

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF LOUISIANA

UNITED STATES OF AMERICA and
STATE OF LOUISIANA,

Plaintiffs,

v.

AMERICAN COMMERCIAL BARGE
LINE LLC,

Defendant.

Civil Action No.: 2:21-cv-01818

**CONSENT DECREE
WITH AMERICAN COMMERCIAL BARGE LINE LLC**

TABLE OF CONTENTS

I.	BACKGROUND.....	2
II.	JURISDICTION AND VENUE	7
III.	PARTIES BOUND	8
IV.	DEFINITIONS.....	8
V.	STATEMENT OF PURPOSE.....	11
VI.	PAYMENTS BY SETTLING DEFENDANT.....	11
VII.	SETTLING DEFENDANT’S RESTORATION PROJECT OBLIGATIONS	14
VIII.	TRUSTEE-IMPLEMENTED NATURAL RESOURCE RESTORATION... 	15
IX.	FORCE MAJEURE	17
X.	DISPUTE RESOLUTION.....	19
XI.	STIPULATED PENALTIES.....	21
XII.	COVENANTS NOT TO SUE BY THE PLAINTIFFS	24
XIII.	RESERVATION OF RIGHTS BY PLAINTIFFS	25
XIV.	COVENANTS BY SETTLING DEFENDANT	27
XV.	EFFECT OF SETTLEMENT	27
XVI.	NOTICES AND SUBMISSIONS.....	28
XVII.	CERTIFICATION	29
XVIII.	INTEGRATION / APPENDICES	30
XIX.	EFFECTIVE DATE AND RETENTION OF JURISDICTION.....	30
XX.	CONSENT DECREE MODIFICATIONS	31
XXI.	LODGING AND OPPORTUNITY FOR PUBLIC COMMENT	31
XXII.	SIGNATORIES / SERVICE	32
XXIII.	FINAL JUDGMENT.....	32

I. BACKGROUND

A. The United States of America (“United States”), on behalf of the United States Department of the Interior (“DOI”), United States Fish and Wildlife Service (“FWS”), United States Department of Commerce (“Commerce”), National Oceanic and Atmospheric Administration (“NOAA”), and the State of Louisiana, appearing through the Louisiana Oil Spill Coordinator’s Office, Department of Public Safety (“LOSCO”), Louisiana Department of Natural Resources (“LDNR”), Louisiana Department of Environmental Quality (“LDEQ”), Louisiana Department of Wildlife and Fisheries (“LDWF”), and the Coastal Protection and Restoration Authority (“CPRA”) have filed a complaint against AMERICAN COMMERCIAL BARGE LINE LLC (“Settling Defendant”) in this Court alleging that the Settling Defendant is liable to the United States and Louisiana under Section 1002(a) and (b) of the Oil Pollution Act of 1990 (“OPA”), 33 U.S.C. § 2702 (a) and (b)(2), and Section 2480 of the Louisiana Oil Spill Prevention and Response Act (OSPRA), La. Rev. Stat. 30:2480, for damages for injury to, destruction of, loss of, or loss of use of, Natural Resources, resulting from an oil spill caused by the collision of the ocean-going tanker M/V TINTOMARA with tanker barge DM-932 (“DM-932”) under tow by the M/V MEL OLIVER on the Mississippi River near New Orleans, Louisiana in 2008 (the “NRD Complaint”). At all times relevant to this action, Settling Defendant was the owner of the tug M/V MEL OLIVER (which at the time was operated by D.R.D. Towing Co., LLC under a bareboat charter), the tanker barge DM-932, and DM-932’s fuel oil cargo.

B. By way of background, on August 22, 2011, the United States filed a complaint, Case No. 2:11-cv-02076-CJB-ALC (E.D. La.) (Doc. 1) (the “2011 Complaint”), against Settling Defendant and D.R.D. Towing Co., LLC asserting claims under the Clean Water Act (“CWA”),

33 U.S.C. §§ 1251-1376, OPA, 33 U.S.C. §§ 2701-61, and the Declaratory Judgment Act, 28 U.S.C. §§ 2201-02, arising out of the same vessel collision and oil spill in the Mississippi River. In November 2014, the United States agreed to dismiss without prejudice its claims for “damages” related to “injuries to, destruction of, loss of, or loss of use of natural resources” under OPA and the Declaratory Judgment Act (the “NRDA Claims”) to provide the Parties an opportunity to amicably resolve the NRDA Claims (Doc. 107). The United States also withdrew its claims for CWA civil penalties. In its Amended Complaint filed December 10, 2014 (Doc. 110), the United States sought only a declaratory judgment that the defendants were jointly and severally liable without limitation under Section 1002(a) of OPA, 33 U.S.C. § 2702(a), for all removal costs and damages resulting from the oil spill in the Mississippi River and an award of the sum of removal cost and damage claims satisfied by the Oil Spill Liability Trust Fund in the amount of \$23,180,790.68 (the “Removal Cost Claim”). In October 2016, the United States and Settling Defendant agreed to settle the Removal Cost Claim for \$20,000,000 (Doc. 206). On August 27, 2018, the United States filed a Satisfaction of Judgment (Doc. 220) certifying to the Court that Settling Defendant has fully paid the sum of \$20,000,000 pursuant to the Order and Judgment (Doc. 208). The NRDA Claims were unaffected by that Order and Judgement, and now the Parties seek to resolve the NRDA Claims.

C. Now, the United States, on behalf of DOI, NOAA, and the State of Louisiana, appearing through the LOSCO, LDNR, LDEQ, LDWF, and the CPRA and Settling Defendant seek to resolve the NRDA Claims. The United States and Louisiana have filed the NRD Complaint against Settling Defendant in this Court alleging that the Settling Defendant is liable to the United States and Louisiana under Section 1002(a) and (b) of OPA, 33 U.S.C. § 2702 (a) and (b)(2), and Section 2480 of the OSPRA, La. Rev. Stat. 30:2480, for damages for injury to,

destruction of, loss of, or loss of use of, Natural Resources, resulting from an oil spill caused by the collision of the ocean-going tanker M/V TINTOMARA with tanker barge DM-932 under tow by the M/V MEL OLIVER on the Mississippi River near New Orleans, Louisiana in 2008. At all times relevant to this action, Settling Defendant was the owner of the tug M/V MEL OLIVER (which at the time was operated by D.R.D. Towing Co., LLC under a bareboat charter), the tanker barge DM-932, and DM-932's fuel oil cargo.

D. The NRD Complaint alleges that, on or about July 23, 2008, the M/V TINTOMARA was sailing downbound on the Lower Mississippi River. The NRD Complaint further alleges that, at the same time, the tug M/V MEL OLIVER was pushing tanker barge DM-932, which was carrying 9,983 barrels (419,286 gallons) of #6 fuel oil, upriver and that, as the vessels closed, the M/V MEL OLIVER began an arcing turn to port and crossed in front of the M/V TINTOMARA, which struck barge DM-932, causing the release of an estimated 6,734 barrels (282,828 gallons) of #6 fuel oil - a viscous oil, into the waters of the Mississippi River over a two-week period (the "Spill"). All of the foregoing events are referred to as the "Incident." The Incident release lasted until August 10, 2008, when final salvage efforts were completed.

E. The Incident occurred during a high water event along the Mississippi River and oil was transported downstream rapidly. By day two of the Incident, aerial reconnaissance surveys revealed sheens and tar patties at Head of Passes and farther downriver, in addition to oil having entered marsh areas through breaks in the river bank. As the waters receded, oil became stranded in the batture between the river and the adjacent levees, on rip-rap, in crevices in rip-rap, and along the shoreline. The NRD Complaint alleges that oil spread more than 100 miles downriver and covered over 5,000 acres of shoreline habitat, although large amounts of the #6

fuel oil remained present near the Incident site. As a result of the Spill, the United States Coast Guard (“USCG”) closed the River from RMM 98 (just upriver from New Orleans) to the Southwest Pass Sea Buoy. The closure was in place from July 23, 2008 until July 29, 2008, affecting commerce and human use activities such as recreational fishing and shoreline use. The NRD Complaint further alleges that the Incident generated several days of public complaints related to the odors from the oil.

F. The NRD Complaint further alleges that oil from the Incident caused injuries to, destruction of, loss of, or loss of use of, Natural Resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States and Louisiana.

G. Pursuant to Executive Order 12580 and the National Contingency Plan (“NCP”), 40 C.F.R. Part 300, Commerce, through NOAA, and DOI, through FWS, have been delegated authority to act on behalf of the public as the Federal Trustees for Natural Resources impacted by the Incident. Pursuant to Section 1006(b)(3) of OPA, 33 U.S.C. §2706(b)(3), and Subpart G of the NCP, the Governor of Louisiana has designated LOSCO, LDNR, LDEQ, LDWF, and CPRA¹ to act on behalf of the public as trustees for Natural Resources under OPA. These same agencies serve as State Trustees under OSPRA according to La. R.S. 30:2451, *et seq.* and LA. ADMIN. CODE tit. 43, part XXIX, *et seq.* The United States and the State of Louisiana share trusteeship of the Natural Resources injured as a result of the Spill and are coordinating restoration efforts.

H. After the Incident, DOI, NOAA, LOSCO, LDNR, LDEQ and LDWF as Trustees for Natural Resources allegedly injured by the Incident and the Settling Defendant entered into a

¹ CPRA was designated a State Trustee for Natural Resources in May 2010.

cooperative Natural Resource Damage Assessment process, pursuant to which the Trustees and the Settling Defendant jointly and independently planned and conducted a number of injury assessment activities. These activities included gathering and analyzing data and other information that the Trustees used to determine and quantify the resource injuries and damages. As a result of this process and other activities, the Trustees found that the Incident adversely affected riverine batture habitat, aquatic/water column organisms, birds, and marsh; and resulted in lost recreation and lost use of marsh restoration material. The Settling Defendant contests the Trustees' findings and determinations.

I. Since the Incident, the Trustees have worked to identify a set of potential restoration actions that would contribute to the restoration, replacement, or acquisition of the equivalent of the Natural Resources the Trustees allege were injured, destroyed, or lost as a result of the Incident. In doing so, the Trustees have developed a potential restoration project (the "Restoration Project") for this matter, consisting of multiple components, including the acquisition of habitat, restoration and management of acquired lands, a crevasse splay, and recreational use improvements. This potential restoration project is serving as the basis for settlement, in part. The settlement is two-fold, including, as set forth in this Consent Decree: (1) a cash payment value the Trustees have developed based upon (a) the restoration and management of acquired lands, crevasse splay, and recreational use components of the Restoration Project, which would be implemented by the Trustees, and (b) payment of Trustee costs, and (2) the requirement that the Settling Defendant undertake the land acquisition component of the Restoration Project, *i.e.*, that the Settling Defendant fulfill its obligations under this Consent Decree to effect the transfer of title of a certain real property parcel of approximately 649.11 acres in Plaquemines Parish near English Turn (the "Woodlands Parcel")

to the Woodlands Conservancy. The Woodlands Parcel contains hardwood forested wetlands, swamp, relic wetlands, and open waters. The Woodlands Parcel is important to migrating birds due to its location near the Mississippi River and the high loss of much of the forested wetlands in the area near New Orleans. The Woodlands Parcel will be protected with a conservation servitude in substantially the same form and substance as Appendix B to this Consent Decree that restricts future use(s) of the Woodlands Parcel in perpetuity in a manner sufficient to protect and preserve the ecological benefits of the Woodlands Parcel acquisition and of the restoration and management of the Woodlands Parcel.

J. By entering into this Consent Decree, Settling Defendant does not admit or agree that the Trustees' findings and determinations are accurate and does not admit any liability to Plaintiffs arising out of the transactions or occurrences alleged in the NRD Complaint.

K. The Parties to this Consent Decree recognize, and the Court by entering this Consent Decree finds, that this Consent Decree: (i) has been negotiated by the Parties in good faith; (ii) will avoid prolonged and complicated litigation among the Parties; (iii) will expedite Natural Resource protection and restoration actions to be performed by the Trustees; and (iv) is fair, reasonable, and in the public interest.

NOW, THEREFORE, with the consent of the Parties to this Decree, it is hereby ORDERED, ADJUDGED, and DECREED:

II. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action pursuant to Section 1017(b) of OPA, 33 U.S.C. § 2717(b), and 28 U.S.C. §§ 1331, 1345, and 1367. The Court also has supplemental jurisdiction over the State law claims articulated in the NRD

Complaint pursuant to 28 U.S.C. § 1367. Venue lies in this District pursuant to Section 1017(b) of OPA, 33 U.S.C. § 2717(b), and 28 U.S.C. § 1391(b), because the Incident occurred in this judicial district. The Court has personal jurisdiction over Settling Defendant in connection with this action. For the purposes of this Consent Decree, and the underlying NRD Complaint, Settling Defendant waives all objections and defenses that it may have to jurisdiction of the Court or to venue in this District. Settling Defendant shall not challenge this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree is binding upon the United States and the State, and upon Settling Defendant and its successors and assigns. Any change in ownership or corporate or other legal status, including, but not limited to, any transfer of assets or real or personal property, shall in no way alter the status or responsibilities of Settling Defendant under this Consent Decree. In any action to enforce this Consent Decree, the Settling Defendant shall not raise as a defense the failure by any of its officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree.

IV. DEFINITIONS

3. Unless otherwise expressly provided in this Consent Decree, terms used in this Consent Decree that are defined in OPA or in regulations promulgated under OPA at 15 C.F.R. Part 990 shall have the meaning assigned to them in OPA or in such regulations. Whenever terms listed below are used in this Consent Decree or its appendices, the following definitions shall apply:

a. “Commerce” shall mean the United States Department of Commerce and any successor departments, agencies, or instrumentalities.

b. “Consent Decree” shall mean this Consent Decree and all appendices attached hereto (listed in Section XVIII (Integration / Appendices)). In the event of conflict between this Consent Decree and any appendix, this Consent Decree shall control.

c. “Conservation Servitude” shall mean the Grant of Conservation Servitude required to be executed and recorded under Paragraph 11 of this Consent Decree, in substantially the same form and substance as Appendix B hereto.

d. “Date of Lodging” shall mean the date the proposed Consent Decree is filed with the Court as an attachment to a Notice of Lodging of Consent Decree, pending public comment as required in Section XXI (Lodging and Opportunity for Public Comment).

e. “Day” or “day” shall mean a calendar day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal or State holiday, the period shall run until the close of business of the next working day.

f. “DOI” shall mean the United States Department of the Interior and any successor departments, agencies, or instrumentalities.

g. “DOJ” shall mean the U.S. Department of Justice and any successor departments, agencies, or instrumentalities.

h. “Effective Date” shall mean the effective date of this Consent Decree as provided by Section XIX of this Consent Decree (Effective Date and Retention of Jurisdiction).

i. “Interest” shall mean the most recent interest rate determined pursuant to 28 U.S.C. § 1961. Interest shall be simple interest calculated on a daily basis.

- j. “Louisiana NRRTF” shall mean LOSCO’s Natural Resource Restoration Trust Fund established by La. R.S. 30:2480.2 for the receipt of NRDA restoration monies.
- k. “Natural Resources” shall have the meaning provided in Section 1001(20) of OPA, 33 U.S.C. § 2701(20).
- l. “Natural Resource Damages” shall have the meaning provided in Section 1002(b)(2)(A) of OPA, 33 U.S.C. § 2702(b)(2)(A).
- m. “NRD Complaint” shall mean the civil complaint filed in this action by the United States and the State of Louisiana concurrently with lodging of this Consent Decree.
- n. “NRDAR Fund” shall mean DOI’s Natural Resource Damage Assessment and Restoration Fund.
- o. “Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral or an upper case letter.
- p. “Parish” shall mean Plaquemines Parish, Louisiana.
- q. “Parties” shall mean the United States, the State of Louisiana, and Settling Defendant.
- r. “Plaintiffs” shall mean the United States and the State of Louisiana.
- s. “Section” shall mean a portion of this Consent Decree identified by a Roman numeral.
- t. “Settling Defendant” shall mean AMERICAN COMMERCIAL BARGE LINE LLC.
- u. “State” shall mean the State of Louisiana.
- v. “State Trustees” shall mean LOSCO, LDNR, LDEQ, LDWF, and CPRA, collectively.

w. “Subparagraph” shall mean a portion of this Consent Decree identified by a lower case letter or an Arabic numeral in parentheses.

x. “Trustees” shall mean Commerce acting through NOAA, DOI acting through FWS, and the State Trustees.

y. “United States” shall mean the United States of America and each department, agency, and instrumentality of the United States, including Commerce and DOI.

z. “Woodlands Parcel” shall mean the real property parcel of approximately 649.11 acres in Plaquemines Parish, Louisiana near English Turn, a legal description of which is appended to this Consent Decree as Appendix C.

V. STATEMENT OF PURPOSE

4. By entering into this Consent Decree, the mutual objectives of the Parties are for Settling Defendant (i) to contribute to the restoration, replacement, or acquisition of the equivalent of the Natural Resources allegedly injured, destroyed, or lost as a result of the Incident; (ii) to reimburse Natural Resource Damages assessment and restoration planning costs incurred by FWS, NOAA, and the State Trustees; and (iii) to resolve its alleged civil liability for Natural Resource Damages as provided herein.

VI. PAYMENTS BY SETTLING DEFENDANT

5. Payments for Past Assessment and Restoration Planning Costs. Settling Defendant has paid a total of \$1,320,961.72 for the Trustees’ past assessment and restoration planning costs, as described below:

a. Payment for United States' Past Assessment and Restoration Planning Costs. Defendant has reimbursed Federal Trustee past assessment and restoration planning costs in the following amounts: \$100,811.98 to DOI and \$571,829.68 to NOAA.

b. Payment for State's Past Assessment and Restoration Planning Costs. Defendant has reimbursed the State of Louisiana's past assessment, restoration planning, and removal costs in the amount of \$648,320.06.

6. Payment for Trustee-Implemented Natural Resource Restoration. Within 45 Days after the Title Transfer required by Paragraph 10, Settling Defendant shall pay to the Trustees \$2,071,212 to fund Trustee-implemented natural resource restoration efforts allocated as follows:

a. Settling Defendant shall pay to the United States a total of \$200,000. Payment shall be made by FedWire Electronic Funds Transfer ("EFT") to the DOJ account, in accordance with instructions provided to Settling Defendant by the Financial Litigation Unit ("FLU") of the United States Attorney's Office for the Eastern District of Louisiana after the Effective Date. The payment instructions provided by the FLU will include a Consolidated Debt Collection System ("CDCS") number, which Settling Defendant shall, along with DOJ Case Number 90-5-1-1-10875/1, use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to: Nicoletti Hornig & Sweeney to the attention of John A.V. Nicoletti at jnicoletti@nicolettihornig.com on behalf of Settling Defendant. Settling Defendant may change the individual to receive payment instructions on its behalf by providing written notice of such change to the United States, NOAA, and DOI in accordance with Section XVI (Notices and Submissions). The total amount paid shall be deposited in a segregated sub-account within the NRDAR Fund, to be managed by DOI for the benefit and use of the Trustees to pay for Federal Trustee oversight and

administration of restoration planning and implementation and the administration of general Federal Trustee responsibilities in accordance with Section VIII (Trustee-Implemented Natural Resource Restoration).

b. Settling Defendant shall pay to the State of Louisiana a total of \$1,871,212. Payment shall be made by EFT to the account specified by LOSCO after the Effective Date. The payment should reference “Gretna/Mississippi River LA2008_0723_0230”. LOSCO will provide the payment instructions to: Nicoletti Hornig & Sweeney to the attention of John A.V. Nicoletti at jnicoletti@nicolettihornig.com on behalf of Settling Defendant. Settling Defendant may change the individual to receive payment instructions on its behalf by providing written notice of such change to the State Trustees in accordance with Section XVI (Notices and Submissions). The total amount paid shall be deposited in a segregated sub-account within the State of Louisiana’s Natural Resource Restoration Trust Fund (“NRRTF”) to be managed by LOSCO for the benefit and use of the Trustees to pay for Trustee-implemented natural resource restoration efforts, State Trustee oversight and administration of restoration planning and implementation, and the administration of general State Trustee responsibilities in accordance with Section VIII (Trustee-Implemented Natural Resource Restoration).

7. Notice of Payment. Upon making any payment under Paragraph 6, Settling Defendant shall send written notice to the United States and the State, in accordance with Section XVI (Notices and Submissions), that payment has been made, and, for payments to the United States, reference the relevant civil action number, CDCS number, and DOJ case number 90-5-1-1-10875/1.

8. Interest. In the event any payment required pursuant to Paragraph 6 is not made when due, Settling Defendant shall pay Interest on the unpaid balance commencing on the

payment due date and accruing through the date of full payment. Payment shall be made in accordance with the instructions provided in the Subparagraph that corresponds to the unpaid amount(s). Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiffs by virtue of Settling Defendant's failure to make timely payments under this Section including, but not limited to, payment of stipulated penalties pursuant to Paragraph 25.

VII. SETTling DEFENDANT'S RESTORATION PROJECT OBLIGATIONS

9. Woodlands Parcel Bid. On June 24, 2021, Plaquemines Parish approved the sale of the Woodlands Parcel to the Woodlands Conservancy on a restricted use basis requiring maintenance and preservation of existing wetlands and bottomland hardwoods for ecological conservation, wetlands education, and passive public recreational use.

10. Title Transfer. Settling Defendant shall take all actions necessary to ensure that fee simple title to the Woodlands Parcel is transferred from Plaquemines Parish to the Woodlands Conservancy within 60 Days of the Effective Date.

11. Conservation Servitude. Settling Defendant shall take all actions necessary to ensure that a Conservation Servitude, in substantially the same form and substance as Appendix B, is executed and recorded with the Register of Deeds, Plaquemines Parish, Louisiana within 60 Days of the Effective Date.

12. Notice of Completion. No later than 30 Days after completion of its obligations under Sections VI and VII of this Consent Decree ("Obligations"), Settling Defendant shall send written notice to the United States and the State, in accordance with Section XVI (Notices and Submissions) that the Obligations are completed in full compliance with the requirements of this

Consent Decree. The notice of completion shall include the certification set forth in Section XVII.

13. Certification of Completion of Settling Defendant's Obligations. No later than 60 Days after the date of the Trustees' receipt of Settling Defendant's Notice of Completion under Paragraph 12, the Trustees shall evaluate the Notice of Completion, and if the Trustees agree that the Settling Defendant has met its Obligations under this Consent Decree, the Trustees shall issue a Certification of Completion of Settling Defendant's Obligations.

VIII. TRUSTEE-IMPLEMENTED NATURAL RESOURCE RESTORATION

14. Management and Application of Funds. All funds deposited in a segregated sub-account within the NRDAR Fund or the Louisiana NRRTF under Paragraph 6 shall be managed by DOI and LOSCO for the joint benefit and use of the Trustees to pay for Trustee-implemented natural resource restoration efforts in accordance with this Consent Decree. All such funds shall be applied toward the costs of restoration, rehabilitation, or replacement of injured Natural Resources, or acquisition of equivalent resources, including but not limited to any administrative costs and expenses such as drafting restoration plans, providing opportunity for public awareness and input, executing agreements for project implementation, conducting monitoring and oversight activities, maintaining an administrative record, and administratively closing the case.

15. Restoration Planning. The Trustees have prepared a Damage Assessment and Restoration Plan ("Plan") describing how the funds dedicated to Trustee-implemented natural resource restoration efforts under this Section are intended to be used. That Plan identifies how funds are intended to be used for restoration, rehabilitation, replacement, or acquisition of equivalent resources. The Plan also identifies how funds are intended to be used to address

services lost to the public until restoration, rehabilitation, replacement, or acquisition of equivalent resources is completed. A copy of the Plan is attached as Appendix A to this Consent Decree.

16. The Trustees have agreed to allocate the settlement funds paid under Paragraph 6 for Trustee-implemented natural resource restoration and Trustee oversight and administrative responsibilities in accordance with the Plan as follows:

<u>Trustee Estimated Project Cost Categories</u>	<u>Allocation</u>
Restoration and management of the wetlands and bottomland hardwoods habitats on the acquired Woodlands Parcel	\$487,479
Protection and preservation of the ecological benefits of the Woodlands Parcel acquisition and of the restoration and management of the Woodlands Parcel through the enforcement of a Conservation Servitude	\$84,819
Marsh creation via a crevasse splay in the Pass-A-Loutre State Wildlife Management Area	\$500,000
Restoration to compensate for injuries to recreational fishing resources and services	\$412,482
Passive recreational use improvements at the Woodlands Parcel	\$68,182
<u>Trustee Estimated Oversight and Administration Cost Categories</u>	
NOAA	\$100,000
DOI	\$100,000
State Trustees	\$318,250
TOTAL Estimated Costs	\$2,071,212

Decisions regarding any use or expenditure of funds under this Section, including any changes to the above allocation, shall be made by all Trustees, acting through consensus. Any funds dedicated above, along with any accrued interest, that have not been spent and remain unobligated once the Trustee-implemented restoration described in the Plan is complete shall be retained by the Trustees to fund additional Natural Resources restoration and any related Trustee oversight and administration of restoration planning and implementation costs.

17. Settling Defendant shall not be entitled to dispute, in any forum or proceeding, any decision relating to use of funds or restoration efforts under this Section. Settling Defendant shall have no liability whatsoever arising out of any disputes and/or disagreements among or between the Trustees relating to the use or expenditures of funds. If, after the Effective Date, the Trustees need to amend or supplement the Plan for any reason, the Trustees may do so without notice to the Settling Defendant and without notice to, or approval by, the Court. Where appropriate, the Trustees will provide the public notice and an opportunity to comment on any post-settlement changes or updates to the Restoration Project and/or the Plan.

IX. FORCE MAJEURE

18. “Force majeure,” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Settling Defendant that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendant’s best efforts to fulfill the obligation. The requirement that Settling Defendant exercise “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. Force majeure does not include financial inability to complete the work under this Consent Decree or comply with any obligation of this Consent Decree.

19. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree for which Settling Defendant intends or may intend to assert a claim of force majeure, Settling Defendant shall notify the Trustees identified in Section

XVI (Notices and Submissions), by email, within 14 Days of when Settling Defendant first knows that the event is reasonably likely to cause a delay. Within 14 Days thereafter, Settling Defendant shall provide in writing to the Trustees an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Settling Defendant's rationale for attributing such delay to a force majeure. Settling Defendant shall include with any notice all available documentation supporting its claim that the delay was attributable to a force majeure. Settling Defendant shall be deemed to know of any circumstance of which Settling Defendant, or any entity controlled by Settling Defendant, knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Settling Defendant from asserting any claim of force majeure regarding that event, provided, however, that if the Trustees, despite the late or incomplete notice, are able to assess to their satisfaction whether the event is a force majeure under Paragraph 18 and whether Settling Defendant has exercised its best efforts under Paragraph 18, the Trustees may, in their unreviewable discretion, excuse in writing Settling Defendant's failure to submit timely or complete notices under this Paragraph.

20. If the Trustees agree that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this Consent Decree that are affected by the force majeure will be extended by the Trustees for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. If the Trustees do not agree that the delay or anticipated delay has been or will be caused by a force majeure, the Trustees will notify Settling Defendant in writing of their decision. If the Trustees

agree that the delay is attributable to a force majeure, the Trustees will notify Settling Defendant in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure.

21. If Settling Defendant elects to invoke the dispute resolution procedures set forth in Section X (Dispute Resolution) regarding the Trustees' decision, it shall do so no later than 30 Days after receipt of the Trustees' notice. In any such proceeding, Settling Defendant shall have the burden of proving that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendant complied with the requirements of Paragraphs 18 and 19. If Settling Defendant carries this burden, the delay at issue shall be deemed not to be a violation by Settling Defendant of the affected obligation of this Consent Decree.

X. DISPUTE RESOLUTION

22. The Trustees' determinations under Sections VII (Settling Defendant's Restoration Project Obligations), IX (Force Majeure), and XI (Stipulated Penalties), shall be final and binding unless within 30 Days after receipt of the Trustees' written notice of a force majeure or stipulated penalty determination, Settling Defendant invokes dispute resolution procedures of this Section by sending the Trustees a written notice specifying the nature of the dispute and requested relief ("Notice of Dispute").

23. Informal Dispute Resolution. Any dispute regarding this Consent Decree shall in the first instance be the subject of informal negotiations between the Trustees and Settling Defendant. The period for informal negotiations shall not exceed 60 Days from the time the

dispute arises, unless it is modified by written agreement of the Parties. A dispute shall be considered to have arisen when Settling Defendant sends the Trustees a written Notice of Dispute.

24. Formal Dispute Resolution.

a. In the event that the Parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by the Trustees shall be considered final and binding unless, within 30 Days after the conclusion of the informal negotiation period, Settling Defendant invokes the formal dispute resolution procedures of this Section by serving on the Trustees a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by Settling Defendant.

b. Within 30 Days after receipt of Settling Defendant's Statement of Position, the Trustees will serve on the Settling Defendant their written Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by the Trustees.

c. An administrative record of the dispute shall be maintained by the Trustees and shall contain all Statements of Position, including supporting documentation, submitted pursuant to this Section. The Trustees and Settling Defendant each shall identify Formal Dispute Resolution Representatives who shall meet to discuss the matter in dispute at the earliest available opportunity and will work in good faith to resolve the matter in dispute. If the Parties fail to resolve the dispute within 30 Days after the initial meeting of the Formal Dispute Resolution Representatives, then the position advanced by the Trustees in their Statement of Position shall be considered binding upon Settling Defendant, subject to any agreements the

Formal Dispute Resolution Representatives may have reached on one or more issues and further subject to Settling Defendant's right to seek judicial review pursuant to the following Subparagraph. In such event, the Trustees shall, within 10 Days after the conclusion of the formal dispute resolution process, notify Settling Defendant in writing that the formal dispute resolution process has concluded. Settling Defendant may seek judicial review of Trustees' Statement of Position (as modified by any agreements the Formal Dispute Resolution Representatives may have reached) pursuant to the following Subparagraph.

d. Any matter in dispute shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by Settling Defendant with the Court and served on all Parties within 30 Days after receipt of the Trustees' letter notifying Settling Defendant of the conclusion of the formal dispute resolution process. The motion shall include a description of the matter in dispute, the efforts made by the Parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The Parties shall jointly move the Court to establish a schedule under which the Plaintiffs may file a response to Settling Defendant's motion within 30 Days after receipt of the motion, and Settling Defendant may file a reply brief within 21 Days after receipt of the response. If the Court does not grant the motion for such a schedule, then the Parties shall file the response and reply in accordance with the schedule set forth in the Local Rules for the Eastern District of Louisiana. Settling Defendant bears the burden of proving that the Trustees' position is arbitrary, capricious, contrary to law, or contrary to the provisions in this Consent Decree.

XI. STIPULATED PENALTIES

25. Settling Defendant shall be liable for stipulated penalties in the amount of \$2,000 per Day for each Day of noncompliance for failure to fulfill any obligation under Sections VI (Payments by Settling Defendant) and VII (Settling Defendant's Restoration Project Obligations) unless excused under Section IX (Force Majeure). "Compliance" by Settling Defendant shall include completion of all activities and obligations, including payments, required under this Consent Decree, in accordance with all applicable requirements of law.

26. All penalties shall begin to accrue on the day after performance or payment is due, or a violation occurs, whichever is applicable, and shall continue to accrue through the final date of satisfactory performance or payment, or until the violations cease. However, stipulated penalties shall not accrue with respect to judicial review by this Court of any dispute under Section X (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing in this Consent Decree shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

27. Settling Defendant shall pay stipulated penalties to the Plaintiffs within 60 Days of the date of mailing of a written demand by either Plaintiff, unless Settling Defendant invokes the Dispute Resolution procedures under Section X within the 30-Day period. Settling Defendant shall pay 50 percent of the total stipulated penalty amount due to the United States and 50 percent to the State. The Plaintiff making a demand for payment of a stipulated penalty shall simultaneously send a copy of the demand to the other Plaintiff. Penalties shall accrue as provided in the preceding Paragraph regardless of whether the Plaintiffs have notified Settling Defendant of a violation or made a demand for payment.

28. Settling Defendant shall pay stipulated penalties owing to the United States and the State in the manner set forth in Paragraph 6 (Payment for Trustee-Implemented Natural Resource Restoration), respectively, and with confirmation notice required by Paragraph 7.

29. Penalties shall continue to accrue as provided in Paragraph 26 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement of the Parties or by a decision of the Trustees that is not appealed to this Court, accrued penalties determined to be owed shall be paid to the Trustees within 60 Days after the agreement or the receipt of the Trustees' decision unless such agreement or decision provides that penalties are not due;

b. If the dispute is appealed to this Court and the Plaintiffs prevail in whole or in part, Settling Defendant shall pay all accrued penalties determined by the Court to be owed to the Plaintiffs within 60 Days after receipt of the Court's decision or order, except as provided in Paragraph 29(c);

c. If the District Court's decision is appealed by any Party, Settling Defendant shall pay all accrued penalties determined by the District Court to be owed to the Trustees into an Interest-bearing escrow account, established at a duly chartered bank or trust company that is insured by the Federal Deposit Insurance Company, within 60 Days after receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 Days. Within 60 Days after receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to the Plaintiffs or to Settling Defendant to the extent that they prevail.

30. If Settling Defendant fails to pay stipulated penalties when due, Settling Defendant shall pay Interest on the unpaid stipulated penalties as follows: (a) if Settling

Defendant has timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to Paragraph 29 until the date of payment; and (b) if Settling Defendant fails to timely invoke dispute resolution, Interest shall accrue from the date of demand under Paragraph 27 until the date of payment. If Settling Defendant fails to pay stipulated penalties and Interest when due, the United States or the State may institute proceedings to collect the penalties and Interest.

31. The payment of penalties and Interest, if any, shall not alter in any way Settling Defendant's obligation to make any payment required under this Consent Decree or to perform any other requirement of this Consent Decree.

32. Except as provided in Sections XII (Covenants Not to Sue by Plaintiffs) and XIII (Reservation of Rights by Plaintiffs), nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the Plaintiffs to seek any other remedies or sanctions available by virtue of Settling Defendant's violation of this Consent Decree.

33. Notwithstanding any other provision of this Section, Plaintiffs may, in their unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Decree.

XII. COVENANTS NOT TO SUE BY THE PLAINTIFFS

34. Except as specifically provided by Paragraph 35 (General Reservations by the United States and the State) and Paragraph 36 (Special Reservations by the United States and the State Regarding Natural Resource Damages), the United States and the State covenant not to sue

or to take administrative action against Settling Defendant pursuant to Section 1002(a) and (b) of OPA, 33 U.S.C. § 2702(a) and (b), and Sections 2480, 2488, or 2489 of OSPRA, La. R. S. 30:2480, 2488, or 2489, for Natural Resource Damages resulting from the Incident. This covenant not to sue shall take effect upon the Effective Date of this Consent Decree. This covenant not to sue is conditioned upon the satisfactory performance by Settling Defendant of its obligations under this Consent Decree, including, as applicable, payments of stipulated penalties under Section XI (Stipulated Penalties). This covenant not to sue extends only to Settling Defendant and its successors and assigns (but only to the extent that the alleged liability of the successor or assign is based on the alleged liability of Settling Defendants), and does not extend to any other person.

XIII. RESERVATION OF RIGHTS BY PLAINTIFFS

35. General Reservations by the United States and the State. The United States and the State reserve, and this Consent Decree is without prejudice to, all rights against Settling Defendant and with respect to all matters not expressly included within Paragraph 34. Notwithstanding any other provisions of this Consent Decree, this agreement does not constitute resolution of Settling Defendant's liability for the following:

- a. claims based on a failure by Settling Defendant to meet a requirement of this Consent Decree;
- b. any potential claims against Settling Defendant for criminal liability associated with the Incident;
- c. claims against the Settling Defendant for Natural Resource Damages that are not a result of the Incident;

36. Special Reservations Regarding Natural Resource Damages. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve the right to institute proceedings against Settling Defendant in this action or in a new action seeking recovery of Natural Resource Damages, including costs of damages assessment, based on:

(a) conditions resulting from the Incident, unknown by the Trustees as of the date of the lodging of this Consent Decree, that result in new or additional injury to, destruction of, loss of, or loss of use of such Natural Resources; or

(b) information received by the Trustees after the Date of Lodging of this Consent Decree that indicates that the Incident has resulted in injury to, destruction of, loss of, or loss of use of Natural Resources of a type or future persistence that was unknown to the Trustees as of the Date of Lodging of this Consent Decree.

For purposes of this Paragraph, conditions or information known to the Trustees at the Date of Lodging shall consist of any information that was in the files of, or otherwise in the possession of, any employee, contractor or consultant of one or more of the individual Trustees who worked on any Trustee's Natural Resource Damages assessment for the Incident addressed in this Consent Decree, including information submitted to the Trustees by Settling Defendant.

37. The United States expressly reserves, and the Settling Defendant expressly acknowledges, the right of the United States to institute proceedings, to take judgment thereon, and collect such judgment(s) thereon against the Settling Defendant in this action, to seek and recover costs and/or damages resulting from the Incident based on claims submitted to or filed against the United States pursuant to 33 U.S.C. § 2715(c), including claims against the Oil Spill Liability Trust Fund, after the date when this Decree is lodged with this Court.

38. This Consent Decree shall not preclude the United States or the State from instituting a separate or ancillary action to enforce the terms of this Consent Decree.

XIV. COVENANTS BY SETTLING DEFENDANT

39. Covenants by Settling Defendant. Settling Defendant hereby covenants not to sue and agrees not to assert any claims or causes of action against the United States or the State, and their employees, agents, contractors, departments, agencies, administrations and bureaus, related to Natural Resource Damages arising from the Incident, including, without limitation, any potential or pending claims against the Oil Spill Liability Trust Fund relating to the Incident or the Spill. This Paragraph 39 does not preclude Settling Defendant from filing a motion for judicial review under Section X (Dispute Resolution).

XV. EFFECT OF SETTLEMENT

40. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. In addition, nothing in this Consent Decree shall limit, enlarge, or otherwise affect, the private rights or claims of any person not a Party to this Consent Decree, except as may be determined otherwise by a court of competent jurisdiction. Each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Incident against any person not a Party hereto. Nothing in this Consent Decree diminishes the right of the United States or the State to pursue any such persons to obtain additional Natural Resource Damages, response costs, or response actions.

41. In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, penalties, costs, damages, including without limitation Natural Resource Damages, criminal liability, or other appropriate relief relating to the Incident, Settling Defendant shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the Covenants by the United States or the State set forth in Section XII.

XVI. NOTICES AND SUBMISSIONS

42. Whenever, under the terms of this Consent Decree, notice is required to be given or a document is required to be sent by one Party to another, it shall be made in writing and directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. Except as otherwise provided, notice to a Party by email (if that option is provided below) or by regular mail in accordance with this Section satisfies any notice requirement of the Consent Decree regarding such Party.

As to the United States:

EES Case Management Unit
U.S. Department of Justice
Environment and Natural Resources Division
P.O. Box 7611
Washington, DC 20044-7611
eescasemanagement.enrd@usdoj.gov
Re: DJ #90-5-1-1-10875/1

Corinna McMackin, Attorney-Advisor

National Oceanic and Atmospheric Administration
Office of General Counsel
Natural Resources Section
55 Great Republic Drive
Gloucester, MA 01930
corinna.mcmackin@noaa.gov

Brigette Beaton, Attorney Advisor
Office of the Regional Solicitor for
Interior Regions 2 and 4 U.S. Department of the Interior
75 Ted Turner Drive, Suite 304
Atlanta, GA 30303
brigette.beaton@sol.doi.gov

As to the State of Louisiana:

Kelli Braud, Attorney
Louisiana Oil Spill Coordinator's Office, on behalf of the State Trustees
7979 Independence Blvd., Suite 104
Baton Rouge, LA 70806
kelli.braud@la.gov

As to AMERICAN COMMERCIAL BARGE LINE LLC:

John A.V. Nicoletti, Esq.
Nicoletti Hornig & Sweeney
Wall Street Plaza
88 Pine Street, 7th Floor
New York, New York 10005
jnicoletti@nicolettihornig.com

XVII. CERTIFICATION

43. Each report, plan, or other document submitted by Settling Defendant pursuant to this Consent Decree or Appendices shall be signed by an official of Settling Defendant and include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the

information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

44. This certification requirement does not apply to emergency or similar notifications where compliance would be impractical.

XVIII. INTEGRATION / APPENDICES

45. This Consent Decree and its appendices constitute the final, complete, and exclusive understanding among the Parties with respect to the settlement embodied in this Consent Decree. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

46. The following appendices are attached to and incorporated into this Consent Decree:

“Appendix A” is the Damage Assessment and Restoration Plan.

“Appendix B” is the Form of Conservation Servitude.

“Appendix C” is the legal description of the Woodlands Property.

XIX. EFFECTIVE DATE AND RETENTION OF JURISDICTION

47. This Consent Decree shall take effect upon the date upon which approval of this Consent Decree is recorded on the Court’s docket.

48. The Court shall retain jurisdiction over this matter for the purpose of interpreting and enforcing the terms of this Consent Decree.

XX. CONSENT DECREE MODIFICATIONS

49. Any material modification of this Consent Decree shall be made by agreement of the Parties to this Consent Decree and in writing, and shall not take effect unless approved by the Court. Any non-material modification of this Consent Decree shall be made by agreement of the Parties to this Consent Decree and in writing, and shall not take effect until filed with the Court. Nothing in this Consent Decree shall be deemed to alter the Court's power to enforce, supervise, or approve modifications to this Consent Decree.

50. The provisions of this Consent Decree are not severable. The Parties' consent hereto is conditioned upon the entry of the Consent Decree in its entirety without modification, addition, or deletion except as agreed to by the Parties.

51. Economic hardship or changed financial circumstances of Settling Defendant shall not serve as a basis for modifications of this Consent Decree.

XXI. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

52. This Consent Decree shall be lodged with the Court for a period of at least 30 Days for public notice and comment. The United States and the State reserve the right to withdraw or withhold its consent if comments regarding the Consent Decree disclose facts or considerations which indicate that this Consent Decree is inappropriate, improper, or inadequate. Settling Defendant consents to the entry of this Consent Decree without further notice.

53. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between the Parties.

XXII. SIGNATORIES / SERVICE

54. Each undersigned representative of Settling Defendant, the United States, and the State certifies that he or she is authorized to enter into the terms and conditions of this Consent Decree and to execute and bind legally such Party to this document.

55. Settling Defendant agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree, unless the United States or the State have notified Settling Defendant in writing that it no longer supports entry of the Consent Decree.

56. Settling Defendant shall identify on the attached signature page the name and address of an agent who is authorized to accept service of process by mail on its behalf with respect to all matters arising under or relating to this Consent Decree. Settling Defendant agrees to accept service in that manner and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including but not limited to service of a summons. The Parties agree that Settling Defendant need not file an answer to the NRD Complaint in this action unless or until 60 Days after the Court expressly declines to enter this Consent Decree.

XXIII. FINAL JUDGMENT

57. Upon entry of this Consent Decree by the Court, this Consent Decree shall constitute the final judgment between and among the United States, the State, and Settling Defendant. The Court enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS _____ DAY OF _____, 2021.

United States District Judge

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Barge Commercial Line LLC:

FOR THE UNITED STATES OF AMERICA

TODD KIM
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice

SCOTT
CERNICH

Digitally signed by
SCOTT CERNICH
Date: 2021.10.04
15:47:04 -04'00'

Date: 10/04/2021

SCOTT M. CERNICH (DC 479851), T.A.
Senior Counsel
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044-7611
(202) 514-0056
scott.cernich@usdoj.gov

DUANE A. EVANS
United States Attorney
Eastern District of Louisiana

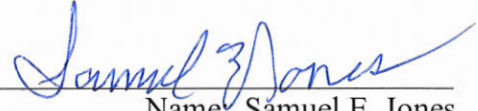
Date: 10/04/2021

/s/ Peter M. Mansfield
Peter M. Mansfield
Assistant United States Attorney
Chief of the Civil Division
Office of the United States Attorney
650 Poydras Street, Suite 1600
New Orleans, LA 70130

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Barge Commercial Line LLC:

FOR THE STATE OF LOUISIANA

**LOUISIANA OIL SPILL COORDINATOR'S OFFICE,
DEPARTMENT OF PUBLIC SAFETY**



Name: Samuel E. Jones

Title: Louisiana Oil Spill Coordinator

Date: Sept 16, 2021

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Barge Commercial Line LLC:

COASTAL PROTECTION AND RESTORATION AUTHORITY



Name: Kyle R. "Chip" Kline, Jr.
Title: Chairman

Date: _____

9/13/21

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Barge Commercial Line LLC:

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY



Name: Chuck Carr Brown, PhD.

Title: Secretary

Date: 9/16/2021

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Commercial Barge Line LLC:

LOUISIANA DEPARTMENT OF NATURAL RESOURCES




Name: Thomas F. Harris
Title: Secretary

Date: 9-16-2021

THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Commercial Barge Line LLC:

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

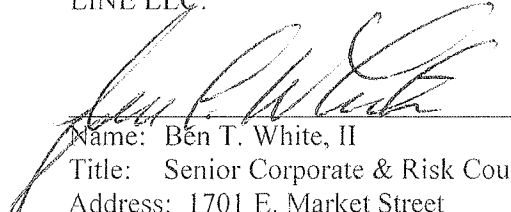

Name: Jack Montoucet
Title: Secretary

Date: 9/16/2021

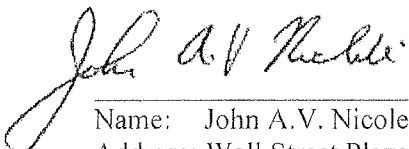
THE UNDERSIGNED PARTY enters into this consent decree in the matter of United States and State of Louisiana v. American Commercial Barge Line LLC:

FOR AMERICAN COMMERCIAL BARGE
LINE LLC:

9/9/2021
Dated


Name: Ben T. White, II
Title: Senior Corporate & Risk Counsel
Address: 1701 E. Market Street
Jeffersonville, IN 47103

Agent authorized to accept service on behalf of AMERICAN COMMERCIAL BARGE LINE
LLC:


Name: John A.V. Nicoletti
Address: Wall Street Plaza
88 Pine Street, 7th Floor
New York, New York 10005
Telephone Number: (212) 220-3830
Facsimile Number: (212) 220-3780

Consent Decree in *U.S. and State of Louisiana v. American Commercial Barge Line, LLC*

APPENDIX A

Final Damage Assessment and Restoration Plan and Environmental Assessment

FINAL
DAMAGE ASSESSMENT AND RESTORATION PLAN
AND
ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER OIL SPILL
GRETNA – NEW ORLEANS, LOUISIANA
JULY 23, 2008

NRDA Case File# LA2008_0723_0230 (Gretna/MS River 2008)

Prepared by:

Louisiana Oil Spill Coordinator's Office
Louisiana Department of Environmental Quality
Louisiana Department of Natural Resources
Louisiana Department of Wildlife and Fisheries
Coastal Protection and Restoration Authority of Louisiana
United States Department of the Interior, United States Fish and Wildlife Service
National Oceanic and Atmospheric Administration

August 2021

(This page intentionally left blank.)

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Purpose and Need for Restoration.....	1
1.2	Summary of the Incident.....	2
1.3	Summary of Response Actions	5
1.4	NRDA Authority and Legal Requirements.....	6
1.4.1	Overview of Legal Requirements	6
1.4.2	National Environmental Policy Act Compliance.....	8
1.4.3	Coordination with Responsible Party	8
1.4.4	Public Participation.....	9
1.4.5	Administrative Record (AR).....	9
1.5	Summary of Natural Resource Injuries.....	10
1.6	Summary of Preferred Restoration Actions	10
2	AFFECTED ENVIRONMENT	12
2.1	Physical Environment	12
2.1.1	Climate.....	13
2.1.2	Regional Hydrology.....	13
2.1.3	Water Quality.....	14
2.1.4	Air Quality	15
2.2	Biological Environment	17
2.2.1	Vegetation.....	17
2.2.2	Aquatic Habitat	17
2.2.3	Fisheries	18
2.2.4	Essential Fish Habitat	18
2.2.5	Wildlife	19
2.2.6	Endangered and Threatened Species	20
2.2.7	Historic and Cultural Resources	21
2.3	Economic and Human Use Resources	22
3	INJURY ASSESSMENT AND QUANTIFICATION	23
3.1	Preassessment Activities and Findings	23
3.1.1	Shoreline Surveys	23
3.1.2	Aquatic Impacts	24
3.1.3	Sediments and Restoration Material	24
3.1.4	Birds.....	26

3.1.5	Recreational Lost Use	26
3.1.6	Other Potential Impacts.....	27
3.2	Injury Assessment Methodology.....	27
3.2.1	Assessment Strategy	27
3.2.2	Assessment Methods.....	27
3.3	Injury Assessment and Quantification	28
3.3.1	Shoreline Habitats.....	28
3.3.2	Aquatic Fauna	31
3.3.3	Sediment for Restoration Projects	31
3.3.4	Birds.....	33
3.3.5	Human Use.....	36
4	RESTORATION ALTERNATIVES	39
4.1	Restoration Strategy	39
4.2	Selection of Restoration Alternatives.....	40
4.2.1	Evaluation of Restoration Types.....	40
4.2.2	Identifying Potential Restoration Actions.....	42
4.3	Evaluation of the Potential Restoration Alternatives	43
4.3.1	No Action/Natural Recovery Alternative	43
4.3.2	Preferred Alternative - Suite of Restoration Actions, including (1) the Woodlands Acquisition, Management and Recreational Enhancement Project, (2) Marsh Creation via a Crevasse Splay, and (3) Recreational Fishing Enhancements	44
4.4	Considered but Eliminated from Further Evaluation	49
4.4.1	Lake Maurepas Land Protection Project.....	49
4.4.2	Cash Settlement for Acquisition/Protection of Coastal Forested Wetlands	49
4.5	Conclusion.....	50
5	POTENTIAL ENVIRONMENTAL IMPACTS OF UNDERTAKING THE PREFERRED RESTORATION ACTIONS	52
5.1	Physical Environment	53
5.1.1	Air and Noise Pollution	53
5.1.2	Water Quality.....	53
5.2	Biological Environment	54
5.2.1	Vegetation	54
5.2.2	Aquatic Habitat	55
5.2.3	Fisheries and EFH.....	55
5.2.4	Wildlife	56
5.2.5	Endangered and Threatened Species	56

5.3	Socioeconomic Environment	57
5.3.1	Environmental Justice.....	57
5.3.2	Recreation	57
5.3.3	Cultural resources	58
5.4	Cumulative Impacts.....	58
5.4.1	No Action.....	59
5.4.2	Preferred Alternative.....	59
5.5	Finding of No Significant Impact.....	59
6	COMPLIANCE WITH OTHER AUTHORITIES	60
7	REFERENCES	62
8	RESPONSE TO PUBLIC COMMENT.....	66

(This page intentionally left blank.)

EXECUTIVE SUMMARY

On July 23, 2008, the M/T Tintomara collided with Barge DM932 controlled by the UTV Mel Oliver at River Mile Marker (RMM) 98 on the Mississippi River near New Orleans, Louisiana (herein referred to as the “Incident”). Barge DM932 was carrying 9,983 barrels (419,286 gallons) of No. 6 fuel oil within three tanks. After the accident, approximately 3,250 barrels (136,500 gallons) of oil were recovered from one tank that had not been ruptured by the collision. Until lightering was completed, oil was occasionally released from the sunken Barge DM932 over a two-week period prior to and during salvage. Overall, an estimated 6,734 barrels (282,828 gallons) of oil were released into the waters of the Mississippi River. The release lasted until August 10, 2008, when final salvage efforts were completed. American Commercial Barge Line LLC (ACL) was identified as the Responsible Party for the Incident.

Spilled oil from the Incident spread more than 100 miles downriver and affected over 5,000 acres of shoreline habitat. Aquatic and shoreline habitats within the batture (land between the river and its levee, which consists of, forested wetlands, scrub-shrub habitat, mud flats, and freshwater marsh) were oiled, as were birds, mammals, reptiles, and other wildlife.

The United States Coast Guard (USCG) directed Incident response. As part of the response, the USCG closed the Mississippi River from RMM 98 to the Southwest Pass Sea Buoy (near the Gulf of Mexico) from July 23 until July 29, 2008. Response actions included lightering and recovering Barge DM932, deployment of hard and absorbent boom, wildlife surveys and hazing, and capture and rehabilitation of oiled wildlife.

This Final Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA) was prepared by the Louisiana Oil Spill Coordinator’s Office, Department of Public Safety (LOSCO); the Louisiana Department of Environmental Quality (LDEQ); the Louisiana Department of Natural Resources (LDNR); the Louisiana Department of Wildlife and Fisheries (LDWF); the Coastal Protection and Restoration Authority (CPRA); the United States Department of the Interior (DOI), represented by the United States Fish and Wildlife Service (FWS); and the United States Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); collectively acting as Trustees for the restoration of natural resources, their services, and public use services that were exposed to and/or injured as a result of the Incident. This DARP/EA is issued to inform the public concerning the Trustees’ authorities and responsibilities under the Oil Pollution Act of 1990 (OPA) (33 United States Code [U.S.C.] § 2701 et seq.), the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA) (Louisiana Revised Statutes [R.S.] 30:2451 et seq.), and the National Environmental Policy Act (NEPA) (83 Stat. 852; 42 U.S.C. § 4321 et seq.); and to respond to public comment on alternatives first proposed to restore resources injured by the Incident in the Draft DARP/EA, published May 20, 2021. In this DARP/EA, the Trustees evaluate potential restoration alternatives which exhibit sufficient nexus to the natural resources injured by the Incident and would provide resource services to compensate the public for natural resource losses resulting from the discharged oil and select a preferred alternative. The Trustees’ preferred restoration alternative includes multiple projects that provide restoration of natural resources commensurate with injuries to forested wetlands, emergent wetlands, fisheries habitat, and natural resource use by the general public. The Trustees’ preferred restoration alternative was developed as part of the

Natural Resource Damage Assessment (NRDA) process through negotiations with ACL on a potential settlement of natural resource damage claims. Implementation of the preferred alternative is contingent upon future court approval of a settlement agreement between the Trustees and ACL, which would be subject to public notice and comment.

This DARP/EA provides information on, among other things:

- the Incident, spill response, restoration to pre-spill baseline conditions, and legal authorities (Chapter 1);
- the natural resources found in the area affected by the Incident (Chapter 2);
- the nature and extent of the natural resources exposed and/or injured and the lost public uses resulting from the Incident (Chapter 3);
- the range of potential restoration alternatives identified by the Trustees under OPA and National Environmental Policy Act (NEPA) to restore the natural resources and resource services injured by the Incident and the identification of the Trustees' preferred restoration alternative (Chapter 4);
- the analysis of potential environmental consequences of the restoration alternatives considered by the Trustees (Chapter 5); and
- a summary of, and response to, public comments received on the Draft DARP/EA (Chapter 8).

The Trustees prepared the EA portion of this document using the 1978 Council on Environmental Quality (CEQ) NEPA Regulations. NEPA reviews initiated prior to the effective date of the revised CEQ regulations may be conducted using the 1978 version of the regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020. Under 40 C.F.R. §§ 1501.5 and 1501.6, for the purposes of this NEPA analysis, DOI is the lead agency and NOAA is a cooperating agency. NOAA may adopt the EA, as appropriate, in accordance with 40 CFR § 1506.3 and its agency-specific NEPA procedures. This review began on September 20, 2016 when the Trustees issued the Notice of Intent to Conduct Restoration Planning for the NRDA; DOI and NOAA decided to proceed under the 1978 regulations.

ABBREVIATIONS

ACL	American Commercial Barge Line LLC
AR	Administrative Record
BLH	Bottomland Hardwood
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CPRA	Coastal Protection and Restoration Authority
DARP	Damage Assessment and Restoration Plan
DNWR	Delta National Wildlife Refuge
DOI	United States Department of the Interior
DSAYs	Discounted Service Acre Years
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
FWS	United States Fish and Wildlife Service
GIS	Geographic Information System
HDDA	Hopper Dredge Disposal Area
HEA	Habitat Equivalency Analysis
LAC	Louisiana Administrative Code
R.S.	Louisiana Revised Statute
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDWF	Louisiana Department of Wildlife and Fisheries
LOSCO	Louisiana Oil Spill Coordinator's Office, Department of Public Safety and Corrections
LCWCRTF	Louisiana Coastal Wetlands Conservation and Restoration Task Force
MRFSS	Marine Recreational Fisheries Statistical Survey
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NRDA	Natural Resource Damage Assessment
OPA	Oil Pollution Act
OSPRA	Oil Spill Prevention and Response Act
REA	Resource Equivalency Analysis
RMM	River Mile Marker
RRP Program	Regional Restoration Planning Program
SCAT	Shoreline Clean-up and Assessment Technique
U.S.	United States
USACE	United States Army Corps of Engineers, Mississippi River Valley New Orleans Division
U.S.C.	United States Code
USCG	United States Coast Guard

LIST OF TABLES

Table 1.1	Summary of natural resource injury estimates caused by the Incident.
Table 1.2	Preferred restoration actions for injured resources and services associated with the Incident.
Table 2.1	Combined monitored and evaluated assessments of water quality for the Mississippi River.
Table 2.2	National Ambient Air Quality Standards and Louisiana Attainment Status.
Table 2.3	EFH requirements for managed species that may occur in the preferred marsh creation project area.
Table 2.4	Federal and State Endangered and Threatened Species and their critical habitats in Plaquemines Parish, Louisiana.
Table 3.1	Scheduled dates for Bayou Dupont construction prior to and after the Incident.
Table 3.2	Acres of batture and riprap impacted by the Incident.
Table 3.3	Acres of batture and riprap impacted by the Incident with a 5 percent correction factor for batture.
Table 3.4	Affected shoreline acreage and initial service losses in Discounted Service Acre Years (DSAYs).
Table 3.5	Lost use of river sediment for restoration material in marsh creation projects at the time of the Incident.
Table 3.6	Oiled wildlife observed by response personnel or reported by private citizens from July 24 to August 25, 2008.
Table 3.7	Rationale for using a multiplier to estimate bird mortality.
Table 3.8	Summary of recreational fishing damages.
Table 3.9	Summary of New Orleans Riverwalk damages.
Table 3.10	Summary of all resources/services categories, amount injured, and injury/damages estimates resulting from the Incident.
Table 4.1	Restoration types that would compensate for injured natural resources.
Table 4.2	Preferred restoration types based on injured natural resources and their services and the Trustees' preferred restoration actions.

LIST OF FIGURES

Figure 1.1	Barge DM932 Incident location along the Mississippi River.
Figure 1.2	Photos depicting various observed impacts as a result of the Incident.
Figure 1.3	Various locations associated with the USACE maintenance dredging operations along the Mississippi River and within the Bird's Foot Delta.
Figure 3.1	Mississippi River Sediment Delivery System - Bayou Dupont (BA-39) project area and features.
Figure 3.2	Shoreline habitat impacted by the Incident.
Figure 4.1.	Woodlands Acquisition, Management, and Recreational Enhancement Project subject property (approximate boundary mapped in yellow), Plaquemines Parish.
Figure 4.2.	Crevasse splay project area, Pass-A-Loutre State Wildlife Management Area.

1 INTRODUCTION

1.1 Purpose and Need for Restoration

On July 23, 2008, Barge DM932 owned and operated by American Commercial Barge Line, LLC (ACL) was struck broadside by the M/V Tintomara on the Mississippi River at River Mile Marker (RMM) 98 near New Orleans, Louisiana. The collision compromised the internal compartment of the barge, causing it to discharge a significant amount of No. 6 fuel oil into the Mississippi River (herein referred to as the “Incident”). Natural resources within and adjacent to the Mississippi River were injured from exposure to oil as a result of the Incident. Public services provided by these natural resources were also injured. The natural resource trustees for the Incident (Trustees; see below) prepared this Final Damage Assessment and Restoration Plan and Environmental Assessment (DARP/EA) to inform the public about natural resource injuries caused by the Incident; potential restoration alternatives considered to compensate the public for those injuries; and projects the Trustees identified as the “Preferred Alternative” to accomplish the goal of restoring, rehabilitating, replacing and/or acquiring the equivalent of those resources and the services they provide.

This document is part of the Natural Resource Damage Assessment (NRDA) process being performed pursuant to the Oil Pollution Act of 1990 (OPA) and the Louisiana Oil Spill Prevention and Response Act of 1991 (OSPRA) by the Louisiana Oil Spill Coordinator’s Office, Department of Public Safety (LOSCO); the Louisiana Department of Environmental Quality (LDEQ); the Louisiana Department of Natural Resources (LDNR); the Louisiana Department of Wildlife and Fisheries (LDWF); the Coastal Protection and Restoration Authority (CPRA); the U.S. Department of the Interior (DOI), represented by the United States Fish and Wildlife Service (FWS); and the U.S. Department of Commerce, represented by the National Oceanic and Atmospheric Administration (NOAA); collectively known as the Trustees. The purpose of the Trustees’ preferred restoration actions, as outlined in this DARP/EA, is to make the public whole for injuries to natural resources and their services resulting from the Incident by returning the injured natural resources and related services to their “baseline” condition (i.e., the condition that would have occurred but for the Incident) and compensating the public for associated interim losses. This DARP/EA also serves as an Environmental Assessment to meet requirements of the National Environmental Policy Act (NEPA) by evaluating the reasonably foreseeable impacts of the preferred restoration actions on the quality of the physical, biological, and cultural environment in the Mississippi River watershed.

This DARP/EA presents information about the affected environment (Chapter 2), the Trustees’ estimates of exposure and/or injury and service losses to natural resources caused by the Incident (Chapter 3), potential restoration alternatives and the selection of the Trustees’ preferred restoration alternative (Chapter 4), and an analysis of the potential environmental consequences of those potential alternatives (Chapter 5). This DARP/EA also addresses public comment received on the Draft DARP/EA, published on May 20, 2021 (Chapter 8).

ACL has been identified as the Responsible Party for the Incident under OPA and OSPRA. As part of the NRDA process, the Trustees reached agreement on a potential settlement of natural resource damage claims with ACL. The terms of the proposed settlement are subject to public

notice and comment, following lodging of a proposed consent decree with the United States District Court, and any settlement is subject to approval by the United States District Court. Accordingly, implementation of the restoration projects identified by the Trustees as the preferred restoration alternative in this DARP/EA is contingent upon future court approval of a settlement agreement between the Trustees and ACL, which would only occur following public notice and comment. Additionally, implementation would occur as described in a court-approved consent decree.

1.2 Summary of the Incident

On July 23, 2008, the M/T Tintomara collided with Barge DM932 controlled by the UTV Mel Oliver at approximately RMM 98 on the Mississippi River near New Orleans, Louisiana (Figure 1.1). Barge DM932 was carrying 9,983 barrels (419,286 gallons) of No. 6 fuel oil within three tanks. After the accident, approximately 3,250 barrels (136,500 gallons) of oil were recovered from one tank that had not been ruptured by the collision. Until lightering was completed, oil was discharged from the sunken barge over a two-week period, prior to and during salvage. Overall, an estimated 6,734 barrels (282,828 gallons) of oil were discharged into the waters of the Mississippi River. The discharge lasted until August 10, 2008, when final salvage efforts were completed. Due to a high-water event that created swift current conditions in the river at the time of the discharge, the oil spread more than 100 miles downriver and affected over 5,000 acres of batture and riverine shoreline.

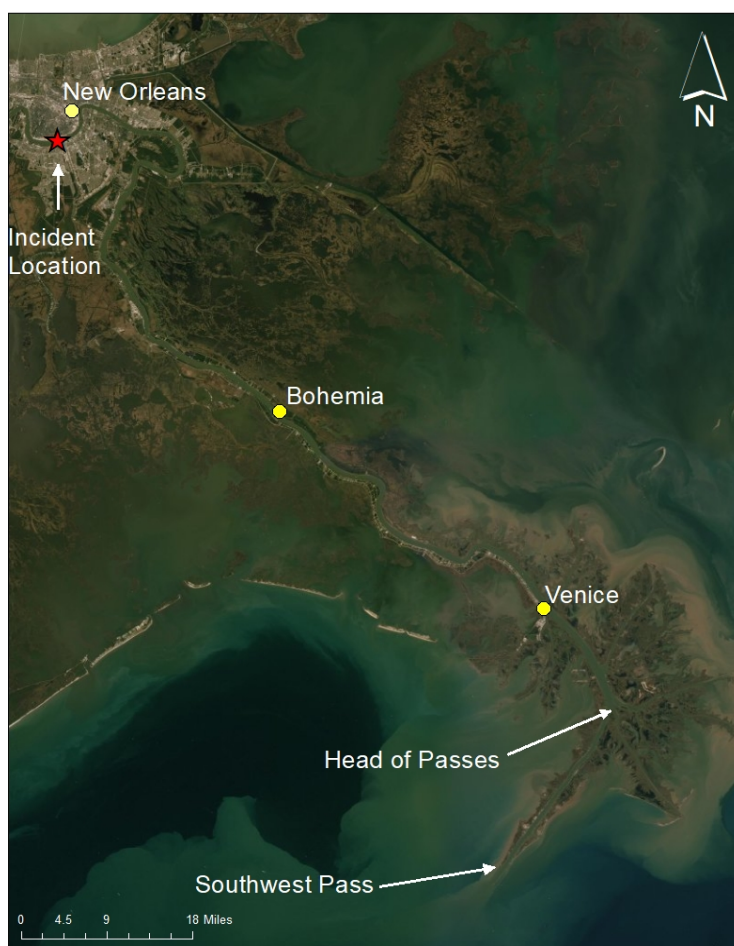


Figure 1.1. Barge DM932 Incident location along the Mississippi River.

Number 6 fuel oil is nearly the same density as water, and discharged oil was observed floating throughout the Incident area. By day two of the Incident, aerial reconnaissance surveys revealed sheens and tar patties at Head of Passes, as well as in the marsh areas located adjacent to breaks in the riverbank. As the water receded, oil became stranded in the batture, especially on and in crevices within riprap and along the shoreline (Figure 1.2). Response personnel discovered later that oil had also sunk to the river bottom near Head of Passes. Observations made during barge salvage operations suggested that some of the oil also sank, mixed with suspended sediment, and

then resurfaced downstream when entrained in turbulence. The result was patchy surface oiling throughout the Incident area, with unknown amounts or effects of submerged oil.

As a result of the Incident, Mississippi River surface waters, shoreline habitats, fauna inhabiting these areas, and river sediments were exposed to the discharged No. 6 fuel oil. State and Federal Trustee agency personnel and ACL representatives responded to the Incident as part of the Unified Command (see Section 1.3) and observed potential injury to habitat and other biological resources, as well as effects on recreational activities.

During the Incident, the United States Army Corps of Engineers (USACE) was conducting unrelated regular maintenance dredging operations for navigational purposes in the Mississippi River at Southwest Pass (Figures 1.1 and 1.3). On July 28, 2008, two hopper dredges conducting those operations were ordered to cease activities when they encountered oil, oil sheen, and droplets of oil in the hopper section of the dredge. The USACE was also dredging at the Hopper Dredge Disposal Area (HDDA) nearby as part of a sediment mining project to create emergent marsh within the Delta National Wildlife Refuge (DNWR) (Figure 1.3). Concurrent with suspending the hopper dredge work, the USACE suspended the sediment mining work at the HDDA because of the potential for placing oil contaminated dredged material into the DNWR. The USACE, United States Coast Guard (USCG), NOAA Scientific Support, FWS, and State trustee agencies developed a phased dredging plan, which allowed necessary dredging operations to resume based on identified procedures and alternative disposal areas (Disposal Sites A and B), and which would be implemented should oil contamination of dredged material recur (Figure 1.3). However, a significant amount of dredge material that otherwise would have been used in unrelated restoration projects ongoing at the time was lost due to contamination and/or alternative placement.



Figure 1.2. Photos depicting various observed impacts as a result of the Incident. A) Mississippi River facing downstream from the French Quarter in New Orleans, LA (July 23, 2008). B) Riverwalk area in New Orleans, LA (July 24, 2008). C) A typical clean-up crew working in the batture (July 24, 2008). D) Typical affected riprap. E) Heavily oiled batture, including silver sheen and black streamers, south of the Incident location (July 25, 2008). F) Stranded oil in the batture (August 1, 2008).

1.3 Summary of Response Actions

Federal and State Trustee agencies, as well as ACL and its Oil Spill Response Operators, began responding to the oil discharges from Barge DM932 on July 24, 2008. The USCG assumed leadership of the Unified Command in its role as Federal On-scene Coordinator. The Unified Command included representatives from ACL, FWS, NOAA, LDEQ, LOSCO, and LDWF. The USCG closed the Mississippi River from RMM 98 to the Southwest Pass Sea Buoy (near the Gulf of Mexico) from July 23, 2008, until July 29, 2008. Restrictions on speed and travel in some areas of the river continued after this time during barge salvage operations. On July 25, 2008, the FWS initiated aerial reconnaissance to determine the extent of oil discharged downriver, and Wildlife Rehabilitation and Education (Huston, TX) set up rehabilitation facilities for oiled wildlife in Venice, Louisiana. By the afternoon of July 25, 2008, there were numerous reports and confirmed sightings of oiled wildlife in New Orleans and downstream on the Mississippi River. To facilitate reporting, a hotline for the public to report oiled wildlife observations was activated on July 26, 2008. From July 30 until August 19, 2008, the U.S. Department of Agriculture's Wildlife Services helped with wildlife capture and was instrumental in evaluating and ameliorating oil impacts on wildlife.

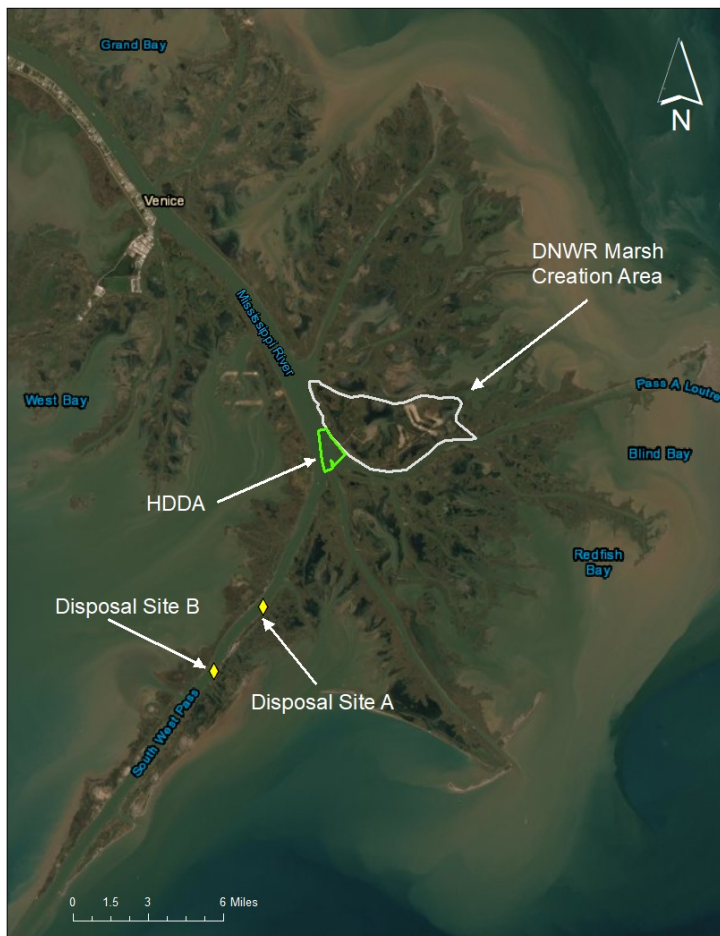


Figure 1.3. Various locations associated with the USACEs' maintenance dredging operations along the Mississippi River and within the Bird's Foot Delta.

Response actions included lightering and recovering Barge DM932 and deployment of hard and absorbent boom. Oil skimmers were deployed to recover accessible oil on the surface. Wildlife response personnel initiated wildlife surveys, hazing, and capture and rehabilitation of oiled wildlife. Shoreline and batture areas were cleaned using sorbents, sometimes preceded by water flushing and/or removal of oiled soil. Most of the oiled shoreline and batture areas were cleaned manually. Vessels moored along the river and exposed to oil were also decontaminated.

Air monitoring was conducted early during the Incident and downstream drinking water intakes were closed to protect human health. By July 30, 2008, all drinking water intakes below RMM

97 were reopened, but advisories were published for intakes at critical points during the barge salvage operation period, a period that ended on August 10, 2008.

After August 10, 2008, no significant oiling was observed in open water in the river. Response efforts subsequently concentrated within impacted batture and shoreline habitats. By August 19, 2008, approximately 130 miles of shoreline (65 percent of the potentially impacted area) had been cleaned or recommended for no further response action. Residual oil on areas of riprap remained the most challenging for response operations to recover because no cleaning methods were effective at removing pooled oil from within rock crevices. An organic material was used to coat the remaining pooled oil within riprap to reduce the threat of physical contact to wildlife.

On August 27, 2008, response operations were temporarily suspended due to the impending passage of Hurricane Gustav on September 1, 2008. At that time, two affected areas remained under active investigation by response personnel: (1) heavily oiled riprap along a segment of the lower Mississippi River, and (2) heavily oiled riprap adjacent to the Riverfront in downtown New Orleans. By September 25, 2008, crews renewed response actions in those areas. On October 29, 2008, all response operations were complete. Overall, response activities resulted in the recovery of approximately 3,250 barrels (136,500 gallons) of oil from the barge, recovery of approximately 3,000 bbls (126,000 gallons) of discharged oil from the environment, activation of 2,300 responders and 200 response boats, the cleaning of 1,185 vessels, and deployment of 130,000 linear feet of boom.

1.4 NRDA Authority and Legal Requirements

The federal Trustees for this Incident (FWS and NOAA) were designated pursuant to the National Contingency Plan (NCP) (40 C.F.R. §300.600) and Section 1006(b) of OPA (42 U.S.C. §2706(b)). State Trustees for Louisiana are designated by the Governor of Louisiana pursuant to the NCP (40 C.F.R. §300.605) and OSPRA (R.S. 30:2451 et seq.), and include LOSCO, LDEQ, LDNR, LDWF, and CPRA. Each designated Trustee is authorized to act on behalf of the public to assess and recover natural resources and resource services injured or lost as the result of a discharge or discharges of oil.

1.4.1 Overview of Legal Requirements

The NRDA process conducted pursuant to OPA, and the regulations promulgated thereunder at 15 C.F.R. Part 990 and OSPRA (R.S. 30:2451 et seq.), consists of three phases: (1) Preassessment, (2) Restoration Planning, and (3) Restoration Implementation. OPA authorizes federal, state, and tribal natural resource trustees to initiate a damage assessment when natural resources may have been injured and/or natural resource services impaired as a result of, or a substantial threat of, a discharge of oil. OPA regulations provide specific definitions for the following terms:

- “Injury” is “an observable or measurable adverse change in a natural resource or impairment of a natural resource service”;
- “Natural resources” are “land, fish, wildlife, biota, air, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by,

appertaining to, or otherwise controlled by the United States, any state or local government, or Indian tribe”; and

- “Natural resource services” are “functions performed by a natural resource for the benefit of another resource and/or the public.”

During the Preassessment Phase, the Trustees determined that the provisions and determinations of OPA and OSPRA applied to the Incident, including: (1) one or more incidents had occurred, (2) the discharge was not from a public vessel, (3) the discharge was not from an onshore facility subject to the Trans-Alaska Authority Act, (4) the discharge was not permitted under federal, state, or local law, and (5) public trust natural resources and/or services may have been injured as a result of the discharge. On the basis of those determinations, on September 20, 2016, the Trustees issued the Notice of Intent to Conduct Restoration Planning for the NRDA case associated with the Incident. The Trustees began the Restoration Planning Phase even as they were still finishing some Preassessment activities. In the Restoration Planning Phase, the Trustees evaluated and quantified the nature and extent of injuries to natural resources and services, and determined the need for, type of, and scale of appropriate restoration actions. Using the information developed during the Restoration Planning Phase, the Trustees published a Draft DARP/EA for public comment May 20, 2021 to outline their injury assessment and proposal for restoring natural resources injured as a result of the Incident.

The first component of the Restoration Planning Phase was injury assessment. The Trustees evaluated injury to: (1) shoreline habitats, including forested and emergent wetlands and riprap, (2) aquatic fauna, (3) lost use of dredged sediments for restoration projects, (4) birds, and (5) public recreational uses, including fishing and riverfront use. As provided at 15 C.F.R. § 990.14(c)(1), the Trustees invited ACL to participate in the injury assessment component of the NRDA (see also Section 1.4.3).

The second component of the Restoration Planning Phase is restoration selection (also known herein as the Trustees’ restoration planning process). Considering the nature and extent of exposure and/or injuries to natural resources caused by the Incident, the Trustees developed a plan for restoring the injured resources and services, which is set forth in this DARP/EA. The Trustees identified reasonable restoration alternatives and evaluated those alternatives to determine the preferred restoration actions from among them. As a part of this process, the Trustees considered the extent to which the potential restoration alternatives provide benefits to more than one natural resource and/or service, as well as the cost-effectiveness of the alternatives. Any funds recovered in settlement of natural resource damage claims, other than reimbursement of Trustee costs, would be expended in accordance with this DARP/EA.

Natural resource Trustees may settle claims for natural resource damages under OPA at any time during the damage assessment process, provided that the settlement is: (1) adequate in the judgment of the Trustees to satisfy the goals of OPA, and (2) fair, reasonable, and in the public interest, with particular consideration of the adequacy of the settlement to restore, replace, rehabilitate, or acquire the equivalent of the injured natural resources and services.

1.4.2 National Environmental Policy Act Compliance

Any restoration of natural resources under OPA must comply with NEPA, as amended (42 U.S.C. § 4321 et seq.), and its implementing regulations (40 C.F.R. § 1500-1508) where federal actions may significantly impact the human environment. In compliance with NEPA and its regulations, this DARP/EA identifies potential restoration alternatives, describes the purpose and need for the action, evaluates reasonably foreseeable environmental consequences, and provides for public participation in the decision-making process. The information on environmental consequences will be used in making a threshold determination as to whether preparation of an Environmental Impact Statement (EIS) is required prior to the selection of the Trustees' preferred restoration actions.

For certain preferred restoration actions (e.g., recreational use restoration preferred herein), project-specific NEPA analysis may be needed as the plans for these restoration actions become more concrete. For example, the Trustees could in the future conduct a consistency analysis to determine whether the anticipated environmental impacts of the specific projects proposed for implementation fall within the range of impacts evaluated in the DARP/EA. If so, a consistency determination could be made and no further NEPA review would be necessary to implement the projects. If the anticipated impacts fall outside of the scope of those evaluated in the DARP/EA, however, the Trustees could choose not to proceed with the specific projects, or choose to conduct the follow-up NEPA analysis necessary to select projects for implementation. Similarly, if there is a significant change to any of the restoration projects selected in this DARP/EA, the Trustees would consider the need to develop a restoration plan amendment and/or additional environmental analyses in accordance with NEPA regulations, which typically require a supplemental NEPA analysis be prepared if new information arises that would substantively impact previous decision-making or if there is a substantial change to a selected restoration project (40 C.F.R. § 1502(9)(d)). Project changes not deemed significant could be outlined in a supplemental information report, or similar type document, for posting to the Administrative Record.

The EA portion of this document is being prepared using the 1978 CEQ NEPA Regulations. NEPA reviews initiated prior to the effective date of the revised CEQ regulations may be conducted using the 1978 version of the regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020. Under 40 C.F.R. §§ 1501.5 and 1501.6, for the purposes of this NEPA analysis, DOI is the lead agency and NOAA is a cooperating agency. NOAA may adopt the EA, as appropriate, in accordance with 40 CFR § 1506.3 and its agency-specific NEPA procedures. This review began on September 20, 2016 when the Trustees issued the Notice of Intent to Conduct Restoration Planning for the NRDA; DOI and NOAA decided to proceed under the 1978 regulations.

1.4.3 Coordination with Responsible Party

The OPA and the OSPRA regulations for NRDA (15 C.F.R. Part 990 and OSPRA at LAC 43:XXIX.101 et seq.) require the Trustees to invite the responsible party to participate in the damage assessment process. Accordingly, on August 6, 2008, the Trustees invited ACL to participate in the damage assessment process for this Incident. ACL formally accepted the

Trustee's invitation on August 12, 2008. Prior to this time, the Trustees and ACL were already working together cooperatively to collect field data for Preassessment and injury assessment analyses. On January 16, 2009, the Trustees and ACL signed a Cooperative Agreement for conducting a NRDA for the Incident. This Cooperative Agreement addressed the Trustees' and ACL's desire to expedite the Preassessment data collection process by using resource-specific protective assumptions for shoreline impacts. ACL was therefore involved in the design, performance, and funding of several Preassessment activities to collect ephemeral data. Information collected by all parties was shared, as were the results of analyses undertaken independently by the Trustees and ACL. This coordination reduced duplication of effort, increased the cost-effectiveness of the assessment process, and increased sharing of information. The Trustees' assessment used data produced by the Trustees, ACL (when validated), and other sources.

While proceeding with the injury assessment for the Incident, the Trustees also participated in settlement negotiations with ACL. Doing so is consistent with the OPA regulations, which are intended, in part, to facilitate settlement of damage claims without litigation. As required by the regulations at 15 C.F.R. §990.14 (c)(4), the Trustees retain final authority to make determinations regarding injury and restoration.

1.4.4 Public Participation

On September 20, 2016, the Trustees published a Notice of Intent to conduct restoration planning in the Louisiana Register (Vol. 42, No. 09, pgs. 1572-1573, September 20, 2016); *The Times Picayune*, New Orleans, LA; and *The Advocate*, Baton Rouge, LA, and New Orleans, LA. The Notice of Intent stated that, based on Preassessment findings, the Trustees were proceeding with restoration planning following OPA and OSPRA regulations and opening an Administrative Record to facilitate public involvement in the restoration planning process (see section 1.4.5).

This DARP/EA provides information about the nature and extent of natural resource injuries resulting from the Incident and identifies preferred restoration actions to address those injured resources. Public participation in development of the DARP/EA is an integral component of the Restoration Planning Phase. Soliciting public comment is consistent with all federal and state laws and regulations that apply to the natural resource damage assessment and restoration process, including Section 1006 of OPA, the NRDA regulations at 15 C.F.R. Part 990, Section 2480 of OSPRA, the OSPRA regulations at LAC 43:XXIX.101 *et seq.*, and NEPA, as well as associated implementing regulations.

The Trustees published a Draft DARP/EA on May 20, 2021 for a 30-day comment period and considered comments received by the end of the comment period in development of the DARP/EA. Comments received are summarized and responded to in Chapter 8.

1.4.5 Administrative Record (AR)

The Trustees maintain records to document the information considered by the Trustees as they developed this DARP/EA. Additional information and documents, including public comments received on the Draft DARP/EA, other related restoration planning documents, and the

references cited in Chapter 7 are also part of the AR. These records are compiled in the AR, available to the public online at <https://data.losco.org/> and at the address listed above for the Louisiana Oil Spill Coordinator's Office. This AR facilitates public participation in the assessment process and will be available for use in future administrative or judicial review of Trustee actions to the extent provided by federal or state law.

1.5 Summary of Natural Resource Injuries

The Trustees reviewed information gathered from response activities, Preassessment, and the Restoration Planning Phase to help determine potential natural resource injuries. The Trustees identified a number of resources injured by the Incident. These resources (as categorized by the Trustees for the purpose of this assessment) include shoreline habitat (i.e., batture, riprap), aquatic fauna, sediment for restoration projects, birds, and recreational uses (i.e., fishing and riverfront use). The Trustees used past experience from similar injury analyses and expertise of local agency personnel and habitat experts to derive the recovery time to baseline service flows and complete injury estimates. Table 1.1 provides a summary of the natural resource injuries caused by the Incident.

Table 1.1. Summary of natural resource injury estimates caused by the Incident.

Injured Resources/Services	Injury Estimate
Shoreline Habitats	
<i>Batture</i>	52.8 acres with heavy oiling 5,308.7 acres with light oiling
<i>Riprap</i>	11.79 acres with heavy oiling
Aquatic Fauna	32,063 kg of river shrimp biomass lost
Sediment for Restoration Projects	(a) Maintenance Dredging: 2.04 marsh acres for 15 years (b) Sediment Mining: 13.75 marsh acres for 15 years; Bayou Dupont, 493 marsh acres for 2 months
Birds	
<i>Aquatic</i>	540 dead birds
<i>Terrestrial</i>	2,896 dead birds
Human Use	
<i>Recreational Fishing</i>	8,369 foregone trips
<i>Riverfront Use</i>	11,683 total lost equivalent trips

1.6 Summary of Preferred Restoration Actions

The goal of restoration under OPA and OSPRA is to restore injured natural resources to the conditions that existed prior to the Incident and to compensate the public for interim losses. The Trustees evaluated a range of restoration actions with the potential to compensate for the natural resource and resource service losses resulting from the Incident. In this DARP/EA the Trustees select preferred restoration actions directed at habitat services, aquatic fauna, birds, and lost public use (i.e., recreational fishing and riverfront use) to compensate for those losses, summarized in Table 1.2.

Table 1.2. Preferred restoration actions for injured resources and services associated with the Incident.

Injured Resources/Services	Preferred Restoration Actions
Shoreline Habitats	
<i>Batture</i>	Land acquisition and forested wetland enhancement
<i>Riprap</i>	
Aquatic Fauna	Marsh creation – crevasse splay
Sediment for Restoration Projects	Marsh creation – crevasse splay
Birds	
<i>Aquatic</i>	Marsh creation – crevasse splay
<i>Terrestrial</i>	Land acquisition and forested wetland enhancement
Human Use	
<i>Recreational Fishing</i>	Enhance public access to natural resources for recreational use
<i>Riverfront Use</i>	

2 AFFECTED ENVIRONMENT

This chapter provides a general description of the environment and natural resources that may be affected by restoration activities, as required by NEPA (40 C.F.R. § 1502.15). The preferred restoration activities would be located in Region 2 of Louisiana's Regional Restoration Planning Program (RRP Program)¹. Regional boundaries are described in Section 5.0 of the RRP Program Final Programmatic Environmental Impact Statement (NOAA et al. 2007). The physical environment includes the waters and sediments of the Mississippi River, its associated shoreline habitats, and emergent wetlands of the Bird's Foot Delta in Plaquemines and St. Bernard Parishes, Louisiana.

2.1 Physical Environment

The State of Louisiana is located along the north-central coast of the Gulf of Mexico. Over time, the Mississippi River has created a number of deltaic lobes along Louisiana's Gulf coast, the most recent of which is the area below New Orleans at the present mouth of the river, where the channel forks into many passages. This area is also referred to as the "Bird's Foot Delta." Between New Orleans and the Bird's Foot Delta, the Mississippi River shoreline consists of a mixture of man-made structures (e.g., industrial facilities, wharfs, docks, seawalls, borrow pits, and riprap), forested wetlands, scrub-shrub habitat, mud and sand flats, and freshwater marsh. Beyond the Mississippi River levee system, south of the greater New Orleans area, there are two hurricane protection levee systems in Plaquemines Parish (i.e., the New Orleans to Venice Hurricane Protection Levee and the Plaquemines Parish Nonfederal Hurricane Protection Levee²) and one hurricane protection levee system in St. Bernard Parish (i.e., part of the Lake Pontchartrain and Vicinity Hurricane Protection Levee system). The landscape surrounding the river within those hurricane protection levee systems consists of a mixture of industrial facilities, residential properties, agricultural lands, pasture, cypress swamp, bottomland hardwood (BLH) forest, and scrub-shrub habitat. Beyond the hurricane protection levee systems in Plaquemines and St. Bernard Parishes, habitats within the Barataria Basin (to the west) and Breton Sound Basin (to the east) consist of remnant cypress swamp and fresh marsh along the northernmost reaches of the basins and a mixture of fresh, intermediate, brackish, and saline marshes throughout the remaining areas. Those marshes support a productive commercial fishery and oil and gas industry and provide over-wintering habitat for migratory waterfowl and year-round habitat for a variety of mammals, birds, reptiles, and amphibians. Coastal Louisiana consists of a low elevation coastal zone experiencing some of the highest rates of relative sea level rise in the world, which contributes to significant marsh loss. Factors contributing to this trend include sea level rise and local subsidence (Keogh and Törnqvist 2019; USACE 2019).

¹ Federal and Louisiana natural resource trustees developed the statewide RRP Program to assist natural resource trustees in carrying out their NRDA responsibilities for discharges or substantial threats of discharges of oil. The goals of this statewide Louisiana RRP Program are to: 1) expedite and reduce the cost of the NRDA process; 2) provide for consistency and predictability by describing in detail the NRDA process, thereby increasing understanding of the process by the public and industry; and 3) increase restoration of lost trust resources and services. Attainment of these goals will serve to make the NRDA process as a whole more efficient in Louisiana.

² The New Orleans to Venice Hurricane Protection Levee and the Plaquemines Parish Non-federal Hurricane Protection Levee terminate on the left descending bank at Bohemia, Louisiana, and terminate on the right descending bank at Venice, Louisiana (Figure 1.1).

2.1.1 Climate

Situated along the northern Gulf of Mexico between 29 and 33 degrees north latitude, Louisiana's climate is humid, subtropical. The average annual temperature for southeastern Louisiana is 67 degrees Fahrenheit (°F), with mean monthly temperatures ranging from 82°F in August to 52°F in January; average annual precipitation is 57 inches (USACE 2016). During the summer months, prevailing southerly and southeasterly winds transport warm, moist air from the Gulf of Mexico across the coast. From September to May, more variable and moderate weather conditions prevail as arctic and polar air masses associated with extratropical storms periodically inundate the state and produce cooler and drier conditions. In addition to precipitation, these storms can produce significant changes in water level in the coastal bays and marshes over relatively short periods. Louisiana is also susceptible to tropical weather systems such as tropical waves, tropical depressions, tropical storms, and hurricanes. These weather systems can produce significant amounts of precipitation over a very short period and are often accompanied by strong winds, tornadoes, and storm surges along the coastal areas.

2.1.2 Regional Hydrology

The restoration actions included in the Trustees' preferred restoration alternative would be located in different areas along the Mississippi River in Plaquemines and St. Bernard Parishes, Louisiana. The Mississippi River is the largest river system in North America and is Louisiana's most important surface water resource. The Mississippi River discharges flows from approximately 41 percent of the 48 contiguous states. Discharges in the river average 470,000 cubic feet per second (cfs), and the average annual high and low discharges are 1,050,000 cfs and 161,000 cfs, respectively (USFWS 2003). Mississippi River stages at Venice, Louisiana, average 2.4 feet National Geodetic Vertical Datum (NGVD) with an average annual high of 5.0 feet NGVD and average annual low of 0.3-foot NGVD (USFWS 2003). The Mississippi River Ship Channel, Louisiana, Project authorized the enlargement of the Mississippi River to a project depth of 55 feet between Baton Rouge and the Gulf of Mexico; however, the current navigation channel is maintained at 48 feet in most places (USACE 2016). Mississippi River depths can, however, exceed 160 feet in some locations (USACE 2020). River flows are confined within flood protection levees on each side of the river for most of its length. Flood protection levees extend down to Venice on the west side of the river and to Bohemia on the east side of the river (Figure 1.1). Downstream from Bohemia, river flows escape the channel through several natural and man-made openings in the riverbank.

Suspended sediment in the Mississippi River has been monitored since 1949. Suspended sediment concentrations decreased significantly from 1950 to 1966, but minimally since that time. In 1951, suspended sediment loads averaged 1,576,000 tons per day and currently average 436,000 tons per day (Louisiana Coastal Wetlands Conservation and Restoration Task Force [LCWCRTF] 1993). Large quantities of sediment are dredged from the Mississippi River each year as part of the USACE's maintenance of the Mississippi River navigation channel. Large amounts of sediment are also lost to the Gulf of Mexico as river flows reach the deep open waters of the continental shelf.

Typical astronomical tides in coastal Louisiana are diurnal (i.e., one high tide and one low tide per day) and can range as much as 2 feet in the spring, but the mean tidal range is 0.51 feet (USACE 2016). There is tidal influence on the lower Mississippi River and its associated wetland habitats, but that influence differs throughout the year pending seasonal and weather conditions and flood stage of the river.

There are three hydrologic basins in proximity to the Incident location: the Pontchartrain Basin to the north, the Barataria Basin to the west, and the Breton Sound Basin to the east. Those hydrologic basins are influenced by the Mississippi River on a seasonal basis pending water levels in the river and the operation of spillways and sediment diversions.

2.1.3 Water Quality

As part of its surface water quality monitoring program, the LDEQ routinely monitors 25 parameters on a monthly basis using a four-year cycle fixed site network, as well as a long-term network of 21 sites (LDEQ 2018). Each year of the four-year cycle runs from October through September for a given set of sites before changing to the next set. Long-term network sites are sampled every month and year regardless of the four-year cycle. Based on those data and the use of less-continuous information, such as fish consumption and swimming advisories, the LDEQ assesses water quality fitness for the following uses: primary contact recreation (swimming), secondary contact recreation (boating), fish and wildlife propagation (fishing), drinking water supply, outstanding natural resource use, agriculture, and shellfish propagation (LDEQ 2018). Based on existing data, water quality is determined to be either fully supporting or not supporting those uses.

The LDEQ currently maintains two water quality monitoring sites near the projects considered by the Trustees. Both sites are part of the four-year cycle network. One site, located in South Pass south of Pilot Town, represents subsegment 070401. The second site, located in East Bay (also south of Pilot Town), represents subsegment 070601. The nearest water quality monitoring station located in the Mississippi River is near Belle Chasse, approximately 77 miles upstream from Head of Passes. That station and one other upstream station are used to assess water quality in the Mississippi River from Monte Sano Bayou, near Baton Rouge, to Head of Passes, subsegment 070301. Table 2.1 provides a summary of the 2018 Integrated Report Assessments for the three lowest subsegments of the Mississippi River.

Table 2.1. Combined monitored and evaluated assessments of water quality for the Mississippi River (LDEQ 2018).

Waterbody Subsegment Code	Location Description	Primary Contact Recreation	Secondary Contact Recreation	Fish and Wildlife Propagation
070301	Mississippi River – from Monte Sano Bayou to Head of Passes	Full	Full	Full
070401	Mississippi River Passes – Head of Passes to Mouth of Passes; includes all passes in the Bird's Foot Delta (Estuarine)	Full	Full	Full

070601	Mississippi River Basin Coastal Bays and Gulf Water to the State 3-mile limit	Full	Full	Not Supporting
--------	---	------	------	----------------

2.1.4 Air Quality

The LDEQ maintains a statewide monitoring network that consists of 43 air-monitoring stations. The data collected are used to determine compliance with national ambient air quality standards (NAAQS) and track trends in air quality. The USEPA Office of Air Quality Planning and Standards set NAAQS for six principal pollutants considered harmful to public health and the environment. Termed criteria pollutants, the six are: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate (PM_{2.5} and PM₁₀), and sulfur dioxide (SO₂). Volatile organic compounds, many of which are hazardous air pollutants, are not listed as criteria air pollutants but are measured at selected sites throughout Louisiana. Units of measure for the standards are parts per million (ppm) or parts per billion (ppb) by volume, milligrams per cubic meter of air (mg/ m³), and micrograms per cubic meter of air (µg/m³).

The Clean Air Act establishes two types of national air quality standards, primary and secondary. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. A geographic area that meets or exceeds primary standards is classified as an attainment area. Areas that violate NAAQS for one or more of the six criteria pollutants are classified as nonattainment areas. Table 2.2 provides standards for each pollutant and attainment status for Louisiana.

Information on nonattainment/maintenance status for each parish by year can be accessed at: https://www3.epa.gov/airquality/greenbook/anayo_la.html

Table 2.2. National Ambient Air Quality Standards (EPA n.d.) and Louisiana Attainment Status (LDEQ 2016).

Pollutant	Primary/ Secondary	Averaging Time	Level	Form	Attainment Status
Carbon Monoxide	Primary	8 – hour 1 – hour	9.0 ppm 35.0 ppm	Not to be exceeded more than once per yr	Attainment
Lead	Primary and Secondary	Rolling 3 month avg	0.15 µm/m ^{3a}	Not to be exceeded	Attainment
Nitrogen Dioxide	Primary	1 – hour	100.0 ppb	98 th percentile of 1 – hr daily max conc, avgd over 3 yrs	Attainment
	Primary and Secondary	Annual	53.0 ppb ^b	Annual mean	
Ozone	Primary and Secondary	8 – hour	0.070 ppm ^c	Annual 4 th highest daily	Attainment

				max 8 hr concentration avgd over 3 yrs	
Particle Pollution PM2.5	Primary	Annual	12.0 $\mu\text{m}/\text{m}^3$	Annual mean avgd over 3 yrs	Attainment
	Secondary		15.0 $\mu\text{m}/\text{m}^3$		
	Primary and Secondary	24 hour	35.0 $\mu\text{m}/\text{m}^3$	98 th percentile, avgd over 3 yrs	
Particle Pollution PM 10	Primary and Secondary	24 – hour	150.0 $\mu\text{m}/\text{m}^3$	Not to be exceeded more than once per yr on avg over 3 yrs	Attainment
Sulfur Dioxide	Primary	1 – hour	75.0 ppb ^d	99 th percentile of 1 – hr daily max conc avgd over 3 yrs	Non- attainment for St. Bernard Parish only
	Secondary	3 – hour	0.5 ppm	Not to be exceeded more than once per yr	

^a In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 $\mu\text{g}/\text{m}^3$ as a calendar quarter average) also remain in effect.

^b The level of the annual NO₂ standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

^c Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O₃ standards additionally remain in effect in some areas. Revocation of the previous (2008) O₃ standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.

^d The previous SO₂ standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO₂ standards or is not meeting the requirements of a SIP call under the previous SO₂ standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

2.1.5 Noise

The Noise Control Act of 1972 (42 U.S.C. §4901 et seq.) establishes coordination of Federal noise-control activities and provides information to the public regarding noise emissions. There are many different sources of noise in and near the restoration project areas including but not limited to commercial and recreational boats, automobiles and trucks; aircraft; and industry-related noise (such as oil and gas facilities).

The primary sources of noise in the nearshore environment are transportation and construction related activities. Transportation noise includes traffic noise from automobiles, trucks, and motorcycles; railway transportation services; and aircraft (including helicopters) take-offs, landings, and overflights from public and private airfields. Construction noise is created during a variety of activities, including but not limited to, construction and demolition projects, site preparation (e.g., land clearing, grading, excavation), and repair and maintenance activities. These actions can result in relatively high noise levels within several hundred feet of the activity. Noise levels generated can fluctuate depending on the type, number, and duration of use of heavy equipment for construction activities and can differ in effect by the type of activity, existing site conditions (vegetation to buffer sound) and existing ambient noise levels.

2.2 Biological Environment

2.2.1 Vegetation

Vegetative communities are very diverse along the lower Mississippi River in Plaquemines and St. Bernard Parishes. Typically, fresher vegetative communities (e.g., batture forest, BLH forest, swamp, or fresh marsh) occur near the river with a gradation to saline marsh toward Breton Sound to the east and Barataria Bay to the west. Tree species common to BLH forests include, but are not limited to, various water-tolerant oak species, red maple, sweetgum, hackberry, bitter pecan, water hickory, and planar tree. Swamps are commonly dominated by bald cypress and tupelo gum with occasional black willow and red maple. Species common to all four marsh types (i.e., fresh, intermediate, brackish, and saline) are found in many areas. Emergent marsh species include elephant's ear, common reed, bulltongue, alligatorweed, delta duck potato, soft rush, black needlerush, smartweed, Walter's millet, saltmeadow cordgrass, saltmarsh cordgrass, freshwater threesquare, Olney bulrush, saltmarsh bulrush, torpedograss, giant cutgrass, deer pea, and cattail. Spoil banks and natural ridges include black willow, rattlebox, eastern baccharis, elephant's ear, deer pea, and common reed. Submerged and floating-leaved species include Eurasian milfoil, southern naiad, sago pondweed, curly-leaf pondweed, big pondweed, and water stargrass. All of the wetland habitats affected by the Incident and that would be affected by the preferred restoration alternative provide ecosystem services, such as filtration, protection of inhabited coastal areas from wind and storm surge during tropical weather systems, and protection of freshwater vegetative communities in the upper basin from increased marine/tidal influence.

2.2.2 Aquatic Habitat

Aquatic habitat of the lower Mississippi River and Bird's Foot Delta consists of surface water, sediments, overhanging vegetation, woody structures, pools, riffles, intertidal emergent vegetation, and mudflats that support all or a portion of the lifecycles of plants, benthic invertebrates, fish, other aquatic organisms, reptiles, amphibians, birds, and mammals. Benthic invertebrates are vitally important in the aquatic food chain, playing essential roles in energy and nutrient transfer from primary producers, such as algae and phytoplankton, to predatory fish, and as decomposers. Benthic invertebrates include organisms such as clams, snails, mussels, and the larval forms of some insects (e.g., dragonflies, midges, mayflies).

A number of factors contribute to the degradation of aquatic habitat in the Mississippi River and its tributaries, including the release of hazardous substances, nonpoint source pollution, stream channelization, urban and suburban development, industrial development, and oil and gas exploration and development.

2.2.3 Fisheries

The Mississippi River and its distributaries and associated wetlands provide habitat for a diversity of freshwater fisheries many of which are commercially and recreationally important. The freshwater fish community of the lower Mississippi River includes, but is not limited to, sturgeons, common carp, buffalofishes, carpsuckers, blue sucker, catfishes, silversides, darters, freshwater drum, skipjack herring, crappie, minnows, chubs, sunfishes, bass, paddlefish, gars, and shads (Baker et. al. 1991). Other aquatic organisms such as the river shrimp (*Macrobrachium ohione*) also inhabit the river and provide a food source for commercial and recreational fishes.

The Bird's Foot Delta supports a diverse assemblage of estuarine-dependent fishes and shellfishes, and species present is largely dictated by river flood stage, salinity levels, and season. During low-salinity periods, species such as Gulf menhaden, blue crab, white shrimp, and striped mullet may be present in the area. During high-salinity periods, more salt-tolerant species such as spotted seatrout, black drum, red drum, Atlantic croaker, sheepshead, southern flounder, and brown shrimp may move into the area. Wetlands throughout the area also support small resident fishes and shellfish such as least killifish, sheepshead minnow, sailfin molly, grass shrimp and others. Those species are typically found along marsh edges or among submerged aquatic vegetation and provide forage for a variety of fish and wildlife.

2.2.4 Essential Fish Habitat

Features of the marsh creation project within the Bird's Foot Delta (see section 4.3.2.2) may be located within an area identified as Essential Fish Habitat (EFH) by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). The 1998 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council identifies EFH in the potential project area to be estuarine emergent wetlands, submerged aquatic vegetation, estuarine water column, and mud, sand, shell, and rock substrates. Under the MSFCMA, wetlands and associated estuarine waters in the project area are identified as EFH for postlarval/juvenile and subadult brown shrimp; postlarval/juvenile and subadult white shrimp; and postlarval/juvenile, subadult, and adult red drum. Table 2.3 provides a more detailed description of EFH within the project area.

Table 2.3. EFH requirements for managed species that may occur in the preferred marsh creation project area.

Species	Life Stage	Essential Fish Habitat	Occurrence in Project Area
Brown shrimp (<i>Farfantepenaeus aztecus</i>)	post-larval/ juvenile	marsh edge, SAV, tidal creeks, inner marsh	All habitats are found throughout the project area
	subadult	mud bottoms, marsh edge	All habitats are found throughout the project area

White shrimp (<i>Litopenaeus setiferus</i>)	post-larval/ juvenile, subadult	marsh edge, SAV, marsh ponds, inner marsh, oyster reefs	All habitats are found throughout the project area (excluding oyster reefs)
Red drum (<i>Sciaenops ocellatus</i>)	post-larval/ juvenile	SAV, estuarine mud bottoms, marsh/water interface	All habitats are found throughout the project area
	subadult	Mud bottoms, oyster reefs	All habitats are found throughout the project area (excluding oyster reefs)
	Adult	Gulf of Mexico and estuarine mud bottoms, oyster reefs	Estuarine mud bottoms are found within open water areas

2.2.5 Wildlife

The forested wetlands associated with the lower Mississippi River support a wide variety of plant and animal species. Twenty-four migratory bird Species of Greatest Conservation Need (SGCN), as identified by the Louisiana Wildlife Action Plan (WAP), are associated with batture forest, BLH forest, and cypress-tupelo-blackgum swamp in Plaquemines and St. Bernard parishes (Holcomb et al. 2015). Wood stork, swallow-tailed kite, bald eagle, chimney swift, yellow-throated vireo, and prothonotary warbler (all SGCN) occur in all of these forest types in the region, and 18 additional bird SGCN occur in one or more of these forest habitats (Holcomb et al. 2015). Many other bird species, including herons, egrets, woodpeckers, and additional songbirds also utilize these forested wetlands. Bald eagles nest in the region, although no known nest locations occur in the project area. Other wildlife utilizing forested wetlands along the Mississippi River includes, but is not limited to, white-tailed deer, swamp rabbit, northern raccoon, and various species of frogs, toads, and salamanders.

The Bird's Foot Delta provides expansive salt, brackish, intermediate and freshwater marsh habitats that are important for many species of wildlife, including birds, mammals, reptiles, and amphibians. Of 41 bird SGCN associated with these marshes in Plaquemines and St. Bernard parishes, 22 occur within all four identified marsh types, including mottled duck, northern pintail, canvasback, redhead, lesser scaup, least bittern, glossy ibis, roseate spoonbill, osprey, bald eagle, black rail, king and clapper rails (depending on salinity), marbled godwit, dunlin, short-billed dowitcher, gull-billed tern, Caspian tern, Forster's tern, short-eared owl, and Nelson's sparrow (Holcomb et al. 2015). An additional 11 bird SGCN are associated with three of the four marsh types in the area, including brown pelican, American bittern, little blue heron, reddish egret, least tern, royal tern, Sandwich tern, loggerhead shrike, sedge wren, marsh wren, and LeConte's sparrow (Holcomb et al. 2015).

Mammals found within the Bird's Foot Delta include nutria, muskrat, mink, river otter, and raccoon, all of which are commercially important furbearers. Reptiles and amphibians are common in the low-salinity brackish and intermediate marshes found within the area. These 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.

2.2.6 Endangered and Threatened Species

The Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. § 1531, et seq.) instructs federal agencies to carry out programs for the conservation of endangered and threatened species and to conserve the ecosystems upon which these species depend. The LDWF's Wildlife Diversity Program also lists species that are of special concern to the state. Table 2.4 provides a list of federal and state recognized endangered or threatened species known to occur in Plaquemines and St. Bernard Parishes where the preferred restoration alternative would occur.

Requests to review projects for potential impacts to endangered and threatened species protected by federal and state laws are sent to the FWS's Louisiana Ecological Services Office and the LDWF's Wildlife Diversity Program, respectively. Those reviews would be completed as part of the project-specific planning processes and selected projects will be modified as necessary to avoid adverse impacts on federal and state listed species.

Table 2.4. Federal and State Endangered and Threatened Species and their critical habitats in Plaquemines Parish, Louisiana³.

Species	Critical Habitat (CH)	Federal Status	State Status
<i>Mammals</i>			
West Indian manatee (<i>Trichechus manatus</i>)	None in Louisiana	Threatened	S1N ^a
Sperm whale (<i>Physeter macrocephalus</i>)	None in Louisiana	Endangered	SZ ^b
Bryde's whale (<i>Balaenoptera edeni</i>)	None	Endangered	-----
<i>Birds</i>			
Eastern black rail (<i>Laterallus jamaicensis jamaicensis</i>)	None	Threatened	S2N ^c / S1B ^d
Piping plover (<i>Charadrius melodus</i>)	Yes	Threatened	S2N
Red knot (<i>Calidris canutus rufa</i>)	None	Threatened	S2N
<i>Reptiles</i>			
Green sea turtle (<i>Chelonia mydas</i>)	None in Louisiana	Threatened ^e	S1N
Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	None in Louisiana	Endangered ^e	SZ
Kemp's Ridley sea turtle (<i>Lepidochelys kempii</i>)	None in Louisiana	Endangered ^e	S1B, S3N ^f
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	None in Louisiana	Endangered ^e	SZ
Loggerhead sea turtle	None in Louisiana	Threatened ^e	S1B, S3N

³ Current federally and state listed species lists for Plaquemines and St. Bernard Parishes were accessed on March 11, 2021, at <https://www.fws.gov/southeast/pdf/fact-sheet/louisiana-ecological-services-field-office-t-and-e-species.pdf>, <https://www.fisheries.noaa.gov/southeast/consultations/southeast-region>, and https://www.wlf.louisiana.gov/assets/Resources/Publications/Wildlife_Action_Plans/Wildlife_Action_Plan_Revisions_2019.pdf.

Species	Critical Habitat (CH)	Federal Status	State Status
<i>(Caretta caretta)</i>			
Fish			
Atlantic sturgeon <i>(Acipenser oxyrinchus desotoi)</i>	Yes	Threatened ^e	S1 ^g
Pallid sturgeon <i>(Scaphirhynchus albus)</i>	None	Endangered	S1
Shovelnose sturgeon <i>(Scaphirhynchus platyrhynchus)</i>	None	Threatened (S/A) ^h	S4 ⁱ
Smalltooth sawfish <i>(Pristis pectinata)</i>	None in Louisiana	Endangered	S1

^a S1N = Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation; the occurrence of nonbreeding individuals.

^b SZ = Transient species in which no specific consistent area of occurrence is identifiable

^c S2N = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation; the occurrence of nonbreeding individuals.

^d S1B = Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation; the occurrence of breeding individuals.

^e The United States Fish and Wildlife Service and the National Marine Fisheries Service share consultation authority for these species.

^f S3N = Rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations); the occurrence of nonbreeding individuals.

^g S1 = Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation

^h S/A = Similarity of Appearance. For law enforcement purposes shovelnose sturgeon are classified as “Threatened due to Similarity of Appearance” wherever they coexist with the endangered pallid sturgeon. They are biologically neither endangered nor threatened but this designation extends the Endangered Species Act take prohibitions to shovelnose sturgeon, shovelnose-pallid sturgeon hybrids, and their roe when associated with a commercial fishing activity.

ⁱ S4 = apparently secure in Louisiana with many occurrences (100 to 1,000 known extant populations).

2.2.7 Historic and Cultural Resources

Various cultural resources occur throughout the Louisiana coastal zone, including both prehistoric and historic sites. Ever since the early 1600s when the French explorer René-Robert Cavelier, Sieur de La Salle, successfully reached the mouth of the Mississippi River, the delta has become widely known as an area with an abundance of fish and wildlife resources. A variety of cultures have existed in the region, including Native American, Spanish, French, British, Acadian (Cajun), Creole, and African.

Two National Historical Monuments are located along the lower Mississippi River, but they are not located within any of the project areas for the preferred alternative. Fort Jackson is located on the right descending bank near RMM 20 and Fort St. Philip is located across the river on the left descending bank. They served as the Confederate Army’s primary defensive positions protecting New Orleans during the Civil War. Access to Fort St. Philip is limited, and it is in a lesser state of preservation than Fort Jackson, which is a well-maintained and popular point of interest for

tourists. Fort Jackson also serves as the location of Plaquemines Parish's annual Parish Fair and Orange Festival each December.

Remnant army facilities from World War II occur within the forest enhancement site of the preferred alternative. A National Historic Preservation Act evaluation will be conducted as part of the project-specific planning process and the selected project(s) will be modified as necessary to avoid impacts to historical and cultural resources.

2.3 Economic and Human Use Resources

Lands within Plaquemines and St. Bernard Parishes are directly used for agriculture, residential, commercial, and industrial development. Forested wetlands and emergent marshes of the parishes are regularly used for commercial and recreational crabbing, trapping, hunting, and fishing. Ecotourism (e.g., bird and wildlife viewing) is also increasing in importance in these areas. Oil and gas exploration and production also occur throughout the region.

Emergent wetlands provide essential nursery habitat for commercially and recreationally important fishes and shellfishes such as Gulf menhaden, red drum, spotted seatrout, southern flounder, brown shrimp, white shrimp, blue crab and others. In 2016, commercial fishery landings in coastal Louisiana exceeded 1.2 billion pounds with a dockside value of over \$426 million (NOAA 2017). More blue crab was caught in Louisiana (40.1 million pounds) than in any other state, producing revenue of more than \$49.4 million (NMFS 2018) and Louisiana has led the United States in shrimp landings every year since 2000 (LDWF 2016). Additionally, Louisiana's oyster production accounted for an average of 34% of annual landings of all oysters in the United States from 1997 through 2017 (LDWF 2020). Landings revenue for saltwater recreational fishing in the Gulf Region totaled \$858 million in 2015 with the highest revenue (\$373 million) in Louisiana (NMFS 2018).

Louisiana's coastal wetlands continue to support fur harvest and produce more alligator skins than any other State in the nation. As of 2018, nutria, raccoon, beaver and river otter constitute 87 percent of the total value (over \$1 million dollars annually) within Louisiana's fur industry (LDWF 2018a). The state's wild alligator harvest continues to represent an important economic resource. Since 1972, over one million wild alligator skins have been harvested, over 10 million alligator eggs have been collected and over 6.4 million farm raised alligators have been sold bringing in millions of dollars of revenue to landowners, trappers and farmers. Conservative estimates have valued these resources at over \$100 million dollars annually, providing significant, direct economic benefit to Louisiana (LDWF 2018b).

Plaquemines Parish, Louisiana has one of the smaller populations in Southeast Louisiana. According to the US Census Bureau 2019 data (US Census Bureau n.d.), Plaquemines Parish population of 23,197 was primarily White (69.4%). Minorities reported in the Parish included: Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or other Pacific Islander. The mean household income was reported to be \$52,386 and 15.5% of the Parish population lived below the poverty line. Of those under age 65 living in the Parish, 7.7% had a disability and 10.3% lived without health insurance.

3 INJURY ASSESSMENT AND QUANTIFICATION

This chapter describes the Trustees' assessment of the nature, degree, and extent of injuries to natural resources and services resulting from the Incident. The chapter begins with an overview of data collected during the Preassessment phase of the NRDA process. Section 3.2.1 describes the Trustees' assessment strategy, including the approaches used to identify, determine, and quantify potential injuries. The remainder of the chapter presents the results of Trustee injury assessments for the specific resources affected by the Incident. Results of estimates of injuries are summarized at the end of the chapter in Table 3.10.

3.1 Preassessment Activities and Findings

The Trustees initiated Preassessment activities for the discharge shortly after notification of the Incident. The Trustees focused on collecting ephemeral data that would address three criteria defined by OPA (15 C.F.R. § 990.42) and OSPRA (LAC 43:XXIX.101 et seq.), whether:

- injuries have resulted or probably will result from the Incident;
- response actions have not adequately addressed or are not expected to address the injuries resulting from the Incident; and
- feasible primary and/or compensatory restoration actions exist to address the potential injuries.

The Trustees and ACL delineated the initial spill impact area concurrent with ongoing emergency response actions. Information collected during the Preassessment phase of the Incident is summarized below.

3.1.1 Shoreline Surveys

Overflights, boat surveys, and Shoreline Cleanup and Assessment Technique (SCAT) team data were used to document the trajectory and extent of oiling. Trustee agency personnel participated in those activities throughout the response and made a joint site visit with ACL representatives on July 31, 2008. Trustees and ACL representatives surveyed the east and west banks of the Mississippi River via helicopter from August 11-14, 2008 to determine the nature and degree of oiling along the affected shoreline. Each survey team included three people: two observers and one recorder/time-keeper. The same Trustee and ACL representatives were able to participate in all surveys. Each survey was conducted at an altitude of approximately 300 feet and a speed of approximately 60 mph. The flight path was parallel to the river, and for segments where a higher degree of oiling was suspected or observed, three or more passes over each shoreline segment were conducted (one on the river side of the batture and two on the levee side of the batture). Fewer passes were flown on downstream segments because oiling was only observed on areas of riprap. During each flight, a GPS unit was used to record time and latitude and longitude readings.

Shoreline survey data were recorded for 0.5-mile segments. Observers estimated the overall percent and relative distribution of oil in the batture. The percent of batture containing oil within each 0.5-mile segment was estimated from the edge of the river to the toe of the levee, rounded

to the nearest 5 percent. If no oil was observed, a value of zero was recorded. Each observer provided independent estimates in order to limit any bias. Independent estimates were averaged as joint records of oiling. Video and still photographs were also collected.

Based on the quality of the SCAT data, the Trustees determined that additional ground-truthing of the aerial shoreline surveys was not necessary. In addition to Trustee surveys, aerial photographs (6-inch resolution in 2006 and 1-foot resolution in 2008) provided by the Regional Planning Commission were analyzed using a Geographic Information System (GIS) and aided in determining habitat areas and associated acreages impacted by the discharged oil.

3.1.2 Aquatic Impacts

Following the Incident, the Mississippi River's water level decreased and response personnel observed oil stranded on downstream shorelines and batture areas. The Trustees assumed that the toxicity of the No. 6 fuel oil (Stout and Wang 2016) and the environmental conditions at the time of the Incident (i.e., high turbidity, high flow, elevated water level) likely resulted in the exposure of, potential injury to, and/or mortality of aquatic organisms. Accordingly, the Trustees developed a proposal using juvenile river shrimp as a surrogate species to assess the potential extent of aquatic organism exposure within the water column as a result of the Incident. This shrimp species is well described (Bauer and Delahoussaye 2008) with established migratory behavior and seasonality (peaking in mid to late July and extending through September). Its migratory behavior and seasonality made it highly vulnerable to contact (fouling) with oil from the Incident. Thus, the juvenile river shrimp is a reasonable surrogate species for aquatic life injury assessment.

3.1.3 Sediments and Restoration Material

Some of the oil released from the Incident sank as it was entrained in the sediment-laden waters of the Mississippi River. The Incident affected two ongoing marsh restoration initiatives at two separate locations and the use of river sediment as restoration material for one future marsh restoration at a third location. The three affected restoration projects included sediment mining from maintenance dredging of the Mississippi River, sediment mining at the HDDA for beneficial use of dredged material on the DNWR, and the Bayou Dupont Sediment Delivery System Project (BA-39), all of which are described in further detail below.

3.1.3.1 Maintenance Dredging for River Navigation

On July 28, 2008, two hopper dredges were conducting maintenance dredging in the Mississippi River at Southwest Pass in the vicinity of Head of Passes (Figure 1.3). The dredges reported encountering oil sheen and droplets of oil in the hopper section of the dredge. Initial product samples of the observed oil were collected by the NOAA Scientific Support Coordinator and taken to Louisiana State University for characterization and analysis. Preliminary results confirmed that the oil observed was from the Incident. Additional samples were collected by ACL, NOAA, and USACE on August 8-10, 2008, and results were presented on August 18, 2008, to the Unified Command. A "Phased Dredging Plan" was drafted on July 31, 2008, that allowed for the necessary dredging of the Mississippi River to continue regardless of the

potential oil contamination. The plan was implemented by the USACE, Unified Command, and Trustee agencies.

As a result of the implemented Phased Dredging Plan, 9,282 cubic yards of contaminated material that should have been deposited at the HDDA was deposited at an alternative disposal site (Disposal Site A, Figure 1.3) and removed from use for the subsequent year's sediment mining event cycle. In addition, 34,616 cubic yards of contaminated material was deposited at the HDDA (E. Creef, personal communication 2009). In all, the Trustees estimated that 43,898 cubic yards of restoration material were lost from these activities for restoration purposes due to contamination and/or alternative placement that was not beneficial for marsh restoration.

3.1.3.2 Sediment Mining at the HDDA – Beneficial Use of Dredged Material at DNWR

At the time of the Incident, the USACE was actively mining sediments from the HDDA and placing those sediments on the DNWR via a cutterhead hydraulic dredge in order to create marsh habitat (Figure 3.1). On July 28, 2008, the USACE directed the ongoing sediment mining work to cease because of the potential for placing contaminated dredge material onto the refuge. The sediment mining event of 2008 was therefore terminated and 295,880 cubic yards of restoration material were lost/not placed beneficially on the DNWR for habitat creation (R. Scholl, personal communication, November 10, 2009).

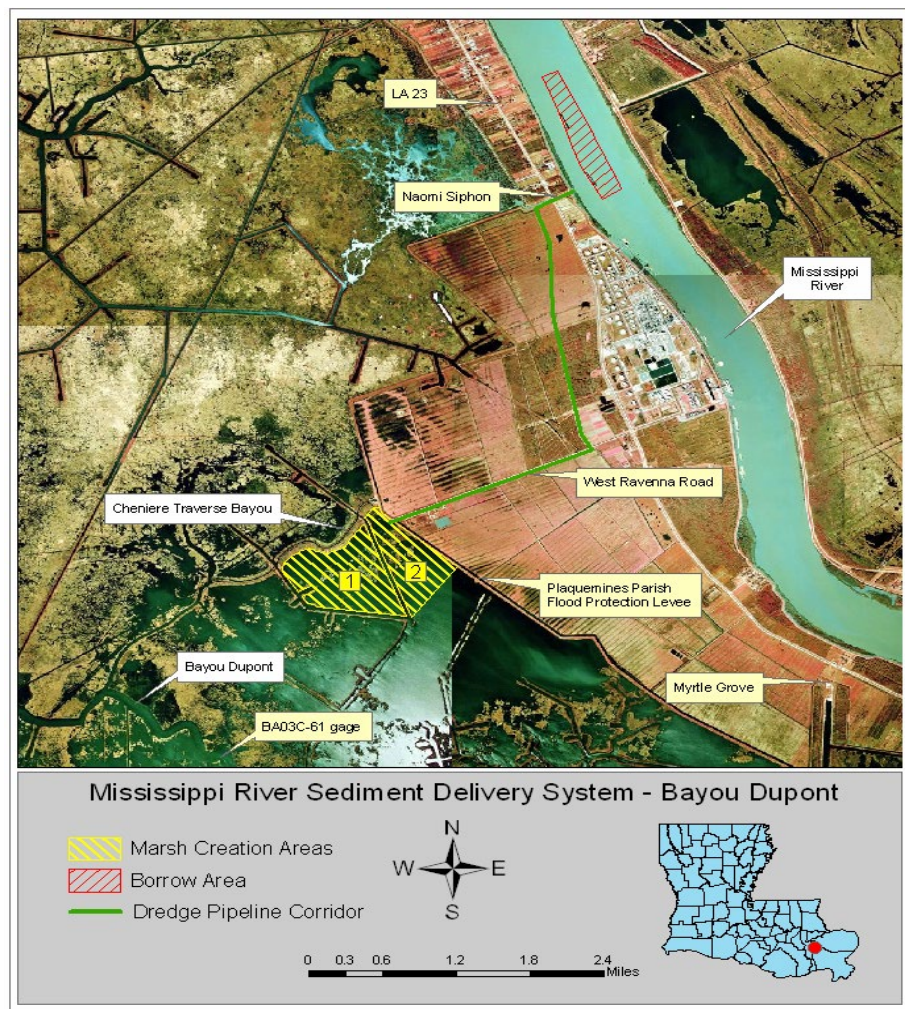


Figure 3.1. Mississippi River Sediment Delivery System - Bayou Dupont (BA-39) project area and features (taken from Lindquist 2007).

3.1.3.3 Bayou Dupont Sediment Delivery System Project (BA-39)

The Incident occurred at RMM 98, approximately 30 miles upstream from the identified borrow area for the BA-39 restoration project (shown in Figure 3.1). Hydraulic dredging in the Mississippi River for the BA-39 project had previously been scheduled to begin shortly after the Incident occurred. Consequently, there was a need to determine if oil was present at the borrow area to prevent pumping potentially contaminated sediments into the marsh ecosystem.

The LDNR and the EPA developed a sampling and analysis plan (shared with ACL on September 17, 2008) to determine the absence or presence of oil from the Incident at the proposed borrow area. A cooperative sampling effort took place on September 23-25, 2008. The results were submitted to the LDNR's Coastal Engineering Division (now Coastal Protection and Restoration Authority [CPRA]) and the EPA on October 16, 2008, and forwarded via email to ACL and LOSCO on October 24, 2008. The required sampling delayed the original construction schedule for the BA-39 restoration project by approximately two months based on the Notice to Proceed date (Table 3.1).

Table 3.1. Scheduled dates for Bayou Dupont construction prior to and after the Incident.

	Schedule Date	
	Before Incident	After Incident
Bid Advertisement	8/12/2008	10/1/2008
Pre Bid Meeting	9/23/2008	10/27/2008
Bid Opening	10/14/2008	11/20/2008
Notice to Proceed	12/1/2008	2/4/2009

The Notice to Proceed with project construction is a set date and time based on a predefined process which project managers and engineers must follow in order to obtain a contract through the Louisiana Division of Administration Office of State Purchasing. The delay of two months caused by the Incident represents a delay in marsh services provided to the public.

3.1.4 Birds

The Trustees and wildlife response survey teams conducted field surveys during the response phase of the Incident. Wildlife response survey teams patrolled the Mississippi River, recording the extent and degree of oiled wildlife, collecting oiled dead wildlife, and capturing oiled wildlife (if possible) for rehabilitation. A total of 859 birds observed with visible oil were reported by the Wildlife Group of Unified Command or private citizens along the lower Mississippi River (RMM 0 to 90) between July 24 and August 25, 2008 (Table 3.6).

3.1.5 Recreational Lost Use

During the Incident, portions of the Mississippi River below the discharge site were closed to recreational fishing access and did not reopen to all boat traffic until the evening of July 28, 2008. From July 23-28, 2008, those anglers who would have typically used the river for fishing or access to fishing locations were unable to engage in their desired activity. In addition to

fishing, the Incident affected recreational use of the riverfront⁴ in downtown New Orleans from its inception to the final date of clean up (35 days). During that time, locals and tourists who would have typically visited the New Orleans Riverwalk and associated facilities did not make their trips.

3.1.6 Other Potential Impacts

The Trustees examined evidence of injury to mammals, reptiles, and other terrestrial organisms. For example, 26 mammals and 13 reptiles were reported visibly oiled (Table 3.6). The Trustees anticipate that the preferred ecological restoration actions will benefit those resources, thereby helping to ensure that the public and environment are made whole.

3.2 Injury Assessment Methodology

3.2.1 Assessment Strategy

The goal of injury assessment under OPA and OSPRA is to determine the nature, degree, and extent of injuries, if any, to natural resources and services resulting from an incident in order to provide a technical basis for evaluating and scaling restoration actions. After identifying injured resources, the Trustees considered a number of factors to select appropriate injury assessment procedures. The development of these procedures was primarily based on: (1) information gathered during the response and Preassessment phases of the Incident; (2) relevant peer-reviewed literature; and, (3) best professional judgment of the Trustees and other experts familiar with the effects of No.6 fuel oil in similar environments.

The Trustees and ACL agreed to employ simple, cost-effective procedures for collecting data and assessing injuries to natural resources and the ecological services related to those resources, including the development of reasonable and protective assumptions that allowed assessment of injury with less investment of time and money in assessment studies, as allowed for in OSPRA (RS 30:2480(C)(8)). Injuries described herein are organized into the following categories: shoreline habitat (i.e., batture and riprap), aquatic fauna, birds, sediment for restoration projects, and recreational use (i.e., fishing and riverfront use).

3.2.2 Assessment Methods

For injury to shoreline habitats and sediments, the Trustees used a Habitat Equivalency Analysis (HEA) to quantify interim service losses (i.e., service losses incurred from the time of injury until recovery to baseline) for these habitats impacted by the Incident (NOAA 1995). Interim service losses were quantified in terms of lost service acre years, where a service acre year is the flow of services of one acre of habitat over the course of one year. The input parameters for the HEA include the total acres of injured habitat, the initial level of service losses, and the recovery curve of service flows over time.

⁴ The riverfront is defined as the area between the Mississippi River and the street car tracks, between the Riverwalk Outlet Mall to the northwest and the wharf to the southeast.

To assess aquatic injury, the Trustees used the juvenile river shrimp as a surrogate species to represent all organisms actually injured in the water column. Injury to juvenile river shrimp was classified as a combination of direct or “initial fouling”, which occurred at the time the shoreline was initially oiled, as well as “migratory fouling” as shrimp migrated upstream through oiled shoreline areas. Injury assessments also considered “production foregone,” measured either as the growth in organism biomass or number of offspring that would have been produced in the absence of the spill.

To assess the bird injury, the Trustees differentiated between aquatic birds (e.g., laughing gull, killdeer, green heron, etc.) and terrestrial birds (e.g., summer tanager, barn owl, etc.) due to their differing habitat requirements (see Table 3.6). The Trustees used a trophic transfer approach to quantify injury to aquatic birds in terms of equivalent production at the same trophic level as the habitat (i.e., restoration; see French McCay and Rowe 2003). The primary inputs include the total lost biomass (or weight of organic material), the trophic biomass transfer efficiencies, and the marsh plant production for the target habitat restoration. The Trustees used a Resource Equivalency Analysis (REA) to quantify injury to terrestrial birds. The REA was used to evaluate the direct loss (birds killed) of birds over time. Injuries to terrestrial birds were quantified in terms of lost bird years.

The Trustees assessed damages resulting from impairments to two categories of recreational use: (1) recreational fishing, and (2) general riverfront use along the New Orleans Riverwalk. To assess the recreational fishing injury, the Trustees used a benefit-transfer approach to calculate dollar values from forgone trips using estimates of baseline trips from NOAA’s Marine Recreational Fisheries Statistical Survey (MRFSS) database and count data from selected sites within the area affected by the Incident. The Trustees used intercept surveys conducted on August 2 and 23, 2008 to estimate lost trips and applied a benefit-transfer approach to calculate a damage estimate for general riverfront use along the Riverwalk.

Injury quantification (including a discount rate of 3 percent per year (NOAA 1999) is more fully described in the following sections.

3.3 Injury Assessment and Quantification

3.3.1 Shoreline Habitats

The Trustees delineated Mississippi River shoreline affected by the Incident into three categories and then used the aerial survey data collected during the Preassessment phase to determine the spatial extent and degree of the injury associated with those categories for assessment purposes:

- Batture –Shoreline that provides ecological services and is located in the area between the river and the toe of the levee. Included riprap adjacent to oiled batture.
- Riprap – Revetment along the waterfront (i.e., where no batture existed) located in front of industrial areas or other land cover types consisting of crushed stone, concrete block mats, or rock material and provides ecological services.
- Industrial – Developed areas consisting of industrial facilities, seawalls, paved areas, mowed urban lawns, and new borrow areas, that are between the river and the toe of the

levee. The Trustees concluded that these areas did not provide ecological services specifically injured by the Incident. These areas were therefore removed from the assessment.

Because of the difficulty in assessing oiling of riprap during aerial surveys, the aerial survey team included areas of riprap adjacent to visibly oiled wetland habitat the batture category. For all shoreline areas adjacent to industrial facilities, the Trustees assumed that riprap was present at the river's edge except where seawalls were present, and any oiling of that riprap was included in the riprap category. Therefore, the assessment analyzed two habitat categories for shoreline: batture and riprap (Figure 3.2).



Figure 3.2. Shoreline habitat impacted by the Incident. For the purposes of this document and injury assessment, the batture includes any forested wetlands, scrub-shrub, marsh, and mudflat habitats along the Mississippi River.

The Trustees used GIS to determine the acres of batture and riprap and used the aerial survey data collected during the Preassessment phase to estimate the degree of oiling of those habitats. All riprap was categorized as heavily oiled based on response and Preassessment survey data. Taking into consideration the high-water event at the time of the Incident, the Trustees assumed that all the batture was exposed to some amount of floating oil in the form of sheen because

survey data indicated pooled oil throughout the batture once the high water receded. Accordingly, any batture not categorized as heavily oiled was categorized as lightly oiled (i.e., sheen). Table 3.2 and Figure 3.2 represent the results of that analysis. Additional review of the GIS data indicated a potential underestimate in the batture habitat acreages. The Trustees and ACL propose to compensate for the underestimate by applying a 5 percent correction factor for the batture only, represented in Table 3.3 below.

Table 3.2. Acres of batture and riprap impacted by the Incident.

Shoreline Category	Heavily Oiled Acreage	Lightly Oiled Acreage	Total Acreage
Batture	50.24	5,055.89	5,106.13
Riprap	11.79	0.00	11.79

Table 3.3. Acreage of batture and riprap impacted by the Incident with a 5 percent correction factor for batture.

Shoreline Category	Heavily Oiled Acreage	Lightly Oiled Acreage	Total Acreage
Batture	52.8	5,308.7	5,361.5
Riprap	11.79	0.00	11.79

The Trustees used available data to estimate service losses to batture and riprap habitats resulting from the Incident. Riprap provides a substrate for the attachment of algae and refugia for some fish and invertebrate species (Curry 2000), as well as other ecological services. The Trustees assumed that habitats near the discharge before the Incident were healthy and providing 100 percent ecological services. Due to the dynamic nature of the Mississippi River environment (e.g., substantial water fluctuations), the Trustees also assumed that the above-ground vegetation and sediments in lightly oiled batture experienced an initial service loss of 5 percent and would naturally recover to baseline in 6 months on a linear trajectory, and vegetation and sediments in heavily oiled batture experienced an initial 75 percent service loss and would naturally recover to baseline within 3 years on a linear trajectory. Assumed recovery rates are supported by recovery projections in the Type A procedures developed by DOI for natural resource damage assessments under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (43 C.F.R. Part 11). The results of those analyses are illustrated in Table 3.4.

Table 3.4. Affected shoreline acreage and initial service losses in Discounted Service Acre Years (DSAYs).

Shoreline Habitat / Oiling Category	Acres	Initial Service Loss	Time to Recovery (years)	Recovery Trajectory	Injury Estimate (DSAYs)
Batture					
Lightly Oiled	5,308.7	5%	0.5	Linear	66.11
Heavily Oiled	52.8	75%	3	Linear	57.75
Riprap					
Heavily Oiled	11.79	75%	0.5	Linear	2.20

3.3.2 Aquatic Fauna

Streamers of black oil and sheen from Barge DM932 were documented across more than 100 miles of the lower Mississippi River. Dead fish were not observed after the Incident, but this is not unusual since river currents and prevailing winds typically keep dead fish from floating to the surface. Rather than conducting an exhaustive survey for affected fish, the Trustees used potential injuries to juvenile river shrimp as a surrogate for injury to aquatic fauna; the use of a surrogate or representative species in determining injury as opposed to a model that includes all potentially injured organisms can expedite assessment while still providing an accurate depiction of resources lost.

The Mississippi River is a major migration corridor for juvenile river shrimp, and the Incident occurred during peak migration. Research conducted by Dr. Ray Bauer and Dr. Frank Truesdale indicates that the upriver migration of juvenile river shrimp peaks in mid- to late-July but extends from July through September (Bauer 2008). Juvenile river shrimp typically migrate from approximately one hour after sunset to just before dawn, following the bank of the river from the water's surface to a depth of approximately 1 m and occasionally "crawling" along the bank above the water's surface in a band approximately 1 m in width (Bauer 2008). The Trustees assumed that the timing of the Incident combined with the shrimp's documented migration behavior made them vulnerable to contact with spilled oil (i.e., fouling); Juvenile river shrimp that were present when oil reached the shoreline and those migrating through oiled batture had a high likelihood of exposure. Accordingly, to address injury to aquatic fauna, the Trustees used the river shrimp as a surrogate species to represent all organisms potentially injured in the water column.

Given SCAT results and aerial surveys, the Trustees estimate that river shrimp were initially exposed to approximately 98.97km of oiled batture. Dr. Ray Bauer (personal communication, January 23, 2009) reports that the juvenile shrimp in the Mississippi River system migrate approximately 4 kilometers (km) per night and the biomass of juvenile river shrimp is equal to approximately 139.81 kilogram (kg) over 1 km of shoreline. Migrating juveniles therefore occupy the equivalent of a corridor 4 km long and 2m wide, which passes a fixed point on the bank of the river in the period of one night. The Trustees consequently estimate that migrating river shrimp were exposed for six nights during the Incident over a length of 130.36 equivalent kilometers. To determine the total lost biomass of river shrimp affected, the density of shrimp (139.81 kg/km) multiplied by the total effective kilometers oiled (229.33 km) yielded an estimated 32,063 kg of river shrimp biomass lost.

3.3.3 Sediment for Restoration Projects

One of Louisiana's highest priorities is restoration of its severely degraded coastal wetlands, which relies heavily on access to and use of Mississippi River sediments. There are two primary ways in which Mississippi River sediments are obtained for the mechanical creation or restoration of marsh: (1) sediment dredged during USACE maintenance of navigation depths in the Mississippi River is used to create and/or nourish marsh, a technique commonly referred to as "beneficial use"; and (2) specific locations in the Mississippi River are identified as borrow

sites for sediments that will be used to create and/or nourish marsh. The latter mechanism's dredging events are not tied to the USACE's maintenance dredging schedule, but rather, are conducted specifically for the purpose of creating and/or nourishing marsh. Both techniques utilize a pipeline to transport the sediment dredged from the Mississippi River bottom to areas designated for marsh creation. These restoration techniques are identified in numerous restoration planning initiatives including the Coast 2050 Plan (LCWCRTF and WCRA 1998), the Louisiana Coastal Area Ecosystem Restoration Study (USACE 2004), and Louisiana's Comprehensive Master Plan for a Sustainable Coast (CPRA 2007, 2012, 2017).

The Incident contaminated or threatened to contaminate river sediment being used for two ongoing marsh restoration initiatives and one planned marsh creation project. This caused a lost use of river sediments for marsh restoration as well as the associated services that those marsh habitats would have provided. Accordingly, the Trustees quantified the loss of marsh habitat caused by lost use of river sediments in terms of lost marsh habitat services.

3.3.3.1 Maintenance Dredging for River Navigation

The Trustees estimated that 43,898 cubic yards of restoration material were lost for restoration purposes as a result of the modifications to dredging actions resulting from oil contamination during the Incident. To calculate the amount of acres that should have been created by this material, the Trustees assumed a theoretical fill area designed with a 9.5-foot crown height and 300-foot crown width with a side slope of 5:1. Assuming a cut-to-fill ratio of 1.5:1, the Trustees estimated that 2.04 acres of marsh habitat were not created due to the modified maintenance dredging event.

The Trustees used a theoretical marsh creation project to calculate the amount of services that 2.04 acres of marsh would have produced to determine an injury estimate. To estimate resulting injuries, the Trustees assumed that the theoretical marsh creation project would:

- be constructed in 2008;
- mature at a linear rate in seven years with no plantings and would be providing full services by 2015;
- have a 50 percent relative productivity as compared to natural marsh; and
- provide 15 years⁵ of habitat services following completion date, thus services would end by 2023.

Benefits were then discounted at a rate of 3 percent per year. The final injury estimate from lost maintenance dredging beneficial use is 9.03 DSA Ys (Table 3.5).

3.3.3.2 Sediment Mining at HDDA – Beneficial Use of Dredged Material at DNWR

As a result of the Incident, the sediment mining event of 2008 was terminated and 295,880 cubic yards of river sediment were not placed beneficially onto DNWR for marsh creation. To determine the marsh acreage for that lost material, the Trustees again assumed a theoretical fill

⁵ A 15-year life span is typical for marshes in the Bird's Foot Delta.

area designed with a 9.5-foot crown height and 300-foot crown width with a side slope of 5:1 to calculate the amount of acres that should have been created by this material. Assuming a cut to fill ratio of 1.5:1, the Trustees estimate that 13.75 acres of marsh habitat were not created.

Like with the lost maintenance dredging, the Trustees estimated injury by using a theoretical marsh creation project to calculate the amount of services that 13.75 acres of marsh would have produced. Using the same project assumptions and discounting rate as those for the maintenance dredge marsh (see Section 3.3.3.1), the final injury estimate from lost Sediment Mining at HDDA is 60.85 DSAYs (Table 3.5).

3.3.3.3 Bayou Dupont Sediment Delivery System Project (BA-39)

The original schedule for the proposed BA-39 project was delayed by approximately two months due to the sediment testing required to determine whether sunken oil from the Incident was present at the proposed project borrow location. The Trustees considered that two-month delay an injury because of delayed provisions of the natural resources and services associated with the planned creation of 493 acres of marsh habitat.

The Trustees again used a theoretical marsh creation project to calculate the habitat service losses of 493 acres for the two-month delay in project implementation. To accomplish this, the Trustees conducted two HEAs, one with a completion date of February 2010 and the other with a completion date of April 2010, and calculated the difference to model the two-month delay in habitat services. To estimate resulting injuries, the Trustees assumed that the theoretical marsh creation project would:

- mature at a linear rate in five years with plantings;
- have a 50 percent relative productivity as compared to natural marsh; and
- provide services for 15 years of habitat services following completion date.

Benefits were then discounted at a rate of 3 percent per year. The difference of the two HEAs resulted in an injury estimate of 11.28 DSAYs (Table 3.5).

Table 3.5. Lost use of river sediment for restoration material in marsh creation projects at the time of the Incident.

Project	Restoration Material Lost (cubic yards)	Acres Affected	Injury Duration	Injury Estimate (DSAYs)
Maintenance Dredging	43,898	2.04	15 years	9.03
Sediment Mining	295,880	13.75	15 years	60.85
Bayou Dupont		493	2 months	11.28
Total		508.79		81.16

3.3.4 Birds

The Trustees utilized the results of field surveys conducted by FWS wildlife response personnel during the Incident to help determine injuries to birds. Between July 24 and August 25, 2008, 859 visibly oiled birds were either observed by response personnel or reported by private citizens

(Table 3.6). Other oiled wildlife (e.g., alligators, turtles, snakes, raccoons, beavers, etc.) were also reported. However, the large size of the affected area and the complexity of river shoreline habitats created environmental conditions in which oiled and dead birds were difficult to find. Other challenges included carcass loss via river currents, poor visibility of oil on dark-colored birds, and hazardous boating conditions preventing bird capture and carcass retrieval. It is reasonable to assume that only a small proportion of expected bird carcasses were found or observed due to a host of limiting factors including, but not limited to, carcass scavenging, sinking, or drifting downriver, and because carcasses are difficult to detect in dense vegetation (see Table 3.7). For those reasons and following API (2009), the Trustees employed a multiplier of 4.0 to estimate total bird mortality. Using this approach, the actual number of oiled birds observed (859 birds) is multiplied by a factor of 4 to arrive at an estimate of the total bird mortality of 3,436.

Table 3.6. Oiled wildlife observed by response personnel or reported by private citizens from July 24 to August 25, 2008 (from ACL Barge DM932-New Orleans, LA, Oil Spill, FWS Report: R4-EC-RST 8/23-25/08 Operational Period, p. 9, by USFWS 2008). The Trustees categorized bird species as either terrestrial or aquatic for purposes of restoration planning.

BIRDS		Count	MAMMALS	Count	REPTILES	Count
Terrestrial birds			Nine-banded Armadillo	1	American Alligator	9
Northern Cardinal	1		Beaver	2	Turtle sp.	1
Summer Tanager	12		Muskrat	1	Water Snake	3
Unknown Passerine sp.	3		Nutria	3		
Mourning Dove	1		Opossum	3		
Rock Dove	7		Raccoon	16		
Common Grackle	1					
American Crow	1					
Black-crowned Night Heron	3					
Great Blue Heron	15					
Yellow-crowned Night Heron	3					
Cattle Egret	23					
Great Egret	326					
Snowy Egret	241					
Unknown Egret sp.	11					
Black-bellied Whistling Duck	9					
Wood Duck	21					
Unknown Duck sp.	38					
Barn Owl	1					
Unknown Hawk sp.	1					
Unknown Vulture sp.	6					
Aquatic birds						
Laughing Gull	5					
Unknown Gull sp.	6					
Unknown tern sp.	2					
Killdeer	1					

Black-necked Stilt	1				
White Ibis	44				
Unknown ibis sp.	4				
Green Heron	3				
Little Blue Heron	23				
Tri-colored Heron	2				
Unknown Heron sp.	8				
Unknown Grebe sp.	2				
Anhinga	2				
Green-winged Teal	2				
Mallard	22				
Mottled Duck	8				
TOTALS	859		26		13

Table 3.7. Rationale for using a multiplier to estimate bird mortality.

Environmental Conditions	Rationale
Time of year the spill occurred (July – August)	<ul style="list-style-type: none"> Nesting and presence of juveniles leads to increased stress and competition for food, potentially compounding stresses caused by exposure to the Incident. Oiled birds likely spent time at rookeries along the spill area, potentially removing themselves away from the spill area and reducing recovery.
River conditions at time of Incident (high water, fast current, strong undertow, increased velocity)	<ul style="list-style-type: none"> Attempts by search crews to find oiled birds were more difficult and dangerous at high flows. Oiled birds struggle with thermoregulation and buoyancy; high water, fast currents and strong undertow likely carried oiled birds and carcasses out of the search area.
Nearby areas may have attracted oiled birds away from the search area	<ul style="list-style-type: none"> Rookeries along the spill zone. Garbage dumps in the area. Mudflats behind coal barges on the west bank.
Birds previously observed as not oiled were at risk of later oiling	<ul style="list-style-type: none"> Contained oil was likely released by ship wakes in areas of active clean-up or resuspended from sediments disturbed by deep-draft vessels. Hard booms were vandalized and traversed by clean-up contractors and commercial and recreational vessels desiring a shorter route to the Gulf of Mexico, releasing previously trapped oil. Residual oil remained trapped in riprap.
Weather conditions	<ul style="list-style-type: none"> Inclement weather occurred multiple times during clean-up operations, postponing bird and wildlife surveys and recovery.

Of the 36 species of birds observed oiled, the Trustees classified 16 as species of aquatic birds (see Table 3.6). Because both aquatic birds themselves and the specific habitat they relied on was injured, the Trustees articulated injuries to aquatic birds in terms of total services lost, and estimated losses in terms of lost bird production (i.e., lost biomass of birds). Amount of habitat

needed to produce lost production was then calculated to determine restoration needed. The mortality of the aquatic birds group was converted to kg wet weight (ww) (i.e., species-level mass of an adult), multiplied by the number killed for that species, and then divided by a 2 percent ecological efficiency (trophic transfer). The result is the total kg ww of secondary productivity from the species' diet (energy received from benthic fauna) needed to produce a kg of bird (French McCay and Rowe 2003). The final estimate was a loss of 19,553 kg ww of benthic production, equating to the loss of 540 birds of these species. Thus, the Trustees estimate that, of the total mortality of 3,436 birds, 540 were aquatic birds.

Given the above, of the estimated total number of birds killed (3,436), the Trustees categorized 2,896 as terrestrial bird species (see Table 3.6). The Trustees used a Resource Equivalency Analysis (REA) model (Sperduto et al. 2003) to quantify terrestrial bird injury. The REA model used bird life history information to evaluate the direct loss (birds killed) of birds over time. Injury was calculated in discounted bird years (DBYs). Using this methodology, the estimated loss of 2,896 terrestrial birds equates to approximately 8,212 DBYs.

3.3.5 Human Use

The USCG closed the Mississippi River from RMM 98 to the Southwest Pass Sea Buoy (near the Gulf of Mexico) from July 23 until July 29, 2008, affecting human use of natural resources. The Trustees assessed impacts in two categories that were representative of all uses: recreational fishing and general riverfront use along the New Orleans Riverwalk.

3.3.5.1 Recreational Fishing

The Trustees calculated damages from recreational fishing losses by applying literature values per trip to calculated lost trips. Two data sources were used to calculate the number of lost trips, and as shown in Table 3.8 below, the two sources lead to very similar estimates of damages, differing by no more than 5%. The first method calculated the number of baseline trips using NOAA's MRFSS⁶ data. The second method involved count data collected at sites within the area affected by the Incident.

On the weekend of October 4 and 5, 2008, the Trustees attempted a total of 137 on-site surveys of anglers at commonly used boat launch sites in Plaquemines Parish downriver from the Incident. Of those, 117 were usable in the recreational fishing damages analysis. The survey presented questions to anglers about their awareness of the spill and how or if they adjusted their recreational fishing activity because of the Incident. More specifically, anglers were questioned about whether they took fewer trips and/or chose alternate locations because of the Incident. The survey questions covered three distinct periods:

1. Trips planned or taken during the last two weeks of July 2008.
2. Trips planned or taken during August through the day before Labor Day in 2008.

⁶ The Marine Recreational Fishery Statistics Survey (MRFSS) is a program that ran from 1979-2008 to estimate recreational fishing effort in a broad area nationally, including Louisiana. The program has since been renamed and updated multiple times. More information available here: <https://www.fisheries.noaa.gov/recreational-fishing-data/about-marine-recreational-information-program>.

3. Trips planned or taken on Labor Day through the date of the intercept (in-person) survey (not including the date of survey itself).

The Trustees determined that results should be representative of baseline angler behavior within the affected area. The results indicated that 24.9% of trips were lost during the first period, 7.7% were lost during the second period, and no trips were lost during the third period.

To estimate total damages, the Trustees used a benefit-transfer approach to convert forgone trips into a dollar value per trip. The Trustees used the Consumer Price Index (CPI) to adjust for inflation and compounded losses using a three percent annual discount rate. Because charter vessel trips and substitute trips were not included in either analysis, there was likely a downward bias in trip estimates. To account for such sources of bias in the data the Trustees applied a 15 percent adjustment (increase) to the total forgone trips. Based on experience in other cases, the adjustment reasonably accounts for such potential bias. The Trustees' estimates of recreational fishing damages are illustrated in Table 3.8 with updated values for inflation and compounded at a three percent annual discounted rate to April 2017.

Table 3.8. Summary of recreational fishing damages.

Total Foregone Trips	8,369 (using count data) to 8,833 (using MRFSS data)
Value per Foregone Trip	\$46.70
Estimate of Damages	\$390,807 to \$412,482

3.3.5.2 General Riverfront Use along the New Orleans Riverwalk

There were no closures of the New Orleans Riverwalk during the Incident; however, a noticeable odor along the Riverwalk deterred visitors, resulting in lost (i.e., a person completely avoiding the Riverwalk) and diminished use (i.e., made less enjoyable due to the noticeable odor) of the area during that time. ACL conducted instantaneous intercept counts and intercept surveys on August 2 and 23, 2009, to estimate lost and diminished use of the area. Using results of those surveys, the Trustees converted diminished trips to lost trips to produce an estimate of lost equivalent trips along the Riverwalk.

The Trustees assumed no use of the Riverwalk between 10:00pm and 6:00am. Given the proximity of the Riverwalk to late night establishments such as taverns and a casino, that assumption likely underestimates baseline use of the Riverwalk. The Trustees' estimates of Riverwalk damages are illustrated in Table 3.9 with updated values for inflation and compounded at a three percent annual discounted rate.

Table 3.9. Summary of New Orleans Riverwalk damages.

Total Lost Equivalent Trips ^a	11,683
Value Per Lost Trip	\$8.95
Damages	\$136,363

^a One Diminished Trip = 0.2 Lost Trip

3.3.5.3 Summary of Human Use Damages

Using values provided in tables 3.8-3.9, the Trustees estimate total damages of \$548,845 for human use losses due to the Incident. Values per trip are calculated using benefit-transfer methods, which are standard and acceptable practices, but ones that also have some level of uncertainty. The estimated damages are reasonable given the circumstances of the Incident.

Table 3.10. Summary of all resources/services categories, amount injured, and injury/damages estimates resulting from the Incident.

Injured Resource/Service Category	Amount Injured	Injury/Damages Estimate
Shoreline Habitats		
<i>Batture</i>	52.8 acres heavy oil 5,308.7 acres light oil	126.07 DSAYs of batture habitat
<i>RipRap</i>	11.79 acres with heavy oil	
Aquatic Fauna	229 km initial fouling and fouling during migration (river shrimp density=139.81 kg/km)	32,063 kg of river shrimp biomass lost
Sediment for Restoration Projects	(a) Maintenance Dredging: 2.04 marsh acres for 15 years (9.03 DSAYs) (b) Sediment Mining: 13.75 marsh acres for 15 years (60.85 DSAYs); Bayou Dupont, 493 marsh acres for 2 months (11.28 DSAYs)	81.16 DSAYs of marsh habitat
Birds		
<i>Aquatic</i>	540 dead birds ^a	19,553 kgww lost biomass
<i>Terrestrial</i>	2,896 dead birds ^a	8,212 DBYs
Human Use		
<i>Recreational Fishing</i>	8,369 to 8,833 foregone trips	\$390,807 to \$412,482 ^b
<i>Riverfront Use</i>	11,683 total lost equivalent trips	\$136,363 ^b

^a Based on a multiplier of 4 of the number of oiled birds observed.

^b The Trustees estimate total damages of \$548,845 for human use losses due to the Incident. This represents the \$412,482 for the 8,833 recreational fishing foregone trips plus riverfront use damages.

4 RESTORATION ALTERNATIVES

The goal of restoration under OPA is to compensate the public for injuries to natural resources and their services resulting from an oil spill. This goal is achieved through the return of the injured natural resources and their services to baseline conditions and compensation for interim losses from the date of the incident until recovery. To fulfill this purpose, this section introduces potential restoration actions (to be funded by the settlement with ACL) to restore the natural resources and resource services injured by the Incident and identifies the Trustees' preferred alternative.

The assessment completed by the Trustees described in Chapter 3 quantified the amount of injury to natural resources resulting from the Incident. Per section 1006(c)(1)(C) of OPA, Trustee restoration actions must restore the equivalent of the injured resources by providing resources and services of the same type and quality and of comparable value (i.e., restore, rehabilitate, replace or acquire the equivalent) as those injured. The process of "scaling" compensatory restoration actions involves determining the size of the restoration action(s) needed to provide resource and service gains equal to the value of interim losses due to the release of hazardous substances (NOAA 1997, 1999). Because the duration of the injury differs from the lifespan of the restoration action(s), equivalency is calculated in terms of the present discounted value of services lost due to resource injuries and gained due to compensatory restoration.

4.1 Restoration Strategy

Restoration actions are defined as primary or compensatory. Primary restoration actions are actions that restore injured natural resources and services to their baseline condition (that is, their condition prior to the release of oil). Primary restoration is an action that expedites the return of injured resources to their baseline condition. Compensatory restoration addresses interim losses of natural resource services from the time of initial injury until full recovery of natural resources to their baseline condition. Natural recovery, in which no human intervention is taken to restore the injured resources, is considered a primary restoration alternative, and is appropriate where feasible or cost-effective primary restoration actions are not available or where the injured resources would recover relatively quickly without human intervention. The scale of compensatory restoration projects depends on the nature, extent, severity, and duration of the resource injury. Primary restoration actions that speed resource recovery would reduce the scale of compensatory restoration required.

For primary restoration, the Trustees considered both the natural recovery option and primary restoration at the spill site. Upon completion of emergency response and cleanup activities by ACL, the Trustees decided that primary restoration would not contribute significantly to the recovery of the injured natural resources due to the dynamic nature of the riverine environment. Although appropriate response actions were taken following the Incident, impacts to the environment were not fully restored and interim ecological service losses were anticipated to ensue. Accordingly, the Trustees determined that a number of potential restoration actions would be needed to compensate the public for the losses, and proceeded with restoration planning. For compensatory restoration, OPA and OSPRA regulations clearly establish Trustee authority to

seek compensation for interim losses if technically feasible, cost-effective alternatives exist. Since interim losses will accrue until restoration compensates for losses, and technically feasible, cost-effective alternatives exist, the Trustees proceeded with identifying compensatory restoration alternatives for the injured resources discussed in Chapter 3. Chapter 4 focuses on the compensatory restoration actions developed.

4.2 Selection of Restoration Alternatives

Both OPA and NEPA require the Trustees to develop reasonable restoration alternatives before selecting their preferred alternative(s). Each alternative must be designed so that, as a package of one or more actions, the preferred alternative would make the environment and public whole. Only those alternatives considered technically feasible and in accordance with applicable laws, regulations, and/or permits are moved forward for further consideration by the Trustees. Once Trustees develop reasonable restoration alternatives, they must evaluate the restoration alternatives based on the criteria found in regulations 15 C.F.R. § 990.54 and listed below.

1. Project cost and cost effectiveness (i.e., cost to carry out each alternative).
2. Nexus to natural resource injuries and services lost (i.e., the extent to which each alternative is expected to meet the Trustees' goals and objectives in returning the injured natural resources and their services to baseline and/or compensating for interim losses).
3. Likelihood of success of each alternative.
4. Avoidance of adverse impacts (i.e., extent to which each alternative will prevent future injury as a result of the incident and avoid collateral injury as a result of implementing the alternative).
5. Multiple resources and services benefits (i.e., extent to which each alternative benefits more than one natural resource and/or service).
6. Public health and safety (i.e., effects of each alternative on public health and safety).

The Trustees then select a preferred restoration alternative(s) based on these factors.

4.2.1 Evaluation of Restoration Types

To streamline the process of developing reasonable restoration alternatives and proposing preferred alternatives for implementation for each injury category, the Trustees looked first to restoration types identified in the Louisiana RRP Program Final Programmatic Environmental Impact Statement.⁷ These include the following seven broad categories:

1. Creation/enhancement of habitat;
2. Physical protection of habitat;
3. Acquisition/legal protection of resources and services;
4. Stocking of fauna;
5. Physical protection of fauna;
6. Restoration of recreational resource services; and
7. Restoration of cultural resource services.

⁷ Restoration types are described in Section 4.2.3 of the Louisiana Regional Restoration Planning Program Final Programmatic Environmental Impact Statement (NOAA et al. 2007).

Next, the Trustees selected a subset of appropriate restoration types by identifying those with a strong nexus to the injured natural resources and their services (Table 4.1). Doing so would ensure that compensatory restoration alternatives considered would provide services of the same type, quantity, and of comparable values as those lost. Through this process, the Trustees identified the following five restoration types with a strong nexus to the injury as their preferred restoration types for this case:

1. Acquisition/legal protection of coastal forested wetlands (Ac/LP CFW).
2. Creation/enhancement of coastal forested wetlands (C/E CFW).
3. Creation/enhancement of coastal herbaceous wetlands (C/E CHW).
4. Restoration of lost recreational resource services related to fishing.
5. Restoration of lost recreational resource services related to riverfront use.

The Trustees selected these preferred restoration types for the following reasons:

1. Under the RRP Program these are appropriate restoration types for compensating for interim losses of ecological services resulting from the Incident.
2. The preferred restoration types are proven, cost-effective, and successful restoration approaches for increasing the types of natural resources, habitats and resource services that were injured as a result of the Incident.
3. The Trustees have developed methods for estimating costs of the future implementation of these types of restoration projects and therefore could develop a cash value to facilitate settlement with ACL.

Table 4.1. Restoration types that would compensate for injured natural resources.

COASTAL			POTENTIALLY INJURED RESOURCES/SERVICES								
			Herbaceous Wetlands	Forested Wetlands	Beach/Shoreline/ Streambed	Oyster Reefs (& other)	Water Column Org.	Birds	Wildlife	Recreational	Cultural
RESTORATION TYPES	C/E ⁽¹⁾	Coastal Herbaceous Wetlands	√	√		√	√	√	√	√	
		Coastal Forested Wetlands	√	√			√	√	√	√	
		Coastal Beach/Shoreline/Streambed			√		√	√	√	√	
		Coastal Oyster Reefs (& other)				√	√	√	√	√	
		Coastal Artificial Reefs				√	√	√	√	√	
		Coastal SAV	√			√	√	√	√	√	
	PP ⁽²⁾	Coastal Herbaceous Wetlands	√	√		√	√	√	√	√	
		Coastal Forested Wetlands	√	√			√	√	√	√	
		Coastal Beach/Shoreline/Streambed			√		√	√	√	√	
	Ac/LP ⁽³⁾	Coastal Herbaceous Wetlands	√	√		√	√	√	√	√	
		Coastal Forested Wetlands	√	√			√	√	√	√	
		Coastal Beach/Shoreline/Streambed			√		√	√	√	√	
		Coastal Oyster Reefs (& other)				√	√	√	√	√	
		Coastal SAV	√				√	√	√	√	
	S ⁽⁴⁾	Coastal Water Column Org.					√			√	
		Coastal Oyster Reefs (& other)				√	√			√	
		Birds						√		√	
		Wildlife							√	√	
	PF ⁽⁵⁾	Birds						√		√	
Wildlife								√	√		
		Recreation							√		
		Cultural								√	
(1) Creation/Enhancement											
(2) Physical Protection of Habitat											
(3) Acquisition/Legal Protection											
(4) Stocking of Fauna											
(5) Physical Protection of Fauna											

4.2.2 Identifying Potential Restoration Actions

Following the identification of the preferred restoration types, the Trustees conducted an initial screening of potential restoration projects, or actions, available in the hydrologic basins in which

the natural resources were injured (RRP Program Regions⁸ 1 and 2) to develop the range and type of available restoration actions. Forty-five (45) preliminary restoration actions matched one or more of the preferred restoration types for the injured resources in RPP 1 and 2 (Appendix A). All of the actions were submitted by or obtained from the public and government agencies. The Trustees screened these 45 restoration actions to identify the most appropriate options for this case.

The Trustees used the OPA criteria listed in Section 4.2 above and the following RRP Program-specific criteria during the screening process to identify a suite of preferred restoration actions: (a) ability to implement project with minimal delay; (b) degree to which project supports existing strategies/plans; and, (c) project urgency. The Trustees also considered the stage of development of the potential projects; the extent to which the projects would support, or are consistent with national, regional, and/or local restoration initiatives including Louisiana's Comprehensive Master Plan for a Sustainable Coast (CPRA 2017); the ability of the restoration project to be integrated into an existing resource management program or larger project; and the ability of the restoration action to be added to a project already under consideration.

The Trustees identified a number of potential restoration actions during screening that met their restoration goals and criteria; however, several of these restoration actions were funded by other sources during the course of the Trustees' restoration planning process. These restoration actions are described in Section 4.4 below as projects considered but eliminated from further evaluation.

4.3 Evaluation of the Potential Restoration Alternatives

4.3.1 No Action/Natural Recovery Alternative

NEPA requires the Trustees to consider a "no action" alternative, and OPA requires consideration of the "natural recovery" option. In this case, these options are equivalent. Under this alternative, the Trustees would take no direct action to restore injured natural resources or compensate the public for lost services pending environmental recovery. Instead, the Trustees would rely on natural processes for recovery of the injured natural resources. The principal advantages of this approach are the ease of implementation and cost-effectiveness. This approach relies on the capacity of ecosystems to "self-heal" and, in this case, is appropriate for primary restoration.

The no action/natural recovery alternative is rejected for compensatory restoration for this Incident. The Trustees' assessment of natural resource injuries indicates that losses occurred as a result of the Incident. Response actions undertaken may allow the injured resource to recover, but those actions would not compensate the public for the resource services lost over time. Such compensation serves to make the public and the environment whole. OPA provides that the public be compensated for such losses based on actions that restore, replace, or provide services equivalent to those lost. As evidenced by the restoration alternatives identified in developing this DARP/EA, there are feasible and appropriate opportunities within RRP Program Regions 1 and 2 to restore, replace, or provide services equivalent to those lost due to the Incident. Under the no-

⁸ Regional Restoration Planning Program (RRP Program) Regions are defined in Chapter 5 of the Louisiana Regional Restoration Planning Program Final Programmatic Environmental Impact Statement (NOAA et al., 2007).

action alternative, restoration actions needed to make the environment and public whole for its losses would not occur. This is inconsistent with the goals of the natural resource damages provisions of OPA. Thus, the Trustees determined that the no-action alternative (i.e., no compensatory restoration) should be rejected on that basis. The no action/natural recovery alternative is retained in this DARP/EA for comparative purposes only.

4.3.2 Preferred Alternative - Suite of Restoration Actions, including (1) the Woodlands Acquisition, Management and Recreational Enhancement Project, (2) Marsh Creation via a Crevasse Splay, and (3) Recreational Fishing Enhancements

4.3.2.1 Woodlands Acquisition, Management, and Recreational Enhancement Project

The Woodlands Acquisition, Management, and Recreational Enhancement Project involves the acquisition of approximately 650 acres in Plaquemines Parish, Louisiana, along with management and recreational enhancements on the property. The property is located southeast of New Orleans, just south of English Turn and southeast of Algiers (Figure 4.1). The property encompasses contiguous BLH forest and swamp connected to public land owned by the federal government and adjacent to the City of New Orleans Wilderness Park. It is currently owned by Plaquemines Parish and managed by Woodlands Conservancy, a nonprofit land trust organization, under a series of ordinances and Cooperative Endeavor Agreements.

Woodlands Conservancy has managed this property for over a decade, conducting ongoing assessment and restoration activities, engaging schools and interest groups in hands-on service learning, and conducting bird banding research. Through monetary donations, the Woodlands Conservancy has developed hiking trails and an interpretive program and conducted ecosystem restoration work. The land provides essential habitat for wildlife as well as resident and neotropical migratory birds. The BLH forest and swamp provide habitat for eighteen SGCN species listed in Louisiana's Wildlife Action Plan (Holcomb

et al. 2015) and nine species of continental importance according to Partners in Flight. It serves as one of the first resting and staging areas for over 100 species of migratory birds prior to their migration across the Gulf. The components of the project are consistent with CPRA's Coastal Forest Conservation Initiative, which seeks to conserve and protect coastal forest resources in



Figure 4.1. Woodlands Acquisition, Management, and Recreational Enhancement Project subject property (approximate boundary mapped in yellow), Plaquemines Parish.

Louisiana. The project also presents a rare opportunity: large coastal forested wetland restoration projects are rare within the hydrologic basin in which the Incident occurred. This area comprises some of the last remaining forested wetlands in Southeastern Louisiana. Habitat on the property acts as a wind barrier for New Orleans and nearby communities and the wetlands on the site serve as a filtering ground for pollution and act as a natural sponge for absorbing storm water runoff. Development of this contiguous forest could change the local hydrology of the area and impact future benefits of this ecosystem.

Plaquemines Parish has considered leasing 250 acres of the tract to a private investor planning to construct a youth baseball facility (including 20 baseball diamonds and 10 to 15 bunkhouses) on the property. Recent appraisals by Woodlands Conservancy and the Parish indicate the cost of purchasing the property at between \$1.7 and \$3.2 million. Acquisition and protection would ensure that this habitat would continue to provide ecological services and essential habitat for wildlife and migratory birds in perpetuity.

As part of this project, ACL would affect the transfer of title of the property to Woodlands Conservancy. The property would then be protected by a conservation servitude that would remain with the land in perpetuity. Settlement funds received from ACL would be used for habitat and recreational enhancements, such as invasive species management and revegetation of native species, trail enhancements, and creation of new or enhancement of existing signage and/or kiosks that provide interpretive information for public use. Resource management and recreational enhancement would improve habitat services over time and increase passive recreational opportunities. The Trustees believe that this project is cost effective based on the type and quality of trust resources and their services that would be protected and enhanced into the future (e.g., see section 4.4.2). This project also provides the ability to address multiple injury categories in one project, which is not only a direct benefit, but also increases its cost effectiveness.

Restoring the forest habitat within the subject property is anticipated to provide similar or complimentary ecological services to the injured trust resources (shoreline habitat, birds, and recreational use), and therefore, has a sufficient nexus to the injured resources. The project site currently provides recreation opportunities to the New Orleans metropolitan area as well as Plaquemines and St. Bernard Parishes, offers nesting and foraging habitat for resident and migrating birds, and serves as a buffer from wind and storm surge attributed to tropical storms. The Trustees believe effecting the transfer of title to Woodlands Conservancy and legally protecting the trust natural resources and services present on the property will result in a direct benefit because the protected resources and services would no longer be subject to potential development in the future. Habitat enhancements achieved through management of invasive species and replanting of native vegetation would have a positive effect on biodiversity by expanding the available food supply, cover, and sites available for nesting, foraging and mating for birds. The Trustees anticipate developing a Forest Management Plan (FMP) as part of this project to ensure the goals and objectives related to these habitat enhancements are met. The project would be monitored on a regular basis to identify and respond to any potential problems, assess the health and progress of restoration, manage invasive species, and maintain the site for access to planting, treatment, and monitoring locations. These activities may be conducted on foot, utility trail vehicle, or by using a small unmanned aircraft system (sUAS) or “drone.” The

Trustees further anticipate that the project would provide direct recreational enhancements through improvements such as directional signage, information kiosks, trail improvements, educational tools, etc. The protection and enhancements afforded by this project would extend to potential improvement in bird and wildlife viewing and the overall recreational experience for users of the project area.

This project is technically feasible and utilizes proven techniques with established methods, and the Trustees believe the transfer of title of the property to Woodlands Conservancy can be implemented with minimal delay. Acquisition and legal protection are common techniques to protect property from future development while providing the public access to its resources. A title examination conducted by the Trustees found Plaquemines Parish to be vested with valid and merchantable title of the property, and Plaquemines Parish is willing to sell the property for this project. A Phase I Environmental Site Assessment conducted during restoration planning revealed no evidence of recognized environmental conditions on the property, and there are currently no known impediments to acquisition.

The Trustees also foresee no delay in the implementation of preferred restoration and maintenance activities. Woodlands Conservancy has managed the property and would be a partner in the management and protection of the trust resources. All necessary permits or other approvals would be obtained prior to implementation of management activities. Property management would utilize best management practices and ultimately be beneficial in nature (such as exotic/invasive species control); any temporary disturbances would be short-lived with a net gain in resources and services. There may be minimal disturbance in the project area with the installation of educational kiosks and signage, but such disturbance would be temporary and ultimately provide an enhanced visitor experience.

Finally, in evaluating the feasibility of this alternative, the Trustees collaborated with Woodlands Conservancy to determine how to maximize funds in managing the property as a whole. In response, Woodlands Conservancy developed a multi-year plan to manage and restore the property, which would leverage funds acquired through the U.S. Department of Transportation's Federal Highway Administration Recreational Trails Program for Louisiana; the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act; and other funds. By doing so, the Trustees would be able to effect more significant restoration than they would if funding an independent project.

For these reasons, the Trustees have identified the Woodlands Acquisition, Management, and Recreational Enhancement Project as a component of the preferred restoration alternative for this NRDA. In addition to transferring the subject property to Woodlands Conservancy, the Trustees estimate the conservation servitude (habitat protection), and targeted habitat restoration and enhancement and recreational enhancements on the property to cost \$640,480.

4.3.2.2 Creation and Enhancement of Coastal Herbaceous Wetlands via Crevasse Splay

To address the injury to aquatic organisms, lost use of restoration material, and aquatic birds, the Trustees will undertake the creation of at least 9 acres of marsh via a crevasse splay project in the Pass-A-Loutre State Wildlife Management Area (PALWMA) in the Lower Mississippi River

(Figure 4.2.). The primary goal of this project would be to provide marsh habitat sufficient to compensate for lost habitat services and for aquatic bird and aquatic faunal injuries. The PALWMA provides both biological and geographic nexus to the injured resources, as well as

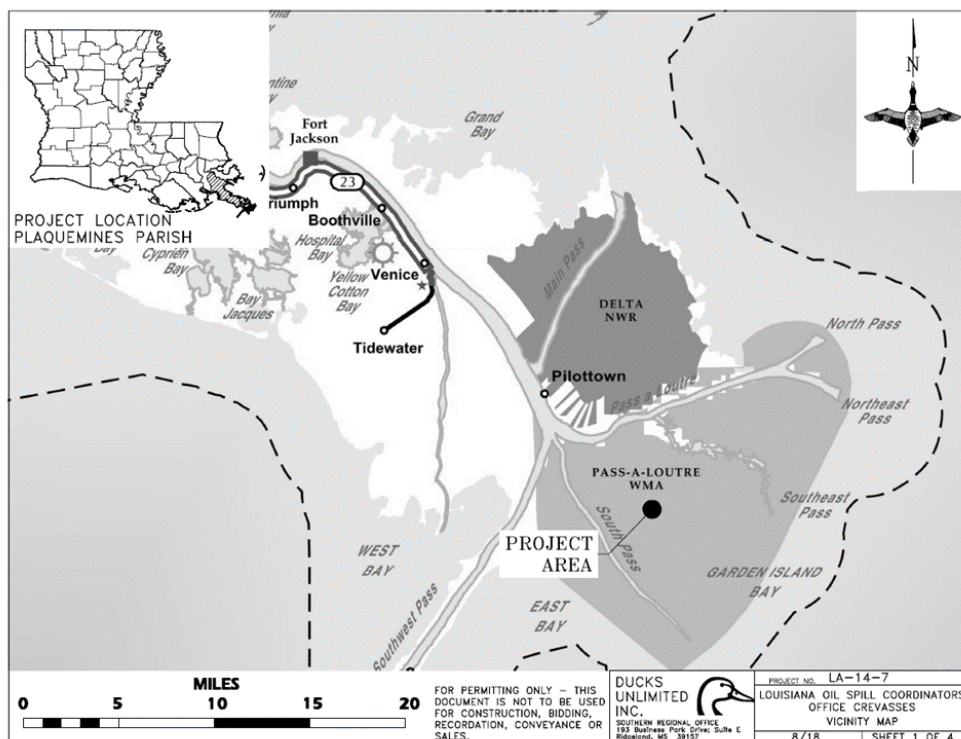


Figure 4.2. Crevasse splay project area, Pass-A-Loutre State Wildlife Management Area.

Numerous factors contributed to the loss of coastal marsh in the Lower Mississippi River, including, but not limited to, the reduction in sediment load from upstream dams, the construction of levees along the river that prevent sediment deposition during normal high water events, and soil subsidence. Constructed crevasses reverse this process by mimicking the historic and natural riverine processes of the Lower Mississippi River by reintroducing riverine sediments during higher river stages. As sediments settle out in the receiving basin, splays are formed. Emergent vegetation forms on the splays and accelerates the land accretion and marsh expansion (Boyer et al. 1997). This project would help facilitate this natural marsh building process.

The crevasse would be a newly constructed feature extending southwest from South Pass and into a marsh area. The new crevasse would measure approximately 750' in length by 110' in width and be dredged between 8-12' in depth. Dredging would be conducted using standard dredging methods, which typically include a bucket-style dredge or hydraulic dredge depending upon site conditions and amount of material to be moved. Dredge locations are not near dry land, so dredges are anticipated to be barge-mounted units. Sediment dredged for the project would be placed on adjacent wetlands just above the tidal elevation to provide nesting habitat for a number of wetland species, such as secretive marsh birds and mottled ducks. This non-tidal habitat is

favorable geomorphic conditions for wetland formation via a crevasse splay to restore injured resources and the opportunity for multiple resource and service benefits. As described in Chapter 3, the extensive loss of coastal marsh within the Lower Mississippi River over the last century has been extensively documented (Boyer et al. 1997; Cahoon et al. 2011).

lacking in this environment and believed to be one reason why the numbers of these wetland birds are in decline. It is important to note that crevasses are created within the WMA on a somewhat routine basis and are typically considered self-mitigating. This type of project is designed to create new wetlands over time. A typical crevasse is designed to create new wetland marsh over a 5- to 40-year life span. The preferred crevasse splay project has a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit (Permit No. MVN-2018-01112-MM) and a Coastal Zone Consistency conditional permit (Permit No. C20180143) pursuant to 15 CFR §930.4(a)(1).

Monitoring and evaluation of previous crevasse splay projects has yielded several design considerations that the Trustees utilized in the design of the crevasse splay project. Specifically, the siting, engineering and design: (1) is located on primary order channel of the Lower Mississippi River within the PALWMA, to ensure higher suspended sediment loads for splay marsh creation; (2) has an orientation to the channel that is conducive for intercepting sufficient suspended sediments needed to create a marsh; and (3) has a receiving bay of sufficient size and gradient to create at least 2.2 acres of marsh within 5 years of construction.

Performance monitoring would be performed for 5 years after crevasse construction to provide an assessment of project progress and help guide corrective actions, if any, to meet the project's goals and objectives. The project's success would be determined by comparing quantitative monitoring results to pre-determined performance standards developed by the Trustees defining minimum physical or structural conditions deemed to represent acceptable growth and development. Specific standards of this project are that it would create at least 2.2 new acres of vegetated marsh in the first 5 years, that the crevasse remains open, and that plant species characteristic of splay marshes are present at the end of five years. The final 9 acres would create biomass needed to address the lost sediment use, aquatic faunal, and aquatic bird injury over its lifetime. An aerial photograph taken prior to the cutting of the crevasse would be used to determine the baseline for measurement of future growth of the splay. Aerial photographs would be taken periodically for five years to gauge the progress of the splay development. If the performance criteria are satisfied at the 5-year monitoring event, then the Trustees are confident, based on previous experience, that the project would be successful and no further monitoring would be required.

Should one or more of the performance criteria not be met, corrective action would be considered to remedy the situation. Corrective action options to be considered include: monitoring for an additional period of time to see if the project begins to match predicted trends in growth, re-opening the crevasse, opening a new crevasse, or other actions agreed upon that would correct the deficiency and ensure growth at the required rates.

In this case, a crevasse splay project has a strong nexus to the lost habitat services as well as certain bird and aquatic faunal injuries, benefit multiple resources and resource services, be cost effective, and has a high likelihood of success. For these reasons, the Trustees identified marsh creation via the construction of a crevasse splay in the PALWMA in the Lower Mississippi River as a component of the preferred restoration alternative for this NRDA. The Trustees estimate a crevasse splay project in the PALWMA creating at least 9 acres of marsh would cost \$500,000.

4.3.2.3 Recreational Fishing Enhancements

The Trustees estimate total damages of \$412,482 for recreational fishing losses due to the Incident. The Trustees will use settlement funds to restore for lost recreational fishing opportunities by creating or enhancing infrastructure, access, and use opportunities. While the Trustees have not identified a specific restoration project to address this injury at this time, the Trustees are actively engaged in discussing potential opportunities with local and State entities throughout the affected area. Additionally, the Trustees are monitoring other efforts, such as restoration being conducted by the Deepwater Horizon (DWH) NRDA program (e.g., Louisiana Trustee Implementation Group Final Restoration Plan/Environmental Assessment #2: Provide and Enhance Recreational Opportunities (2018) to be best positioned to select an effective restoration project. When suitable projects are identified, the Trustees will evaluate them under OPA and NEPA prior to proposing it for implementation, and will give notice and an opportunity to comment to the public.

4.4 Considered but Eliminated from Further Evaluation

As discussed in section 4.2, the Trustees evaluated a number of potential projects to help compensate the public for injuries to resources caused by the Incident. Of those, two specific alternatives emerged in addition to the preferred alternative. Both alternatives met the Trustees' restoration goals and criteria; however, due to the reasons discussed below, the Trustees eliminated them from further evaluation and analysis.

4.4.1 Lake Maurepas Land Protection Project

This project included the acquisition and permanent protection of up to 16,000 acres of Louisiana coastal wetlands along the north shore of Lake Maurepas. The project would have provided compensation for coastal forested wetland habitat and fauna that use those habitats. The Lake Maurepas/Maurepas Swamp area supports dense breeding populations of several species of special concern. In addition to these SGCN species, this tract supports numerous other migratory bird species, as well as various terrestrial and aquatic residents. This acquisition would have provided additional public natural resource benefits through storm surge protection, water quality protection/ improvement, and public recreation. However, during the course of the restoration planning process, the Lake Maurepas Land Protection Project was funded by another entity and is therefore no longer available for consideration by the Trustees.

4.4.2 Cash Settlement for Acquisition/Protection of Coastal Forested Wetlands

The Trustees considered developing a cash settlement amount to either purchase or protect and restore other properties in the upper Barataria Basin that also had connectivity to existing swamp habitat. The Trustees would have also required that the property be protected by a perpetual conservation servitude and restoration on the property would have incorporated a combination of re-establishing wet BLH forest, rehabilitating existing BLH forest, and/or preserving existing BLH forest. While land acquisition is technically feasible and associated restoration would use proven techniques with established methods, based on a number of recent land acquisition/land protection projects in the Barataria Basin as a reference, the Trustees estimated that a project

necessary to compensate for the injuries in this case would cost approximately \$45,000 per acre, a cost far exceeding the expected cost of the Woodlands Acquisition, Management, and Recreational Enhancement Project. Furthermore, the potential projects the Trustees considered while attempting to develop a cash settlement number for this purpose do not remain current restoration options, having been implemented for other purposes during the course of the Trustees' planning process. Additionally, those projects did not have the public access and recreational use opportunities found with the Woodlands Acquisition, Management, and Recreational Enhancement Project.

4.5 Conclusion

As part of the cooperative assessment and restoration planning process, the Trustees evaluated expected restoration benefits of potential restoration actions to identify a preferred restoration alternative. Based on the above information and analysis, and after consideration of public comments received on the Draft DARP/EA, the Trustees select the following suite of restoration actions as the preferred restoration alternative to fully compensate the public for the natural resources and services injured as a result of the Incident. Natural resources and resource services injured by the Incident and the Trustees' preferred restoration types and actions to compensate for the injured resource or service are summarized in Table 4.2.

1. Implement the *Woodlands Acquisition, Management, and Recreational Enhancement Project* as discussed in Section 4.3.2.1. This project will provide for the acquisition and legal protection of approximately 650-acres of contiguous coastal forested wetland habitat, predominately BLH forest and Bald Cypress/Tupelo Swamp, in Plaquemines Parish, Louisiana, ensuring that ecological, bird and wildlife, and recreational services continue into the future. Settlement funds received from ACL will also go towards habitat enhancements on the property, such as invasive species management and revegetation of native species, to improve the ecological and biological productivity of the habitat, as well as recreation enhancements, such as trail enhancements, and creation of new or enhancement of existing signage and/or kiosks providing interpretive information for public use on area wildlife and vegetation.
2. Construction of a crevasse splay project in the PALWMA in the Lower Mississippi River as described in Section 4.3.2.2.
3. Cash settlement in the amount of \$548,845 to fund recreational enhancement projects to restore for Riverfront use and recreational fishing injuries as described in Sections 4.3.2.1 and 4.3.2.3. A future restoration plan or plans identifying specific recreational fishing enhancement projects will be issued by the Trustees for public review following settlement with ACL.

Table 4.2. Preferred restoration types based on injured natural resources and their services and the Trustees' preferred restoration actions.

Injured Resources/Services	Preferred Restoration Types	Preferred Restoration Actions
Shoreline Habitats		
<i>Batture</i>		

<i>Riprap</i>	<ul style="list-style-type: none"> • Acquisition/Legal Protection of Coastal Forested Wetlands • Creation/Enhancement of Coastal Forested Wetlands 	Woodlands Acquisition, Management, and Recreational Enhancement Project (see Section 4.3.2.1)
Aquatic Fauna	Creation/Enhancement of Coastal Herbaceous Wetlands	Creation and Enhancement of Coastal Herbaceous Wetlands via Crevasse Splay (see Section 4.3.2.2)
Sediment for Restoration Projects	Creation/Enhancement of Coastal Herbaceous Wetlands	Creation and Enhancement of Coastal Herbaceous Wetlands via Crevasse Splay (see Section 4.3.2.2)
Birds		
<i>Aquatic</i>	Creation/Enhancement of Coastal Herbaceous Wetlands	Creation and Enhancement of Coastal Herbaceous Wetlands via Crevasse Splay (see Section 4.3.2.2)
<i>Terrestrial</i>	<ul style="list-style-type: none"> • Acquisition/Legal Protection of Coastal Forested Wetlands • Creation/Enhancement of Coastal Forested Wetlands 	Woodlands Acquisition, Management, and Recreational Enhancement Project (see Section 4.3.2.1)
Human Use		
<i>Recreational Fishing</i>	<ul style="list-style-type: none"> • Restore Recreational Resource Services (fishing) • Restore Recreational Resource Services (riverfront use) 	<ul style="list-style-type: none"> • Fishing: increased access to or enhanced recreational fishing opportunities in the affected region (see Section 4.3.2.3). • Riverfront Use: Woodlands Acquisition, Management, and Recreational Enhancement Project (see Section 4.3.2.1)
<i>Riverfront Use</i>		

5 POTENTIAL ENVIRONMENTAL IMPACTS OF UNDERTAKING THE PREFERRED RESTORATION ACTIONS

NEPA requires that the environmental impacts of a proposed federal action be considered before implementation (42 U.S.C. §4321; 40 C.F.R. Parts 1500-1508). This section addresses the potential environmental consequences of the Trustees' preferred restoration actions. Generally, when it is uncertain whether an action would have a significant impact, federal agencies would begin the NEPA planning process by preparing an environmental assessment (EA). Federal agencies may then review public comments prior to making a final determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a Finding of No Significant Impact would be issued.

In undertaking their NEPA analysis, the Trustees evaluated the potential significance of preferred actions, considering both context and intensity (40 C.F.R. § 1508.27). For the actions considered in this DARP/EA, the appropriate context for considering potential significance of the action is at the local or regional level, as opposed to national, or worldwide. Intensity refers to the severity of impact. This chapter is intended to accomplish NEPA compliance by summarizing the current environmental setting of the preferred restoration, describing the purpose and need for restoration actions, identifying alternative actions, assessing the environmental consequences of the preferred action(s), and providing an opportunity for public participation in the decision-making process.

The Trustees evaluated the potential for restoration actions associated with all proposed alternatives to impact the following: the physical environment (air and noise pollution and water quality), the biological environment (vegetation, fisheries, wildlife and endangered species), socioeconomic environment (environmental justice, recreation, and cultural resources) and the potential for cumulative impacts.

The preferred restoration actions included in this DARP/EA (Table 4.2) will enhance the functionality of the ecosystem in the area impacted by the Incident by preserving and improving coastal wetland forests, improving aquatic habitat and water quality, restoring native species, and providing enhanced opportunities for human recreational use.

After considering NEPA requirements, the Trustees believe that the preferred restoration actions described in this DARP/EA will not cause significant negative impacts to the environment or to natural resources or the services they provide. None of the preferred actions to be implemented by the Trustees are controversial, have highly uncertain impacts or risks, or are likely to violate any environmental protection laws. Further, the Trustees do not believe the preferred actions will adversely affect the quality of the human environment or pose any significant adverse environmental impacts. Instead, habitat restoration will benefit aquatic fauna and birds by restoring natural habitat functions. Likewise, the preferred restoration actions will provide positive benefits for human recreational use.

As described in Chapter 4, the Trustees would restore lost recreational fishing opportunities by creating or enhancing infrastructure, access, and use opportunities. While the Trustees have not identified a specific restoration project to address this injury at this time, the Trustees are actively

engaged in discussing potential opportunities with local, State and federal entities throughout the affected area. When the Trustees identify a potential suitable project or project(s), notice will be given to the public and the Trustees will evaluate the project under OPA and NEPA prior to proposing it for implementation.

A summary of the Trustees' analysis is located below.

5.1 Physical Environment

5.1.1 Air and Noise Pollution

No Action: Air quality conditions would remain as they are, and there would be no adverse impacts to air quality from construction activities. There would be no noise above the ambient levels because there would be no construction activities associated with no action.

Preferred Alternative: Numerous crevasse splays have been created in the Lower Mississippi River, thereby assisting the Trustees' understanding of environmental impacts associated with the construction of crevasse splays. Machinery and equipment used during the construction of the crevasse is expected to increase noise in the near proximity of construction but is anticipated to be less than 2 working days. During construction, the increase in noise could disturb wildlife and humans use near the construction site. However, given the short duration of the earth moving work needed to create a crevasse, the increase noise and potential air emissions are considered de minimus and the site would return to present levels immediately after construction.

The restoration actions for the Woodlands Acquisition, Management, and Recreational Enhancement Project (hereafter "Woodlands project") would likely entail the use of smaller equipment (e.g., augers for tree planting) and the use of vehicles to transport vegetation and trail maintenance equipment in and out of the site. These actions would not produce adverse impacts to noise and air pollution.

5.1.2 Water Quality

No action: There would be no short-term adverse impacts to water quality associated with construction with no action. However, not implementing the crevasse splay action would not restore coastal marsh that has been converted to open water through land loss from subsidence and/or erosion and, therefore, long-term benefits to water quality such as nutrient reduction would not occur.

Preferred Alternative: Impacts resulting from habitat improvements at the Woodlands project may have temporary, minor adverse impacts to local ambient surface water and sediment quality by disrupting topsoil conditions during mechanical removal and by herbicides becoming airborne or washed into local drainages by rainfall events. Trustees would ensure that best management practices (e.g., appropriate equipment, tire pressure, dry weather conditions, targeted herbicide application, etc.) would be implemented to guarantee minimal topsoil disturbance and minimal airborne and rainfall drift of herbicides to local drainages to avoid effects to local water and sediment quality.

The crevasse splay action would entail the use of heavy equipment to breach a natural levee to intercept certain river stage heights. There may be a short-term, adverse impacts to water quality from increases in localized suspended sediment associated with the work. Best management practices and compliance with applicable permits would be employed to minimize the extent, duration, and intensity of any water quality impacts. Post construction, water quality should stabilize, and there should be moderate beneficial, long-term impacts to water quality because of improved benthic habitat. Additionally, because constructed crevasses mimic the historic and natural riverine processes by reintroducing alluvial sediments during higher river stages, the current shallow open water areas (i.e., receiving basin) would experience short-term, episodic increases in suspended sediment associated with higher river stage heights. As alluvial sediments settle out in the receiving basin, the shallow water areas will gradually convert to marsh through the creation of splays. Emergent vegetation is expected to naturally recruit on the splays and further facilitate the expansion of marsh through enhanced sediment trapping. Because of this natural process of creating marsh, the Trustees do not anticipate any long-term adverse impacts associated with the construction or maintenance of the crevasse splay.

5.2 Biological Environment

5.2.1 Vegetation

No Action: The Woodlands project area consists of BLH forest (wet and non-wet) and cypress swamp which are functioning as a contiguous forest ecosystem along the Mississippi River east of New Orleans. The BLH forest canopy is dominated by red maple, American elm, bald cypress, and tupelo gum, and sparsely contains various water-tolerant oak species in the mid- and understory. Past hurricane damage affected most oak species in the canopy. Midstory species include box elder, swamp privet, and persimmon. Understory species include blackberry, dewberry, English ivy, stinging nettle, and various asters and clover. The swamp canopy is dominated by bald cypress and red maple, with black willow dominating the midstory, and alligator weed, southern naiad, and cut grass dominating the understory. Chinese tallow, an aggressive invasive species, is present at the project site. Without active management (e.g., manual removal or herbicide treatment) there would be long-term adverse impacts to native vegetation, as Chinese tallow would reasonably be expected to outcompete the native vegetation, reducing the biological value of the project site.

The crevasse splay action would be located in an area that is dominated by open water and, therefore, the no action would not enhance or impact vegetation.

Preferred Alternative: The Woodlands project would restore and maintain the BLH forest through a number of passive and active restoration actions (e.g., preservation and treatment of invasive species). Standard best management practices and techniques for invasive species management and replanting native tree species would be used to implement forest enhancement measures. Such techniques may include mechanical removal, herbicide treatment of invasive plant species using certified applicators and approved herbicides for wetland habitats, or a combination of both techniques. The selection and application rates for herbicide use for invasive species control will be designed to maximize control of the invasive species and minimize harm

to native vegetation. Some short-term adverse impacts to existing native vegetation may occur during herbicide application, but such effects will be minimized to the maximum extent practicable because only targeted plant species will be treated.

The preferred crevasse splay action would create herbaceous wetlands through the deposition of alluvial sediments. Emergent vegetation would form on the splay and accelerates the land accretion and marsh expansion.

Through the implementation of the preferred restoration actions, long-term beneficial impacts to vegetation at the Woodlands project site and PALWMA would occur.

5.2.2 Aquatic Habitat

No Action: The no action alternative would not restore for injured resources or result in the creation and enhancement of aquatic habitat through the preferred crevasse splay that would support all or a portion of the lifecycles of plants, benthic invertebrates, fish, other aquatic organisms, birds, and mammals.

Preferred Alternative: The preferred crevasse splay action would create herbaceous wetlands through the deposition of alluvial sediments. Emergent vegetation would form on the splay and accelerates the land accretion and marsh expansion. The functional value of herbaceous wetlands (i.e. marsh) is well documented in the scientific literature to have a positive effect on aquatic habitat improving the estuarine food web (e.g., essential role in primary, secondary and tertiary productivity).

5.2.3 Fisheries and EFH

No Action: With no action, there would be long-term adverse impacts to fisheries and EFH, as productivity improvements needed to restore for injured resources resulting from the Incident would not be implemented.

Preferred Alternative: The Woodlands project would have localized beneficial impacts to freshwater fisheries within the canals around the property by maintaining and improving riparian vegetation.

The construction of a crevasse is intended to trap suspended sediment within the splay, which will in turn increase the elevation to become suitable for the natural recruitment of marsh vegetation. The functional value of herbaceous wetlands (i.e. marsh) is well documented in the scientific literature to have a positive effect on water and sediment quality (e.g., increased water filtration and sediment suitable for a variety of benthic invertebrates), as well as improving the estuarine food web. The crevasse restoration action would provide valuable habitat, including EFH, that support a diverse assemblage of estuarine-dependent fishes, shell-fishes and EFH species by providing marsh edges and forage for a variety of fish and wildlife. Example fisheries species that would benefit from the crevasse splay action are red drum, blue crab, brown shrimp and white shrimp. Therefore, the crevasse splay action is expected to result in long-term beneficial impacts to fisheries in the project area.

5.2.4 Wildlife

No Action: With no action, there would be long-term adverse impacts to wildlife, as productivity improvements needed to restore for injured resources resulting from the Incident would not be implemented.

Preferred Alternative: Machinery and equipment used during construction of the crevasse splay at the PALWMA and Woodlands project (e.g., trail improvements) could temporarily disturb wildlife near the construction activity. Adverse impacts on mobile species (e.g., birds, mammals) are expected to be minor, consisting of short-term displacement. Overall, the preferred land acquisition and habitat improvements are expected to provide long-term beneficial impacts to wildlife through enhancement and protection of their habitat.

5.2.5 Endangered and Threatened Species

No Action: No action would not result in beneficial or adverse impacts to species listed as endangered or threatened under the Endangered Species Act (16 U.S.C. § 1531 et seq.).

Preferred Alternative:

Pursuant to the Endangered Species Act (16 U.S.C. § 1531 et seq.), the Trustees reviewed and coordinated with NOAA and the FWS to determine the potential presence of listed species (see the Federally-listed species listed in Table 2.3). Through informal consultation, NOAA concurred that the preferred restoration actions associated with the creation of a crevasse splay are not likely to adversely affect or impact the following species: the terrestrial and marine life stages of the hawksbill, Kemp's ridley, leatherback and loggerhead sea turtles. This is based on numerous years of similar restoration implementation and monitoring that have not encountered these species and the determination that site conditions have not changed in a material manner that would provide suitable nesting habitat for all the sea turtles in the action area. While the species of sea turtles are known to use large channels along the Gulf of Mexico, they are not likely to be present in the South Pass or emergent marsh of the preferred restoration action area. The preferred restoration project activities will involve the use of a floating bucket dredge to create a crevasse. Dredging activities within the preferred restoration project action area could result in temporary increases in turbidity, the turbidity would be within the open water and emergent marsh targeted for restoration. Construction noise would also be localized and temporary. South Pass (preferred restoration project action area) does not harbor extensive sea grass beds that may be used as foraging habitats, thus foraging habitat loss is not an expected impact. In order to ensure de minimis impacts, BMPs would be implemented to minimize and avoid any potential impacts within the preferred restoration project action area. The Trustees will consult with the FWS on potential effects to these species from preferred actions, as applicable. Consultations will also be completed for all future recreational use restoration not fully evaluated as part of this DARP/EA.

5.3 Socioeconomic Environment

5.3.1 Environmental Justice

No Action: No action would not provide long-term beneficial impacts to the public from land acquisition, improved habitat and recreational opportunities. Additionally, the lack of meaningful recovery would have indirect, adverse impacts on the economic and social well-being of area residents.

Preferred Alternative: The restoration actions would not negatively or disproportionately affect minority or low-income populations in the area, including economically, socially, or in terms of conditions affecting their health. There would be long-term, indirect, beneficial impacts because preferred activities are expected to preserve and restore an environment that is of equal benefit to all area residents and provide improved recreational opportunities.

5.3.2 Recreation

No Action: No action would not restore for injured recreational resources lost as a result of the incident and would not provide long-term benefits to the region.

Preferred Alternative: Land acquisition, habitat improvements, and recreational use enhancements would ensure existing natural resource services and recreational and aesthetic values are conserved and available into the future. Invasive species management, planting, and recreational use improvements could have temporary adverse effects to the aesthetic and recreational qualities and values during active management activities due to the presence of equipment or personnel performing management activities or installing recreational features. Over time, public access and recreational opportunities would be enhanced as a result of those activities. Beneficial impacts would result from invasive species management activities that contribute to the restoration or enhancement of the Woodlands project. Such effects would extend to potential improvement in bird and wildlife viewing, hiking, and biking opportunities, and the overall recreational experience for users of the restored habitat. The invasive species management activities may also result in expanding or reopening areas with high aesthetic and recreational qualities to the public. Accordingly, implementation of site improvements would result in temporary adverse effects but would have long-term beneficial impacts to aesthetic and recreational qualities or values at the project site.

Enhancements to recreation services through improvements and/or installation of signage or kiosks would result in temporary, localized, minor adverse impacts from ground disturbance at the Woodlands project. The disturbed sites would be re-contoured similar to the surrounding surface conditions following enhancement activities and allowed to naturally revegetate. The restoration actions would increase and enhance recreational use and, therefore, would reasonably be expected to improve and provide beneficial impacts to recreation.

Habitat improvements associated with the creation of a crevasse splay restoration action in the PALWMA are expected to have a short-term adverse impact on recreation, namely fishing, in the near proximity of construction. Given the vast size of the PALWMA, the small size of the

anticipated construction and ample fishing opportunities, the Trustees do not anticipate more than minor adverse impacts to recreation associated with the construction of the crevasse. There are no anticipated impacts to public access of the levees that would be breached during construction, as access to the levees is by boat only. Recreational fishing could reasonably be expected to improve in the proximity of the crevasse splay as the marsh forms and begins to properly function. Specifically, the marsh is expected to improve productivity and access for fish, both of which could beneficially impact recreation by enhancing recreational fishing opportunities.

The Trustees will also continue to review and plan restoration projects to provide recreational fishing opportunities. Such projects would directly benefit the public by providing or enhancing recreational fishing opportunities.

5.3.3 Cultural resources

No Action: Under this alternative, there would be no impacts because any potentially present cultural and historic resources would remain as they currently stand.

Preferred Alternative: The Louisiana Department of Culture, Recreation and Tourism maintains catalogues of cultural resource sites, but many areas remain unsurveyed and the significance or eligibility of some sites for inclusion in the National Register of Historic Places has not been determined. The Trustees will consult with the Louisiana State Historic Preservation Office on potential effects to archaeological sites, as applicable. Consultations will also be completed for all future recreational use restoration not fully evaluated as part of this DARP/EA.

5.4 Cumulative Impacts

Under NEPA, federal agencies are required to consider the cumulative effects of their preferred actions within the affected environment. Cumulative impacts are the collective result of the incremental impacts of an action that, when added to the impacts of other past, present, and reasonably foreseeable future actions, would affect the same resources, regardless of what agency or person undertakes those actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 C.F.R. § 1508.7). Although the impacts of individual actions taken separately might be minor, the impact of those same actions taken together may be significant for one or multiple resources.

A cumulative impacts analysis focuses on the resources rather than the planned action and considers impacts that take place on both spatial and temporal scales. On a spatial basis, impacts must be considered both within and outside the preferred project area. Time scales for a cumulative impacts analysis are generally longer than project-specific analysis of impacts.

The Trustees have reviewed potential past, present, and reasonably foreseeable actions to assess the potential for cumulative impacts. In this DARP/EA, the Federal Trustees considered the potential cumulative impacts of both the No-Action Alternative and the Preferred Alternative in light of restoration planning efforts and opportunities in the region.

5.4.1 No Action

Since no active restoration would occur, the no action alternative would have long-term adverse effects to physical, biological, and socioeconomic resources in the lower Mississippi River, its associated shoreline habitats, and emergent wetlands of the Bird's Foot Delta in Plaquemines and St. Bernard Parishes, Louisiana. Natural resources would not return to baseline and interim losses would not be compensated for. However, the adverse cumulative effect of the no-action alternative would be minor and not at a regional scale, and is not expected to be significant as defined under NEPA.

5.4.2 Preferred Alternative

The preferred restoration actions taken together will be cumulative in the sense that protection of the Woodlands project property in perpetuity and associated habitat and recreational improvement and management, along with the creation and enhancement of coastal wetlands via crevasse splay, will provide ecological and human use services into the future. These restoration actions are intended to compensate the public for resources injuries caused by the Incident. Based on the environmental analysis conducted herein, the Trustees do not anticipate any negative cumulative impacts as a result of implementing the preferred alternative.

The restoration actions under the preferred alternative would have no major adverse impacts on physical, biological, and socioeconomic resources in the project area. The preferred alternative may result in minor, short-term adverse impacts and both short- and long-term beneficial impacts to habitats and the natural resources they support. When considered in tandem with other past, present, and reasonable foreseeable future actions in the lower Mississippi River and the Bird's Foot Delta, the preferred alternatives are not anticipated to have adverse cumulative impacts. The preferred alternative is expected to result in long-term, beneficial cumulative impacts on the human environment resulting from synergy with previous and current restoration efforts, as well as future restoration activities in the vicinity constructed under separate federal and state authorities and by local and private entities. These efforts may positively impact the areas land use, recreational use, and economic activity through habitat restoration, land preservation, and improved public access and recreational activities. These beneficial cumulative impacts are not expected to be significant as defined under NEPA.

5.5 Finding of No Significant Impact

Under 40 C.F.R. §§ 1501.5 and 1501.6, for the purposes of this NEPA analysis, the DOI is the lead agency and NOAA is a cooperating agency. Based on the analysis of the available information presented in this document, the federal Trustees have concluded that implementation of the preferred restoration actions would not significantly impact the quality of the human environment. All potential beneficial and adverse impacts have been considered in reaching this conclusion. No information indicating the potential for significant impacts was revealed through the public review and comment process on the Draft DARP/EA. An Environmental Impact Statement (EIS) will therefore not be prepared for the preferred restoration actions. Issuance of a Finding of No Significant Impact based upon this Environmental Assessment would fulfill and conclude all requirements for compliance with NEPA by the federal Trustees.

6 COMPLIANCE WITH OTHER AUTHORITIES

Federal Laws

Additional federal laws may apply to the preferred alternative considered in this DARP/EA. All federal, state and local laws will be complied with prior to project implementation. Federal laws, regulations, and Executive Orders (EO) that may be applicable include, but are not limited to, the following:

- Endangered Species Act (16 U.S.C. § 1531 et seq.)
- Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)
- Marine Mammal Protection Act (16 U.S.C. § 1361 et seq.)
- Coastal Zone Management Act (16 U.S.C. § 1451 et seq.)
- National Historic Preservation Act (16 U.S.C. § 470 et seq.)
- Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)
- Bald and Gold Eagle Protection Act (16 U.S.C. § 668 et seq.)
- Clean Air Act (42 U.S.C. § 7401 et seq.)
- Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1251 et seq.) and/or Rivers and Harbors Act (33 U.S.C. § 401 et seq.)
- Marine Protection, Research and Sanctuaries Act (16 U.S.C. § 1431 et seq. and 33 U.S.C. § 1401 et seq.)
- Estuary Protection Act (16 U.S.C. § 1221–1226)
- Archaeological Resource Protection Act (16 U.S.C. § 470aa–470mm)
- National Marine Sanctuaries Act (16 U.S.C. § 1431 et seq.)
- Farmland Protection Policy Act (7 U.S.C. § 4201–4209)
- Rivers and Harbors Act (33 U.S.C. § 401 et seq.) EO 11988: Floodplain Management (augmented by EO 13690, January 30, 2015)
- EO 11990: Protection of Wetlands
- EO 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations⁹
- EO 12962: Recreational Fisheries
- EO 13007: Indian Sacred Sites
- EO 13112: Safeguarding the Nation from the Impacts of Invasive Species
- EO 13175: Consultation and Coordination with Indian Tribal Governments
- EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 13693: Planning for Federal Sustainability in the Next Decade

⁹ This order requires each federal agency to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. The preferred projects are not expected to adversely affect the environment or human health for any environmental justice populations in the vicinity of the projects. In January 2021, the Executive Branch of the United States issued additional Executive Orders relating to Environmental Justice. The federal Trustees reviewed the preferred projects in the context of these Executive Orders and confirm that the preferred projects are not expected to result in disproportionately high or adverse human health, environmental, climate-related or other cumulative impacts on disadvantaged communities.

State and Local Laws

The Trustees will ensure compliance with all applicable state and local laws relevant to the State of Louisiana. Applicable laws and regulations may include, but are not limited to, the following:

- Archeological Finds on State Lands (RS 41:1605)
- Louisiana State and Local Coastal Resources Management Act (RS 49:214.21–214.42)
- Louisiana Oil Spill Prevention and Response Act (RS 30:2451 et seq.)
- Management of State Lands (RS 41:1701.1 et seq.)
- Louisiana Coastal Resources Program (LAC 43:700 et seq.)
- Louisiana Surface Water Quality Standards (LAC 33.IX, Chapter 11)
- Oyster Lease Relocation Program (LAC 76: VII, Section 531)
- Louisiana Scenic Rivers Program (RS 56:1856)

7 REFERENCES

- American Petroleum Institute (API). 2009. Assessment of beached bird modeling methods. Publication 355. API Publishing Services, Washington, D.C. 78 pp.
- Baker, J.A., K.J. Killgore, and R.L. Kasul. 1991. Aquatic habitats and fish communities in the lower Mississippi River. *Aquatic Sciences*, Volume 3, Issue 4, Pages 313-356.
- Bauer, R.T. 2008. From the River to the Sea and Back Again: Amazing migrations of the river shrimp *Macrobrachium ohione*. *Lagniappe* (Louisiana State University) 32 (3). March 1, 2008.
- Bauer R.T. and J. Delahoussaye. 2008. Life history migrations of the amphidromous river shrimp *Macrobrachium ohione* from a continental large river system. *Journal of Crustacean Biology*, (28) 4: 622-632.
- Boyer M.E., J.O. Harris, and R.E. Turner. 1997. Constructed Crevasses and Land Gain in the Mississippi River Delta. *Restoration Ecology*. (5) 1: 85-92.
- Cahoon, D.R., D.A. White and J.C. Lynch. 2011. Sediment infilling and wetland formation dynamics in an active crevasse splay of the Mississippi River delta. *Geomorphology*. 131(3-4): 57-68.
- Coastal Protection and Restoration Authority of Louisiana (CPRA). 2007. Integrated Ecosystem Restoration and Hurricane Protection: Louisiana's Comprehensive Master Plan for a Sustainable Coast. 140pp + appendices.
- Coastal Protection and Restoration Authority of Louisiana (CPRA). 2012. Louisiana's Comprehensive Master Plan for a Sustainable Coast. 190pp.
- Coastal Protection and Restoration Authority of Louisiana (CPRA). 2017. Louisiana's Comprehensive Master Plan for a Sustainable Coast. 171pp.
- Curry, Mark, 2000. Memorandum to John Kern and Lisa DiPinto (NOAA), dated December 7, 2000. Subject: Evaluation of Rip-rap and Revetment Habitat in the Lower Mississippi River.
- Environmental Protection Agency (EPA) n.d. NAAQS Table. <https://www.epa.gov/criteria-air-pollutants/naaqs-table>. Accessed November 20, 2020.
- French McCay D. and J.J. Rowe. 2003. Habitat restoration as mitigation for lost production at multiple trophic levels. *Marine Ecology Progress Series*, 264: 233-247.
- Holcomb, S.R, A.A. Bass, C.S. Reid, M.A. Seymour, N.F. Lorenz, B.B. Gregory, S.M. Javed and K.F. Balkum. 2015. Louisiana Wildlife Action Plan (including 2019 revisions addendum). Louisiana Department of Wildlife and Fisheries. Baton Rouge, Louisiana.

- Keogh, M.E. and T. E. Törnqvist. 2019. Measuring rates of present-day relative sea-level rise in low-elevation coastal zones: a critical evaluation. *Ocean Science*. 15:61-73.
- Lindquist, D.C. 2007. Ecological Review: Mississippi River Sediment Delivery System – Bayou Dupont, CWPPRA Priority Project List 12, State No. BA-39. Louisiana Department of Natural Resources – Coastal Restoration Division. 11pp.
- Louisiana Coastal Wetlands Conservation and Restoration Task Force (LCWCRTF). 1993. Louisiana Coastal Wetlands Restoration Plan, Main Report and Environmental Impact Statement. Appendix C, Mississippi River Delta Basin. 74pp.
- Louisiana Coastal Wetlands Conservation and Restoration Task Force (LCWCRTF) and the Wetlands Conservation and Restoration Authority. 1998. *Coast 2050: toward a sustainable coastal Louisiana*. Louisiana Department of Natural Resources. Baton Rouge, LA. 161 pp + appendices.
- Louisiana Department of Environmental Quality, Ambient Air Monitoring Program. 2016. <https://www.deq.louisiana.gov/page/ambient-air-monitoring-program>. Accessed on November 11, 2020.
- Louisiana Department of Environmental Quality (LDEQ). 2018. Louisiana Water Quality Integrated Report. https://www.deq.louisiana.gov/assets/docs/Water/Integrated_Report/2018_Integrated_Report/18_IR1_A_Master_Text_FINAL-CORRECTIONS_For_Website_04-17-19.pdf.
- Louisiana Department of Wildlife and Fisheries. 2016. Louisiana Shrimp Fishery Management Plan. Office of Fisheries. 158 pp.
- Louisiana Department of Wildlife and Fisheries. 2018a. Fur Advisory Council 2017-2018 Annual Report.
- Louisiana Department of Wildlife and Fisheries. 2018b. Louisiana's Alligator Management Program: 2017-2018 Annual Report.
- Louisiana Department of Wildlife and Fisheries. 2020. Louisiana Oyster 2018 Stock Assessment Report of the Public Oyster Seed Grounds and Reservations of Louisiana. Oyster Data Report Series No. 24. 68 pp.
- National Marine Fisheries Service. 2018. Fisheries Economics of the United States, 2016. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-187a, 243 pp.
- National Oceanic and Atmospheric Administration (NOAA). 1995. Habitat Equivalency Analysis: An Overview. Policy and Technical Paper Series No. 95-1 (revised 2000). Washington DC: National Oceanic and Atmospheric Administration: Damage Assessment and Restoration Program.

- National Oceanic and Atmospheric Administration (NOAA). 1997. Scaling Compensatory Restoration Actions: Guidance Document for Natural Resource Damage Assessment Under the Oil Pollution Act of 1990. Washington DC: National Oceanic and Atmospheric Administration: Damage Assessment and Restoration Program.
- National Oceanic and Atmospheric Administration (NOAA). 1999. Discounting and the treatment of uncertainty in natural resource damage assessment. Technical Paper 99-1. Silver Spring, Maryland: Damage Assessment and Restoration Program: Damage Assessment Center.
- National Oceanic and Atmospheric Administration, U.S. Department of the Interior, Louisiana Oil Spill Coordinator's Office, Office of the Governor, Louisiana Department of Environmental Quality, Louisiana Department of Natural Resources, Louisiana Department of Wildlife and Fisheries. 2007. The Louisiana Regional Restoration Planning Program Final Programmatic Environmental Impact Statement.
- National Oceanic and Atmospheric Administration (NOAA). 2017. Commercial fisheries statistics – annual commercial landing statistics.
<https://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/annual-landings/index>. Accessed on February, 20, 2018.
- Sperduto, M.B., S.P. Powers, and M. Donlan. 2003. Scaling restoration to achieve quantitative enhancement of loon, seaduck, and other seabird populations. Marine Ecology Progress Series 264: 221-232.
- Stout, S.A. and Z. Wang. 2016. Standard Handbook Oil Spill Environmental Forensics: Fingerprinting and Source Identification. Second Edition. Elsevier Inc.
- U.S. Army Corps of Engineers (USACE). 2004. Louisiana Coastal Area (LCA), Louisiana – Ecosystem Restoration Study. Volumes 1, 2, 3, and 4. U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District. New Orleans, LA. November 2004.
- U.S. Army Corps of Engineers (USACE). 2016. Mississippi River Ship Channel, Gulf to Baton Rouge, LA: Draft Integrated General Reevaluation Report and Supplemental Environmental Impact Statement. U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District. New Orleans, LA. November 2016.
<http://www.mvn.usace.army.mil/About/Mississippi-River-Ship-Channel/>.
- U.S. Army Corps of Engineers (USACE). 2019. Sea-level change curve calculator (Version 2019.21). Accessed 8/31/20. http://corpsmapu.usace.army.mil/rccinfo/slc/slcc_calc.html.
- U.S. Army Corps of Engineers (USACE). 2020. Historic Mississippi River Hydrographic Survey Books. U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District. New Orleans, LA.

https://www.mvn.usace.army.mil/Missions/Engineering/Geospatial-Section/MRHB_Historic/. Accessed September 2, 2020.

United States Census Bureau. n.d. QuickFacts, Plaquemines Parish, Louisiana
<https://www.census.gov/quickfacts/plaqueminesparishlouisiana>. Accessed November 23, 2020.

U.S. Fish and Wildlife Service (USFWS). 2003. Final Environmental Assessment: Delta Management at Fort St. Philip BS-11, Plaquemines Parish, Louisiana. U.S. Fish and Wildlife Service, Ecological Services, Lafayette, LA. 35pp.

U.S. Fish and Wildlife Service (USFWS) 2008. ACL Barge DM932-New Orleans, LA, Oil Spill, FWS Report: R4-EC-RST 8/23-25/08 Operational Period, p. 9

8 RESPONSE TO PUBLIC COMMENT

Public participation in development of the DARP/EA is an integral component of the Restoration Planning Phase. Soliciting public comment is consistent with all federal and state laws and regulations that apply to the natural resource damage assessment and restoration process, including Section 1006 of OPA, the NRDA regulations at 15 C.F.R. Part 990, Section 2480 of OSPRA, the OSPRA regulations at LAC 43:XXIX.101 *et seq.*, and NEPA, as well as associated implementing regulations.

The Trustees published a Draft DARP/EA on May 20, 2021 for a 30-day comment period. The Trustees then considered comments received by the end of the comment period in development of this DARP/EA. Comments received and Trustee responses are summarized below.

8.1 Comments Received

1. **Comment:** The National Wildlife Federation submitted a statement in support of the Preferred Alternative suite of restoration actions, including (1) the Woodlands Acquisition, Management and Recreational Enhancement Project, (2) Marsh Creation via a Crevasse Splay, and (3) Recreational Fishing Enhancements.

Response: The Trustees acknowledge the submission and thank the commenter for their support in this process.

2. **Comment:** The Louisiana Wildlife Federation submitted a letter in support of the proposed Woodlands Acquisition, Management and Recreational Enhancement Project.

Response: The Trustees acknowledge the submission and thank the commenter for their support in this process.

APPENDIX A: POTENTIAL RESTORATION ACTIONS IN RRP Program REGIONS 1 AND 2

Count	Project ID	Project Name	Parish	RRP Program Region
1	225	Edward Wisner Marsh Creation	Lafourche	2
2	229	Wetland Creation-Parishwide East Bank	St James	1
3	230	Grand Point Boat Launch	St James	1
4	233	Wetland Creation-Parishwide West Bank	St James	2
5	245	Bay Champagne Marsh Creation North Rim	Lafourche	2
6	246	Martin Shoreline Protection and Marsh Creation	Lafourche	2
7	261	Woodlands Acquisition, Management and Recreational Enhancement Project	Plaquemines	2
8	262	The Coastal Forest Center	Orleans	2
9	264	Woodlands Trail - Interpretive Center	Plaquemines	2
10	300	West End Cypress Swamp Project - Mandeville, LA	St Tammany	1
11	320	Clovelly	Lafourche	2
12	323	Restoring a Small Island in Barataria Bay: Providing Habitat for Nesting Birds	Plaquemines	2
13	373	La Branche East Marsh Creation (PO-0075)	St Charles	1
14	480	LL&E South Lafourche Marsh Restoration and Levee Protection	Lafourche	2
15	482	EKOgrown® Native Trees for Barrier Islands Restoration	Coastwide	Coastwide
16	484	Twin Pipeline Canal Ridge Restoration and Fringe Marsh Creation	Lafourche, Terrebonne	2, 3
17	493	PPL20 - Lake Lery Marsh Restoration	St Bernard	1, 2
18	495	Lake Maurepas Land Protection Effort	Livingston, Tangipahoa	1
19	500	Grand Isle and Vicinity Barrier Islands Protection and Enhancement	Jefferson, Lafourche	2, 3
20	501	Lake Pontchartrain Shoreline Restoration - Little Woods area	Jefferson, Orleans, St Tammany, Tangipahoa	1
21	502	Lake Pontchartrain Shoreline Restoration - South Shore	Jefferson, Orleans, St Tammany, Tangipahoa	1

22	503	Lake Pontchartrain Shoreline Restoration - canal restoration	Jefferson, Orleans, St Tammany,	1
23	566	Madisonville to Manchac Louisiana Wetlands Redux	Tangipahoa Coastwide	Coastwide
24	572	Delacroix Island Protection and Restoration: A Hurricane Protection and Community Resilience Project	St Bernard	2
25	577	Restore historic Gulf Sturgeon spawning grounds	St Tammany	1, 5
26	608	Big Branch Marsh National Wildlife Refuge	St Tammany	1
27	622	Chef Menteur Restoration	Orleans	1
28	752	Mississippi River long distance sediment pipeline/marsh creation - NRDA increment	Plaquemines	2
29	803	Tchefuncte River Lighthouse Habitat Restoration & Shoreline Protection	St Tammany	1
30	811	Barataria Basin Ridge and Marsh Creation Project: Spanish Pass Increment (BA-0203)	Plaquemines	2
31	813	Caminada Headlands Back Barrier Marsh Creation Increment 2 (BA-0193)	Lafourche, Jefferson	2
32	814	East Leeville Marsh Creation and Nourishment (BA-0194)	Lafourche	2
33	815	Barataria Bay Rim Marsh Creation and Nourishment (BA-0195)	Jefferson, Plaquemines	2
34	816	LaBranche East Marsh Creation (PO-0075)	St Charles	2
35	817	LaBranche Central Marsh Creation (PO-0133)	St Charles	2
36	818	New Orleans Landbridge Shoreline Stabilization and Marsh Creation (PO-0169)	Orleans	1
37	819	Fritchie Marsh Terracing and Marsh Creation (PO-0173)	St Tammany	1
38	820	Bayou La Loutre Ridge Restoration and Marsh Creation (PO-0178)	St Bernard	1
39	821	St. Catherine Island Marsh Creation and Shoreline Protection (PO-179)	Orleans	1
40	822	North Catfish Lake Marsh Creation (TE-0112)	Lafourche	2
41	826	Caminada Headlands Back Barrier Marsh Creation (BA-0171)	Lafourche	2
42	827	Bayou Grand Cheniere Marsh and Ridge Restoration (BA-0173)	Plaquemines	2

43	828	Terracing and Marsh Creation South of Big Mar (BS-0024)	Plaquemines	2
44	829	Shell Beach South Marsh Creation (PO-0168)	St Bernard	1
45	865	Alligator Bend Marsh Restoration and Shoreline Protection (PO-0034)	Orleans	1

Consent Decree in *U.S. and State of Louisiana v. American Commercial Barge Line, LLC*

APPENDIX B

Form of Conservation Servitude

ACT OF DONATION OF CONSERVATION SERVITUDE

THIS ACT OF DONATION OF CONSERVATION SERVITUDE (this “Servitude”) is made as of this ____ day of _____, 2021, before the undersigned Notary Public(s), and in the presence of the subscribing witnesses, who there appeared: **WOODLANDS CONSERVANCY**, a non-profit organization under the laws of the State of Louisiana whose mailing address is P.O. Box 7028, Belle Chasse, Louisiana 70037, and whose tax identification number will be made available as reasonably needed on request (herein referred to as “Grantor”); and **LAND TRUST FOR LOUISIANA**, a non-profit corporation organized under the laws of the State of Louisiana whose mailing address is P. O. Box 1636, Hammond, Louisiana, 70404-1636, and whose tax identification number will be made available as reasonably needed on request (herein referred to as “Grantee”) (collectively, the “Parties”) who declared that:

WHEREAS, Grantor is the owner in fee simple of certain real property (hereinafter “the Property”) known as a nature preserve, located in Plaquemines Parish, Louisiana that is 649.11 acres, more or less, and accessed via a servitude granted by Plaquemines Parish Government, both of which are more particularly shown and described in Appendix A, which is attached hereto and made a part hereof;

WHEREAS, the Property consists of substantial natural areas of significant conservation and aesthetic value, relatively natural habitats for fish, wildlife and plants, and related ecosystems, and includes historic magazines used during WWII, all of which contribute to open space, natural and cultural values;

WHEREAS, conservation servitudes serve to protect among other purposes the natural, scenic, historical or open space values of properties in a manner that permits continuing private ownership of land while fulfilling desirable conservation purposes;

WHEREAS, this Servitude is part of a Natural Resources Damage (NRD) settlement that, among other things, requires a servitude on the Property and certain restoration activities on a portion of the Property to compensate the public for damages to natural resources;

WHEREAS, the NRD Trustees (the “Trustees” are defined herein) have an interest in restoring and preserving the important natural resources and natural resource services provided by the Property and, as such, will have the right to enforce the terms of this Servitude as Third Parties with Rights of Enforcement, in accordance with the Louisiana Conservation Servitude Act (“LCSA”), as amended and codified at Louisiana Revised Statutes 9:1271 *et seq.*;

WHEREAS, the term “Trustees” shall mean and include the United States and the State of Louisiana by and through their duly authorized representatives: the National Oceanic and Atmospheric Administration (“NOAA”), the United States Fish and Wildlife Service (on behalf of the United States Department of the Interior (“DOI”)), the Louisiana Oil Spill Coordinator’s Office (“LOSCO”), the Louisiana Department of Wildlife and Fisheries (“LDWF”), the Louisiana Department of Environmental Quality (“LDEQ”), the Louisiana Department of Natural Resources (“LDNR”), and the Louisiana Coastal Protection and Restoration Authority (“CPRA”);

WHEREAS, Grantor acquired the Property pursuant to a settlement entered into by the Trustees to compensate the public for damages to natural resources and natural resource services;

WHEREAS, the natural areas of significant conservation and aesthetic value on the Property specifically include approximately 55 acres of bottomland hardwood forested wetland

habitats and 50 acres of swamp, which provide natural resource service flows to bird guilds that utilize bottomland hardwood forested wetland for nesting, sheltering and foraging, and which the Trustees credited toward the public's compensation for damages to natural resources and natural resource services;

WHEREAS, the Trustees shall develop and approve prescribed restoration and/or management plans for a portion of the Property to be followed by the Grantor;

WHEREAS, the Property constitutes a significant natural area that is a "...relatively natural habitat of fish, wildlife or plants, or similar ecosystem" as that phrase is used in Section 170(h)(4)(A)(ii) of the Internal Revenue Code of 1986, as amended, 26 U.S.C. §1 *et. seq.* (hereinafter referred to as "the Code"), and protection of the Property will thereby meet the requirements of Section 170(h)(4)(A)(ii) of the Code;

WHEREAS, the Grantee is a non-profit, 501(c)(3) "qualified conservation organization" as defined in Section 170(h)(3) of the Code and the regulations thereunder whose purpose is to enhance and conserve natural areas for ecological, aesthetic, scientific, charitable and educational purposes;

WHEREAS, the LCSA permits the creation of conservation servitudes for the purposes of, among other things, retaining or protecting natural, scenic, or open space values of real property, assuring its availability for agricultural, forest, recreational, or open space use, protecting natural resources, maintaining or enhancing air and water quality or preserving the historical, archeological or cultural aspects of real property, La. R.S. 9:1272(1);

WHEREAS, Grantor and Grantee's general purposes are to enhance and conserve natural areas for ecological, aesthetic, scientific, charitable, recreational and educational purposes;

WHEREAS, Grantor and Grantee's specific purpose in entering into this Servitude is to preserve the important natural resources and natural resource services provided by the Property, including the approximately 55 acres of bottomland hardwood forested wetland habitats and 50 acres of swamp in its current or restored state;

WHEREAS, the Grantee has the resources to monitor and enforce the restrictions set forth in this Servitude;

WHEREAS, the specific Conservation Values of the Property on the date of this Servitude are documented in the Baseline Documentation Report ("BDR Report"), a copy of which is on file with both the Grantor and the Grantee (which Report was made available prior to the date of the Servitude). The Grantor, Grantee, and Trustees agree the BDR provides an accurate representation of the Property and the condition of the same as of the date of this Servitude as required by Treasury Reg. 1.170A-14(g)(5), and is intended to serve as an objective informational baseline outlining the Conservation Values present on the Property at the time of this Servitude, as well as for monitoring compliance with the terms and conditions of this Servitude on at least an annual basis. For purposes of this Servitude, the term "**Conservation Values**" is defined as those characteristics of the Property which exemplify "a relatively natural habitat of fish, wildlife, or plants or similar ecosystem" as that phrase is used in Section 170(h)(4)(A)(ii) of the Code, or other particular natural resource perpetually protected for the benefit of the public on the Property; and

WHEREAS, Grantor represents that the Property is free and clear of any liens or encumbrances that could have a material adverse effect on this Servitude, or such liens have been subordinated to this Servitude, and that as owner of the Property, Grantor has access thereto, the right to convey to the Grantee, and the right to conserve and protect the Conservation Values of the Property in perpetuity.

NOW, THEREFORE, the Grantor, in consideration of the foregoing recitations and of the mutual covenants, terms, conditions and restrictions hereinunder set forth and as an absolute and unconditional gift, does hereby freely give, grant, bargain, donate and convey unto the Grantee, and its successors and assigns, the Servitude over the Property subject to the covenants, conditions and restrictions hereinafter set forth, which will run with the land and burden the Property in perpetuity.

Section I PURPOSE

Purpose. This Servitude is granted for the Purpose of forever conserving the open condition, natural and scenic values, biological diversity and ecological services of the Property and preventing any use of the Property that would impair or interfere with the Conservation Values of the Property, as defined in the Baseline Documentation Report (BDR), while allowing for uses on the Property that are compatible with and not destructive of those Conservation Values. The conservation purpose (hereinafter “Purpose”) of this Servitude is further defined below:

1. wildlife habitat protection, and ecological value protection;
2. to conserve open, undeveloped conditions;
3. to conserve the Property’s bottomland hardwood forested wetland and swamp habitats in their current or restored state;
4. natural communities and biological diversity protection;
5. rare and endangered species habitat protection;
6. scenic, scientific, natural, and historical features protection;
7. wetlands protection;
8. water quality protection and storm water storage;
9. to allow compatible passive outdoor recreation and environmental education and outreach;
10. the protection of any other characteristic, resource and/or use of the Property that constitute the Conservation Values as defined herein and in the BDR.

Section II RESTRICTIONS AND COVENANTS

In furtherance of the foregoing Purpose, the Grantor states and agrees that the following uses and practices, though not an exhaustive recital of the inconsistent uses and practices, are hereby deemed to be inconsistent with the Purpose of this Servitude, and shall be prohibited. Any activity or use of the Property must not materially impair or interfere with its Purpose or the Conservation Values. When considering whether or not a particular activity or use would materially impair the Conservation Values, Grantor shall consider whether the proposed activity or use, in combination with existing activities or uses, would materially impair the Conservation Values. Unless otherwise specifically stated herein or unless allowed in a prescribed restoration or management plan for the Property approved by the Trustees, Grantor agrees that the following activities are prohibited on the Property:

- 2.1 Development Activities. There shall be no commercial, industrial, agricultural or building development activities undertaken or allowed on the Property.
- 2.2 Subdivision. No partition, division or subdivision of the Property is permitted, nor may the Property be included as part of the gross tract area of other property not subject to this Servitude.
- 2.3 Structures. Unless allowed by Section IV or otherwise allowed herein, there shall be no construction or placing of buildings, docks, piers, bridges, or other structures of any kind on, under or above the Property, including, but not limited to, transmission or receiving towers, energy facilities, or water tanks. There will also be no house trailers, permanent or temporary shelter, or vehicles of any sort providing temporary living quarters on the Property. This restriction is not intended to apply to temporary parking of vehicles. No parking areas shall be established on the Property except as allowed under Section IV. Use of outdoor benches or furniture on the Property is allowed as long as it does not detract from the natural and scenic condition of the property, or materially impair the Conservation Values of the Property or the Purpose of this Servitude.
- 2.4 Fences. There shall be no partitioning the Property with fencing or constructing perimeter or boundary fencing designed to impede the movement of terrestrial wildlife to and from said Property or designed to contain terrestrial wildlife within said Property.
- 2.5 Roads and Trails. There shall be no building of any new roads or trails except as allowed in reserved rights.
- 2.6 Vehicles. Use of dune buggies, motorcycles, all-terrain or off-road vehicles or other types of motorized vehicles is prohibited except when required for property maintenance, land management and restoration activities, or when used by Grantor on existing roads and trails to assist individuals with access to the site in accordance with this Servitude.
- 2.7 Leases. There shall be no leasing of all or any part of the Property for a use inconsistent with the Purpose of this Servitude.
- 2.8 Topography and Minerals. The Grantor shall not conduct or allow excavating, dredging, quarrying, mining, drilling or use of any surface mineral extraction method. No removal of topsoil, sand, gravel, rock, peat, minerals, gas, oil, or other hydrocarbon products or other materials; and no change in the topography of the landscape or land surface in any manner shall be allowed, except those limited impacts from exercising a reserved right.
- 2.9 Fill. No filling, dumping, excavation or other alteration to the surface of the Property shall be allowed. This includes mechanical land clearing or deposition of soil, rock, shell or other fill on the Property.
- 2.10 Exotics. There shall be no introduction of non-native plant or animal species except as allowed in reserved rights; however, no exotic species known to be invasive shall be allowed.
- 2.11 Agriculture and Grazing. Except as allowed herein, there shall be no agricultural activities including, but not limited to: commercial horticulture, including nursery, aquaculture, animal husbandry, and cattle and domestic livestock grazing.
- 2.12 Water Resources. There shall be no activities, other than those that already exist on the property, that alter the natural drainage and flooding patterns of the Property. There will be no drainage, disturbance, or impairment, including water quality impairment, of any watercourse or wetlands within and upon the Property in violation of State or Federal law, including the Louisiana Scenic Rivers Act, La. R.S. 56:1840 *et. seq.*

- 2.13 Hunting and Fishing. There shall be no sport or commercial hunting of wildlife or commercial fishing on the Property unless determined necessary for invasive species control.
- 2.14 Refuse and USTs. No portion of the Property shall be used for landfill, for the installation of any underground or aboveground storage tanks, for the installation and use of an incinerator for the destruction of waste material or for the dumping, storing, disposal or treatment of refuse, trash, garbage, rubbish, junk, ashes, building debris, unregistered vehicles, abandoned equipment or parts thereof, or other offensive or hazardous substances or waste.
- 2.15 Pollutants. There shall be no release, generation, treatment, use, disposal, abandonment, and movement in, on, from or across the Property of a substance defined, listed, or otherwise classified pursuant to any federal, state, or local law, regulation or requirement as hazardous, toxic, polluting or otherwise contaminating to the air, water, soil, or in any way harmful or threatening to human health or the environment.
- 2.16 Signs. There shall be no construction or placing of signs for commercial purposes, including but not limited to, billboards, or any advertising materials of any sort on the Property.
- 2.17 Vegetation Management. Native vegetation on the Property may not be burned, cut, disturbed, harvested, destroyed, altered or removed from the Property, nor may chemical herbicides, pesticides, fungicides, fertilizers and other agents be used that may have an adverse effect on wildlife, waters, and other important conservation interests to be protected by this Servitude. There shall be no cutting or harvesting of timber on or from the Property except as permitted herein.
- 2.18 Rights-of-Way. There shall be no establishment/location of new utility corridors or other rights-of-way within the Property, nor shall any rights-of-passage across or upon the Property be allowed or granted to third parties except as permitted below in Section 2.19.
- 2.19 Access. Nothing contained herein should be construed as affording the general public physical access to any portion of the Property. Nothing in this Servitude should be construed to preclude Grantor's right, at Grantor's liability, to grant public access on, over or across the Property, for low-impact (passive) outdoor recreation, nature observation and study, provided that such use does not conflict with the Conservation Values and Purpose of the Property.
- 2.20 Use Inconsistent with Purpose. The Parties agree upon the Purpose of this Servitude as stated in Section I. The Property will be retained in perpetuity predominantly in its natural and scenic and open condition, for conservation purposes and to prevent any use of the Property that will materially impair or interfere with the Conservation Values of the Property, its wildlife habitat, natural resources, natural resource services or associated ecosystems. Subject to Section IV, any use or activity that is inconsistent with the Purpose of this Servitude or that materially threatens the Purpose of this Servitude is prohibited. Any ambiguities in this document are to be interpreted in favor of furthering the Purpose of the Servitude. Any issue that may arise in the future that is unforeseen or is not addressed in this document is to be addressed in a manner that furthers the Purpose of the Servitude. In the event that there is a dispute as to whether or not an activity or use is prohibited under this Section II, the Parties will interpret the provisions of this Servitude addressing use in a manner most favorable to the Purpose of the Servitude.

Section III
GRANTEE’S AND TRUSTEES’ AFFIRMATIVE RIGHTS

Grantee and the Trustees shall have the right to protect the Conservation Values of the Property and to prevent any activity on, or use of, the Property that is inconsistent with the Purpose of this Servitude and to require restoration to the condition immediately before such activity or use of any areas or features of the Property that may be damaged by any such inconsistent activity or use.

- 3.1 Right of Entry and Access & Enforcement. The Grantee and the Trustees shall have the right, with reasonable prior notice to Grantor, to enter the Property for the purposes of the inspection and protection of the Conservation Values of the Property and to enforce the terms of this Servitude. The right of entry and access herein described does not extend to the public or any person or entity other than the Grantee and Trustees, their agents, employees, successors, and/or assigns. In the event of an emergency and/or any circumstances that may cause immediate harm to the Conservation Values, the Grantee or Trustees may seek immediate injunctive relief to mitigate such harm.
- 3.2 Restoration and Management Plans. The Trustees shall have the right, at their discretion, to develop restoration and management plans in addition to the NRD prescribed restoration and management plans, which include but are not limited to restoration for the integrated coastal protection as defined in LA RS 49:214.211, as well as restoration for fish and wildlife habitat, or for rare or endangered plant or animal species in the event that they are found to exist on the Property, and to implement said plans with the permission of the Grantor, which permission shall not be unreasonably withheld, conditioned or delayed. Any such plans must be consistent with preserving and/or restoring the Conservation Values of the Property and the Purpose of this Servitude. All costs and expenses for such a plan shall be paid by the Trustees.
- 3.3 Conservation Recognition. The Grantee and the Trustees have the right to place a plaque noting the conservation status of the property as per this Servitude. Design and placement of said plaque should be via mutual agreement between Grantor, Grantee and Trustees.

Section IV
GRANTOR’S RESERVED RIGHTS

Notwithstanding any provision to the contrary contained in this Servitude, the Grantor reserves for itself, its heirs, successors and assigns the “Reserved Rights” set forth in this Section IV. The exercise of all Reserved Rights will be in full accordance with all applicable local, state and federal laws and regulations, as well as in accordance with the Purpose of this Servitude and shall not materially impair the Conservation Values of the Property.

- 4.1 Subdivision. The Property may not be subdivided for the purpose of division of parcels from the whole for residential development or to be sold as multiple undeveloped parcels, but shall be held by the same owner(s) as a single undivided tract of land. However, the Grantor, the Trustees, and the Grantee do not intend to restrict the conveyance of parcels smaller than the whole for purposes that are not contrary to the Purpose of this Servitude and do not negatively affect the Conservation Values, such as, but not limited to, adjustment of boundaries or consolidation of parcels, so long as such conveyances a) are

accomplished via deed and recorded pursuant to state conveyancing regulations; and b) are subject to the terms and conditions of the Servitude and specifically thereby restricted from any development other than as stated in Section IV of the Servitude.

- 4.2 Structures Promoting Passive Recreational Use of the Property and Environmental Education. The right to construct, maintain, repair, and replace benches, picnic tables, kiosks, gates, bridges, observation towers, wildlife observation platforms, other structures identified in Appendix B, *Woodlands Property Enhancement Projects*, and other structures that are consistent in nature and scope with the projects identified in Appendix B, to promote passive outdoor recreation and environmental education and outreach at the Property, and which are consistent with the Purpose of this Servitude and do not materially impair the Conservation Values. Any new construction shall consist of environmentally sensitive materials. Interpretive kiosks may consist of two (2) poles with a roof over the interpretive panel/kiosk, similar in design to the existing kiosks on the Property. Grantor may place a total number of kiosks on the Property not to exceed one (1) for every half mile of trail, though kiosks may be clustered together at historic and/or scenic areas. Grantor may construct no more than two (2) observation towers on the Property, with elevation below canopy height, and boardwalks leading to the raised platforms. The observation towers may overlook the WWII Ammunition Magazine Site, wetlands, and/or other scenic areas. Prior to the construction of any observation towers, Grantor shall consult with the United States Fish and Wildlife Service on any appropriate height restrictions for the respective tower. For a period of 20 years following the recording of this Servitude, any proposed new construction not identified in Appendix B, *Woodlands Property Enhancement Projects*, or not consistent in nature and scope with the list of projects identified in Appendix B, shall be subject to prior written approval of the Trustees and the Grantee or its successor or assigns. Such approval shall not be unreasonably, withheld, conditional or delayed. Any such new construction shall be consistent with the Purpose and Conservation Values of this Servitude and shall consist of environmentally sensitive materials. Following this 20-year period, any new construction not identified in Appendix B will not be approved without an amendment to this Servitude. No jurisdictional waters of the United States may be filled or directly impacted by the construction of new structures on the Property, except for the observation towers allowed by this paragraph and where applicable permit requirements have been met.

- 4.3 Interpretive Center and Associated Educational and Access Amenities. The right to construct, operate, maintain, repair, and replace an Interpretive Center and associated access and educational amenities on the approximately ten-acre upland portion of the Property adjacent to the existing parking area accessed by F. Edward Herbert Boulevard, as long as these structures are consistent with the Purpose of this Servitude and do not materially impair the Conservation Values. The purpose of the Interpretive Center and Associated Educational and Access Amenities is to promote the public's use of the Property for passive outdoor recreation and environmental education and outreach. The Interpretive Center shall be comparable in size and scope to that described in Appendix C, *Woodlands Property Interpretive Center Plans*, and shall be no larger than 6500 square feet. Any significant deviation in size and scope from this plan must be approved by the Trustees and the Grantee, such approval not to be unreasonably withheld, conditional or delayed. Associated Access Amenities, such as additional parking, restrooms, and roads, trails or boardwalks, may be constructed in the upland portion of the Property adjacent to

the existing parking area accessed by F. Edward Herbert Boulevard, to promote the public's use of the Interpretive Center and the Property. Additionally, the Associated Educational Amenities identified in Appendix B, *Woodlands Property Enhancement Projects*, may be constructed in this upland portion of the Property for the same purpose. Any new construction shall consist of environmentally sensitive materials and shall adhere to minimum design standards for wind loading as developed by the American Society of Civil Engineers (ASCE) and referenced in the International Building Code and International Residential Code at the International Code Council and adopted by the Louisiana State Uniform Construction Code Council. Any new road or parking area must be constructed of pervious material. No jurisdictional waters of the United States may be filled or directly impacted by the construction of an Interpretive Center, or the Associated Educational and Access Amenities.

- 4.4 Fencing. If necessary for restoration or management purposes, the right to construct, maintain, and replace a fence around the perimeter of the Property and to construct, repair and maintain new fences within the Property, provided, however, that such new fence construction shall not have a negative effect on the movement of wildlife onto or off of the Property or to other natural resources or resource services, and shall not materially impair the Conservation Values. Temporary fencing around planted vegetation for protection from wildlife or trampling is allowed.
- 4.5 Roads and Trails. The right to maintain and replace existing roads and trails, including equestrian trails, at the same location with roads or trails of like size and composition, and in addition, the right to construct new roads, as described in this Section IV or as allowed in a Trustee-approved prescribed restoration or management plan, and to construct up to 15 miles of new trails, including equestrian trails, on the Property. Trails may include boardwalks and overlooks at scenic areas, which overlooks should not exceed 600 square feet in size. The right to use roads and trails for all activities permitted under this Servitude. Maintenance of roads and trails shall be limited to normal practices for non-paved roads and trails, such as the removal of dead vegetation, necessary pruning or removal of hazardous trees and plants, application of aggregate, application of other permeable materials necessary to correct erosion, grading, placement of culverts, water control structures, and bridges, and maintenance of roadside ditches and canals. Any new road or trail must be constructed of pervious material. No jurisdictional waters of the United States may be filled or significantly impacted by the construction of new roads or trails.
- 4.6 Recreational and Nature Study Activities. The right to allow public access for low impact (passive) outdoor recreation such as hiking, biking, bird-watching, and horseback-riding on designated trails and areas, and for nature study and research so long as the activities do not materially impair the Conservation Values of the Property and are consistent with the Purpose of this Servitude. Primitive overnight camping for outdoor education purposes may be allowed on an occasional basis in a designated camping area provided there are no negative effects to the habitat.
- 4.7 Infrastructure Maintenance. The right to construct, maintain and replace existing infrastructure or new infrastructure approved in this Section IV, subject to all requisite government permits, regulations and/or laws, for use by the Grantor, its guests and employees, as well as for use by the Grantee and Trustees for their entry and access rights as set forth in this Servitude.

- 4.8 Restoration and/or Enhancement of Historic or Cultural Sites. The right to maintain, restore, and/or enhance existing historic or cultural sites currently known or unknown on the Property, subject to all laws and regulations applicable to such sites. Activities may include, but are not limited to, the right to remove brush or trees from historic or cultural structures, the right to remove rust from and/or repaint historic or cultural structures, and the right to restore and/or enhance the interior of historic or cultural structures for passive recreation and educational purposes.
- 4.9 Wildlife Enhancement Features. The right to construct, maintain, and replace wildlife enhancement features, such as osprey platforms, nest boxes, bat boxes, and wood duck boxes, to promote wildlife use of the Property, so long as these features are consistent with the Purpose of this Servitude and do not materially impair the Conservation Values of the Property.
- 4.10 Water Resources. The right to develop and maintain those water resources and wetlands on the Property necessary to wildlife and other uses permitted by this Servitude, so long as such development and maintenance does not impair any of the water resources or wetlands. Permitted activities shall include, but are not limited to, the right to develop, restore and enhance water resources for fisheries and wildlife improvement; and the right to undertake bank stabilization measures and stream and watercourse restoration, provided all government regulations are followed, a living shoreline concept is followed as much as possible, and said work does not materially impair the Conservation Values of the Property and is consistent with the Purpose of this Servitude.
- 4.11 Flood Control: The right to allow permitted drainage-way maintenance and the pumping of flood waters as currently done on the Property and as needed by holders of existing drainage servitudes.
- 4.12 Clearing and Food Plots. The right to maintain or create wildlife food plots on open lands and spaces existing at the time of the execution of this Servitude, or in openings resulting from activities permitted under this Servitude, and along existing roads and trails on the Property. Grantors may use native and non-native plant species traditionally and prevalently used as of or prior to the date of this Servitude in the food plots, as long as said activity does not materially impair the Conservation Values of the Property and plants used are not invasive in nature.
- 4.13 Vegetation Maintenance. The right to cut and remove grass or other vegetation, and, to the extent customary, to perform routine upkeep, maintenance, and landscaping, including the planting in natural areas of trees, shrubs, flowers, and other native, indigenous species. The right to plant native or non-native species adjacent to existing or permitted structures as long as such plants are not invasive in nature. All planting and vegetation maintenance shall not contribute to sediment runoff or a reduction of water quality. The right to use fertilizers and pesticides as needed provided they are not known to degrade water quality or negatively impact wildlife. Subject to other provisions of this Servitude, the right to selectively cut, burn, mow and clear trees and vegetation in existing fields for wildlife habitat enhancement, management, research and protection, including but not limited to the right to create, relocate and maintain bird banding net lanes. The right to undertake activities for fire protection, road, trail and rights-of-way maintenance, tick, fire ant, and mosquito control. All such activities shall be undertaken in accordance with the Purpose of this Servitude.

- 4.14 Timber. The right to cut and/or harvest dead, damaged or diseased trees and trees that present hazards to persons or property, and to clear brush and trim trees affecting structures within the immediate vicinity of same. The right to conduct salvage timber harvests and forest management activities as a result of storm and flood damage as long as it is supervised by a registered forester utilizing Best Management Practices, and said activity does not materially impair the Conservation Values of the Property or the Purpose of this Servitude.
- 4.15 Grazing. Brief, temporary grazing of horses along trails is allowed.
- 4.16 Agrichemicals. The right to use agrichemicals, including, but not limited to, fertilizers, biocides, herbicides and insecticides, but only in those amounts and with that frequency of application constituting the minimum necessary to accomplish activities permitted by the terms of this Servitude and applied in accordance with the label instructions. Notwithstanding the foregoing sentence, no use of agrichemicals will be made if such use would result in (i) contamination of any source of water, (ii) negative impact to wildlife, or (iii) any material impairment of any natural ecosystem or process, or the Conservation Values, on the Property.
- 4.17 Exotics. Grantor shall allow only those non-native plant or animal species that serve the Purpose and Conservation Values of this Servitude. All species used must be non-invasive (i.e., they do not readily spread on their own away from where they were introduced on the site).
- 4.18 Utilities. At Grantor's election and expense, Grantor may bury or otherwise camouflage all utility systems or extensions of the existing utility systems. The right to maintain and replace all necessary utility systems for any existing or approved new structures on the Property.
- 4.19 Signs. The right to construct, place and maintain directional, environmental, educational or other signs that benefit the Purpose of the Servitude and the Conservation Values of the Property. Fence posts or markers used to demark restoration areas or plantings shall be allowed.
- 4.20 Safety Lighting. The right to install and maintain safety and security lighting on roads and trails, and in other areas of the Property used by employees and the public. Safety lighting may be used after dusk, but only during the hours the Property is open to the public, or in areas specifically used by employees after open hours, or in the designated primitive camping area.
- 4.21 Consistent Uses. The Grantor has the right to engage in any and all acts or uses not expressly prohibited herein that are consistent with the Purpose of this Servitude and do not materially impair the Conservation Values of the Property.

Section V
GENERAL COVENANTS

- 5.1 Baseline Documentation Report. The specific Conservation Values of the Property on the date of this Servitude are documented in the Baseline Documentation Report (“BDR”), signed of even date herewith, a copy of which is on file with both the Grantor and the Grantee. The Grantor, Grantee, and Trustees agree the BDR provides an accurate representation of the Property and the condition of the same as of the date of this Servitude as required by Treasury Reg. 1.170A-14(g)(5), and is intended to serve as an objective informational baseline for monitoring compliance with the terms of this Servitude.
- 5.2 Cost of Ownership. Grantor, its heirs, successors, and assigns, shall retain all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property, including the maintenance of adequate liability insurance coverage. This includes the payment of any and all real estate taxes or assessments levied on the Property by authorized local, county, state or federal officials. Grantor remains solely responsible for obtaining any applicable governmental permits and approvals for any activity or use permitted by this Servitude. Nothing in this Servitude shall be construed as giving rise to any right or ability in the Trustees or Grantee to exercise physical or managerial control over the day-to-day operations of the Property, or any of Grantor’s activities on the Property.
- 5.3 Indemnification. Grantor hereby releases and agrees to hold harmless, indemnify, and defend the Trustees, Grantee, and their members, directors, officers, employees, agents, and contractors and their heirs, personal representatives, successors, and assigns of each of them (collectively “Indemnified Parties”) from and against any and all liabilities, penalties, fines, charges, costs, losses, damages, expenses, causes of action, claims, demands, orders, judgments, or administrative actions, including without limitation, reasonable attorney’s fees, arising from or in any way connected with: (1) injury to or the death of any person, or physical damage to any property resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, regardless of cause, unless due solely to the negligence of any of the Indemnified Parties; (2) the violation or alleged violation of, or other failure to comply with, any state, federal, or local law, regulation, or requirement, and (3) the presence or release in, on, from, or about the Property, at any time, or any substance now or hereafter defined, listed, or otherwise classified pursuant to any federal, state, or local law, regulation, or requirement as hazardous, toxic, polluting, or otherwise contaminating to the air, water, or soil, or in any way harmful or threatening to human health or the environment, unless caused solely by any of the Indemnified Parties.
- 5.4 Public Access. No right of access to the general public to any portion of the Property is conveyed by this Servitude. However, Grantor acquired the Property pursuant to a settlement entered into by the Trustees to compensate the public for damages to natural resources and natural resource services, including to compensate the public for lost recreational use of natural resources, and Grantor should not unreasonably limit passive outdoor recreation or environmental education on the Property, consistent with Section IV and with the Purpose of this Servitude. Accordingly, Grantor should charge no more than a nominal fee, such as parking fees, to allow for public access to the Property, however, Grantor may charge, or allow to be charged, additional fees for recreational or educational programming provided on the Property or in Property facilities.

- 5.5 Subsequent Conveyances. The Property, or the right to use the Property, may only be transferred to another organization or individual that agrees to maintain the Property for conservation purposes and be bound by and adhere to the terms, conditions and restrictions set forth in this Servitude. The Grantor shall include reference to all terms and conditions of this Servitude in any subsequent deed or legal instrument by which the Grantor divests itself of either the fee simple in all or part of the Property, or its possessory interest in any portion of the Property. At least thirty (30) days prior to any conveyance of the Property, or any portion of the Property, the Grantor shall notify the Trustees and Grantee in writing of any pending changes in ownership, transfer of title or other conveyance of the Property.
- 5.6 Notices/Approvals. Any notices or approval requests required in this Servitude will be sent by electronic mail and registered or certified mail, or commercial overnight carrier, to the following addresses below or to such address as may be hereafter specified by notice in writing.

TRUSTEES

Louisiana Oil Spill Coordinator's Office
Lead Administrative Trustee for the State of Louisiana
7979 Independence Blvd.,
Suite 104
Baton Rouge, LA 70806
Charles.Armbruster@la.gov

National Oceanic and Atmospheric Administration
Supervisor, Southeast Region
NOAA Restoration Center
263 13th Ave. South
Saint Petersburg, FL 33701
Leslie.Craig@noaa.gov

Department of the Interior
United States Fish and Wildlife Service
1875 Century Blvd. NE
Atlanta, GA 30345
Brian_Spears@fws.gov

GRANTEE

Land Trust for Louisiana
P. O. Box 1636
Hammond, LA 70404-1636
info@landtrustforlouisiana.org

GRANTOR:

Woodlands Conservancy
P.O. Box 7028
Belle Chasse, LA 70037
info@woodlandsconservancy.org

- 5.7 Severability. In the event any provision of this Servitude is determined by the appropriate court to be void and unenforceable, all remaining terms will remain valid and binding.
- 5.8 Perpetuity. The burdens of this Servitude will run with the Property and will be enforceable against the Grantor and all future owners in perpetuity during their respective periods of such ownership.
- 5.9 Assignment by Grantee. The benefits of this Servitude shall be in gross and shall be assignable by the Grantee, only upon the following conditions: (i) the Grantee must require that the Purpose of this Servitude continues to be carried out, and (ii) the assignee, at the time of the assignment, must qualify under Section 170(h) of the Code, and applicable regulations thereunder, and under Louisiana law and must be eligible to receive this Servitude directly. In the event Grantee ceases to exist or exists but no longer as a tax exempt, non-profit organization, qualified under Section 501(c)(3) of the Code, this Servitude shall transfer to and become vested in a tax exempt, non-profit organization, qualified under Section 501(c)(3) and 170(h)(3) of the Code that has experience in holding similar conservation servitudes, and whose goals are consistent with the rights reserved by the Grantor.
- 5.10 Extinguishment. If a subsequent, unexpected change in the conditions of the Property or the surrounding property make impossible or impractical the continued use of the Property for conservation purposes, the Servitude shall be extinguished only with approval by the Trustees and Grantee, or their successors in interest, or by a court of competent jurisdiction. In this event, Grantor shall take steps to sell the Property with the proceeds of such sale, if any, to be placed in a trust account managed by the Trustees, or their successor agencies, for the purpose of conducting activities or acquiring alternative property consistent with the Purpose of this Servitude.
- 5.11 Eminent Domain/Condemnation. Whenever all or part of the Property is taken in exercise of eminent domain by public, corporate or other authority so as to abrogate the restrictions imposed by this Servitude, Grantor and Grantee shall each take appropriate actions at the time of such taking according to the following hierarchy:
1. avoiding the taking of the Property and preserving it in its present condition: Grantor, Grantee, and at their option, the Trustees as Third Parties with Rights of Enforcement shall jointly take actions to formally request that the intended proceeding completely avoid the taking of the Property.
 2. minimizing and supplementing the loss to the Property: if the Property cannot be wholly preserved as a result of the intended proceeding, Grantor, Grantee, and at their option, the Trustees as Third Parties with Rights of Enforcement shall jointly take actions to formally request the intended proceeding minimize its taking of the Property and to supplement, on at least a 1:1 acreage basis of nearby land possessing equivalent conservation values, the loss of the Property with a supplemental conservation servitude conveyed to the Grantee and granting the Trustees rights of enforcement.
 3. recovering the full value of the taking and all incidental or direct damages resulting from the taking: if options (1) and (2) are not acceptable to the Grantee or the Trustees, Grantor, Grantee, and at their option, the Trustees as Third Parties with Rights of Enforcement shall jointly take actions to

recover the full value of the interests in the Property and all direct or incidental damages resulting therefrom. All expenses reasonably incurred by Grantor, Grantee, and the Trustees in connection with the taking shall be paid out of the amount recovered.

- 5.12 Application of Proceeds. The net proceeds from a sale under Section 5.10 or taking under Section 5.11 will be placed in a trust account managed by the Trustees, or their successor agencies, and shall be used to acquire alternative property interests or fund conservation activities consistent with the goals of this Servitude. The acquisition of alternative property interests or the conduct of additional conservation activities shall be managed by the Trustees, or their successor agencies. However, to the extent that a portion of the net proceeds from a sale under Section 5.10 or taking under Section 5.11 are the result of Grantor's independent efforts to improve or maintain the property with funds separate and apart from any funds contributed by the United States, the State of Louisiana or in settlement of any Trustee claims, Grantor shall receive compensation from the Trustees in an amount equivalent to that portion of the net proceeds resulting from Grantor's efforts.
- 5.13 Amendments. This Servitude shall not be amended, modified, or terminated except in writing in a document signed by Grantor and Grantee, and approved by the Trustees or their successor agencies. Any such amendment shall be consistent with the Purpose of this Servitude, shall not affect its perpetual duration, shall not permit additional development other than development permitted by this Servitude on its effective date, and shall not permit any material impairment of the Conservation Values of the Property. Any such amendment shall be recorded in the land records of Plaquemines Parish, Louisiana. Nothing in this paragraph shall require the Parties to agree to any amendment.
- 5.14 Environmental Conditions. Grantor covenants and represents that, to the best of its knowledge, no hazardous substance or toxic waste exists nor has been generated, treated, stored, used, disposed of, or deposited in or on the Property and that there are not now any underground storage tanks located on the Property. If, at any time, there occurs or has occurred, a release in, on or about the Property of any substance now or hereafter defined, listed or otherwise classified pursuant to any federal, state or local law, regulation or requirement as hazardous, toxic, polluting, or otherwise contaminating to the air, water or soil, or in any way harmful or threatening to human health or the environment, Grantor agrees to take all steps necessary to assure its containment and remediation, including any cleanup that may be required, unless the release was caused by Grantee, in which case Grantee shall be responsible therefore.
- 5.15 Notice of Breach and Enforcement. The Trustees and Grantee have the right to enforce this Servitude by proceedings in law and in equity, including without limitation the right to require the restoration of the Property to a condition existing immediately prior to the violation complained of in compliance herewith. If the Trustees and Grantee determine that Grantor is in violation of the terms of this Servitude or that a violation is threatened, the Trustees and Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Property resulting from any use or activity inconsistent with the Purpose herein, to restore the portion of the Property so injured to the condition existing immediately prior to the violation complained of.
- 5.16 Remedies. If Grantor fails to cure the violation within thirty (30) days after receipt of notice thereof from the Trustees and Grantee, or under circumstances where the violation

cannot reasonably be cured within a thirty (30) day period, fails to begin curing such violation within the thirty (30) day period, or fails to continue diligently to cure such violation until finally cured, the Trustees and/or Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Servitude, to enjoin the violation, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Servitude or injury to any Conservation Values protected by this Servitude, including damages, costs, and attorney's fees, or to require the restoration of the Property to the condition that existed immediately prior to any such injury. Without limiting Grantor's liability therefore, the Trustees and Grantee, in their discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Property. If the Trustees and Grantee, in their reasonable discretion, determine that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Values of the Property, the Trustees and Grantee may pursue remedies under this Section without prior notice to Grantor or without waiting for the period provided for cure to expire. The Trustees' and Grantee's rights under this Section apply equally in the event of either actual or threatened violations of the terms of this Servitude, and Grantor agrees that the Trustees' and Grantee's remedies at law for any violation of the terms of this Servitude are inadequate and that the Trustees and Grantee shall be entitled to the injunctive relief described in this Section, both prohibitive and mandatory, in addition to such other relief to which the Trustees and Grantee may be entitled, including specific performance of the terms of this Servitude, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Remedies described in this Section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity. Nothing herein shall be construed to entitle the Trustees and Grantee to institute any proceedings against Grantor for any changes to the Property due to causes beyond Grantor's control such as changes occurring due to natural causes or unauthorized wrongful acts of third parties; provided, however, that Grantor shall take such actions as a reasonable prudent landowner would to prevent or minimize unauthorized activities by third parties on the Property that are inconsistent with the Purpose of this Conservation Servitude. Grantor shall notify the Trustees and Grantee of any such occurrence that would adversely affect or interfere with the purpose of the Conservation Servitude, whether caused by the acts or omissions of the Grantor or third parties. In the event of violations of this Conservation Servitude caused by the unauthorized wrongful acts of third parties, Grantor agrees, upon the request by Grantee, to assign its right of action to Grantee, to join in any suit, or to appoint Grantee its attorney-in-fact for the purposes of pursuing enforcement action, all at the election of Grantee.

- 5.17 Waiver of Rights. The Trustees and Grantee, their successors or assigns, do not waive or forfeit the right to take action as may be necessary to insure compliance with this Servitude by any prior failure to act. The rights hereby granted will be in addition to, and not in limitation of, any other rights and remedies available to the Trustees and Grantee for enforcement of this Servitude.
- 5.18 Resolution of Disputes. The Parties shall promptly and in good faith attempt to resolve any dispute arising out of or relating to this Conservation Servitude. If those negotiations are not successful, the dispute shall be resolved by a court of competent jurisdiction. Except as provided in Section V of this Conservation Servitude, no judicial action may be

instituted by any party until after good faith efforts to resolve a dispute through negotiations has occurred.

- 5.19 Warranty of Title. Grantor hereby warrants and represents that the Grantor is seized of the Property in fee simple and has the right to grant and convey this Servitude in perpetuity, that the Property is free and clear of any and all encumbrances, except Servitudes of record and prescriptive Servitudes, purchase money or other mortgages, and mineral right reservations, if any, and that the Trustees, Grantee and their successors and assigns shall have the use of and enjoy all of the benefits derived from and arising out of this Servitude.
- 5.20 Controlling Law. The interpretation and performance of this Servitude shall be governed by the laws of Louisiana.
- 5.21 Filing and Non-merger. The Grantor shall file this instrument and any amendment in the official conveyance records as soon as is practicable after all signatures have been obtained and the Grantee may re-file it and any amendments to the Servitude at any time as may be required to preserve its rights in this Servitude. No merger shall be deemed to have occurred hereunder or under any documents executed in the future affecting this Act of Donation of Conservation Servitude, unless the Parties expressly state that they intend a merger of estates or interests to occur.
- 5.22 Entire Agreement and Counterparts. This instrument was drafted with the mutual efforts of Grantor, the Trustees, and Grantee and sets forth the entire agreement of the Parties with respect to the Servitude and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Servitude, all of which are merged herein. This Servitude may be executed in multiple counterparts. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment that complies with Section V.

TO HAVE AND TO HOLD this Servitude together with all and singular the appurtenances and privileges belonging or in any way pertaining thereto, either in law or equity, either in possession or expectancy, for the proper use and benefit of the Trustees and Grantee, and their successors and assigns, forever.

[Signatures appear on the following page.]

THUS DONE AND PASSED on the ____ day of _____ 2021, to be effective on _____, at _____ Parish, State of Louisiana, the Grantor having affixed its authorized signatures in the presence of me, Notary, and the undersigned witnesses after due reading of the whole.

WITNESSES:

GRANTOR:
WOODLANDS CONSERVANCY

(SIGNATURE OF WITNESS)

Katie Brasted
Executive Director

(PRINTED NAME)

(SIGNATURE OF WITNESS)

(PRINTED NAME)

Lee Dupont
Land Chair

NOTARY PUBLIC - State of Louisiana
Printed

Name: _____
My Commission

Expires: _____

THUS DONE AND PASSED on the ____ day of _____ 2021, to be effective on _____, at _____ Parish, State of Louisiana, the Grantee having affixed its authorized signature in the presence of me, Notary, and the undersigned witnesses after due reading of the whole.

WITNESSES:

GRANTEE:
LAND TRUST FOR LOUISIANA

(SIGNATURE OF WITNESS)

Edward M. Burns
Executive Board Member

(PRINTED NAME)

(SIGNATURE OF WITNESS)

(PRINTED NAME)

NOTARY PUBLIC - State of Louisiana
Printed
Name: _____
My Commission
Expires: _____

APPENDIX A– LEGAL DESCRIPTIONS AND MAPS
RESTORATION AND ACCESS PROPERTIES



**BRYANT HAMMETT
& ASSOCIATES, LLC**
CIVIL ENGINEERING & LAND SURVEYING

BRYANT O. HAMMETT, JR., P.E./P.L.S.
C. KEITH CAPDEPON, JR., P.E.
HUGH "BUD" MCCURDY, III, P.L.S.
BRUCE K. DYSON, P.E./P.L.S.

Woodland Trails Parking Lot Servitude

A CERTAIN SERVITUDE, for the purposes of Ingress -Egress and Parking, across Tract PPG 3, situated in Plaquemines Parish, Louisiana, Township 14 South, Range 25 East, Section 7, in the unincorporated town of Belle Chasse, and being more fully described as follows:

COMMENCING at the intersection of the northerly line of the Planters Canal Right of Way with the easterly Right of F. Edward Boulevard, having Louisiana South 1983 Coordinate of X=3,710,119.66 feet and Y=509,439.62 feet, thence South 43 degrees 05 minutes 53 seconds East, along the easterly line of F. Edward Hebert Boulevard, 102.37 feet to the intersection with the centerline of the Planters Canal Right of Way; thence North 59 degrees 15 minutes 53 seconds East, along the centerline of the Planters Canal Right of Way, 1324.76 feet to the **POINT OF BEGINNING**;

Thence continuing along the centerline of the Planters Canal Right of Way, North 59 degrees 15 minutes 53 seconds East 225.00 feet to the intersection with the southerly line of Tract PPG 2;

Thence South 47 degrees 14 minutes 10 seconds East, along the southerly line of Tract PPG 2, 208.20 feet to the intersection with the northerly line of the property of the Plaquemines Parish School Board;

Thence South 59 degrees 15 minutes 53 seconds West, along the northerly line of the Plaquemines Parish School Board Property, 284.14 feet to a point;

Thence North 30 degrees 44 minutes 07 seconds West 199.63 feet to the **POINT OF BEGINNING**.

The above described Parking Servitude contains 1.167 acres and is more fully shown on the attached Map of Survey, Proposed Parking Lot Servitude and Access, across Tract PPG 3, by Bryant Hammett and Associates, certified by Hugh McCurdy III, PLS, dated April 12, 2019. Bearings refer to the State Plane Coordinate System, South Zone NAD83.

[Handwritten signature]
4/12/19

830 North St., Suite B
Baton Rouge, LA 70802
225-379-3209

8637 Hwy. 23, Suite C
Belle Chasse, LA 70037
504-391-2835

6885 Hwy. 84 W
Ferryday, LA 71334
318-757-6576

1201 S Purpera Ave, Unit 301
Gonzales, LA 70737
225-450-1721

1104 Dealers Ave., Suite A
Harahan, LA 70123
504-733-8004



**BRYANT HAMMETT
& ASSOCIATES, LLC**
CIVIL ENGINEERING & LAND SURVEYING

BRYANT O. HAMMETT, JR., P.E./P.L.S.
C. KEITH CAPDEPON, JR., P.E.
HUGH "BUD" MCCURDY, III, P.L.S.
BRUCE K. DYSON, P.E./P.L.S.

Woodland Trails Ingress-Egress Servitude

A CERTAIN SERVITUDE, for the purposes of Ingress and Egress, across Tract PPG 3, situated in Plaquemines Parish, Louisiana, Township 14 South, Range 25 East, Section 7, in the unincorporated town of Belle Chasse, and being more fully described as follows:

COMMENCING at the intersection of the northerly line of the Planters Canal Right of Way with the easterly Right of F. Edward Boulevard, having Louisiana South 1983 Coordinate of X=3,710,119.66 feet and Y=509,439.62 feet, thence South 43 degrees 05 minutes 53 seconds East, along the easterly line of F. Edward Hebert Boulevard, 102.37 feet to the intersection with the centerline of the Planters Canal Right of Way and the **POINT OF BEGINNING**;

Thence North 59 degrees 15 minutes 53 seconds East, along the centerline of the Planters Canal Right of Way, 1324.76 feet to a point;

Thence South 30 degrees 44 minutes 07 seconds East 100.00 feet to the intersection with the southerly line of the Planters Canal Right of Way;

Thence South 59 degrees 15 minutes 53 seconds West, along the southerly line of the Planters Canal Right of Way, 1302.85 feet to the intersection with the easterly Right of Way line of F. Edward Hebert Boulevard;

Thence North 43 degrees 05 minutes 53 seconds West 102.37 feet to the **POINT OF BEGINNING**.

The above described servitude contains 3.016 acres and is more fully shown on the attached Map of Survey, Proposed Parking Lot Servitude and Access, across Tract PPG 3, by Bryant Hammett and Associates, certified by Hugh McCurdy III, PLS, dated April 12, 2019. Bearings refer to the State Plane Coordinate System, South Zone NAD83.

A handwritten signature in blue ink, followed by the date "4/12/19" written vertically.

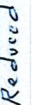
830 North St., Suite B
Baton Rouge, LA 70802
225-379-3209

8637 Hwy. 23, Suite C
Belle Chasse, LA 70037
504-391-2835

6885 Hwy. 84 W
Ferryday, LA 71334
318-757-6576

1201 S Purpera Ave, Unit 301
Gonzales, LA 70737
225-450-1721

1104 Dealers Ave., Suite A
Harahan, LA 70123
504-733-8004



PPG-2

A CERTAIN PARCEL OF GROUND, situated in and being a portion of Belle Chasse, Fort St. Leon, and Upper Magnolia Plantations in Township 13 South Range 25 East, Section 18 and Township 14 South Range 25 East Sections 5, 6, and 7, in the unincorporated town of Belle Chasse, Plaquemines Parish, Louisiana on the west bank of the Mississippi River and being more fully described as follows:

COMMENCING at a 1 inch iron pipe perpetuating a concrete monument at the corner common to Sections 7, 8, and 21 of Township 14 South Range 25 East, having a 1983 South Zone Coordinate of X=3,707,942.45 feet and Y=511,176.22 feet; thence North 64 degrees 07 minutes 14 seconds West, along the rear line of Section 7 of Township 14 South Range 25 East and Section 20 of Township 13 South Range 25 East 4,397.93 feet to corner common to Sections 18 and 20 of Township 13 South Range 25 East; thence South 82 degrees 08 minutes 52 seconds East, along the rear line of Section 18 and the line between Orleans and Plaquemines Parishes, 695.50 feet to the **POINT OF BEGINNING**;

Thence continuing along the line between Orleans and Plaquemines Parishes, South 82 degrees 08 minutes 52 seconds East 3,688.44 feet to the corner common to Sections 5 and 6;

Thence South 65 degrees 38 minutes 57 seconds East, along the line between the Orleans and Plaquemines Parishes, 6,126.71 feet to the intersection with the westerly line of Tract PPG-1;

Thence South 29 degrees 17 minutes 04 seconds West, along the westerly line of PPG-1, 160.00 feet to the southwest corner;

Thence South 65 degrees 38 minutes 57 seconds East, along the southerly line of PPG-1, 80.30 feet to the intersection of the line between the properties of the Plaquemines Parish Government and the United States Coast Guard or assigns;

Thence along the line between the properties of the Plaquemines Parish Government and the United States Coast Guard or assigns, for the next four courses;

South 29 degrees 17 minutes 04 seconds West 737.09 feet to a point;

South 28 degrees 57 minutes 27 seconds West 191.65 feet to a point;

South 24 degrees 21 minutes 36 seconds West 883.79 feet to a point;

South 46 degrees 02 minutes 48 seconds West 1,141.13 feet to a point;

Thence along the line between the properties of the Plaquemines Parish Government and Tulane University or assigns for the next six courses;

North 78 degrees 55 minutes 57 seconds West 902.02 feet to a point;

North 23 degrees 07 minutes 19 seconds West 1,319.78 feet to a point;

North 79 degrees 15 minutes 22 seconds West 2,342.86 feet to a point;

South 11 degrees 05 minutes 38 seconds West 552.01 feet to a point;

North 78 degrees 54 minutes 22 seconds West 4,048.38 feet to a point;

South 46 degrees 38 minutes 35 seconds West 75.17 feet to the northeast corner of the property of the Plaquemines Parish School Board;

Thence North 47 degrees 14 minutes 04 seconds West, along the northerly line of the property of the Plaquemines Parish School Board, 907.02 feet the northwest corner;

Thence along a prolongation of said northerly line, North 47 degrees 13 minutes 56 seconds West 208.20 feet to the intersection with the centerline of the Planters Canal right of way;

Thence North 59 degrees 15 minutes 53 seconds West, along the centerline of the Planters Canal right of way, 1483.30 feet to the intersection of the line between Sections 6 and 7;

Thence South 89 degrees 09 minutes 17 seconds East, along the centerline of the Planters Canal right of way, 1052.00 feet to the centerline of an existing drainage ditch;

Thence North 29 degrees 46 minutes 45 seconds West, along the centerline of the existing drainage ditch, 2,526.62 feet to the **POINT OF BEGINNING**.

The above described Tract PPG-2, contains 649.11 acres and is all and more fully shown on the Map of Resubdivision, Property of the Plaquemines Parish Government, Former U.S. Ammunition Depot, by Bryant Hammett and Associates certified by Hugh McCurdy III, PLS, dated January 10, 2018, last amended June 18, 2021. Bearings refer to the State Plane Coordinate System.

APPENDIX B – Woodlands Property Enhancement Projects

In accordance with Section IV, *Grantor's Reserved Rights*, of the Act of Donation of Conservation Servitude between Woodlands Conservancy (Grantor) and Land Trust for Louisiana (Grantee), and specifically Sections 4.2 and 4.3, Grantor is permitted to construct, maintain, repair, and replace the following structures and amenities, to promote low impact (passive) recreational use of, and environmental education at, the Property, so long as such activities are consistent with the Purpose of the Servitude and do not materially impair the Conservation Values of the Property.

Section 4.2, Structures Promoting Passive Recreational Use of the Property and Environmental Education

1. **Pavilions**, including near the WWII Ammunition Magazine Site and on the Bottomland Trail near Bicentennial Tree: Grantor may construct up to three (3) primitive shelters, consisting of supporting beams with a floor and roof, that provide cover to Property users and may provide seating to accommodate passive recreational activities, nature study and research (such as bird banding activities), and environmental education and outreach.
2. **Outdoor classroom and/or amphitheaters**: Grantor may construct up to two (2) simple outdoor classrooms and/or amphitheaters on the Property, with rustic benches and a stage area, for educational programming, musical events, and other passive recreational and environmental education activities. The stage area(s) may be equipped with electricity.
3. **Bathroom facilities**: Grantor may construct no more than six (6) low-impact bathroom facilities, with no more than four (4) stalls per facility. All new bathroom facilities will be built to meet accessibility standards, as required to comply with federal, state, and/or local law and regulations.
4. **Water stations and/or troughs**: Grantor may construct drinking water stations for use by the public and drinking water troughs for equestrian use. Grantor may place a total number of drinking water stations on the Property not to exceed one (1) for every mile of trail and a total number of drinking troughs not to exceed one (1) for every two miles of equestrian trail. Grantor may construct up to ten (10 = one for every 60 acres) cleaning water stations on the Property, including at the designated primitive camping area. The water stations and troughs may be connected to a water line.

Section 4.3, Interpretive Center and Associated Educational and Access Amenities

In accordance with Section 4.3, Grantor may construct an Interpretive Center and Associated Access and Educational Amenities on the approximately ten-acre upland portion of the Property adjacent to the existing parking area accessed by F. Edward Herbert Boulevard. The Interpretive Center shall be comparable in size and scope to that described in Appendix C, *Woodlands Property Interpretive Center Plans*. Associated Access Amenities may include additional parking, restrooms, and roads, trails or boardwalks in the upland portion of the Property where the Interpretive Center may be built. Associated Educational Amenities constructed in the upland

portion of the Property adjacent to the existing parking area accessed by F. Edward Herbert Boulevard may include:

1. **Multipurpose, educational building:** In lieu of or adjacent to the Interpretive Center described in Appendix C, Grantor may construct a multipurpose, educational building not to exceed 4,000 square feet in size.
2. **Designated, primitive camping area:** Grantor may construct a primitive camping area within the approximately ten-acre upland portion of the Property. Construction of the primitive camping area may include construction of fire pits and raised sleeping platforms to accommodate overnight camping of up to thirty (30) guests. Any facilities for overnight horse storage are restricted to this ten-acre area.
3. **Greenhouse:** Grantor may construct an enclosed structure for cultivating plant material that is less than 4,000 square feet in size.
4. **Equipment shed:** Grantor may construct an enclosed structure for the storage of tools and other equipment that is less than 1,500 square feet in size.
5. **Challenge course:** Grantor may construct a ropes course, or outdoor education and fitness course, featuring several elements that promote teambuilding and self-confidence, as part of its mission to promote outdoor recreation and environmental education at the Property. Examples of potential features include outdoor rock walls, cargo net climbs, and catwalks. The challenge course may impact no more than 3.5 acres of the designated upland area.

APPENDIX C – Interpretive Center Plans



WOODLANDS INTERPRETIVE CENTER



WOODLANDS CONSERVANCY

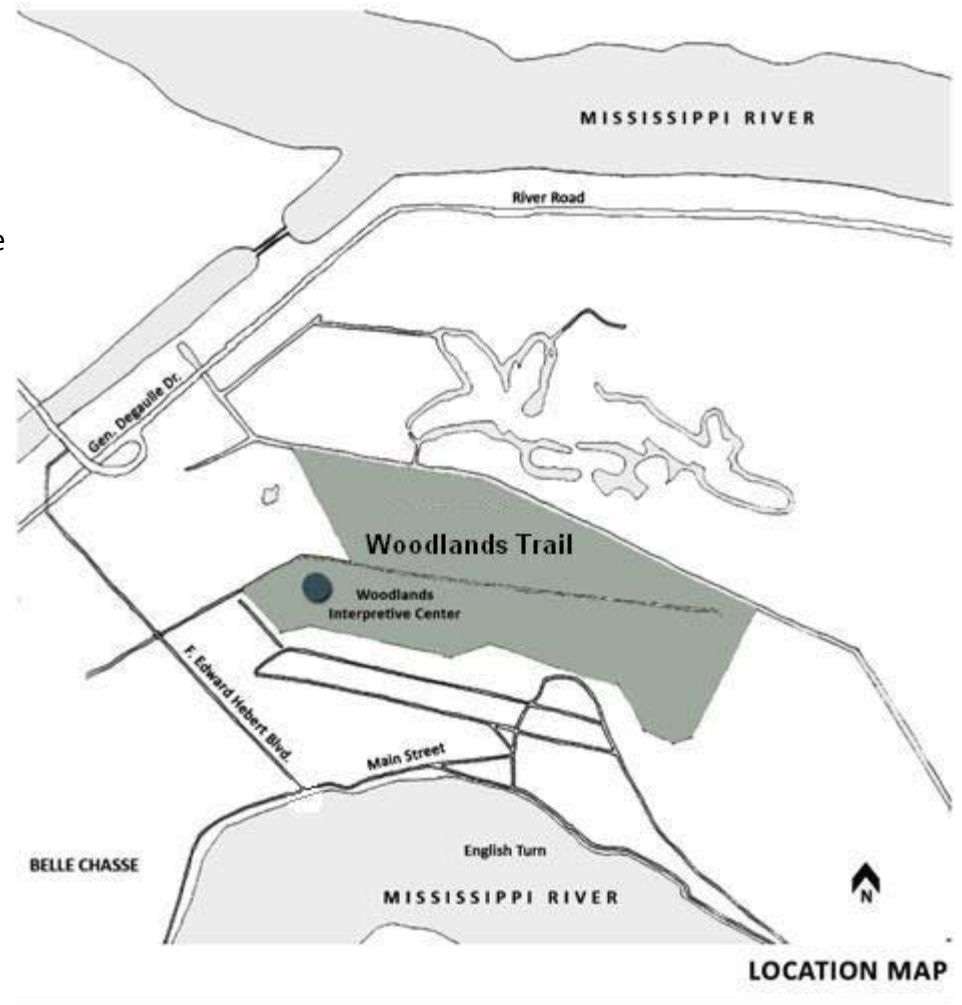
Woodlands Conservancy was organized as a regional land trust in 2001 with the mission to preserve and develop an ecosystem dedicated to creating daily public opportunities for recreation, ecotourism and education in a natural and historic setting. The vision of Woodlands Conservancy is to be the regional conservancy model for the conservation of hardwood forests, and a leader in the advocacy and preservation of Louisiana's coastal forest ecosystems.

Woodlands Trail

Woodlands Trail, managed by Woodlands Conservancy, is an established educational, historical, recreational greenway and trail that is open to the general public. More than ten miles of natural trails for hiking and horseback riding traverse through a bottomland hardwood, coastal forest, passing along edge communities that are a frequent viewing area for wildlife and migratory birds. The trails meander through forested wetland areas and lead to a grouping of ten World War II Ammunition Magazines.

Woodlands Interpretive Center

The design for the Woodlands Interpretive Center includes state-of-the-art green building techniques and is designed to be a teaching tool in both its design and contents. The interpretive plan within the center and the surrounding trail system will tell the cultural and natural history of the geographical area including such topics as the early plantation era, the 1927 flood, value of native habitat and impacts from hurricane activity.

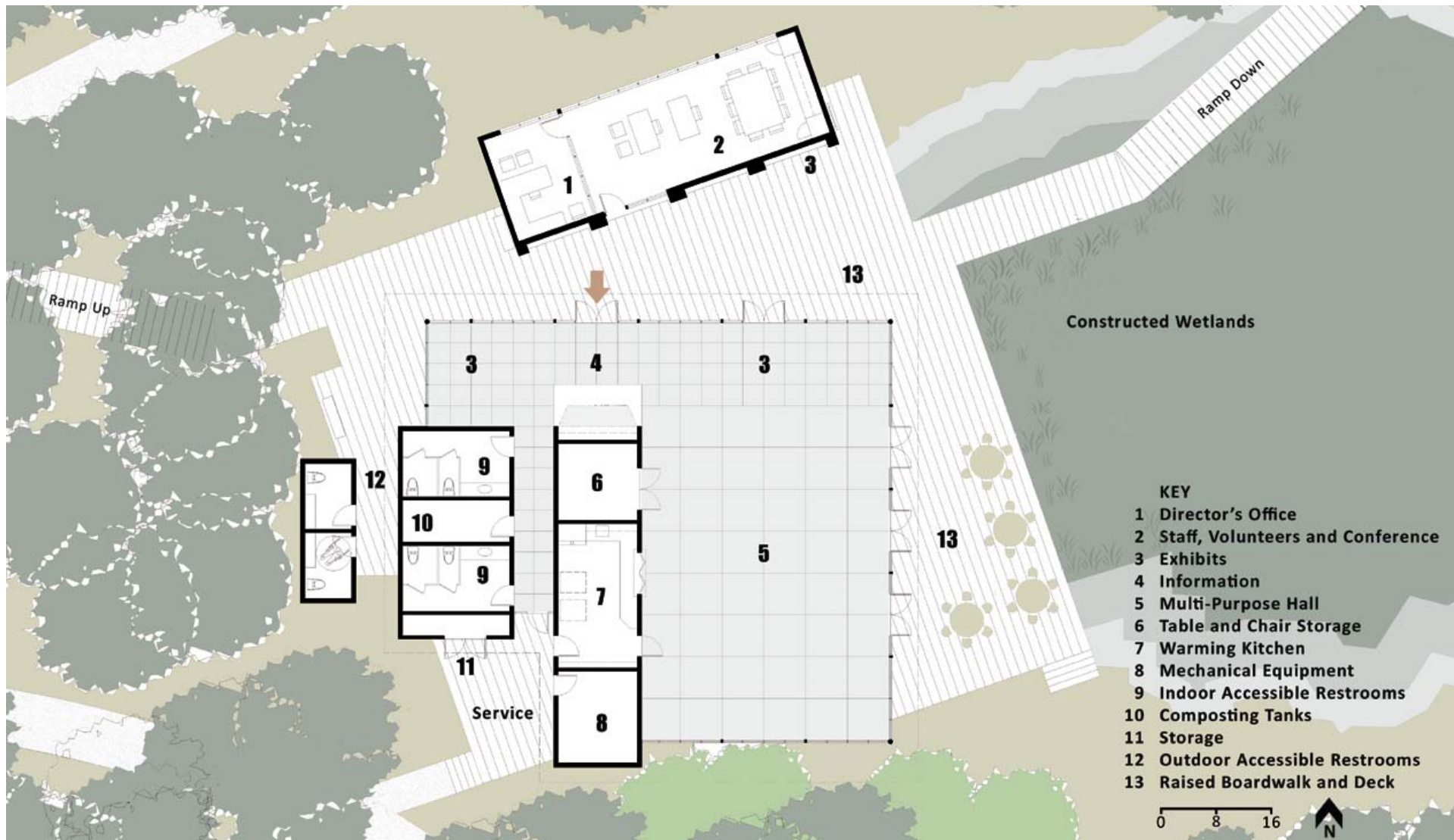




Proposal for the Woodlands Interpretive Center

WOODLANDS CONSERVANCY

LSU Office of community Design and Development



WOODLANDS INTERPRETIVE CENTER

FLOOR PLAN



Proposal for the Woodlands Interpretive Center

WOODLANDS CONSERVANCY

LSU Office of community Design and Development



WOODLANDS INTERPRETIVE CENTER

VIEW ACROSS THE CONSTRUCTED WETLANDS



Proposal for the Woodlands Interpretive Center

WOODLANDS CONSERVANCY

LSU Office of community Design and Development



WOODLANDS INTERPRETIVE CENTER

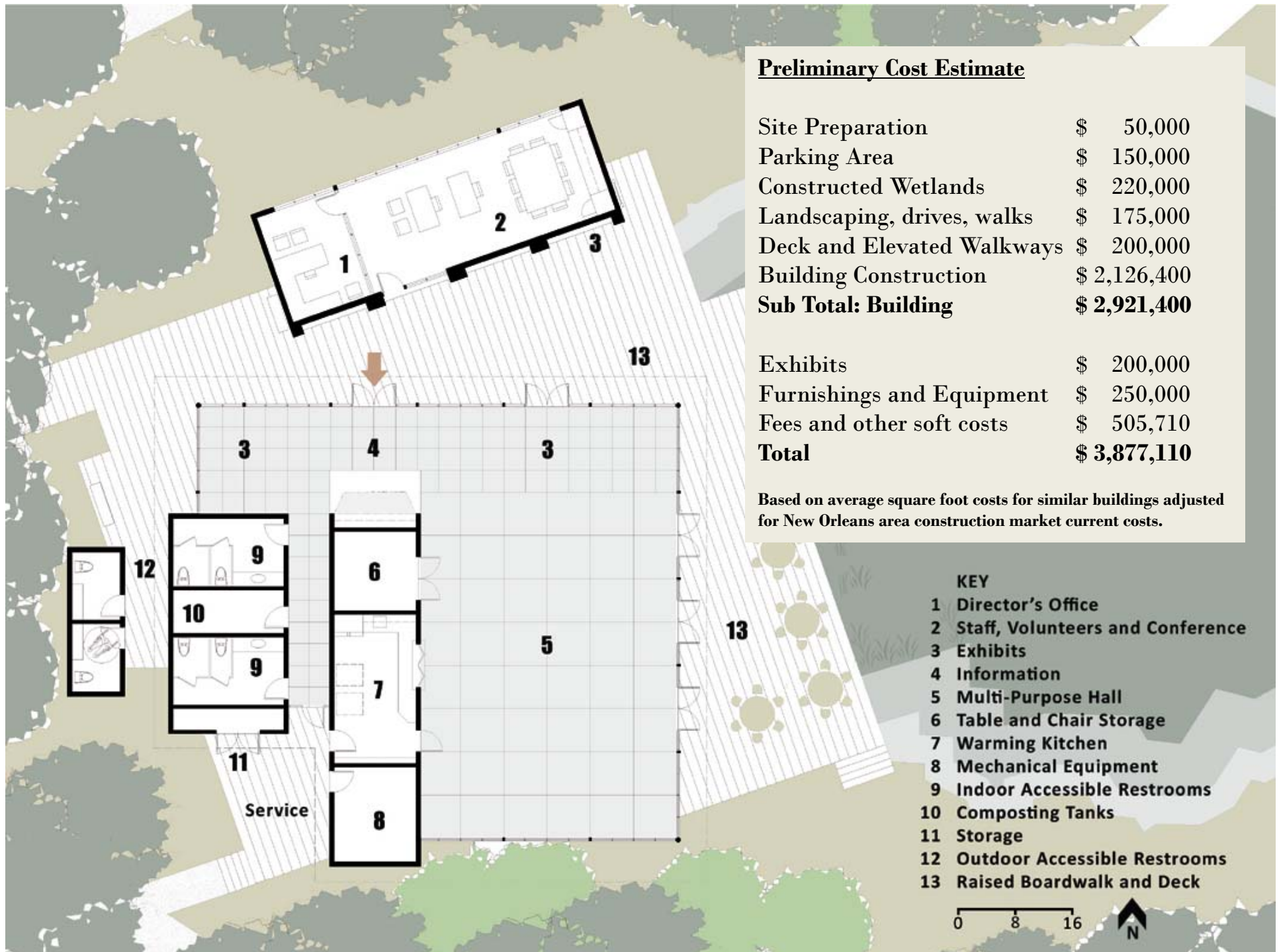
ARRIVING AT THE INTERPRETIVE CENTER



Proposal for the Woodlands Interpretive Center

WOODLANDS CONSERVANCY

LSU Office of community Design and Development

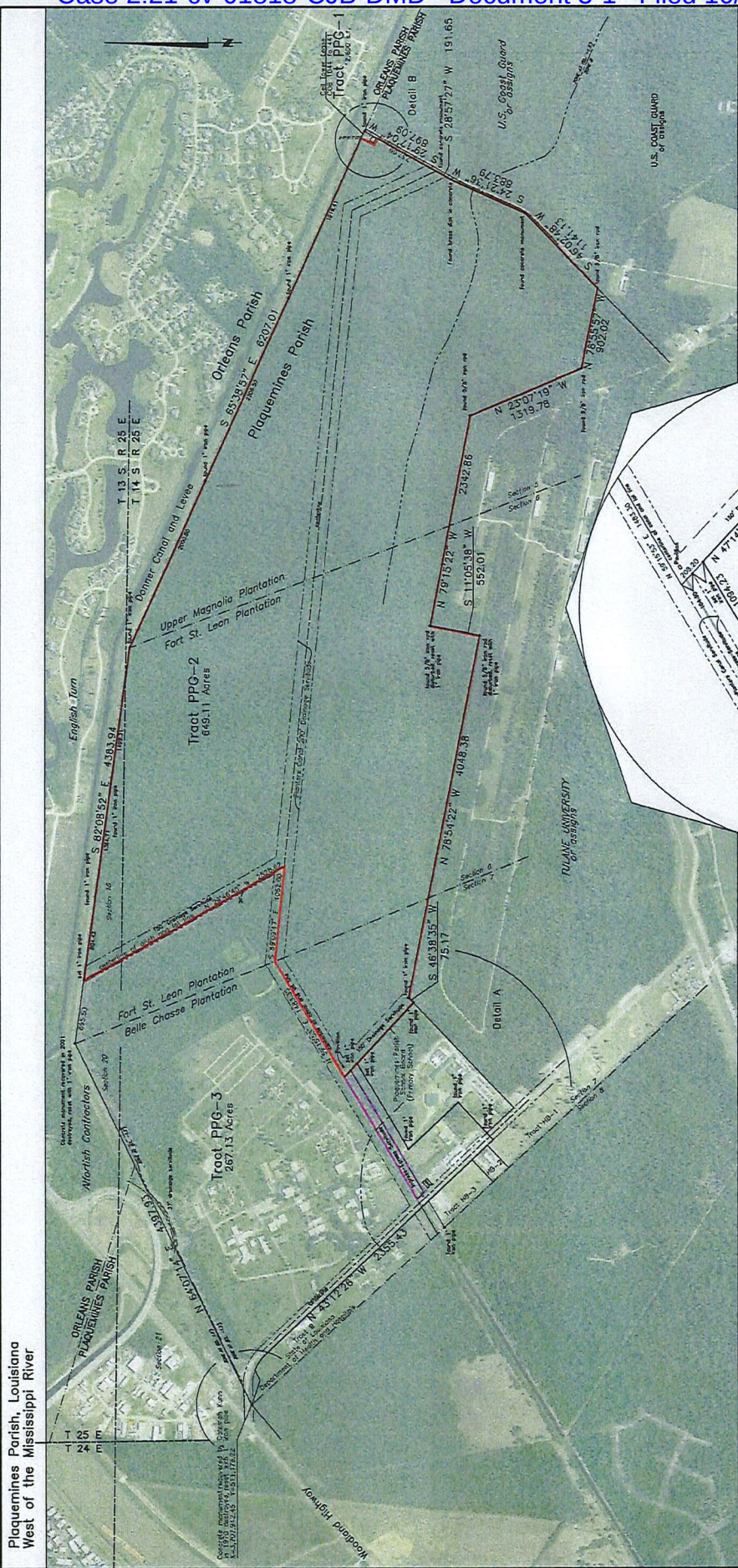


Consent Decree in *U.S. and State of Louisiana v. American Commercial Barge Line, LLC*

APPENDIX C

Woodlands Parcel Property Description

Plaquemines Parish, Louisiana
West of the Mississippi River



MAP OF RESUBDIVISION
PROPERTY OF THE
PLAQUEMINES PARISH GOVERNMENT
FORMER U.S. AMMUNITION DEPOT

I hereby certify that the within shown herein
is a true and correct copy of the original
as approved and recorded in the Public Records
of the Parish of Orleans, Louisiana, Book 3-3-21.

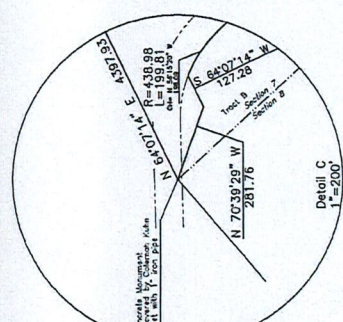
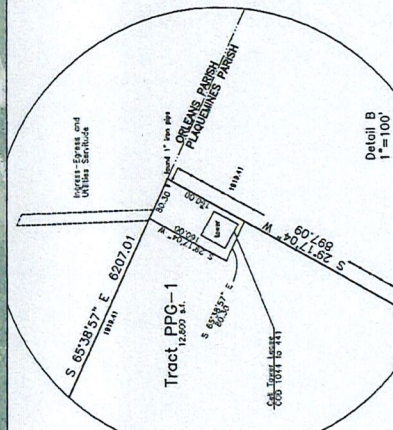
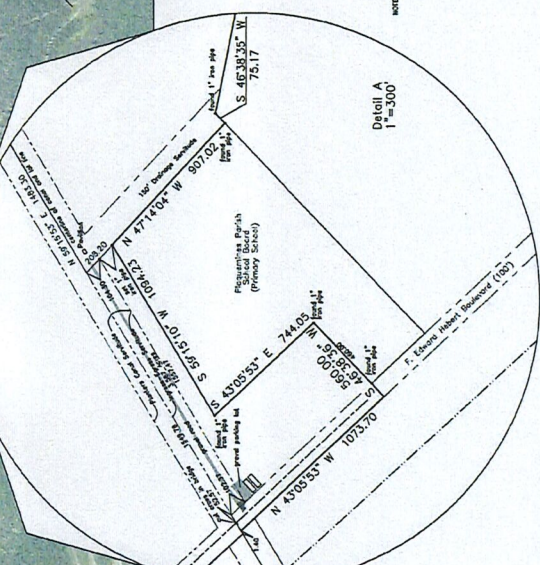
Superintendent of Planning and Zoning

NOTES: 1) Survey was based on Louisiana State Plane Coordinates System (North Zone NAD83, 2011).
2) Subject property is in FEMA Zone AE and is in accordance with FEMA 200500000000 dated January 15, 2021.
3) This map was prepared by Bryant Hammel and Associates, L.L.C. and is not to be used for any purpose other than that for which it was prepared. The user assumes all liability for any errors or omissions in this map. The user also assumes all liability for any damages or losses resulting from the use of this map. The user agrees to hold Bryant Hammel and Associates, L.L.C. harmless from and against all claims, damages, and losses of any kind, including reasonable attorneys' fees, arising out of or from the use of this map, whether or not such claims, damages, and losses are caused in whole or in part by the negligence of Bryant Hammel and Associates, L.L.C.



NO.	DESCRIPTION	DATE
1	Original Map	1/10/2021
2	Revised Map	1/10/2021
3	Revised Map	1/10/2021
4	Revised Map	1/10/2021
5	Revised Map	1/10/2021
6	Revised Map	1/10/2021
7	Revised Map	1/10/2021
8	Revised Map	1/10/2021
9	Revised Map	1/10/2021
10	Revised Map	1/10/2021

Bryant Hammel
And Assoc., L.L.C.
8005 Highway 14, Suite 100
Ponchartraine, Louisiana 70064
(504) 835-4578
bhammel@bhammelandassoc.com



Reduced

PPG-2

A CERTAIN PARCEL OF GROUND, situated in and being a portion of Belle Chasse, Fort St. Leon, and Upper Magnolia Plantations in Township 13 South Range 25 East, Section 18 and Township 14 South Range 25 East Sections 5, 6, and 7, in the unincorporated town of Belle Chasse, Plaquemines Parish, Louisiana on the west bank of the Mississippi River and being more fully described as follows:

COMMENCING at a 1 inch iron pipe perpetuating a concrete monument at the corner common to Sections 7, 8, and 21 of Township 14 South Range 25 East, having a 1983 South Zone Coordinate of X=3,707,942.45 feet and Y=511,176.22 feet; thence North 64 degrees 07 minutes 14 seconds West, along the rear line of Section 7 of Township 14 South Range 25 East and Section 20 of Township 13 South Range 25 East 4,397.93 feet to corner common to Sections 18 and 20 of Township 13 South Range 25 East; thence South 82 degrees 08 minutes 52 seconds East, along the rear line of Section 18 and the line between Orleans and Plaquemines Parishes, 695.50 feet to the **POINT OF BEGINNING**;

Thence continuing along the line between Orleans and Plaquemines Parishes, South 82 degrees 08 minutes 52 seconds East 3,688.44 feet to the corner common to Sections 5 and 6;

Thence South 65 degrees 38 minutes 57 seconds East, along the line between the Orleans and Plaquemines Parishes, 6,126.71 feet to the intersection with the westerly line of Tract PPG-1;

Thence South 29 degrees 17 minutes 04 seconds West, along the westerly line of PPG-1, 160.00 feet to the southwest corner;

Thence South 65 degrees 38 minutes 57 seconds East, along the southerly line of PPG-1, 80.30 feet to the intersection of the line between the properties of the Plaquemines Parish Government and the United States Coast Guard or assigns;

Thence along the line between the properties of the Plaquemines Parish Government and the United States Coast Guard or assigns, for the next four courses;

South 29 degrees 17 minutes 04 seconds West 737.09 feet to a point;

South 28 degrees 57 minutes 27 seconds West 191.65 feet to a point;

South 24 degrees 21 minutes 36 seconds West 883.79 feet to a point;

South 46 degrees 02 minutes 48 seconds West 1,141.13 feet to a point;

Thence along the line between the properties of the Plaquemines Parish Government and Tulane University or assigns for the next six courses;

North 78 degrees 55 minutes 57 seconds West 902.02 feet to a point;

North 23 degrees 07 minutes 19 seconds West 1,319.78 feet to a point;

North 79 degrees 15 minutes 22 seconds West 2,342.86 feet to a point;

South 11 degrees 05 minutes 38 seconds West 552.01 feet to a point;

North 78 degrees 54 minutes 22 seconds West 4,048.38 feet to a point;

South 46 degrees 38 minutes 35 seconds West 75.17 feet to the northeast corner of the property of the Plaquemines Parish School Board;

Thence North 47 degrees 14 minutes 04 seconds West, along the northerly line of the property of the Plaquemines Parish School Board, 907.02 feet the northwest corner;

Thence along a prolongation of said northerly line, North 47 degrees 13 minutes 56 seconds West 208.20 feet to the intersection with the centerline of the Planters Canal right of way;

Thence North 59 degrees 15 minutes 53 seconds West, along the centerline of the Planters Canal right of way, 1483.30 feet to the intersection of the line between Sections 6 and 7;

Thence South 89 degrees 09 minutes 17 seconds East, along the centerline of the Planters Canal right of way, 1052.00 feet to the centerline of an existing drainage ditch;

Thence North 29 degrees 46 minutes 45 seconds West, along the centerline of the existing drainage ditch, 2,526.62 feet to the **POINT OF BEGINNING**.

The above described Tract PPG-2, contains 649.11 acres and is all and more fully shown on the Map of Resubdivision, Property of the Plaquemines Parish Government, Former U.S. Ammunition Depot, by Bryant Hammett and Associates certified by Hugh McCurdy III, PLS, dated January 10, 2018, last amended June 18, 2021. Bearings refer to the State Plane Coordinate System.