

**U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION**

**NATIONAL MARINE FISHERIES SERVICE
OFFICE OF HABITAT CONSERVATION
RESTORATION DIVISION
SILVER SPRING, MARYLAND**

**ENVIRONMENTAL ASSESSMENT
of
POINT AU FER ISLAND HYDROLOGIC
RESTORATION PROJECT, PHASE III**

Terrebonne Parish, Louisiana

AUGUST 1999

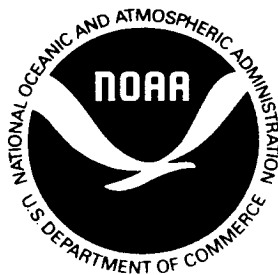


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ENVIRONMENTAL ASSESSMENT

POINT AU FER ISLAND HYDROLOGIC RESTORATION PROJECT, PHASE III

Terrebonne Parish, Louisiana

1.0 Introduction

This Environmental Assessment (EA) was prepared to evaluate the impacts of a project to construct a shoreline protection/stabilization structure designed to prevent shoreline erosion and interior marsh deterioration of a Louisiana barrier island in Terrebonne Parish, Louisiana.

This project is being funded under the Coastal Wetlands Planning Protection and Restoration Act (PL 101-646, Title III-CWPPRA) made law in 1990. Five federal agencies and the State of Louisiana have combined in a Task Force to implement the "comprehensive approach to restore and prevent the loss of coastal wetlands in Louisiana" mandated by CWPPRA. The five federal agencies involved are: the Department of the Army (Corps of Engineers), the Department of Commerce (National Marine Fisheries Service), the Department of Interior (U.S. Fish and Wildlife Service), the Department of Agriculture (National Resource and Conservation Service), and the U.S. Environmental Protection Agency. The project described in this EA for the Point au Fer Hydrologic Restoration Project, Phase III, is a continuation of the Point au Fer Hydrologic Restoration Project, Phase I and II (CWPPRA Project PTE-24/26), which was authorized on the Second Annual Priority Project List (Louisiana Coastal Wetlands Conservation and Restoration Task Force, 1992). Phase I and II were completed in 1995 and 1997, respectively. Engineering and design plans for Phase III have been prepared and the project is under evaluation outside the annual Priority Project List process by CWPPRA as an emergency project necessary to maintain and protect the areas restored by the original project (Phase I and II) and the Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a) CWPPRA project. Combined, these two previous projects have invested over \$7 million of Federal and State coastal restoration funds into protecting 10,000 acres of wetlands habitat.

1.1 Technical Background

Louisiana contains 7.9 million acres of coastal marshes that are currently being converted to open water at a rate of 34.9 square miles per year (Barrast al., 1994). This rate is similar to that measured in previous years by Gagliano et al., 1981 and DeLaune et al., 1991. This conversion is the result of natural

and anthropogenic factors that have altered the hydrology and physical integrity of these wetlands and still persist today.

The primary pattern of land loss in the Louisiana coastal zone results from the submergence of coastal marshes and subsequent conversion to open water (Turner, 1990). Generally, submergence occurs when the rate of vertical accretion, including mineral sediment deposition and organic matter accumulation, does not equal or exceed the rate of geologic subsidence and sea level rise. Consequently, these marshes begin to break apart and create open shallow ponds within the marsh interior. This ponding increases until the entire marsh area has converted to open water.

Coastal marshes are constructed and nourished by hydrological processes that influence site specific chemical, physical and biological processes which effect plant growth and mineral sediment deposition (Mendelssohn and Burdick, 1988). Because these processes are interrelated, the site specific factors influencing conversion of marsh to open water may vary widely and are difficult to assess.

Natural factors associated with coastal land loss include subsurface compaction and subsidence, sea level rise, physical substrate scouring and erosion, and periodic tropical cyclonic storms (Craig et al., 1979; Boesch et al., 1983). The Gulf of Mexico shoreline erosion rates along Point au Fer Island vary from 11.0 to 15.0 feet per year. Maximum erosion rates around Bay Castagnier and Mosquito Bay are approximately 2 feet per year (May and Britsch, 1987). In addition, site specific natural influences such as increased herbivore activity can promote land loss within coastal marshes (Nyman et al., 1993b).

Anthropogenic activity suspected of contributing to coastal land loss includes levee construction for flood protection along the Mississippi River (Templett and Meyer Arendt, 1988), and extensive canal construction associated with oil and gas exploration (Turner et al., 1982). Collectively, these activities may have advanced marsh loss by altering existing patterns of surface hydrology over large areas and facilitating saltwater intrusion into coastal marshes.

Numerous studies have indicated that extensive mineral exploration in the Louisiana coastal zone is a primary cause of marsh deterioration and its subsequent conversion to open water (Turner et al., 1984; Turner, 1990). In addition to direct wetland destruction from canal excavation and dredged material deposition (Johnson and Gosselink, 1982), these waterways are implicated as having altered hydrology, induced prolonged surface water retention (Scaife et. al., 1983), disrupted sediment distribution patterns (Bahr et al., 1983), and facilitated saltwater intrusion and tidal export of

unconsolidated organic marsh sediments (Craig et al., 1979; Gagliano and Wicker, 1989).

Generally, saltwater intrusion into brackish and intermediate marshes throughout the Louisiana coastal zone is viewed as a preliminary indication of marsh submergence. Saltwater intrusion results from natural and anthropogenic causes such as subsidence, global sea-level rise and the construction of access canals (Salinas et al., 1986; Reed and Cahoon, 1993). The rate of subsidence varies from basin to basin, and the hydrological impacts associated with canal construction are site specific. Therefore, site specific causes of saltwater intrusion must be clearly identified to determine if protection of specific marshes is cost effective, or even possible.

Research has been conducted to identify specific physical, chemical, and biochemical factors that indicate marsh deterioration resulting from saltwater intrusion. These include increased soil salinity (Mendelssohn and Burdick, 1988), sulfate toxicity (Pezeshki et al., 1989), decreased organic accumulation (Nyman et al., 1993b; Nyman et al., 1993c), decreased soil density and increased subsurface erosion (Nyman et al., 1994). By identifying these factors, marsh restoration and protection projects can be properly designed and implemented.

1.2 Project Location

The project site is Point au Fer Island, an approximately 52,000-acre barrier island (U.S. Department of the Interior, 1990) located off the mainland of southwest Terrebonne Parish, 13 miles south and east of the mouth of the Atchafalaya River (Figure 1). The Barataria - Terrebonne Estuary, which includes Point au Fer Island, has been included in the U.S. EPA's National Estuary Program.

1.3 Project Funding

The project is under evaluation by the CWPPRA Task Force for funding as an independent emergency project outside the annual Priority Project List process. Funding is solely for construction.

2.0 Purpose and Need for Action

2.1 Project Purpose

The goal of CWPPRA is to "restore and prevent the loss of coastal wetlands in Louisiana". The purpose of the Point au Fer Island Hydrologic Restoration

Project, Phase III, is to control shoreline erosion, reduce the deterioration of an interior brackish intermediate marsh, and ultimately protect the restoration work done through the original Point au Fer and the Lake Chapeau CWPPRA projects.

The Phase III project focuses on the southwestern section of the island, a site which was designated as Area 2 in the original restoration project on Point au Fer Island (U.S. Department of Commerce, 1994). In this area, an oil well access canal, known as the Mobil Canal, parallels the shoreline of the island. This canal was separated from the shore by approximately 200 feet of beach. During Hurricane Andrew, this small land bridge was breached, exposing the canal to the Gulf of Mexico. Because of engineering complications in the design for Area 2, Area 1 was implemented as a separate construction project and has since been known as Phase I. The Area 2 project was implemented subsequently as a separate engineering action at Mobil Canal and is referred to as Phase II. During Phase II of the project, 3600 feet of a limestone rock breakwater were constructed in what was termed Areas 1, 2, and 3 (see Figure 2) to prevent shoreline erosion and marsh deterioration caused by saltwater intrusion. The purpose of Phase III is to extend this protective barrier 3100 feet eastward (Area 4, Figure 3) and 600 feet westward (Area 5, Figure 4) along the Mobil Canal shoreline. Figure 5 shows a typical cross-section of the limestone rock structure (25' ± 5' wide, 35" thick) and other engineering details.

Mobil Canal is an access canal that provides a navigable waterway to a developed oil and gas field located directly north of this canal. Mobil Canal parallels the southwestern shoreline of the island, separated from the shore by approximately 10 feet at the narrowest point and averaging only 50 feet along the reach. During Hurricane Andrew (August, 1992), the narrowest portion of shoreline was breached, exposing the canal to the Gulf of Mexico. Although the shoreline stabilization structure was constructed in 1995 by CWPPRA (Phase II) and is functioning well, the adjacent area remains at risk of further deterioration and another shoreline breach was documented during a site visit on May 18, 1999 (Zobrist, 1999). The purpose of extending the shoreline protection project is to restore and reinforce the shoreline and prevent an extended breach from developing that could eventually erode the interior marsh north of this location. Such a breach would jeopardize the effectiveness of two CWPPRA projects (Point au Fer Hydrologic Restoration Project, PTE-24/26 and the Lake Chapeau Sediment Input and Hydrologic Restoration, PTE-23/26a).

2.2 Need for Action

The need to protect and restore Point au Fer Island emanates from its significant natural resource value. The magnitude of these resources correspond to the island's size and strategic location within the Louisiana coastal zone. Traditionally, attention has focused on oil and gas activity as the primary source of land loss on Point au Fer Island. Numerous oil and gas access and pipeline canals have been constructed primarily in the southwest portion of the island, although several long canals have also been constructed in the east and northeast sections. These canals provide maritime access to numerous well sites and are suspected to be the cause of extensive hydrologic modifications. These modifications include shoreline erosion, the increased flushing of inland marshes, and the advancement of saline water into existing intermediate-brackish marshes. Phase I and II of the Point au Fer restoration and the 1998 Lake Chapeau CWPPRA project have been highly successful in restoring the natural hydrology of the island and protecting its natural resource value. The additional shoreline protection project, described here as Phase III, must be implemented in order to maintain the success of these projects and secure the future of the island and the protection it affords.

2.2.1 Protection from Storm Surge and Flooding

The protection from hurricanes and storms provided by barrier islands off the Louisiana coast is well documented (U.S. Army Corps of Engineers, 1984). Point au Fer Island is fronted on the north and west by the Atchafalaya Bay; Four League Bay on the north and east; and the Gulf of Mexico to the south. This location provides critical protection to inland populations by buffering the effects of storm surges and subsequent flooding associated with hurricanes and tropical storms.

2.2.2 Highly Productive Intermediate-Brackish Marsh

The loss of intermediate-brackish 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.

2.2.3 Long-term Resource Benefits

Point au Fer Island represents a significant natural resource due to its size and relative stability. This 52,000-acre island is significantly larger than other nearby barrier islands and has a comparatively lower rate of land loss. In addition, recent data from various points on the island indicate that the current rate of vertical accretion equals the rate of subsidence. This stability is not found in nearby barrier islands located within the Mississippi Deltaic plain. Therefore, public funds used to

implement restoration projects that prevent the rapid degradation of Point au Fer Island represent cost effective programs that are more likely to provide long-term benefits to the State of Louisiana.

2.2.4 Valuable Wildlife Habitat

Cultural remains of Native Americans uncovered on Point au Fer Island indicate the island's historical significance as a valuable habitat for wildlife and fisheries. In 1949, the island was an established fur and hide producing area for muskrat, raccoon, otter, mink and alligator. Marsh burning is practiced as a method to promote the growth of preferred vegetation for furbearers. Weirs and other water containment devices have been installed and managed to improve waterfowl habitat and attempt to reduce land loss. Thus, Point au Fer Island has always provided the people of the Louisiana with valuable, high quality wildlife habitat.

2.2.5 Marine Fisheries Habitat

The Atchafalaya Bay, including the inland marshes of Point au Fer Island, provide significant estuarine habitat for marine-transient and resident fishery 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. Point au Fer Island, with its extensive marshes, is a significant part of the Louisiana estuarine system.

2.3 **Authorization**

As the federal sponsor for implementation of the Point au Fer Hydrologic Restoration Project, Phase III, NMFS is required to be in compliance with the National Environmental Policy Act (NEPA) of 1996. To meet NEPA compliance requirements, an EA must be conducted for each wetland project site that is modified or restored. The Point au Fer Hydrologic Restoration Project, Phase III, has been identified as an independent, emergency project under CWPPRA. It has been evaluated based on the pre-established list of criteria for CWPPRA priority projects. Such criteria include cost-effectiveness and Wetlands Value Assessment (WVA). The CWPPRA Environmental Work Group reviewed the WVA and concurred with NMFS's position that the benefits to the original Point au Fer Island Hydrologic restoration project would not be realized without the present emergency action.

3.0 Alternatives including preferred alternative

3.1 No-Action Alternative

The no-action alternative would fail to protect valuable coastal wetlands that provide and protect other resources in Louisiana. Specifically, failure to create a shoreline protection barrier would result in promoted tidal flushing of the island's marshes, intensified island deterioration, and devaluation of the positive effects of the Point au Fer and Lake Chapeau projects. Due to the public need to protect and restore Point au Fer Island marshes, as evidenced by the public funding through the CWPPRA of previous restoration activities at Point au Fer, the no-action alternative is not the preferred alternative.

3.2 Dredge and Fill Alternatives

These options involve filling the Mobil Canal to prevent further breaching of the shoreline.

3.2.1 Option 1 - Use of offshore dredge material

Dredge material obtained from offshore would be used to fill the canal. The material would be obtained from a minimum of one mile offshore. Sediment movement along the shore would rapidly fill in the borrow areas so no lasting effects are expected.

This option proved not viable during the evaluation of options for the 1995 Point au Fer restoration project. The available material from an offshore borrow area is very fine clay. Sediment analyses found a 70% compaction rate indicating that several lifts would be required, making the alternative cost ineffective.

3.2.2 Option 2 - Long-distance transport of dredge material

This option requires coordination with the annual U.S. Army Corps of Engineers maintenance dredging activities along the Atchafalaya River Navigation Channel and utilizing long-distance pumping of dredge material from the Atchafalaya Navigation Channel and to fill Mobil Canal. This material is expected to be coarser in nature and more suitable to filling the canal in one dredging effort.

Due to the need of multiple pumping stations to transfer the dredge material over a long distance this option is cost ineffective.

3.2.3 Option 3 - Use of shell as fill material

Shell material would be obtained and used as fill for the canal. The canal would be filled only enough to provide a 20 year life (assuming a 10 ft./yr. erosion rate).

Since there will only be enough shell material to partially fill the canal, it is unlikely that the shell material will act as an effective barrier against erosion. This option has a low likelihood of success and is cost ineffectiveness.

3.3 Preferred Alternative - Breakwater Construction

A total of 3,700 feet of a limestone breakwater structure will be constructed and maintained along Areas 4 and 5 of the shoreline of Point au Fer (Figure 3 and 4). This breakwater will be an extension of the 3,600 ft. breakwater constructed as part of Phase II in 1995. The location and details of the structure are shown in Figures 1-5 of this document.

The breakwater will be constructed of a 25' ± 5' wide, 32-inch thick layer of limestone rock underlain by woven geotextile fabric. This option was selected as the preferred alternative based on its success in Phase II of this project and its continued cost-effectiveness.

4.0 Affected Environment

Point au Fer Island is a 52,000-acre island fronted by the Atchafalaya Bay to the north and west; Four League Bay to the north and east; and the Gulf of Mexico to the south. Point au Fer Island contains approximately 42,073 acres (U.S. Army Corps of Engineers, 1992) of intertidal brackish emergent marsh. As with most intermediate-brackish marshes throughout the Louisiana Coastal Zone, this island has experienced significant land loss primarily within its inland marshes (U.S. Department of the Interior, 1990). Yet, in contrast to other coastal marshes, Point au Fer Island has also experienced localized land gain as a result of its proximity to the sediment rich waters of the prograding Atchafalaya delta (van Heerden, 1983; van Heerden et al., 1991). Until the construction of oil and gas canals, the inland's intermediate-brackish marshes were hydrologically maintained by four bayou systems including Locust Bayou in the southwest, Alligator Bayou in the north, Burkes Bayou in the southcentral, and Little Mosquito Bayou in the southeast (See Figure 1). Lake Chapeau is located in the central portion of the island. Mosquito Bay and Bay Castagnier connect the eastern portion of the island with Four League Bay. Lake Chapeau is the headwater for Locust Bayou, which flows into Atchafalaya Bay, and Little Mosquito Bayou which drains into Mosquito Bay. Burkes Bayou is a tributary of Locust Bayou. Alligator Bayou, having historically maintained minimal hydrologic connection with Lake Chapeau, flows into Four League Bay. Surface

hydrology was historically a gradual and low energy process in which tidal overbank flooding and sheetflow provided exchange between the bayous and adjacent marshes (Ensminger, 1988). The effects of the Atchafalaya River and its prograding delta are a dominant factor influencing the ecology of Point au Fer Island. The arrival of abundant prodelta clays in the Atchafalaya Bay in the 1950's marked a channel shift within the Mississippi River Delta complex that has resulted in the creation of over 32 square kilometers of new marshlands within Atchafalaya Bay since 1972 (van Heerden et al., 1991). This prograding delta has affected the regional hydrologic regime by reducing the storage capacity of Atchafalaya Bay and confining water movement over a smaller surface area. This process has altered water circulation patterns and increased the freshwater influence from the Atchafalaya River on Point au Fer Island. Consequently, there has been an overall increase in intermediate to brackish plant composition since 1956 as a result of the increased fresh water influence on the island (U.S. Department of Interior, 1990; Shaffer et al., 1992). Land loss has occurred on Point au Fer Island despite increased fresh water influences and sediment loads in the adjacent surface waters. Although some research suggests that the prograding delta restricts sediment deposition within the island marshes, recent investigations from various researchers suggest the island is not submerging as rapidly as other Louisiana coastal wetlands. Data from 23 sampling sites near Mosquito Bay in the eastern section of the island indicates a mineral deposition rate between 1,385 - 1,594 grams/meter²/year (Nyman, 1994), exceeding the amount needed to offset a 1 centimeters per year submergence rate for brackish marshes (Nyman and DeLaune, 1991). In addition, there were no visible signs of plant stress in the study area suggesting an adequate rate of organic accumulation. Although no specific submergence rate for Point au Fer Island has been identified, the combined effect of adequate mineral and organic deposition equals or exceeds the average coastal submergence rate of 1.1 cm per year (Penland et al., 1988). These data indicate that adequate mineral sediment is transported into marshes by flooding events such as overbank flooding and winter storms. In addition, a zero accretion deficit suggests that access canals may exert the major role affecting inland land loss on Point au Fer Island.

The Phase III project site is located in the western portion of the island where an oil field access canal, known as the Mobil Canal, parallels the southwest shoreline of the island. This canal originates in Locust Bayou and connects to a developed oil field with numerous well heads and short access canals. Mobil Canal is separated from the shore by approximately 10-50 feet of beach. During Hurricane Andrew in 1992, a shoreline breach occurred exposing the Gulf to the Mobil Canal. Continuous wave action at this breach could result in an extended loss of shoreline and extensive deterioration of inland marshes.

4.1 Physical Environment

4.1.1 Geology, Soils and Topography

Geologically, Point au Fer Island is located in the western portion of the recent Mississippi River Deltaic plain where three periods of active sediment deposition have occurred during the past 8,000 years. This alluvial sediment deposition primarily resulted from westward channel shifting of the Mississippi River and subsequent emergence of the Maringouin, Teche, and Lafourche delta complexes. A typical soil profile of Point au Fer Island would indicate deep alluvial deposits of shell, sand, and clay comprising the subsurface stratum overlain with organic plant material at varying stages of decomposition. The topography of Point au Fer Island typifies that of a Louisiana barrier Island. The highest elevations are located along the shoreline ranging between 4.6-6.0 feet above mean water level. Spoil banks along dredged access channels are elevated 2-3 feet above mean water level in the canals. The elevation of the interior marshes is between 0-1 feet and can be completely submerged during storm events. During Hurricane Andrew, Point au Fer Island was covered with up to 8 feet of water. Three soil types have been identified in the project area. Saltwater marsh clays and mucky clays occur behind the beach rim from the Gulf of Mexico. These soils occur in the low natural levee ridges at near-gulf level and are subject to frequent tidal flooding. In a typical profile, the surface consists of mucky clay with recent coarse plant materials. The subsurface is predominantly clay, with occasional lenses of muck or mucky clay and fine sands.

4.1.2 Climate and Weather

Point au Fer Island has a hot, subtropical climate. It is characterized by long, hot and humid summers, and short, mild and humid winters. Temperatures between May and October average between 88-90° Fahrenheit (F). Temperatures of 90°F or higher occur approximately 100 days between May and October with an average humidity of 62 percent. Winter temperatures between November and April average 69°F with relative humidity between 30-85 percent. Cold spells usually last 3 days due to the dominance of warm gulf air moving inland from the coast year round. A winter temperature of 32°F or less is expected 15 days per year and there is a 20 percent chance of temperatures falling below 20°F during winter. Copious rains fall throughout the year as a result of the dominant coastal air masses moving inland and mixing with continental air. Average annual rainfall is 62 inches per year and heavy thunderstorms occur frequently. Less rainfall usually occurs in

the fall months and snow only occurs at intervals of decades. During the past 90 years, six hurricanes and eight tropical storms have passed over Point au Fer Island, the latest being Hurricane Andrew in 1992.

4.1.3 Air Quality

Air quality at Point au Fer Island is good. Air masses are highly unstable in this area due to coastal activity. There are no industrial or automotive air emissions in the area.

4.1.4 Surface Water Resources

Surface water resources at the site include resources attributed to Point au Fer Island and the surrounding surface waters of the Atchafalaya Basin and the Gulf of Mexico. Coastal marshes are defined as "Waters of the United States" (33 CFR S.328.3 (a)(8)(b)) and are highly productive ecosystems that are built, nourished, and sustained by the fluvial processes of adjacent surface waters. Comparatively, Point au Fer Island is one of the more stable, healthy barrier islands in coastal Louisiana and continues to support its historical resource value by providing storm protection, wildlife habitat, nursery habitat for marine fishes and shellfishes, and recreational use. Although this island has sustained less deterioration than most barrier islands in the Louisiana coastal zone, data indicate that land loss has occurred on the island due to shoreline erosion and the conversion of inland marshes to open water.

A remote sensing analysis of land loss on Point au Fer Island revealed that 12 percent of the marsh on the island converted to shallow open water during the period 1956 to 1978 (U.S. Department of the Interior, 1990). This marsh loss occurred primarily in the central part of island and in areas impacted by oil and gas exploration (Fruge, 1990). Rapid subsidence, increased water exchange, partial impoundment and other hydrologic alterations are thought to be responsible for this loss. As a result, the quantity and quality of wildlife habitat has been reduced, however, high quality nursery habitat for estuarine-dependent fishes and shellfishes has been maintained. Although this conversion still supports high natural resource values, land loss may indicate a pattern of rapid deterioration that could adversely impact the overall health and ecology of the island. Surface water resources surrounding Point au Fer Island include the Atchafalaya Bay, Four League Bay, Mosquito Bay and the Gulf of Mexico. Surface water resources within Point au Fer Island are maintained by a series of natural bayous and man made access canals. Locust Bayou, Mosquito Bayou, Burkes Bayou and

Alligator Bayou are the main natural waterways meandering through inland marshes. These natural waterways transport the fresh-to-brackish waters of the upper Atchafalaya Bay into the island's interior. Saline water from the Gulf of Mexico enters the inland marsh primarily via oil and gas access canals that open directly or indirectly to the Gulf of Mexico. The water quality of surface waters within the Atchafalaya Basin is good. 1991 data from the Louisiana Department of Environmental Quality (DEQ) rates surface waters of the Atchafalaya Bay and Delta and Gulf waters to the 3-mile limit as adequate for primary contact recreation, secondary contact recreation, propagation of fish and wildlife, and oyster propagation (Louisiana Administrative Code, 1991). Isolated areas of oil and gas exploration and agricultural runoff of fertilizer and pesticides in the upper basin cause some concern for water quality. This influence appears to be isolated and does not significantly affect the overall water quality of the basin or Point au Fer Island.

4.1.5 Storm and Flood Protection

Storm, Wave and Erosion Buffers

Point au Fer Island is the outermost land area in western Terrebonne Parish and acts as the first line of defense against seasonal cyclonic storms. Stabilization of the marshes will improve the capacity of the island to buffer tidal surges, thereby providing limited protection for inland areas.

Erosion and Accretion Patterns

The location of Point au Fer Island at the terminus of the Atchafalaya River suggests that a high potential exists for a gradual reversal of land loss rates and natural marsh recovery due to increased regional sediment loading (van Heerden and Roberts, 1988; Roberts and van Heerden, 1984).

4.2 Biological Environment

4.2.1 Vegetative Communities

Vegetative communities on Point au Fer Island are more extensive than those normally found on a Louisiana barrier island (McTigue, 1994). Beginning at the shoreline these include vegetative communities associated with dunes and washover sands (beach rim marsh), saline marsh, brackish marsh and intermediate marsh. 1990

data indicate that there are 4,490 acres of intermediate marsh, 21,557 acres of brackish marsh, and 4,135 acres of saline marsh on Point au Fer Island (U.S. Department of the Interior, 1990). In addition to these marshes, spoil banks adjacent to dredged canals provide an upland site vegetated by upland species.

Vegetation of communities commonly found on Point au Fer Island include:

Beach Rim Marsh

Spartina patens, *Spartina alterniflora*, *Iva frutescens*, *Daubentonia texana*, *Baccharis halimifolia*, *Batis maritima*, *Opuntia stricta dillenii*, *Salicornia bigelovii*, and *Sesuvium maritimum*.

Saline Marsh

Spartina patens, *Spartina alterniflora*, *Juncus roemerianus*, *Scirpus robustus*, *Solidago sempervirens*, *Ipomea stolonifera*, *Paspalum vaginatum*, *Suaeda linearis*, and *Distichlis spicata*.

Brackish Marsh

It is not uncommon to find over 40 species of vegetation in unmanaged brackish marsh. Because much of the brackish marsh area on Point au Fer Island has been managed by fire, *Scirpus olneyi* and *Scirpus robustus*, in addition to *Spartina patens* and *Distichlis spicata*, remain dominant species. Additional species include *Sesuvium portulacastrum*, *Sabatia stellaris*, *Borrchia frutescens*, and *Fimbristylis castanea*.

Intermediate Marsh

In isolated areas, intermediate marsh is replacing brackish marsh on Point au Fer Island. There was no recorded intermediate marsh on the island in 1958 or 1978, whereas there were approximately 5,000 acres of intermediate marsh recorded in 1990. This increase in intermediate marsh is the result of fresh water influences from the Atchafalaya River and its prograding delta. Vegetative species found in this marsh include *Salix nigra*, *Typha domingensis*, *Vigna repens*, *Sagittaria sp.*, *Echinochloa walteri*, *Eleocharis parvula*, *Leptochloa fascicularis*, *Aster subulatus*, *Baccharis halimifolia*, *Spartina cynosuroides*, *Cyperus spp.*, *Mikania scandens*, *Justica ovata*, *Scirpus validus*, *Scirpus americanus*, and *Sphenoclea zeylanica*.

4.2.2 Essential Fish Habitat

Under the Magnuson-Stevens Fishery Conservation and Management Act, the Gulf of Mexico Fishery Management Council identified essential fish habitat for those species managed under its fishery management plans for coral and coral reefs, spiny lobster, stone crab, coastal migratory species, reef fish, red drum, and shrimp (Gulf of Mexico Fishery Management Council, 1998). The Council's essential fish habitat amendment was partially approved by the National Marine Fisheries Service in February 1999. Habitats in and near Point au Fer Island, including adjacent areas that could be affected by construction and benefit from the proposed action, are now recognized as essential fish habitat for eggs, larvae, juveniles, adults, and spawning adults for several managed species - brown shrimp juveniles (year round), pink shrimp juveniles and adults (year round), red drum juveniles and adults (year round), gray snapper juveniles (September - November), white shrimp adults (March - May), white shrimp juveniles (year round), bonnethead shark late juvenile/subadults and adults (year round) and Atlantic sharpnose shark juvenile/subadults (year round).

The proposed action is designed to control shoreline erosion, reduce deteriorating habitat values in interior brackish marshes, and protect the barrier island ecosystem. This phase of construction expands work done in two earlier project cycles to install a protective barrier of limestone rock breakwater. When completed, the strengthened barrier will restore and reinforce the natural shoreline along 3,700 linear feet of barrier dunes and prevent an extended breach that could destroy earlier shoreline stabilization structures and alter the fragile ecology of the barrier island and marsh ecosystems. The project will involve short-term construction impacts such as bottom scouring, piling installation, sediment compaction, and siltation on the ocean side of the island and longer-term impacts associated with the hardened shoreline on the main island. Those impacts will be balanced by the project intent to complete the limestone barrier that will help to protect the entire 52,000-acre Point au Fer barrier system. NMFS estimates that if the unstabilized portion of Point au Fer island were to breach, the combined investment of over \$7 million in 1995-1999 for the original Point au Fer Island project (Phase I and II) and the Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a) CWPPRA project would be severely jeopardized. If the barrier breached, several thousand acres of marsh immediately shoreward of the dune line would suffer from saltwater intrusion and sediment overwash, thereby degrading the valuable wetland systems that represent the primary justification for the stabilization work.

Projects like this hydrologic restoration effort are recommended in the essential fish habitat amendment (Gulf of Mexico Fishery Management Council, 1998) as the most viable approach to large-scale habitat protection and restoration in coastal Louisiana. Such projects help to ensure the long-term sustainability of important habitats and managed species that depend on those habitats during some stage of their life. Point au Fer and other habitat protection and restoration projects are selected by a public process that offers ample opportunity for public input and debate prior to any decisions to proceed. This project was proposed as an emergency addition to the first two phases of shoreline stabilization, and has been announced through normal CWPPRA program meetings and publications.

4.2.3 Wildlife Resources

Point au Fer Island marshes provide high value habitat for those wildlife species typically associated with brackish coastal wetlands. The island is also situated to serve as a temporary stopover for migratory birds. Within the adjacent waters of the Atchafalaya Bay, approximately 144,000 waterfowl overwinter including green-winged teal, gadwall, mallards, canvasbacks, coots, and pintails (Sasser and Fuller, 1988).

Specific habitats within the project area are discussed below.

Beach Rim Marsh

The beach rim area is important for migratory song birds as winter habitat and during spring migrations. This area is the first landfall north of the Mexican coast and during inclement weather large numbers of trans-gulf migrants seek refuge on the elevated vegetation of this beach rim habitat. A site to rest, feed and obtain fresh water is critical to the survival of thousands of these birds. Wildlife utilizing the beach rim include nutria, raccoons, coyotes, and rabbits.

Saline Marsh

The total area of saline marsh has decreased due to the fresh water influence of the Atchafalaya River and shoreline retreat. Currently it is estimated that approximately 4,135 acres of saline marsh exist on Point au Fer Island. Those saline marshes which open to the gulf via bayous or canals are used extensively as feeding and nursery habitat by numerous fishes and invertebrates such as Atlantic croaker, red drum,

spot, sand seatrout, spotted seatrout, southern flounder, striped mullet, gulf menhaden, bay anchovy, rainwater killifish, sailfin molly, white shrimp, blue crab, and brown shrimp.

Brackish Marsh

Approximately 21,500 acres of brackish marsh currently exist on Point au Fer Island. As with saline marsh, brackish marsh is used extensively as feeding and nursery habitat by numerous fishes and invertebrates if access is provided to the gulf and migration can occur. Fish and crustaceans associated with brackish marshes include spotted sunfish, Atlantic croaker, spot, blue catfish, spotted gar, gizzard shad, sheepshead, southern flounder, gulf menhaden, striped mullet, bay anchovy, rainwater killifish, sailfin molly, white shrimp, blue crab and brown shrimp. In addition to estuarine values stated earlier, these marshes have historically provided extensive habitat for fur bearers, especially nutria and muskrat, and have been managed by marsh burning since the Native American times. The American alligator and snow geese also utilize the more inland brackish marshes as habitat.

Intermediate Marsh

Intermediate marshes are the most rapidly expanding marshes on Point au Fer Island. There was no recorded intermediate marsh in 1978 and currently there are approximately 4,500 acres. These marshes provide the greatest diversity of plant species. Many faunal species that are prevalent in brackish marshes also occur in intermediate marshes. Intermediate and brackish marshes near the project area support a large residential mottled duck population which breeds and winters primarily in coastal Louisiana.

Bayous, Levees, Spoil Banks and Canals

Natural levees are found adjacent to bayous such as Locust and Mosquito Bayou that are within the project area. Spoil banks are located adjacent to dredged canals such as Hester, Mobil and Transco Canals. These slightly elevated levees and banks provide habitat for migratory song birds similar to that of the beach rim area. Because they are the only upland areas in the marsh, birds utilize these areas for refuge during storm events and the upland vegetation also provides additional food value. Canals, bayous and ponds also provide areas for alligator mating or waterfowl protection during storm events.

4.2.4 Threatened and Endangered Species

The current list of endangered or threatened species was reviewed as part of this assessment. Although the project location is in the defined range for several species, no sitings or nests were noted during field visits. Occurrences of eagles, falcons and sea turtles are possible, particularly as a feeding area. Due to previously expressed concerns about sea turtles our assessment focused on their relative probability of occurrences in the project area. The northern Gulf of Mexico is within the range of five species of sea turtles, including the Kemp's ridley (*Lepidochelys kempi*), a Federally listed endangered species. The Kemp's ridley occasionally appears along the Louisiana Gulf coast (Dundee and Rossman, 1989). Possible factors related to this occurrence include the widespread availability of preferred shallow water marine and estuarine habitat with high turbidity levels. Since the project site is located within a relatively shallow estuarine environment, the regional waters have a potential for occasional utilization by Kemp's ridley sea turtles as do other inshore and nearshore areas throughout the Louisiana coastal zone. Point au Fer Island lies within NMFS Statistical Zone 15. To determine the extent to which the proposed work may affect the Kemp's ridley, literature documenting known occurrences within adjacent statistical zones along the Louisiana coast were examined. Documentation was based on historical and recent sitings, incidental catches and reports by commercial and recreational fisherman, observations by divers and commercial pilots, aerial surveillance, and strandings records (Fritts et al., 1983; Fuller et al., 1987; Teas, 1992a; and Teas, 1992b). In addition, a biological assessment of impacts to sea turtles from oyster shell dredging in Atchafalaya and adjacent waters was prepared in November 1987 by the U.S. Army Corps of Engineers, New Orleans District as part of an Environmental Impact Statement (U.S. Army Corps of Engineers, 1987). Our review of this information has revealed occurrences of Kemp's ridley sea turtles along the entire Louisiana coast; however, the area of highest relative incidence appears to be from Terrebonne Bay eastward through Chandeleur and Breton Sounds, and to the west in the vicinity of the Calcasieu Ship Channel. No unusually high incidences of occurrence were noted in NMFS Statistical Zone 15 in general, or at Point au Fer Island specifically.

4.3 Cultural Environment

4.3.1 Historical or Archeological Resources

The Louisiana coastal waters have been traversed by watercraft since the earliest colonization of the region. It is also possible that prehistoric vessels utilized these waters. At present, 42 recorded wrecks have occurred in Louisiana coastal waters and seven have occurred in the Atchafalaya Bay. This includes the sinking of the Chancellor in 1841 near Point au Fer Island (U.S. Army Corps of Engineers, 1987; U.S. Army Corps of Engineers, 1994). Due to the dependence on ship travel during the colonialization of south Louisiana and the frequency of tropical storms in the area, there is a strong potential that historical ship remains may be found in subbasins or near the shores of Point au Fer Island. There is also the potential for inundated prehistoric archeological sites on Point au Fer Island. The Chitimacha Tribe of Louisiana were known to have communities near Grand Lake and the mouth of the Atchafalaya River. Although no permanent sites were located on the Island due to flooding, the Chitimacha hunted and fished the entire Atchafalaya Basin including Point au Fer Island (Faine and Bohlander, 1986). During the nineteenth century, trappers and hunters frequented the area hunting mink, muskrat, raccoon, and alligator and established trade routes to the east via the Atchafalaya Bay. The Louisiana State Historical Preservation Office (SHPO) was consulted on the original Mobil Canal project (Phase II) and found no resources to be affected by the 1997 shoreline stabilization project. NMFS consulted the SHPO in the preparation of this assessment and the SHPO again found the project would have no effect on significant cultural resources (see Appendix).

4.3.2 Economics (Employment and Income)

Point au Fer Island's inherent natural resources contribute significantly to the economy of south Louisiana. These resources serve as a basis that support extensive recreational and commercial fishing, shellfishing, trapping, and hunting industries as well as mineral exploration. The inland marshes of Point au Fer Island provide a nursery habitat for marine fisheries that are harvested throughout the Louisiana coastal zone. Morgan City and Delcambre, Louisiana are fishing ports located near the Atchafalaya Bay. The combined value attributed to the commercial fishing industries of these two ports in 1997 was \$40.7 million dollars or 12.8 percent of the total value of finfish landings in Louisiana (U.S Department of Commerce, 1998). Louisiana represents 95% of the commercial landings in the Gulf of

Mexico with a dockside value of over \$318 million (U. S. Department of Commerce, 1998). In addition to the economic impact from the commercial fishing industry, revenue is generated from recreational wildlife and fisheries activities on or near Point au Fer Island. For over 50 years, fishing, hunting, and trapping and have attracted sportsmen from all over the country to the Terrebonne Basin and many local businesses serve this market. Evidence of this is documented by the numerous marsh management plans that have been implemented within the basin to promote the recreational wildlife harvest. Mineral exploration on Point au Fer Island has been conducted for over 50 years. Parish revenues and employment resulting from oil and gas exploration on and near Point au Fer Island reached their highest level from 1970 - 1985. During this time, numerous wells, storage facilities and pipelines were constructed and maintained by mineral exploration companies. Following the sharp decrease in the oil and gas industry during the mid 1980's, the economic benefits resulting from oil and gas exploration on Point au Fer Island have also decreased.

4.3.3 Land Use

The involved property is owned by the John M. Smyth Company and the Roman Catholic Church. The project area itself encompasses approximately 3,700 feet of beach. However, the anticipated benefits of the project will impact approximately 3,000 acres of brackish emergent marsh and shallow vegetated water bottoms. Present and historical use includes fish and wildlife resource management and exploitation, and hydrocarbon exploration and production.

4.3.4 Recreation

The coastal marshes of the Terrebonne and Atchafalaya Basins, including Point au Fer Island, have attracted sportsmen for decades. Recreational use of Point au Fer Island results from its fish and wildlife resources. Historically, this includes fishing, hunting, boating, and trapping, although this barrier island could serve as an excellent site for migratory bird observation. The marshes of the island can be reached within hours of inland ports, provide protection from rough seas and are excellent habitat for fish and wildlife. The coastal marshes of the Atchafalaya Basin, including Point au Fer Island, have attracted sportsmen for decades.

4.3.5 Noise

Point au Fer Island represents a privately owned, remote area that has no industry other than oil production. Ambient noise on the island would result from oil and gas exploration, boats, or wildlife.

4.3.6 Infrastructure

Natural bayous and access canals constitute the entire transportation network on Point au Fer Island. These access canals are concentrated in the southwestern and eastern areas of the island.

5.0 Environmental Consequences

In general, the environmental consequences of the no-action alternative are overwhelming compared to the preferred alternative. The conversion of marsh to open water at rates such as 34.9 square miles per year (Barras, et al., 1994) due to subsidence (Turner, 1990), erosion (Boesch et al., 1983), and saltwater intrusion (Reed and Cahoon, 1993) has well documented adverse environmental impacts which can be mitigated by restoration projects. All structural and non-structural alternatives, including the preferred, have short term localized impacts during construction, yet offer significant long term environmental benefits. It should be noted that the no-action alternative will increase the change of fresh and brackish marsh to saline marsh vegetation and lead to increased tidal and wave-induced erosion. Selection of the breakwater alternative versus the various options for filling Mobil Canal were, therefore, evaluated from an engineering and cost viewpoint. A thorough assessment of the environmental consequences of the preferred alternative is, therefore, provided below.

5.1 Physical Environment

5.1.1 Geology, Soils and Topography

The proposed activity will have no impact on geology, soils or topography. The material used for construction of the shoreline stabilization structure will be limestone rock, and inert material. No potential for contamination is anticipated by use of limestone rock since the material will be freshly mined and transported to the site.

5.1.2 Climate and Weather

The existing shoreline structure (Phase II) has experienced normal weather conditions including numerous tropical storms with no ill

effect. The structure has incorporated local materials (sand, shell, etc.) into its matrix which has increased its stability. The Phase III structure is expected to function in a similar manner.

5.1.3 Air Quality

Minor adverse impacts will result from the proposed activity. Exhaust emissions from construction 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

Short-Term Adverse Impacts

Short-term adverse impacts to surface water resources will be limited to the designated construction site on the beach separating the Gulf of Mexico and Mobil Canal. These impacts are minor and will be limited to the construction phase of the project.

Long-Term Benefits

The long-term benefits to surface water resources resulting from the proposed activity include shoreline restoration and marsh protection. Stabilizing the shoreline will reduce the risk of breaching during storm events and protect the inland marshes from rapid erosion.

These restoration activities will contribute to restoring the integrity of the barrier island needed to maintain its surface water resources.

5.1.5 Storm and Flood Protection

The proposed activity will improve long-term storm and flood control resources of Point au Fer Island. This barrier island is the outermost land area in western Terrebonne Parish and acts as the first line of defense against seasonal cyclonic storms. Stabilizing the shoreline and protecting the marshes from excessive erosion will improve the capacity of the island to buffer tidal surges, thereby providing protection for inland areas.

5.2 Biological Environment

5.2.1 Vegetative Communities

The proposed activity will result in positive long term impacts on vegetative communities within the project area of Point au Fer Island. Plant health and vigor are necessary for overall marsh health and stability. Because the accumulation of organic material is a primary factor influencing vertical accretion, protecting the inland marshes from excessive erosion and saltwater intrusion through construction of the breakwater will increase the overall health and stability of the island. Long-term restoration of marshes could amount to as much as 800 acres in the project area (Louisiana Coastal Wetlands Conservation and Restoration Task Force, 1993). This effect more than offsets any potential short-term negative impacts due to construction of the breakwater.

5.2.2 Essential Fish Habitat (EFH)

As shown in Figure 2, the construction site is on the shoreline and construction materials can be placed without disturbing inland marsh. The construction staging area for this project will be located to avoid long-term direct and indirect impacts to essential fish habitat. Short-term impacts will be minimal, and will dissipate quickly with no long-term or cumulative impacts (see Section 4.2.2). Construction impacts from barges and machinery on the ocean beach side of the barrier island will disappear through normal wave action within a few tidal cycles. All other impacts are beneficial, and will accrue from the continued presence of the barrier and a viable marsh system.

5.2.3 Wildlife Resources

Short-Term Adverse Impacts

Short-term adverse impacts to estuarine dependant organisms will occur during the construction phase of the project. These impacts include possible smothering of non-mobile benthic organisms and increased turbidity in waters near the construction site. These impacts are minor and are limited to the immediate vicinity of activity and for the duration of construction of the project.

Long-Term Adverse Impacts

No long term adverse impacts are expected.

Long-Term Benefits

The proposed activity will improve long-term fish and wildlife resources by stabilizing and protecting the shoreline and inland marshes from increased deterioration attributed to Transco, Mobil, and Hester Canals. In addition to benefitting fish and wildlife resources, protected inland marsh and elevated shoreline provides critical habitat for a numerous fish and wildlife species during storm events or excessive flooding.

5.2.4 Threatened and Endangered Species

The data reviewed suggest that while there is a potential for the occurrences of Kemp's ridley sea turtles in the project vicinity, it is comparatively low relative to other statistical zones. Therefore, it is anticipated that the probability for death, injury, or other incidental take related to project construction and plan implementation is negligible. Previous discussions with the Protected Resources Division of NMFS revealed no other potential for significant impacts to threatened or endangered species from the Phase II project (McTigue, 1994) which Phase III will extend. NMFS consulted again with the Protected Resources Division for Phase III and again they concluded the project is not likely to adversely affect species protected by the ESA under NMFS purview. Adverse impacts to species for which the United States Fish and Wildlife Service (USFWS) is responsible are also not expected. Interagency consultation to confirm these views are contained in the Appendix.

5.3 Cultural Environment

5.3.1 Historical or Archeological Resources

The proposed activity represents a small potential to adversely impact historical or archeological resources. This potential is due to the significant number of shipwrecks that have occurred in the Atchafalaya Bay, the use of the area by Native Americans and the colonization of south Louisiana via gulf waterways. The shoreline restoration could destroy historical artifacts during the construction process. This potential is minor due to the limited area of the proposed activity. The Louisiana State Historical Preservation Office (SHPO) was consulted on

the original Mobil Canal project (Phase II) and found no resources to be affected by the 1997 shoreline stabilization project. NMFS consulted the SHPO in the preparation of this assessment and the SHPO again found the project would have no effect on significant cultural resources (see Appendix).

5.3.2 Economics (Employment and Income)

The proposed activity will have no measurable impacts on the economics in the area. Commercial fishing will not be affected by the activity. Slight access restrictions may occur to fishermen accustomed to frequenting the area; however, other routes are available.

5.3.3 Land Use

Project implementation will not alter or impact existing land use classifications. If successful, the project will prevent further marsh loss and improve the value of the area for the production of those resources for which it is best suited. Maintenance of surface integrity will also safeguard legal rights to subsurface mineral resources. Project implementation will maintain and possibly improve the economic, biological, and aesthetic value of the tract for the landowners.

5.3.4 Recreation

The proposed activity will result in minor impacts to recreational activity. The visual and auditory characteristics of the project area will be temporarily impacted by the presence and operation of construction equipment. The increased turbidity levels in the construction area may be aesthetically displeasing. Long-term visual impacts may result from the placement of the limestone breakwater which is more conspicuous within the natural setting. However, such features will not significantly degrade local aesthetic values since similar structures exist in the project vicinity and throughout coastal Louisiana.

5.3.5 Noise

Structure installation will elevate noise levels in the project area. These increases may disturb sportsmen in pursuit of recreation. Because of the remote location, populated areas will not be impacted by excessive noise levels. It is anticipated that auditory disturbances will be periodic and short-term.

5.4 Infrastructure/Transportation


No significant impacts to transportation are anticipated.

6.0 Conclusions

The Point au Fer Island Hydrologic Restoration Project, Phase III, is being jointly implemented by NMFS and the Louisiana Department of Natural Resources. The project is recognized by both of these agencies as a critical element in the restoration and maintenance of Point au Fer Island. This EA finds that no significant adverse environmental impacts are anticipated by the activities related to this project. This finding is supported by the success of the initial creation of the rock breakwater in Phase II of the project. This project will result in highly positive direct, secondary, and cumulative effects due to the substantial benefits from marsh protection and barrier island restoration. The design for a 20-year life meets the criteria under CWPPRA. By proceeding with this project the people of Louisiana, as well as the nation, will take another step in restoring and preserving the valuable estuarine habitat that our wildlife, fisheries, and human populations depend upon.

7.0 Finding of No Significant Impact (FONSI)

In compliance with the National Environmental Policy Act (NEPA), an Environmental Assessment has been prepared for the proposed Point au Fer Island Hydrologic Restoration Project, Phase III in Terrebonne Parish, Louisiana. The environmental review process has led NMFS to determine that this action will not have a significant effect on the quality of the human environment. Therefore, an Environmental Impact Statement is not required by Section 102 (2) (C) of NEPA or its implementing regulations.



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Date

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9.0 Preparers

This Environmental Assessment (EA) was prepared by the National Marine Fisheries Service (NMFS), Office of Habitat Protection, Restoration Division. Portions of this EA reference the 1995 Environmental Assessment for the Point au Fer Hydrologic Restoration Project (CWPPRA Project PTE-24/26), Terrebonne Parish, Louisiana in which A Finding of No Significant Impact (FONSI) was signed May 8, 1995. The present document evaluating the Point au Fer Phase III project was written and compiled by Dr. Erik Zobrist, Jennifer Arnold, Rick Hartman and John Foret of NMFS.

10.0 Appendix



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 HOB DY
ASSISTANT SECRETAR

KATHLEEN BASINEAUX BLANCO
LIEUTENANT GOVERNOR

July 23, 1999

Mr. John D. Foret
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Lafayette Office
P.O. Box 42451
Lafayette, Louisiana 70504

Post-It Fax Note 7671
Table with columns: To, From, Co./Dept., Phone #, Fax #, Date, # of pages

Re: Draft Environmental Assessment
Point au Fer Island Hydrologic Restoration Project (Phase III)
Terrebonne Parish, Louisiana

Dear Mr. Foret:

Reference is made to your letter dated July 6, 1999, concerning the above. A review of our files indicates that there are 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 (225) 342-8170.

Sincerely,

[Handwritten signature of Gerri Hobdy]

Gerri Hobdy
State Historic Preservation Officer

GH:MM:s



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506



July 21, 1999

Mr. John D. Foret
National Marine Fisheries Service
Lafayette Office
Post Office Box 42451
Lafayette, LA 70504

Dear Mr. Foret:

The U.S. Fish and Wildlife Service (Service) has reviewed the draft Environmental Assessment (EA) for the Point au Fer Island Hydrologic Restoration Project (Phase III). That project would be constructed as an emergency project 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 fully explains project impacts on those resources. Specific comments are provided in the following section of this letter.

The intermediate, brackish, and saline marshes within Point au Fer Island provide important habitat for several Federal trust species including wading birds, shorebirds, and resident and migratory waterfowl. Shoreline protection will reduce shoreline erosion rates and preserve the hydrologic integrity of interior marshes which support those species. The Service agrees that additional shoreline protection should be implemented as an emergency project to further protect areas benefitted by the original Point au Fer Island Hydrologic Restoration and Lake Chapeau Sediment Input and Hydrologic Restoration Projects. Implementation of this emergency action would ensure that the benefits ascribed to those projects will be fully realized.

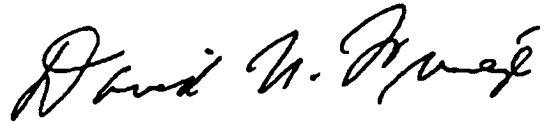
Specific Comments

Page 6, Section 2.3 Authorization - "Wetland Valuation Analysis" should be changed to Wetland Value Assessment (WVA). It should also be stated that the Environmental Work Group (EnvWG) reviewed a WVA submitted by the National Marine Fisheries Service which proposed

that the benefits ascribed to the original Point au Fer Island Hydrologic Restoration Project would not be realized without emergency action to prevent breaching of the Mobil Canal. The EnvWG concurred with that proposed WVA.

The Service fully supports the measures proposed thus far for Phase III of the Point au Fer Hydrologic Restoration 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 318/291-3120.

Sincerely,

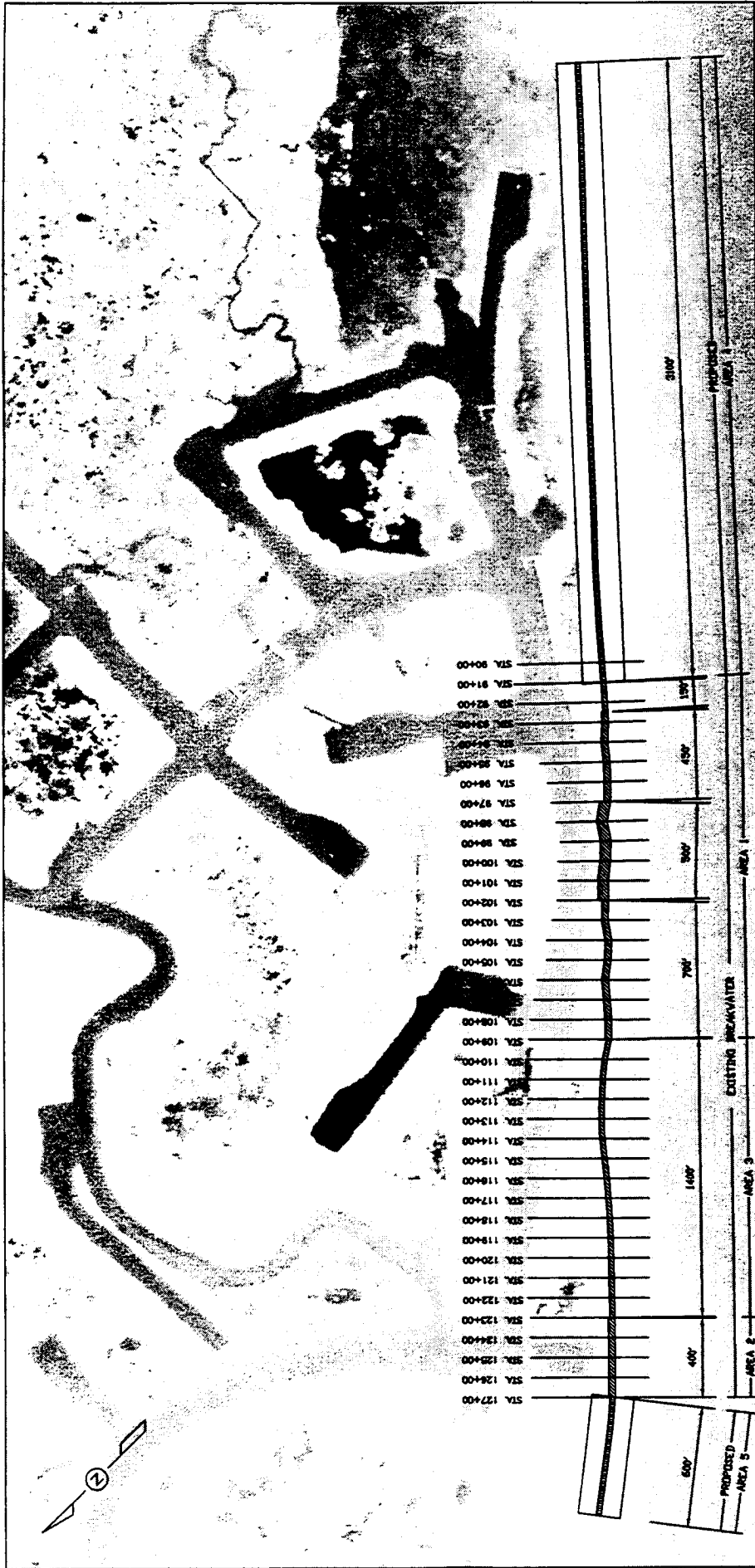


David W. Frugé
Field Supervisor

- 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

Figures

POINT AU FER ISLAND PROPOSED SHORELINE PROTECTION PROJECT



800' 0 800' 1600'



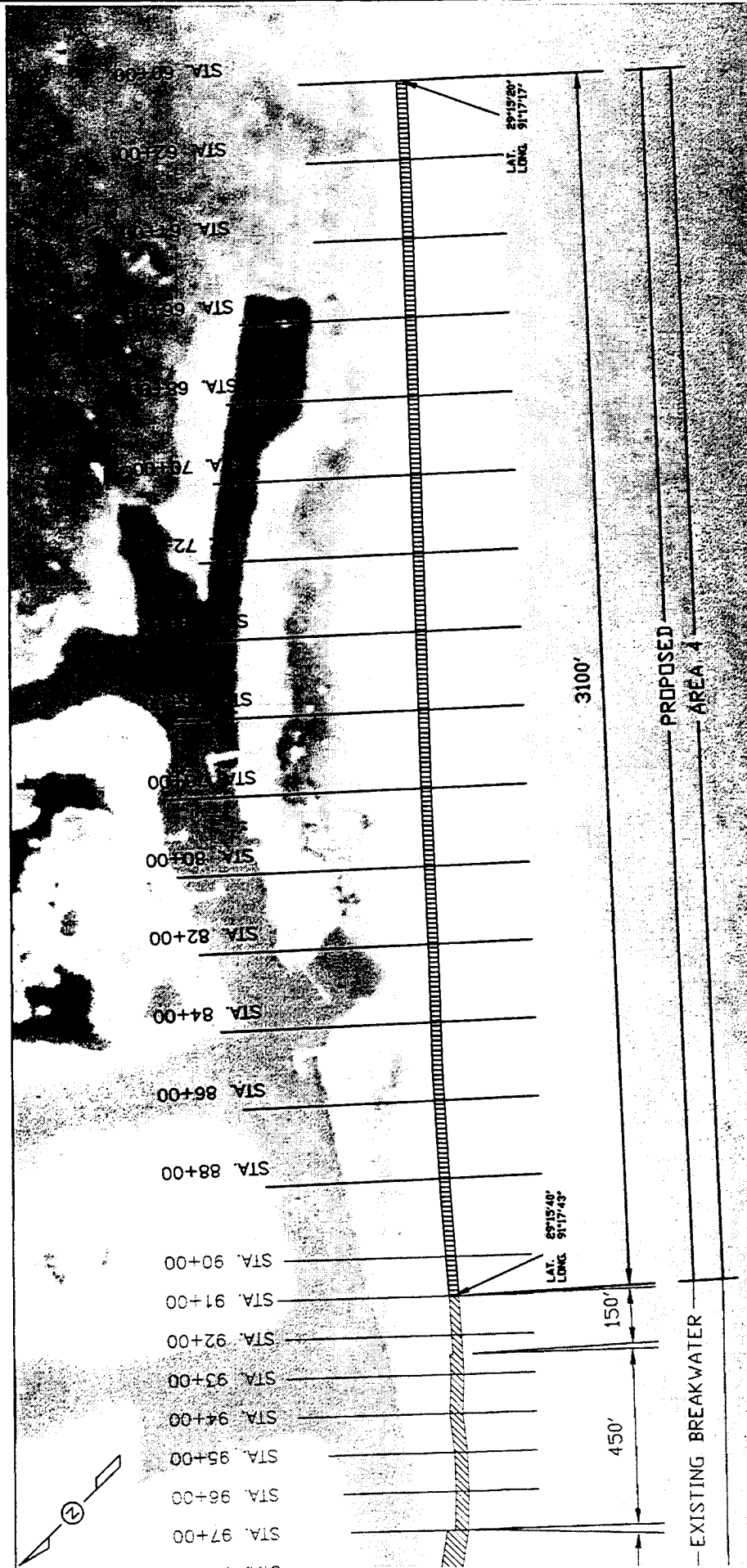
SCALE: 1" = 800'

LEGEND

-  PROPOSED BREAKWATER LOCATION
-  EXISTING BREAKWATER

FIGURE 2

POINT AU FER ISLAND PROPOSED SHORELINE PROTECTION PROJECT



LEGEND
 PROPOSED BREAKWATER LOCATION
 EXISTING BREAKWATER

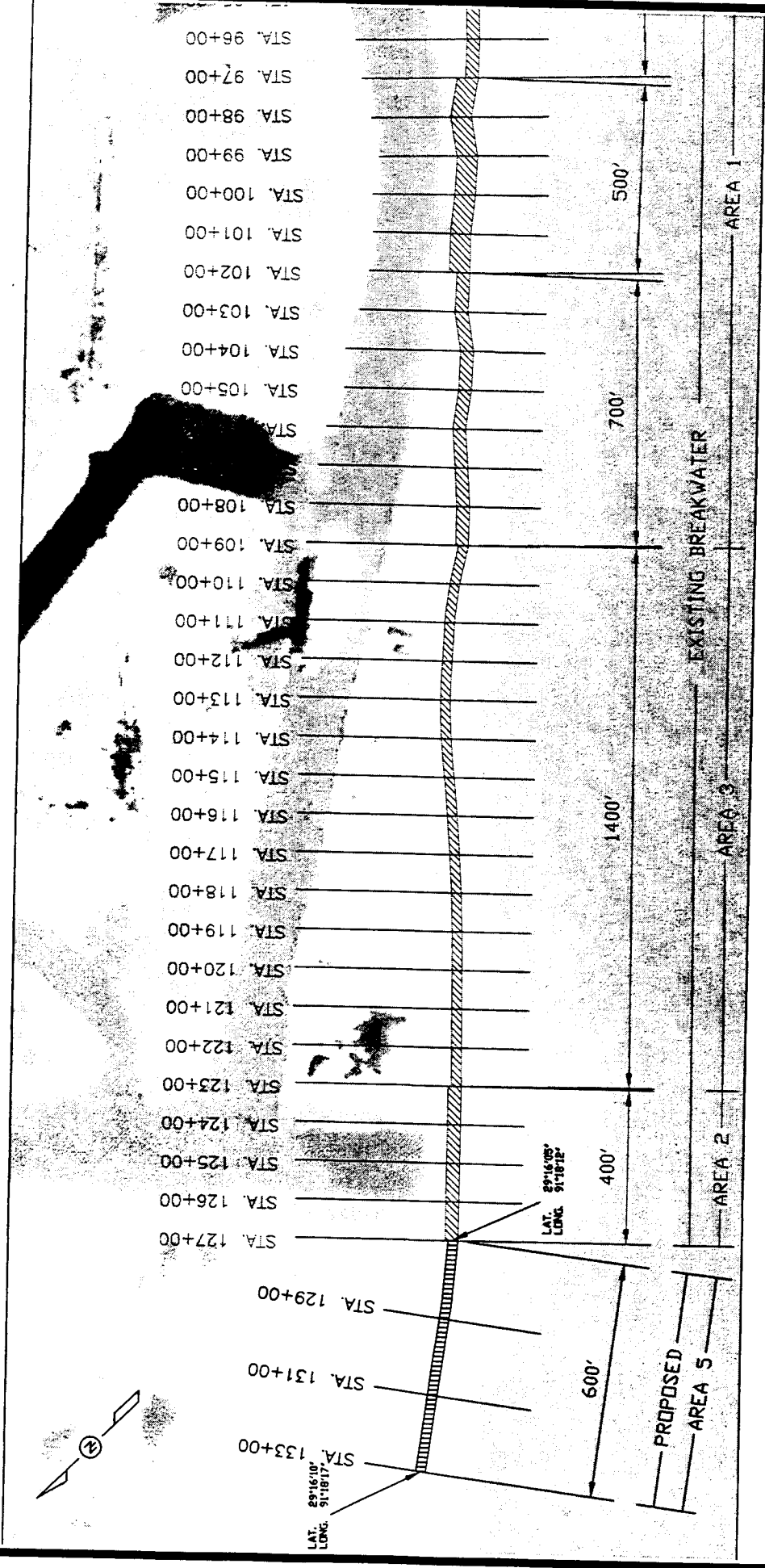



SCALE: 1" = 400'

NOTES:
 FOOT PRINT AREA: (L=3100 ft X W=25 ft)= 77,500 sq. ft.
 BREAKWATER THICKNESS: 32 in.
 RIPRAP VOLUME: (7,654.3 cyds. X 1.1tons/cyd.)= 8,419.7 tons

FIGURE 3

POINT AU FER ISLAND PROPOSED SHORELINE PROTECTION PROJECT



LEGEND
 PROPOSED BREAKWATER LOCATION
 EXISTING BREAKWATER

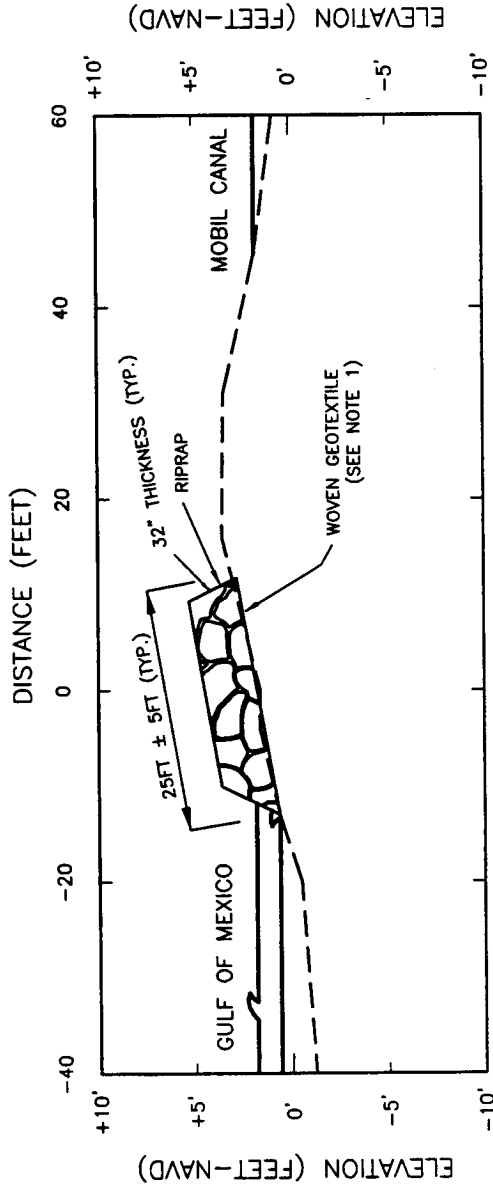


NOTES:
 FOOT PRINT AREA: (L=600 ft x W=25 ft)= 15,000 sq. ft.
 BREAKWATER THICKNESS: 32 in.
 RIPRAP VOLUME: (1,481.5 cyds. x 1.1 tons/cyd.)= 1,629.6 tons

FIGURE 4

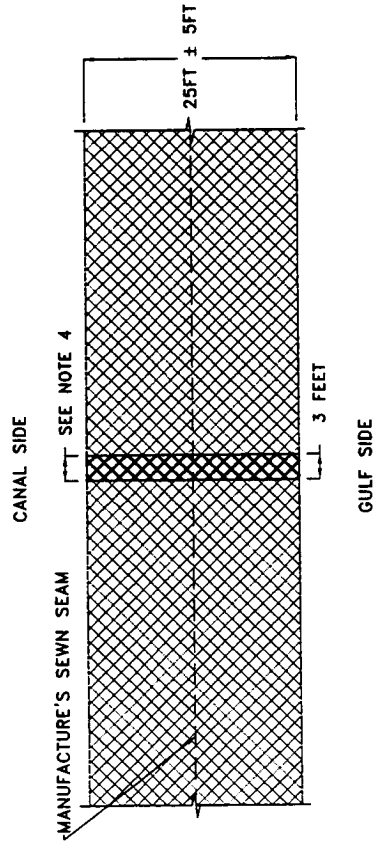
POINT AU FER ISLAND

TYPICAL SECTION AND DETAILS



TYPICAL SECTION

SCALE: 1" = 10' H.
1" = 5' V



GENERAL NOTES:

1. THE CONSTRUCTION OF THE BREAKWATER CONSISTS OF A WOVEN GEOTEXTILE FABRIC AND 32 INCHES OF RIPRAP. WOVEN GEOTEXTILE SHALL BE AS PER THE TECHNICAL SPECIFICATIONS. CONTRACTOR SHALL PLACE GEOTEXTILE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. ARMOR STONE RIPRAP SHALL MEET LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT CLASS 250 POUND STONE, OR OWNER APPROVED EQUIVALENT. GRADATION TESTS OF REPRESENTATIVE STONE (15-TON MIN. SAMPLE SIZE) SHALL BE MADE AT THE QUARRY. CERTIFIED TEST RESULTS MUST BE SUBMITTED AND APPROVED PRIOR TO PLACEMENT ON THE PROJECT. THE STONE PLACEMENT METHOD SHALL PRODUCE A REASONABLY WELL GRADED ROCK MASS WITH VOIDS MINIMIZED AND A TOLERANCE OF +6 TO -0 INCHES OF FINAL GRADE. STONE SHALL BE PLACED TO FULL THICKNESS (32 INCHES) IN ONE LIFT WITH A MAXIMUM DROP OF 1 FOOT TO AVOID DAMAGING THE GEOTEXTILE FABRIC.
3. ACTUAL ALIGNMENT MAY BE ADJUSTED BY PROJECT ENGINEER TO MEET CHANGING FIELD CONDITIONS. IF ADDITIONAL QUANTITIES FOR GEOTEXTILES AND ARMOR STONE ARE NECESSARY, THEY WILL BE PAID FOR AT THE UNIT PRICE BID FOR THE ITEM.
4. MINIMUM OVERLAP AT ENDS OF WOVEN GEOTEXTILE SHALL BE: THREE FEET

WOVEN GEOTEXTILE LAYOUT

N.T.S.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312; FAX 570-5517

JUL 14 1999

F/SER3:BH

MEMORANDUM FOR: F/SEC5 - John D. Foret
FROM: *Ja* F/SE - William T. Hogarth *Carl S. Ball*
SUBJECT: Point au Fer Island Hydrologic Restoration Project (Phase III)

This is in response to your letter dated July 6, 1999 regarding the above-mentioned subject. The purpose of this project is to control shoreline erosion and reduce the deterioration of interior island marshes. This project will use limestone rock (25' +/- 5' wide, by 35" thick) over supporting woven geotextile fabric to stabilize approximately 3,700 feet of shoreline. The proposed location of this project is the southwest section of Point au Fer Island, Terrebonne Parish, Louisiana.

This area is a known habitat for sea turtles which are protected by the Endangered Species Act (ESA); however, the construction, described in your letter and accompanying environmental assessment, is not likely to affect sea turtles. Therefore, NMFS concurs with your conclusion that this project is not likely to adversely affect species protected by the ESA under NMFS purview.

This concludes your consultation responsibilities under section 7 of the ESA for the proposed Point au Fer Island Hydrologic Restoration Project for species under NMFS purview. 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 Bob Hoffman, Fishery Biologist.

cc: F/PR3

