Mississippi Valley Division,
Regional Planning and Environment Division South

South Central Coast Louisiana

Hurricane Ike flooding in Delcambre, Louisiana.

Appendix A-6 – Fish and Wildlife Coordination Act Compliance

June 2021

Controlled by: USACE MVD
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POC: Karla Sparks, [redacted]

CONTENTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Louisiana Ecological Services
200 Dulles Drive
Lafayette, Louisiana 70506
November 20, 2018

Colonel Michael N. Clancy
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Clancy:

Please reference the South Central Louisiana Coast Storm Risk Management Feasibility Study Project conducted by the U.S. Army Corps of Engineers and the Coastal Protection and Restoration Authority Board. This study will evaluate the feasibility of providing hurricane protection, storm damage reduction, and related purposes for the coast of Louisiana in Iberia, St. Martin, and St. Mary Parishes.

The following comments are provided on a planning-aid basis to assist the Corps in developing environmentally acceptable project alternatives and features. These comments and recommendations do not constitute the final report of the Secretary of Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). 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.), the National Environmental Policy Act of 1969, as amended, the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 661 et seq.), the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.), and the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d).

General Comments

Levee alignments should avoid and minimize impacts to both herbaceous and forested wetlands. This would be achieved by locating levees and borrow canals entirely in agricultural lands near or adjacent to the wetland-non wetland interface. North of Avery Island, where the wetlands south of the agricultural lands are mostly marsh with little forest, storm surge elevations are among the highest for all levee subunits (Arcadis 2014). In those areas, levee protection and wave dampening might be achieved by establishing a forested buffer seaward of the levee. In addition to the above mentioned benefits, establishment of a forest buffer might also mitigate unavoidable project impacts to forested wetlands.

Alternative levee alignments should be developed to avoid enclosure of tidal marshes. Throughout most of the project area, tidal marshes are relatively healthy and benefit from tides and currents which provide for the input and accretion of suspended sediments from the Wax

Lake Outlet via the Gulf Intracoastal Waterway and from East and West Cote Blanche Bays. Levees constructed in these tidal areas may reduce sediment accretion and render the enclosed marshes more vulnerable to effects of sea-level rise and subsidence.

Borrow areas should be located within the protected side of the system and preferably within existing agricultural lands and non-wet pasture areas. Levee alignments should avoid and/or minimize intercepting drainage and causing flooding of forested wetlands and nearby homes and businesses. To avoid such impacts, an interior borrow canal may be needed to maintain drainage to areas that would otherwise be impacted. Additionally, any planned floodgates should be designed to efficiently handle the drainage needs and avoid increased flooding duration and depths for the potentially large protected area north of any levee alignments.

Where construction of borrow pits or canals are needed, if possible, those features should be located in non-wetland areas providing the least fish and wildlife habitat value. To minimize fish and wildlife impacts, a hierarchical list of habitat types to avoid is provided (Attachment A). Where borrow pits and/or canals must be constructed, those features may increase habitat value for fish and wildlife resources and provide additional fish and wildlife recreational opportunities. To achieve these habitat benefits, the Service offers recommendations on borrow pit construction (Attachment B).

Within the study area (Parishes of Iberia, St. Martin, and St. Mary), nine threatened or endangered species are known to occur or believed to occur (Table 1). Information regarding those species and their preferred habitats are provided below.

Table 1. List of threatened and endangered species believed to occur within the project area.

Specie	Specie Group	Status
Pallid Sturgeon	Fish	Endangered
Green Sea Turtle	Reptile	Threatened
Hawksbill Sea Turtle	Reptile	Endangered
Kemp's Ridley Sea Turtle	Reptile	Endangered
Leatherback Sea Turtle	Reptile	Endangered
Loggerhead Sea Turtle	Reptile	Threatened
Red Knot	Bird	Threatened
West Indian Manatee	Mammal	Endangered

Pallid Sturgeon

The pallid sturgeon (*Scaphirhynchus albus*) is an endangered, bottom-oriented, fish that inhabits large river systems from Montana to Louisiana. Within this range, pallid sturgeon tend to select main channel habitats in the Mississippi River and main channel areas with islands or sand bars in the upper Missouri River. In Louisiana it occurs in the Atchafalaya and Mississippi Rivers, and below Lock and Dam Number 3 on the Red River (with known concentrations in the vicinity of the Old River Control Structure Complex). The pallid sturgeon is adapted to large, free-flowing, turbid rivers with a diverse assemblage of physical characteristics that are in a constant

state of change. Many life history details and subsequent habitat requirements of this fish are not known. However, the pallid sturgeon is believed to utilize Louisiana riverine habitat during reproductive stages of its life cycle. Habitat loss through river channelization and dams has adversely affected this species throughout its range.

Sea Turtles

There are five species of federally listed threatened or endangered sea turtles that forage in the near shore waters, bays, and estuaries of Louisiana. The National Marine Fisheries Service (NMFS) is responsible for aquatic marine threatened or endangered species that occur in the marine environment. Please contact Kelly Shots (727/824-5312) at the NMFS Regional Office in St. Petersburg, Florida, for information concerning those species in the marine environment. When sea turtles leave the marine environment and come onshore to nest, the Service is responsible for those species. Two species, the threatened loggerhead sea turtle (*Caretta caretta*) and the endangered Kemp's ridley *(Lepidochelys kempii*) could potentially nest in Louisiana during the summer months (i.e., May through November). Historical records indicate that loggerheads nested on the Chandeleur Islands and recent data indicate rare nesting attempts along Fourchon Beach in Lafourche Parish. The Kemp's ridley is known to nest in coastal Texas and Alabama; thus, nesting attempts could possibly occur in Louisiana as that species achieves recovery. The primary threats to nesting beaches include coastal development and construction, placement of erosion control structures and other barriers to nesting, beachfront lighting, vehicular and pedestrian traffic, sand extraction, beach erosion, beach nourishment, beach pollution, removal of native vegetation, and planting of non-native vegetation (USFWS 2007). We recommend that you contact this office if your activities would occur on coastal beaches during the summer months (i.e., May through November). More detailed information on these two species can be found below.

Loggerhead Sea Turtle

Federally listed as a threatened species, loggerhead sea turtles (*Caretta caretta*) nest within the coastal United States from Virginia to Louisiana, with major nesting concentrations occurring on the coastal islands of North Carolina, South Carolina, and Georgia, and on the Atlantic and Gulf coasts of Florida. Historically in Louisiana, loggerheads have been known to nest on the Chandeleur Islands and recent data indicate rare nesting attempts along Fourchon Beach in Lafourche Parish. Nesting and hatching dates for the loggerhead in the northern Gulf of Mexico are from May 1 through November 30. Threats to this species include destruction of nesting habitat and drowning in fishing nets. The National Marine Fisheries Service is responsible for marine threatened or endangered species. Please contact Kelly Shots (727/824-5312) in St. Petersburg, Florida, for information concerning this species in the marine environment. When loggerhead sea turtles leave the aquatic environment and come onshore to nest, the Service is responsible for the species. Accordingly, we recommend that you contact this office if your activities would occur on coastal beaches during the loggerhead nesting season.

Kemp's Ridley Sea Turtle

The endangered Kemp's ridley (*Lepidochelys kempii*) sea turtle has a restricted nesting distribution; essentially limited to the beaches of the western Gulf of Mexico, primarily in Mexico. Kemp's ridleys are coastal inhabitants throughout the Gulf of Mexico and the northwestern Atlantic Ocean, as far north as the Grand Banks and Nova Scotia, Canada.

Juveniles and sub-adults occupy shallow, coastal regions and are commonly associated with crab-laden, sandy or muddy water bottoms. They are generally found in near shore areas of the Louisiana coast from May through October. Adults may be abundant near the mouth of the Mississippi River in the spring and summer. Adults and juveniles move offshore to deeper, warmer water during the winter. Between the East Gulf Coast of Texas and the Mississippi River Delta, Kemp's ridleys use near shore waters, ocean sides of jetties, small boat passageways through jetties, and dredged and nondredged channels. They have been observed within both Sabine and Calcasieu Lakes. Major threats to this species include over-exploitation on their nesting beaches, drowning in fishing nets, and pollution. The National Marine Fisheries Service is responsible for marine threatened or endangered species. Please contact Kelly Shots (727/824-5312) in St. Petersburg, Florida, for information concerning this species. When Kemp's ridley sea turtles leave the marine environment and come onshore to nest, the Service is responsible for the species. Accordingly, we recommend that you contact this office if your activities would occur on coastal beaches during the summer months (i.e., May through November).

Red Knot

The red knot (*Calidris canutus rufa*), federally listed as a threatened species, is a medium-sized shorebird about 9 to 11 inches (23 to 28 centimeters) in length with a proportionately small head, small eyes, short neck, and short legs. The black bill tapers steadily from a relatively thick base to a relatively fine tip; bill length is not much longer than head length. Legs are typically dark gray to black, but sometimes greenish in juveniles or older birds in non-breeding plumage. Non-breeding plumage is dusky gray above and whitish below. The red knot breeds in the central Canadian arctic but is found in Louisiana during spring and fall migrations and the winter months (generally September through May).

During migration and on their wintering grounds, red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks. Observations along the Texas coast indicate that red knots forage on beaches, oyster reefs, and exposed bay bottoms, and they roost on high sand flats, reefs, and other sites protected from high tides. In wintering and migration habitats, red knots commonly forage on bivalves, gastropods, and crustaceans. Coquina clams (*Donax variabilis*), a frequent and often important food resource for red knots, are common along many gulf beaches. Major threats to this species along the Gulf of Mexico include the loss and degradation of habitat due to erosion, shoreline stabilization, and development; disturbance by humans and pets; and predation.

West Indian Manatee

The endangered West Indian manatee (*Trichechus manatus*) is known to regularly occur in Lakes Pontchartrain and Maurepas and their associated coastal waters and streams. It also can be found less regularly in other Louisiana coastal areas, most likely while the average water temperature is warm. Based on data maintained by the Louisiana Natural Heritage Program (LNHP), over 80 percent of reported manatee sightings (1999-2011) in Louisiana have occurred from the months of June through December. Manatee occurrences in Louisiana appear to be increasing and they have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of southeastern Louisiana. Manatees may also infrequently be observed in the Mississippi River and coastal areas of southwestern Louisiana. Cold weather and outbreaks of red tide may adversely affect these animals. However,

human activity is the primary cause for declines in species number due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution.

During in-water work in areas that potentially support manatees all personnel associated with the project should be instructed about the potential presence of manatees, manatee speed zones, and the need to avoid collisions with and injury to manatees. All personnel should be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel should be instructed not to attempt to feed or otherwise interact with the animal, although passively taking pictures or video would be acceptable.

- All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). We recommend the following to minimize potential impacts to manatees in areas of their potential presence:

- All work, equipment, and vessel operation should cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).

- If a manatee(s) is sighted in or near the project area, all vessels associated with the project should operate at "no wake/idle" speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels should follow routes of deep water whenever possible.

- If used, siltation or turbidity barriers should be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.

- Temporary signs concerning manatees should be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities should display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½ " X 11" reading language similar to the following: "CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WIIEN MANATEE IS PRESENT". A second temporary sign measuring 8½ " X 11" should be posted at a location prominently visible to all personnel engaged in water-related activities and should read language similar to the following: "CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION".

- Collisions with, injury to, or sightings of manatees should be immediately reported to the Service's Louisiana Ecological Services Office (337/291-3100) and the Louisiana

Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.

If the proposed project is still in the feasibility phase, or it has not been initiated within one year of this letter, follow-up consultation (via telephone call or e-mail) should be accomplished with the Service prior to publishing reports or to making expenditures because our threatened and endangered species information is updated periodically. If the scope or location of proposed project features are changed significantly, consultation should occur as soon as such changes are made.

At-Risk species

The Service's Southeast Region has defined "at-risk species" as those that are:

1) Proposed for listing under the ESA by the Service;
2) Candidates for listing under the ESA, which means the species has a "warranted but precluded 12-month finding"; or
3) Petitioned for listing under the ESA, which means a citizen or group has requested that the Service add them to the list of protected species. Petitioned species include those for which the Service has made a substantial 90-day finding as well as those that are under review for a 90-day finding. As the Service develops proactive conservation strategies with partners for at-risk species, the states' Species of Greatest Conservation Need (defined as species with low or declining populations) will also be considered.

The Service's goal is to work with private and public entities on proactive conservation to conserve these species thereby precluding the need to federally list as many at-risk species as possible. Discussed below are species currently designated as "at-risk" that may occur within the project area.

Eastern Black Rail

The eastern black rail (*Laterallus jamaicensis ssp.*), an at-risk species, is the smallest of North America's rail species. It has a broad distribution inhabiting higher elevations of tidal marshes and freshwater wetlands throughout the Americas. The eastern black rail breeds from New York to Florida along the Atlantic Coast and in Florida and Texas along the Gulf Coast. There is little known about the spring and fall migration as well as wintering distribution of the eastern black rail, but it has been documented to winter on the Gulf Coast from southeast Texas to Florida.

Winter habitat for the eastern black rail is presumed to be similar to breeding habitat. They are found in a variety of salt, brackish, and freshwater marsh habitats that can be tidally or non-tidally influenced. Plant structure is considered more important than plant species composition in predicting habitat suitability (Flores and Eddleman, 1995). In Louisiana, occurrences have been documented in high brackish marsh vegetated with saltgrass (*Distichlis spicata),* sea oxeye *(Borrichia frutescens)*, gulf cordgrass (*Spartina spartinae*) and saltmeadow cordgrass (*S. patens)* and often interspersed with shrubs such as marsh elder (*Iva frutescens*) or saltbush (*Baccharis hamilifolia*). The high marsh is only inundated during extreme high tide events. In

general, the character of the high marsh is a short grassy savannah. It may also occur in working wetland habitats such as rice fields.

On October 9, 2018, the Service announced a proposal to list the Eastern black rail as a threatened species and to provide measures under section 4(d) of the ESA that are tailored to our current understanding of the conservation needs of the eastern black rail. Section 7(a)(4) of the ESA provides a mechanism for identifying and resolving potential conflicts between a proposed Federal action and proposed species or proposed critical habitat at an early planning stage. A conference is required if a proposed action is likely to jeopardize the continued existence of a proposed species, or adversely modify or destroy proposed critical habitat; however Federal action agencies may request a conference on any proposed action that may affect proposed species or proposed critical habitat to ensure the conservation of that species. In the interest of conserving the Eastern black rail, we encourage the Corps, in coordination with the Service, to implement an identified conservation measures that would minimize impacts to this proposed species.

Alligator Snapping Turtle

The alligator snapping turtle (*Macrochelys temminckii*) may be found in large rivers, canals, lakes, oxbows, and swamps adjacent to large rivers. It is most common in freshwater lakes and bayous, but also found in coastal marshes and sometimes in brackish waters near river mouths. Typical habitat is mud bottomed waterbodies having some aquatic vegetation. The alligator snapping turtle is slow growing and long lived. Sexual maturity is reached at 11 to 13 year of age (Ernst et al. 1994). Because of this and its low fecundity, loss of breeding females is thought to be the primary threat to the species.

Golden-Winged Warbler

The golden-winged warbler breeds in higher elevations of the Appalachian Mountains and northeastern and north-central U.S. with a disjunct population occurring from southeastern Ontario and adjacent Quebec northwest to Minnesota and Manitoba. Wintering populations occur in Central and South America. The loss of wintering habitat in Central and South America and migratory habitat may also contribute to its decline. The golden-winged warbler is also known to hybridize with the blue-winged warbler (*Vermivora cyanoptera*).

This species may be found in forested habitats throughout Louisiana during spring and fall migrations. This imperiled songbird is dependent on forested habitats along the Gulf, including coastal Louisiana, to provide food and water resources before and after trans-Gulf and circum-Gulf migration. Population declines correlate with both loss of habitat owing to succession and reforestation and with expansion of the blue-winged warbler into the breeding range of the golden-winged warbler.

Monarch Butterfly

On June 20, 2014, President Obama signed a Presidential Memorandum, "Creating a Federal Strategy to Promote the Health of Honey Bees and Other Pollinators," outlining an expedited agenda to address the devastating declines in honey bees and native pollinators, including the monarch butterfly (*Danaus plexippus plexippus*). Recent research has shown dramatic declines in monarchs and their habitats leading conservation groups to petition the Service to list the

species under Endangered Species Act (ESA). Ensuring adequate and sustainable habitats, meeting all the life history needs of these species is of paramount importance. The Service and its partners are taking immediate actions to replace and restore monarch and pollinator habitat on both public and private lands across the U.S. landscape. Therefore we recommend revegetation of disturbed areas with native plant species, including species of nectar-producing plants and milkweed endemic to the area, we recommend consultation with state botanists to determine appropriate species where possible.

Migratory Birds and Other Trust Resources

Bald Eagle

The proposed project area may provide nesting habitat for the bald eagle (*Haliaeetus leucocephalus*), which was officially removed from the List of Endangered and Threatened Species as of August 8, 2007. However, the bald eagle remains protected under the MBTA and BGEPA. Comprehensive bald eagle survey data have not been collected by the Louisiana Department of Wildlife and Fisheries (LDWF) since 2008, and new active, inactive, or alternate nests may have been constructed within the proposed project area since that time.

Bald eagles typically nest in large trees located near coastlines, rivers, or lakes that support adequate foraging from October through mid-May. In southeastern Louisiana parishes, eagles typically nest in mature trees (e.g., baldcypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Major threats to this species include habitat alteration, human disturbance, and environmental contaminants. Furthermore, bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Disturbance during these periods may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree, thus reducing their chance of survival.

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. T hose Guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. During any project construction, on-site personnel should be informed of the possible presence of nesting bald eagles in the vicinity of the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary.

On September 11, 2009, the Service published two federal regulations establishing the authority to issue permits for non-purposeful bald eagle take (typically disturbance) and eagle nest take when recommendations of the NBEM Guidelines cannot be achieved. Permits may be issued for nest take only under the following circumstances where: 1) necessary to alleviate a safety emergency to people or eagles, 2) necessary to ensure public health and safety, 3) the nest prevents the use of a human-engineered structure, or 4) the activity or mitigation for the activity will provide a net benefit to eagles. Except in emergencies, only inactive nests may be permitted to be taken. The Division of Migratory Birds for the Southeast Region of the Service (phone: [redacted] e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting consultations and issuance of permits. Should you need further assistance interpreting the guidelines, avoidance measures, or performing an on-line project evaluation, please contact Ulgonda Kirkpatrick ([redacted]).

Louisiana Black Bear

Louisiana black bears (*Ursus americanus luteolus*) are primarily associated with forested wetlands, however, they utilize a variety of other habitat types, including scrub-shrub, marsh, spoil banks, and upland forests. They normally den from December through April and preferred den sites include large, hollow trees (36 inches or more in diameter at breast height) with sufficiently sized openings that allow access to interior cavities. Due to recovery, the Louisiana black bear was officially removed from the List of Endangered and Threatened Species on March 11, 2016 (effective April 11, 2016); critical habitat designation for this subspecies has also been withdrawn. Because the Louisiana black bear is no longer protected under the Endangered Species Act (ESA), consultation with the Service is not required for this subspecies. The Louisiana black bear remains protected, however, under Louisiana state law, and the Louisiana Department of Wildlife and Fisheries (LDWF) will continue to actively manage this subspecies. The Service and LDWF have developed a plan to extensively monitor the status of the Louisiana black bear for 7 years following its delisting (until year 2022). That monitoring will be undertaken to detect any potential population decreases or threat increases that may warrant the implementation of measures to ensure that the Louisiana black bear remains secure from risk of extinction.

Although ESA consultation is no longer required regarding project impacts on this subspecies, in the interest of conserving the Louisiana black bear, projects proposed in areas of the state that are inhabited by bears should be designed to avoid adversely affecting this subspecies or its habitat. Conservation measures for the Louisiana black bear include reducing the footprint of proposed actions to the maximum extent feasible, avoiding impacts to trees that are 36 inches or more in diameter at breast height, implementing programs to prevent the habituation of bears to human-associated food sources (e.g., use of "bear-proof" waste disposal containers or daily removal of food and garbage), and avoiding vegetative clearing during the black bear denning season (i.e., December 1 through April 30). For additional information regarding the Louisiana black bear and conservation measures that may be required by the LDWF, please contact Maria Davidson (Large Carnivore Program Manager) at [redacted].

Coastal forest & neotropical migrating songbirds

The construction of levees and borrow canals can result in temporary and/or permanent impacts to migratory birds and the habitats upon which they depend for various life requisites. The

Service has concerns regarding the direct and cumulative impacts resulting from the loss and fragmentation of forest and grassland habitats, and the direct and indirect impacts that these losses will have upon breeding migratory birds of conservation concern within the West Gulf Coast Plain Bird Conservation Region (http://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf). Many migratory birds of conservation concern require large blocks of contiguous habitat to successfully reproduce and survive.

In Louisiana, the primary nesting period for forest-breeding migratory birds occurs between April 15 and August 1. Some species or individuals may begin nesting prior to April 15 or complete their nesting cycle after August 1, but the vast majority nest during this period. The proposed project may directly impact migratory birds of conservation concern because habitat clearing that occurs during the aforementioned primary nesting period may result in unintentional take of active nests (i.e., eggs and young) in spite of all reasonable efforts to avoid such take. The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for allowing incidental take, the Service recognizes that some birds may be taken during project construction/operation even if all reasonable measures to avoid take are implemented.

In addition to the direct loss of grassland and forested habitat, the proposed project may indirectly impact migratory birds of conservation concern because construction of large-scale projects within forested habitats typically results in habitat fragmentation. Forest fragmentation may contribute to population declines in some avian species because fragmentation reduces avian reproductive success (Robinson et al. 1995). Fragmentation can alter the species composition in a given community because biophysical conditions near the forest edge can significantly differ from those found in the center or core of the forest. As a result, edge species could recruit to the fragmented area and species that occupy interior habitats could be displaced. The fragmentation of intact forests could have long-term adverse impacts on some forest interior bird species.

The primary impact to forest habitat conditions from the proposed project would result from the conversion of forest habitat to levees and open water borrow sites. We recommend that the project sponsors refuge avoid impacts to forested areas (particularly those containing a hardwood species component) to the maximum extent practicable.

Wading Bird Colonies

In accordance with the Migratory Bird Treaty Act of 1918 (as amended) and Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), please be advised that the project area includes habitats which are commonly inhabited by colonial nesting waterbirds and/or seabirds.

Colonies may be present that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries. That database is updated primarily by (1) monitoring previously known colony sites and (2) augmenting point-to-point surveys with flyovers of adjacent suitable habitat. Although several comprehensive coast-wide surveys have been recently conducted to determine the location of newly-established nesting colonies, we

recommend that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season because some waterbird colonies may change locations year-to-year.

For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period, depending on the species present. Below is the list of colonial nesting birds that may be found and the corresponding activity window during which the project may occur without affecting nesting wading bird colonies. Please note that no part of the project should occur outside those windows.

Species	**Project Activity Window/Non-Nesting Period**
Anhinga	July 1 to March 1
Cormorant	July 1 to March 1
Great Blue Heron	August 1 to February 15
Great Egret	August 1 to February 15
Little Blue Heron	August 1 to March 1
Tricolored Heron	August 1 to March 1
Reddish Egret	August 1 to March 1
Cattle Egret	September 1 to April 1
Green Heron	September 1 to March 15
Black-crowned Night-Heron	September 1 to March 1
Yellow-crowned Night-Heron	September 1 to March 15
Ibis	September 1 to April 1
Roseate Spoonbill	August 1 to April 1

In addition, we recommend that on-site contract personnel including project-designated inspectors be trained to identify colonial nesting birds and their nests, and avoid affecting them during the breeding season (i.e., the time period outside the activity window). Should on-site contractors and inspectors observe potential nesting activity, coordination with the LDWF and the Service should occur.

Coastal Barrier Resources System

A portion of the project area falls within the Coastal Barrier Resources System (CBRS) unit LA-05P. The CBRA encourages the conservation of hurricane prone and biologically rich coastal barriers. No new expenditures or financial assistance may be made available under authority of any Federal law for any purpose within the System Units of the CBRS including: construction or purchase of roads, structures, facilities, or related infrastructure, and most projects to prevent the erosion of or otherwise stabilize any inlet, shoreline, or inshore area. However, the appropriate Federal officer, after consultation with the U.S. Fish and Wildlife Service (Service), may make Federal expenditures and financial assistance available within System Units for activities that meet one of the CBRA's exceptions (16 U.S.C. 3505). For CBRA project consistency determinations and further information on the consultation process regarding these determinations, please visit the following website, https://www.fws.gov/cbra/Consultations.html. Any further questions regarding CBRA consultations can be referred to Ms. Amy Trahan (337/291-3126) of this office.

Bayou Teche National Wildlife Refuge
The Bayou Teche National Wildlife Refuge (NWR) is located within St. Mary Parish. All project related activities on the refuge must be coordinated with the Refuge Manager. That work will require either a Right-of-Way or Special Use Permit in advance, from the Refuge Manager Mr. Brian Pember (985-860-6681). Issuance of a right-of-way or Special Use Permit will be contingent on a determination that the proposed work will be compatible with the purposes for which the Refuge was established. Close coordination by both the Corps and its contractors must be maintained with the Refuge Manager to ensure that construction and maintenance activities are carried out in accordance with provisions of any Special Use Permit issued by the refuge. Any impacts to the refuge will need to be mitigated on refuge lands.

Atchafalaya Delta Wildlife Management Area
The Atchafalaya Delta Wildlife Management Area, operated by the Louisiana Department of Wildlife and Fisheries, is located within St. Mary Parish and encompasses both the Atchafalaya River Delta and Wax Lake Outlet Delta. Any work conducted on this area should be cleared well in advance with Mr. Lance Campbell, Coastal Operations Program Manager, at 337-735-8668.

Marsh Island Wildlife Refuge
The Marsh Island Wildlife Refuge, operated by the Louisiana Department of Wildlife and Fisheries, is located at the edge of the Gulf of Mexico, in Iberia Parish. Any work conducted on this area should be cleared well in advance with Mr. Lance Campbell, Coastal Operations Program Manager, at 337-735-8668.

Fish and Wildlife Conservation Measures
The President's Council on Environmental Quality regulations for implementing the National Environmental Policy Act define mitigation to include: (1) avoiding the impact; (2) minimizing the impact; (3) rectifying the impact; (4) reducing or eliminating the impact over time; and (5) compensating for impacts. The Service supports and adopts this definition and considers the specific elements to represent the desirable sequence of steps in the mitigation planning process. Through this process, the Service strives to make the project's hurricane protection goals co-equal to fish and wildlife resource conservation.

The Service's Mitigation Policy (Federal Register, Vol. 46, pp. 7644-7663, January 23, 1981) has designated four resource categories which are used to ensure that the level of mitigation recommended will be consistent with the fish and wildlife resources involved. The mitigation planning goals and associated Service recommendations should be based on those four categories, as follows:

> Resource Category 1 - Habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the ecoregion section. The mitigation goal for this Resource Category is that there should be no loss of existing habitat value.
>
> Resource Category 2 - Habitat to be impacted is of high value for evaluation species and is relatively scarce or becoming scarce on a national basis or in the ecoregion section.

The mitigation goal for habitat placed in this category is that there should be no net loss of in-kind habitat value.

Resource Category 3 - Habitat to be impacted is of high to medium value for evaluation species and is relatively abundant on a national basis. FWS's mitigation goal here is that there be no net loss of habitat value while minimizing loss of in-kind habitat value.

Resource Category 4 - Habitat to be impacted is of medium to low value for evaluation species. The mitigation goal is to minimize loss of habitat value.

Considering the high value of forested wetlands and marsh for fish and wildlife and the relative scarcity of that habitat type, those habitat types are designated as Resource Category 2, the mitigation goal for which is no net loss of in-kind habitat value. Non-wetland forests would also be considered Resource Category 2. Scrub-shrub habitat that may be impacted, however, is a Resource Category 3 due to their reduced value to wildlife, fisheries and degraded wetland functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value.

To achieve fish and wildlife resource conservation, the Service recommends that the following planning objectives be adopted to guide future project planning efforts.

1. Conserve important fish and wildlife habitat (marshes, forested wetlands, and non-wetland forest) by avoiding and minimizing the acreage of those habitats directly impacted by flood control features. Forest clearing associated with project features should be conducted during the fall and winter to minimize impacts to nesting migratory birds, when practicable.
2. Minimize enclosure of wetlands within new levee alignments. When enclosing wetlands is unavoidable, acquire non-development easements on those wetlands, or maintain hydrologic connections with adjacent, un-enclosed wetlands to minimize secondary impacts from development and hydrologic alteration.
3. Where levees would be constructed, avoid intercepted drainage and water logging impacts to protected-side forest habitats through construction of levee borrow canals or other means.
4. Avoid impacts to threatened and endangered species, at risk species, and species of concern such as black bear, bald eagle, and wading bird nesting colonies.
5. Fully compensate for any unavoidable losses of wetland habitat or non-wetland forest caused by project features.

Mitigation Planning for Unavoidable Habitat Impacts

Project features should be located and designed to avoid impacts to wetlands and non-wetland forested habitat. Should unavoidable impacts occur, those impacts should be minimized to the greatest extent possible. Any remaining unavoidable impacts must then be mitigated. Mitigation planning, including site selection and design, should be closely coordinated with the Service and other interested natural resource agencies. Full, in-kind compensation, quantified as Average Annual Habitat Units, should be provided for unavoidable net adverse impacts on forested areas, wetlands, marsh, and associated submerged aquatic vegetation. Mitigation measures that would provide habitat for at-risk species in the project area should be included in any mitigation plan and project features; the Service can assist in development of such measures.

Mitigation measures should be constructed concurrently with the features that they are mitigating (i.e., mitigation should be completed no later than 18 months after levee construction has begun). If mitigation is provided via an in-lieu fee program or mitigation bank, completed mitigation would be achieved when credits were purchased from either source. If mitigation is not implemented concurrent with levee construction, the amount of mitigation needed should be reassessed and adjusted to offset temporal habitat losses, including Essential Fisheries Habitat functions.

For marsh mitigation, the acreage of marsh created to mitigate project impacts should meet or exceed the marsh acreage projected by the Habitat Evaluation Team for target year 5. If deficiencies occur in year 5 acres, additional mitigation shall be provided.

In coordination with the Service and other fish and wildlife conservation agencies, the Corps should address the Environmental Protection Agency's and the Corps of Engineers' 12 requirements for each mitigation measure (Appendix C). The Corps should remain responsible for marsh mitigation until the mitigation is demonstrated to be fully compliant with success and performance criteria. At a minimum, this should include compliance with the requisite vegetation, elevation, acreage, and dike gapping criteria.

Wetland Restoration Measures

Because of sediment-rich freshwater flowing down the Wax Lake Outlet, the Lower Atchafalaya River, and through the Gulf Intracoastal Waterway, project area wetlands are relatively healthy. However, continuous spoil banks in some areas have precluded opportunities for suspended sediment inputs to marshes and swamps. Spoil bank gapping to improve suspended sediment inputs might be conducted in such areas to improve long-term wetland health. The Service is available to assist with identification of such areas. Other potential restoration measures would include construction of earthen terraces in shallow open water areas, such as The Jaws, to trap suspended sediments and create marshes. Such features would aid in the sustainability of coastal wetlands against sea-level rise and subsidence, thus aiding in the reduction of storm surges via natural features. Shoreline protection features might also be installed where organic marshes are eroding along the edges of large bays and open water areas.

We look forward to assisting the Corps in the documentation of existing conditions, development of alternatives, and assessment of project alternatives on Federal trust resources during the subsequent feasibility study. Should you have any questions regarding our comments, please contact Ronny Paille (337/291-3117) of this office.

Sincerely,

Joseph A. Ranson
Field Supervisor
Louisiana Ecological Services Office

Literature Cited

Arcadis 2014. Draft South Central Coastal Louisiana Flood Protection Study Report. Prepared for the ccastal Protection and Restoration Authority of Louisiana, September 2014. 147 pp.

Flores and Eddleman, 1995. California black rail use of habitat in southwestern Arizona. Jour. Wildlife Man. Vol. 59, No.2. pp. 357-363.

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Appendix A

Borrow Site Prioritization Criteria

Where multiple alternative borrow areas exists, use of those alternative sites should be prioritized in the following order: existing commercial pits, upland sources, previously disturbed/manipulated wetlands within a levee system, and low-quality wetlands outside a levee system. The Service supports the use of such protocols to avoid and minimize impacts to wetlands and bottomland hardwoods within project areas. Avoidance and minimization of those impacts helps to provide consistency with restoration strategies and compliments the authorized hurricane protection efforts. Such consistency is also required by Section 303(d)(1) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).
Accordingly, the Service recommends that prior to utilizing borrow sites every effort should be made to reduce impacts by using sheetpile and/or floodwalls to increase levee heights wherever feasible. In addition, the Service recommends that the following protocol be adopted and utilized to identify borrow sources in descending order of priority:

1. Permitted commercial sources, authorized borrow sources for which environmental clearance and mitigation have been completed, or non-functional levees after newly constructed adjacent levees are providing equal protection.
2. Areas under forced drainage that are protected from flooding by levees, and that are:
   a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas) and non-wetlands;
   b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;
   c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).
3. Sites that are outside a forced drainage system and levees, and that are:
   a) non-forested (e.g., pastures fallow fields, abandoned orchards, former urban areas) and non-wetlands;
   b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;
   c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).

Notwithstanding this protocol, the location, size and configuration of borrow sites within the landscape is also critically important. Coastal ridges, natural levee flanks and other geographic features that provide forested/wetland habitats and/or potential barriers to hurricane surges should not be utilized as borrow sources, especially where such uses would diminish the natural functions and values of those landscape features.
To assist in expediting the identification of borrow sites, the Service recommends that immediately after the initial identification of a new borrow site the Corps should initiate informal consultation with the Service regarding potential impacts to federally listed threatened or endangered species. To aid you in complying with those proactive consultation responsibilities, the Service has provided (in the above letter) a list of threatened and endangered species and their critical habitats within the project area.

Appendix B

Borrow Pit/Canal Construction Recommendations for Improved Fish and Wildlife Habitat Quality

The Service offers the following additional recommendations for reducing borrow site impacts on fish and wildlife resources and, where feasible, enhancing those resources. However, these additional recommendations should not be implemented if they would result in the expansion of existing borrow pits or construction of new borrow pits in wetlands or bottomland hardwoods.

1. A minimum of 30 percent of the borrow pits' edge should slope no greater than 5 horizontal (H):1 vertical (V), starting from the water line down to a depth of approximately 5 feet.
2. Most of the woody vegetation removed during clearing and grubbing should be placed into the deepest parts of the borrow pits and the remaining debris should be placed in the water along the borrow pit shorelines, excluding those areas where the 5H:1V slope, per recommendation 1, have been constructed.
3. Following construction, perimeter levees (if constructed) around each borrow pit should be gapped at 25-foot intervals with an 8-foot-wide breach, the bottom elevation of which should be level with the adjacent natural ground elevation.

When avoidance and minimization of bottomland hardwood and wetland impacts is not practicable, all unavoidable net losses of those habitats should be fully offset via compensatory mitigation. Such compensatory mitigation should sited within the watershed and/or hydrologic unit where the impact occurred, and should be completed concurrently with borrow operations, or as soon thereafter as possible.

Should the need for borrow material exceed that of locally available non-wetland sites, the search for levee-building material is often conducted primarily on project-by-project basis. In the context of such project-by-project searches for borrow material, the least-expensive and easiest sources of borrow material are usually located within wetlands and/or bottomland hardwoods, adjacent to the proposed levee. Such on-site sources, however, often involve adverse impacts to wetlands, thus exacerbating the overall wetland loss problem in all coastal basins, especially those in the deltaic plain of southeast Louisiana. In short, while such on-site sources are relatively inexpensive, they will frequently be inconsistent with coastal restoration efforts and, to the extent that wetlands will be adversely impacted, use of those sites will be counterproductive with respect to minimizing wetland impacts and attaining the goal of increasing non-structural hurricane protection within a sustainable ecosystem.

If large amounts of borrow material will be needed, the Corps should begin working to identify borrow sites of acceptable quantity and quality, while avoiding and/or minimizing adverse environmental impacts. We therefore recommend that a plan be developed that integrates borrow resources, uses, and needs for various programs and activities. Guiding principles should be developed to identify borrow resources, borrow-site designs, and prioritize uses to avoid competing for resources, maximize benefits with those resources, and avoid adverse environmental impacts.

APPENDIX C

TWELVE REQUIRMENTS FOR MITIGATION PLANNING (from the U.S. Army Corps of Engineers & EPA 2008 Final Mitigation Rule in the FEDERAL REGISTER Vol. 73, No. 70, April 10, 2008)

Twelve Requirements for a Compensatory Mitigation Plan

1. Objectives. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (restoration, establishment, preservation etc.), and how the anticipated functions of the mitigation project will address watershed needs.

2. Site selection. A description of the factors considered during the site selection process. This should include consideration of watershed needs, onsite alternatives where applicable, and practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the mitigation project site.

3. Site protection instrument. A description of the legal arrangements and instrument including site ownership, that will be used to ensure the long-term protection of the mitigation project site.

4. Baseline information. A description of the ecological characteristics of the proposed mitigation project site, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other characteristics appropriate to the type of resource proposed as compensation. The baseline information should include a delineation of waters of the United States on the proposed mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site.

5. Determination of credits. A description of the number of credits to be provided including a brief explanation of the rationale for this determination.
    - For permittee-responsible mitigation, this should include an explanation of how the mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.
    - For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.

6. Mitigation work plan. Detailed written specifications and work descriptions for the mitigation project, including: the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water; methods for establishing the desired plant community; plans to control invasive plant species; proposed grading plan; soil management; and erosion control

measures. For stream mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.

7. Maintenance plan. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.

8. Performance standards. Ecologically-based standards that will be used to determine whether the mitigation project is achieving its objectives.

9. Monitoring requirements. A description of parameters monitored to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting monitoring results to the DE must be included.

10. Long-term management plan. A description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.

11. Adaptive management plan. A management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures.

12. Financial assurances. The DE may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the mitigation project.

Other information. The DE may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the mitigation project.

C - 2

United States Department of the Interior

FISH AND WILDLIFE SERVICE
200 Dulles Drive
Lafayette, Louisiana 70506

November 30, 2020

Colonel Stephen Murphy
District Commander
U.S. Army Corps of Engineers
7400 Leake Avenue
New Orleans, LA 701118-3651

Dear Colonel Murphy:

We are providing the enclosed Final Fish and Wildlife Coordination Act (FWCA) Report on the South Central Louisiana Risk Management Feasibility Study. Our Final FWCA Report was prepared under the authority of the FWCA (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and fulfills the final reporting requirements of Section (2)b of that Act. The Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service reviewed the draft report, but did not provide any comments for inclusion in the Final Report.

Sincerely,

Joseph A. Ranson
Field Supervisor
Louisiana Ecological Services Office

SOUTH CENTRAL LOUISIANA RISK MANAGEMENT FEASIBILITY STUDY

FINAL
FISH AND WILDLIFE COORDINATION ACT REPORT

U.S. FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES

LAFAYETTE, LOUISIANA

November 2020

SOUTH CENTRAL LOUISIANA RISK MANAGEMENT FEASIBILITY STUDY

FINAL
FISH AND WILDLIFE COORDINATION ACT REPORT

SUBMITTED TO

NEW ORLEANS DISTRICT

U.S. ARMY CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

PREPARED BY

RONNY PAILLE
FISH AND WILDLIFE FIELD BIOLOGIST

U.S. FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES

LAFAYETTE, LOUISIANA

NOVEMBER 2020

Executive Summary

The U.S. Fish and Wildlife Service has prepared a Final Fish and Wildlife Coordination Act Report on the U.S. Army Corps of Engineers' (Corps) South Central Louisiana Risk Management Feasibility Study. The objectives of that study are to evaluate the feasibility of providing storm surge protection and protection from flooding due to heavy rainfall events for the coastal communities located in the vicinity of Delcambre to Morgan City, Louisiana, in Iberia, St. Martin, and St. Mary Parishes.

This Final Coordination Act Report provides an analysis of fish and wildlife resource impacts associated with construction and the final array of alternative plans and it fulfills the requirements of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In October 2019, our Draft Fish and Wildlife Coordination report was submitted to the Louisiana Department of Wildlife and Fisheries (LDWF) and the National Marine Fisheries Service (NMFS). No comments have been received from those agencies.

The study area is located along the interface between higher elevation developed areas (agriculture and local communities) and lower elevation coastal fresh marshes and coastal forested wetlands. Those wetlands support nationally important fish and wildlife resources. In localized areas, those marshes have experienced deterioration and loss, but in most areas the marshes are healthy and suffering little if any losses despite subsidence and sea level rise. The health of area marshes is due in part to mineral soils which underlay area wetlands. Also, the study area wetlands receive substantial annual inputs of freshwater, nutrients and suspended sediments flowing from east to west across the study area through the Gulf Intracoastal Waterway from the Wax Lake Outlet, a distributary of the Atchafalaya River. Freshwater seasonally dominates East and West Cote Blanche Bays due to the discharge of the Atchafalaya River and the wax Lake Outlet into the adjoining Atchafalaya Bay east of the study area. Marshes adjacent to those bays benefit from those freshwater, suspended sediment, and nutrient inputs.

An array of earthen levee protection alternatives were evaluated. None of the levee alternatives were found to be cost effective. Non-structural measures consisting of raising elevations of residential structures and flood proofing non-residential structures were found to be cost effective. The Recommended Plan therefore, consists solely of non-structural measures. The Service offers the following recommendation to avoid and minimize possible impacts associated with implementation of such non-structural measures.

1. Should construction of earthen berms around a structure result in impacts to adjacent wetlands, a sheetpile barrier shall be constructed in lieu of earthen berms to avoid or minimize those wetland impacts.

2. If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary.

3. On-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. Should on-site contractors and inspectors observe potential nesting activity, coordination with the LDWF and the Service should occur.

Should project plans change and construction of flood protection features be added, the Service provides the following recommendations to avoid and/or minimize project impacts on fish and wildlife resources, and for mitigating unavoidable impacts to those resources.

4. The Corps should coordinate closely with the Service and other fish and wildlife conservation agencies throughout the planning, engineering and design of project features to ensure that those features are located and designed to avoid and minimize wetland impacts and associated fish and wildlife resources.

5. The Corps should obtain a right-of-way from the Service prior to conducting any work on Bayou Teche National Wildlife Refuge, in conformance with Section 29.21-1, Title 50, Right-of-Way Regulations. Issuance of a right-of-way will be contingent on a determination by the Service's Regional Director that the proposed work will be compatible with the purposes for which the Refuge was established.

6. All planning, design, or other construction-related activities (e.g., surveys, geotechnical borings, etc.) conducted on National Wildlife Refuges (NWRs) will require the Corps to obtain a Special Use Permit from the Refuge Manager of the Southwest Louisiana Refuge Complex. We recommend that the Corps request issuance of a Special Use Permit well in advance of conducting any work on the refuge. Please contact the Refuge Manager [redacted] or SWLRComplex@fws.gov) for further information on compatibility of proposed ecosystem restoration measures, and for assistance in obtaining a Special Use Permit. Close coordination by both the Corps and its contractor must be maintained with the Refuge Manager to ensure that construction and maintenance activities are carried out in accordance with provisions of any Special Use Permit issued by the NWR.

7. The Service recommends that the Corps contact the Service for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. Additional consultation as a result of any of the above conditions or for changes not covered in this consultation should occur before changes are made and or finalized.

The Service does not oppose implementation of the project provided that the above recommendations are incorporated.

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INTRODUCTION

The South Central Louisiana Risk Management Feasibility Study was authorized under the Bipartisan Budget Act of 2018, H.R. 1892 -13, Title IV, Corps of Engineers – Civil Department of the Army Investigations. The non-federal sponsor for the study is the Coastal Protection and Restoration Authority Board (CPRA) of Louisiana. That Act authorized the Corps to evaluate the feasibility of measures to reduce impacts associated with coastal storm tidal surges and flooding due to rainfall to coastal communities and agricultural lands located adjacent to adjoining lower elevation coastal marshes and coastal wetland forests in Iberia, St. Mary, and St. Martin Parishes.

This Final Coordination Act Report provides an analysis of fish and wildlife resource impacts associated with construction and the final array of alternative plans. This Final Coordination Act Report constitutes the final report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). Our Draft Coordination Act Report was provided to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service in October 2019 for their review and comment. No comments have been received from those agencies.

DESCRIPTION OF STUDY AREA

The South Central Louisiana study area is located along the southwestern flank of the Bayou Teche ridge, which is a former distributary channel of the Mississippi River. The study area includes communities located between Morgan City westward to Delcambre. Extensive agricultural lands and small local communities exist on the higher elevation portions of the Bayou Teche natural levee. Coastal swamp and bottomland hardwood forests occupy the lower elevation more flood prone flanks of the Bayou Teche ridge. Between these forested wetlands and the tidal marshes bordering East and West Cote Blanche Bays lies a band of scrub-shrub and/or willow swamps.

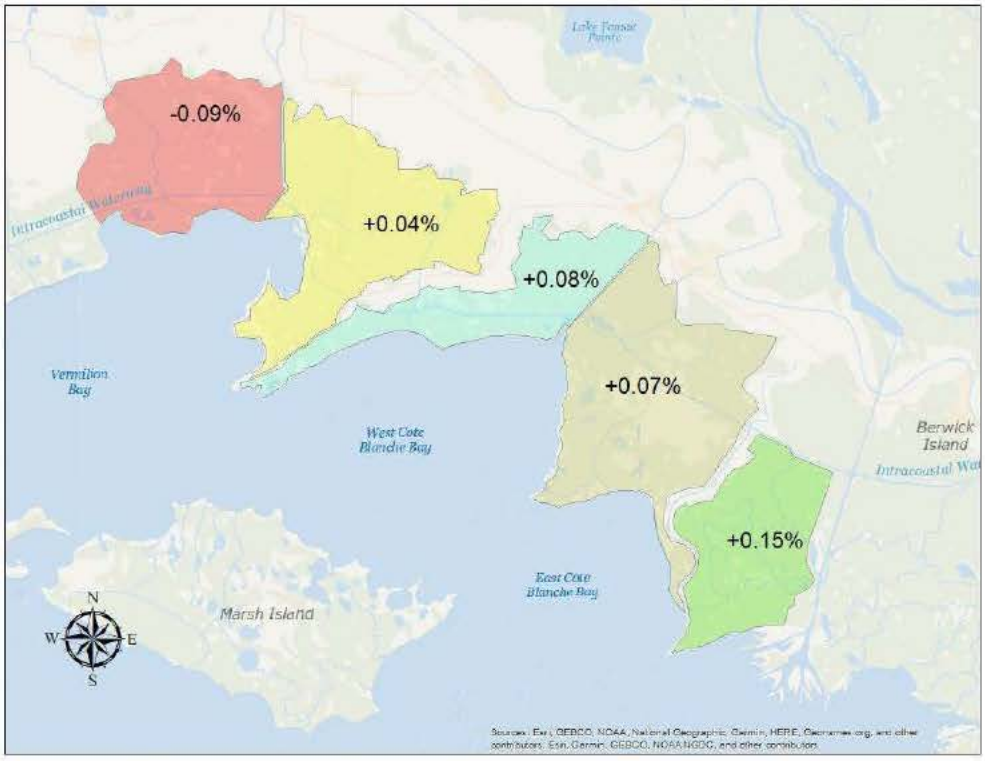
Area marshes annually receive substantial Atchafalaya River freshwater, nutrient, and suspended sediments via the Wax Lake Outlet and Gulf Intracoastal Waterway (GIWW). River water discharged into Atchafalaya Bay also flows westward into the adjoining East and West Cote Blanche Bays further influencing area hydrology. Those GIWW freshwater inputs have been gradually increasing as the Wax Lake Outlet delta has become emergent and expands. Consequently, once low-salinity and brackish marshes within the study area have over recent decades converted to fresh and intermediate marshes.

Because of these seasonal freshwater inputs, area wetlands are generally healthy and many area marshes are characterized by overall marsh gains rather than marsh loss for the period from 1985-2016 (Figure 1). Despite the overall health of area marshes, shoreline erosion along the bay edges continues to cause loss of bay-edge marshes.

Area coastal wetland forests no longer receive direct riverine inputs via the Bayou Teche distributary channel. As a result, they are experiencing gradually increasing water levels due to subsidence and sea level rise. Because of increasing inundation, lower elevation study area cypress swamps are becoming increasingly unsustainable as cypress seeds cannot germinate in

permanently flooded conditions. Increased flooding is also resulting in the degradation and conversion of bottomland hardwood forests to shrub scrub or marsh.

Figure 1. Loss/gain rates of study area marshes (average annual change relative to 1985 acreage).



FISH AND WILDLIFE CONCERNS IN THE STUDY AREA

Because the ancient Bayou Teche distributary channel ceased functioning long ago, and due to the more recent construction of flood protection levees along the Atchafalaya River Basin, the study area no longer receives beneficial annual overbank flooding and associated suspended sediment inputs. Atchafalaya River water and sediment is however available to marshes adjacent to the Gulf Intracoastal Waterway and East and West Cote Blanche Bays. These marshes are among some of the most healthy within the state of Louisiana. However, the swamps more distant from these sediment sources (and no longer able to receive sediment inputs directly from Bayou Teche or the Atchafalaya River), receive sediment primarily when storm surges push

water across the marshes to the forested areas along the Bayou Teche natural levees. Consequently, an unknown portion of those swamps may no longer be capable of natural regeneration due to increasing water levels, or, they are approaching the non-sustainable condition. Those unsustainable swamps may eventually convert to fresh marsh. Lower elevation bottomland hardwood forests are also experiencing increased flooding stresses and gradually transitioning to swamp. Clearing for agriculture and development are the largest factors associated with the loss of higher elevation forested areas.

Wave-induced erosion of marshes bordering Vermilion, West Cote Blanche, and East Cote Blanche Bays continues despite the availability of suspended sediments and relative health of study area marshes. Other localized areas of marsh loss have occurred due to man-made causes such oil-field canal dredging, unintended impoundment, and local hydrologic alterations.

EVALUATION METHODOLOGY

Because construction of project features will not impact fish and wildlife resources or their habitats, no impact assessment methodology was needed to assess construction impacts.

EXISTING FISH AND WILDLIFE RESOURCES

The study area consists of an abandoned deltaic complex where fish and wildlife habitats include bottomland hardwood forests, cypress-tupelo swamp, shrub scrub, fresh marshes, and open water areas.

Bottomland Hardwood Forest - Bottomland hardwood forests found in coastal portions of the project area occur primarily on the natural levees of distributary channels. Dominant vegetation may include sugarberry, water oak, live oak, bitter pecan, black willow, American elm, Drummond red maple, Chinese tallow-tree, boxelder, green ash, bald cypress, and elderberry. These forests may exhibit standing water at times or seasonally, but if flooding is prolonged, less flood tolerant trees will die off and the forest will convert to cypress swamp or scrub-shrub habitats.

Cypress-tupelo swamp - These swamps are generally dominated with bald cypress, water tupelo, swamp red maple, and various understory plant species. In permanently flooded coastal swamps floating aquatic vegetation such as duckweed, Azolla, Salvinia, and water hyacinth may be common. Coastal swamp forests typically occupy the area between fresh marshes and areas of higher elevation, including the transition zones between bottomland hardwood forests on riverine interdistributary ridges and lower elevation marshes. Healthy cypress swamps occur in fresh water areas experiencing minimal daily tidal action and where the salinity range does not normally exceed 2 parts per thousand (ppt). Salinities of 3 ppt or higher may cause significant stress and mortality of bald cypress. However, short-term exposure to such salinities may be tolerated if it does not penetrate into and persist in the soil.

Scrub-Shrub - Scrub-shrub habitat is often found along the flanks of distributary ridges. Typically it is bordered by marsh at lower elevations and by developed areas, cypress-tupelo swamp, or bottomland hardwoods at higher elevations. Typical scrub-shrub vegetation includes elderberry, wax myrtle, buttonbush, black willow, Drummond red maple, Chinese tallow-tree, and groundselbush. Scrub shrub may also be found in abandoned agricultural areas.

Fresh Marsh - Fresh marshes occur seaward of the forested wetlands. In places marsh vegetation is rooted in firm substrates, but in other areas more removed from sediment inputs, the marshes may be characterized by floating or semi-floating vegetated mats. Most fresh marshes exhibit minimal daily tidal action. Vegetation may include maidencane, bulltongue, duck potato, cattail, California bulrush, pennywort, giant cutgrass, American cupscale, spikerushes, bacopa, and alligatorweed. Associated open water habitats may often support extensive beds of floating-leafed and submerged aquatic vegetation including water hyacinth, Salvinia, duckweeds, American lotus, white water lily, water lettuce, cabomba, coontail, Eurasian milfoil, hydrilla, pondweeds, naiads, fanwort, wild celery, water stargrass, elodea, and others.

Intermediate Marsh – Intermediate marshes occur in the western study area where there is less influence from Atchafalaya River freshwater inputs. These marshes are often dominated by saltmeadow cordgrass or a mix of cordgrass with bulltonuge and other marsh vegetation such as three-cornered grass, hog cane, common reed, seashore paspalum, coastal waterhyssop, California bulrush, Walter's millet, sawgrass, deer pea, spikerushes, and flatsedges. Aquatic plant species found in intermediate marsh waters include widgeon grass, pondweeds, Eurasian watermilfoil, water celery, Salvinia, water hyacinth, and southern naiad. Intermediate marshes are considered extremely important for many wildlife species, such as alligators and wading birds, and serve as important nursery areas for juvenile marine organisms.

Developed Areas - Most developed areas are located on higher elevations of former distributary channels and are typically well drained. They include crop lands, pasture, and commercial and residential developments. In some cases, the developed areas are drained via pumping stations together with low-elevation levees.

Ponds and Lakes - Natural marsh ponds and lakes are typically shallow, ranging in depth from 6 inches to over 2 feet. Typically, the smaller ponds are shallow and the larger lakes are deeper. In fresh and low-salinity areas, ponds and lakes may support varying amounts of submerged and/or floating-leaved aquatic vegetation. Dead-end canals and small bayous are typically shallow and their bottoms may be filled in to varying degrees with semi-fluid organic material. Along larger canals and bayous, erosion due to wave action and boat wakes, together with shading from overhanging woody vegetation, may retard the amount of marsh vegetation growing along the edges of those waterways.

Fishery Resources

Wetlands throughout the study area abound with small resident fishes and shellfishes such as least killifish, rainwater killifish, sheepshead minnow, mosquitofish, sailfin molly, grass shrimp, and others. Those species are typically found along marsh edges and among submerged aquatic vegetation, and provide forage for a variety of fish and wildlife. Fresh water and low-salinity

marshes provide habitat for commercially and recreationally important resident freshwater fishes such as largemouth bass, yellow bass, black crappie, bluegill, redear sunfish, warmouth, blue catfish, channel catfish, buffalo, freshwater drum, bowfin, and gar. Water bodies having minimal water exchange and heavy cover of floating vegetation may exhibit low dissolved oxygen conditions and reduced fisheries abundance.

The project area fresh marshes also provide nursery habitat for estuarine-dependent commercial and recreational fishes and shellfishes that are tolerant of fresh water such as blue crab, white shrimp, Gulf menhaden, Atlantic croaker, red drum, southern flounder, striped mullet, and others.

Essential Fish Habitat

The project area marshes are located in an area that has been identified as essential fish habitat (EFH) for various life stages of federally managed species, including juvenile life stages of brown shrimp, white shrimp, and red drum. Categories of EFH in the project area include mud and shell substrates, submerged aquatic vegetation, estuarine water column, and estuarine emergent wetlands. Detailed information on federally managed fisheries and their EFH is provided in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council. The generic amendment was prepared as required by the Magnuson-Stevens Fishery Conservation and Management Act (P.L. 104-297).

In addition to being designated as EFH for brown shrimp, white shrimp, and red drum, wetlands in the project area provide nursery and foraging habitats supportive of a variety of economically-important marine fishery species, including spotted seatrout, southern flounder, black drum, striped mullet, gulf menhaden, and blue crab. Some of these species serve as prey for other fish species managed under the Magnuson-Stevens Act by the Gulf of Mexico Fishery Management Council (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). These wetlands also produce nutrients and detritus, important components of the aquatic food web, which contribute to the overall productivity of Louisiana's estuaries.

Wildlife Resources

Numerous species of birds utilize study-area marshes, including migratory waterfowl which winter there. Ducks that occur in the study area include mallard, gadwall, northern pintail, blue-winged teal, green-winged teal, American widgeon, wood duck, and northern shoveler. The resident mottled duck also utilizes project-area coastal marshes. Diving ducks prefer larger ponds, lakes, and open water areas. Common diving duck species include lesser scaup, canvasback, redhead, ring-necked duck, red-breasted merganser, and hooded merganser. Other migratory game birds found in coastal marshes include the king, Virginia, and sora rails along with the American coot, purple moorhen, common moorhen, and common snipe.

Marshes and associated shallow open water areas provide habitat for a number of wading birds, shorebirds, and other nongame birds. Common wading birds include the little blue heron, great blue heron, green-backed heron, yellow-crowned night heron, black-crowned night heron, great egret, snowy egret, cattle egret, white-faced ibis, white ibis, and roseate spoonbill. Shorebirds include the killdeer, black-necked stilt, and common snipe. Wading bird nesting colonies may

occur within in the study area. Other nongame birds such as boat-tailed grackle, red-winged blackbird, northern harrier, bald eagle, belted kingfisher, and sedge wren also utilize coastal marsh areas.

Common mammals occurring in the coastal marshes include feral hogs, nutria, muskrat, mink, river otter, raccoon, swamp rabbit, white-tailed deer, and coyote.

Reptiles are most abundant in fresh marshes. Common species include the American alligator, western cottonmouth, water snakes, mud snake, speckled kingsnake, ribbon snakes, rat snakes, red-eared turtle, common snapping turtle, alligator snapping turtle, mud turtles, and softshell turtles. Amphibians commonly found in the area include the bullfrog, pig frog, bronze frog, leopard frog, cricket frogs, tree frogs, chorus frogs, three-toed amphiuma, sirens, and several species of toads. These species may also be found in intermediate marshes during low-salinity periods.

Forested wetlands and scrub-shrub areas provide habitats for songbirds such as the mockingbird, yellow-billed cuckoo, northern parula, yellow-rumped warbler, prothonotary warbler, white-eyed vireo, Carolina chickadee, and tufted titmouse. Additionally, these areas also provide important resting and feeding areas for songbirds migrating across the Gulf of Mexico. Other avian species found in forested wetlands include the American woodcock, common flicker, brown thrasher, white-eyed vireo, belted kingfisher, pileated woodpecker, red-headed woodpecker, downy woodpecker, common grackle, and common crow. Numerous other bird species use forested wetlands throughout the study area.

Forested habitats and associated waterbodies also support raptors such as the red-tailed hawk, red-shouldered hawk, Mississippi kite, northern harrier, screech owl, great horned owl, and barred owl. Wading bird colonies typically occur in cypress swamp and scrub-shrub habitat. Species found in those nesting colonies include great egret, white ibis, black-crowned night heron, tricolored heron, little blue heron, snowy egret, white-faced ibis, and glossy ibises. Waterfowl species found in forested wetlands and adjacent waterbodies in the project area include, but are not limited to, wood duck, mallard, green-winged teal, gadwall, and hooded merganser.

Game mammals associated with forested wetlands include eastern cottontail, swamp rabbit, gray and fox squirrels, and white-tailed deer. Commercially important fur bearers include river otter, muskrat, nutria, mink, and raccoon. Other mammals found in forested wetlands include striped skunk, coyote, Virginia opossum, bobcat, armadillo, gray fox, and red bat. Smaller mammal species serve as forage for both mammalian and avian carnivores and include the cotton rat, marsh rice rat, white-footed mouse, eastern wood rat, harvest mouse, least shrew, and southern flying squirrel.

Reptiles which utilize study area bottomland hardwoods, cypress swamps, and associated shallow water include the American alligator, ground skink, five-lined skink, broad-headed skink, green anole, Gulf coast ribbon snake, yellow-bellied water snake, speckled kingsnake, southern copperhead, western cottonmouth, pygmy rattlesnake, broad-banded water snake, diamond-backed water snake, spiny softshell turtle, red-eared turtle, southern painted turtle,

Mississippi mud turtle, stinkpot, common and alligator snapping turtle, in addition to numerous other species.

Some of the amphibians believed to be in study-area forested wetlands include dwarf salamander, three-toed amphiuma, lesser western siren, central newt, Gulf coast toad, eastern narrow-mouthed toad, green treefrog, squirrel treefrog, pigfrog, bullfrog, southern leopard frog, bronze frog, upland chorus frog, southern cricket frog, and spring peeper.

Most developed areas provide low-quality wildlife habitat. Sites developed for agricultural purposes are located on low ridges and on lower elevation areas that have improved drainage. In agricultural areas, wildlife habitat is primarily provided by unmaintained ditch banks and field edges, fallow fields, pasture lands, and rainfall-flooded fields. Cultivated crops can provide forage for some wildlife species. Game species that utilize agricultural lands include the white-tailed deer, mourning dove, bobwhite quail, eastern cottontail, and common snipe. Seasonally flooded cropland and fallow fields may provide important feeding habitat for wintering waterfowl, wading birds, and other waterbirds.

Threatened and Endangered Species

Current Federally listed threatened and endangered species and their critical habitat that may be found in or near the study area include the red knot (*Calidris canutus rufa*), the eastern black rail (Laterallus jamaicensis jamaicensis), the West Indian manatee (*Trichechus manatus*), the pallid sturgeon (*Scaphirhynchus albus*), and in open bay portions of the study area five species of sea turtles. Those turtle species include the threatened loggerhead sea turtle (*Caretta caretta*) and the endangered Kemp's ridley *(Lepidochelys kempii*), the green sea turtle (*Chelonia mydas*), the hawksbill sea turtle (*Eretmochelys imbricata*),and the leatherback sea turtle (*Dermochelys coriacea*).

In accordance with Section 7(c) of the Endangered Species Act, the Corps has prepared a November 2020 Biological Assessment to determine the effects of the recommended plan on the above-mentioned species. That biological assessment concludes that the proposed project would have no effect on threatened or endangered species. The Service concurs with that conclusion.

The Service recommends that the Corps contact the Service for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. Additional consultation as a result of any of the above conditions or for changes not covered in this consultation should occur before changes are made and or finalized.

At-Risk species

For the purposes of a conservation strategy, the Service's Southeast Region has defined "at-risk species" as those that are proposed for listing as threatened or endangered under the Endangered Species Act, a candidate for listing, or it has been petitioned by a third party for listing. The

Service's goal is to work with private and public entities on proactive conservation to conserve these species, thereby precluding the need to federally list as many at-risk species as possible.

Alligator Snapping Turtle

The alligator snapping turtle (*Macrochelys temminckii*) occurs in waterways that drain into the Gulf of Mexico. Although the species range is large, population densities are likely low throughout the range. They occur in various habitats including rivers, oxbows, lakes, and backwater swamps adjacent to large rivers. It is most common in freshwater lakes and bayous, but also found in coastal marshes and sometimes in brackish waters near river mouths. Typical habitat is mud bottomed waterbodies having some aquatic vegetation. The alligator snapping turtle is slow growing and long lived. Sexual maturity is reached at 11 to 13 year of age. Because of this and its low fecundity, loss of breeding females is thought to be the primary threat to the species. Threats include habitat alteration, exploitation by trappers, pollution, and pesticide accumulation (IUCNredlist.org).

Golden-Winged Warbler

The golden-winged warbler (*Vermivora chrysoptera*) breeds in higher elevations of the Appalachian Mountains and northeastern and north-central U.S. with a disjunct population occurring from southeastern Ontario and adjacent Quebec northwest to Minnesota and Manitoba. Wintering populations occur in Central and South America. The loss of wintering habitat in Central and South America and migratory habitat may also contribute to its decline. The golden-winged warbler is also known to hybridize with the blue-winged warbler (*Vermivora cyanoptera*).

This species may be found in forested habitats throughout Louisiana during spring and fall migrations. This imperiled songbird is dependent on forested habitats along the Gulf, including coastal Louisiana, to provide food and water resources before and after trans-Gulf and circum-Gulf migration. Population declines correlate with both loss of habitat owing to succession and reforestation and with expansion of the blue-winged warbler into the breeding range of the golden-winged warbler.

Monarch Butterfly

Recent research has shown dramatic declines of the monarch butterfly (*Danaus plexippus plexippus*) and their habitats leading conservation groups to petition the Service to list the species under Endangered Species Act (ESA). Ensuring adequate and sustainable habitats, meeting all the life history needs of these species is of paramount importance. The Service and its partners are taking immediate actions to replace and restore monarch and pollinator habitat on both public and private lands through revegetation of disturbed areas with native plant species, including species of nectar-producing plants and milkweed endemic to the area.

Migratory Birds and Other Trust Resources

Bald Eagle

The proposed project area may provide nesting habitat for the bald eagle (*Haliaeetus leucocephalus*), which was officially removed from the List of Endangered and Threatened Species as of August 8, 2007. However, the bald eagle remains protected under the MBTA and

BGEPA. Comprehensive bald eagle survey data have not been collected by the Louisiana Department of Wildlife and Fisheries (LDWF) since 2008, and new active, inactive, or alternate nests may have been constructed within the proposed project area since that time.

Bald eagles typically nest in large trees located near coastlines, rivers, or lakes that support adequate foraging from October through mid-May. In southeastern Louisiana parishes, eagles typically nest in mature trees (e.g., baldcypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water. Major threats to this species include habitat alteration, human disturbance, and environmental contaminants. Furthermore, bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Disturbance during these periods may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree, thus reducing their chance of survival.

The Service developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at: http://www.fws.gov/southeast/es/baldeagle/NationalBaldEagleManagementGuidelines.pdf. Those Guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. During any project construction, on-site personnel should be informed of the possible presence of nesting bald eagles in the vicinity of the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary.

On September 11, 2009, the Service published two federal regulations establishing the authority to issue permits for non-purposeful bald eagle take (typically disturbance) and eagle nest take when recommendations of the NBEM Guidelines cannot be achieved. Permits may be issued for nest take only under the following circumstances where: 1) necessary to alleviate a safety emergency to people or eagles, 2) necessary to ensure public health and safety, 3) the nest prevents the use of a human-engineered structure, or 4) the activity or mitigation for the activity will provide a net benefit to eagles. Except in emergencies, only inactive nests may be permitted to be taken. The Division of Migratory Birds for the Southeast Region of the Service (phone: [redacted] e-mail: SEmigratorybirds@fws.gov) has the lead role in conducting consultations and issuance of permits. Should you need further assistance interpreting the guidelines, avoidance measures, or performing an on-line project evaluation, please contact Ulgonda Kirkpatrick [redacted]

Coastal forest & neotropical migrating songbirds

The construction of levees and borrow canals can result in temporary and/or permanent impacts to migratory birds and the habitats upon which they depend for various life requisites. The Service has concerns regarding the direct and cumulative impacts resulting from the loss and fragmentation of forest and grassland habitats, and the direct and indirect impacts that these losses will have upon breeding migratory birds of conservation concern within the Mississippi Alluvial Valley Bird Conservation Region (http://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf). Many migratory birds of conservation concern require large blocks of contiguous habitat to successfully reproduce and survive.

In Louisiana, the primary nesting period for forest-breeding migratory birds occurs between April 15 and August 1. Some species or individuals may begin nesting prior to April 15 or complete their nesting cycle after August 1, but the vast majority nest during this period. Should a project clear forests during the nesting season, that project may directly impact migratory birds of conservation concern and may result in unintentional take of active nests (i.e., eggs and young) in spite of all reasonable efforts to avoid such take. The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for allowing incidental take, the Service recognizes that some birds may be taken during project construction/operation even if all reasonable measures to avoid take are implemented.

Forest clearing projects may also indirectly impact migratory birds of conservation concern because construction of large-scale projects within forested habitats typically results in habitat fragmentation. Forest fragmentation may contribute to population declines in some avian species because fragmentation reduces avian reproductive success (Robinson et al. 1995). Fragmentation can alter the species composition in a given community because biophysical conditions near the forest edge can significantly differ from those found in the center or core of the forest. As a result, edge species could recruit to the fragmented area and species that occupy interior habitats could be displaced. The fragmentation of intact forests could have long-term adverse impacts on some forest interior bird species.

Colonial Nesting Birds

In accordance with the Migratory Bird Treaty Act of 1918 (as amended) and Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), please be advised that the project area includes habitats which are commonly inhabited by colonial nesting waterbirds and/or seabirds.

Colonies may be present that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries. That database is updated primarily by (1) monitoring previously known colony sites and (2) augmenting point-to-point surveys with flyovers of adjacent suitable habitat. Although several comprehensive coast-wide surveys have been recently conducted to determine the location of newly-established nesting colonies, we recommend that a qualified biologist inspect the proposed work site for the presence of undocumented nesting colonies during the nesting season because some waterbird colonies may change locations year-

to-year. To minimize disturbance to colonial nesting birds, the following restriction on activity should be observed:

> For colonies containing nesting wading birds (i.e., herons, egrets, night-herons, ibis, and roseate spoonbills), anhingas, and/or cormorants, all activity occurring within 1,000 feet of a rookery should be restricted to the non-nesting period (i.e., September 1 through February 15, exact dates may vary within this window depending on species present).

In addition, we recommend that on-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. Should on-site contractors and inspectors observe potential nesting activity, coordination with the LDWF and the Service should occur.

Refuges and Wildlife Management Areas

The Bayou Teche National Wildlife Refuge, operated by the Fish and Wildlife Service, is located within the study area. Marsh Island Refuge, operated by the Louisiana Department of Wildlife and Fisheries is located between the Gulf of Mexico and Vermilion Bay.

FUTURE WITHOUT-PROJECT FISH AND WILDLIFE RESOURCES

The freshening trend observed over the last several decades will likely continue expanding the freshwater plant community westward into formerly brackish areas. Vegetation capable of growing in standing water, such as giant cutgrass, will encroach into open water along bayous and small ponds, and will form a wider band of vegetation along larger bayous. Shoreline erosion of marshes along bay edges will continue. Submerged aquatic vegetation will likely become more abundant in areas receiving consistent freshwater inputs. Because of ongoing sea level rise and subsidence, existing low elevation bottomland hardwoods will convert to swamp and lower elevation swamps will gradually convert to marsh.

Terrestrial wildlife habitat quality may gradually decrease in lower elevation areas where lower elevation wetlands become increasingly inundated due to sea level rise. Wading birds, waterfowl, and other wildlife should experience continued high quality habitat conditions. Riverine inputs will promote expansion of freshwater fisheries into once brackish areas. Estuarine fisheries will become increasingly dominated by species tolerant of fresh and low-salinity conditions such as blue crab, white shrimp, Gulf menhaden, Atlantic croaker, striped mullet, and others.

DESCRIPTION OF ALTERNATIVE PLANS

A number of earthen levee protection alternatives in different locations and lengths were initially identified as potential project alternatives. None of those protection levee alternatives were found to be cost effective. However, non-structural protection measures consisting of raising house elevations and flood proofing nonresidential structures were found to be cost-effective.

Consequently, the Recommended Plan consists entirely of those non-structural protection measures.

EVALUATION OF ALTERNATIVE PLANS

Given that the Recommend Plan involves no construction, project implementation would result in no impacts to wetlands, forests, and fish and wildlife resources. Therefore, an evaluation of project impacts was not needed.

FISH AND WILDLIFE CONSERVATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include the following elements as the desirable sequence of steps in the mitigation planning process:

a) avoiding the impact altogether by not taking a certain action or parts of an action;

b) minimizing impacts by limiting the degree or magnitude of the action and its implementation;

c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

e) compensation for the impact by replacing or providing substitute resources or environments.

The Service's mitigation policy (Federal Register, Volume 46, Number 15, pages 7656-7663, January 23, 1991) provides guidance to help ensure that the level of mitigation recommended by the Service is consistent with the value and scarcity of the fish and wildlife resources involved. In keeping with that policy, the Service usually recommends that losses of high-value habitats which are becoming scarce be avoided or minimized to the greatest extent possible. Unavoidable losses of such habitats should be fully compensated by replacement of the same kind of habitat value; this is called "in-kind" mitigation.

Coastal marshes and forested wetlands are considered by the Service to be aquatic resources of national importance due to their increasing scarcity and high habitat value for fish and wildlife within Federal trusteeship (i.e., migratory waterfowl, wading birds, other migratory birds, threatened and endangered species, and interjurisdictional fisheries). Therefore, the Service recommends that unavoidable losses of those habitats be compensated in-kind.

Because the project consists entirely of non-structural measures, impacts to wetlands and fish and wildlife resources will be avoided. Should project features/plans change, then the Corps of Engineers and/or the local sponsor should consult with the Service to cooperatively plan those measures to avoid and/or minimize fish and wildlife impacts per the above-stated policy.

Should project revisions result in impacts to Bayou Teche National Wildlife Refuge, the Corps must obtain a right-of-way from the Service prior to conducting any work on that Refuge, in conformance with Section 29.21-1, Title 50, Right-of-Way Regulations. Issuance of a right-of-way will be contingent on a determination by the Service's Regional Director that the proposed work will be compatible with the purposes for which the Refuge was established. So that the Service may make that determination, the Corps should provide the Refuge Manager with a concise description of the project and project features to be located on the Refuge, including a construction schedule, construction methods, and equipment to be used. The Service will use that information to assess the extent of any short-term, long-term, direct, and/or indirect impacts. Additionally, public review and comments will be obtained prior to issuing a final determination. Construction related wetland losses occurring on the Refuge would need to be mitigated on Refuge lands.

SERVICE POSITION AND RECOMMENDATIONS

Available information indicates that the project will consist entirely of non-structural measures and result in no wetland losses or losses to impact habitats for fish and wildlife resources. The Service offers the following recommendation to avoid and minimize possible impacts associated with implementation of such non-structural measures.

1. Should construction of earthen berms around a structure result in impacts to adjacent wetlands, a sheetpile barrier shall be constructed in lieu of earthen berms to avoid or minimize those wetland impacts.

2. If a bald eagle nest occurs or is discovered within 660 feet of the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: http://www.fws.gov/southeast/es/baldeagle. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary.

3. On-site contract personnel be informed of the need to identify colonial nesting birds and their nests, and should avoid affecting them during the breeding season. Should on-site contractors and inspectors observe potential nesting activity, coordination with the LDWF and the Service should occur.

Should project plans change and construction of flood protection features be added, the Service provides the following recommendations to avoid and/or minimize project impacts on fish and wildlife resources, and for mitigating unavoidable impacts to those resources.

4. The Corps should coordinate closely with the Service and other fish and wildlife conservation agencies throughout the planning, engineering and design of project features to ensure that those features are located and designed to avoid and minimize wetland impacts and associated fish and wildlife resources.

5. The Corps should obtain a right-of-way from the Service prior to conducting any work on Bayou Teche National Wildlife Refuge, in conformance with Section 29.21-1, Title 50, Right-of-Way Regulations. Issuance of a right-of-way will be contingent on a determination by the Service's Regional Director that the proposed work will be compatible with the purposes for which the Refuge was established.

6. All planning, design, or other construction-related activities (e.g., surveys, geotechnical borings, etc.) conducted on National Wildlife Refuges (NWRs) will require the Corps to obtain a Special Use Permit from the Refuge Manager of the Southwest Louisiana Refuge Complex. We recommend that the Corps request issuance of a Special Use Permit well in advance of conducting any work on the refuge. Please contact the Refuge Manager [redacted] or SWLRComplex@fws.gov) for further information on compatibility of proposed ecosystem restoration measures, and for assistance in obtaining a Special Use Permit. Close coordination by both the Corps and its contractor must be maintained with the Refuge Manager to ensure that construction and maintenance activities are carried out in accordance with provisions of any Special Use Permit issued by the NWR.

7. The Service recommends that the Corps contact the Service for additional consultation if: 1) the scope or location of the proposed project is changed significantly, 2) new information reveals that the action may affect listed species or designated critical habitat; 3) the action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a
new species is listed or critical habitat designated. Additional consultation as a result of any of the above conditions or for changes not covered in this consultation should occur before changes are made and or finalized.

The Service does not oppose implementation of the project provided that the above recommendations are incorporated.

LITERATURE CITED

Robinson et al. 1995 Regional forest fragmentation and nesting success of migratory birds. Science. Vol. 267, Issue 5206. pp. 1987-90.