.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 2,891,000	\$ 2,364	121	128 ac	71 ac	199 ac

BRETON SOUND BASIN

XBS-17	Will's Point Wetland Creation	11
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Project Name: XBS-17 Will's Point Wetland Creation

Federal Sponsor: USACOE

Location and Size:

This project is located in Plaquemines Parish approximately one mile east of Will's Point. The total project area is 530 ac (210 ac intermediate marsh and 320 ac open water).

Problems:

Subsidence and land loss due to the leveeing of the Mississippi River resulting in blocked nutrient, sediment, and freshwater introduction into the area.

Components:

The objective of this project is to pump dredged material from the Mississippi River at Will's Point into an area within a temporary retention dike at a height conducive to the restoration of vegetated marsh after subsidence. The creation area should be about 270 acres.

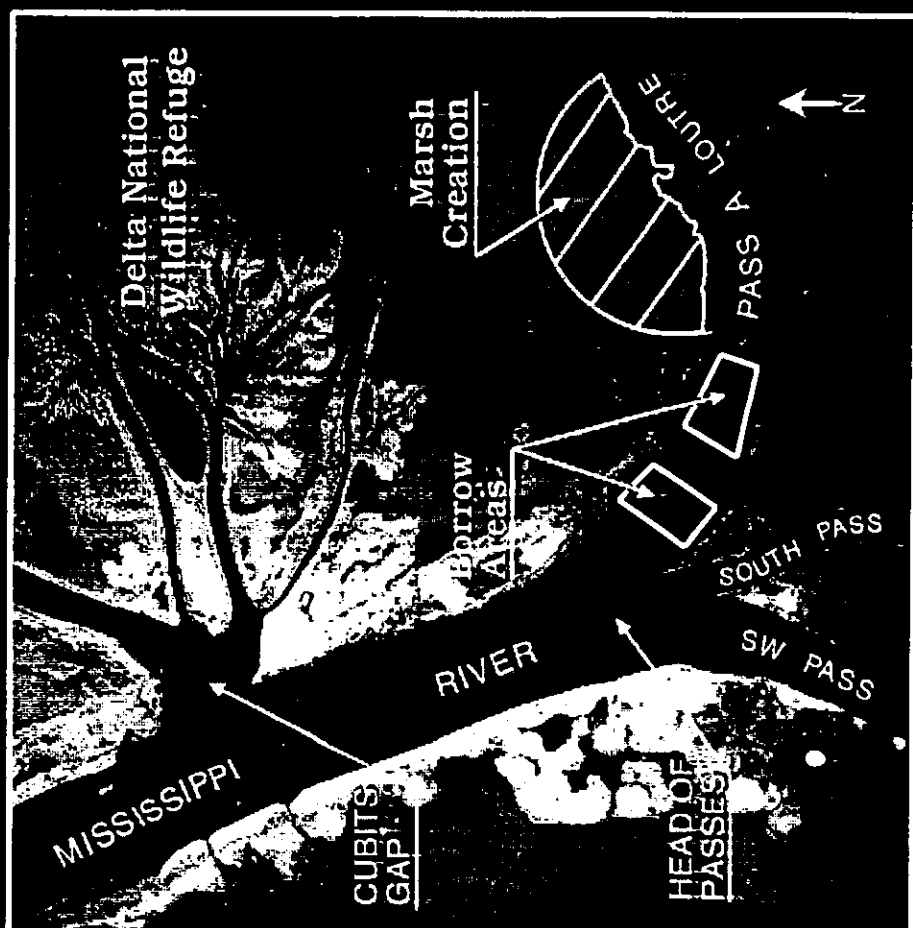
Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,528,000	\$ 2,873	157	268 ac	3 ac	271 ac

MISSISSIPPI RIVER BASIN

PMR-8	Pass a Loutre Sediment Mining	16
XMR-10B	Channel Armor Gap West	18

Pass A Loutre Sediment Mining (PMR - 8)



PMR-8 Pass a Loutre Sediment Mining

Project Name: PMR-8 Pass a Loutre Sediment Mining

Federal Sponsor: USACOE

Location and Size:

This project is located on the bird's foot delta of the Mississippi River north of the northern bank of Pass a Loutre in the Delta National Wildlife Refuge. The total project area is 300 ac (300 ac open water).

Problems:

Marsh loss was extensive between 1956 and 1978 due to subsidence and hurricanes.

Components:

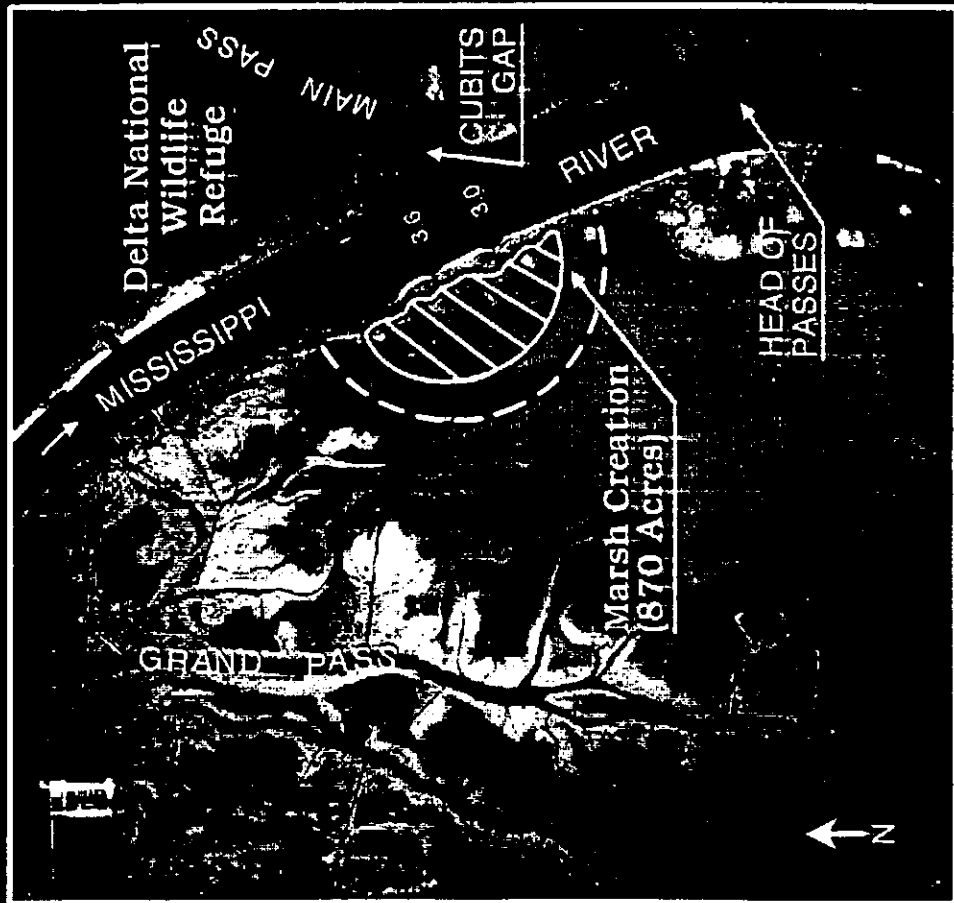
Approximately 800,000 cubic yards of material will be removed from Pass a Loutre by hydraulic cutter head dredge and placed in a shallow disposal area between Pass a Loutre and Raphael Pass. The material will be placed at an initial elevation not to exceed 3.5 ft NGVD.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 1,816,000	\$ 1,432	125	120 ac	0 ac	120 ac

Channel Armor Gap West (XMR - 10b)

-- Project Area Boundary
Existing Gaps, Miles 3.6
& 3.0 AHP Enlarge
to 300 ft.



XMR-10B Channel Armor Gap West

Project Name: XMR-10B Channel Armor Gap West

Federal Sponsor: USACOE

Location and Size:

This project is located approximately 6.5 mi below Venice and 3.5 mi above Head of Passes in Plaquemines Parish. There are two existing openings through the rock armor at the site [along the right descending bank (west bank) of the Mississippi River]. The total project area is 4,800 ac (60 ac fresh marsh and 4,740 ac open water).

Problems:

The major problem is land loss due to subsidence and the loss of sediment deposition by the Mississippi River since the construction of its levee system. In this project area the present narrow, shallow gaps through the levee do not introduce enough sediment to offset subsidence.

Components:

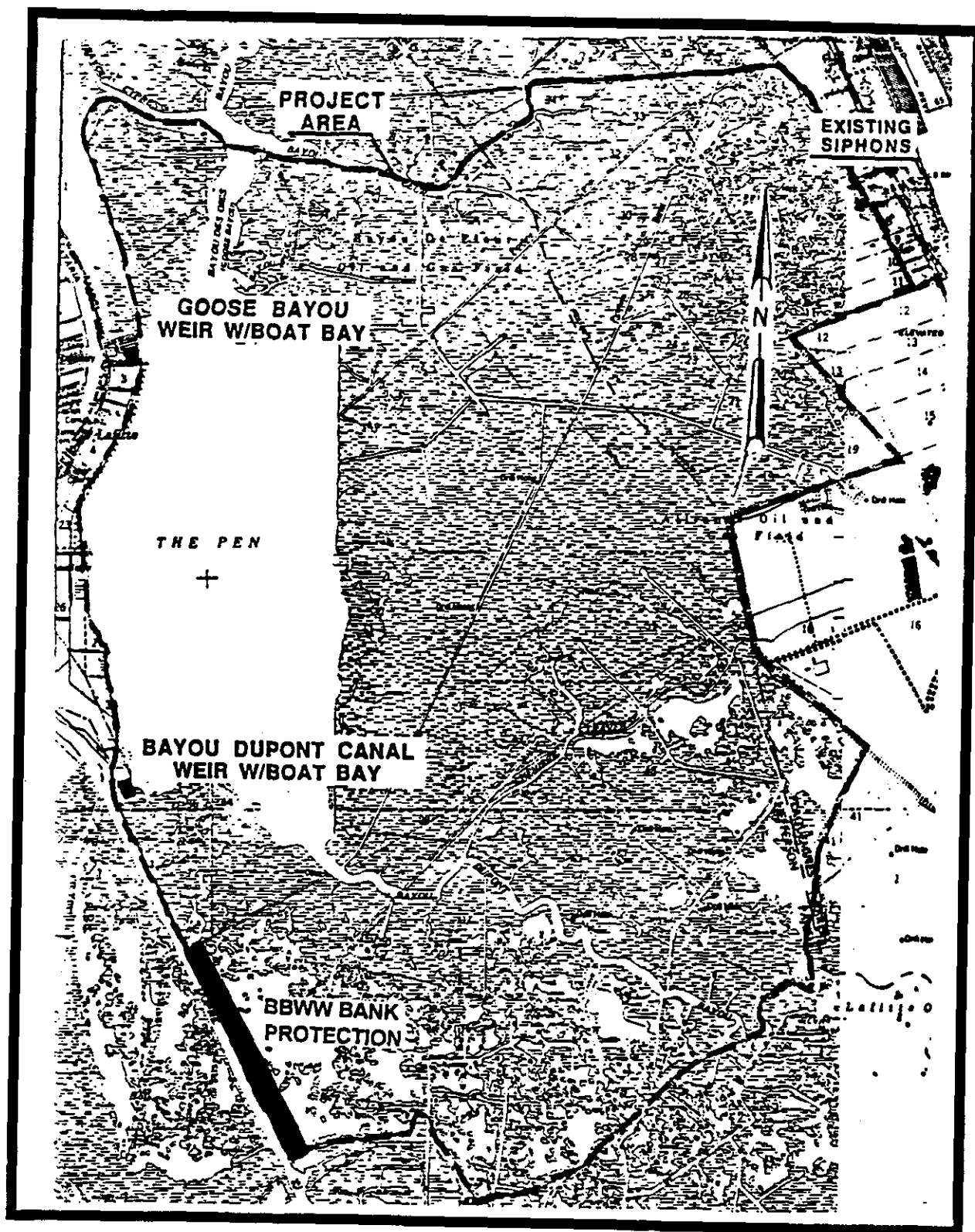
Increase the depths of the existing gaps thereby allowing greater diversion of river water and sediments.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,552,000	\$ 1,244	357	630 ac	0 ac	630 ac

BARATARIA BASIN

BA-3C/PBA-12B	Combined Naomi and BBWW East Bank Protection	21
Ba-3C	Naomi Outfall Management	25
PBA-12B	Barataria Bay East Bank Protection	27
PBA-20	Bayou Lafourche Siphon w/o cutoff structure	29
PBA-20i	Bayou Lafourche Siphon with cutoff structure	31
XBA-48a	Myrtle Grove Siphon	33
XBA-73	Jesuit Band Marsh Creation	35



Ba3c/PBA-12b Combined Naomi and BBWW East Bank Stabilization

Project Name: Ba3c/PBA-12b Combined Naomi and BBWW East Bank Stabilization

Federal Sponsor: NRCS

Location and Size:

This project calls for the management of the outfall from the Naomi (Lareussite) Siphon which is located near the community of Naomi along the Mississippi River in Plaquemines Parish. The project area extends westward to the Pen near Lafitte in Jefferson Parish. The total project area is 31,980 ac (18,046 ac marsh and 13,650 ac water).

Problems:

Construction of the Mississippi River levee has effectively stopped annual flooding that historically nourished surrounding marshes with sediments, nutrients, and freshwater that historically counteracted subsidence, saltwater intrusion, and subsequent marsh loss. Dredging of oil field canals and navigation channels (ie. Barataria Bay Waterway) provides avenues for saltwater intrusion.

Components:

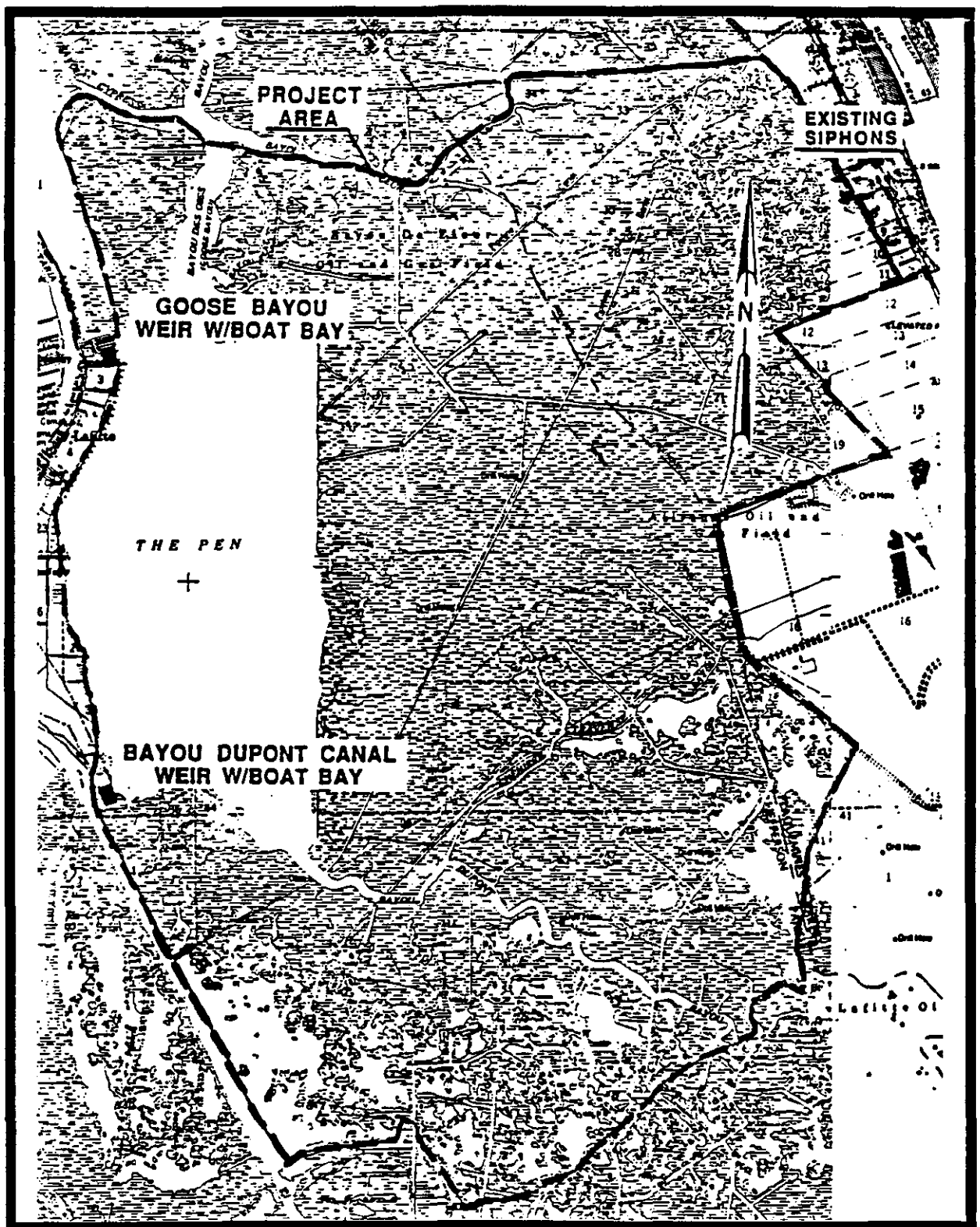
The outfall management plan is designed to maximize wetland benefits of the Naomi Siphon that delivers a maximum 2,144 cfs of water to the area.

The project calls for:

- 1) one weir with a boat bay on the Goose Bayou Canal connecting the Barataria Bay Waterway to The Pen at Lafitte (425'W x 11'D, with a 20'W x 6'D boat bay),
- 2) one weir with a boat bay on Bayou Dupont connecting the Barataria Bay Waterway to the Pen at its southwest corner (300'W x 21'D, with a 20'W x 6'D boat bay),
- 3) and approximately 10,200 ft of rock armor along the east bank of the Dupre' Cut.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,090,000	\$ 501	676	0 ac	900 ac	900 ac



Ba-3c Naomi Outfall Management

Project Name: Ba-3c Naomi Outfall Management

Federal Sponsor: NRCS

Location and Size:

This project calls for the management of the outfall from the Naomi (Lareusite) Siphon located near the community of Naomi along the Mississippi River in Plaquemines Parish. The project area extends west to the Pen near Lafitte in Jefferson Parish. The total project area is 26,603 ac (12,953 ac marsh and 13,650 ac water).

Problems:

Construction of the Mississippi River levee has effectively stopped annual flooding that historically nourished surrounding marshes with sediments, nutrients, and freshwater which counteracted subsidence, saltwater intrusion, and subsequent marsh loss. Dredging of oil field canals and navigation channels (ie. Barataria Bay Waterway) provides additional avenues for saltwater intrusion.

Components:

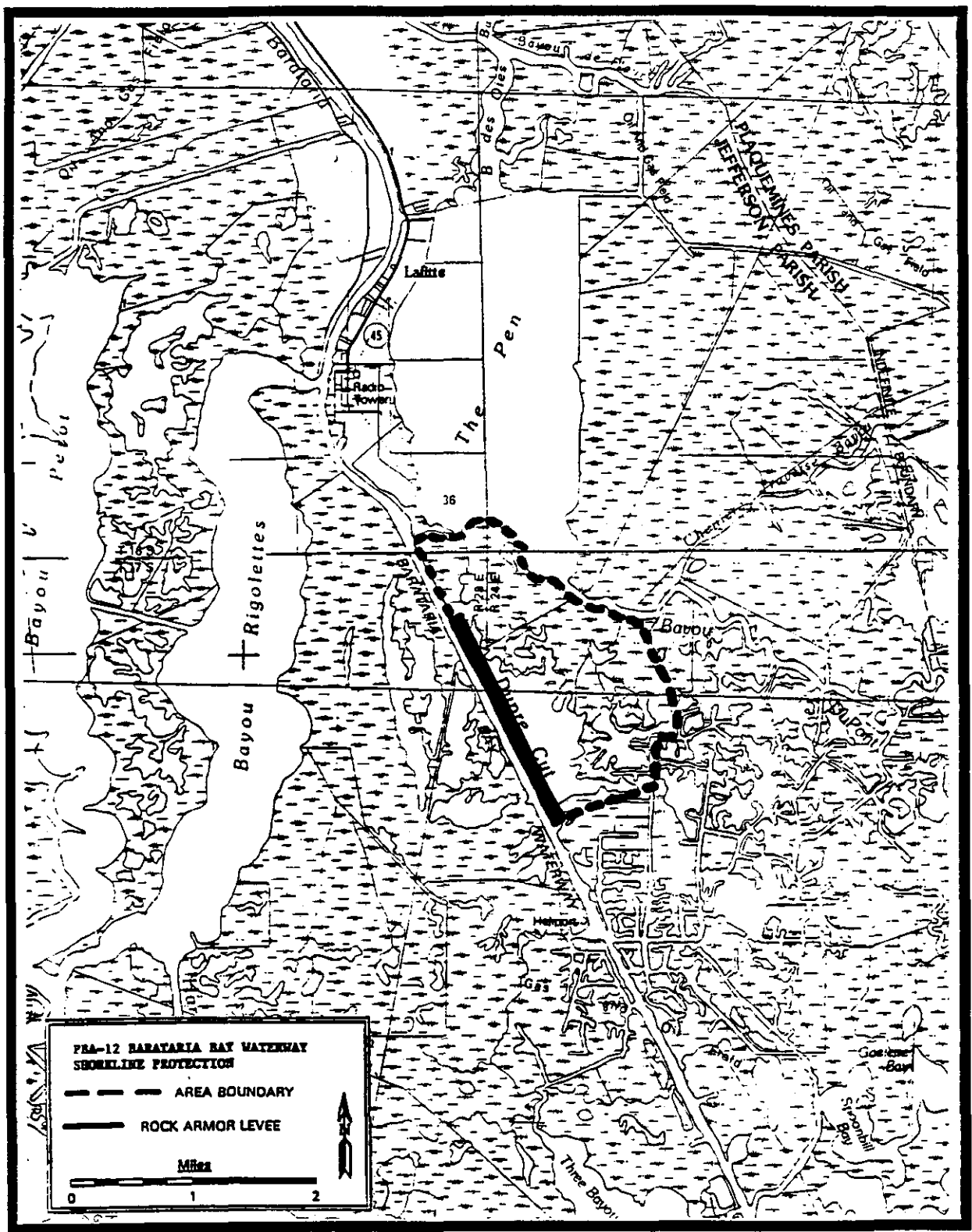
The outfall management plan is designed to maximize wetland benefits of the Naomi Siphon that delivers a maximum 2,144 cfs of water to the area.

The project calls for:

- 1) one weir with a boat bay on the Goose Bayou Canal connecting the Barataria Bay Waterway to The Pen at Lafitte (425'W x 11'D, with a 20'W x 6'D boat bay),
- 2) one weir with a boat bay on Bayou Dupont connecting the Barataria Bay Waterway to the Pen at its southwest corner (300'W x 21'D, with a 20'W x 6'D boat bay)

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 1,744,000	\$ 340	379	0 ac	636 ac	636 ac



PBA-12B Barataria Bay East Bank Protection

Project Name: PBA-12B Barataria Bay East Bank Protection

Federal Sponsor: NRCS

Location and Size:

This project is located in Jefferson Parish on the east bank of the Dupre Cut on the Barataria Bay Waterway. The total project area is 2,790 ac (1,479 ac brackish marsh and 1,311 ac water).

Problems:

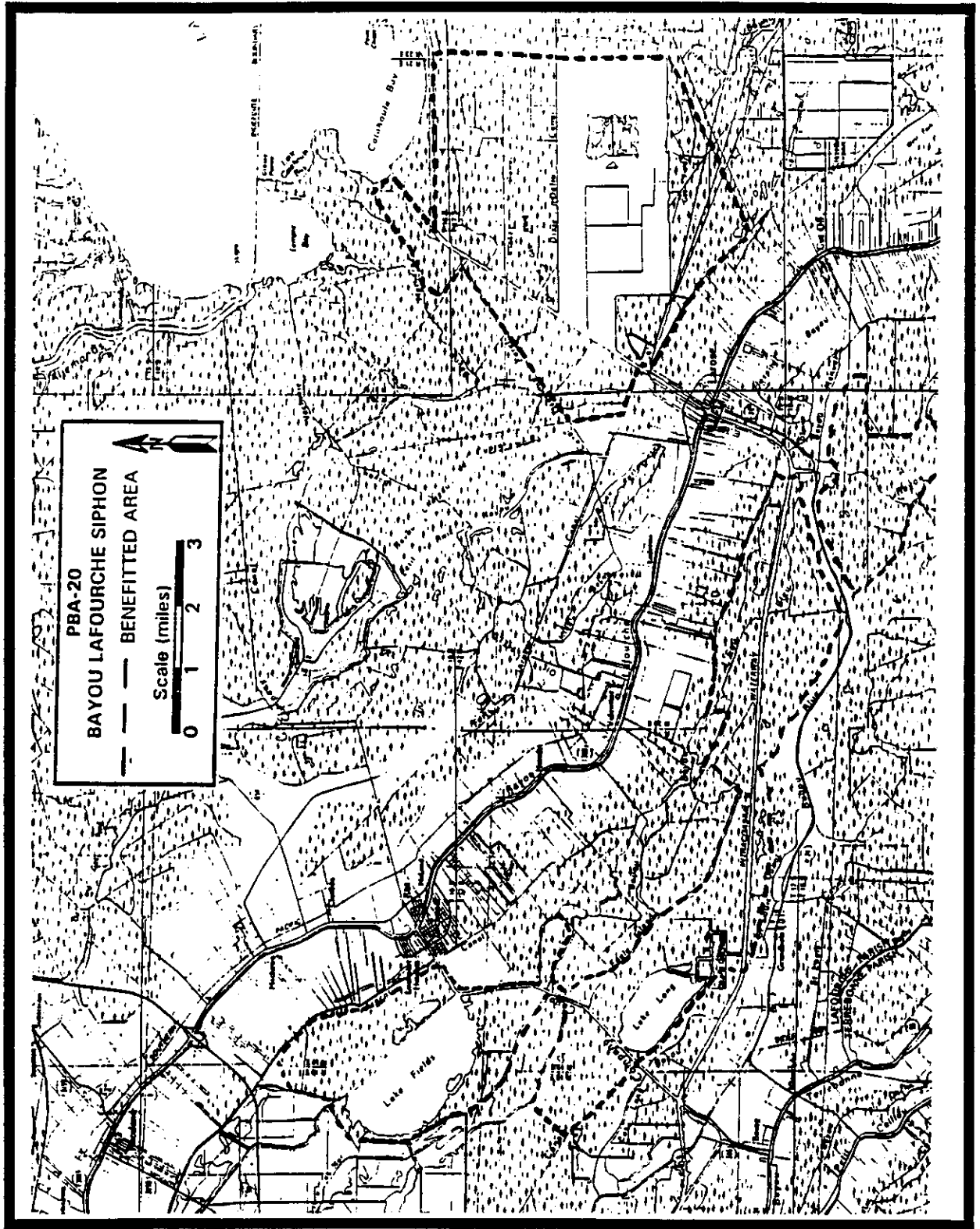
The banks of the BBWW have deteriorated considerably due to erosion from boat traffic. Large breaches in the banks have exposed the adjacent marsh to increased water exchange, tidal energy, and saltwater intrusion. This has resulted in loss of approximately 3,000 acres of emergent marsh in the intermediate area.

Components:

The objective of this project is to rebuild the east bank of Dupre Cut on the BBWW to protect the adjacent marsh from excessive tidal exchange and saltwater intrusion. Dredged material from the BBWW will be used to rebuild the bank and will be armored with approximately 10,200 ft of rock.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 2,303,000	\$1,707	129	0 ac	223 ac	223 ac



PBA-20 Bayou Lafourche Siphon w/o cutoff structure

Project Name: PBA-20 Bayou Lafourche Siphon w/o Cutoff Canal Structure

Federal Sponsor: EPA

Location and Size:

The siphon is located at Donaldsonville at the intersection of Bayou Lafourche with the Mississippi River in Iberville Parish. It will siphon water from the Mississippi River into Bayou Lafourche. The project target marshes are located >30 miles south of Donaldsonville in the Lake Fields and Long area, Grand Bayou area, and Delta Farms area(see map) The total project area is 28,843 ac (16,810 ac fresh and intermediate marsh with 12,033 ac water).

Problems:

Bayou Lafourche has been cut off from the flow of the Mississippi river (except for a small 300 cfs pump) which historically served to counteract subsidence in the area by introducing freshwater, sediments, and nutrients. Additionally, the natural hydrology of the area has been altered by numerous oil field canals and the Gulf Intracoastal Waterway.

Components:

Project features include:

- 1) A receiving (intake) structure at the point of diversion in the Mississippi River;
- 2) A 4 pipe siphon system (approximately 9,520 ft of pipe from the river to the bayou) with a combined discharge capacity of 2000 cfs;
- 3) A discharge (receiving) pond in Bayou Lafourche at Donaldsonville (concrete box and bank stabilization);
- 4) Modification of two highway structures: replacement of one highway bridge and the modification of one railroad bridge;
- 5) Bank stabilization along Bayou Lafourche, dredging of Bayou Lafourche in the Donaldsonville area;

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 22,256,000	\$ 4,579	499	0 ac	428 ac	428 ac

Project Name: PBA-20i Bayou Lafourche Siphon w/ Cutoff Canal Structure

Federal Sponsor: EPA

Location and Size:

The siphon is located at Donaldsonville at the intersection of Bayou Lafourche with the Mississippi River in Iberville Parish. It will siphon water from the Mississippi River into Bayou Lafourche. The project target marshes are >30 miles south of Donaldsonville in the Lake Fields and Long area, Grand Bayou area, and Delta Farms area. The total project area is 45,951 ac (27,746 ac fresh and intermediate marsh with 18,205 ac water).

Problems:

Bayou Lafourche has been cut off from the flow of the Mississippi river (except for a small 300 cfs pump) which historically served to counteract subsidence in the area by introducing freshwater, sediments, and nutrients. Additionally, the natural hydrology of the area has been altered by numerous oil field canals and the Gulf Intracoastal Waterway.

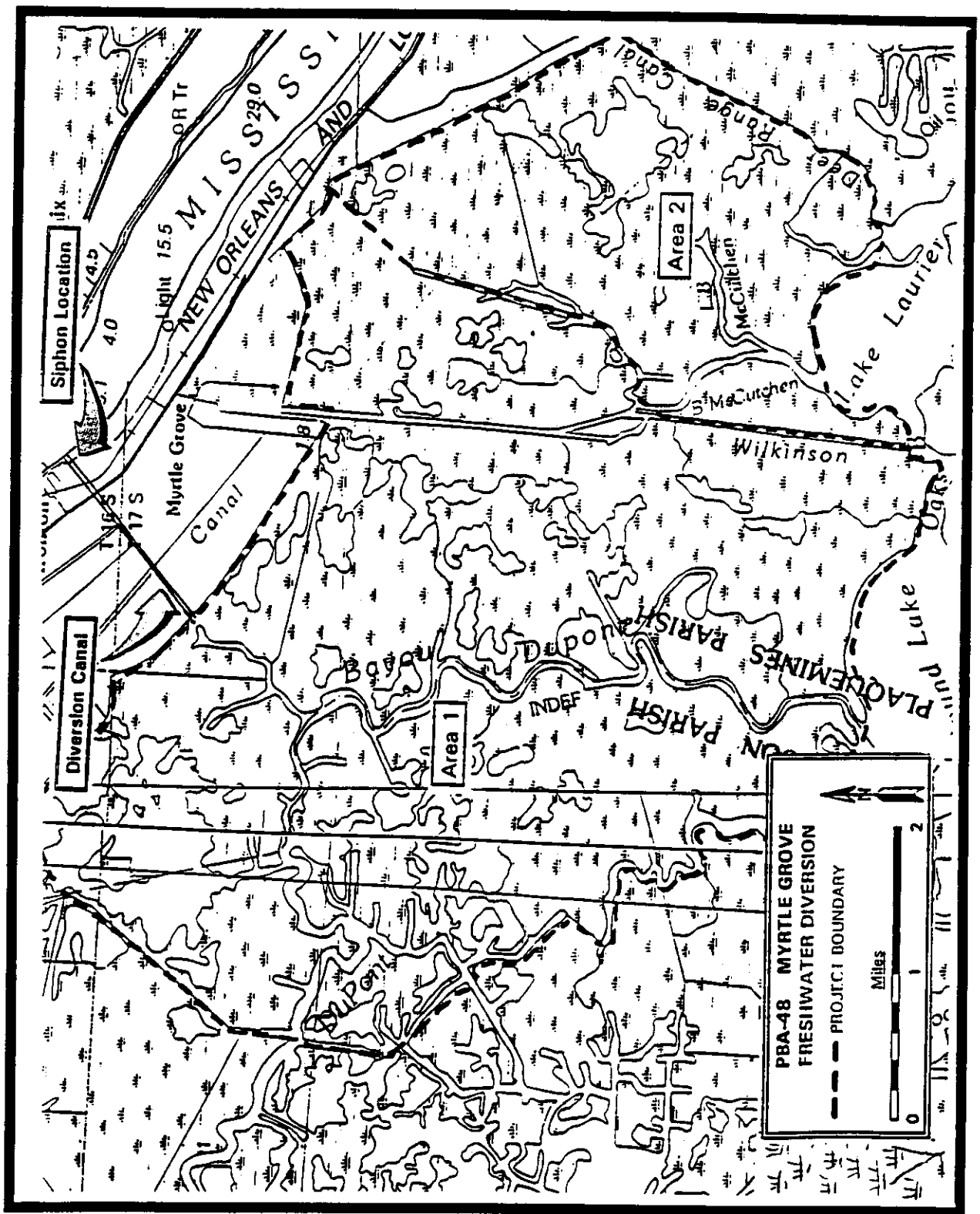
Components:

Project features include:

- 1) A receiving (intake) structure at the point of diversion in the Mississippi River;
- 2) A 4 pipe siphon system (approximately 9,520 ft of pipe from the river to the bayou) with a combined discharge capacity of 2000 cfs;
- 3) A discharge (receiving) pond in Bayou Lafourche at Donaldsonville (concrete box and bank stabilization);
- 4) Modification of two highway structures: replacement of one highway bridge and the modification of one railroad bridge;
- 5) Bank stabilization along Bayou Lafourche, dredging of Bayou Lafourche in the Donaldsonville area;
- 6) A structure in the Cutoff Canal area which also is a part of the TE-10/XTE-49 Grand Bayou /GIWW Freshwater Diversion project.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 23,671,000	\$ 2,277	1,069	0 ac	1,729 ac	1,729 ac



XBA-48a Myrtle Grove Siphon

Project Name: XBA-48a Myrtle Grove Siphon

Federal Sponsor: NMFS

Location and Size:

This project is located near the community of Myrtle Grove along the west bank of the Mississippi River in Plaquemines Parish. The total project area is 15,894 ac (6,585 ac brackish marsh and 9,309 ac water).

Problems:

Construction of the Mississippi River levee has effectively stopped annual flooding that, in the past, nourished surrounding marshes with sediments, nutrients, and freshwater which counteracted subsidence, saltwater intrusion, and subsequent marsh loss. Dredging of oil field canals and navigation channels provides additional avenues for saltwater intrusion and increased tidal action on fragile marsh soils.

Components:

The diversion system consists of eight 6 ft diameter pipes, a vacuum pipe, and a single outfall channel. The diversion will be designed to operate at a maximum discharge of approximately 2,100 cfs. In addition to the siphon structures the project will include roughly one mile of levee and an armored outfall channel. A new pumping station may have to be constructed to allow for forced drainage of the Citrus Lands property due to blockage of north to south flow by the outfall channel. A low level fixed crest weir near the head waters of Bayou Dupont may be needed to facilitate siphon flow over the marsh and through shallow ponds in the outfall area.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 15,526,000	\$ 2,786	527	0 ac	1,117 ac	1,117 ac

Marsh Creation with Dedicated Jesuit Bend (XBA - 73)



XBA-73 Jesuit Bend Marsh Creation

Project Name: XBA-73 Jesuit Bend Marsh Creation

Federal Sponsor: USACOE

Location and Size:

This project is located in a failed agricultural impoundment immediately west of Jesuit Bend which is NW of Naomi, LA in Plaquemines Parish. The total project area is 250 ac (50 ac wetland and 200 ac shallow open water).

Problems:

Construction of the Mississippi River levee has effectively stopped annual flooding that historically nourished surrounding marshes with sediments, nutrients, and freshwater which counteracted subsidence, saltwater intrusion, and subsequent marsh loss. Dredging of oil field canals and navigation channels provides further avenues for saltwater intrusion. In the past the area was leveed and drained which has helped to increased subsidence.

Components:

The project calls for creation of 200 ac of fresh marsh with approximately 0.85 million cubic yards of dedicated dredged material from the Mississippi River taken near Will's point. The structural components include 3,000 ft of containment levee, and breaching of the existing levees once the material settles to marsh level.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 5,213,000	\$ 5,381	97	175 ac	0 ac	175 ac

TERREBONNE BASIN

PTE-15b(IV) 1	Isle Dernieres New Cut Closure Only w/o Ship Shoal Sand	38
PTE-15b(IV)	New Cut Closure / East Trinity Restoration with Ship Shoal Sand	40
PTE-15b(IV) 2	New Cut Closure / East Trinity Restoration w/o Ship Shoal Sand	42
PTE-26a	Bayou De Cade Hydrologic Restoration	44
TE-10, XTE 49	Grand Bayou / GIWW Diversion	46
XTE-45	Timbalier Island Restoration	48
XTE-69	Marsh Creation near Falgout Canal	50

PTE-15b (IV) New Cut Only

Project Name: PTE-15b (IV) 1 Isle Dernieres Restoration (New Cut Closure Only)

Federal Sponsor: EPA

Location and Size:

This project is located between East and Trinity Islands of the Isle Dernieres chain, and at the eastern end of Trinity Island. The total project area is 262 ac (262 ac open water).

Problems:

The New Cut was formed during Hurricane Juan and enlarged during Hurricane Andrew. This new cut has served to increase erosion and accelerate loss of the islands.

Components:

The objective of the project is to create 210 ac of marsh initially.

The project features include:

1. Back Bay material will be used to build a front dune in New Cut that is \pm 450 ft wide, 5,000 ft long, and +8 ft M.S.L. high (52 ac);
2. Back Bay material will be used to build a back containment dike through New Cut;
3. Back bay material will be used to construct back barrier marsh within New Cut to a height of + 3.5 ft M.S.L. that is 750 ft wide, and 5,000 ft long (86 ac).

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 5,861,000	\$ 5,068	118	134 ac	0 ac	134 ac

PTE-15b (IV) New Cut Closure / East Trinity Restoration (W/ SH)

Project Name: PTE-15b (IV) New Cut Closure / East Trinity Restoration with Ship Shoal Sand

Federal Sponsor: EPA

Location and Size:

This project is located between East and Trinity Islands of the Isle Dernieres chain, and the eastern end of Trinity Island. The total project area is 1,112 ac (488 ac saline wetland and 624 ac water).

Problems:

The New Cut was formed during Hurricane Juan and enlarged during Hurricane Andrew. This New Cut has accelerated erosion and a island loss.

Components:

The objective of the project is to create 210 ac of marsh initially.

The project features include:

1. Ship Shoal material will be used to build a front dune in New Cut that is \pm 450 ft wide, 5,000 ft long, and +8 ft M.S.L. high (52 ac);
2. Ship Shoal material will be used to build a beach/dune on the eastern half of Trinity that is 350 ft wide, 9,500 ft long, and +8 ft M.S.L. high (76 ac);
3. Ship Shoal material will be used to build a back containment dike through New Cut;
4. Back bay material will be used to construct back barrier marsh within New Cut to a height of + 3.5 ft M.S.L. that is 750 ft wide, and 5,000 ft long (86 ac);
5. Back bay material will be used to construct back barrier marsh north of East Trinity Island to a height of +3.5 ft M.S.L. that is 1,200 ft wide, and 4,000 to 5,000 ft long (124 ac).
6. Back bay material will be used to nourish existing broken marsh on the northern side of East Trinity Island;
7. Both dune and constructed marsh will be seeded with appropriate plant species.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 19,000,000	\$ 5,383	384	0 ac	468 ac	468 ac



Project Name: PTE-15b (IV) 2 New Cut Closure/East Trinity Rest. w/o Ship Shoal Sand

Federal Sponsor: EPA

Location and Size:

This project is located between East and Trinity Islands of the Isle Dernieres chain, and the eastern end of Trinity Island. The total project area is 1,112 ac (488 ac saline wetland and 624 ac water).

Problems:

The New Cut was formed during Hurricane Juan and enlarged during Hurricane Andrew. This has increased erosion and accelerated island loss.

Components:

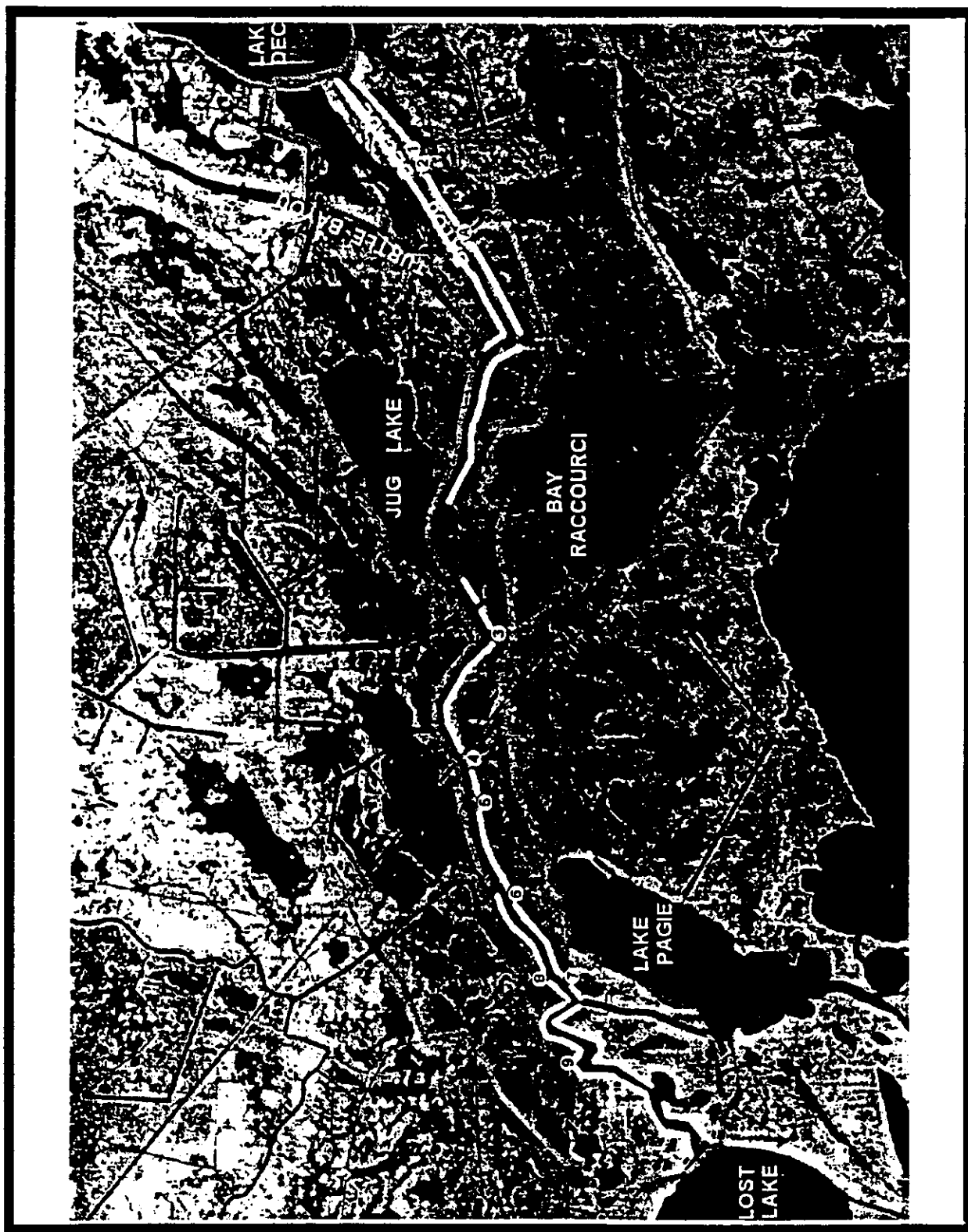
The objective of the project is to create 210 ac of marsh initially.

The project features include:

1. Back bay material will be used to build a front dune in New Cut that is \pm 450 ft wide, 5,000 ft long, and +8 ft M.S.L. high (52 ac);
2. Back bay material will be used to build a beach/dune on the eastern half of Trinity that is 350 ft wide, 9,500 ft long, and +8 ft M.S.L. high (76 ac);
3. Back bay material will be used to build a back containment dike through New Cut;
4. Back bay material will be used to construct back barrier marsh within New Cut to a height of + 3.5 ft M.S.L. that is 750 ft wide, and 5,000 ft long (86 ac);
5. Back bay material will be used to construct back barrier marsh north of East Trinity Island to a height of +3.5 ft M.S.L. that is 1,200 ft wide, and 4,000 to 5,000 ft long (124 ac).
6. Back bay material will be used to nourish existing broken marsh on the northern side of East Trinity Island;
7. Both dune and constructed marsh will be seeded with appropriate plant species.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 12,022,000	\$ 3,380	384	0 ac	468 ac	468 ac



PTE-26A Bayou De Cade Hydrologic Restoration

Project Name: PTE-26A Bayou De Cade Hydrologic Restoration

Federal Sponsor: NRCS

Location and Size:

This project is located on the banks of Bayou De Cade in Terrebonne Parish. The total project area is 3,794 ac (1,486 ac intermediate marsh and 2,308 water).

Problems:

The banks of Bayou De Cade have eroded several thousand feet, providing a direct hydrologic connection between the bayou and higher salinity waters to the south. Protection from storm surges and tidal scouring has been lost. Oil field canals have increased tidal exchange and provided direct routes for saltwater intrusion. This rapid deterioration will continue in a northward trend through the fresh floatant marsh north of Bayou De Cade if not prevented.

Components:

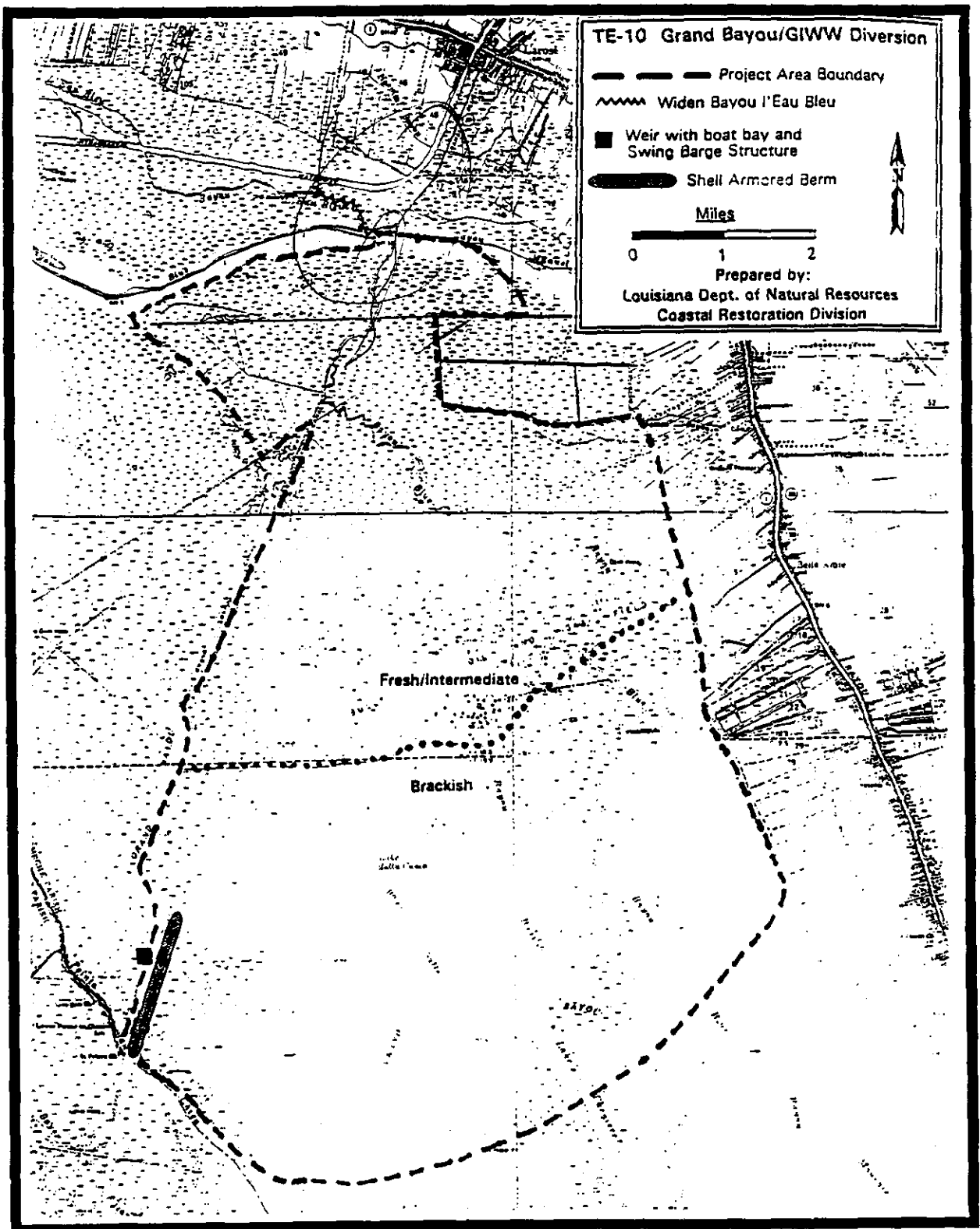
This project is a component of the NRCS Penchant Basin Resource Plan that aims at freshwater flow regulation and reduction in excessive over-marsh flow and subsequent erosion.

Project components include the following structures and maintenance adjacent to Bayou De Cade:

- (1) plugging of an oil field location canal upon abandonment by the oil company;
- (2) maintenance of two existing fixed crest weirs;
- (3) a rock liner to stabilize a channel cross section;
- (4) a rock plug;
- (5) five sheet pile fixed crest weirs;
- (6) stabilization and maintenance of 69,480 ft of the banks of Bayou De Cade.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,154,000	\$ 4,730	74	0 ac	81 ac	81 ac



TE-10, XTE-49 Grand Bayou / GIWW Diversion

Project Name: TE-10, XTE-49 Grand Bayou / GIWW Diversion

Federal Sponsor: USFWS

Location and Size:

This project is located in Lafourche Parish just west of Galliano and south of Larose and includes part of the Point au Chien Wildlife Management Area. The total project area is 26,530 ac (18,250 ac intermediate and brackish marsh and 8,280 ac water).

Problems:

Incidental impoundment by oil field canals and well slips in conjunction with saltwater inflow from the Cutoff and Grand Bayou Canals has resulted in widespread loss of marsh in this area.

Components:

The objective of the project is to maintain emergent wetlands in this area by providing supplemental freshwater, nutrients, and mineral sediments from the Atchafalaya River via the GIWW. Constriction of Cutoff Canal will reduce saltwater intrusion into the project area and retain freshwater which enters the area from the GIWW.

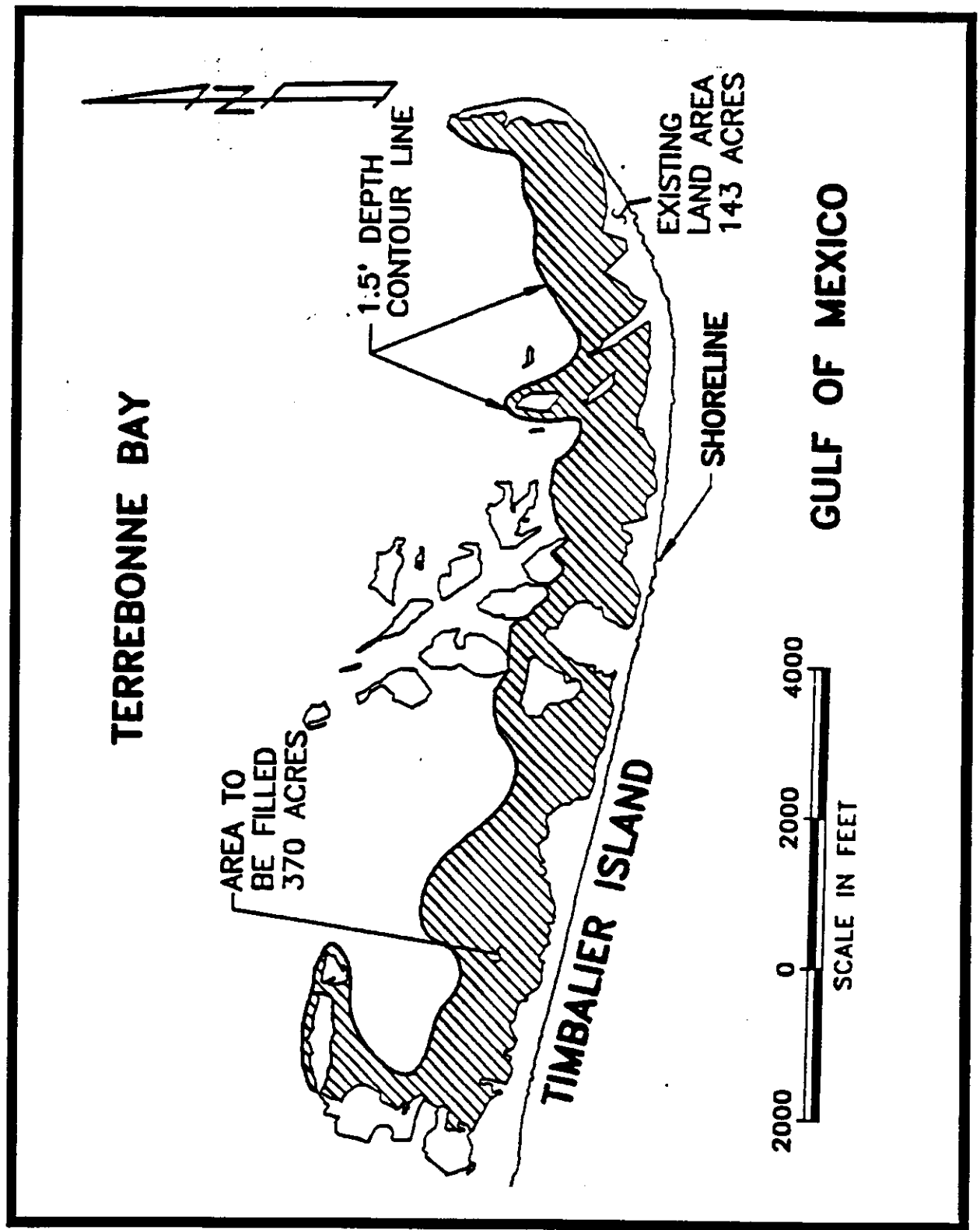
Project features include:

- 1) deepening of the existing Bayou L'eau Bleu channel from 6 ft to 9 ft deep along the 5,000 ft section from the conduit channel off of the GIWW to the Hwy. 24 bridge;
- 2) one sheet pile weir with a boat bay connected to a submersible swing barge across Cutoff Canal near Bayou Point Au Chien.

The Cutoff Canal channel is 220 ft wide with a maximum depth of 20 ft. Average depth is approximately 10 ft.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 5,136,000	\$ 515	771	0 ac	1,575 ac	1,575 ac



XTE-45 Timbalier Island Restoration

Project Name: XTE-45 Timbalier Island Restoration

Federal Sponsor: NMFS

Location and Size:

This project is located on the eastern end of Timbalier Island in Terrebonne Parish. The total project area is 723 ac (143 ac saline marsh and washovers with 580 ac water).

Problems:

The width and length of Timbalier Island is rapidly diminishing as it transgresses landward. The width of the island decreased by 7,340 ft (23%) from 1956 to 1988, (31,680 ft wide to 24,340 ft in 1988). Island loss reflects both natural and human-induced processes. Significant physical changes in the Deltaic Plain, such as the 1904 closure of Bayou Lafourche and the Mississippi River Levees, have reduced sediment supply to Terrebonne Bay and its barrier islands. Sediment from the retreating Fourchon headlands is eroded by gulf waves and is moved westward in the gulf's longshore current. Hurricane Andrew created at least seven breaches in the project area and deposited much of the material in the lee of the island.

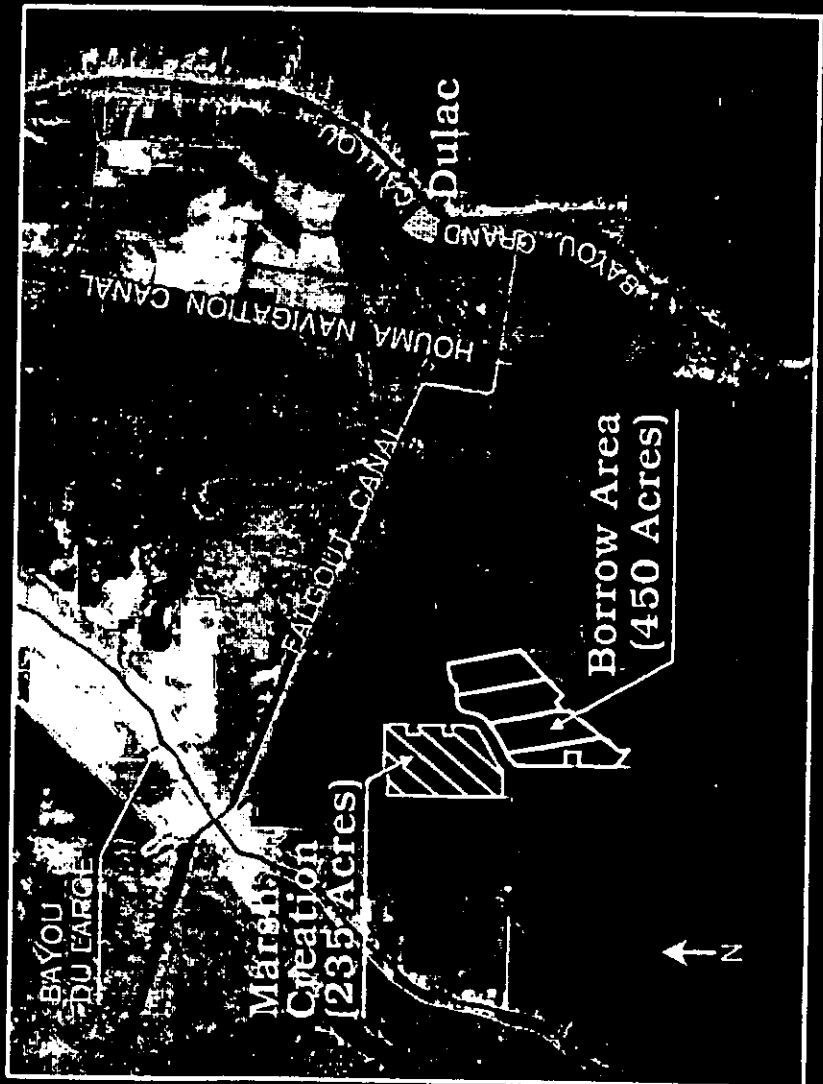
Components:

The project calls for the mining of 1.8 million cubic yards of sediment from Terrebonne Bay and placing it on the eastern third of the island. The elevation of the restored area will be approximately 1 ft above mean sea level creating 370 ac of marsh initially.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 6,582,000	\$ 2,857	230	68 ac	143 ac	211 ac

Marsh
Creation
South of
Falgout Canal
(XTE - 69)



XTE-69 Marsh Creation near Falgout Canal

Project Name: XTE-69 Marsh Creation near Falgout Canal

Federal Sponsor: USACOE

Location and Size:

This project is located in Terrebonne Parish just south of the Falgout Canal between Bayou Dularge and the Houma Navigation Canal. The total project area is 348 ac (5 ac brackish marsh and 343 ac shallow open water).

Problems:

A patchwork of oil field and navigation canals has disrupted the natural hydrology in the area. The problems associated with the canals are: impoundment, saltwater intrusion, and increased erosion and tidal exchange.

Components:

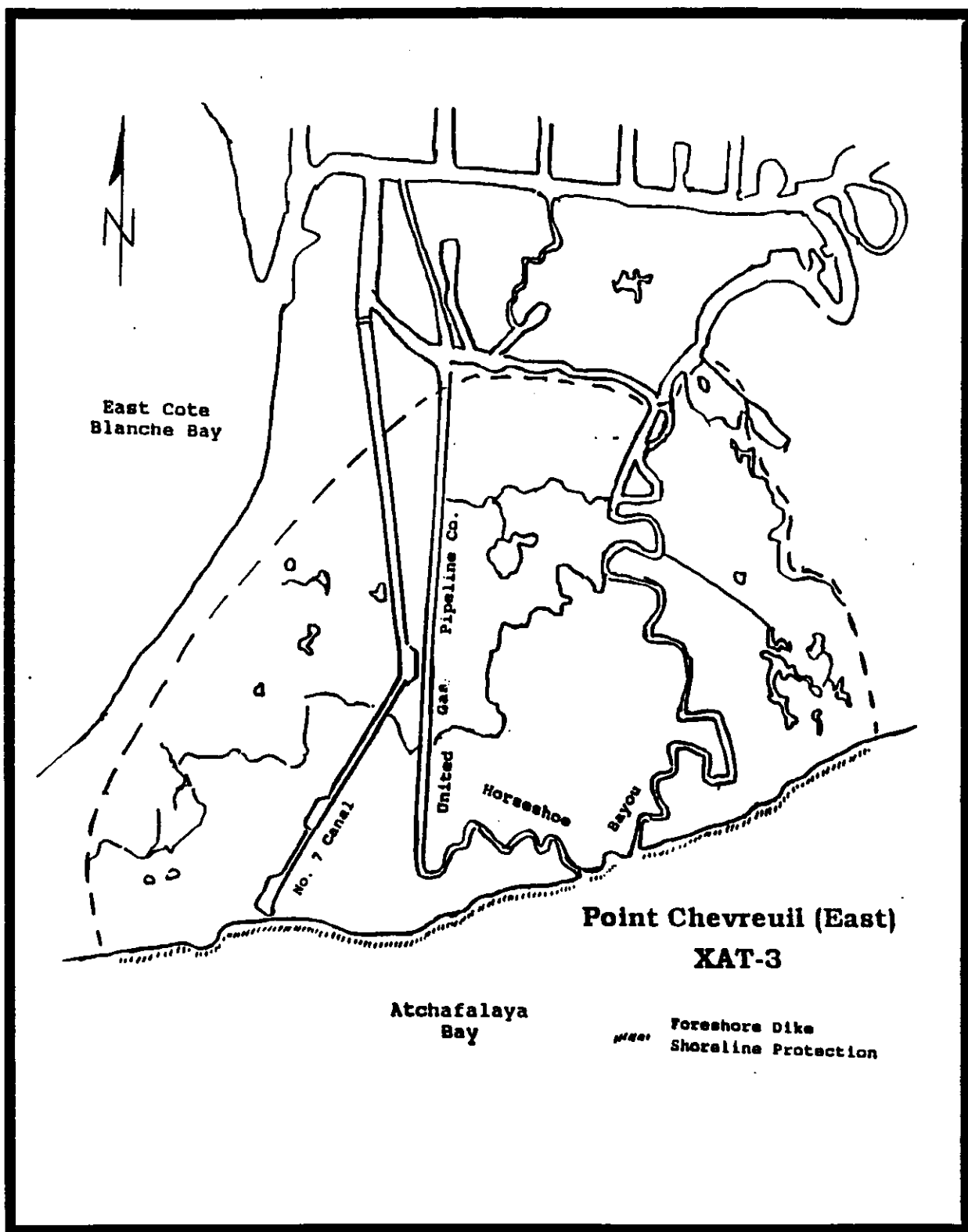
The objective of this project is to create 188 ac marsh in a shallow open water area with dredged material from an adjacent semi-impounded open water area.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,310,000	\$ 3,525	122	188 ac	1 ac	189 ac

ATCHAFALAYA BASIN

XAT-3	Point Chevreuil Shoreline Protection 53
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XAT-3 Point Chevreuil (East) Shoreline

Project Name: XAT-3 Point Chevreuil Shoreline

Federal Sponsor: NRCS

Location and Size:

This project is located between Point Chevreuil and the Wax Lake Outlet in the northwest portion of Atchafalaya Bay in St. Mary Parish. The total project area is 60 ac (52 ac marsh and 8 ac of water).

Problems:

Shoreline erosion has cut into Horseshoe Bayou which has allowed tidal flow to enter the adjacent marshes.

Components:

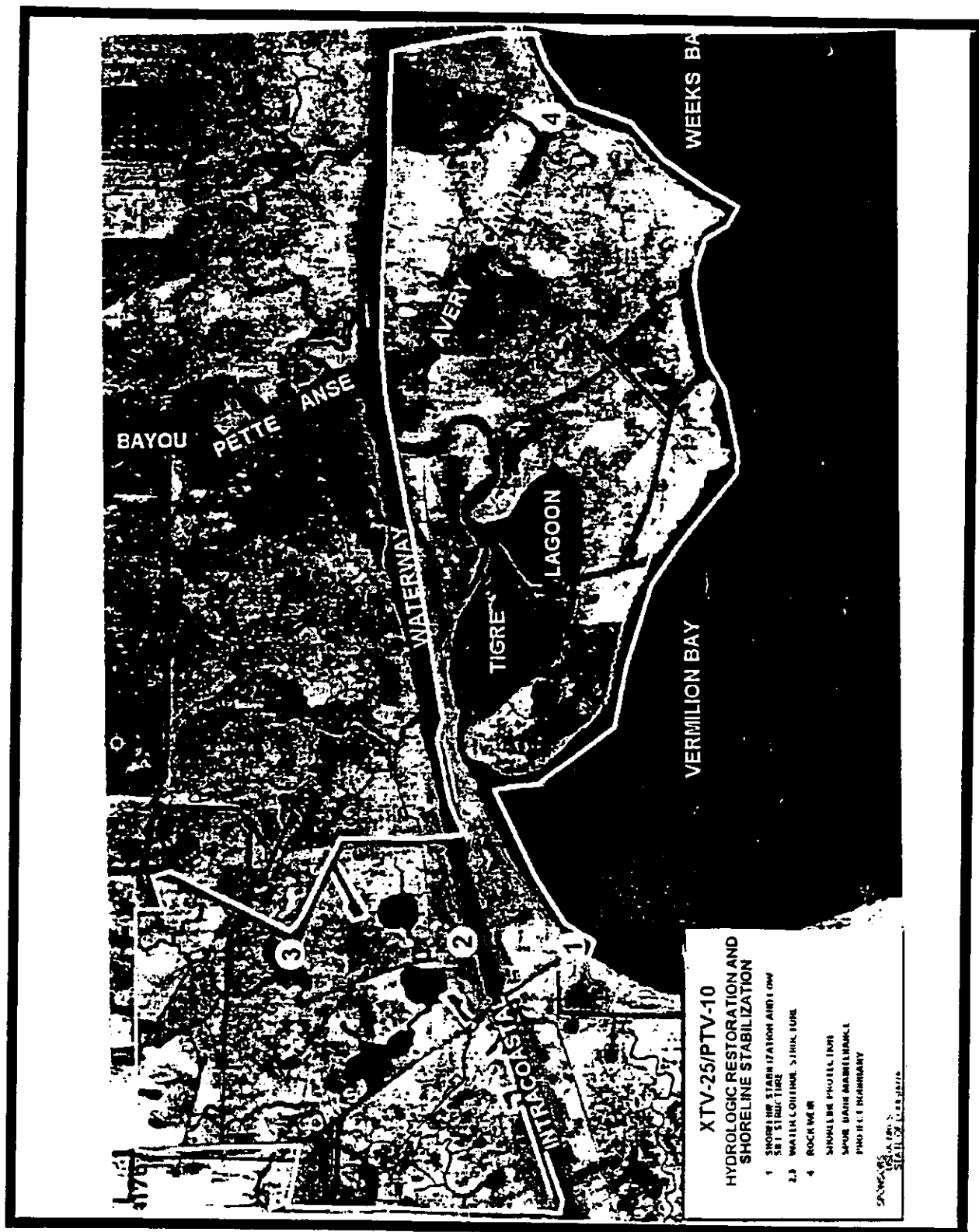
The project calls for the installation of 10,000 ft of limestone rock foreshore dike shoreline protection placed approximately 100 ft from the existing shoreline.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 2,559,000	\$ 14,250	16	7 ac	52 ac	59 ac

TECHE / VERMILION BASIN

PTV-10/XTV-25	Oaks Avery Canal Hydrologic Restoration	58
PTV-19	Little Vermilion Bay Sediment Trapping	60
T/V-5/7	Marsh Island Hydrologic Restoration	62
XTV-30	Vegetation Plantings in the Chenier Plain	64
PTV-7b	Vegetative Plantings in Little Vermilion Bay	66
PTV-8	Cypremort Pt. to Avery Island Vegetative Plantings	68
ME-6	Big Burn Marsh Creation	70
XME-38b	White Lake Vegetative Plantings	72
C/S-15	Broussard Lake Vegetative Plantings	74



PTV-10/XTV-25 Oaks/Avery Canal Hydrologic Restoration

Project Name: PTV-10/XTV-25 Oaks/Avery Canal Hydrologic Restoration

Federal Sponsor: NRCS

Location and Size:

Oaks Canal is located in the extreme southeastern portion of Vermilion Parish in the northeast portion of Vermilion Bay. Avery Canal is located in southwestern Iberia Parish on the northern Vermilion Bay shore. The total project area is 5,365 ac (4,465 ac intermediate marsh and 900 ac of water.

Problems:

Bank erosion from wave action, increased water velocities, and increased tidal exchange has caused deterioration of interior marshes.

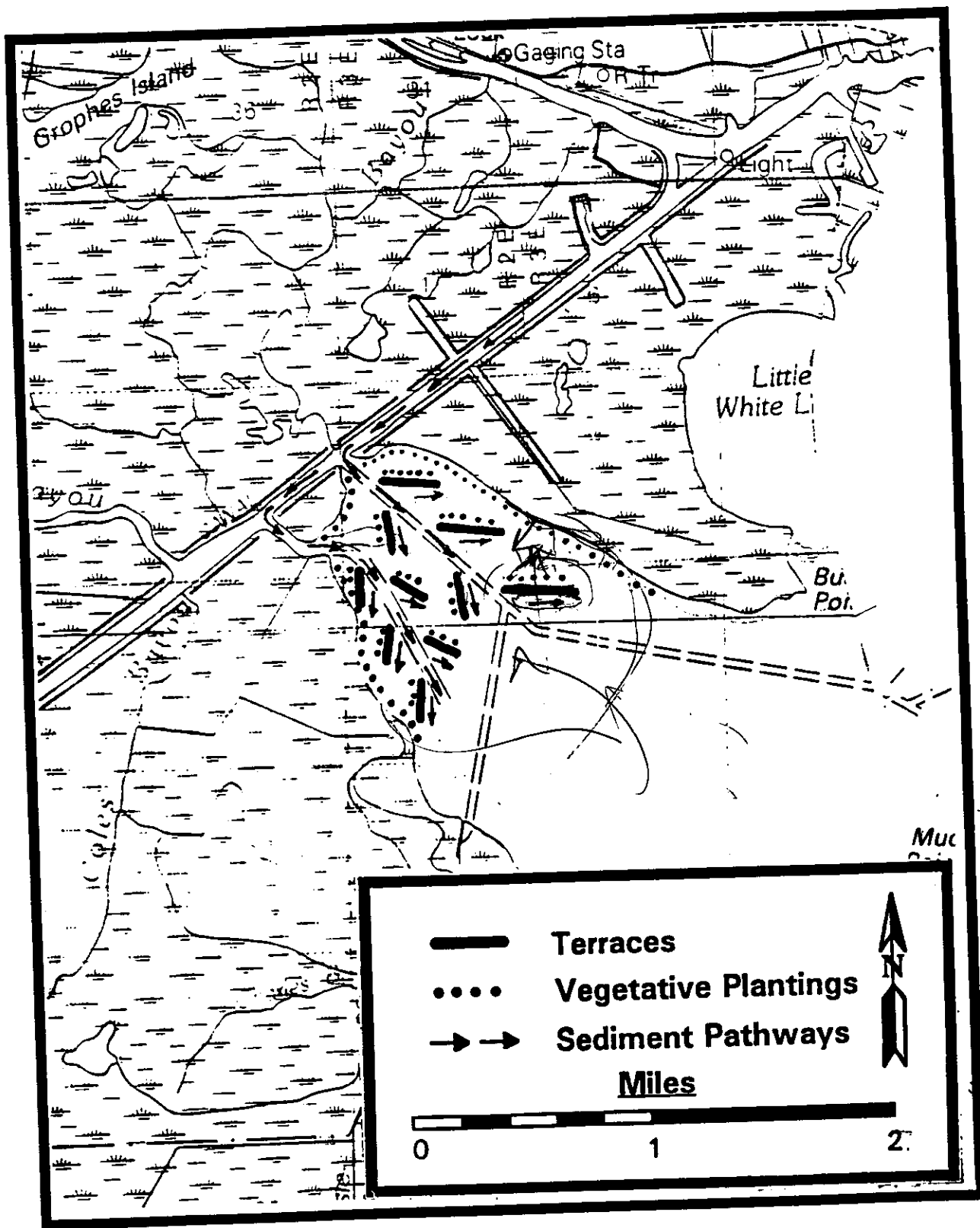
Components:

Project features include:

- 1) two low sill structures at the mouths of Oaks and Avery Canals (Oaks Canal - sill and embankment protection, Avery Canal - sill);
- 2) two water control structures with boat access;
- 3) 3,200 ft of spoil bank maintenance and stabilization on the GIWW for protection of adjacent wetlands;
- 4) and canal maintenance on oil field canals north of the GIWW in the Oaks Canal Area (see map).

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 2,673,000	\$ 1,813	118	0 ac	16 ac	16 ac



PTV-19 Little Vermilion Bay Sediment Trapping

Project Name: PTV-19 Little Vermilion Bay Sediment Trapping

Federal Sponsor: NMFS

Location and Size:

This project is located in the northwestern corner of Little Vermilion Bay at its intersection with the GIWW. The total project area is 964 ac (67 ac marsh and 897 ac water).

Problems:

The wind-wave energy in the bay is preventing sediment from the GIWW from becoming vegetated marsh and is responsible for continued shoreline erosion.

Components:

Project features include:

- 1) dredging 14,000 ft of distributary channels 100 ft wide and 6 ft deep (310,000 cu yds);
- 2) 32 acres of terraces 100 ft wide;
- 3) elevation 2 ft above mean sea level should be created;
- 4) gallon containers and sprigs of smooth chord grass will be planted at the base of terraces and along the shoreline.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 940,000	\$ 577	149	390 ac	51 ac	441 ac

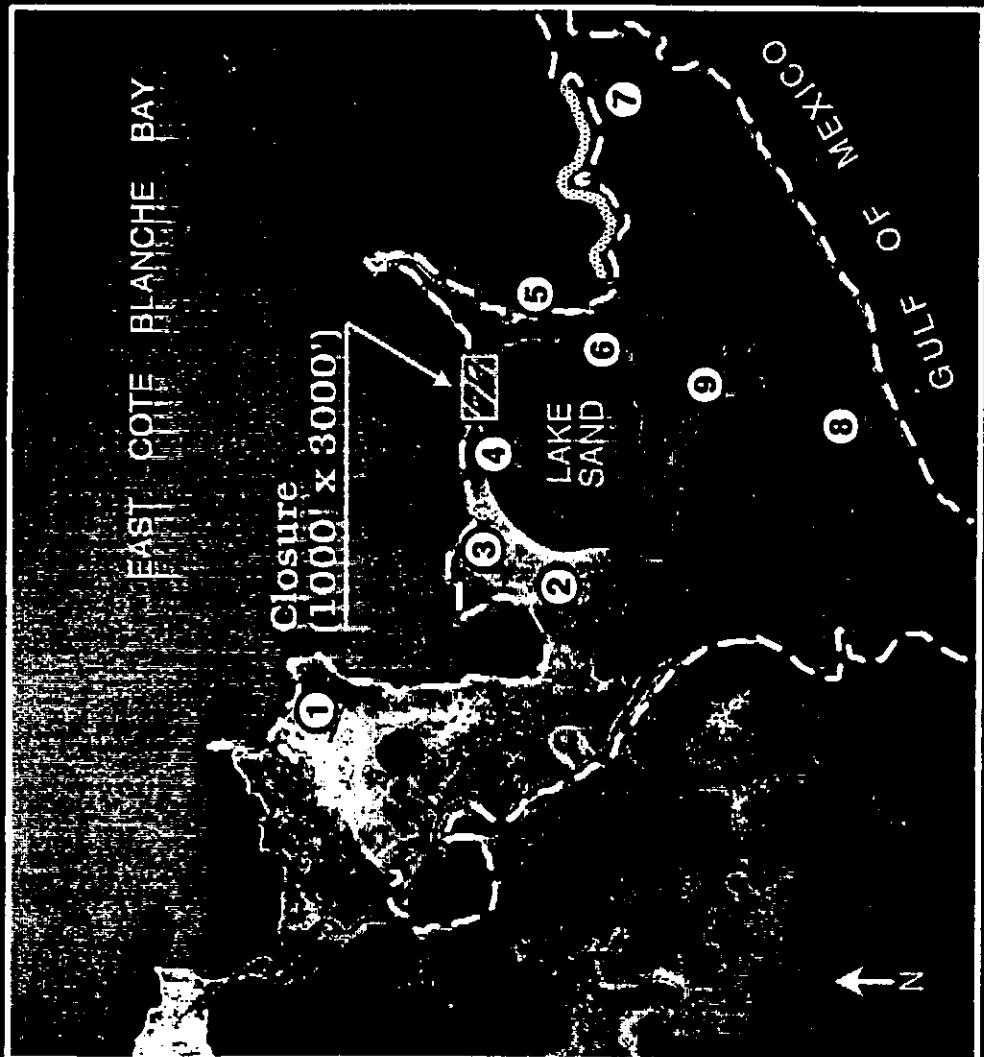
TV - 5/7 Marsh Island Hydrologic Restoration and Marsh Creation

1 - 9 Canals to be
Plugged
(except 3 & 4)

Marsh Creation
w/ Dredged Material

Shoreline Protection
(crushed stone)

Project Area



TV-5/7 Marsh Island Hydrologic Restoration

Project Name: T/V-5/7 Marsh Island Hydrologic Restoration

Federal Sponsor: USACOE

Location and Size:

This project is located east of Bayou Blanc on the northeastern tip of Marsh Island, which is located between Vermilion and West Cote Blanche Bays and the Gulf of Mexico. The total project area is 6,697 ac (5,034 ac brackish marsh and 1,663 ac water).

Problems:

Natural erosional processes caused by wind driven waves and subsidence along the northeast shoreline of Marsh Island have lead to the deterioration of the north rim of Lake Sand. Shoreline erosion, tidal scouring and marsh breakup are evident along the shoreline of the island to the east of Lake Sand and in the marshes south of Lake Sand. Lakes on the island are no longer supporting aquatic vegetation production due to increased tidal exchange and increased turbidity.

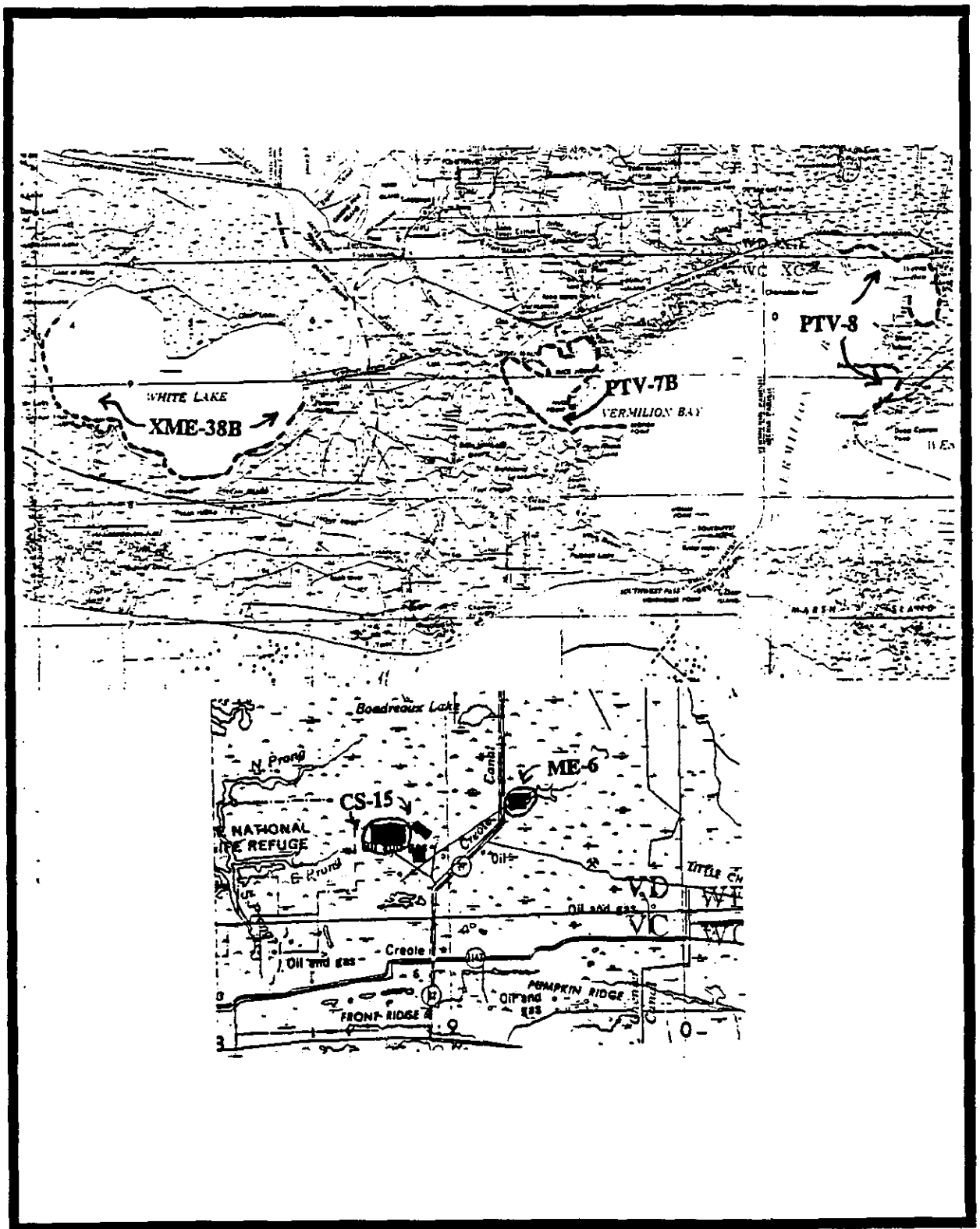
Components:

Project components include:

- 1) Plugging of 9 oil field canals by bucket dredge and/or the construction of steel or wood bulkhead cores with shell coverings. Canal 5 (see map) may require a steel bulkhead. Backfill canals 3 and 4 with hydraulically dredged material from the surrounding bay;
- 2) Construction of retaining dikes along booth sides of the isthmus forming the north shoreline of Lake Sand, approximately 1,500 ft of dike on the north side and 3,000 ft of dike on the south side of the isthmus, and backfilling approximately 27 ac of the site by hydraulic dredging sediments from the surrounding bay to restore this eroded shoreline. Approximately 166,700 cubic yards of sediment will be needed to bring this open water area to a suitable marsh elevation.
- 3) Deposition of limestone rip rap along approximately 1.5 mi of shoreline to provide the armor necessary to halt further erosion.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,056,000	\$ 808	453	0 ac	408 ac	408 ac



XTV-30 Vegetative Plantings in the Chenier Plain

Project Name: XTV-30 Vegetative Plantings in the Chenier Plain

Federal Sponsor: NRCS

Location and Size:

This project includes 5 vegetational planting projects in the Chenier Plain. The location and description of each project are more fully described in the following pages. The total project area is 2,501 ac (1,312 ac marsh and 1,189 ac water). Projects are located in Vermilion Bay along the northwest (PTV-7b) and northeast shoreline (PTV-8); along the southern shore of White Lake (XME-38b); in the Big Burn (ME-6) and in Broussard Lake (CS-15).

Problems:

The major problem which links these projects is shoreline erosion.

Components:

Vegetational plantings will consist of bullwhip planted in terraces and smooth cordgrass planted along Vermilion Bay shorelines.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 1,829,000	\$ 695	246	322 ac	445 ac	767 ac

Project Name: PTV-7b Vegetative Plantings in Little Vermilion Bay

Federal Sponsor: NRCS

Location and Size:

This project is located in the northwest portion of Vermilion Bay approximately 5 miles south of Intracoastal City, and 18 miles south of Abbeville in Vermilion Parish. The total project area is 264 ac (245 ac intermediate marsh and 19 ac water).

Problems:

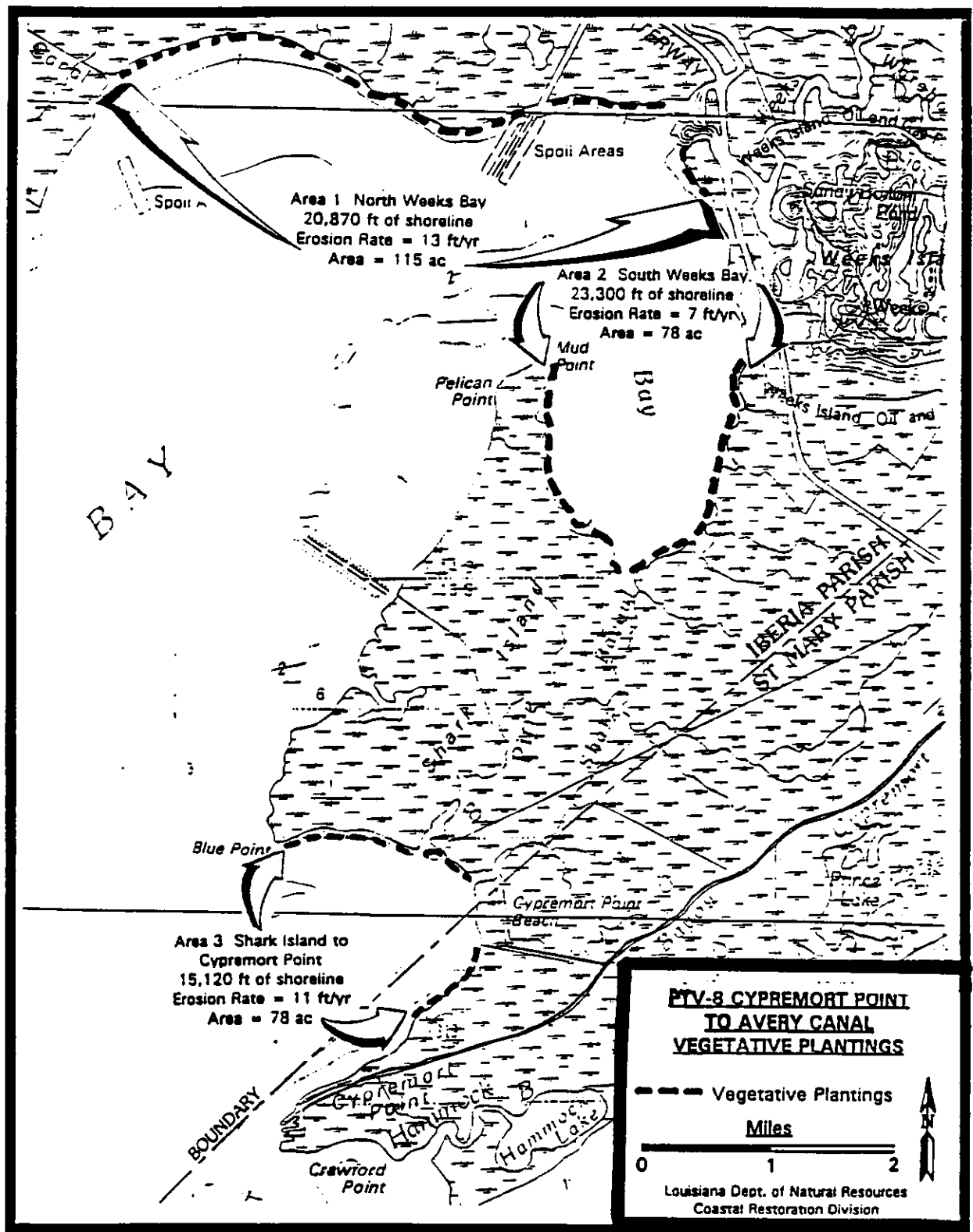
Shoreline erosion caused by wind driven wave action and tidal exchange. The average shoreline erosion rate in this area is 5 ft/yr.

Components:

The project calls for planting approximately 21,344 trade gallon plugs of smooth cordgrass (*Spartina alterniflora*) anchored with 4 ft rebar pins along the high water mark in 5 ft spacings. The project includes re-planting of 50 % of the original number of plants to fill in the gaps caused by plant mortality or washouts. The re-planting will take approximately 11,000 plants.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$222,112	\$	16	0 ac	83 ac	83 ac



PTV-8 Cypremort Pt. to Avery Island Veg. Plantings

Project Name: PTV-8 Cypremort Pt. to Avery Island Veg. Plantings

Federal Sponsor: NRCS

Location and Size:

This project is located along approximately 9.1 miles of northwest Vermilion and Weeks Bay shoreline in Iberia Parish. The total project area is 271 ac (264 ac intermediate marsh and 7 ac water).

Problems:

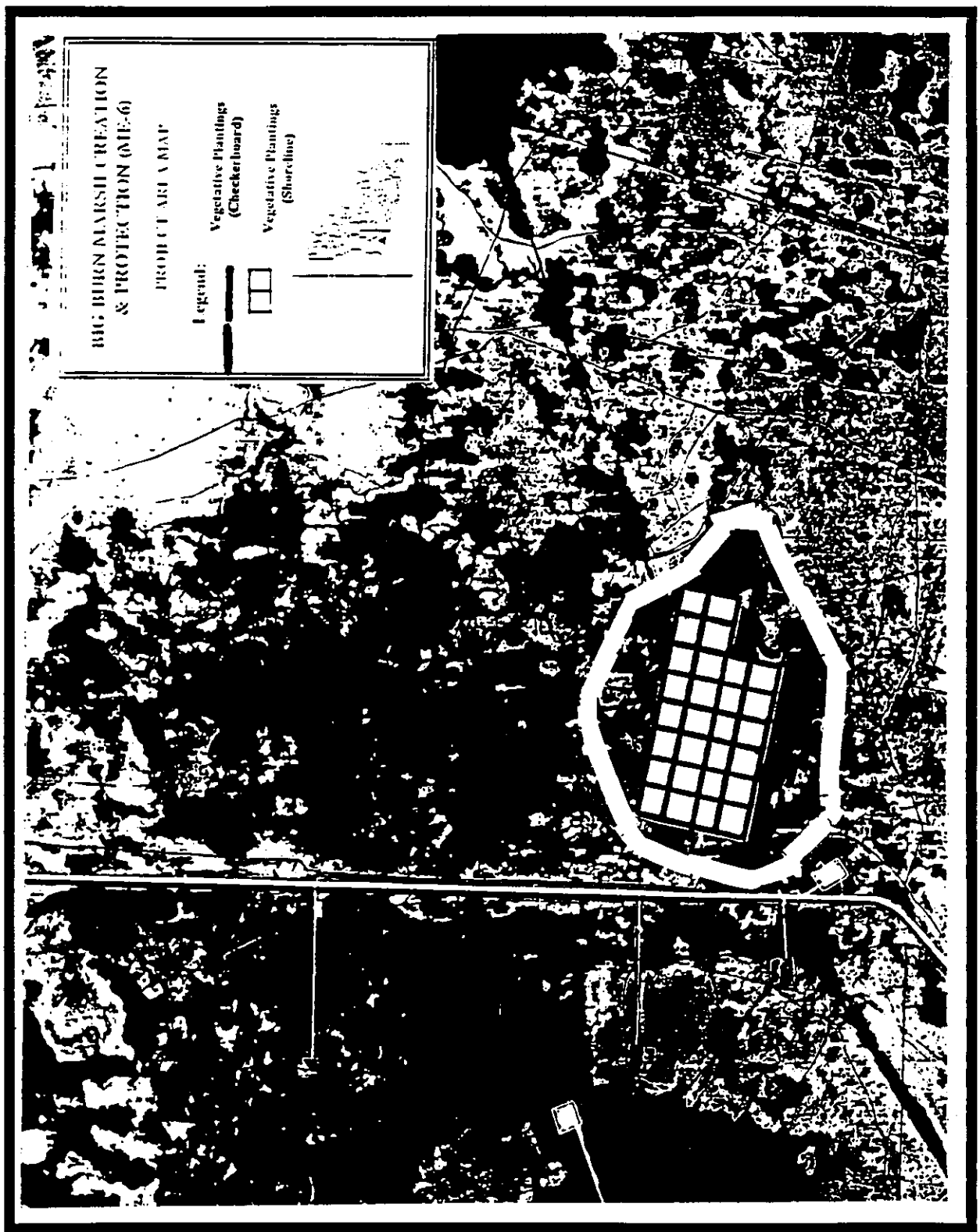
Shoreline erosion caused by wind driven wave action and tidal action. The average area shoreline erosion is 13 ft/yr.

Components:

The project calls for vegetative plantings in 3 areas with smooth cordgrass (*Spartina alterniflora*) in trade gallon plugs anchored with 4 ft long rebar pins along the existing shoreline at 5 ft spacing. A 50% mortality rate is assumed, therefore re-planting is assumed for 50% of the project area.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 120,393	\$	26	0 ac	97 ac	97 ac



ME-6 Big Burn Marsh Creation

Project Name: ME-6 Big Burn Marsh Creation

Federal Sponsor: NRCS

Location and Size:

This project is located along the east side of Hwy 27 just south of the GIWW, north of Little Chenier Ridge, and north of the Arco Oil Co. facility in Cameron Parish. The total project area is 545 ac (41 ac fresh /intermediate marsh and 504 ac water).

Problems:

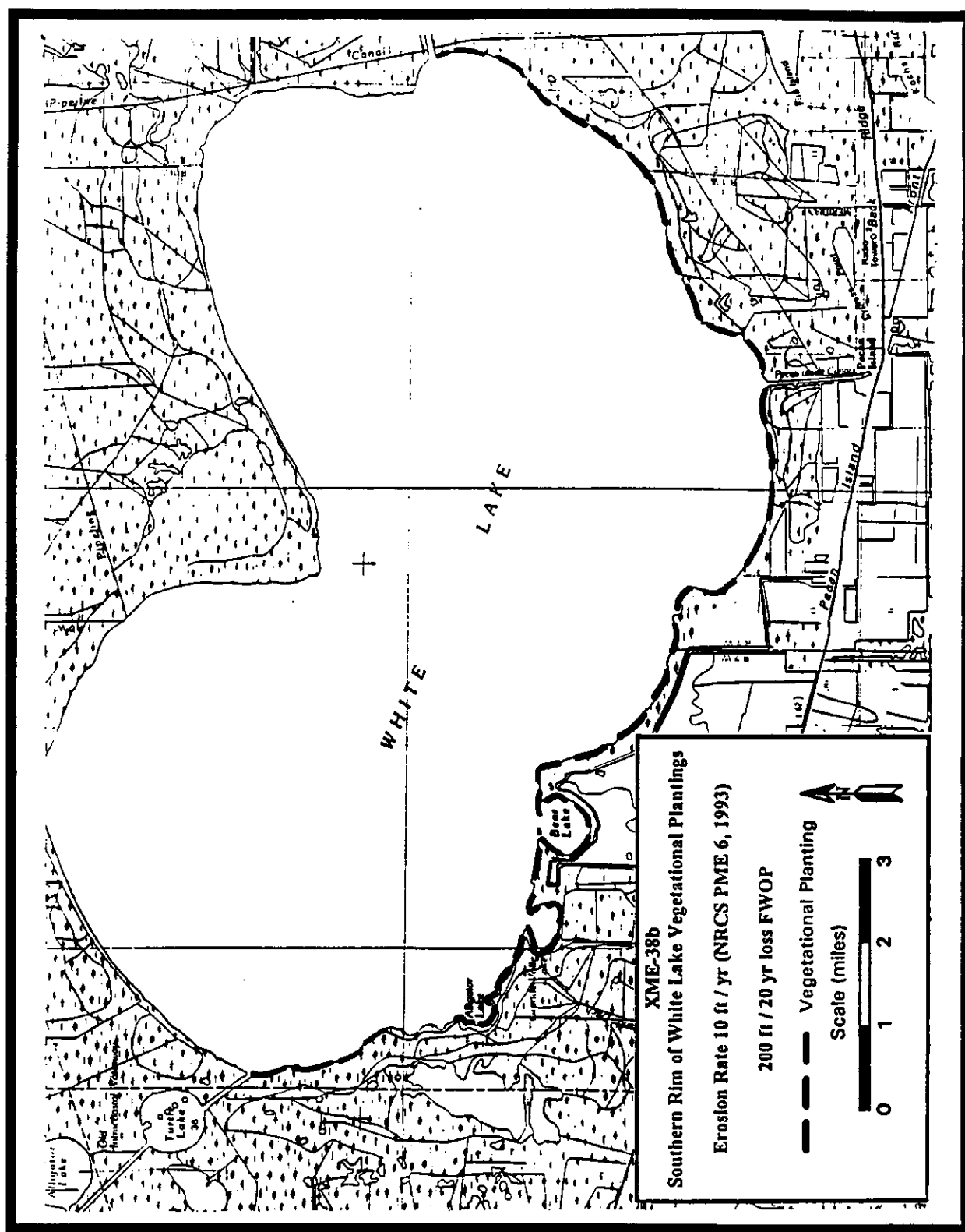
As a result of an extensive marsh fire in the 1970's, much of the organic peat in the Big Burn Marsh was burned off. This, combined with subsidence has lowered the elevation of the marsh surface considerably. As a result of these changes, the Big Burn Marsh consists of small open water ponds and broken marsh which is extremely vulnerable to wind-driven wave action and shoreline erosion.

Components:

This project calls for planting roughly 69,000 linear ft (13 miles) of California bullwhip (*Scirpus californicus*) in open water in the Big Burn Area. 34,000 ft will be in a checkerboard terrace pattern in the central part of the project area and 35,000 linear ft will be in two rows on the inner perimeter of the central area along the shoreline. Plants will be in one gallon trade containers spaced on five foot centers. Roughly 13,800 plants will be required.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 96,600	\$	53	124 ac	0 ac	124 ac



XME-38b White Lake Vegetative Plantings

Project Name: XME-38b White Lake Vegetative Plantings

Federal Sponsor: NRCS

Location and Size:

This project is located on the southern and western rim of White Lake in Vermilion Parish. The total project area is 940 ac (752 ac fresh marsh and 188 ac water).

Problems:

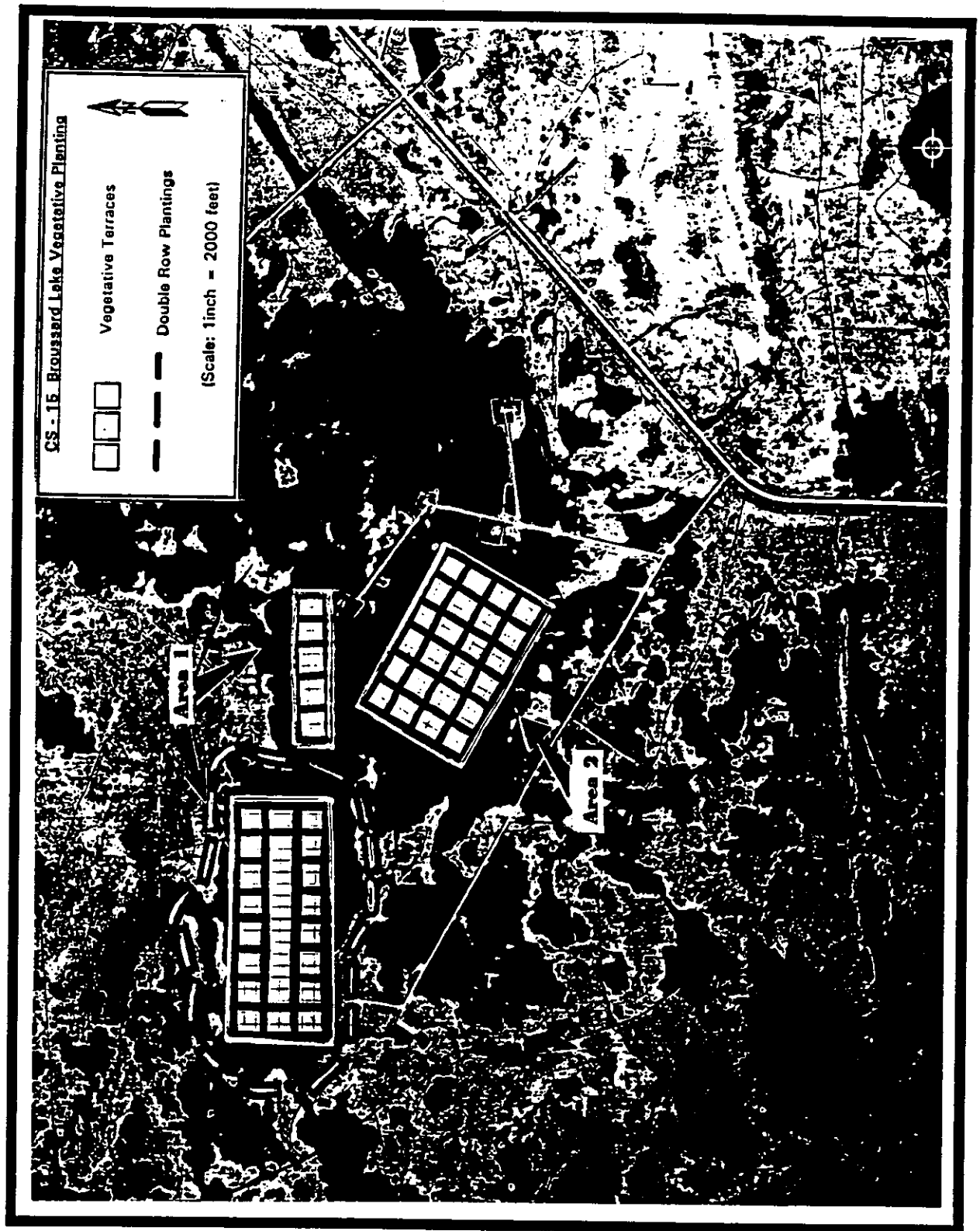
Shoreline erosion due to wind driven wave action. The average shoreline erosion in the area is 10 ft/yr.

Components:

Plant approximately 163,680 linear ft (31 miles) of double row Bullwhip (*Scirpus californicus*) in trade gallon plugs at 5 ft spacing 50 ft offshore parallel to the present shoreline.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 458,304	\$	77	0 ac	255 ac	255 ac



C/S-15 Broussard Lake Vegetative Plantings

Project Name: C/S-15 Broussard Lake Vegetative Plantings

Federal Sponsor: NRCS

Location and Size:

This project is located about 3.5 miles north-northwest Creole on the east side of the Cameron Creole Watershed. The total project area is 481 ac (10 ac intermediate marsh and 471 ac water).

Problems:

The intense marsh degradation that occurred prior to the initiation of the Cameron-Creole Watershed Project in 1989 resulted in the formation of open water and broken marsh around Broussard Lake. The major cause of the present loss is shoreline erosion caused by wind-driven wave action.

Components:

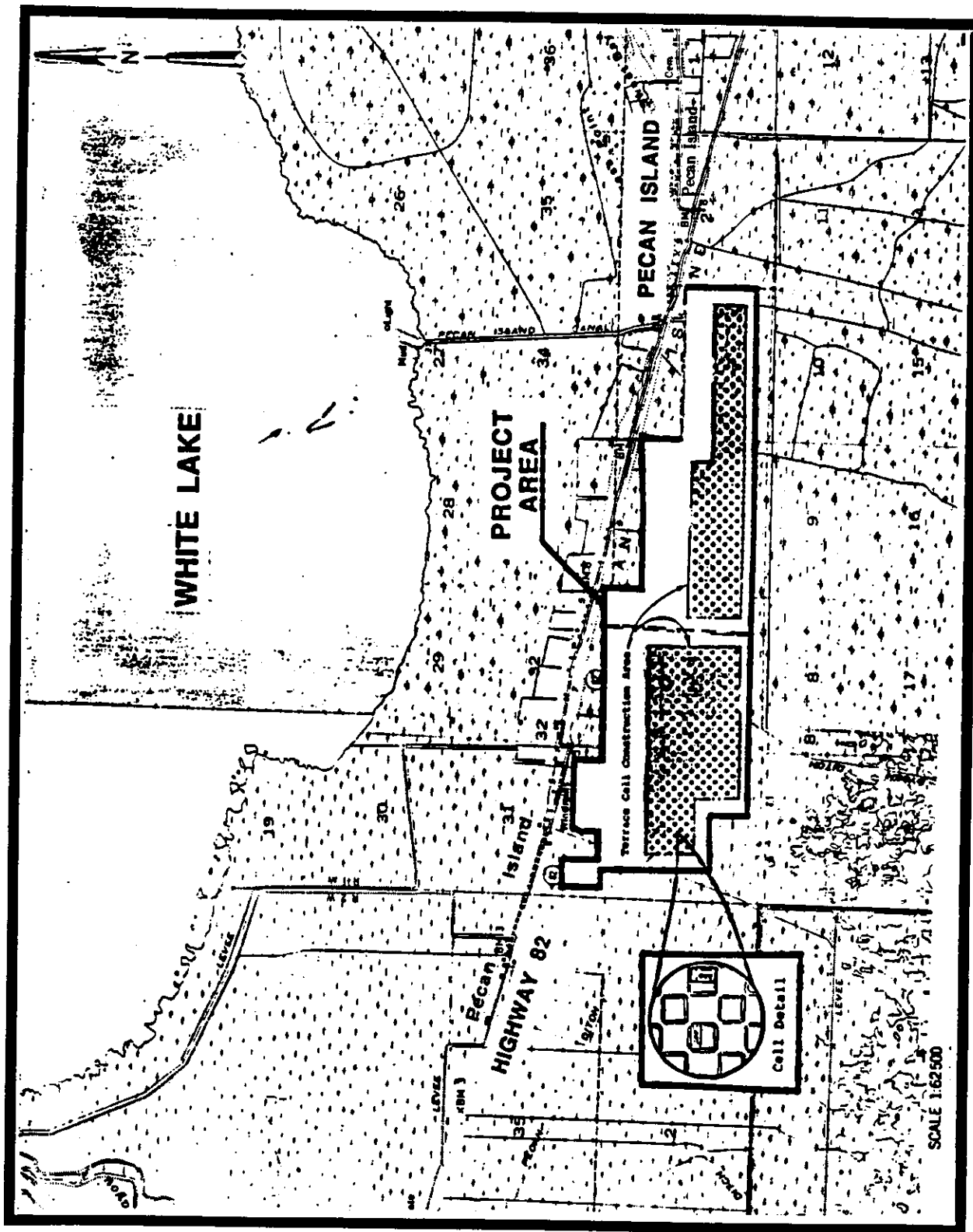
Two areas will be planted with approximately 212,250 ft (40 miles) of Bullwhip (*Scirpus californicus*) in trade gallon plugs at 5 ft spacing in two different arrangements single row and checkerboard pattern. Area 1 is a checkerboard terrace 4,000 ft x 1,500 ft with 500 ft spacing between plant rows for a total of 132,000 linear ft of plantings. The shoreline in Area 1 will be planted with a single row of bullwhip for a total of 14,000 linear ft. Area 2 consists of two checkerboard terraces; a 3,000 ft X 2,000 ft terrace with 500 ft spacing between plant rows for a total of 29,000 linear ft of plantings and a 2,500 ft X 500 ft terrace with 500 ft spacings between plant rows for a total of 8,000 linear ft of plantings.

Benefits and Cost:

First Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 99,050	\$	82	198 ac	10 ac	208 ac

MERMENTAU BASIN

XME-22	Pecan Island Terracing	78
XME-29	Freshwater Bayou Bank Stabilization	80



XME-22 Pecan Island Terracing

Project Name: XME-22 Pecan Island Terracing

Federal Sponsor: NMFS

Location and Size:

This project is located in Vermilion Parish approximately 5 miles north of the Gulf of Mexico just south of Pecan Island and Hwy 82. The total project area is 1,950 ac (5 ac brackish marsh and 1,945 ac water).

Problems:

The marshland was transformed into dry pasture land in the mid 1950's by constructing continuous dikes and pumping out the water. Deterioration and loss of the perimeter levees in recent years has converted the entire area into a shallow, open water lake with a few small marsh islands.

Components:

Project features include construction of earthen terraces over a substantial portion of the project area. The earthen cells of the terraces will consist of dredged bottom material deposited in berms approximately 2.5 ft in height. Each cell will have perimeter dimensions of approximately 200 ft on each side for a total of approximately 482 cells. Breaks or voids will be constructed in each cell to permit sediment laden water to move in or out of the cell to facilitate sediment settling. Submerged aquatic vegetation growth will be promoted in the terraced area due to reduced turbidity and wave action. Emergent vegetation growth will be stimulated by the emergent soils produced by terrace construction.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 2,220,000	\$ 904	240	378 ac	0 ac	378 ac

Project Name: XME-29 Freshwater Bayou Bank Stabilization

Federal Sponsor: NRCS

Location and Size:

This project is located along the west bank of Freshwater Bayou Canal near Little Vermilion Bay in Vermilion Parish immediately north of the North Prong of Belle Isle Bayou.

Problems:

Increased tidal action, saltwater intrusion, and boat wakes have accelerated erosion along the banks of the Freshwater Bayou Canal. Consequently, the spoil banks have been completely eroded in some areas. The spoil banks along the southern reach of the project area separate Freshwater Bayou Canal from several interior marsh ponds. If the banks breach, shoreline erosion would accelerate marsh loss.

Components:

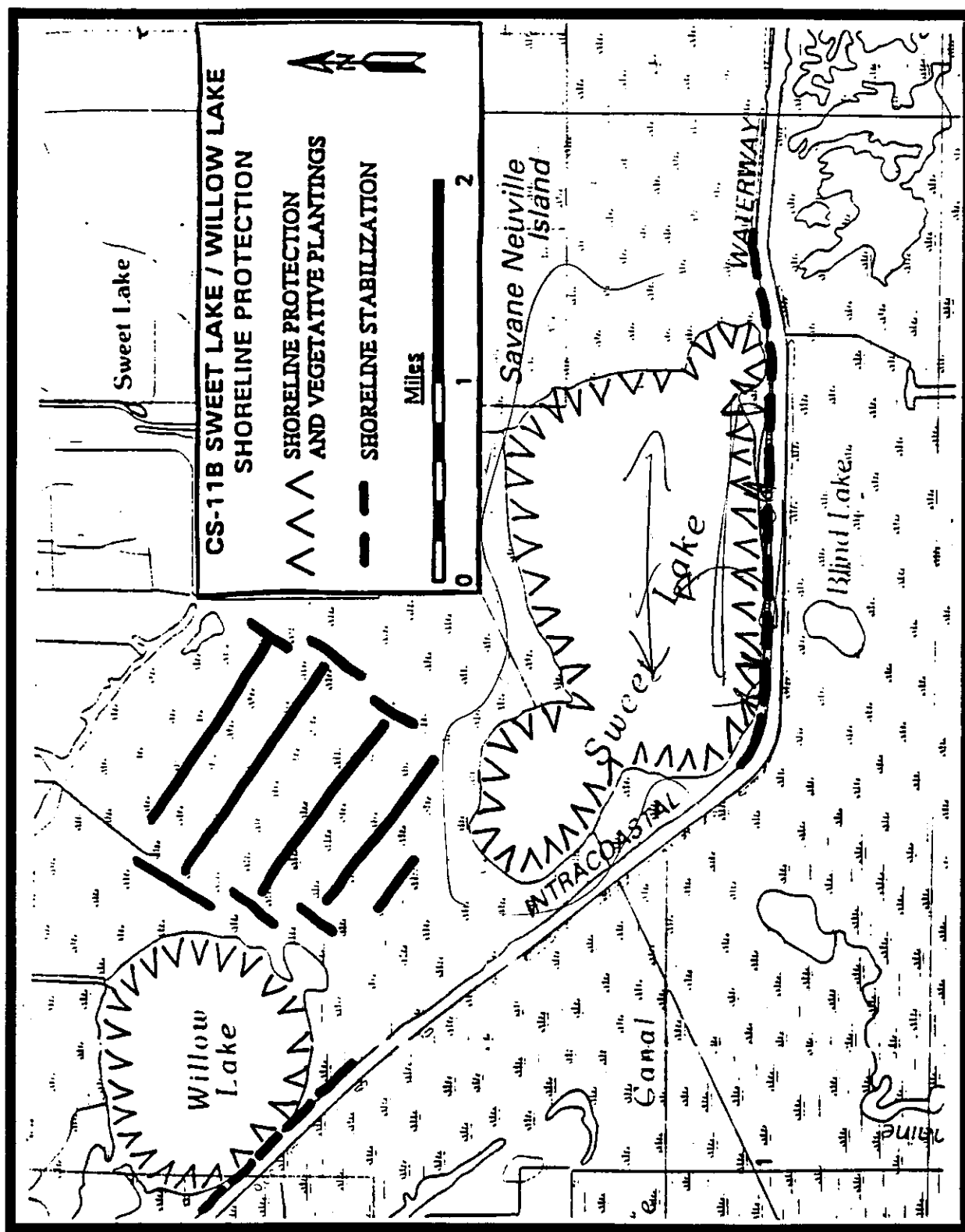
Installation of approximately 23,760 (4.5 miles) linear ft of free-standing rock dike shoreline protection along the west shoreline of Freshwater Bayou from North Prong of Belle Isle Bayou to Six Mile Canal. This dike will be placed approximately 60 ft from the bank to promote marsh accretion between the dike and the shoreline. The foreshore dike will be lowered 1 ft below mean water level along 2 locations where there are openings into the marsh to allow fisheries access. The fisheries access openings will be approximately 50 ft wide.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 3,999,000	\$ 1,581	248	0 ac	511 ac	511 ac

CALCASIEU / SABINE BASIN

C/S-11b	Sweet Lake Willow Lake Hydrologic Restoration	84
C/S-16	Black Bayou Culverts	86



CS-11b Sweet Lake / Willow Lake Hydrologic Restoration

Project Name: CS-11b Sweet Lake / Willow Lake Hydrologic Restoration

Federal Sponsor: NRCS

Location and Size:

This project is located in Cameron Parish on the northern and northwestern shorelines of the GIWW at the intersections of Sweet and Willow Lakes. The total project area is 2,877 ac (536 ac fresh marsh and 2,341 ac water)

Problems:

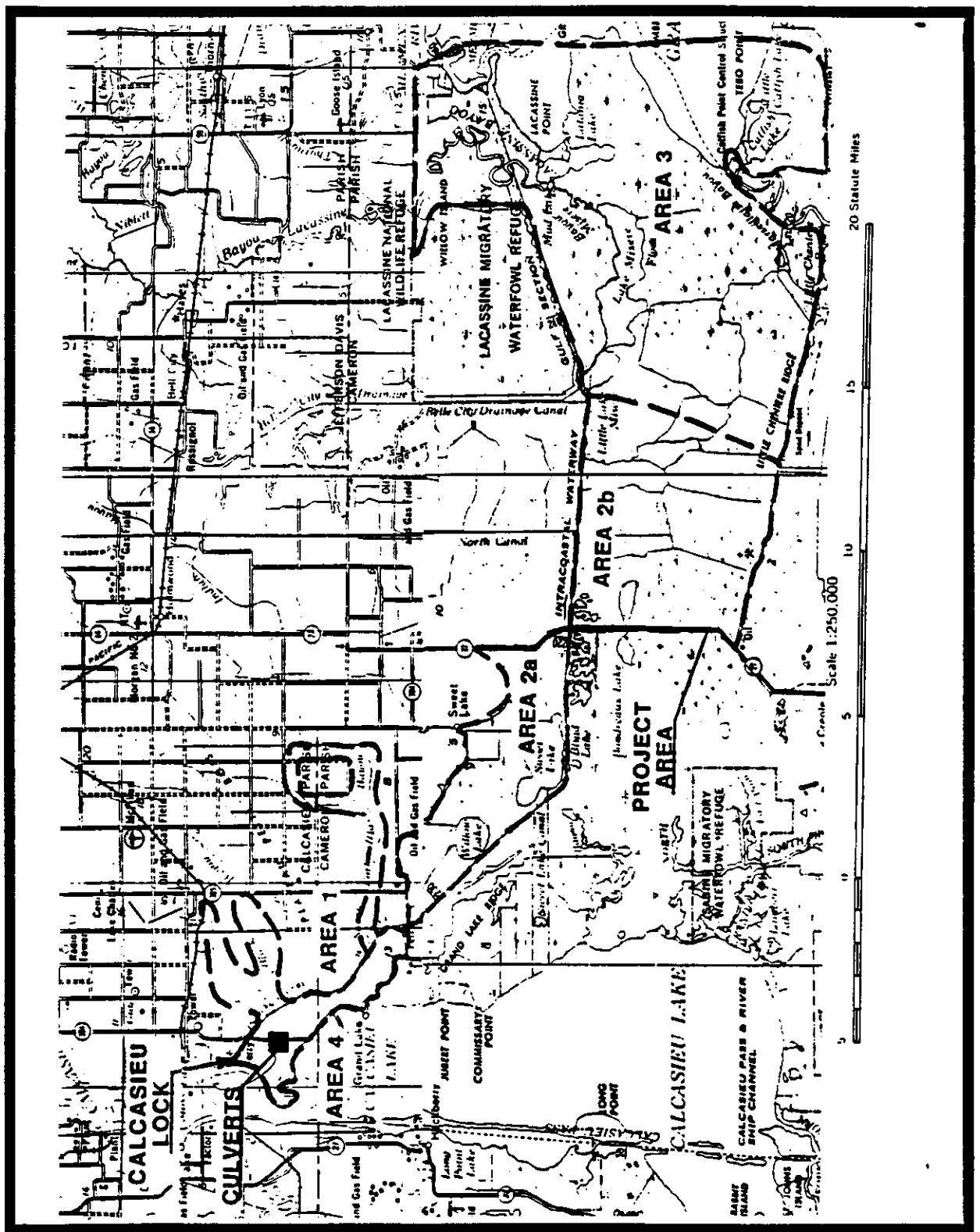
The northern shoreline of the GIWW has eroded into Sweet and Willow Lakes. This is increasing turbidity in the waters of these lakes which reduces the growth of submerged aquatic vegetation and contributes to marsh loss. Severe wind induced wave erosion is occurring along the northern shorelines.

Components:

A 14,200 ft rock rip rap embankment and 28,300 linear ft of vegetative planting will be installed on the southern shoreline of Sweet Lake. A 4,000 ft rock rip-rap embankment and 17,700 linear ft of vegetative plantings will be installed in Willow Lake. Terraces will be constructed in the eroded marsh between the lakes and planted with double row bullwhip.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 4,763,000	\$ 1,747	261	58 ac	262 ac	320 ac



CS-16 Black Bayou Culverts

Project Name: CS-16 Black Bayou Culverts

Federal Sponsor: USACOE

Location and Size:

The culvert location is along the intersection of Black Bayou and Hwy. 384 south of the Calcasieu Lock in Calcasieu Parish. The benefitted area is separated into four parts, three areas are east of the proposed Black Bayou culvert location and extend to the shoreline of Grand Lake. The outfall area is west of the proposed structures near Hwy 384. Two of the eastern areas are further divided into subareas (2a, 2b, 3a, and 3b). The total project area is 75,421 ac (54,068 ac fresh-intermediate marsh and bottom land hardwoods with 21,353 ac water).

Problems:

Wave induced shoreline erosion, ponding, and marsh breakup are occurring in the marshes surrounding the Grand - White Lake system in the Mermentau Basin due to the maintenance of excessively high water levels for agriculture and navigation. The object of the project is to reduce high water levels to a target level of 2 ft mean low gulf (MLG), especially during flood events. The USACOE has determined that the existing outlets are not adequate to maintain water levels at or below marsh level. Water levels from 1.8 to 2.0 ft MLG may be an adequate level for Grand lake and is the target for the Mermentau Basin "Lakes" region.

Components:

Five 10 ft X 10 ft box culverts with screw gates on their eastern ends [or eight 10 ft diameter metal culverts] will be installed under Hwy 384 where it presently dams Black Bayou. These culverts will be opened when the water levels are higher on the inside (east of the structures) compared to the Calcasieu Lake levels. Operation of this structure will be in coordination with Calcasieu Lake, Schooner Bayou, and Catfish Point control structures.

Benefits and Cost:

Fully Funded Cost	AAC/AAHU	AAHU	Created/Restored	Protected	Total Benefited
\$ 9,051,000	\$ 1,458	592	0 ac	837 ac	837 ac

DEMONSTRATION PROJECTS

Tire Breakwater at Freshwater Bayou	91
Tire Breakwater at Marsh Island Demonstration	93
Empire Lock Operation and Maintenance Dredging Modification	95
Vegetative Planting on Racoon Island	97
Clovelly Farms Diversion	99



Tire Breakwater at Freshwater Bayou (Demonstration)

Project Name: Tire Breakwater at Freshwater Bayou (Demonstration)

Federal Sponsor: NRCS

Location and Size:

This project is located on the east bank of Freshwater Bayou approximately 2 miles north of the Humble Canal in Vermilion Parish.

Problems:

The original width of Freshwater Bayou was 300 ft. Some sections of the channel are now in excess of 600 ft due to erosive boat wakes.

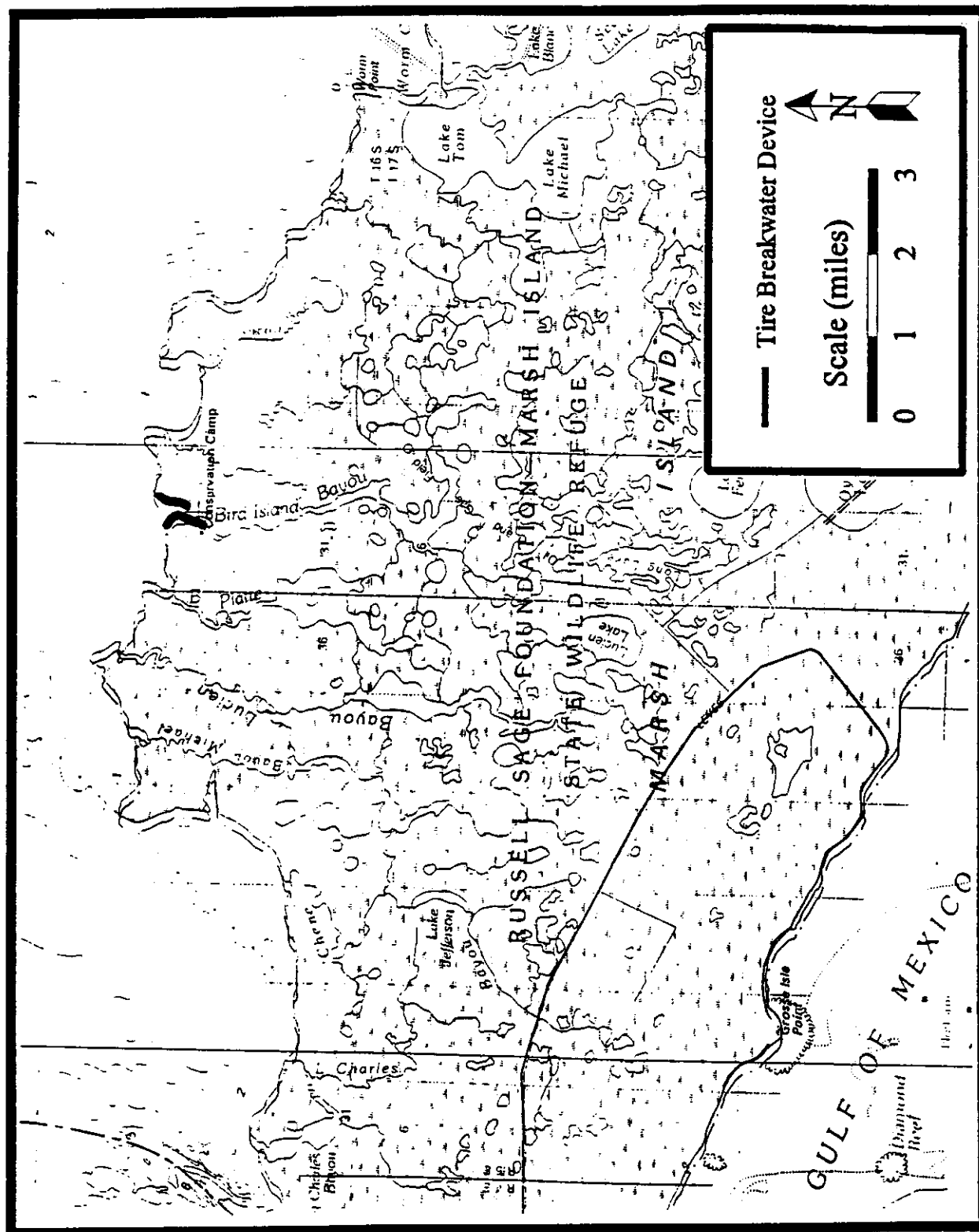
The most common structural measure in use today for shoreline protection is rock or rip rap armored embankments or revetments. Although highly effective and long lasting, rock structures have limitations such as potential subsidence on "soft" soils which in turn prevents its use in some areas in south Louisiana. The "wave dissipating device" proposed for this project can possibly overcome these limitations.

Components:

The objective of this project is to field test a conceptual device that will be comparable to aggregate structures in slowing or stopping shoreline erosion in areas where soils may not be suitable to support rock or heavier structures. The project calls for 1,300 ft of tire breakwater on the eastern shoreline of Freshwater Bayou. The breakwater will be constructed of marine grade aluminum in a triangular configuration. Discarded tires will be placed on the boat traffic side of the structure to reduce wave energy and encourage the accumulation of sediments behind the structure.

Cost:

Total cost = \$449,000



Tire Breakwater at Marsh Island (Demonstration)

Project: Tire Breakwater at Marsh Island (Demonstration)

Location and Size:

The project is located at the mouth of Bird Island Bayou on the central north shore of the Marsh Island Refuge in Iberia Parish.

Problems:

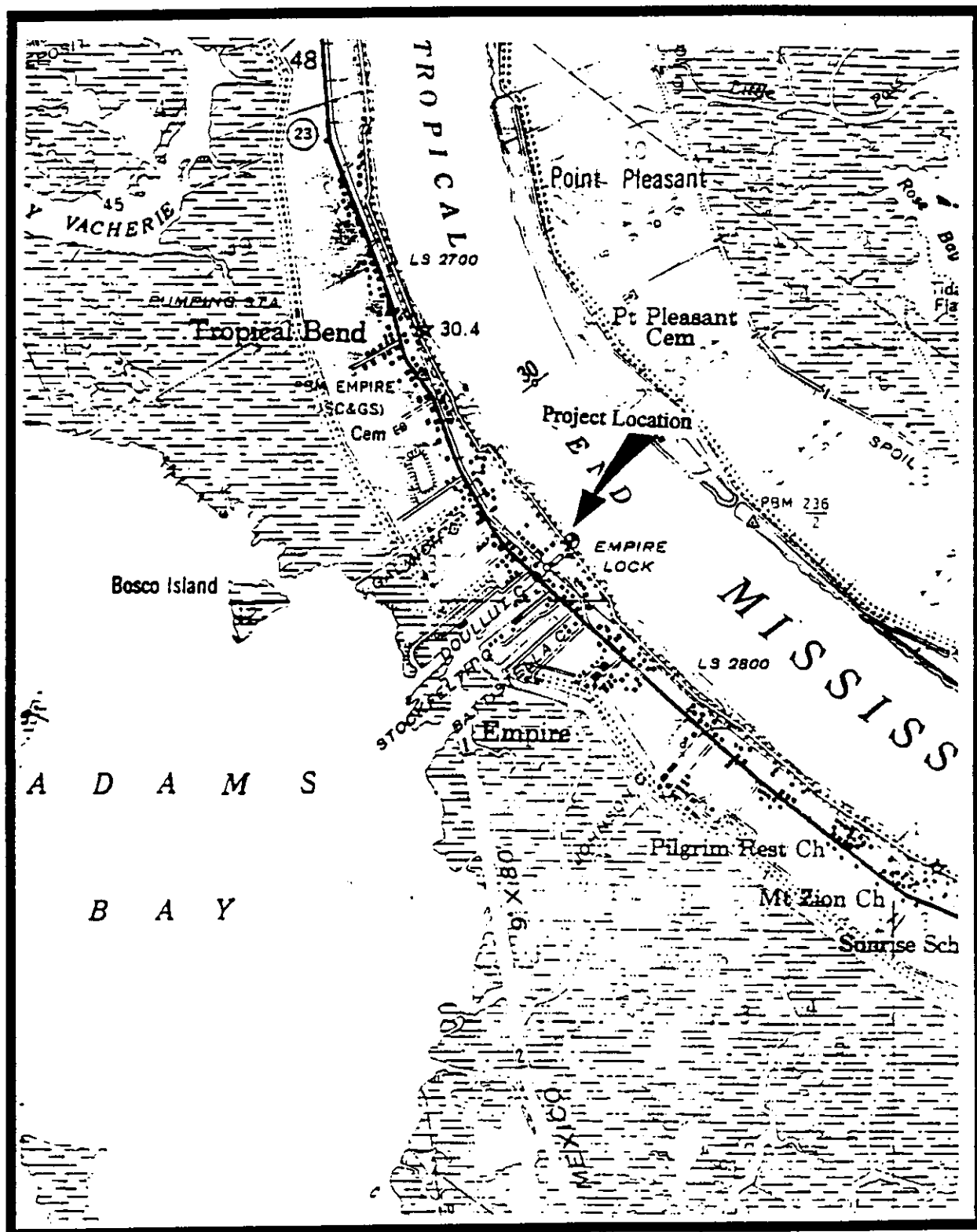
The most common structural measure in use today for shoreline protection is rock or rip rap armored embankments or revetments. Although highly effective and long lasting, rock structures have limitations such as potential subsidence on "soft" soils which in turn prevents its use in some areas in south Louisiana. The "wave dissipating device" proposed for this project can possibly overcome these limitations.

Components:

The objective of this project is to field test a conceptual device that will be comparable to aggregate structures in slowing or stopping shoreline erosion in areas where soils may not be suitable to support rock or heavier structures. The project calls for the construction of 700 ft of the "wave dissipating device" at the mouth of Bird Island Bayou. The breakwater will be installed along 450 ft on the west side and 250 ft on the east side of the channel. The structure will be similar to the one in the Freshwater Bayou project.

Cost:

Total first cost: = \$349,000



Empire Lock Operational and Maintenance Dredging Modification (Demonstration)

Project: Empire Lock Operational and Maintenance Dredging Modification (Demonstration)

Location and Size:

The project is located on the west bank of the Mississippi River in Plaquemines Parish at the Empire Lock structure and canal.

Problems:

In March 1990, the State of Louisiana, Plaquemines Parish Government, and the Corps of Engineers entered into a Memorandum of Agreement to initiate a pilot project to operate the Empire Lock for small freshwater diversions which requires dredging of the lock and canal due to siltation. A set of lock operating criteria was defined and responsibilities identified (DOTD operates the lock and dredges the Doullut Canal, and the Corps of Engineers dredges the Empire Waterway). After one year of operation the MOA was extended indefinitely at the request of PPG. However, currently operation has ceased. Our investigation has uncovered a number of issues which stopped the project: safety, user group conflicts, and funding of increased maintenance. We are currently working to resolve these issues prior to project authorization.

Components:

The project calls for operation of the Empire Lock for freshwater diversion and maintenance dredging of the lock and Doullut Canal.

Cost:

First Cost \$ 500,000



**RACCOON ISLAND
VEGETATIVE PLANTING
DEMONSTRATION**

SPONSORS:
USDA-NRCS
STATE OF LOUISIANA

Vegetative Planting on Racoon Island (Demonstration)

Project: Vegetative Planting on Racoon Island (Demonstration)

Location and Size:

The project is located on Racoon Island in Terrebonne Parish. Racoon Island is the westernmost barrier island in the Isle Dernieres chain.

Problems:

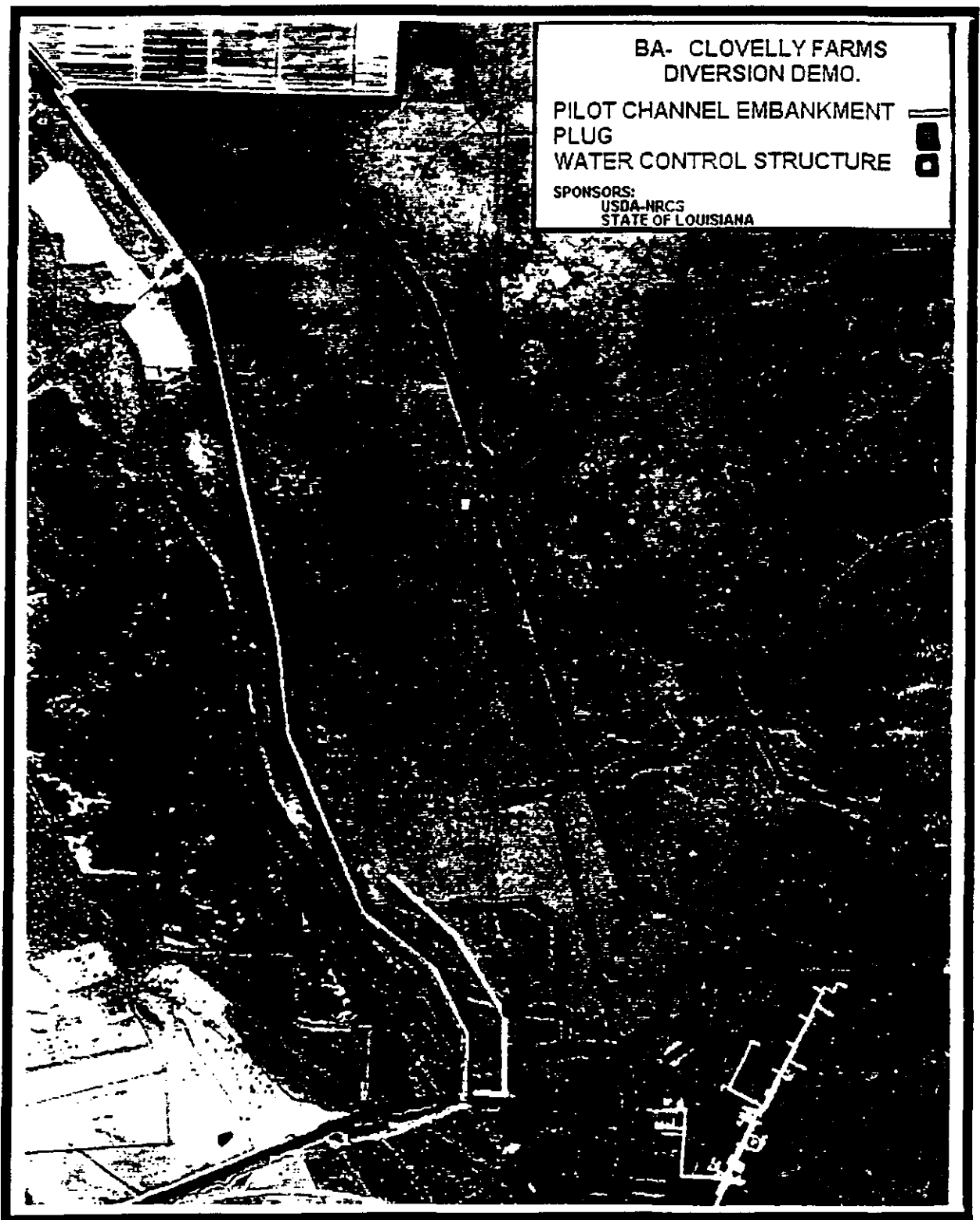
The island is rapidly eroding due to inadequate sediment supply, subsidence, and erosive wave energy. Many hurricanes have also destroyed large portions of the island. In 1993, after hurricane Andrew, the island was partially restored with FEMA funds.

Components:

The project calls for the reestablishment of plant species using vegetative and seed materials in addition to a multi-year fertilization and maintenance program. The objective of the project is to stabilize the recent restoration project.

Cost:

Fully funded cost \$ 523,000



Clovelly Farms Diversion (Demonstration)

Project: Clovelly Farms Diversion**Location and Size:**

The project is located south of Clovelly Farms in Lafourche Parish and encompasses approximately 1,700 acres.

Problems:

The majority of forced-drainage and pump-off levee systems in south Louisiana discharge into either manmade or natural channels which eventually lead to coastal bays or lakes. Wetland areas adjacent to these systems seldom derive marked benefits from the available source of freshwater and nutrients.

Components:

The project calls for diversion of the outfall from the pump station discharge northward into the project area to provide freshwater, nutrients, and sediments which will ultimately enhance the vegetated wetlands in the area.

Project features include:

- 1) five armored earthen plugs
- 2) 4,000 ft of conveyance channel guide levee
- 3) 2,200 ft of spoil bank maintenance
- 4) one fixed-crest weir
- 5) 3,800 ft of spoil bank degradation

Cost:

First cost \$658,000