

APPENDIX N
Fish and Wildlife Coordination Act Report



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506



August 14, 2008

Bryant Hammett
Secretary
Louisiana Department of Wildlife and Fisheries
Post Office Box 98000
Baton Rouge, Louisiana 70898-9000

Dear Mr. Hammett:

Attached is the Fish and Wildlife Coordination Act Report on the Inner Harbor Navigation Canal Lock Replacement Project, Orleans Parish, Louisiana. This report does not constitute the 2(b) report of the Fish and Wildlife Service (Service). The Service is reviewing the results of the contaminated sampling plan and the proposed disposal plan for contaminated sediments; recommendations based upon that review will be included in our next Coordination Act Report. The Service will incorporate your agency's comments into the final report prior to its submission to the U.S. Army Corps of Engineers. Should your staff have any questions regarding this report, please have them contact Catherine Breaux (504/862-2689) of this office.

Your cooperation in this matter is appreciated.

Sincerely,

James F. Boggs
Supervisor
Louisiana Field Office

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
August 14, 2008

Mr. Richard Hartman
Branch Chief
Habitat Conservation Division
National Marine Fisheries Service
c/o Louisiana State University
Baton Rouge, Louisiana 70803-7535

Dear Mr. Hartman:

Attached is the Fish and Wildlife Coordination Act Report on the Inner Harbor Navigation Canal Lock Replacement Project, Orleans Parish, Louisiana. This report does not constitute the 2(b) report of the Fish and Wildlife Service (Service). The Service is reviewing the results of the contaminated sampling plan and the proposed disposal plan for contaminated sediments; recommendations based upon that review will be included in our next Coordination Act Report. The Service will incorporate your agency's comments into the final report prior to its submission to the U.S. Army Corps of Engineers. Should your staff have any questions regarding this report, please have them contact Catherine Breaux (504/862-2689) of this office.

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FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506



August 14, 2008

Colonel Alvin B. Lee
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Lee

Please reference the Inner Harbor Navigation Canal Lock Replacement Project, Orleans Parish, Louisiana. Because of an anticipated increase in barge and ship traffic, the lock replacement project was authorized, to be implemented by the U.S. Army Corps of Engineers, New Orleans (Corps) (previously called the Mississippi River – Gulf Outlet New Lock and Connecting Channels, New Orleans, Louisiana Project), in Chapter 112 of the Rivers and Harbors and Flood Control Acts of 1956. The Corps issued a Record of Decision (ROD) on December 18, 1998, but the decision was challenged in the United States District Court and the Court's Order on Motions for Summary Judgment was issued on October 3, 2006, as part of Case No. 2:03-cv-00370-EEF-KWR, United States District Court Eastern District of Louisiana. The Court's decision enjoined the Corps from continuing with the project until additional compliance with the National Environmental Policy Act (NEPA) is completed. The Corps revised Draft Supplemental EIS updates and supplement the 1998 Final EIS by providing better evaluation of the analysis and handling of dredged material generated during the construction phase, the engineering design of confined disposal areas, and several aspects of the project which may have changed since the original EIS in 1998, including any significant new circumstances relevant to environmental concerns that have arisen since Hurricane Katrina.

This report, which compliments the updated DSEIS, incorporates and supplements our March 1997 FWCAR. This report contains description of the existing fish and wildlife resources of the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations for the Recommended Plan including mitigation requirements for adverse impacts to those resources. This draft report does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act. The Service is reviewing the results of the contaminated sampling plan and the proposed disposal plan for contaminated sediments;



We appreciate the cooperation of your staff on this study. Should your staff have any questions regarding the enclosed report, please have them contact Ms. Catherine Breaux (504/862-2689) of this office.

Sincerely,



James F. Boggs
Supervisor
Louisiana Field Office

Attachment

cc: EPA, Dallas, TX
National Marine Fisheries Service, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD/CRD), Baton Rouge, LA

**INNER HARBOR NAVIGATION CANAL LOCK
REPLACEMENT PROJECT, ORLEANS PARISH,
LOUISIANA**

**DRAFT
FISH AND WILDLIFE COORDINATION ACT REPORT**



U.S. FISH AND WILDLIFE SERVICE

ECOLOGICAL SERVICES

LAFAYETTE, LOUISIANA

AUGUST 2008

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**INNER HARBOR NAVIGATION CANAL LOCK
REPLACEMENT PROJECT, ORLEANS PARISH,
LOUISIANA**

**DRAFT
FISH AND WILDLIFE COORDINATION ACT REPORT**

**SUBMITTED TO
NEW ORLEANS DISTRICT
U.S. ARMY CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA**

**PREPARED BY
CATHERINE BREAUX, FISH AND WILDLIFE BIOLOGIST**

**U.S. FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
LAFAYETTE, LOUISIANA**

AUGUST 2008

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EXECUTIVE SUMMARY

The Inner Harbor Navigation Canal (IHNC) and Lock, located in metropolitan New Orleans, provides a link between the Mississippi River, the Gulf Intracoastal Waterway (GIWW), and Lake Pontchartrain. Constructed in 1923 by the Board of Commissioners of the Port of New Orleans, the antiquated lock is currently operated beyond its design capacity. Because of an anticipated increase in barge and ship traffic, the lock replacement project was authorized, to be implemented by the U.S. Army Corps of Engineers, New Orleans (Corps), in Chapter 112 of the Rivers and Harbors and Flood Control Acts of 1956. The previous Final Environmental Impact Statement (EIS) and Main Report for the Inner Harbor Navigation Canal Lock Replacement Project (also referred to as the IHNC new lock project and previously called the Mississippi River Gulf Outlet, New Lock and Connecting Channels), Orleans Parish, Louisiana, issued in March 1998, focused on the potential impacts of new lock construction, including impacts to the local community and supporting infrastructure. In concert with that effort, the Service prepared a March 1997 Fish and Wildlife Coordination Act Report (FWCAR) addressing the impacts on fish and wildlife resources from implementation of the Recommended Plan (RP), and also providing recommendations to mitigate adverse impacts on those resources (herein incorporated by reference). The RP identifies construction of a new deep-draft lock north of the existing IHNC lock that will be 110 feet wide by 1,200 feet long and having a depth (i.e., draft) of -36 feet.

The Corps issued a Record of Decision (ROD) on December 18, 1998, but the decision was challenged in the United States District Court and the Court's Order on Motions for Summary Judgment was issued on October 3, 2006, as part of Case No. 2:03-cv-00370-EEF-KWR, United States District Court Eastern District of Louisiana. The Court's decision enjoined the Corps from continuing with the project until additional compliance with the National Environmental Policy Act (NEPA) is completed. The Corps revised Draft Supplemental EIS will update and supplement the 1998 Final EIS by providing better evaluation of the analysis and handling of dredged material generated during the construction phase, the engineering design of confined disposal areas, and several aspects of the project which may have changed since the original EIS in 1998, including any significant new circumstances relevant to environmental concerns that have arisen since Hurricane Katrina.

This report, which compliments the updated DSEIS, incorporates and supplements our March 1997 FWCAR. This report contains description of the existing fish and wildlife resources of the project area, discusses future with- and without-project habitat conditions, identifies fish and wildlife-related impacts of the proposed project, and provides recommendations for the RP including mitigation requirements for adverse impacts to those resources. This document does not constitute the 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.). This report has been provided to the National Marine Fisheries Service (NMFS) and the Louisiana Department

of Wildlife and Fisheries (LDWF) and their comments will be incorporated into the final report.

While lock replacement will have minimal impacts to fish and wildlife resources, various project features could potentially result in significant habitat losses. Construction of the graving and stockpile site and the confined disposal facility (CDF) will temporarily eliminate moderate-value fish and wildlife habitat at those sites. Disposal of uncontaminated spoil to create emergent marsh is, however, expected to significantly benefit fish and wildlife resources in the disposal area. Furthermore, those benefits could potentially offset unavoidable project-related habitat losses at the CDF, graving, and stockpile sites.

Construction of the IHNC new lock would result in the loss of 242.82 acres of moderate quality scrub/shrub and early successional bottomland hardwood habitat for a total loss of -36.28 AAHU's. The Service does not oppose replacement of the IHNC lock, provided the following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps and local sponsor shall obtain 36.28 AAHU's by either creating at least 85 acres of marsh in the area south of Bayou Bienvenue, as proposed, or by mitigating elsewhere or by a combination of the two to compensate for the unavoidable, project-related loss of the early successional forested wetlands. The Service, NMFS, LDWF, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites.
2. The Service strongly supports using clean dredged material to create brackish marsh that will improve fish and wildlife habitat in the project area. Furthermore, such marsh creation could provide fish and wildlife habitat benefits to offset unavoidable habitat losses at the proposed CDF, graving and stockpile sites.
3. All containment features should be breached or degraded, if necessary to restore tidal connectivity, once the marsh creation/nourishment areas have at least 80% coverage of emergent vegetation.
4. The created wetlands should be monitored over the project life to help evaluate the effectiveness of these features.
5. The Service recommends the use of silt curtains while dredging and disposal of dredged material whether at the IHNC, CDF, graving and stockpile site, or marsh creation site to minimize siltation and the spread of contaminated materials.
6. The suggested graving and associated stockpile site designated in the RP is not the mandatory site to be used for those purposes. The contractor who is awarded the work on

those sites may choose an alternate site. If an alternative graving and stockpile site are used the impacts analysis will need to be re-evaluated for the site specific impacts.

7. If contaminated material placed in the CDF is used for backfill at the new lock, that material must be contained or capped so that it is not open to or redistributed in the IHNC.
8. The Service and NMFS shall be provided an opportunity to review and submit recommendations on future detailed planning reports (e.g., Design Document Report, Engineering Document Report, etc.) and the draft plans and specifications on the Inner Harbor Navigation Canal Lock Replacement Project addressed in this report.
9. Part of Bayou Bienvenue is a Louisiana designated Natural and Scenic River. The Corps should check with the LDWF, Scenic Rivers Program prior to initiating any of the proposed activities within or adjacent to the banks of that bayou. Scenic Rivers Coordinator Keith Cascio can be contacted at (318) 343-4045.
10. Coordination should continue with the Service and NMFS on detailed contract specifications to avoid and minimize potential impacts to manatees, Gulf sturgeon, and pallid sturgeon.
11. If the proposed project has not been constructed within 1 year or if changes are made to the proposed project, the Corps should re-initiate Endangered Species Act consultation with the Service.

Provided that the above recommendations are included in the feasibility report and related authorizing documents, the Service will support further planning and implementation of the RP.

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INTRODUCTION

The Inner Harbor Navigation Canal (IHNC) and Lock, located in metropolitan New Orleans, provides a link between the Mississippi River, the Gulf Intracoastal Waterway (GIWW), and Lake Pontchartrain. Constructed in 1923 by the Board of Commissioners of the Port of New Orleans, the antiquated lock is currently operated beyond its design capacity. Because of an anticipated increase in barge and ship traffic, the lock replacement project was authorized, to be implemented by the U.S. Army Corps of Engineers, New Orleans (Corps), in Chapter 112 of the Rivers and Harbors and Flood Control Acts of 1956. The previous Final Environmental Impact Statement (EIS) and Main Report for the Inner Harbor Navigation Canal Lock Replacement Project (also referred to as the IHNC new lock project and previously called the Mississippi River Gulf Outlet, New Lock and Connecting Channels), Orleans Parish, Louisiana, issued in March 1998, focused on the potential impacts of new lock construction, including impacts to the local community and supporting infrastructure. In concert with that effort, the Service prepared a March 1997 Fish and Wildlife Coordination Act Report (FWCAR) addressing the impacts on fish and wildlife resources from implementation of the Recommended Plan (RP), and also providing recommendations to mitigate adverse impacts on those resources (herein incorporated by reference). The RP identifies construction of a new deep-draft lock north of the existing IHNC lock that will be 110 feet wide by 1,200 feet long and having a depth (i.e., draft) of -36 feet.

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DESCRIPTION OF STUDY AREA

The study area is located in southeastern Louisiana within St. Bernard and Orleans Parish (Figure 1). The IHNC lock, one of the busiest locks in the Nation, is located in Orleans Parish. It connects the Mississippi River (fresh water) with the GIWW (salt water at this location). The area surrounding the lock is highly urbanized. Both the IHNC and adjacent residential and industrial lands have negligible value to fish and wildlife.

Northeast of the IHNC, there is a large expanse of early successional bottomland hardwood and scrub/shrub habitat, deteriorating brackish marsh, and open water between the GIWW and the back protection levee (local flood protection levee). The Corps proposes to place a portion of the spoil from project construction in an upland disposal site for contaminated sediments (contained disposal facility or CDF), a marsh creation site, and into the Mississippi River (Figure 1). In addition, the RP includes the construction of a graving site with associated stockpile site located on the south bank of the GIWW just east of Paris Road. The marsh creation site is in an openwater area that is bounded on the south by the back protection levee, on the east by a sewage treatment plant, on the north and west by an operating landfill, Bayou Bienvenue, and a strip of land composed of scrub/shrub and early successional bottomland hardwood. The CDF is located in the strip of early successional bottomland hardwood and scrub/shrub habitat north of the marsh creation site and is bound on the south by Bayou Bienvenue.

Figure 1. The Project Area and Feature Locations for the Inner Harbor Navigation Canal, New Orleans, Louisiana Project.



FISH AND WILDLIFE RESOURCES

Description of Habitats

Fish and wildlife habitats found in the study area include developed lands, scrub/shrub and early successional bottomland hardwood, brackish marsh, and open water. Developed habitats in the study area include residential and commercial areas, as well as roads and existing levees. Those habitats do not support significant wildlife use. Some of the development is located on higher elevations of the Mississippi River natural levees and former distributary channels; however, vast acreages of swamp and marsh have been placed under forced drainage systems and developed. Part of Bayou Bienvenue is a designated Louisiana Scenic River.

The proposed CDF and graving and adjacent stockpile sites consist of both scrub/shrub and early successional stage bottomland hardwood habitats. Scrub/shrub communities support woody vegetation less than 20 feet tall and typically occur on disturbed sites (e.g., spoil banks) along the edges of forests, streams, and canals. Scrub/shrub communities are typically vegetated with black willow (*Salix nigra*), eastern baccharis (*Baccharis halimifolia*), and wax myrtle (*Myrica cerifera*). Based on the January 23, 2008, and April 8, 2008, site visits the early successional bottomland hardwood habitat was dominated by Chinese tallow (*Triadica sebifera*) and also included black willow, dogwood (*Cornus* spp.), red maple (*Acer rubrum*), box elder (*Acer negundo*) and hackberry (*Celtis laevigata*). Some other vegetation seen includes elderberry (*Sambucus canadensis*), goldenrod (*Solidago* sp.), *Galium* sp., *Geranium* sp., thistle (*Carduus* spp.), arrowhead (*Sagittaria latifolia*), frogfruit (*Phyla nodiflora*), spikerush (*Eleocharis* spp.), pennywort (*Hydrocotyle* spp.), cattail (*Typha* spp.), smartweed (*Polygonum* spp.), *Verbena* spp., *Rubus* (*Rubus* spp.), white mulberry (*Morus alba*), yaupon (*Ilex vomitoria*), lizard's tail (*Saururus cernuus*), buttercup (*Ranunculus* spp.), frogbit (*Limnobium spongia*), cutgrass (*Zizaniopsis miiacea*), trumpet creeper (*Campsis radicans*), vetch (*Vicia* spp.), rattlebox (*Sesbania drummondii*), corn salad (*Valerianella* spp.), waterhyssop (*Bacopa*), poison ivy (*Rhus radicans*), common ragweed (*Ambrosia* sp.), sedge (*Cyperus* spp.), and peppervine (*Ampelopsis arborea*).

Historically, the wetlands in and around the proposed marsh creation site were fresher and consisted of bottomland hardwood forest, cypress-tupelo swamp, and fresh marsh. Many tree stumps and several dead standing trees from the forested wetlands that previously occupied the area remain in the proposed marsh creation site. Construction of the MRGO and subsequent saltwater intrusion, in addition to drainage and subsidence, has converted those habitats to brackish marsh and open water. Predominant vegetation found in brackish marsh is smooth cordgrass (*Spartina alterniflora*), marshhay cordgrass (*Spartina patens*), and leafy threesquare (*Scirpus maritimus*). The openwater in the marsh creation site area is fairly turbid with highly organic bottom sediments. Major openwater areas in and around the project area include Lake Pontchartrain, the IHNC, the Mississippi River, the GIWW, and the MRGO.

Coastal wetlands and associated shallow open waters, such as those found in the study area, are very important to fish and wildlife resources. In addition to providing valuable habitat, wetlands

and submerged aquatic vegetation produce vast amounts of organic detritus which are transported to adjacent estuarine waters. Organic detritus is a key component of the estuarine food web which supports a high level of finfish and shellfish productivities. Those habitats also help to improve water quality by acting as a sink for inorganic nutrients and suspended sediments. Because of subsidence, saltwater intrusion, and development, those habitats are becoming increasingly scarce in the study area.

The current marsh habitat types are expected to remain, for the most part, as they currently are. Wetland loss in the study area will continue because of subsidence, erosion, and development. Although increased salinities prevent the re-establishment of cypress swamp, existing forested areas will continue to provide important fish and wildlife habitat. Wetland restoration efforts by State and Federal agencies may help reduce marsh loss in the project area. Restoration activities in the project area include Coastal Wetlands Planning, Protection and Restoration Act projects, and beneficial use of dredged material during Corps maintenance of Federal navigation channels.

Fisheries Resources

The IHNC has minimal fishery value in the project area. The proposed marsh creation site, however, has significant value to finfishes and shellfishes. Recreationally and commercially important finfish and shellfish species commonly found in the study-area marshes and open water include Gulf menhaden, Atlantic croaker, spotted seatrout, sand seatrout, red drum, black drum, spot, sheepshead, southern flounder, white shrimp, brown shrimp, and blue crab. Representative freshwater fishes found in the adjacent Mississippi River include channel catfish, blue catfish, freshwater drum, yellow bass, largemouth bass, and white crappie.

Fishery abundance and distribution should remain similar to the current status though it is expected to decline dramatically at some point in the future as Louisiana's coastal wetland loss continues. Future impacts to fisheries resources would be related primarily to a substantial decrease in the quality and diversity of habitat that would reduce the area's ability to support the resource. As wetlands continue to decline throughout coastal Louisiana so continues the degradation and eventual loss of important fisheries habitat used for spawning, nursery, foraging, shelter, and other life requirements.

Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; P.L. 104-297) set forth a new mandate for NOAA's National Marine Fisheries Service (NMFS), regional fishery management councils (FMC), and other federal agencies to identify and protect important marine and anadromous fish habitat. The Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act support one of the nation's overall marine resource management goals- maintaining sustainable fisheries. Essential to achieving this goal is the maintenance of suitable marine fishery habitat quality and quantity. Detailed information on Federally managed fisheries and their EFH is provided in the 1999 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of

Mexico FMC (GMFMC). The generic FMP subsequently was updated and revised in 2005 and became effective in January 2006 (70 FR 76216). NMFS administers EFH regulations.

Categories of EFH in the project area include the estuarine emergent wetlands; mud, sand and shell substrates; and estuarine water column. EFH has been designated in the project area for Gulf stone crab, brown shrimp, white shrimp, and red drum. These wetlands produce nutrients and detritus, important components of the aquatic food web, which contribute to the overall productivity of the Pontchartrain basin estuary and nearshore Gulf of Mexico. Under future without project (FWOP) conditions, EFH is not expected to change much in this area in the future.

Wildlife Resources

Historically, wintering waterfowl such as mallard, green-winged teal, and gadwall were common in the study area where fresher wetlands provided excellent habitat. In spite of the conversion from fresher wetlands to brackish marsh and open water, study-area wetlands still provide habitat, albeit of reduced value, for certain waterfowl such as mottled duck and lesser scaup. Other game birds, such as American coots, common snipe, Virginia rails, and sora rails, may occasionally occur in the study area in winter. Clapper rails are year-round residents of coastal Louisiana that also are expected to be found in the study area marshes.

Numerous species of wading birds, seabirds, shorebirds, and songbirds use the wetlands and scrub/shrub habitats in the study area. Common wading birds include the little blue heron, great blue heron, great egret, snowy egret, cattle egret, white-faced ibis, white ibis, green-backed heron, and yellow-crowned night heron. Seabirds using the openwater areas include white pelican, black skimmer, herring gull, laughing gull, and several species of terns. Common shorebirds include killdeer, American avocet, black-necked stilt, and numerous sandpipers. Other nongame birds in the project area include marsh wren, boat-tailed grackle, belted kingfisher, re-winged blackbird, seaside sparrow, yellow-rumped warbler, and several raptors.

Furbearers, found in large numbers in this area, included muskrat, mink, nutria, river otter, and raccoons which were staples of the Louisiana fur industry. The most productive muskrat marshes, based on harvest records (USFWS 1960, Wicker et al. 1982), were in the marshes south of Bayou Bienvenue, near Proctor Point, between Lake Borgne and the Bayou St. Malo ridge and east of the Violet Canal. Mink catches were good in the marshes south of Bayou Bienvenue; while nutria harvests were average in the Bayou Bienvenue marshes. Furbearer populations in the area have decreased due to saltwater intrusion and a corresponding decrease in the carrying capacity of brackish marshes. Also, canals and dredged material not only physically destroyed the wetlands and disrupted natural drainage patterns, but they also provided access to the vast marshes for hunting, trapping, and fishing. Game mammals of these marshes and few remaining forested wetlands in the inland area include wild boar, swamp rabbit, raccoon, and fox/gray squirrels. Nongame mammals that occur in the study area include Virginia opossum, nine-banded armadillo, and several species of bats, rodents and insectivores.

Reptiles and amphibians are fairly common in the low-salinity brackish marshes found within the

project area. Reptiles include the American alligator, western cottonmouth, water snakes, speckled kingsnake, rat snake, and eastern mud turtle. Amphibians expected to occur in the area include the bullfrog, southern leopard frog, and Gulf coast toad.

Wildlife populations are directly related to the amount of wetlands present. As the wetlands of coastal Louisiana continues to decline over time, it is expected that wildlife populations would decrease, but some may remain steady. Populations of wading birds, woodland resident birds, shorebirds, raptors, and marsh resident and migrant birds are expected to remain steady through 2050 (LCWCR and WCRA, 1999). Seabird populations are expected to decline in the future while brown pelican populations are expected to increase through 2050 (LCWCR and WCRA, 1999). Furbearer populations are expected to continue to decrease in the future (LCWCR and WCRA, 1999). Alligator in the area have decreased in the past and are expected to continue to do so in the future (LCWCR and WCRA, 1999).

Threatened and Endangered Species

Federally listed threatened and endangered species and/or their designated critical habitat occurring in the study area include the endangered West Indian manatees (*Trichechus manatus*), the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*), and the endangered pallid sturgeon (*Scaphirhynchus albus*).

Federally listed as endangered, West Indian manatees occasionally enter Lakes Pontchartrain, which is hydrologically connected to the IHNC, and adjacent coastal waters and streams during the summer months (i.e., June through September). There have been sightings of manatee in the outfall slip of the New Orleans Power Plant, approximately one mile east of the proposed graving site. Manatees have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana. They have also been occasionally observed elsewhere along the Louisiana Gulf coast. The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

The following are conditions that should be used to avoid impacts to manatee. All contract personnel associated with the project shall be informed of the potential presence of manatees and the need to avoid collisions with manatees, which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. All construction personnel are responsible for observing water-related activities for the presence of manatee(s). Temporary signs should be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., work area), and at least one sign should be placed where it is visible to the vessel operator. Siltation barriers, if used, should be made of material in which manatees could not become entangled, and should be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions should be implemented, including: no operation of moving equipment within 50 feet of a manatee; all vessels shall operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, should be re-secured and monitored. Once the manatee has left the 100-yard

buffer zone around the work area on its own accord, special operating conditions are no longer necessary, but careful observations would be resumed. Any manatee sighting should be immediately reported to the U.S. Fish and Wildlife Service (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821).

The Gulf sturgeon, Federally listed as a threatened species, is an anadromous fish that occurs in many rivers, streams, and estuarine waters along the northern Gulf coast between the Mississippi River and the Suwanee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, rivers and lakes of the Lake Pontchartrain basin, and adjacent estuarine areas. Spawning occurs in coastal rivers between late winter and early spring (i.e., March to May). Adults and sub-adults may be found in those rivers and streams until November, and in estuarine or marine waters during the remainder of the year. Sturgeon less than two years old appear to remain in riverine habitats and estuarine areas throughout the year, rather than migrate to marine waters. Habitat alterations such as those caused by water control structures that limit and prevent spawning, poor water quality, and over-fishing have negatively affected this species.

The following are conditions that would be used to avoid impacts to sturgeon. The Corps should induce Gulf sturgeon to leave the immediate work area prior to bucket dredging regardless of water depth or time of year. At the commencement of dredging, the bucket should be dropped into the water and retrieved empty one time. After the bucket has been dropped and retrieved, a one-minute no dredging period must be observed. If, at any time, more than fifteen minutes elapses with no dredging, then the empty bucket drop/retrieval process shall be performed again prior to initiating dredging. If a hydraulic/cutter head dredge is utilized, the suction/cutterhead shall remain completely buried in the bottom material during dredging operations. If pumping water through the suction/cutterhead is necessary to dislodge material, or to clean the pumps or suction/cutterhead, etc., the pumping rate shall be reduced to the lowest rate possible until the cutterhead is at mid-depth, where the pumping rate can then be increased. During dredging, the pumping rates shall be reduced to the slowest speed feasible while the suction/cutterhead is descending to or ascending from the channel bottom.

The pallid sturgeon is an endangered fish found in Louisiana, in both the Mississippi (which is hydrologically connected to the IHNC and will be used for disposal of dredged material) and Atchafalaya Rivers (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. Detailed habitat requirements of this fish are not known, but it is believed to spawn in Louisiana. Habitat loss through river channelization and dams has adversely affected this species throughout its range. Should the proposed project directly or indirectly affect the pallid sturgeon or its habitat, further consultation with this office will be necessary.

EVALUATION METHODOLOGY

Evaluation of project-related impacts on fish and wildlife resources for the Mississippi River – Gulf Outlet New Lock and Connecting Channels project was conducted using the Wetland Value Assessment (WVA) methodology developed for the evaluation of proposed coastal wetland

projects. The WVA is similar to the Service's Habitat Evaluation Procedures (HEP), in that habitat quality and quantity are measured for baseline conditions and predicted for future without project (FWOP) and future with project (FWP) conditions. Instead of the species-based approach of HEP, each WVA model utilizes an assemblage of variables considered important to the suitability of that habitat type for supporting a diversity of fish and wildlife species. The WVA models operate under the assumption that optimal conditions for fish and wildlife habitat within a given coastal wetland type can be characterized, and that existing or predicted conditions can be compared to optimum conditions to provide an index of habitat quality. Habitat quality is estimated and expressed through the use of a mathematical model developed specifically for each wetland type. Separate models were used for brackish marsh and bottomland hardwood habitats in this studies evaluation. The WVA models assess the suitability of each habitat type for providing resting, foraging, breeding, and nursery habitat to a diverse assemblage of fish and wildlife species. This standardized, multi-species, habitat-based methodology facilitates the assessment of project-induced impacts on fish and wildlife resources. As with HEP, the WVA allows a numeric comparison of each future condition and provides a quantitative estimate of project-related impacts to fish and wildlife resources. Results are annualized over the project life to determine the Average Annual Habitat Units (AAHUs) available for each habitat type.

The change (increase or decrease) in AAHUs for each FWP scenario, compared to FWOP conditions, provides a measure of anticipated impacts. A net gain in AAHUs indicates that the project is beneficial to the habitat being evaluated; a net loss of AAHUs indicates that the project is damaging to that habitat type.

Using the WVA methodology, impact assessments were conducted by the Service based on wetland loss data, knowledge of the area, and experience with similar projects. Further explanation of how impacts/benefits were assessed is available for review at the Services Lafayette, Louisiana, Field Office.

DESCRIPTION OF RECOMMENDED PLAN

Three plans are considered in detail in this Supplemental EIS; the No-build/Deauthorization Plan, the 1997 EIS Plan, and the Revised Lock Replacement Plan. The No-build/Deauthorization Alternative would preclude the construction of a new lock, as well as any future expenditure by the Federal government to maintain the existing lock. The existing IHNC Lock would be deauthorized by Congress and any future maintenance or replacement would be the responsibility of the local government (e.g., Port of New Orleans). This alternative assumes that the existing lock would be maintained by a local government agency and would neither be replaced nor closed. Delay times would be similar to existing conditions as lock repairs and maintenance would be a continuous concern.

The 1997 EIS Plan or New Lock – North of Claiborne Avenue Plan was described in detail in that document. In summary, that plan included the replacement of the existing lock with a new lock to be constructed in the IHNC, north of Claiborne Avenue. The New Lock recommended in the 1997 EIS would have the dimensions of 110 feet wide by 1,200 feet long by 36 feet deep.

The Recommended Plan (RP) is the Revised Lock Replacement Plan and is described in the following paragraphs. Since the preparation of the 1997 EIS, portions of the originally proposed project and additional studies, design and analyses have been completed that require a revision to the original lock replacement plan. Most of these changes involve details associated with dredged material reuse and disposal. However, in addition to the originally proposed float-in-place (FIP) construction method evaluated in the 1997 EIS, a second plan that would allow for cast-in-place (CIP) construction has been evaluated. The FIP construction method would prefabricate lock modules that would be constructed at a graving site (see below) and floated into place in sections. With the CIP the modules would be constructed on site at the new lock location. The RP is to use the FIP construction method as in the 1997 EIS with the additional modifications involving dredge material reuse and disposal. It is anticipated the entire construction process would take 11 years to complete.

In the RP, dredged material removed during construction of the new lock, temporary bypass channels, and after demolition of the existing lock is completed would be disposed of in one of three ways. Dredged material determined to be contaminated would be disposed of along the south bank of the GIWW in a CDF (Figure 1). The CDF would be comprised of a disposal cell (71 acres of contaminated dredged material would permanently remain in the CDF) and a fill cell (138 acres of dredged material would be temporarily stockpiled in the CDF for reuse, such as backfilling the bypass channel after lock construction). To accommodate this volume of material, the CDF would be approximately 209 acres in size, including the disposal and fill cells and containment dike. Dredged material deemed suitable for use in wetland restoration would be disposed of south of Bayou Bienvenue and west of the City of New Orleans' Wastewater Treatment Plant to create wetlands as mitigation for impacts to wetlands from some project components (e.g., CDF, graving and stockpile site construction). Finally, material determined to be suitable for disposal in aquatic environments but not needed or not suitable for estuarine wetland creation would be discharged into the Mississippi River. Approximately 1.4 million cubic yards (cy) of dredged material has been determined suitable for freshwater disposal and is expected to be discharged to the Mississippi River.

Areas to be dredged during each construction phase were separated into individual Dredge Material Management Units (DMMU). The determination for the handling of material in each DMMU was based on benthic toxicity testing and water column impacts. Material demonstrating no toxicity to freshwater organisms was considered suitable for open water disposal subject to evaluation of associated water column impacts. Water column impacts were determined by comparing elutriate concentrations from the standard elutriate test to state and Federal freshwater criteria. Suitability for construction fill was based on the results of benthic toxicity testing. Material not demonstrating marine or freshwater toxicity was assumed suitable for construction fill.

Dredged material pumped into the CDF would contain a large volume of water, called effluent. Both effluent and water collecting from precipitation would be managed at the CDF. Effluent and runoff from precipitation would be pumped from the CDF over the flood protection levee and into the GIWW where dilution capacity would be adequate. Main discharge weirs would be located at the northeast corner of each of the CDF cells and would be connected to the pumps

and pipes that discharge to the GIWW. Active dewatering of the CDF would occur to encourage rapid consolidation and desiccation of dredged material. Active dewatering would include regular surface trenching and weir management. Vegetation management on the CDF during dewatering activities would occur through both active tilling and the application of herbicides approved for aquatic environments.

In the RP a graving site will be used to construct the lock module base section. The proposed site is located in New Orleans East, approximately six miles from the existing lock, where the Paris Road Bridge (Interstate 510/Louisiana Highway 47) crosses the GIWW (Figure 1). The graving site will be excavated to -31 feet after all the vegetation is removed. The material excavated (664,000 cy) will be stockpiled adjacent to the graving site with part being used for a berm to separate the GIWW from the graving site. The flood protection levee will be relocated and a small drainage canal will be rerouted around the graving and stockpile sites. Suitable material may be brought in to relocate the hurricane protection levee while the berms will be built using material excavated from the graving site. Following the construction of the lock modules, the stockpiled material would be used to fill the graving site and return around half of the graving site to the preconstruction elevation, and the flood protection levee will be reconstructed and returned to its current alignment and authorized elevation. It is likely that the stockpiled and berm material would no longer refill the entire graving site to its previous elevation as that volume would likely be reduced due to dewatering and loss of organic material and 7 years of weathering.

PROJECT IMPACTS

The contaminant levels documented in the IHNC sediments and soils could pose a significant threat to those species using areas affected by contaminated spoil disposal. Exposure through direct contact or ingestion could result in injury, and in some cases, mortality. In addition, the potential for many of the contaminants to bioconcentrate and bioaccumulate poses further long-term risk to trust resources through direct and indirect exposure. The RP plans to place contaminated dredged material into the CDF thus significantly reduce the potential for adverse fish and wildlife impacts from contaminants in that material. In addition impacts are further minimized by designing spoil containment structures to ensure effluent is disposed of appropriately.

The Service has reviewed the results of the contaminant sampling plan and the proposed disposal plan for contaminated sediments. Based upon the information provided, the Service has no objections to the Corps environmental contaminants assessment and dredged sediment disposal plans as they are proposed.

Approximately 1,897,064 cy of material dredged from the IHNC and its banks will be placed in the CDF along the south bank of the GIWW. That material could impact up to 209 acres of early successional bottomland hardwood and scrub/shrub habitat (Table 1). Of those, 71 acres (600,944 cy) would permanently remain at the CDF due to the higher levels of contaminants. The remaining 138 acres (1,296,120 cy) would be stockpiled in the CDF for future use, such as backfilling the by-pass channel after construction is complete. In addition, 34 acres at the

graving and stockpile site would be directly impacted by the proposed project (Table 1). As indicated in Table 1, our WVA analyses determined that project implementation would result in the direct loss of 36.28 AAHUs in moderate quality early successional bottomland hardwood and scrub/shrub wetlands. If the Corps created 85 acres of brackish marsh in the area south of Bayou Bienvenue (Figure 1) that would provide a benefit of 36.56 AAHUs.

WVAs	Acres	AAHUs
Contaminated Disposal Site	209	-29.06
Graving and Stockpile Site	33.82	-7.22
Total	242.82	-36.28
Marsh Creation Site	85	36.56

Wildlife Resources

During implementation of the RP, construction activities at the lock location may disrupt or displace wildlife resources. However, this temporary impact (11 years) would be localized to an area that has little wildlife value and most wildlife species would move to an area with more favorable conditions and return after construction is completed. After completion of the new lock wildlife conditions would be similar to current conditions.

Activity at the CDF, graving, and stockpile sites would directly eliminate wildlife habitat at those sites. It is expected that for 7 years while construction and continued dredging activities are on going that these sites would remain without vegetation. In our analysis we assumed a temporary loss that allowed re-vegetation to start in year 8 and beyond. Once the proposed action is complete, the adjacent wetlands would stabilize. As with the FWOP, wildlife and their habitats, in the future with project scenario, are expected to remain relatively stable with some decline from development, subsidence, and erosion.

The creation of wetlands resulting from the potential marsh creation site will be a benefit to wildlife resources. An increase in wetland acreage would provide increased nesting, brood-rearing, and foraging habitat for resident and migrant avian species and wintering habitat for waterfowl. The approximately 68 additional acres of brackish marsh habitat that would be available in 50 years compared to the FWOP would also be beneficial to furbearers, game mammals, reptiles, and amphibians. However, the long-term sustainability of wildlife resources is not expected to change as a result of this feature.

Fisheries Resources

Impacts to fisheries at the new lock site would generally be associated with construction activities and would be temporary (11 years) and include injury or mortality to sessile and slow-moving aquatic organisms due to burial or increased turbidity. More mobile fisheries would be temporarily displaced to other suitable locations. After construction activities cease, displaced fishery species would return to the proposed action area.

The CDF would have no effect on fisheries. The graving and stockpile site, as with wildlife, would eliminate fisheries habitat for the duration of construction. The majority of the graving and stockpile sites are hydrologically connected to the GIWW. Once construction is complete and those sites are restored, the site would be similar to existing conditions.

The containment needed for the marsh creation site will block fisheries access to the newly created wetlands until the containment dike is breached or degraded to allow fisheries ingress and egress. The Service proposes breaching the containment dikes when 80% of the area is covered with emergent vegetation; which is anticipated to occur 3 to 5 years after construction. These wetlands would provide a habitat for foraging, breeding, spawning, and cover for a variety of larval, juvenile and adult fishes. More nutrients and detritus would be added to the food web, thereby increasing fish productivity and providing a benefit to local fisheries. However, the long-term sustainability of local fisheries is not expected to change as a result of this project.

Essential Fish Habitat

Impacts to EFH resulting from construction activities would be localized and temporary. There would be increases in turbidity as a result of construction in the IHNC as well as the graving, stockpile, and marsh creation sites. Once construction is complete at all sites affecting EFH, it is expected EFH would return to similar to existing conditions.

The creation of wetlands would improve the quality of some categories of EFH by re-establishing marsh communities from the less productive EFH categories of open water. Additionally, essential vegetated habitats used by fish for spawning, nursery, forage, cover, and other life requirements would be improved.

Threatened and Endangered species

Manatee and Gulf sturgeon could possibly be at the graving and stockpile site because of its connection with the GIWW and the marsh creation site because of its connection to the MRGO through Bayou Bienvenue. However, the Service does not expect the manatee or Gulf sturgeon to be at the CDF. The Service does not expect pallid sturgeon to be in the graving and stockpile sites, the CDF, or the marsh creation site though they may happen into the IHNC. In the unlikely

event that these species are observed in any part of the project area during construction or operation, the Corps should contact Ms. Deborah Fuller of the Service's Lafayette, Louisiana, Office at (337) 291-3124.

The Corps is responsible for determining whether the selected alternative is likely (or not likely) to adversely affect any listed species and/or critical habitat, and for requesting the Service's concurrence with that determination. If the Corps determines, and the Service concurs, that the selected alternative is likely to adversely affect listed species and/or critical habitat, a request for formal consultation in accordance with Section 7 of the Endangered Species Act should be submitted to the Service. That request should also include the Corps rationale supporting their determination.

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:

(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) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process. Based on current and expected future without-project conditions, the planning goal of the Service is to develop a balanced project, i.e., one that is responsive to the IHNC New Lock project needs while addressing the co-equal need for fish and wildlife resource conservation.

The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the high value of marsh for fish and wildlife and the relative scarcity of that habitat type, those wetlands are designated as Resource Category 2 habitats, the mitigation goal for which is no net loss of in-kind habitat value. The shrub/scrub and early successional bottomland hardwood habitats are of lesser habitat quality and value but are also designated as Resource Category 2. Service Policy (cited above) for Resource Category 2 habitats allows an exception for mitigation of in-kind habitat if different habitats and species available for replacement are determined to be of greater value than those lost. Project impacts to fish and wildlife resources will be minimized to some extent by placing contaminated material into the CDF, though impacts to that site could not be avoided. The graving and stockpile site impacts have been reduced by selecting an alternate site that has minimal fish and wildlife habitat value compared to the 1997 site. Because the project is already authorized, avoiding the project

impacts altogether (i.e., the “no action” alternative) is not feasible. Therefore, project impacts should be mitigated via compensatory replacement of the habitat values lost.

It should be noted that with the authorization of the IHNC new lock project in 1998 and with the Service’s evaluation of the existing habitat at that time, the CDF and graving site habitats were predominately scrub/shrub wetlands. Today the habitat has become scrub/shrub and early successional bottomland hardwood that is dominated by Chinese tallow. The habitat is not considered to carry the same value or act as a fully functional bottomland hardwood habitat. In addition the long-term use of the CDF carries the potential for that site to be reused as a disposal site for dredging the GIWW, thus not allowing the habitat to ever become a fully functional bottomland hardwood. Considering the above information, the existing mitigation plan, and that mitigation is not typically available for scrub/shrub wetlands, the Service has determined that mitigation via marsh creation would be acceptable.

As indicated in Table 1, our WVA analyses determined that project implementation would result in the direct loss of 36.28 AAHUs in moderate quality scrub/shrub and early successional bottomland hardwood wetlands. The Corps is proposing to create between 37 and 148 acres of marsh creation in the area south of Bayou Bienvenue (Figure 1). As seen in Table 1, if 85 acres (36.56 AAHUs) of marsh is created, that should be sufficient to satisfy the required mitigation needs. The potential of up to 63 additional acres above the mitigation requirement will be considered beneficial use of dredged material. Coastal marshes 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). The Service encourages the use of all suitable dredged material for marsh creation. However if not enough material or no material is determined to be suitable for creating marsh then the remaining or the full mitigation needs (-36.28 AAHUs) to compensate for the unavoidable, project-related loss of forested wetlands would need to be addressed. The Service, National Marine Fisheries Service (NMFS), Louisiana Department of Wildlife and Fisheries (LDWF), and Louisiana Department of Natural Resources (LDNR) should be consulted regarding the adequacy of any proposed alternative mitigation sites. The mitigation plan developed to offset project related impacts should be consistent with mitigation requirements of the Clean Water Act regulatory program, and include monitoring, success criteria, and financial assurance components.

SERVICE POSITION AND RECOMMENDATIONS

While lock replacement will have minimal impacts to fish and wildlife resources, various project features could potentially result in significant habitat losses. Construction of the graving and stockpile site and the CDF will temporarily eliminate moderate-value fish and wildlife habitat at those sites. Disposal of uncontaminated spoil to create emergent marsh is, however, expected to significantly benefit fish and wildlife resources in the disposal area. Furthermore, those benefits could potentially offset unavoidable project-related habitat losses at the CDF, graving, and stockpile sites.

Construction of the IHNC new lock would result in the loss of 242.82 acres of moderate quality scrub/shrub and early successional bottomland hardwood habitat for a total loss of -36.28 AAHU's. The Service does not oppose replacement of the IHNC lock, provided the following fish and wildlife conservation recommendations are implemented concurrently with project implementation:

1. The Corps and local sponsor shall obtain 36.28 AAHU's by either creating at least 85 acres of marsh in the area south of Bayou Bienvenue, as proposed, or by mitigating elsewhere or by a combination of the two to compensate for the unavoidable, project-related loss of the early successional forested wetlands. The Service, NMFS, LDWF, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites.
2. The Service strongly supports using clean dredged material to create brackish marsh that will improve fish and wildlife habitat in the project area. Furthermore, such marsh creation could provide fish and wildlife habitat benefits to offset unavoidable habitat losses at the proposed CDF, graving and stockpile sites.
3. All containment features should be breached or degraded, if necessary to restore tidal connectivity, once the marsh creation/nourishment areas have at least 80% coverage of emergent vegetation.
4. The created wetlands should be monitored over the project life to help evaluate the effectiveness of these features.
5. The Service recommends the use of silt curtains while dredging and disposal of dredged material whether at the IHNC, CDF, graving and stockpile site, or marsh creation site to minimize siltation and the spread of contaminated materials.
6. The suggested graving and associated stockpile site designated in the RP is not the mandatory site to be used for those purposes. The contractor who is awarded the work on those sites may choose an alternate site. If an alternative graving and stockpile site are used the impacts analysis will need to be re-evaluated for the site specific impacts.
7. If contaminated material placed in the CDF is used for backfill at the new lock, that material must be contained or capped so that it is not open to or redistributed in the IHNC.
8. The Service and NMFS shall be provided an opportunity to review and submit recommendations on future detailed planning reports (e.g., Design Document Report, Engineering Document Report, etc.) and the draft plans and specifications on the Inner Harbor Navigation Canal Lock Replacement Project addressed in this report.
9. Part of Bayou Bienvenue is a Louisiana designated Natural and Scenic River. The Corps should check with the LDWF, Scenic Rivers Program prior to initiating any of the

proposed activities within or adjacent to the banks of that bayou. Scenic Rivers Coordinator Keith Cascio can be contacted at (318) 343-4045.

10. Coordination should continue with the Service and NMFS on detailed contract specifications to avoid and minimize potential impacts to manatees, Gulf sturgeon, and pallid sturgeon.
11. If the proposed project has not been constructed within 1 year or if changes are made to the proposed project, the Corps should re-initiate Endangered Species Act consultation with the Service.

Provided that the above recommendations are included in the feasibility report and related authorizing documents, the Service will support further planning and implementation of the RP.

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