

DRAFT
ENVIRONMENTAL ASSESSMENT

**PROPOSED MAINTENANCE AND DISPOSAL OF DREDGED MATERIAL
FOR THE BAYOU CODEN NAVIGATION PROJECT
MOBILE COUNTY, ALABAMA**

A FEDERALLY-AUTHORIZED NAVIGATION PROJECT

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1.0 INTRODUCTION

This Environmental Assessment (EA) presents the impacts that could potentially result from the dredging and dredged material placement of the federally authorized Bayou Coden navigation project, Mobile County, Alabama. The purpose of this EA is to update and determine whether or not the proposed action has the potential for creating significant impacts to the environment and would thereby warrant a more detailed study on possible impacts, mitigation, and alternative courses of action.

2.0 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) CONSIDERATION

NEPA of 1969 and Title 40 of the Code of Federal Regulations (CFR), Parts 1500-1508 (40 CFR 1500-1508) require Federal agencies to consider the potential environmental consequences of proposed actions and alternatives. Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991), provides policy directing the Federal government to take leadership in protecting and enhancing the environment. In accordance with the requirements of NEPA, an Environmental Impact Statement (EIS) for the entire Bayou Coden navigation project was filed with the President's Council on Environmental Quality (CEQ) on 17 March 1971. The EIS was coordinated with all applicable Federal, state and local agencies and the interested public. This document is available for review in the Corps, Mobile District Office.

NEPA of 1969 excuses or excludes the Corps from the preparation of any formal environmental analysis with respect to actions that result in minor or no environmental effects, which are known as "categorical exclusions." An intermediate level of analysis, an EA, is prepared for an action that is not clearly categorically excluded, but does not clearly require an EIS [40 CFR §1501.3 (a) and (b)]. Based on the EA, the Corps either prepares an EIS, if one appears warranted, or issues a Finding of No Significant Impact (FONSI), which satisfies the NEPA requirement. This EA is prepared according to the Engineer Regulation (ER) 200-2, Procedures for Implementing NEPA, and CEQ Regulations (40 CFR § 1508.27) for Implementing the Procedural Provisions of NEPA (40 CFR § 1500-1508).

3.0 DESCRIPTION OF ENTIRE AUTHORIZED PROJECT

The existing project at Bayou Coden was authorized on 2 June 1969, under the authority of Section 107, River and Harbor Act of 1960 and the River and Harbor Act of 2 March 1945 (H.

Doc. 824, 77th Cong., 2nd sess.). The project provides for a channel 8 feet deep and 60 feet wide extending from La Belle Avenue Bridge south about 3,000 feet through the bayou to Portersville Bay, thence 8 feet deep by 100 feet wide extending about 2.3 miles westward across Portersville Bay to connect with the Bayou La Batre Channel, and a turning basin 8 feet deep by 60 feet wide by 100 feet long on the west side of the bayou channel about 500 feet south of La Belle Avenue Bridge. Vertical plane of reference is mean lower low water (**Figure 1**).

4.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to reestablish the authorized depth of the federally authorized Bayou Coden navigation project. The channel is needed to provide for safe navigation by commercial and private vessels into Bayou Coden. The area is also utilized by users of the federally authorized Bayou La Batre navigation channel which the Bayou Coden channel runs perpendicular to (**Figure 1**). Bayou Coden's channel location along the central Gulf Coast, and its proximity to the major ship channels of the open Gulf, create a natural import/export terminal, particularly for delivery to and from the Caribbean and Central and South America.

5.0 DESCRIPTION OF THE PROPOSED ACTION

The proposed action is to continue maintenance dredging and placement activities associated with the project, which provides for a channel 8 feet deep and 60 feet wide extending from La Belle Avenue Bridge south about 3,000 feet through the bayou to Portersville Bay, thence 8 feet deep by 100 feet wide extending about 2.3 miles westward across Portersville Bay to connect with the Bayou La Batre channel, and a turning basin 8 feet deep by 60 feet wide by 100 feet long on the west side of the bayou channel about 500 feet south of La Belle Avenue bridge. Due to inaccuracies of the dredging equipment 2 feet of advanced maintenance, plus 2 feet of allowable overdepth, plus an additional 3 feet due to dredging inaccuracies. Dredging typically involves the excavation of approximately 305,000 cubic yards (cy) of silts and sands over a five (5) year period. The primary method of dredging will be via a hydraulic pipeline dredge. The previously approved placement sites for this project are: a) a 70-acre upland site (Charlie) divided into a 55-acre cell and a 15-acre cell; and b) five open-water sites 8, 9, 11, 12, 13, with each of the five open-water site acreages being approximately 160 acres each, located west of the Bayou La Batre channel in Mississippi Sound (**Figure 2**). The materials dredged from the 60-foot wide bayou section would be placed in the upland site "Charlie." The material extracted from the Mississippi Sound portion of the channel would be placed in any of the five open-water placement sites described above or in upland site "Charlie". Except for the bayou portion of the channel, which involves the use of the upland site, the specific placement site(s) used would be contingent upon which section of the Bayou Coden project requires dredging. An overlap zone is required for the channel area located approximately 400 feet on the bayou side, or landward side, of the point of intersection to allow for inaccuracies associated with dredging methodology and processes. The material removed from the approximately 400-foot long overlap zone portion of the channel would be placed either in the upland disposal area "Charlie" or the open-water disposal sites, based upon where shoaling occurs.

6.0 ALTERNATIVES TO THE PROPOSED ACTION

In addition to the proposed alternative described above, the only other alternative being analyzed would be the “no action” alternative. The implementation of the “no action” alternative would result in the Bayou Coden channel not being dredged to the authorized project depth. Also, the material being proposed for dredging from the area is not suitable for any other form of beneficial use at this time; hence the need for the material to be placed in the previously authorized disposal areas under the proposed action alternative. The “no action” alternative would not provide the necessary conditions for safe navigation of commercial and recreational boats through the channel. Therefore, the “no action” alternative was deemed unacceptable and not considered further.

7.0 AFFECTED ENVIRONMENT

7.1 Climate. The project area is located in a humid subtropical climate region, characterized by temperate winters; long, hot summers; and rainfall that is fairly evenly distributed throughout the year. Prevailing southerly winds provide moisture for high humidity from May through September. Annual temperatures range from below freezing to over 100° Fahrenheit (F), with a normal mean annual temperature of 68° F along the coast. Normal precipitation ranges from about 50 to 65 inches per year.

7.2 Sediment. Sediment within Mississippi Sound consists of inorganic clays of high plasticity, poorly graded sands, sand-clay mixtures, sand-silt mixtures, and inorganic clays of low to medium plasticity. Sandy material begins to show up in the sediment profile in the area just south of the Gulf Intracoastal Waterway (GIWW) and becomes dominant through the tidal pass into the Gulf of Mexico. The area below project elevation in the bayou consists of inorganic clays of high plasticity, poorly-graded sands, sand-silt mixtures and sandy clay mixtures. The material to be dredged is predominantly silty, organic material deposited since the previous maintenance cycle.

7.3 Benthos, Motile Invertebrates, and Fishes. The benthic community in the project area was classified by Vittor and Associates (1982) in a study of the Mississippi Sound and selected sites in the Gulf of Mexico. In the Sound, a total of 437 taxa were collected at densities ranging from 1,097 to 35,537 individuals per square meter. Generally, densities increase from fall through the spring months since most of the dominant species exhibit a late winter to early spring peak in production. Species diversity, evenness, and species richness (number of taxa) demonstrate only minor inconsistent temporal fluctuations. Biomass per unit area also increases from fall to spring, primarily as a result of higher densities. Vittor and Associates (1982) named several opportunistic species that are ubiquitous in the Mississippi Sound and nearshore Gulf of Mexico. These species, though sometimes low to moderate in abundance, occur in a wide range of environmental conditions. They are usually the most successful at early colonization and thus tend to strongly dominate the sediment subsequent to disturbances, such as dredging activities. These species include *Mediomastus spp.*, *Paraprionospio pinnata*, *Myriochele oculata*, *Owenia fusiformis*, *Lumbrineris app.*, *Sigambra tentaculata*, the *Linopherus-Paraphinome* complex, and *Magelona cf. phyllisae*. The phoronid, *Phoronis* sp. and the cumacean *Oxyurostylis smithi* also fit this category. *M. oculata* and *O. fusiformis* are predominate species in the Mississippi Sound.

The project site lies within the area categorized as the shallow coastal margin mud habitat. The numerically dominant species *Mediomastus californiensis* and *Paraprionospio pinnata* dominated the samples collected by Vittor and Associates, Inc. (1982). Numerous fish species occur within Sound with the most common including: Atlantic croaker (*Micropogonias undulates*), spot (*Leiostomus xanthurus*), bay anchovy (*Anchoa mitchilli*), and Gulf menhaden (*Brevoortia patronus*) (GCLR, 1978). No oyster reefs exist within the project area.

7.4 Submerged Aquatic Vegetation. Naturally high turbidity levels reduce necessary light at depths within the project area and immediate vicinity, making the area unsuitable for growth of submerged aquatic vegetation.

7.5 Essential Fish Habitat. Essential Fish Habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. The National Marine Fisheries Service (NMFS) has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments (**Table 1**). These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column.

Table 1 provides a list of the species that NMFS manages under the federally Implemented Fishery Management Plan.

Table 1	
Fishery Management Plans and Managed Species for the Gulf of Mexico. (NMFS 1999)	
Shrimp Fishery Management Plan	Red Drum Fishery Management Plan
Brown shrimp (<i>Penaeus aztecus</i>)	Red drum (<i>Sciaenops ocellatus</i>)
Pink shrimp (<i>P. duorarum</i>)	
Rock shrimp (<i>Sicyonia brevirostris</i>)	Golden Crab Fishery Management Plan
Royal Red Shrimp (<i>Pleoticus robustus</i>)	Golden crab (<i>Chaceon fenneri</i>)
White Shrimp (<i>P. setiferus</i>)	
Snapper Grouper Fishery Management Plan	
Blackfin snapper (<i>Lutjanus buccanella</i>)	Silk snapper (<i>L.vivanus</i>)
Blueline tilefish (<i>Caulolatilus microps</i>)	Snowy grouper (<i>E. niveatus</i>)
Gray snapper (<i>L.griseus</i>)	Speckled hind (<i>E. drummondhayi</i>)
Greater amberjack (<i>Seriola dumerili</i>)	Yellowedge grouper (<i>E. flavolimbatus</i>)
Jewfish (<i>Epinephelus itajara</i>)	Warsaw grouper (<i>E. nigritus</i>)
Mutton snapper (<i>L.analis</i>)	White grunt (<i>Haemulon plumieri</i>)
Red porgy (<i>Pargrus pargrus</i>)	Wreckfish (<i>Polypriion americanus</i>)
Red snapper (<i>L. campechanus</i>)	Scamp (<i>Mycteroperca phenax</i>)
Vermillion snapper (<i>Rhomboplites aurorubens</i>)	
Coastal Migratory Pelagics Fishery Management Plan	
Dolphin (<i>Coryphaena hippurus</i>)	
Cobia (<i>Rachycentron canadum</i>)	
King mackerel (<i>Scomberomorus cavalla</i>)	

Spanish mackerel (<i>S. maculatus</i>)
Spiny Lobster Fishery Management Plan Spiny lobster (<i>Panulirus argus</i>)
Calico Scallop Fishery Management Plan Calico scallop (<i>Argopecten gibbus</i>)
Coral and Coral Reef Fishery Management Plan Varied coral species and coral reef communities Comprised of several hundred species
Sargassum Habitat Fishery Management Plan <i>Sargassum</i> (and associated fauna) where it occur in the EEZ and state waters

7.6 Esthetics. The project area around Bayou Coden is esthetically pleasing outside of the developed areas. The developed industrialized areas offer little in the way of esthetics.

7.7 Water Quality. The water quality within the area is generally good. Increased turbidity in Mississippi Sound and Bayou Coden is a common occurrence due to wave energy and the input from local rain events.

7.8 Noise. Noise levels in the area are typical of recreational boating and commercial marine activities. Noise levels fluctuate with the highest levels usually occurring during the spring and summer months due to increased boating activity.

7.9 Navigation. The channel serves as the only deep-water access route into Bayou Coden. The channel is needed to provide for safe navigation by commercial and private vessels into Bayou Coden. Bayou Coden's channel location along the central Gulf Coast, and its proximity to the major ship channels of the open Gulf, create a natural import/export terminal, particularly for delivery to and from the Caribbean and Central and South America.

7.10 Air Quality. Mobile County is in attainment with the National Ambient Air Quality Standards (NAAQS) of the Clean Air Act (CAA). The proposed action would not affect the attainment status of the project area or the region. A State Implementation Plan (SIP) conformity determination (42 United States Code 7506(c)) is not required since the project area is in attainment for all critical pollutants.

7.11 Hazardous Material. No known hazardous materials are present within the project area or immediate vicinity.

7.12 Cultural Resources. In compliance with the National Historic Preservation Act (NHPA), coordination with the Alabama State Historic Preservation Officer (SHPO) concerning the proposed action has been conducted. The National Register of Historic Places has been consulted and no properties listed on, being nominated to or that having been determined eligible for the National Register are located in the vicinity of the proposed work. Given the relatively recent maintenance dredging of the project, the potential for submerged cultural resources is low.

7.13 Threatened and Endangered Species. The following federally listed threatened and endangered species are potentially found in Mobile County:

U.S. Fish and Wildlife (USFWS)

E – West Indian Manatee (*Trichechus manatus*)
 T - Piping plover (*Charadrius melodus*)
 E - Red-cockaded woodpecker (*Picoides borealis*)
 E - Least tern (*Sterna antillarum*)
 T - Eastern indigo snake (*Drymarchon corais couperi*)
 T - Gopher tortoise (*Gopherus polyphemus*)
 E - Alabama red-bellied turtle (*Pseudemys alabamensis*)
 T - Loggerhead sea turtle (*Caretta caretta*)
 E - Kemp's ridley sea turtle (*Lepidochelys kempii*) (P)
 T - Green sea turtle (*Chelonia mydas*) (P)
 T - Gulf sturgeon (*Acipenser oxyrinchus desotoi*)
 T - Flatwoods salamander (*Ambystoma cingulatum*) (P)
 E - Louisiana quillwort (*Isoetes louisianensis*) (P)
 C - Black pine snake (*Pituophis melanoleucus lodingi*)
 Bald and Golden Eagle Protection Act (BGEPA) – American Bald Eagle (*Haliaeetus leucocephalus*)

NMFS

E- Blue whale (*Balaenoptera musculus*)
 E- Finback whale (*Balaenoptera physalus*)
 E- Humpback whale (*Megaptera novaeangliae*)
 E- Sei whale (*Balaenoptera borealis*)
 E- Sperm whale (*Physeter macrocephalus*)
 T- Green sea turtle (*Chelonia mydas*)
 E- Hawksbill sea turtle (*Eretmochelys imbricate*)
 E- Kemp's ridley sea turtle (*Lepidochelys kempii*)
 E- Leatherback sea turtle (*Dermochelys coriacea*)
 T- Loggerhead sea turtle (*Caretta caretta*)
 T- Gulf sturgeon (*Acipenser oxyrinchus desotoi*)

Federally protected species, such as gopher tortoise, Louisiana quillwort, red-cockaded woodpecker, flatwoods salamander, Eastern indigo snake, hawksbill sea turtle, leatherback sea turtle, and black pine snake would not be affected because these species are not likely to be found in or near the project area. The blue, finback, humpback, Sei, and sperm whales would also not be affected. Due to the shallow conditions of the Sound, whales are not found in or near the project area. The bald eagle, least tern, and piping plover are anticipated to avoid the area during disposal operations. The American bald eagle had long been listed by the USFWS as threatened under the Endangered Species Act (ESA) but has been recently delisted. The bald eagle does, however, remain on the Federal list for protection under the Migratory Bird Treaty Act and the BGEPA. The loggerhead, Kemp's ridley, and green sea turtles would also not be

impacted, as the proposed action will be conducted via a mechanical or hydraulic dredge. Neither of these methods has been documented to affect marine turtles. Since the project is located outside of critical habitat for Gulf sturgeon, it is unlikely that adverse effects to the species' habitat would result (**Figure 3**). In the unlikely event a Gulf sturgeon is in the area, the proposed action would not adversely affect the species. The Alabama red-bellied turtle may be present in the project area. The species will likely avoid the project area during operations. No significant affects to this species are anticipated. West Indian manatee could be found within the project vicinity. If individuals were to be found, the Corps, Mobile District, would implement the Standard Manatee Conditions issued by the USFWS.

The three species, most likely to be found in the Bayou Coden area, are the Alabama red-bellied turtle, gopher tortoise, and the Gulf sturgeon. The Alabama red-bellied turtles primarily inhabit backwater areas of the bays that are 3.3 to 6.6 feet in depth. These turtles have a limited range of habitat, which is located between Interstate 10 and U.S. Highway 90 (0.8 miles) and just north of Highway 90. These areas provide broad, vegetated expanses of shallows to a great number of Alabama red-bellied turtles. Dense beds of aquatic vegetation provide turtles with substrate for basking, predator avoidance, and food. Alabama red-bellied turtles have recently been found in the Bayou Coden study area.

The gopher tortoise is a member of the class reptilia. Its carapace is grayish-brown and unmarked in adults, while its plastron, legs, head and neck are golden-yellow. Gopher tortoises dig burrows typically ranging in size from 20 to 30 feet long and from six to eight feet deep with their shovel-like front legs. Biologists have found some burrows as big as 40 feet long and 10 feet deep. The burrows are found in dry places such as sandhills, flatwoods, prairies and coastal dunes or in human-made environments such as pastures, grassy roadsides and old fields. The gopher tortoise is a keystone species, meaning its extinction would result in measurable changes to the ecosystem in which it occurs. Specifically, other animals, such as gopher frogs, several species of snakes and several small mammals, depend on tortoise burrows. For the gopher tortoise to thrive, the animal generally needs three things: well-drained sandy soil (for digging burrows), plenty of low plant growth (for food) and open, sunny areas (for nesting and basking). The gopher tortoise is found along the dry sand ridges of the southeastern Coastal Plain. The tortoise is found in Florida and the southern parts of South Carolina, Georgia, Alabama and Mississippi. Gopher tortoises usually mate during April and May. Shortly after mating, the female lays between three and 15 eggs, either in a sandy mound in front of her burrow or a nearby sunny place. The eggs mature and hatch from 70 to 100 days later. The hatchlings spend much of their time in their mother's burrow until they're old enough to dig their own. They don't reach maturity until they are between 10 and 15 years old, when their shells are about 9 inches long. Gopher tortoises usually eat low-growing plants found in bright sunshine, primarily grasses such as wiregrass. Some tortoises have been known to eat gopher apples, blackberries and other fruits. Gopher tortoises will also scavenge and are opportunistic feeders, occasionally feeding on dead animals or excrement. Bayou Coden and its tributaries could be possible habitat for the Gopher tortoise.

The Gulf sturgeon is a subspecies of the Atlantic sturgeon. In early spring, subadult and adult fish migrate into rivers from the Gulf of Mexico and continue until early May. In late September or October, subadult and adult sturgeons begin downstream migrations. Adult fish spend 8 to 9 months each year in rivers and 3 to 4 of the coolest months in estuarine or Gulf

waters. Gulf sturgeon are bottom-feeders that apparently only feed during their stay in marine waters; food items are rarely found in the stomachs of specimens sampled from rivers. Bayou Coden and its tributaries could be possible habitat for the Gulf sturgeon.

The Kemp's ridley population has declined since 1947 (when an estimated 42,000 females nested in one day) to a nesting population of approximately 1,000 in the mid-1980s. The decline of this species was primarily due to human activities including collection of eggs, fishing for juveniles and adults, killing adults for meat and other products, and direct take for indigenous use. In addition to these sources of mortality, Kemp's ridley turtles have been subject to high levels of incidental take by shrimp trawlers. Kemp's ridley turtles are occasionally caught on fishing hooks and incidentally injured by recreational anglers and boaters (Mann, personal communication 2003). Today, under strict protection, the population appears to be in the earliest stages of recovery. The increase can be attributed to two primary factors: full protection of nesting females and their nests in Mexico, and the requirement to use turtle excluder devices (TEDs) in shrimp trawls both in the United States and Mexico. The major habitat for Kemp's ridley sea turtle is the nearshore and inshore waters of the northern Gulf of Mexico, especially Louisiana waters outside of the nesting season. Kemp's ridley sea turtles are usually found in water with low salinity, high turbidity, high organic content, and where shrimp are abundant. This species of sea turtle is the most commonly found species along the northern Gulf of Mexico coast. The continual influx of freshwater and high organic content associated with the northern Gulf of Mexico provides ideal foraging habitat for this species.

The loggerhead sea turtle is widely distributed throughout its range and may be found hundreds of miles out to sea as well as in inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, and the mouths of large rivers. Loggerheads are seen annually inshore in the Mississippi Sound, but are more commonly seen offshore in the proximity of oil rigs. Most recent evidence suggests that the number of nesting females in South Carolina and Georgia may be declining, while the number of nesting females in Florida appears to be stable. Until the 1970s, loggerhead turtles were commercially harvested for their meat, eggs, leather, and fat. Because of their feeding behavior and their habit of wintering in shallow waters, loggerheads along with Kemp's ridley sea turtles, are more likely to be caught in large shrimp trawl nets and drown. Today, TEDs pulled by shrimp boats help reduce mortality from net entanglement by allowing turtles to escape from the nets. However, loggerhead turtles are hooked by recreational fishermen offshore near oil rigs and are frequently injured by being struck by boats and boat propellers.

The green sea turtles are mottled brown in color. The name is derived from the greenish fat of the body. The carapace is light or dark brown. It is sometimes shaded with olive, often with radiating mottled or wavy dark markings or large dark brown blotches. This species is considered medium to large in size for sea turtles with an average length of 36 to 48 inches. The record was set at about 60 inches in length. Its weight ranges from about 250 to 450 pounds with the record at more than 650 pounds. The upper surfaces of young green turtles are dark brown, while the undersides are white. Most green sea turtle populations have been depleted or endangered because of direct exploitation or incidental drowning in trawl nets (King 1981). A major factor contributing to the green turtles' decline worldwide is commercial harvest for eggs and meat. In Florida, the nesting population was nearly extirpated within 100 years of the initiation of commercial exploitation (King 1981). Fibropapillomatosis, a disease of sea turtles

characterized by the development of multiple tumors on the skin and internal organs, is also a mortality factor and has seriously impacted green turtle populations in Florida, Hawaii, and other parts of the world. These tumors interfere with swimming, eating, breathing, vision, and reproduction, and turtles with heavy tumor burdens become severely debilitated and die. Other threats include loss or degradation of nesting habitat from coastal development and beach armoring; disorientation of hatchlings by beachfront lighting; excessive nest predation by native and non-native predators; degradation of foraging habitat; marine pollution and debris; watercraft strikes; and incidental take from commercial fishing operations.

The piping plover is a small, stocky, sandy-colored bird resembling a sandpiper. The adult has yellow-orange legs, a black band across the forehead from eye to eye, and a black ring around the base of its neck. Like other plovers, it runs in short starts and stops. When still, the piping plover blends into the pale background of open, sandy habitat on outer beaches where it feeds and nests. The piping plover breeds on sandy or pebble coastal beaches of Newfoundland and southeastern Quebec to North Carolina. Decline in piping plover populations has been linked to loss of breeding habitat. Shoreline development, river flow alteration, river channelization, and reservoir construction have all led to loss of breeding habitat. The piping plover winters along the Gulf coast but does not nest in Alabama. Piping plovers begin arriving on the wintering grounds in July, with some late-nesting birds arriving in September. Behavioral observations of piping plovers on the wintering grounds suggest that they spend the majority of their time foraging (Nicholls and Baldassarre 1990; Drake 1999a, 1999b). Of the birds located on the United States wintering grounds during these two censuses, 89 percent were found on the Gulf Coast and 8 percent were found on the Atlantic Coast.

The West Indian Manatee lives in the West Indies, or Caribbean, generally in shallow coastal areas and coastal river systems. However, it is known to withstand large changes in water salinity, and so have also been found in shallow rivers and estuaries. It is limited to the tropics and subtropics due to an extremely low metabolic rate and lack of a thick layer of insulating body fat. During the summer, these large mammals have even been found as far north as Cape Cod, Massachusetts.

The Florida manatee, (*Trichechus manatus latirostris*) a subspecies of the West Indian manatee, is the largest of all sirenians. Florida manatees inhabit the most northern limit of sirenian habitat. Over three decades of research by Universities, Federal agencies, and NGOs, have contributed to further understanding of Florida manatee ecology and behavior. They are found in fresh water rivers, in estuaries, and in the coastal waters of the Gulf of Mexico and the Atlantic Ocean. Females usually have their first calf when they are about 4 years old. Normally they only have one calf every 2-5 years, but there are rare occurrences of twins. The family unit consists of mother and calf, which remain together for up to 2 years. Males aggregate in mating herds around a female when she is ready to conceive, but contribute no parental care to the calf. Florida manatees may live to be greater than 60 years old in the wild. The biggest single threat to Florida manatees is death from collisions with recreational watercraft.

7.14 Environmental Justice. EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (February 11, 1994) requires that Federal agencies conduct their programs, policies, and activities that substantially affect human health or the environment in a manner that ensures that such programs, policies, and activities do not have

the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under such programs, policies, and activities because of their race, color, or national origin. On February 11, 1994, the President also issued a memorandum for heads of all departments and agencies, directing that the Environmental Protection Agency (EPA), whenever reviewing environmental effects of proposed actions pursuant to its authority under Section 309 of the CAA, ensure that the involved agency has fully analyzed environmental laws, regulations, and policies.

7.15 Protection of Children. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 21, 1997), recognizes a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children’s bodily systems are not fully developed; because children eat, drink, and breathe more in proportion to their body weight; because their behavior patterns may make them more susceptible to accidents. Based on these factors, the President directed each Federal agency to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. The President also directed each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

8.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

8.1 Climate. No climatic changes will occur as a result of this localized project.

8.2 Sediment. The proposed action will result in the relocation of material from the channel to the designated disposal areas. This action is not likely to result in significant impacts to the benthic environment, as the dredged material is similar in composition to that found in the open water disposal areas. The material removed from the bayou portion of the channel will be placed into the upland disposal area “Charlie”.

8.3 Benthos, Motile Invertebrates, and Fishes. There would be temporary disruption of the aquatic community. Non-motile benthic fauna within the project area would be lost due to the proposed operations, but should repopulate within several months upon completion of dredging. Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes, are able to avoid the disturbed area and should return shortly after the activity is completed. Larval and juvenile stages of these forms may not be able to avoid the activity due to limited mobility. The overall impact to these organisms is expected to be temporary and insignificant. No oyster reefs will be impacted by the proposed activity.

8.4 Submerged Aquatic Vegetation. There will be no impacts to submerged aquatic vegetation since none is found in the project area.

8.5 Essential Fish Habitat. The following species are potentially found in the project area:

- Brown Shrimp (*Penaeus azectus*)

- White Shrimp (*P. setiferus*)
- Red Drum (*Sciaenops ocellatus*)
- Greater amberjack (*Seriola dumerili*)
- Red porgy (*Pargrus pargrus*)
- Dolphin (*Coryphaena hippurus*)
- Cobia (*Rachycentron canadum*)
- King mackerel (*Scomberomorus cavalla*)
- Spanish mackerel (*S. maculatus*)
- *Sargassum*

Species identified to be present within the project area are motile and will likely move from the area upon initiation of dredging operations. The dredged material will bury some benthic organisms however; most organisms in this environment are adapted for existence in an area of considerable substrate movement. As previously mentioned, impacts to these species will be negligible as they will re-colonize the area within a few months. The proposed project would not adversely alter the present EFH.

8.6 Esthetics. Presence of dredge equipment within the existing navigation channel will have no significant impact to the area esthetics. The equipment will be there for a relatively short period of time. No permanent visible effects to local estuaries will result from this project.

8.7 Water Quality. Water quality in the immediate vicinity of the dredge and open-water disposal placement sites would be slightly impaired for a short period of time due to a slight increase in turbidity. Best management practices (BMP) would be implemented to reduce disturbance to the area. The dredging and disposal would be controlled and monitored so that no part of these operations would cause an increase in turbidity of more than 50 nephelometric turbidity units (ntu) above background levels outside a 400 foot mixing zone. The proposed action will comply with conditions of the State Water Quality Certification (WQC). Disposal of material at this open-water site would temporarily impact water quality and is anticipated to return to prior conditions upon completion of the disposal operations. Disposal of dredged material at the previously authorized upland placement site “Charlie” would provide suitable time for particulates to settle out from the water column. Thus, no adverse impacts are anticipated as a result of return water entering the waters of the United States. Best management practices (BMP) would be implemented to reduce disturbance to the area. Furthermore, these operations are minor, short-duration, and insignificant impacts that are typical of these operations.

8.8 Noise. Noise from the dredge equipment and other job-related equipment is expected to increase during the proposed operations in the project vicinity. Noise levels will resume to prior conditions once the dredging and disposal operations are complete. Noise levels will blend with those from adjacent activities and are not significant.

8.9 Navigation. Navigation would be temporarily affected due to associated dredging and disposal activities. The restricted maneuverability of the equipment may result in incoming/outgoing vessels waiting for short periods of time. While the presence of the dredge is expected to be a slight inconvenience, no significant adverse impacts are expected to occur to navigation due to these operations being of a short duration. After completion of the dredging

activities, navigation would be improved due to increased navigational depths within the channel.

8.10 Air Quality. The proposed action would have no significant long-term effect on air quality. Air quality in the immediate vicinity of the dredge and other equipment would be slightly affected for a short period of time by the fuel combustion and resulting engine exhausts. The exhaust emissions are considered insignificant in light of prevailing breezes and when compared to the existing exhaust fumes from other vessels using the project. The Bayou Coden area is in attainment with NAAQS parameters. These Standards would not be violated by the implementation of the proposed action. The proposed action would not affect the attainment status of the project area or region. A SIP conformity determination (42 United States Code 7506(c)) is not required since the project area is in attainment for all criteria pollutants.

8.11 Hazardous Materials. No hazardous materials are associated with the project outside of fuel and oils on the dredging equipment. The contractor would be responsible for proper storage and disposal of any oils and fuels used during the dredging and disposal operation.

8.12 Cultural Resources. In compliance with the National Historic Preservation Act the proposed action was coordinated with the Alabama SHPO. No known cultural resources have been identified in the project area.

8.13 Threatened and Endangered Species. No federally protected species would be adversely impacted as a result of the proposed project. Coordination with the USFWS will be conducted regarding this project. The Corps, Mobile District, anticipates concurrence from the USFWS that the proposed action was not likely to adversely affect any listed species.

Federally protected species, such as red-cockaded woodpecker, Louisiana quillwort, gopher tortoise, black pine snake, flatwoods salamander, Eastern indigo snake, hawksbill sea turtle, leatherback sea turtle, would not be affected because these species are not likely to be found in or near the project area. The blue, finback, humpback, Sei, and sperm whales would also not be affected as they would not be found within, or near, the project area. Due to the shallow conditions of the project area, whales are not found in or near the project area. The bald eagle, least tern and piping plover are anticipated to avoid the area during disposal operations. The American bald eagle had long been listed by the USFWS as threatened under the ESA but has been recently delisted. The bald eagle does, however, remain on the Federal list for protection under the Migratory Bird Treaty Act and the BGEPA. The loggerhead, Kemp's ridley, and green sea turtles would also not be impacted, as the proposed action will be conducted via mechanical or hydraulic dredge. This method has not been documented to effect marine turtles. Since the project is located outside of critical habitat for Gulf sturgeon, it is unlikely that adverse effects to the species' habitat would result. In the unlikely event a Gulf sturgeon is in the area, the proposed action would not adversely affect the species due to the mobile species likely avoiding the project area during operations. The Alabama red-bellied turtle may be present in the project area. The species will likely avoid the project area during operations. No significant impacts to these species are anticipated. West Indian manatee could be found within the project vicinity. If individuals were to be found, the Corps, Mobile District, would implement the Standard Manatee Conditions issued by the USFWS.

Section 7 consultations with the USFWS Daphne, Alabama Field Office and NMFS, Southeast Regional Office, has been coordinated by letters dated 19 June 2009 (Enclosures 1 & 2) and their concurrence with a determination that the proposed action would not likely adversely affect threatened or endangered species within the area is anticipated.

8.14 Environmental Justice. The proposed action is not designed to create a benefit for any group or individual. The dredging and disposal of the overall Bayou Coden project does not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Review and evaluation of the proposed action have not disclosed the existence of identifiable minority or low-income communities that would be adversely affected by the proposed action.

8.15 Protection of Children. No changes in demographics, housing, or public services would occur as a result of the proposed action. The proposed action does not involve activities that would pose any disproportionate environmental health risk or safety risk to children because it will occur away from children.

9.0 CUMULATIVE EFFECTS SUMMARY.

Cumulative impacts are those impacts on the environment that result from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions. This section analyzes the proposed actions as well as any connected, cumulative, and similar existing and potential actions occurring in the area surrounding the site. The potential adverse direct environmental and socioeconomic impacts associated with the proposed action are insignificant. In general, the proposed dredging and disposal operations would have no significant adverse secondary or cumulative effects.

The dredging and disposal operations at Bayou Coden, past, present and for the reasonably foreseeable future, will not cause changes in the current activities of the vicinity. Recreational and commercial boaters that presently use the navigation project will likely remain unchanged as no channel improvements are planned. Therefore, no significant cumulative impacts are expected from this proposed action.

10.0 CONCLUSION

The proposed action would have no significant environmental impacts on the existing environment. No mitigation actions are required for the proposed project. BMP's would be employed during the proposed actions to minimize any identified adverse impacts. The implementation of the proposed action would not have a significant adverse impact on the quality of the environment and an environmental impact statement is not required.

11.0 LIST OF AGENCIES, INTERESTED GROUPS AND PUBLIC CONSULTED

Region 4, U.S. Environmental Protection Agency
Field Representative, Fish and Wildlife Service
Regional Director, National Park Service

Regional Director, National Marine Fisheries Service
 Commander, Eighth Coast Guard District
 Alabama State Historic Preservation Officer
 Alabama Department of Environmental Management
 Alabama Department of Conservation and Natural Resources
 Gulf of Mexico Fishery Management Council
 Federal Emergency Management Agency

12.0 REFERENCES

Gulf Coast Research Laboratory. 1973. *Cooperative Gulf of Mexico Estuarine Inventory and Study - Mississippi.* Ocean Springs, Mississippi.

Vittor, B. A. and Associates, Inc. 1982. *Benthic Macroinfauna Community Characterizations in Mississippi Sound and Adjacent Waters.* Contract Report to U. S. Army Corps of Engineers, Mobile District, Mobile, Alabama.

US Army Corps of Engineers, 1988. *Feasibility Report and Environmental Impact Statement For Navigation Improvements at Bayou La Batre,* Alabama. Mobile District, Mobile, Alabama.

13.0 ACRONYMS

BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Register
CY	Cubic Yards
EA	Environmental Assessment
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ER	Engineer Regulation
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
GIWW	Gulf Intracoastal Waterway
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NTU	Nephelometric Turbidity Units
SHPO	State Historical Preservation Office
SIP	State Implementation Plan
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WQC	Water Quality Certification

14.0 LIST OF PREPARERS

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Figures

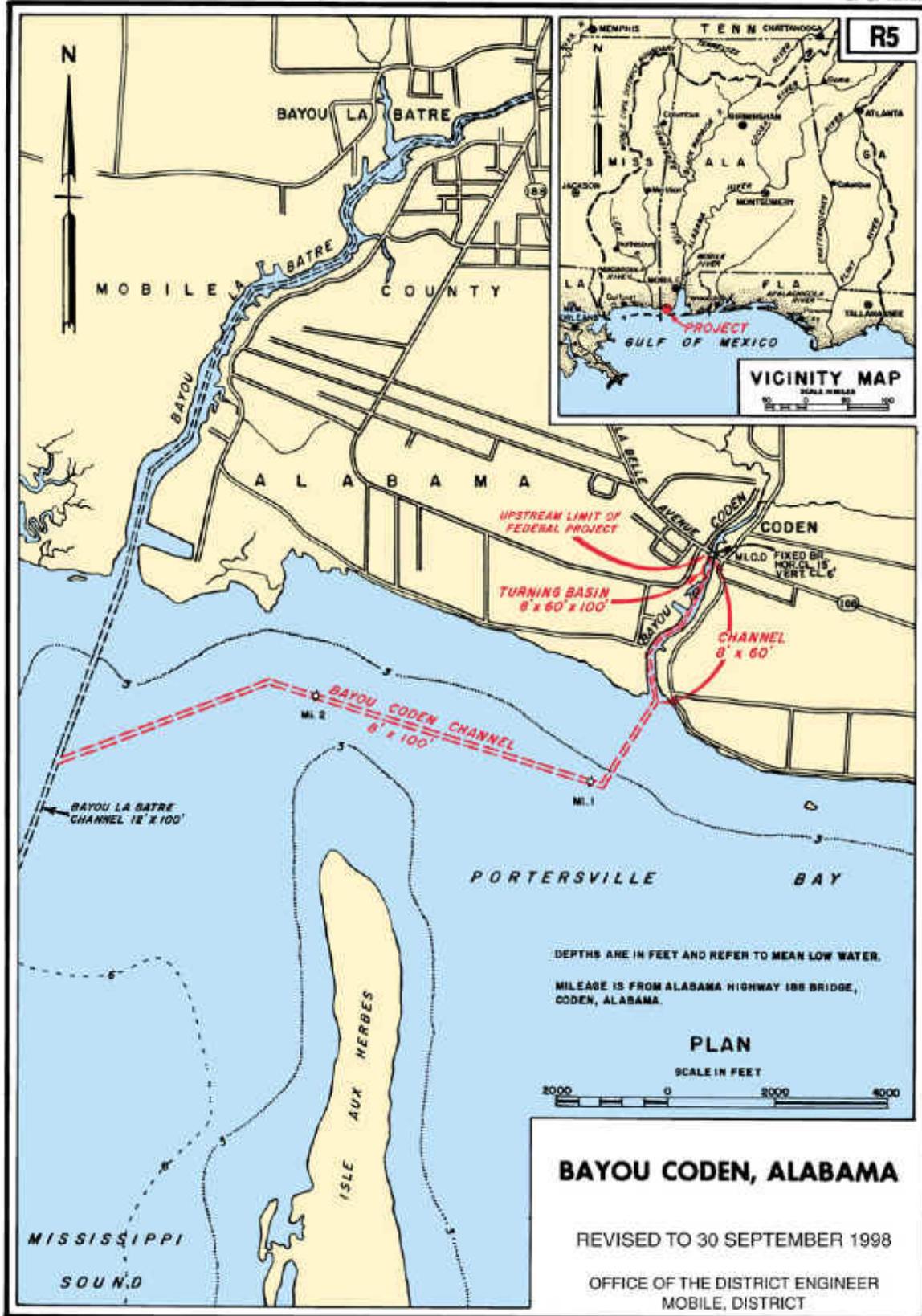


Figure 1 – Project Map

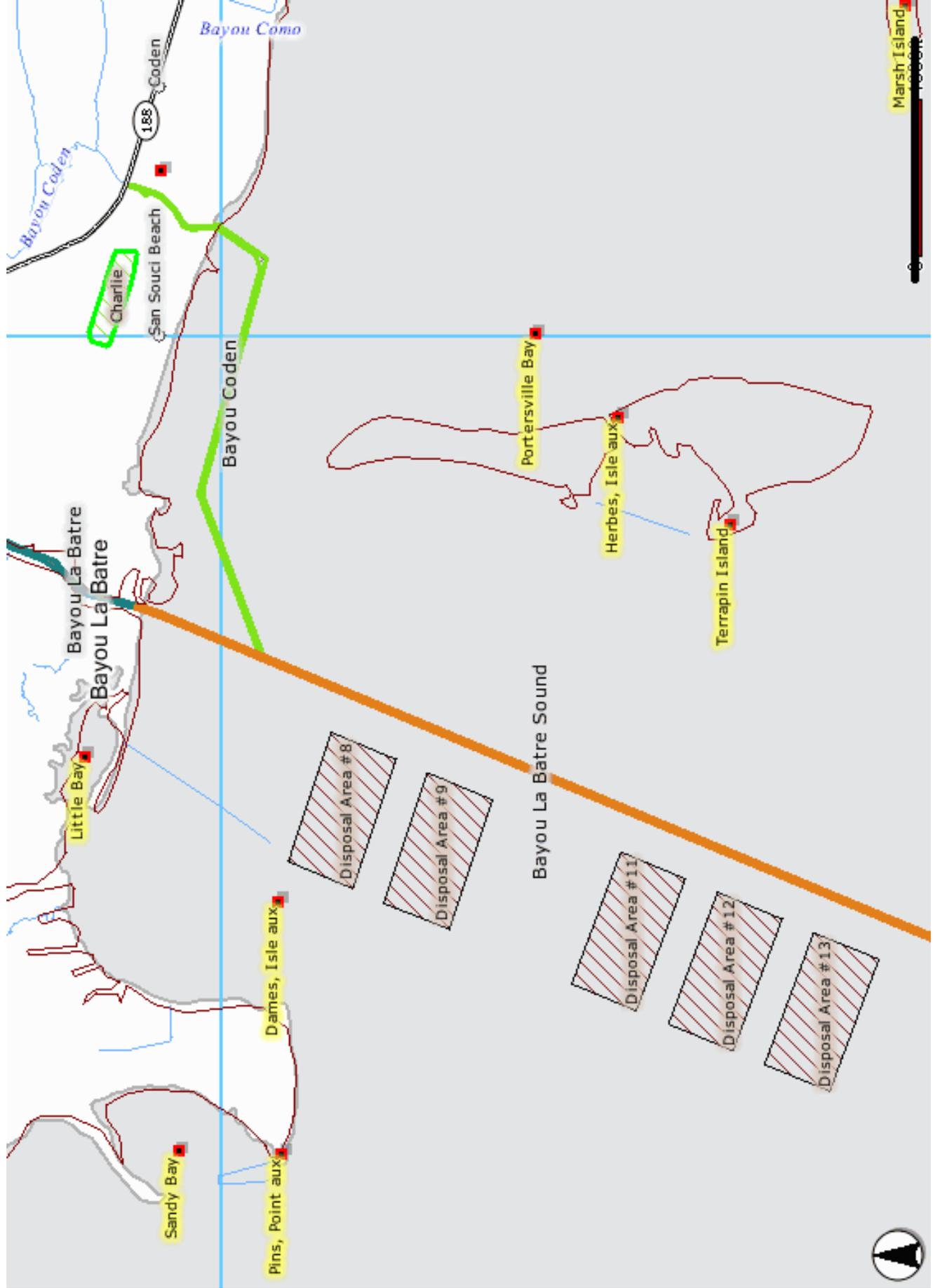


Figure 2 – Disposal Areas

Bayou Coden Navigation Channel

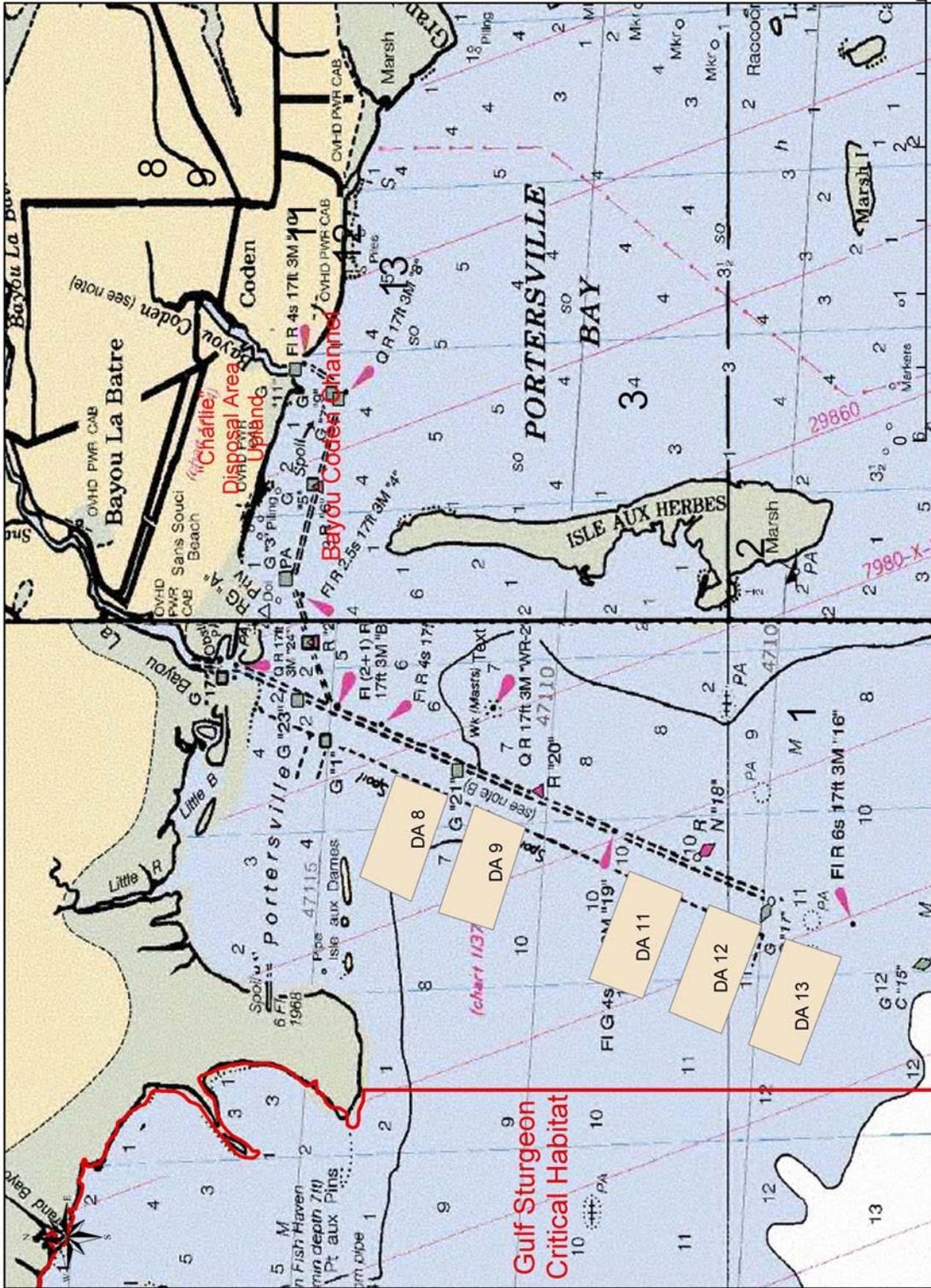


Figure 3 – Gulf Sturgeon Critical Habitat