U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL MARINE FISHERIES SERVICE

SILVER SPRING, MARYLAND

ENVIRONMENTAL ASSESSMENT OF LITTLE VERMILION BAY SEDIMENT TRAPPING PROJECT

CWPPRA PROJECT TV-12, PTV-19

VERMILION PARISH, LOUISIANA

August 1998

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Environmental Assessment Of Little Vermilion Bay Sediment Trapping Project

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1.0 INTRODUCTION

This Environmental Assessment (EA) evaluates the impacts of activities to enhance wetlands in and around the western arm of Little Vermilion Bay at its junction with Freshwater Bayou (Figure 1). The project is called Little Vermilion Bay Sediment Trapping and is located in south-central Vermilion Parish, Louisiana (Figure 2).

This project is part of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) of 1990 (16 U.S.C. §§ 777c, 3951-3956). In accordance with CWPPRA, the heads of five federal agencies and the Government of the State of Louisiana comprise a Task Force to implement a "comprehensive approach to restore and prevent the loss of coastal wetlands in Louisiana" (16 U.S.C. § 3952 (b) (2)). The five federal agencies involved are: the U.S. Army Corps of Engineers (COE); the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS); the U.S. Department of Interior, Fish and Wildlife Service (FWS); the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS); and the U.S. Environmental Protection Agency (EPA). The Little Vermilion Sediment Trapping Project is on the fifth Priority Project List, approved by the CWPPRA Task Force on February 28, 1996 (LDNR 1997a), and will soon be ready for construction.

1.1 Technical Background

The Louisiana coastal zone contains approximately 3,200,000 ha (7,900,000 acres) of which about 1,200,000 ha (3,000,000 acres) are coastal marshes. These marshes convert to shallow open water at a rate of 9,039 ha/yr (34.9 mi^2/yr) (Barras et al., 1994). The site specific factors influencing conversion of marsh to open water vary widely and are difficult to assess, but natural as well as anthropogenic factors are responsible.

An most important process in landscape dynamics in coastal Louisiana is the delta lobe cycle (Coleman 1988). This cycle consists of natural periods of wetland creation and wetland loss. Natural wetland loss results from compaction and subsidence of deltaic deposits, eustatic sea level rise, physical substrate scouring, and erosion exacerbated by periodic tropical cyclonic storms (Craig et al., 1979; Boesch et al., 1983). Herbivory may also accelerate wetland loss (Nyman et al., 1993).

OLD RIVER CONTROL STRUCTURE

LOUISIANA

National Marine Fisheries Service

PROJECT VICINITY

PROJECT SITE

NUMEROUS OIL WELL STRUCTURES

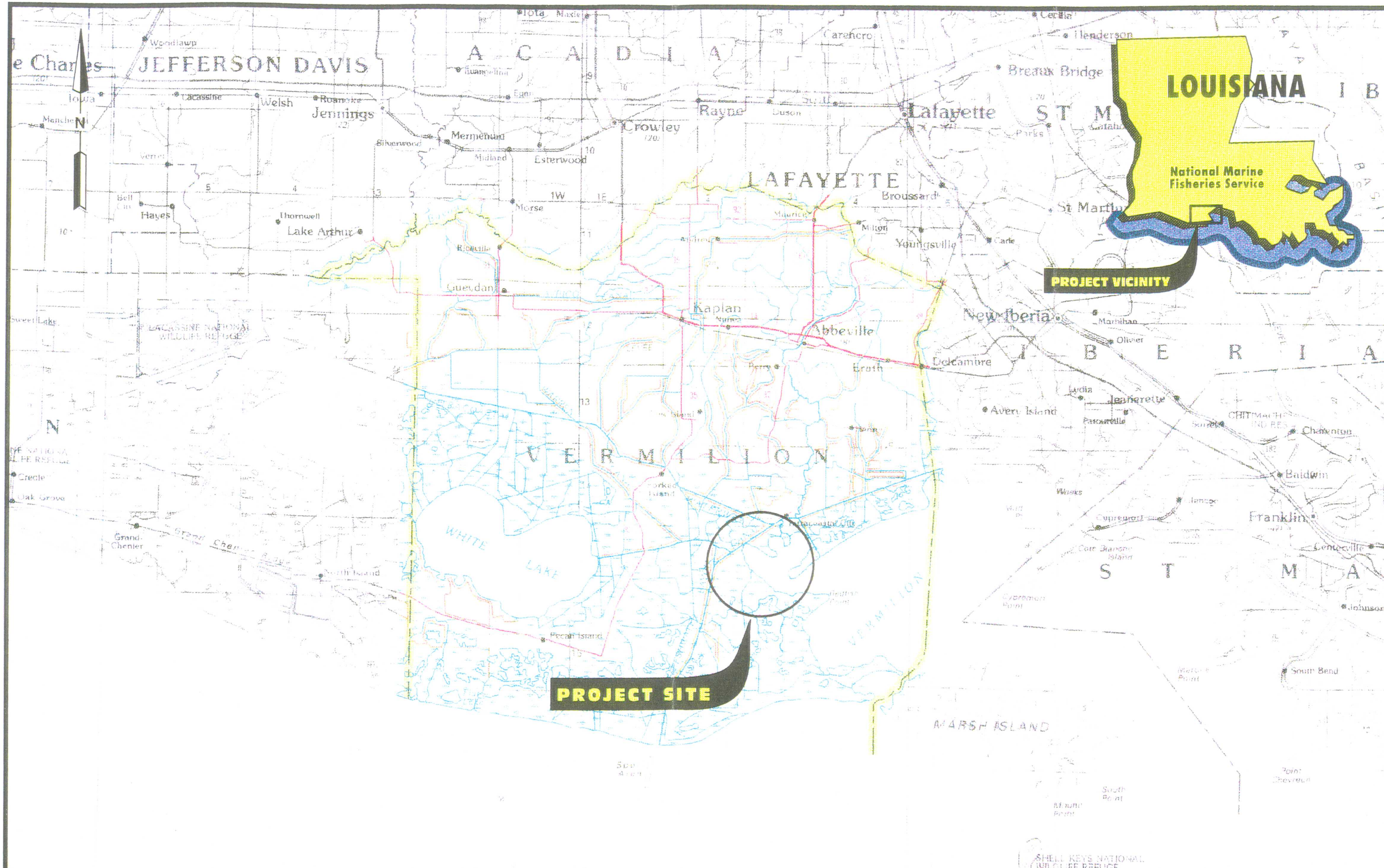
NUMEROUS OIL WELL

GOTECH, INC.
CONSULTING ENGINEERS

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION PROJECT
Little Vermilion Bay Sediment Trapping Project

REGIONAL MAP

FIGURE 1



GOTECH, INC. CONSULTING ENGINEERS & C-K ASSOCIATES • INC

NOTE:
BASE MAP TAKEN FROM U.S.G.S. MAP "STATE OF LOUISIANA", DATED 1990, AT A SCALE OF 1:500,000

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION PROJECT
Little Vermilion Bay Sediment Trapping Project

PARISH MAP

FIGURE 2

In addition to natural processes, human activity also causes wetland loss. Anthropogenic activity accounted for 26 percent of total wetland loss within Louisiana between 1955 and 1978 (Turner and Cahoon, 1988). These direct losses were caused by dredging canals and creating spoil-banks, draining land, and expanding agricultural and urban areas. Human activity also causes wetland loss indirectly. Turner and Cahoon (1988) attribute indirect causes of wetland loss to five interrelated effects. These include temporal trends in estuarine salinity, saltwater intrusion in waterways, saltwater movement in marshes, plant responses to salinity change and submergence, and subsidence, water level rise and sediment deprivation. Indirect losses were exacerbated by levee construction for flood protection along the Mississippi River (Templet and Meyer-Arendt, 1988), extensive canal construction associated with oil and gas exploration (Turner et al., 1982), and navigation channel development and maintenance dredging. These large scale perturbations altered hydrological conditions and sediment distribution over large areas and facilitated saltwater intrusion into coastal marshes.

As part of the delta lobe cycle, the Mississippi River began shifting into the Atchafalaya River early this century. In 1900, the Atchafalaya River received 13 percent of the Mississippi River's flow at the point of convergence near Simmesport, Louisiana, approximately 70 miles northeast of Lafayette, Louisiana (Morgan et al., 1953). By 1952, the Atchafalaya River had captured 30 percent of the Mississippi's flow. In 1963, flow from the Mississippi River into the Atchafalaya River was regulated by the construction of the Old River Control Structure near Simmesport, Louisiana (Figure 1) to prevent completion of the channel switching. Even with this structure, sediment deposition is converting shallow open water to wetlands in the lower Atchafalaya Basin (Adams and Baumann, 1980), Atchafalaya Bay (van Heerden et al., 1981), and on the downdrift coast of the Gulf of Mexico (Wells and Kemp 1981, Orton 1959). The Gulf Intracoastal Waterway (GIWW) has become a conduit carrying sediment-rich waters from the Atchafalaya River west to West Cote Blanche Bay (CEI 1977), Vermilion Bay, and Little Vermilion Bay. Subaqueous deltas are developing where confined flow from the GIWW slows and spreads upon entry into these bays (CEI 1977).

Navigation charts indicate that water depth in Little Vermilion Bay was 0.9-1.5 m (3-5 ft) in the 1960's, but currently ranges from 0.3-0.9 m (1-3 ft) (Foret, personal observation). Two subaqueous deltas are developing in Little Vermilion Bay where confined flow from the GIWW is delivered via Freshwater Bayou, which is also a constructed navigation channel (Figure 2). These subaqueous deltas are associated with two artificial channels leading from Freshwater Bayou

into Little Vermilion Bay (Figure 3). Subaqueous levees resulting from redistributed spoil material and natural sedimentation are associated with each channel. The subaqueous levees indicate that these channels are functioning as a distributary network carrying sediment from Freshwater Bayou to the open bay. Subaqueous deltas are expected to convert to subaerial deltas within 20-30 years. The resulting delta lobes will directly create wetlands as they are colonized by emergent wetland plants and will indirectly slow shoreline erosion of existing wetlands by reducing wave energy in the bay. The deltas are expected to be fairly small because of the size of the channels carrying confined flow from Freshwater Bayou to the bay.

There have been no documented studies within Little Vermilion Bay. However, data from other areas are becoming available that are relevant to proposed project features. Sediment diversions have not been used to induce wetland creation from Atchafalaya River sediments, but are a common and effective method of inducing wetland creation at the mouth of the Mississippi River (LDNR 1996a, Boyer et al. 1997). Terraces have been used to create wetlands in coastal Louisiana and are particularly effective at increasing the length of marsh water interface (LDNR 1993). Furthermore, Shell Oil Company constructed terraces in front of properties managed by Vermilion Land Corporation, and adjacent to the project area. Some terraces were vegetated, while others were not. After 13 months, those that were vegetated continued to be colonized by additional vegetation but the unvegetated terraces eroded away (Edwards, personal communication). Vegetative plantings have been used to slow shoreline erosion with varying success in coastal Louisiana. Plantings on the Gulf of Mexico have been unsuccessful (LDNR 1996b) whereas plantings on the shoreline of Vermilion Bay have been very successful (LDNR 1997b) as have been plantings on dredged terraces (LDNR 1993).

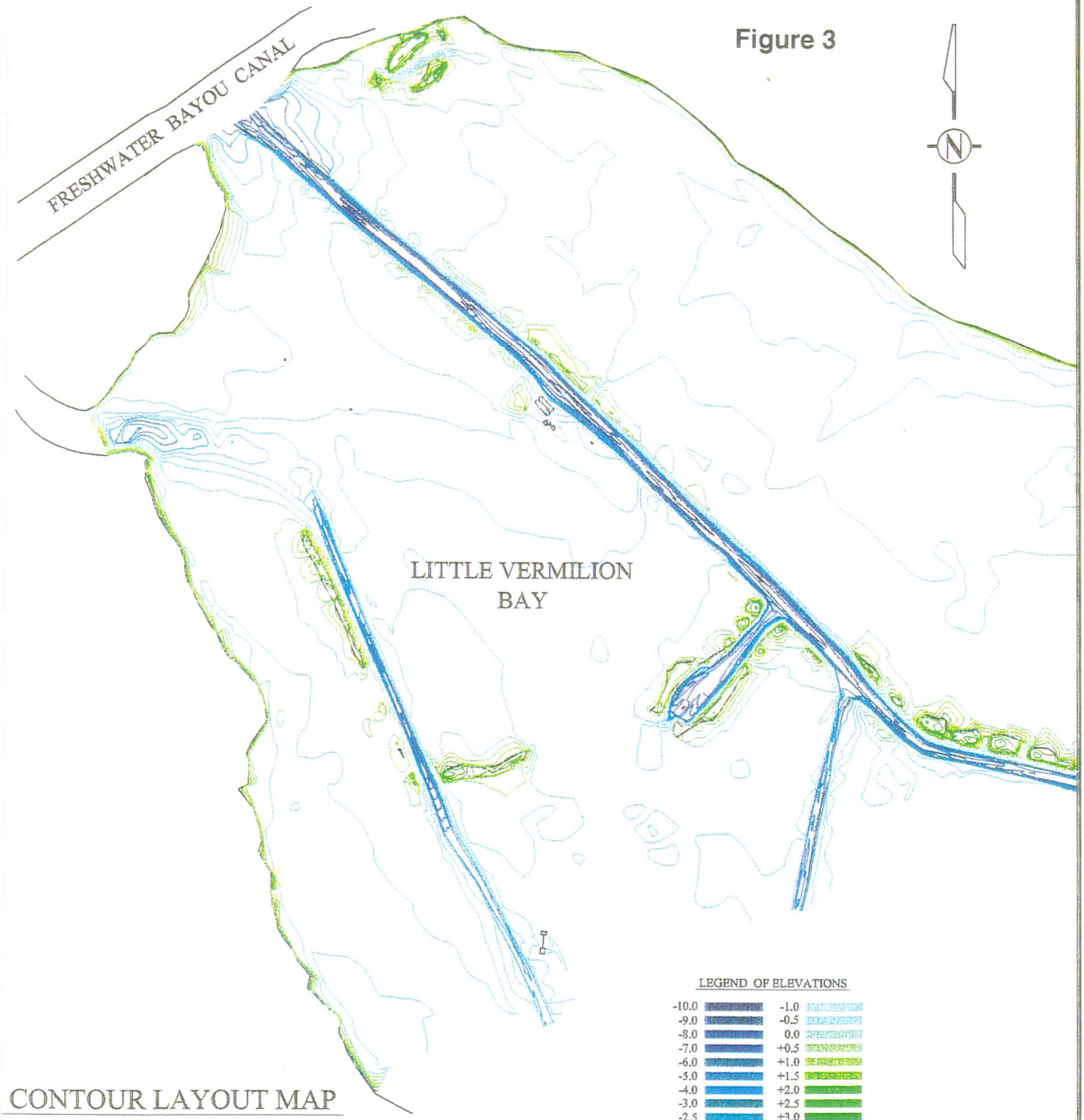
1.2 Project Location

Little Vermilion Bay is a shallow western extension of Vermilion Bay, located in Vermilion Parish. The project is centered at approximately 29°43'00"N, 92°11'00"W.

1.3 Project Funding

Eighty-five percent on the funding for this project is provided through CWPPRA with 15 percent cost sharing by LDNR. The project is

Figure 3



CONTOUR LAYOUT MAP

1000' 500' 0 1000'

CWPPRA PROJECT TV-12, PVT-19

LITTLE VERMILION BAY SEDIMENT TRAPPING PROJECT

VERMILION PARISH, LOUISIANA

EXHIBIT III

411 Wall Street
Lafayette, LA 70506-3096

PENSCO
PROFESSIONAL ENGINEERING AND SURVEYING CO., INC.

DATE	DESCRIPTION	BY
	REVISIONS	

DESIGNED JOY	DETAILED TJP
CHECKED PJL	CHECKED JOY

administered by cooperative agreements NMFS and LDNR.

2.0 PURPOSE AND NEED FOR ACTION

2.1 Purpose

The goal of CWPPRA is to "restore and prevent the loss of coastal wetlands in Louisiana." The purposes of this project are (1) to increase the amount of wetlands created by natural sediment deposition where confined flow of Atchafalaya River water enters Little Vermilion Bay, and (2) protect existing wetlands bordering the bay from erosion.

2.2 Need For Action

There is a critical need to create new wetlands that will offset marsh loss in coastal Louisiana. There is also a critical need to slow the loss of existing wetlands. The proposed action provides a unique opportunity to address both needs.

2.2.1 Release of Natural Wetland Creation Processes

Natural coastal wetland creation, which was faster than natural wetland loss until early this century when the Mississippi River was managed for flood-control and navigation (Coleman 1988), has virtually ceased except for 1,158 ha created by the river at the Wax Lake Outlet and Atchafalaya River since 1973 (Evers et al. 1998). Thus, no-net-loss cannot be achieved in coastal Louisiana simply by ending human induced wetland loss because natural wetland loss associated with the delta lobe cycle continues (Coleman 1988, Penland and Suter 1990). Measures to enhance natural wetland creation processes, such as sediment diversions used elsewhere in coastal Louisiana (LDNR 1996a, Boyer et al. 1997) are needed. Such measures are particularly critical where wetland development processes are constrained by artificial navigation channels as they are in Little Vermilion Bay.

2.2.2. Protection of Existing Wetlands

Recent erosion rates in Little Vermilion Bay of 2.4 m/yr (8 ft/yr) are expected to continue, thereby causing the loss of emergent wetlands surrounding the bay. The loss of intermediate marsh in the Louisiana coastal zone from 1956 to the present represents a significant natural resource loss. Intertidal

marshes are among the most productive ecosystems on earth and their rapid disappearance may significantly impact the economy of South Louisiana. Action is therefore needed to provide immediate protection to existing wetlands.

2.2.3 Protection of Wildlife Habitat

Lack of wetland creation and continued wetland loss reduce habitat availability for many wildlife species in the project area and coastwide. The project area consists primarily of shallow, open water, which is utilized by few wildlife species particularly when there is little submersed aquatic vegetation (SAV) as in the project area. Wetland loss increases the availability of shallow open water by approximately 9,039 ha/yr (34.9 mi^2/yr) in coastal Louisiana (Barras et al., 1994). The project area also contains emergent wetlands, which are heavily utilized by wildlife because they are intermediate marshes, which provide higher quality habitat than brackish and saline marsh for nutria (*Myocastor coypus*), raccoon (*Procyon lotor*), puddle ducks (*Anas* sp.), and alligator (*Alligator mississippiensis*) (Palmisano 1973, McNease and Joanen 1978). Reversing declines in habitat availability for wetland wildlife species requires creating new emergent wetlands, protecting existing wetlands from erosion, and increasing the abundance of SAV.

2.2.4 Protection of Marine Fisheries Habitat

The Vermilion Bay complex, provides significant estuarine habitat for marine-transient and resident fishery species, but has a relatively low length of interface between emergent wetlands and shallow open water. Interface areas are particularly valuable to estuarine dependent fish and crustacean species. This estuary, near the Gulf of Mexico spawning areas, provides nursery and foraging habitats that support the production of commercial and recreational fish and shellfish. Vermilion Bay along with West Cote Blanche Bay, East Cote Blanche Bay, and Atchafalaya Bay, forms one of the most extensive Louisiana estuarine complexes. Actions are therefore needed to replace marshes that are converting to shallow open water elsewhere in coastal Louisiana.

2.2.5 Protection of Infrastructure

The marshes separating Freshwater Bayou from Little Vermilion Bay have eroded to the point that 228.6 m (750') of the navigation channel are currently exposed to wave energy from

Little Vermilion Bay. Another 304.8 m (1,000') feet of Freshwater Bayou are currently separated from Little Vermilion Bay by a 30.5 m (100') wide strip of eroding marsh. It is therefore likely that 533.4 m (1,750') of Freshwater Bayou will soon be exposed to open bay wave energy. Actions are needed to stop and reverse marsh erosion that is exposing shipping on Freshwater Bayou to wave energy from Little Vermilion Bay.

2.3 Authorization

NMFS is the federal sponsor for implementing this sediment trapping project which is included on the Fifth Priority Project List (LDNR 1997b). This responsibility includes conducting the evaluation and other activities involved for final decision-making in compliance with the National Environmental Policy Act (NEPA) of 1969. To meet NEPA compliance requirements environmental documentation must be prepared for each wetland project site that is modified or restored.

The Little Vermilion Bay Sediment Trapping Project uses sediment diversion, terrace construction, and vegetative plantings to create and protect 179 ha (441 acres) of emergent wetlands (LDNR 1997b).

3.0 ALTERNATIVES INCLUDING PROPOSED ACTION

The project site and scope were identified by NMFS as part of Task Force submittals on the Third Priority Project List. This project is one of several selected by the Task Force for the Teche-Vermilion Basin. The recognition that two artificial channels leading from Freshwater Bayou into Little Vermilion Bay are functioning as distributary channels stimulated interest in designing a plan to enhance sediment deposition and wetland creation by these artificial channels. Consequences of the proposed action are discussed in Section 5.0.

3.1 No-Action Alternative

The no-action alternative would allow current shoreline erosion rates to continue. The no-action alternative would thus fail to protect existing wetlands that provide and protect other resources in Louisiana. The no-action alternative would also postpone, and possibly reduce, the area of wetlands created by natural sediment deposition in Little Vermilion Bay. The no-action alternative was not the preferred alternative because of the public need to create new coastal marshes to offset losses elsewhere and to protect existing coastal marshes as evidenced by the public funding through the CWPPRA.

3.2 Non-Vegetated Terrace without Distributary Network Alternative

This alternative could temporarily reduce wave energies, and thus temporarily reduce erosion of existing wetlands. However, with the wave-wind energy, it is unlikely that the terraces would last long enough to be colonized by vegetation (Edwards, *personal communication*). This would then re-expose fragile shoreline to erosion. Furthermore, dredging and construction of terraces without considering the natural distributary network could destroy development of that system and hence prevent natural wetland development expected to eventually occur in the bay. This alternative was rejected because of the likely damage to delta development processes operating in Little Vermilion Bay.

3.3 Vegetated Terrace without Distributary Network Alternative

Construction of vegetated terraces without regards to the distributary network in the bay was considered. This alternative could reduce wave energies and thereby slow the erosion of exiting wetlands that border the bay. However, dredging and construction of terraces without considering the natural distributary network developing in the bay could stop development of that system and hence prevent natural wetland development expected to eventually occur in the bay. This alternative was also rejected because of the likely damage to delta development processes operating in Little Vermilion Bay.

3.4 Non-Vegetated Terrace with Distributary Network Alternative

Dredging to enhance the existing distributary network would likely result in the development of 80-120 ha (200-300 acres) of emergent wetlands within 20 years. However, terraces would likely erode within 12-24 months unless planted and would thus allow erosion of existing wetlands to proceed at current rates and may delay the development of subaerial delta deposits and subsequent natural wetland creation. This alternative was rejected because it would probably delay subaerial development and would certainly allow current erosion of existing wetlands to continue for 10-20 years.

3.5 Dredging to enhance the Distributary Network and 30-m wide (100') or 15-m wide (50') Vegetated Terraces

Dredging to enhance the distributary network, combined with utilizing the material excavated to construct 30-m (100') terraces, followed by vegetative plantings on terraces and all existing shorelines was considered. According to a Wetland Value Assessment (WVA) performed by the Envronmental Working Group of the CWPPRA, this

alternative was expected to create 145 ha (358 acres) of new marshes as subaerial deltas develop from subaqueous deltas within 20 years, to immediately create 13 ha (32 acres) of marsh on the terraces, and to protect 20 ha (51 acres) of existing marsh from shoreline erosion, and to greatly increase the abundance of SAV. However, comparison of shoreline characteristics between the project area and shoreline planting projects in Vermilion Bay indicated no benefit of planting 70% of the shoreline in this project area. Thus, this project could create or protect 164 ha (405 acres) of wetlands, as opposed to 178 ha (441 acres) anticipated by the WVA Work Group (Table 1). Unfortunately, a suction dredge is required to create 30-m (100') wide terraces, but soil tests indicated that the resulting slurries would create embankment slopes of 1(V):20(H) or flatter (Pensco 1998). Thus, 30 m wide terraces could be created only if a second lift of the material was done after five years. Thirty meter wide terraces were excluded from further consideration because of excessive dredging costs.

Soil tests indicated that the maximum width of terrace crest that can be created with a bucket dredge is eight meters (27') (Pensco 1998). Terraces 15-m wide could be created by dredging parallel channels and placing all the material between them; this would require dredging 7,437 meters (24,400') of channel (Table 1). Using 15-m wide terraces would create 13 hectares (32 acres) of terrace. This alternative was expected to create and protect 164 hectares (405 acres) but was rejected because of the low ratio of dredging to wetland creation (Table 1).

Table 1. Characteristics of different dredging scenarios considered to protect wetlands in and around Little Vermilion Bay, Louisiana.

	----alternative 3.5----		----alternative 3.6----	
	30 m wide	15 m wide	4,267 m long	6,065 m long
length dredged (ft)	14,000	24,400	19,900	14,000
wetlands created by sedimentation (acres)	358	358	358	358
terrace crest width (ft)	100	23	23-27	23-27
wetland created by terraces (acres)	32	32	31	22
shoreline planted (ft)	14,000	4,200	4,200	4,200
wetlands prevented from eroding (acres)	15	15	15	15
total wetlands created or protected (acres)	405	405	404	395
total wetlands per 1,000 linear feet dredged	28.9	16.6	20.3	28.2

3.6 Preferred Alternative

Dredging 4,267-6,065 meters (14,000-19,900') to enhance the distributary network, combined with utilizing the material excavated to construct seven to eight meter (23-27') wide terraces, followed by vegetative plantings on the terraces and 30% of the existing shoreline was the preferred alternative. This project is expected to create 145 hectares (358 acres) of new marshes as subaerial deltas develop from subaqueous deltas within 20 years, to immediately create nine to thirteen hectares (22-31 acres) of marsh on the terraces, and to protect six hectares (15 acres) existing marsh from shoreline erosion, and to greatly increase the abundance of SAV. This project also has a favorable ratio of wetland acres to length of channel dredged (Table 1). The actual amount of dredging will depend on the cost of dredging when bids are submitted for construction. Terrace width varies with soil characteristics in the project area.

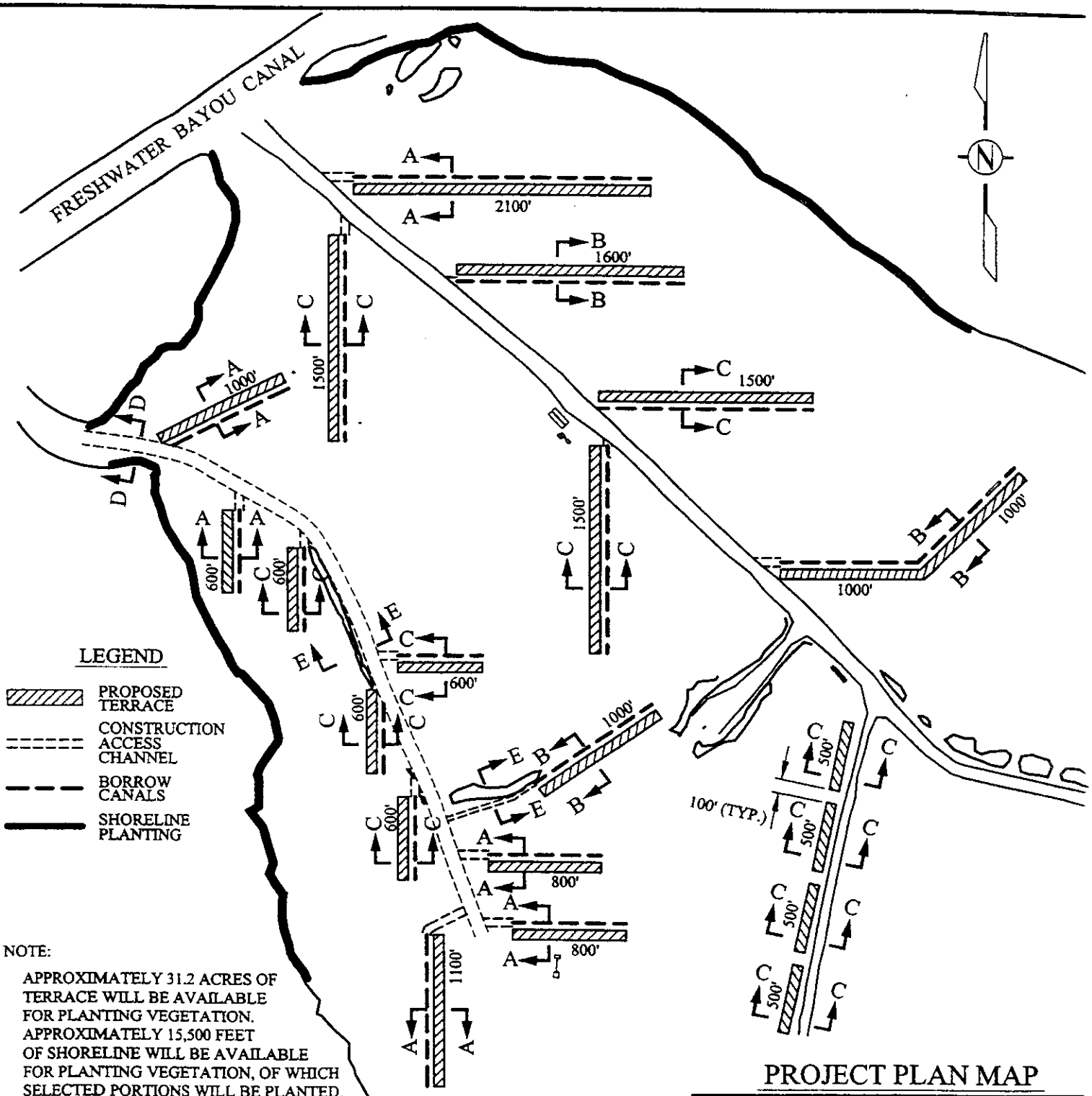
3.6.1 Distributary Network

The project will use dredging to increase the capacity of two artificially induced, but naturally developing distributary channels in the project area (Figure 3). Length of distributary channel dredged will range from 4,267-6,065 meters (14,000-19,900'). The maximum extent of dredging is indicated in Figure 4. Enhancing the capacity of this network will facilitate spreading of a larger sediment load over a wider area than the current system is affecting. Given that sedimentation exceeds subsidence, the spreading of sediments is expected to cause 145 hectares (358 acres) of the bay to become subaerial within a decade. Dredged distributaries extending from the two man-made channels will be 30 meter (100 ft) wide and three meter (10 ft) deep (Figure 5a, 5b).

3.6.2 Terraces

Wave energy in the bay is eroding existing wetlands fringing the bay and may be slowing development of the existing subaqueous levees and deltas into subaerial features. To reduce wave energy in the bay, dredged material excavated during enhancement of the distributary system will be placed as terraces adjacent to each dredged distributary. The terraces will be planted with wetland vegetation (*Spartina alterniflora* or other suitable species) to slow their erosion. Terrace characteristics will vary with soil sediment characteristics in the project area (Figure 5a, 5b). The area of wetland created reflects the intertidal slopes of the terraces as well as the crests.

Figure 4



NOTE:

APPROXIMATELY 31.2 ACRES OF TERRACE WILL BE AVAILABLE FOR PLANTING VEGETATION. APPROXIMATELY 15,500 FEET OF SHORELINE WILL BE AVAILABLE FOR PLANTING VEGETATION, OF WHICH SELECTED PORTIONS WILL BE PLANTED.

AVERAGE MEAN TIDE LEVEL IS 1.42' NGVD.

1,000' 500' 0 1,000'

PROJECT PLAN MAP

CWPPRA PROJECT TV-12

LITTLE VERMILION BAY SEDIMENT TRAPPING PROJECT

VERMILION PARISH, LOUISIANA

411 Wall Street
Lafayette, LA 70506-3096

PENSCO
PROFESSIONAL ENGINEERING AND SURVEYING CO., INC.

DATE	DESCRIPTION	BY
	REVISIONS	

DESIGNED JOY	DATE: JULY 6, 1998	SHEET 3 O
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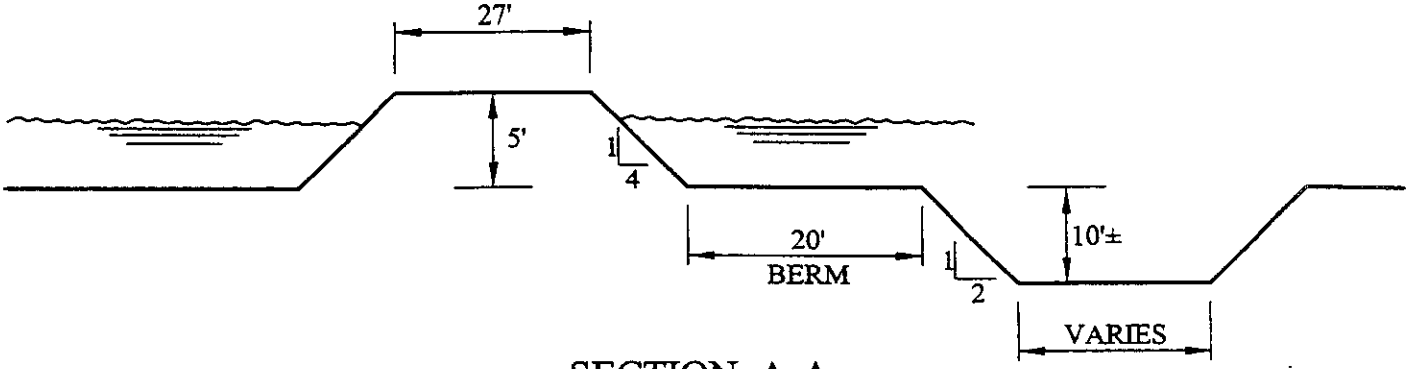
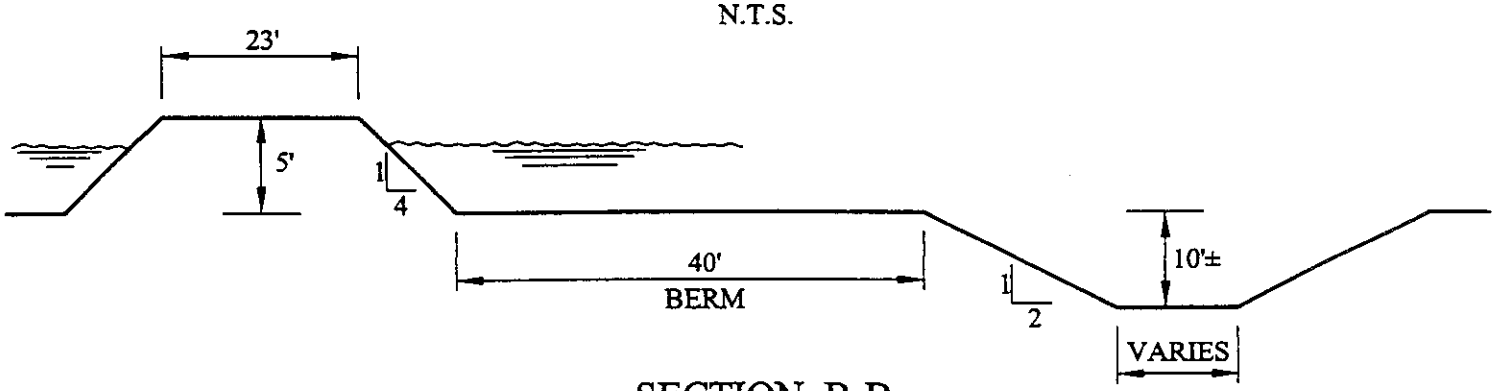
Figure 5 a



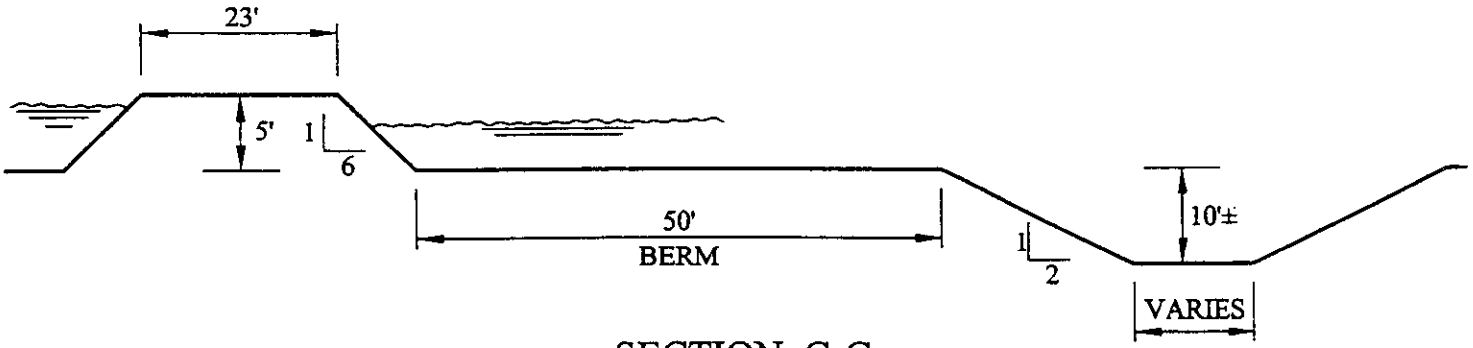
SECTION A-A

N.T.S.



SECTION B-B

N.T.S.



SECTION C-C

N.T.S.

VOLUMES:

EXCAVATION=219,600 cy *

TERRACE= 183,000 cy

* 20% ADDED FOR CONSOLIDATION

CWPPRA PROJECT TV-12

LITTLE VERMILION BAY SEDIMENT TRAPPING PROJEC

VERMILION PARISH, LOUISIANA

411 Wall Street
Lafayette, LA 70506-3096

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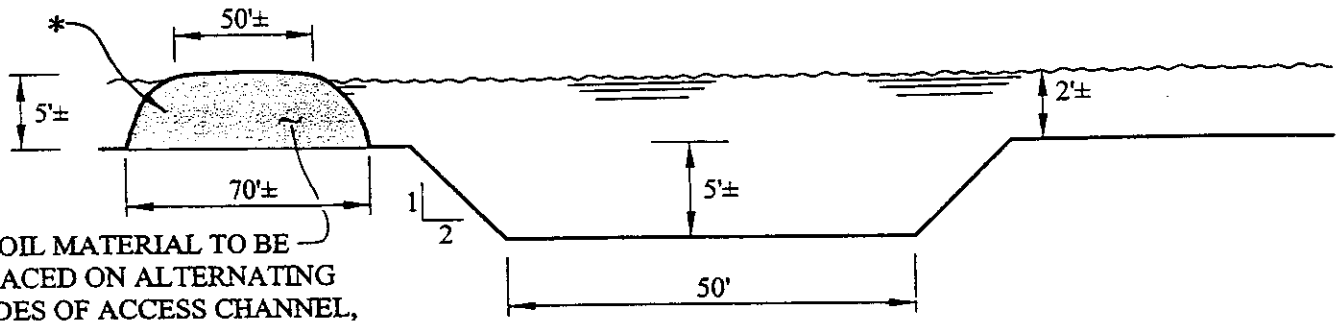
SHEET 4

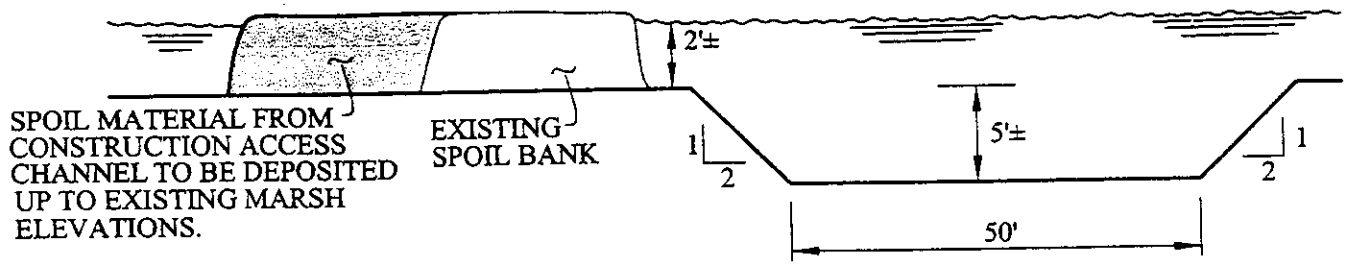
Figure 5 b



SPOIL MATERIAL TO BE PLACED ON ALTERNATING SIDES OF ACCESS CHANNEL, FORMING SPOIL BANKS OF 500' ± IN LENGTH.

* SPOIL MATERIAL FROM ALL ACCESS CHANNELS SHALL BE SPREAD IN SIMILAR FASHION.

SECTION D-D
N.T.S.



SPOIL MATERIAL FROM CONSTRUCTION ACCESS CHANNEL TO BE DEPOSITED UP TO EXISTING MARSH ELEVATIONS.

EXISTING SPOIL BANK

SECTION E-E
N.T.S.

VOLUMES:

EXCAVATION= 55,556 cy

SPOIL= 55,556 cy

CWPPRA PROJECT TV-12

LITTLE VERMILION BAY SEDIMENT TRAPPING PROJEC

VERMILION PARISH, LOUISIANA

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3.6.3 Vegetative Plantings

Unvegetated wetland soil is weaker and erodes faster than vegetated wetland soil (McGinnis 1997). Therefore, gallon containers of *Spartina alterniflora* (or other suitable species) will be planted at the base of terraces facing the greatest fetch. Sprigs of *S. alterniflora* (or other suitable species) will be planted along the shoreline and at the base of the remaining terraces. Only 30% of the shoreline will benefit from plantings, thus there is no need to plant 100% of the shoreline as originally planned. Reducing shoreline erosion rates on 30% of the shoreline will protect six hectares (15 acres) of wetlands throughout the 20 year project life.

4.0 AFFECTED ENVIRONMENT

Little Vermilion Bay is a shallow western extension of Vermilion Bay, which is the westernmost of four bays on the central Louisiana coast: Atchafalaya Bay, East Cote Blanche Bay, West Cote Blanche Bay, and Vermilion Bay. Prior to 1950, marshes fringing Little Vermilion Bay were brackish (O'Neil 1949), but by 1952, the Atchafalaya River had captured sufficient flow from the Mississippi River to reduce salinity and increase sediment availability in these bays (Adams and Bauman 1980, van Heerden 1981). Most Atchafalaya River water is discharged into Atchafalaya Bay via one natural and one artificial channel, the Atchafalaya River and Wax Lake Outlet respectively. Natural delta building processes are operating where these channels become unconfined and have created 1,152 ha of vegetated wetlands (Evers et al. 1998). None-the-less, a portion of Atchafalaya River flow is not discharged through the Atchafalaya River or Wax Lake Outlets. This water instead enters the GIWW and is carried westward (CEI 1977).

The GIWW was constructed during the first half of this century as an east-west inland waterway to enhance the transportation of products and services by protecting these interests from wave energy in open bays and the Gulf of Mexico. Consequently, the GIWW has become a conduit for sediment-rich waters from the Atchafalaya River to Freshwater Bayou, and eventually to Little Vermilion Bay. Shallowing of the bay and subaerial development is resulting within the project area from sediments deposited as confined flow in Freshwater Bayou slows and spreads upon entry into Little Vermilion Bay.

4.1 Physical Environment

4.1.1 Geology, Soils, and Topography

Soil types in the marsh surrounding Little Vermilion Bay are classified as Clovelly-Lafitte (NRCS, 1996). Clovelly soils are those that consist of very poorly drained, very slowly permeable, organic soils that formed in moderately thick accumulations of herbaceous plant material overlying very fluid clayey alluvium and are continuously flooded (NRCS, 1996). Lafitte soils are those that consists of very poorly drained, moderately rapidly permeable, organic soils that formed in herbaceous plant material overlying clayey alluvium and are flooded most of the time (NRCS, 1996). Topographic relief of the marshes surrounding Little Vermilion Bay is typical for coastal Louisiana, with elevations ranging from approximately 0.3-0.45 m (1-1.5 ft) National Geodetic Vertical Datum (NGVD).

4.1.2 Climate and Weather

The Little Vermilion Bay area has a subtropical climate, which is characterized by long, hot and humid summers, and short, mild and humid winters (Dugas 1970). Temperatures between May and October average between 31-32 C (88^0 to 90^0 F). Temperatures of 32 C (90^0 F) or higher occur approximately 100 days between May and October with an average humidity of 62 percent (Dugas 1970). Winter temperatures between November and April average 20 C (69^0 F) with relative humidity between 30-85 percent. Cold spells usually last no more than three days because of the dominance of warm gulf air moving inland from the coast year round. A winter temperature of 0 C (32^0 F) or less is expected 15 days per year and there is a 20 percent chance of temperatures falling below -6 C (20^0 F) during the winter (Dugas 1970).

4.1.3 Air Quality

Air quality over Little Vermilion Bay is good. Air masses are highly unstable in this area because of coastal activity. There are no industrial or automotive air emissions in the project area.

4.1.4 Surface Water Resources

The water quality of surface waters surrounding Little Vermilion Bay is good, but there are no data for the project area. The designated uses for Freshwater Bayou Canal waters (north of

project area) are primary-contact recreation (e.g. swimming), secondary-contact recreation (e.g. fishing and boating), and fish and wildlife propagation (LDEQ 1997). In addition, Fresh Water Bayou Canal waters are used for commercial boat traffic and drawn upon for agricultural irrigation. Designated uses of Vermilion Bay waters (south of project area) are primary-contact recreation, secondary-contact recreation, fish and wildlife propagation, and oyster propagation (LDEQ 1997).

4.2 Biological Environment

4.2.1 Vegetative Communities

Data indicate that vegetative communities have changed in response to increasing Atchafalaya River discharge. In 1949, the marshes surrounding Little Vermilion Bay were brackish (O'Neil 1949). In 1978, the boundary between intermediate and brackish marshes was mapped at the upper part of the project area (Chabreck and Linscombe 1978). Chabreck and Linscombe in 1988 classified the upper area as intermediate and the lower area to the west as brackish. By 1998, marshes in the project area were intermediate (Foret, personal observation). In 1998, primary plant species in the marshes surrounding Little Vermilion Bay were *Spartina patens* (marshhay cordgrass), *Sagittaria* sp., *Scirpus californicus* (leafy three-square), *Scirpus olnei* (three-cornered grass), *Typha* sp. (cattail), and *Cladium jamaicense* (sawgrass). Vegetative communities in the open water portion of the project area currently consist of small, scattered stands of *Myriophyllum spicatum* (Eurasian watermilfoil) and some *Ceratophyllum demersum* (coontail) and *Najas guadalupensis* (southern naiad).

4.2.2 Fish and Wildlife Resources

Although no studies of fish and crustacean populations have been conducted in Little Vermilion Bay, Vermilion Bay has been studied by several authors (CEI 1977, Coleman 1966, Dugas 1970, Fontenot 1967, Norden 1966, Perret 1965). The most abundant species found from these works were Atlantic croaker (*Micropogonias undulatus*), hogchoker (*Trinectes maculatus*), sand seatrout (*Cynoscion arenarius*), spot (*Leiostomus xanthurus*), gulf menhaden (*Brevoortia patronus*), gafftopsail catfish (*Bagre marinus*), blue catfish (*Ictalurus furcatus*), bay anchovy (*Anchoa mitchilli*), brown shrimp (*Penaeus azetecus*), white shrimp (*Penaeus setiferus*), blue crab (*Callinectes sapidus*), and clams (*Rangia cuneata*). A complete list of fish

species collected in Vermilion Bay for the period 1960-1970 can be found in Dugas (1970, Table 6).

Little Vermilion Bay has been identified by the Louisiana Department of Wildlife and Fisheries (LDWF) as an oyster seed ground, but low water salinity and high sedimentation prevent the establishment of seed production in the area. It is unlikely that these conditions will improve for oyster seed production.

In 1990, a census of wading birds and seabird nesting colonies was conducted in Louisiana. Twenty-seven species of colonial nesting waterbirds were studied (Martin and Lester 1990). One sampling site, located on the Fearman Lake quad map, is approximately 4.5 miles southwest of the project area. Station 060 is located on Belle Isle Lake, which is within the boundary of the Paul J.H. Rainey Wildlife Sanctuary. Martin and Lester (1990) reported 73 nesting adults at Belle Isle Lake, of which, 3 were gull-billed terns (*Sterna nilotica*), 50 least terns (*Sterna antillarum*), and 20 black skimmers (*Rynchops niger*). Although no wading bird rookeries are listed for Little Vermilion Bay, they could be expected to feed on small fish and invertebrates in this shallow bay.

The marshes around Little Vermilion Bay provide higher quality habitat than brackish and saline marsh for nutria, raccoon, puddle ducks, and alligator (Palmisano 1973, McNease and Joanen 1978).

4.2.3 Threatened and Endangered Species

Threatened and endangered birds listed for the State of Louisiana include the bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus anatum*), Eskimo curlew (*Numenius borealis*), Bachman's warbler (*Vermivora bachmanii*), ivory-billed woodpecker, (*Campephilus perincipalis*), piping plover (*Charadrius melodus)*, and the red-cockaded woodpecker (*Picoides borealis*) (USFWS 1992). The American alligator, Louisiana black bear (*Ursus amercanus luteolus*), and the Florida panther (*Felis concolor coryi*) also are listed as threatened or endangered and occur statewide. Of these, only the bald eagle, peregrine falcon, and the alligator would be expected in the marshes of the project area. However, in the 1998 nest counts, there were no bald eagle nests reported in the vicinity of Little Vermilion Bay (Hess, personal communication).

Sea turtles have been reported along the Louisiana coast (Condrey et al. 1995). Dundee and Rossman (1989) report that Kemp's ridley (*Lepidochelys kempi*) occasionally appears along the Louisiana Gulf coast. Possible factors related to this occurrence include the widespread availability of relatively shallow water marine and estuarine habitat with high turbidity levels from proximity to the Atchafalaya River (Frazier, 1980). However, with bay depths averaging from 0.3-0.9 m (1-3 ft), Little Vermilion Bay marshes and open water areas will not likely serve as foraging and development sites for the Kemp's ridley.

Of the other four species of endangered sea turtles, the loggerhead turtle (*Caretta caretta*) and the green turtle (*Chelonia mydas*) are relatively common in the nearshore waters of the Gulf of Mexico. The loggerhead feeds on sponges, jellyfish, mollusks, crustaceans, sea urchins, fishes, seaweeds and grasses while the green turtle's diet is primarily marine grasses and macrophytic algae. The hawksbill turtle (*Eretmochelys impricata*) is usually found in sea waters less than 15 meters (49 feet or 8 fathoms) and feeds on invertebrates, marine grasses and macrophytic algae. The leatherback turtle (*Dermochelys coriacea*) is found in deeper oceanic waters and feeds primarily on jellyfish (Condrey et al. 1995). None of these four species are likely to be found within the project area.

4.3 Cultural Environment

4.3.1 Historical or Archeological Resources

The Louisiana coastal waters have been traversed by water-craft since the earliest colonization by Europeans of the region. Native Americans utilized these waters also. At present, 42 recorded wrecks have occurred in Louisiana coastal waters. Because of the dependence on ship travel during the colonization of south Louisiana and the frequency of tropical storms in the area, there is the potential that historical ship remains may be located beneath the sediments that have accumulated during the past four or five decades.

There is the possibility of inundated prehistoric archaeological sites around Little Vermilion Bay. However, a review of the project area revealed no known sites (Rivet, personal communication).

4.3.2 Economics (Employment and Income)

Wetlands surrounding Little Vermilion Bay have great value as forage, cover, and nursery habitat for the diverse and abundant assemblage of finfish and invertebrates that are harvested by Louisiana's commercial and recreational fishers. About 90 percent of the fish harvested from the Gulf of Mexico rely on aquatic habitats such as those found around Little Vermilion Bay.

Most recent data on commercial fisheries landings (finfish, invertebrates, and alligators) for coastal Louisiana, rank Vermilion Parish third behind Plaquemines and Terrebonne Parishes. Total landings in Vermilion Parish for 1997 were 282,696,912 pounds or $37,114,625.00 (Hightower, personal communication).

4.3.3 Land Use

Present and historical land use is restricted to fish and wildlife resource management and harvest and hydrocarbon exploration and production. Muskrat, nutria, raccoon, and mink are currently harvested; with the exception of nutria, these species have probably been harvested from the project area continually since settlement. Alligator harvest has occurred in the marshes surrounding Little Vermilion Bay except during the 1960's and early 1970's when alligator populations were too low to allow sustainable harvest (Joanen et al. 1984). The area is a traditional, valuable waterfowl hunting area.

4.3.4 Recreation

The project area has been used for outdoor recreational activities for decades partly because the project area can be reached within one-half hour of inland ports. Recreational activities in the project area depend primarily on the excellent fish and wildlife habitat provided by the marshes surrounding Little Vermilion Bay. Historically, recreational fishing, hunting, and boating, have been common, although this estuary could serve as an excellent site for migratory bird observation.

4.3.5 Noise

Little Vermilion Bay represents a state-owned, remote area that has no industry other than oil production. Ambient noise in the area would result from oil and gas exploration, boats, or wildlife.

4.3.6 Infrastructure

The project area is adjacent to Freshwater Bayou, which is an artificial route heavily used by deep water vessels traveling between inland ports and offshore oil rigs, and by commercial fishers traveling between inland ports and deep water shrimping grounds. Freshwater Bayou is also heavily utilized by sport hunters and fishers. The project area includes the junction of Freshwater Bayou and Little Vermilion Bay. At this junction, shipping in Freshwater Bayou is directly exposed to wave energy from Little Vermilion Bay. Wave energy from the project area is also eroding marshes that protects adjacent portions of Freshwater Bayou from wave energy in Little Vermilion Bay. There are also two artificial channels within the bay that are used to access two well heads located in the bay.

5.0 ENVIRONMENTAL CONSEQUENCES

The long-term resource benefits of the project derive primarily from increasing the amount of emergent wetlands and submerged aquatic vegetation (SAV) within the project area. These increases in emergent and submersed aquatic vegetation provide indirect natural resource benefits by increasing the abundance and quality of foraging and cover habitat for numerous wetland and estuarine wildlife and fish species. The increases in emergent and submersed aquatic vegetation also provide indirect infrastructure benefits by reducing wave energy on shipping in Freshwater Bayou and infrastructure within the bay. In general, the adverse environmental consequences of the no-action alternative exceed those of the preferred alternative. A thorough assessment of the environmental consequences of the preferred alternative is provided below.

5.1 Physical Environment

5.1.1 Geology, Soils, and Topography

The project will not affect geology. Topography will be altered in two ways. Some parts of bay will be deepened to extend and improve the efficiency of the distributary channel system carrying water from the GIWW into the bay. Much of this channel system will likely fill with sediments as the system matures over the next 10-20 years (Coleman 1988). Some areas of the bay will be converted to emergent sediment directly by the placement of dredged material. Emergent sediment will revert to shallow open water within a few years where

vegetation fails to establish. Areas of emergent sediment where vegetation establishes will convert to vegetated wetland and will maintain subaerial elevation indefinitely through natural vertical accretion processes, which depend on mineral sedimentation and in situ organic matter production by marsh vegetation (Mitsch and Gosselink 1993: pages 226-231). The only consequence of the project on soils will be the initiation of natural soil formation processes on the emergent sediments.

5.1.2 Climate and Weather

The project will create a net carbon sink of approximately 144 $\pm$ 45 g C m-2 yr-1 (based on C storage rates in wetland soils of the Chenier Plain, Foret 1997) but the removal of atmospheric CO_2 will be too small to affect climate or weather.

5.1.3 Air Quality

Minor temporary adverse impacts will result from the proposed activities. Exhaust emissions from dredging equipment with airborne pollutants should be quickly dissipated by prevailing winds and be limited to the construction phase of the project.

5.1.4 Surface Water Resources

The project will create a net sink of approximately 0.5 $\pm$ 0.1 g P m^{-2} yr^{-1}, and 8.4 + 2.6 g N m^{-2} yr^{-1} (based on P and N storage rates in wetland soils of the Chenier Plain, Foret 1997) but the removal of nutrients will be too small to reduce coastal eutrophication. Dredging will increase turbidity during construction, but newly created wetlands may reduce in wind fetch across the bay, which will reduce turbidity following construction.

5.2 Biological Environment

5.2.1 Vegetative Communities

The project will create new habitat suitable for colonization by emergent vegetation. The emergent plant communities that develop on the new habitat are expected to be similar to existing communities found along the shoreline of the bay. The project is not anticipated to change existing vegetative communities other than by reducing shoreline erosion, which converts vegetated wetland to shallow open water.

The project is expected to increase SAV abundance to levels similar to that in other areas of coastal Louisiana where deltas are developing. In such areas, extensive SAV beds develop on the downstream side of emergent marsh (see Castellanos 1997). Thus, whereas the project area currently contains few, small SAV beds, numerous, extensive SAV beds are expected to develop after construction. These beds are expected to develop in areas protected from direct river flow. Such areas are expected to initially be confined the downstream side of terraces, but to expand to include the downstream side of naturally developing marshes as subaerial delta deposits eventually develop and convert to emergent marsh.

5.2.2 Fish and Wildlife Resources

The wetlands created will be fresh to intermediate, which provides higher quality habitat than brackish and saline marsh for nutria, raccoon, eight species of puddle ducks, and alligator (Palmisano 1973, McNease and Joanen 1978). Short-term adverse impacts to fish will occur during the construction phase of the project. These impacts include smothering of non-mobile benthic organisms in dredged material deposition sites and increased turbidity in waters near the construction sites.

The emergent wetlands and associated submersed aquatic plant communities that are expected to develop should provide fish habitat similar to that at the Atchafalaya River delta, which is used by 33 species of freshwater and estuarine dependent fish species and seven species of freshwater and estuarine dependent crustaceans species (Castellanos 1997). Increases in fish and wildlife resources will result directly from creation of emergent wetlands, and, perhaps more importantly, through a large increase in interface between emergent wetlands and shallow open water.

5.2.3 Threatened and Endangered Species

Although the project area is within the known range of bald eagles, no adverse impacts are anticipated since there are no nesting sites within the project area. Activities during construction are likely to keep alligators from utilizing marshes surrounding the project area. The increased beach and marsh area would positively impact hunting habitat for wintering peregrine falcons.

It is likely that implementation of the project would slow or reverse land loss and create emergent wetlands, thus enhancing an area suitable for foraging habitat for bald eagles and habitat for alligators.

5.3 Cultural Environment

5.3.1 Historical or Archeological Resources

No impacts are anticipated to historical or archaeological resources within the project area.

5.3.2 Economics (Employment and Income)

No impacts to economic resources will result from the proposed activity.

5.3.3 Land Use

No negative impacts to current land use would result from the proposed activity in the marshes surrounding Little Vermilion Bay. An increase in the harvest of furbearers and alligators may result from the increase in supporting habitat.

5.3.4 Recreation

Some temporary adverse short-term impacts to recreation would occur (i.e. increased turbidity of surface water) as a result of dredging activity. However, the long-term impact is likely to be an increase in the opportunity for sport fishing and hunting.

5.3.5 Noise

Some temporary adverse short-term impacts to noise would occur as a result of dredging activity.

5.3.6 Infrastructure

The project will stop and reverse marsh erosion that is exposing shipping on Freshwater Bayou to wave energy from Little Vermilion Bay. The terraces and developing marshes will reverse the marsh erosion that has exposed 228.6 m (750') of Freshwater Bayou to wave energy from Little Vermilion Bay. The terraces and developing marsh will also prevent another 304.8 m (1,000') feet of Freshwater Bayou from becoming

exposed to wave energy from Little Vermilion Bay where Freshwater Bayou is currently separated from Little Vermilion Bay by a30.5 ha (100') wide strip of eroding marsh. The terraces and deltaic marshes that develop in the bay will also reduce exposure of well heads in the bay to wave energy.

No permanent impacts to navigation within the bay are anticipated. Dredging will enlarge the two existing channels in the bay. The enlargement of these existing channels is expected to be fairly persistent although periodic dredging may be required as it was before project construction. New navigable channels, extending from the existing channels will be created by this project. These side channels will temporarily increase vessel access throughout the bay. The side channels are expected to fill within 20 years as deltaic marshes develop at their ends, and thereby slow discharge in the side channels.

6.0 CONCLUSIONS

This report describes the environmental assessment of the Little Vermilion Bay Sediment Trapping Project, which is a CWPPRA wetland restoration project. The project will use dredging to enhance natural wetland development processes in an area where those processes are currently developing but are constrained by artificial navigation channels. Material excavated during dredging will be used to construct terraces to reduce wave energy in the bay and thereby slow shoreline erosion of existing wetlands. The artificial terraces and portions of the natural shoreline will be planted with wetland vegetation to further slow erosion. This EA concluded that there are no significant adverse environmental impacts anticipated by the implementation of the project. This conclusion is based on a comprehensive review of relevant literature, site-specific data, and project-specific engineering reports. This finding supports the recommendations of the CWPPRA Task Force, including NMFS, the sponsoring agency. The natural resource benefits anticipated from the implementation of Little Vermilion Bay Sediment Trapping Project are expected to enhance and sustain the diverse ecosystem of the Vermilion Bay complex, and to partially offset coastal wetland loss occurring elsewhere.

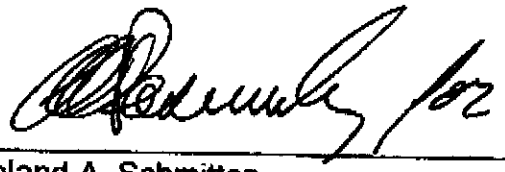
7.0 PREPARERS

This EA was prepared by Mr. John Foret and Dr. John Nyman under the direction and guidance of Dr. Teresa McTigue of NMFS. Figures were prepared by GOTECH, Inc. under contract to NMFS. In addition to Dr. McTigue, invaluable reference material and guidance were provided by Mr.

Rickey Ruebsamen, Mr. Richard Hartman, Mr. Tim Osborn, and Dr. Eric Zobrist of NMFS.

8.0 FINDING OF NO SIGNIFICANT IMPACT

Based on the conclusion of this document and the available information relative to the Little Vermilion Bay Sediment Trapping Project, there would be no significant environmental impacts from this action. Furthermore, preparation of an Environmental Impact Statement on this action is not required by the National Environmental Policy Act or its implementing regulations.



JAN 15 1999

Roland A. Schmitten
Assistant Administrator for Fisheries
National Marine Fisheries Service

Date

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APPENDIX A

UNITED STATES DEPARTMENT OF COMMERCE
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Southeast Regional Office
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AUG 27 1998

F/SER3:CCC:jbm

Teresa McTigue, Ph.D.
Fisheries Biologist
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Dear Dr. McTigue:

We have reviewed the Environmental Assessment forwarded to us on July 14, 1998 regarding the Little Vermilion Bay Sediment Trapping Project (T/V-12, PTV-19) proposed by the National Marine Fisheries Service (NMFS) under the Coastal Wetlands Planning, Protection, and Restoration Act. The project is the result of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) of 1990, which dictates the use of a Task Force made up of the heads of the Government of Louisiana and five Federal agencies (U.S. Army Corps of Engineers, NMFS, U.S. Fish and Wildlife Service, Natural Resources Conservation Services and the U.S. Environmental Protection Agency) to identify a comprehensive plan for wetlands restoration in Louisiana. Your letter requested a determination regarding the effects of this project on listed species under NMFS jurisdiction, pursuant to Section 7 of the Endangered Species Act of 1973 (ESA). For the reasons discussed below, we believe that sea turtles and Gulf sturgeon, the only listed species under NMFS jurisdiction that may be present in the project area, are not likely to be adversely affected by this project. There is no critical habitat under NMFS jurisdiction established or proposed near Little Vermilion Bay; therefore, there is no destruction or adverse modification of critical habitat. Beneficial impacts to listed species may occur if the Little Vermilion Bay Sediment Trapping Project successfully increases the availability of forage species for sea turtles and Gulf sturgeon in adjacent nearshore waters. The project may also increase or improve habitat for the saltmarsh topminnow, a candidate species that may occur in the Bay.

The Little Vermilion Sediment Trapping Project was approved by the CWPPRA and is proposed for construction soon. The project was designed to enhance natural wetland creation by dredging two existing channels to increase their capacity and range for moving and depositing sediments. Sediments dredged from the channels will be placed on terraces adjacent to the channels to reduce the erosion of fringing wetlands that has been caused by wave energy. Wetland vegetation will be planted to stabilize the terraces along 30 percent of the project area. Over the next decade or two, the channels are likely to fill with sediments and there will be an increase in

emergent and submersed aquatic vegetation to provide habitat for estuarine wildlife and fish species.

Listed sea turtles and adult Gulf sturgeon, which may occur in nearshore Gulf of Mexico waters, would occur only rarely in this shallow bay. Sturgeon larvae would not be present, and any sturgeon and sea turtles that might venture into the Bay would not be vulnerable to a slow moving clam shell or bucket dredge used to deepen the channels. Increases and improvements to marshes and wetlands that may result from this project would increase the abundance of forage species available in deeper nearshore waters frequented by sea turtles and sturgeon.

The saltmarsh topminnow, *Fundulus jenkinsi*, which is a candidate species for future listing, may occur or may have historically occurred in Little Vermilion Bay. The abundance of saltmarsh topminnows has declined drastically throughout its range, from Galveston Bay, Texas through Escambia Bay, Florida. Thompson (1988) indicates that records identify the occurrence of *F. jenkinsi* in the embayments formed by the Atchafalaya River delta as late as 1983; however, major habitat alterations since that time may have extirpated this species from this area. The loss of marshes in the Mississippi and Atchafalaya River delta areas has removed vital habitat for the saltmarsh topminnow, which forages, hides and perhaps reproduces in flooded marsh surfaces. Protection of marshes and perhaps restoration of marshes through projects like this one may be critical to the recovery of *F. jenkinsi*.

This concludes consultation responsibilities under Section 7 of the ESA for the Little Vermilion Bay Sediment Trapping Project. Consultation should be reinitiated if new information reveals impacts of the identified activity that may affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

If you have any questions, please contact David Bernhart, of the Protected Resources Division, at 727/570-5312.

Sincerely,

Andrew J. Kemmerer
Regional Administrator

cc: F/SER4 - A. Mager
F/PR3

KATHLEEN BABINEAUX BLANCO
LIEUTENANT GOVERNOR

State of Louisiana

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

PHILLIP J. JONES
SECRETARY

GERRI HOBDY
ASSISTANT SECRETARY

July 23, 1998

Dr. Teresa McTigue
U.S. Department of Commerce
National Oceanic and Atmospheric Administration
Southeast Fisheries Center
Lafayette Office
USL, P.O. Box 42451
Lafayette, Louisiana 70504

Re: Little Vermilion Bay Sediment Trapping Project (T/V-12, PTV-19)
Vermilion Parish, Louisiana

Dear Dr. McTigue:

Reference is made to your letter dated July 14, 1998, concerning the above. A review of our files indicates that there no significant archaeological sites or historic standing structures located in the proposed project area. In addition, there are no other known cultural resources in this area. As such, it is our opinion that this project will have no effect on significant cultural resources, and we have no objections. However, should any archaeological material be uncovered during ground altering activities, we request that work in that area be halted and this office be notified immediately.

If we may be of further assistance, please contact Mr. Mike Mahady in the Division of Archaeology at (504) 342-8170.

Sincerely,

Gerri Hobdy

Gerri Hobdy
State Historic Preservation Officer

GH:MM:s

United States Department of the Interior

FISH AND WILDLIFE SERVICE
825 Kaliste Saloom Road
Brandywine Bldg. II, Suite 102
Lafayette, Louisiana 70508

July 22, 1998

Ms. Teresa McTigue
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Center
Lafayette Office
Post Office Box 42451
Lafayette, LA 70504

The U.S. Fish and Wildlife Service (Service) has reviewed the draft Environmental Assessment (EA) for the Little Vermilion Bay Sediment Trapping Project. That project would be constructed under the authority of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). The Service submits the following comments in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Endangered Species Act of 1973, as amended.

General Comments

The EA is exceptionally well-written; it provides an excellent description of fish and wildlife resources in the project area, and project impacts on those resources. Specific comments are provided in the following section.

The intermediate and brackish marshes within and adjacent to Little Vermilion Bay provide important habitat for several Federal trust species including wading birds, shorebirds, and migratory waterfowl. The Service agrees that dredging of distributary channels will expedite the natural marsh creation processes currently occurring in Little Vermilion Bay. Furthermore, creation of terraces will also reduce shoreline erosion rates affecting the marshes surrounding the project area. The resulting decrease in conversion of those emergent wetlands to shallow open water would sustain or increase the area's habitat value for a number of wetland-dependent species.

Specific Comments

Page 14, Paragraph 2, Sentence 3 - We believe that a comparison of this project to sediment diversion/crevasse projects on the Mississippi River Delta is inappropriate. The rates of sediment accretion rates and subaerial development in the Mississippi River Delta are much more rapid because of the proximity to the Mississippi River which contains a much greater sediment load than that of the GIWW near Little Vermilion Bay. Therefore, we believe that the creation of

approximately 358 acres of emergent wetlands should not be viewed as a conservative estimate until a comparison can be made to other areas influenced by a similar sediment load. Perhaps a comparison could be made to the accretion rate at the Jaws in the northeastern corner of West Cote Blanche Bay. That area, despite its proximity to the Wax Lake Outlet, may provide a better estimate of the wetland creation potential of the Little Vermilion Bay Sediment Trapping Project.

Page 14, Paragraph 2, Sentence 6 - The estimate of 404 acres of wetlands should be changed to 405 acres to correspond to the value in Table 1 under Alternative 3.5a.

Page 28, Threatened and Endangered Species - The Service concurs with the NMFS' determination that the proposed project is not likely to adversely affect listed species or their critical habitat within our purview.

The Service fully supports the measures proposed thus far for the Little Vermilion Bay Sediment Trapping Project. Thank you for the opportunity to provide comments on the EA. If you have any questions regarding our comments, please contact Kevin Roy of this office at 318/262-6662, extension 226.

Sincerely,

Russell C. Watson
Acting Field Supervisor

cc: NMFS, Baton Rouge, LA
EPA, Baton Rouge, LA
U.S. Army Corps of Engineers, New Orleans, LA
NRCS, Alexandria, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CRD), Baton Rouge, LA

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
P.O. BOX 68 ABBEVILLE, LA. 70511-0068

SUBJECT: Overgrazing Determination
Little Vermilion Bay Sediment
Trapping Project(T/V-12,PTV-19)

DATE: 7-29-98

TO: Teresa McTigue
National Marine Fisheries Service
USL P.O. Box 42451
Lafayette, LA 70504

This letter is in response to your request to provide a determination for overgrazing by cattle within the project boundaries for the Little Vermilion Bay Sediment Trapping Project in Vermilion Parish.

After review of information on this area, the Natural Resources Conservation Service(NRCS) has determined that there is not a problem with overgrazing by cattle within the project boudaries. Also, there is no problem expected with overgrazing by cattle in the future. Presently there is no known occurance of cattle grazing in the project area.

If you have questions or concerns please contact me at (318)893-5781 extension 202.

Stuart Gardner

Stuart Gardner
Area Range and Pasture Management Specialist
Abbeville FO

cc: Randolph Joseph; NRCS Lafayette Area Office
Ron Marcantel; NRCS Alexandria State Office
Bruce Lehto; NRCS Alexandria State Office

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
205 COURT ST. VILLE PLATTE, LA. 70586

SUBJECT: Overgrazing Determination
Little Vermilion Bay Sediment Trapping Project(T/V-12,PTV-19)

DATE: 7-29-98

TO: Teresa McTigue
National Marine Fisheries Service
USL P.O. Box 42451
Lafayette, LA 70504

This letter is in response to your request to provide a determination for overgrazing by nutria within the project boundaries for the Little Vermilion Bay Sediment Trapping Project in Vermilion Parish.

After review of information on this area, the Natural Resources Conservation Service(NRCS) has determined that there is a potential problem with overgrazing by nutria within the project boundaries.

The nutria population risk in the area is moderate to high. There is a potential for population of the proposed terraces by nutria. Over-wintering by nutria has occurred on existing terraces in the area during the past winter.

We recommend that nutria populations be monitored, if populations begin to impact plantings the LDWF should be contacted and control practices implemented.

If you have questions or concerns please contact me at (318)363-6604.

Johnny Cross
Area Wildlife Biologist
Ville Platte Field Office

cc: Randolph Joseph; NRCS Lafayette Area Office
Ron Marcantel; NRCS Alexandria State Office
Bruce Lehto; NRCS Alexandria State Office