Draft Restoration Plan Amendment and Environmental Assessment

Ciba-Geigy National Priorities List Site
McIntosh, Alabama
October 2024


Photo Credit: Elizabeth Cowart

Natural Resource Trustees:
U.S. Fish and Wildlife Service

National Oceanic and Atmospheric Administration

Alabama Department of Conservation and Natural Resources

Geological Survey of Alabama

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Executive Summary

Starting in the early 1950's, the Ciba-Geigy Chemical Corporation (Ciba-Geigy) utilized a facility located in McIntosh, Alabama for the production of chemicals. Hazardous substances, including dichlorodiphenyltrichloroethane (DDT) and DDT-isomers, were disposed of on-site and were discharged into the Tombigbee River. These substances likely impacted water, sediment, fish, shellfish, migratory birds, and several federally and state protected species. Ciba-Geigy was acquired by BASF Corporation in 2009.

On October 2, 2013, the Trustees and BASF Corporation entered a Consent Decree that provided funds for restoration, totaling $3,200,000, for injuries to natural resources within the Mobile Bay Watershed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§1906 *et seq*. Following the Consent Decree, the Trustees developed a Restoration Plan and Programmatic Environmental Assessment (RP/PEA) in 2017 to address injured natural resources and services due to hazardous substances releases at or from the Ciba-Geigy Site (Site) in accordance with the CERCLA Natural Resource Damage Assessment (NRDAR) regulations (43 C.F.R. Part 11), the National Environmental Policy Act (NEPA), and other relevant laws and regulations. The natural resource trustees (Trustees) for the Site are the U.S. Fish and Wildlife Service (USFWS) on behalf of the U.S. Department of the Interior; the National Oceanic and Atmospheric Administration (NOAA) on behalf of the U.S. Department of Commerce; and the Alabama Department of Conservation and Natural Resources (ADCNR) and Geological Survey of Alabama on behalf of the State of Alabama.

Based on the nature of the Site-related natural resource injuries and losses, the Trustees identified three restoration goals for the Final 2017 RP/PEA: (1) Restore, create, or enhance bottomland hardwood forest habitat and other habitat types in the Upper Mobile-Tensaw River Delta and Tombigbee River to benefit injured fish and wildlife, including federally listed species, (2) Restore or enhance disturbed habitats in the Upper Mobile-Tensaw River Delta and Tombigbee River to provide for greater ecological functions and services, and (3) Maximize the long-term beneficial effects and cost-effectiveness of restoration activities. The Trustees selected two restoration alternatives as the preferred alternatives in the 2017 RP/PEA: Habitat Enhancement and Restoration on Newly Acquired Lands (Alternative 2), and Habitat Enhancement and Restoration of State-Owned Lands (Alternative 3). The 2017 RP/PEA determined that additional NEPA analyses when proposing future restoration activities or projects would tier from the 2017 RP/PEA per the revised Council on Environmental Quality (CEQ) NEPA regulations in 2020 (40 C.F.R. § 1501.11).

This Draft Restoration Plan Amendment/Environmental Assessment (RPA/EA), developed cooperatively by the Trustees, provides (1) an update on completed restoration activities, (2) a Consistency Evaluation regarding site-specific restoration projects proposed now for implementation that were generally evaluated in the 2017 RP/PEA, and (3) an evaluation of a new proposed restoration action: feral swine management on state-owned lands (including those state-owned lands newly acquired as part of this case's restoration). In this Draft RPA/EA, the Trustees' evaluation of this new restoration action includes consideration of two restoration alternatives: a No Action Alternative, and Alternative B: Feral Swine Management. Feral swine management is in alignment with the goals of the 2017 RP/PEA, as it is a form of invasive

species control and invasive species management was evaluated in the 2017 RP/PEA. However, the 2017 RP/PEA specifically considered and evaluated methods to manage invasive plant species within the Action Area, not invasive fauna, such as feral swine. This Draft RPA/EA evaluates feral swine management as a supplement to the broader invasive species management program analyzed and selected in the 2017 RP/PEA. The No Action Alternative would continue the restoration outlined in the 2017 RP/PEA.

Nuisance feral swine (*Sus scrofa*) are the primary invasive animal species in the Upper Mobile-Tensaw River Delta. These animals significantly degrade native habitats through their feeding behavior, by disturbing soils and damaging native vegetation. Feral swine management methods proposed in Alternative B of this Draft RPA/EA would involve trapping and euthanizing animals, and the opportunistic euthanizing of animals (without trapping) on newly acquired or existing state-owned lands in the Action Area within the Upper Mobile-Tensaw Delta. The restoration action is proposed to restore natural resources and services injured by the hazardous substance released from the Ciba-Geigy facility and to compensate the public for the loss of services pending restoration of those resources. The Trustees are soliciting public comments on this Draft RPA/EA and will address any public comments received in the Final RPA/EA.

Table of Contents

List of Figures

List of Tables

List of Appendices

List of Acronyms and Abbreviations

ADCNR	Alabama Department of Conservation and Natural Resources
AHC	Alabama Historical Commission
AR	Administrative Record
BASF	BASF Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
Ciba-Geigy	Ciba-Geigy Chemical Corporation
CEJST	Climate and Economic Justice Screening Tool
DDT	Dichlorodiphenyltrichloroethane
DDTr	Dichlorodiphenyltrichloroethane and degradates, DDD and DDE
FONSI	Finding of No Significant Impacts
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRDAR	Natural Resource Damage Assessment and Restoration
RP/PEA	Restoration Plan and Programmatic Environmental Assessment
RPA/EA	Restoration Plan Amendment and Environmental Assessment
Site	Ciba-Geigy NPL Site
Trustees	United States Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Alabama Department of Conservation and Natural Resources, and Geologic Survey of Alabama
USDA-APHIS	United States Department of Agriculture Animal and Plant Health Inspection Service
USFWS	United States Fish and Wildlife Service

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1.0 Introduction

The Ciba-Geigy Chemical Corporation (Ciba-Geigy) utilized a facility in McIntosh, Alabama for the production of chemicals starting in the early 1950's. Hazardous substances were disposed of on-site and were discharged into the Tombigbee River over this facility's operational history. Releases of hazardous substances at the Ciba-Geigy National Priorities List (NPL) Site (Site) included dichlorodiphenyltrichloroethane (DDT) and DDT-isomers, which likely affected fish, birds, sediment, and sediment-dwelling biota. Over the years these releases were occurring, the facility was owned and/or operated by Ciba-Geigy, a subsidiary of Ciba-Geigy, and/or its successor, the BASF Corporation (BASF). Ciba-Geigy (including its McIntosh facility) was acquired by BASF in 2009.

The natural resource trustees (Trustees) for the Site are the United States Fish and Wildlife Service (USFWS) on behalf of the U.S. Department of the Interior, the National Oceanic and Atmospheric Administration (NOAA) on behalf of the U.S. Department of Commerce, and the Alabama Department of Conservation and Natural Resources (ADCNR) and Geological Survey of Alabama on behalf of the state of Alabama. In 2005, the Trustees initiated a Natural Resource Damage Assessment (NRDA) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, 42 U.S.C. § 9607(f)) to assess and quantify the natural resource injuries and service losses from Site releases and the natural resource damages appropriate to compensate the public for such injuries. Ciba-Geigy, as the party responsible for these releases, was liable under CERCLA for such damages.

In 2013, BASF and the Trustees agreed to terms of settlement for Ciba-Geigy's natural resource liability under CERCLA. Under the settlement, the Trustees jointly recovered $3,200,000 for use to plan, implement, conduct, finance, and oversee one or more restoration actions or projects within the Mobile Bay Watershed to compensate for injured or lost bottomland hardwood habitat or biota.

In this Draft Restoration Plan Amendment and Environmental Assessment (Draft RPA/EA), the Trustees amend their original Restoration Plan and Programmatic Environmental Assessment by describing the purpose and need for restoration, identifying additional potential restoration alternatives, including a No Action Alternative, summarizing the affected environment, and describing the potential environmental consequences of the additional proposed restoration activities. The Trustees are soliciting comments on this Draft RPA/EA and will address comments in preparing a Final RPA/EA wherein the Trustees will identify the Selected Restoration Alternative.

1.1 Relationship to the Restoration Plan and Programmatic Environmental Assessment

In 2017, a Restoration Plan and Programmatic Environmental Assessment[1] (2017 RP/PEA) was prepared by the Trustees in accordance with the CERCLA Natural Resource Damage Assessment (NRDA) regulations (43 C.F.R. Part 11), the National Environmental Policy Act (NEPA), and other relevant laws and regulations. The 2017 RP/PEA evaluated potential

[1] 2017 Ciba-Geigy National Priorities List Site, McIntosh, Alabama: Restoration Plan and Programmatic Environmental Assessment

restoration techniques to compensate the public for natural resource injuries in the Upper Mobile-Tensaw River Delta, including fish, shellfish, and migratory bird habitat. The Trustees reviewed the 2017 RP/PEA for use in the environmental evaluation herein, including reevaluating the analysis and underlying assumptions on which the 2017 RP/PEA was based, consistent with the requirements of the Fiscal Responsibility Act of 2023 (42 U.S.C. § 4336). The analysis and underlying assumptions of the 2017 RP/PEA remain valid. The 2017 RP/PEA selected two broad restoration techniques as the preferred alternative: Alternative 2) Habitat Enhancement and Restoration on Newly Acquired Lands and Alternative 3) Habitat Enhancement and Restoration of State-Owned Lands. The broad restoration techniques selected in the 2017 RP/PEA allowed for land acquisition and restoration within the Action Area since 2017, while also laying the groundwork for documents like this Draft RPA/EA to further clarify the details of specific future restoration projects.

This Draft RPA/EA tiers[2] from and incorporates by reference[3] portions of the 2017 RP/PEA for expediency and efficiency, as appropriate. Tiering is provided for under NEPA where it can eliminate repetitive discussions of the same issues in multiple NEPA documents (40 C.F.R. § 1501.11). The 2017 RP/PEA evaluated land acquisition as a restoration technique, as well as other restoration techniques for future Trustee implementation, such as invasive plant species control. Those restoration actions and their potential impacts were evaluated broadly within an identified Action Area because future site-specific project information was not yet available. That broader analysis has enabled the Trustee's to build on the foundation in the 2017 RP/PEA in later documents, like this Draft RPA/EA, to conduct site-specific acquisitions and restoration. Since 2017, restoration actions such as land acquisition have been implemented by the Trustees utilizing a tiering approach to apply environmental analysis included in the 2017 RP/PEA through consistency evaluations. By tiering from the 2017 RP/PEA, the Trustees can incorporate prior analyses by reference, focus on project-specific issues, and reduce or eliminate duplicative documentation. The preferred alternative proposed in this Draft RPA/EA is in alignment with the overall goals of the 2017 RP/PEA, including those of the preferred alternatives (Alternatives 2 and 3) selected in the 2017 RP/PEA.

This Draft RPA/EA is necessary because, even though the biological, physical, and socioeconomic conditions within the Action Area are described in the 2017 RP/PEA, the 2017 RP/PEA does not consider and evaluate feral swine management as an invasive species control method. This Draft RPA/EA tiers from the 2017 RP/PEA to also provide site-specific evaluation and analyses for hydrologic modification projects that were only generally evaluated and

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[2] The NEPA regulations define "tiering" as referring to "the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared." 40 C.F.R. §1508.1(ff).

[3] The NEPA regulations state the following regarding "incorporation by reference": Agencies shall incorporate material, such as planning studies, analyses, or other relevant information, into environmental documents by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. Agencies shall cite the incorporated material in the document and briefly describe its content. Agencies may not incorporate material by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Agencies shall not incorporate by reference material based on proprietary data that is not available for review and comment (40 C.F.R. §1501.12).

analyzed in the 2017 RP/PEA.

The Trustees cooperatively prepared this Draft RPA/EA in accordance with the CERCLA NRDAR regulations, 43 C.F.R. Part 11 and the NEPA and its implementing regulations. USFWS is the NRDA lead federal Trustee and the lead federal agency for NEPA compliance. NOAA is a NRDA supporting federal Trustee action agency and a cooperating agency for NEPA compliance (40 C.F.R. § 1501.8). NOAA, as a cooperating agency for purposes of this Draft RPA/EA, intends to adopt this Draft RPA/EA in accordance with 40 C.F.R. § 1506.3 and consistent with its agency NEPA procedures. If this plan is finalized and adopted, both NOAA and USFWS will issue their own Finding of No Significant Impact (FONSI).

1.2 Purpose and Need for Restoration

Since 2017, the Trustees have carried out a process to identify, evaluate, and select restoration projects tailored to restoring, replacing, rehabilitating, and/or acquiring the equivalent of natural resources, and the services they provide, as those injured by the hazardous substance released from the Ciba-Geigy facility, in the Upper Mobile-Tensaw River Delta. The purpose of the Trustees' restoration is to compensate the public for natural resource injuries in the Upper Mobile-Tensaw River Delta, including fish, shellfish, and migratory bird habitat, resulting from releases at and from the Site. The need for these restoration actions arises from the statutory requirement to use recovered natural resource damages to restore, replace, or acquire the equivalent of natural resources injured by releases of hazardous substances 42 U.S.C. § 9607(f)(1). This document builds on the environmental impact analysis provided in the 2017 RP/PEA and incorporates that analysis by reference.

1.3 Overview of the Ciba-Geigy NPL Site

The Site is located near the town of McIntosh in southern Washington County, Alabama (Figure 1). The Site is comprised of a chemical production facility, now owned and operated by BASF, encompassing approximately 1,500 acres. Hazardous substances, including DDT and DDT-isomers, were generated by Ciba-Geigy at the McIntosh Facility, and disposed of on-site and discharged into the Tombigbee River starting in the 1950s. Production wastes were released in floodplain habitats on the Site, as well as into floodplain habitats on neighboring properties, as a result of periodic flooding of a ditch that transmitted untreated plant wastes into several unlined pits. DDT and its breakdown products are highly persistent in the environment, bioaccumulate in fish and wildlife species, and are most widely known for their reproductive toxicity in fish and wildlife (NPIC 2000). The United States Environmental Protection Agency placed the site on the Superfund program's National Priorities List (NPL) in 1984 because of contaminated groundwater, soil, sludge, and sediment resulting from waste disposal practices. Investigations into the nature and extent of the contaminant releases documented concentrations of DDT and DDT-related compounds as frequently exceeding levels potentially toxic to fish, wildlife, and humans.

1.4 Summary of Injury to Natural Resources

The primary constituents of concern at the Site were DDT and DDT-related compounds. Elevated concentrations of DDT and DDT-related compounds have been documented in biota living onsite, and in water quality samples from the Tombigbee River. The Trustees' assessment of natural resource injuries focused on injury related to contamination of floodplain habitat at the Site, and the impacts associated with the migration of constituents into the Tombigbee River.

Resources of concern that were likely to have been injured in these ecologically and economically important areas include water, fish, shellfish, resident wildlife, migratory birds, and at least five federally protected species, including threatened wood stork (*Mycteria americana*), threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*), endangered Alabama red-bellied turtle (*Pseudemys alabamensis*), and threatened inflated heelsplitter (*Potamilus inflatus*). These resources are dependent on floodplain habitats, such as the bottomland hardwood forests impacted by the releases of hazardous substances at the Site.

1.5 Summary of Settlement

On October 2, 2013, the Trustees and responsible party, BASF Corporation, entered a Consent Decree that provided funds for restoration for injuries to natural resources and resource services from the DDT and DDTr releases at and from the Ciba-Geigy Site (District Court 2013). The Consent Decree required BASF to pay the sum of $3,200,000 into the Ciba-Geigy Site Restoration Account maintained by the Department of the Interior. The funds have been and will continue to be used by the Trustees to plan for, implement, conduct, finance, and oversee restoration actions within the Mobile Bay watershed, which includes the Tombigbee River and Upper Mobile-Tensaw Delta.

1.6 Restoration Previously Completed Under the 2017 RP/PEA

In the 2017 RP/PEA, the Trustees proposed the acquisition of privately-owned lands as a component of Alternative 2: Habitat Enhancement and Restoration on Newly Acquired Lands. The Trustees have since acquired two parcels totaling 327 acres with NRD settlement funds: the Simmons Tract in 2018, and the Rigsby Tract in 2019. Both properties abut existing protected habitat areas and have been transferred to ADCNR for long term protection and management.

The Simmons Tract is located along the eastern bank of the Tensaw River, north of Live Oak Landing and west of Alabama Highway 59 in Baldwin County, Alabama. The Simmons Tract is approximately 284 acres and is located within the Action Area defined in the 2017 RP/PEA (Figure 2). The property does not have public road access but is accessible by boat. The Simmons Tract is adjacent to Wildlife Management Area parcels managed by Forever Wild Land Trust.

The Rigsby Tract is adjacent to, but does not fall within, the Action Area defined in the 2017 RP/PEA (Figure 2). The parcel consists of approximately 43 acres of uplands and wetlands adjacent to approximately 1,910 acres of additional bottomland hardwood habitat under state ownership along the Mobile River. The state did not have access to these state-owned acres prior to the acquisition of the Rigsby Tract. Thus, the acquisition of this parcel facilitates state management of the Rigsby Tract itself, as well as facilitating future management action and restoration of the adjacent state-owned property. The Trustees completed a Consistency Evaluation prior to acquisition to evaluate whether acquisition of this parcel was consistent with the 2017 RP/PEA. The 2019 Consistency Evaluation (see Appendix A) found that the Rigsby Tract was directly adjacent to and hydrologically connected to Action Area defined in the 2017 RP/PEA, contained similar habitats to those within the 2017 RP/PEA Action Area, and would provide benefits equivalent to those from a similar parcel acquired within the 2017 RP/PEA Action Area.

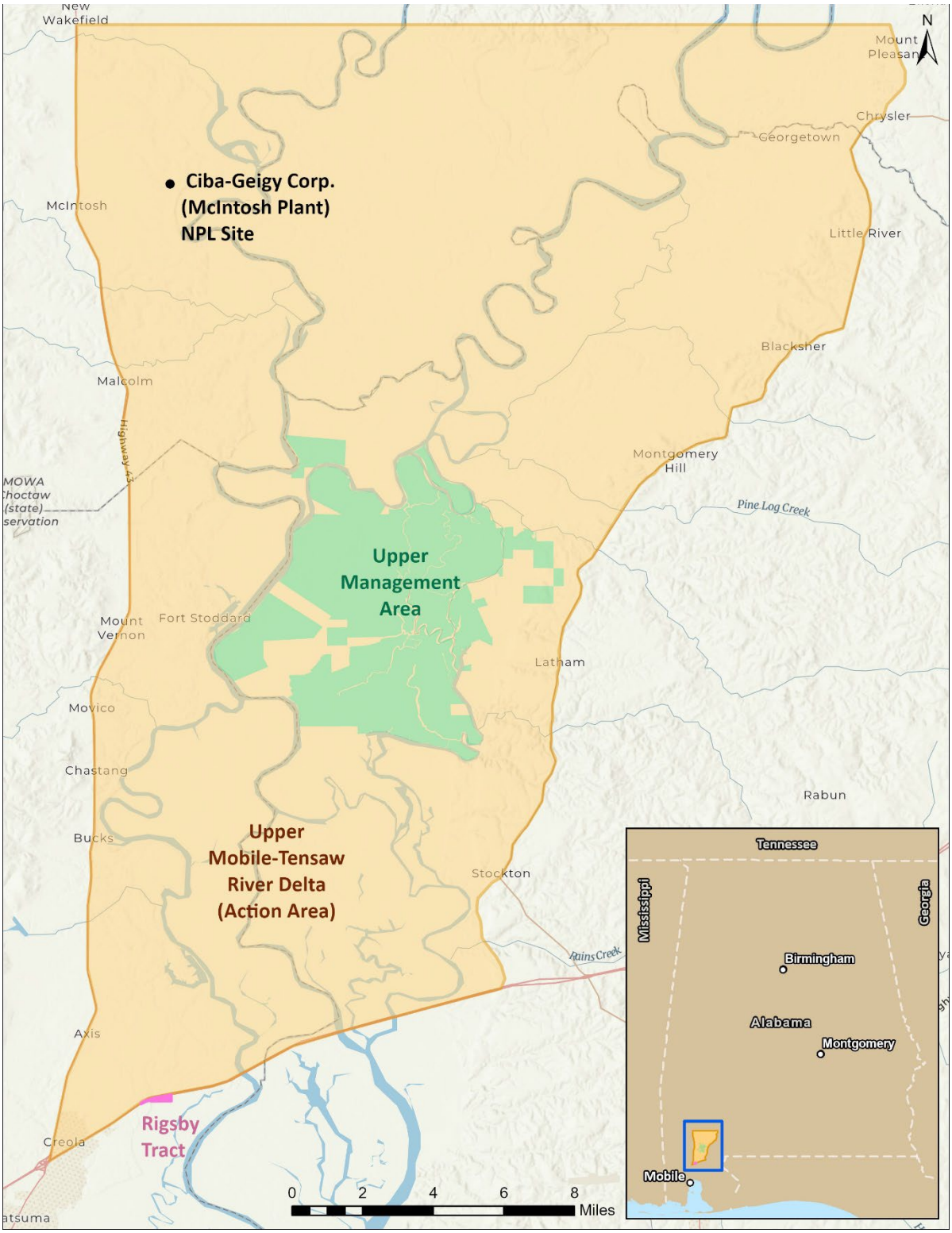

Figure 1. Map of the Upper Mobile-Tensaw River Delta in southwestern Alabama showing the location of the Ciba-Geigy NPL Site. The Action Area described in the 2017 RP/PEA is outlined in yellow. The Upper Management Area and Rigsby Tract, where proposed restoration will take place, are demarcated in green and pink, respectively.

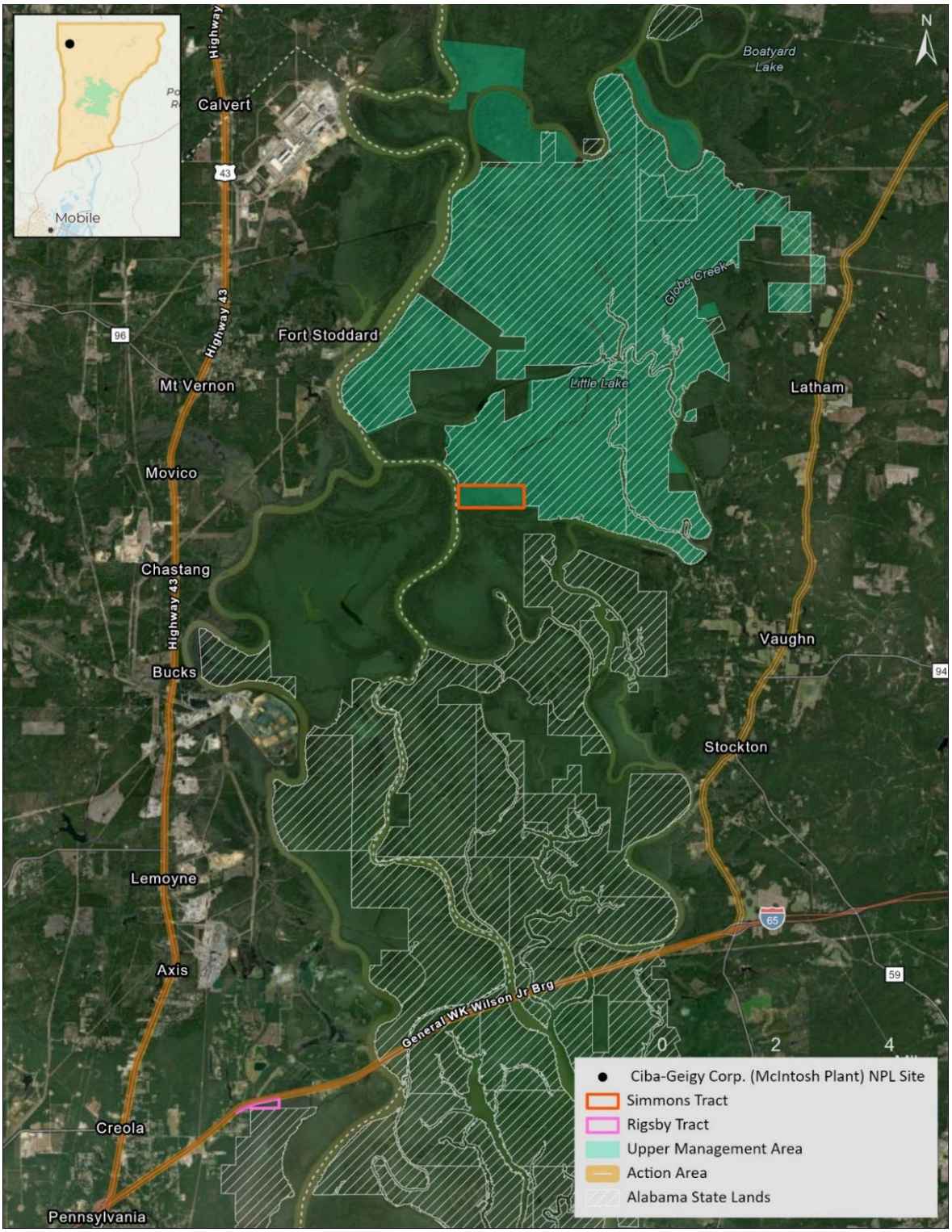

Figure 2. Previously completed restoration in relation to the Upper Management Area, outlined in green, and the Action Area identified in the 2017 RP/PEA, outlined in brown. The 2017 RP/PEA selected land acquisition as a preferred alternative and Alabama State Lands are shown in white hash lines. The Simmons Tract, outlined in orange, and the Rigsby Tract, outlined in pink, were both acquired with funds provided by the 2013 settlement for this case.

The 2017 RP/PEA identified proximity to tracts currently under public ownership or management as an important consideration for the land acquisition component of Alternative 2. Both the Simmons Tract and Rigsby Tract are located adjacent to publicly managed lands. The ownership and management of these properties bordering the Tensaw and Mobile Rivers provides landscape-scale management opportunities to restore habitats similar to those injured by releases at and from the Site. Accordingly, in this Draft RPA/EA the Trustees identify specific restoration activities for implementation on the newly acquired parcels and/or other state-owned properties within the Action Area, including the Upper Management Area. The Upper Management Area is a unit of state-managed lands that is uniquely accessible within the Action Area due to the existing road network; this accessibility substantially reduces the cost of restoration actions in the Upper Management Area compared to more remote parcels managed by the state.

1.7 Public Participation

Public participation and review are integral parts of the restoration planning process and are specifically required in the CERCLA NRDAR regulations (43 C.F.R. §11.81(d)(2), 43 C.F.R. § 11.93(c)). In addition, NEPA and its implementing regulations require that federal agencies fully consider the environmental impacts of their proposed decisions and that such information is made available to the public.

This Draft RPA/EA will be made available to the public for a 30-day comment period, which will begin on the date of the public notice announcing its availability. After the public comment period has ended, all relevant comments received from the public will be evaluated by the Trustees and summarized in a Final RPA/EA. An additional opportunity for public review will be provided if the Trustees decide to make significant changes to the Draft RPA/EA based on public comments.

Copies of this document are available at www.cerc.usgs.gov/orda_docs/CaseDetails?ID=870. Comments should be sent to:

Brian Spears, USFWS
341 Greeno Road North, Suite A
Fairhope AL 36533
Brian_Spears@fws.gov

1.8 Administrative Record

The Trustees have maintained records to document information considered as they developed this Draft RPA/EA, which are compiled in an Administrative Record (AR). The AR for this case is available to the public and can be viewed by contacting

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1.9 Organization of the Draft Restoration Plan Amendment

This document has two aims:

- Tier from the 2017 RP/PEA to provide site-specific evaluation and analyses for hydrologic modification projects that were only generally evaluated and analyzed in the 2017 RP/PEA.
- Evaluate feral swine management as an invasive species control method as part of restoration activities for this case. The 2017 RP/PEA evaluates invasive plant species management, and describes the biological, physical, and socioeconomic conditions within the Action Area; however, it does not specifically evaluate the management of invasive animal species.

This Draft RPA/EA provides a Consistency Evaluation for hydrologic modification projects generally outlined in the 2017 RP/PEA (Chapter 2), describes the goals and evaluation criteria for the feral swine management restoration action (Chapter 3), the proposed restoration alternatives considered (Chapter 4), the affected environment as it currently exists, as required by NEPA (Chapter 5), the probable consequences on the human environment that may result from the implementation of the proposed restoration actions and their alternatives, as required by NEPA (also in Chapter 5), the potential cumulative impacts from the alternatives, as required by NEPA (also Chapter 5), the applicable federal and state statutes, regulations, and policies (Chapter 6), the monitoring approach for the hydrologic modification projects and preferred alternative (Chapter 7) and provides a budget summary and timeline for the hydrologic modification projects and preferred alternative (Chapter 8).

2.0 Hydrological Modification Projects Description and Consistency Evaluation

In the 2017 RP/PEA, the Trustees identified and evaluated hydrologic modification as a restoration technique in two preferred restoration alternatives: Alternative 2: Habitat Enhancement and Restoration on Newly Acquired Lands, and Alternative 3: Habitat Enhancement and Restoration on State-Owned Lands. In the interim, the Trustees identified three locations on state-owned land within the Upper Management Area where hydrologic modification would be appropriate to remove damaged culverts and replace them with low water crossings. Specifically, the Trustees identified two locations for the installation of long (~100 feet) low water crossings, and one location for a short (~40 feet) low water crossing (Figure 3). The locations were selected as the Trustees are prioritizing restoration in lands adjacent to lands already acquired. This proposed work has a high likelihood of success due to the presence of an existing road system that facilitates access to much of the area and the substantial experience of ADCNR in successfully implementing hydrologic restoration projects.

The proposed project locations are currently raised road beds bisecting dry washes that seasonally flood. The construction of low water crossings will require excavation to return the road back to grade. Culverts with raised road beds block the natural water flow, thus preventing the natural transport of water across a flood plain. Unlike culverts, low water crossings are designed to permit more natural flow across the structure during low flow conditions and accommodate overtopping during high flow events (see Figure 4).

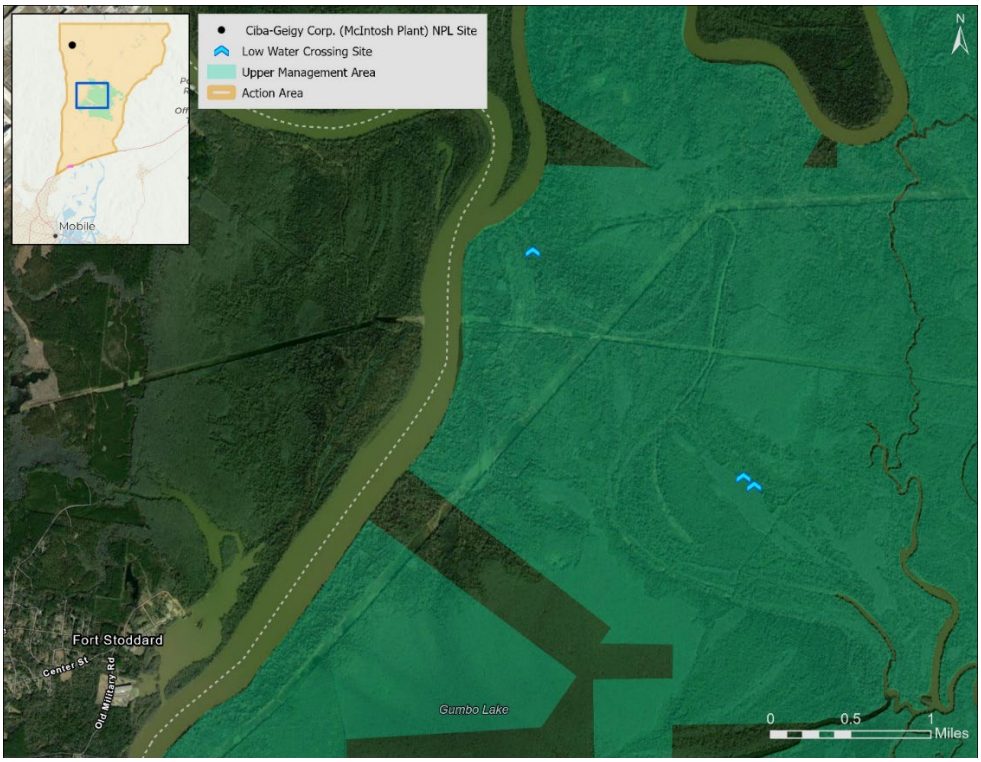

Figure 3. Locations of proposed hydrological modification projects; all projects are located in the Upper Management Area, denoted in green.

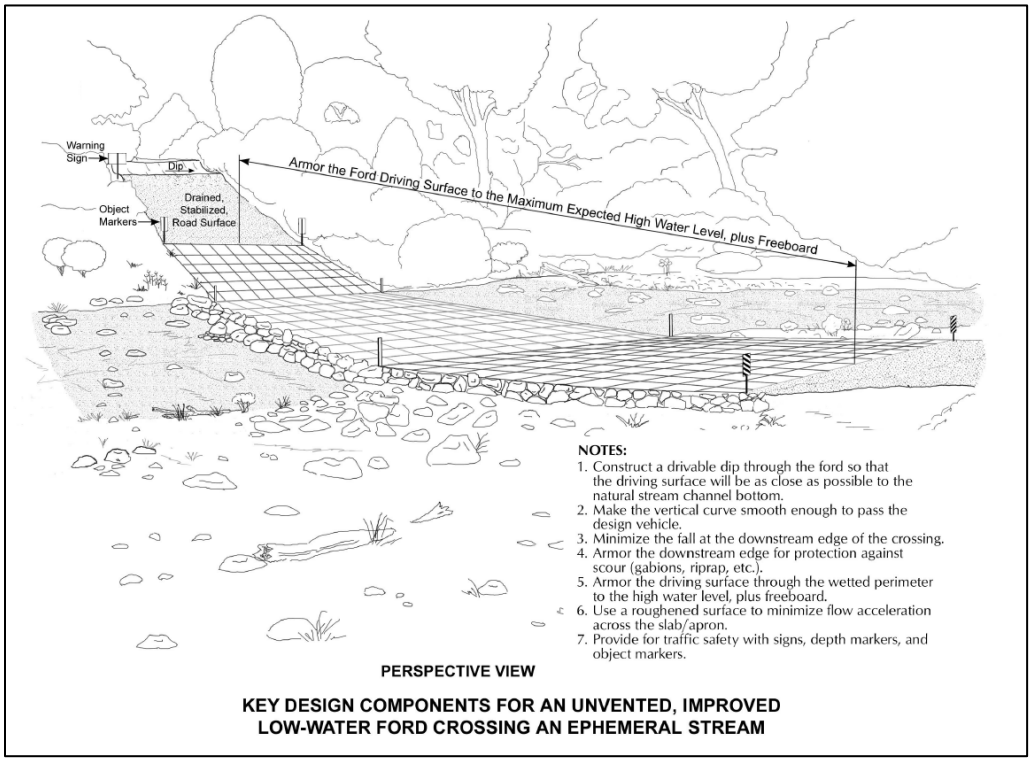

Figure 4. An example low water crossing to be used in the design of the proposed hydrologic modification projects.

In the 2017 RP/PEA, the Trustees analyzed hydrologic modification as a restoration technique and concluded that hydrologic modification actions within the Action Area would provide ecological benefits to natural resources and are not expected to have a significant adverse effect on the quality of the human environment. That analysis, including the Trustees' evaluation of potential environmental impacts in Chapter 4.2 therein, is incorporated here by reference. This finding was documented in the FONSI from the USFWS dated July 18, 2017, and the NOAA FONSI dated August 16, 2017.

In intervening years, the Trustees developed project plans for three proposed hydrologic modifications on state-owned land in the Upper Management Area (see Figure 3). In Table 1 of this Draft RPA/EA, the Trustees document their findings of a Consistency Evaluation to confirm that the three hydrologic modification projects proposed within the Upper Management Area are consistent with the Restoration Evaluation Criteria identified in Chapter 2.3 of the 2017 RP/PEA.

The Trustees will complete any necessary environmental compliance associated with specific restoration activities implemented under this plan, including, but not limited to, National Environmental Policy Act (NEPA), National Historic Preservation Act Section 106, Clean Water Act Section 404, Endangered Species Act evaluations and consultation with the Alabama Historical Commission (AHC) regarding any documented cultural resources in the area. A preliminary search in the AHC Historic Preservation Map Initiative did not return any documented historical sites near the proposed project sites.

The Trustees have determined that the environmental consequences of the project-specific hydrologic modifications proposed within the Upper Management Area are consistent with those evaluated under Alternative 3 in the 2017 RP/PEA. This Consistency Evaluation, which concludes that all the likely effects of the proposed hydrologic modifications fall within the range of environmental consequences evaluated in the 2017 RP/PEA, reaffirms those findings. Therefore, no additional NEPA evaluation is required for the proposed activities associated with the project-specific hydrologic modifications to be implemented by the Trustees.

Table 1. Evaluation of Hydrologic Modification Consistency with CERCLA Restoration Criteria and Additional Restoration Criteria identified by the Trustees. The Restoration Evaluation Criteria are defined in Chapter 3.2 of this document.

CERCLA Restoration Criteria	
1. Technical Feasibility	Methods are well known, traditionally used in these habitats and landscapes dominated by forestry uses, and technically feasible.
2. Benefits Relative to Cost	Project benefits will create functional and low maintenance structures; project benefits are considered high with regards to project cost.
3. Cost-effectiveness	Methods are routinely implemented and considered cost-effective.
4. Actual or Planned Response Actions	N/A
5. Potential for additional injury resulting from the proposed actions	Any adverse impacts due to construction would be both limited in scope and short-term.
6. Natural recovery period and the ability of resources to recover without restoration	Natural resources are experiencing ongoing damage due to seasonal flooding and improperly sized culverts. These ongoing impacts require intervention.
7. Public Health and Safety	The construction of low water crossings will improve the safety of these roadways.
8. Consistency and compliance with applicable/relevant laws, policies, and regulations	As the Implementing Trustee, ADCNR will assure compliance with all federal, state, and local laws, regulations and any related permits.
Additional Restoration Criteria	
1. Relationship to Injured Resources and Services	Direct relationship in terms of project location and restoration focus. Low water crossings will focus on improving floodplain and bottomland hardwood swamp habitats.
2. Consistency with the Trustee's Restoration Goals	Project is consistent with the restoration goals of 2017 RP/PEA.
3. Likelihood of Success	Likelihood of project success is high. The State of Alabama has substantial experience successfully implementing hydrologic restoration projects.
4. Multiple Resource Benefits	Low water crossings will achieve benefits for multiple resources, including the physical environment, habitat resources, fish and wildlife, and cultural resources.
5. Duration of Benefits	Hydrologic modifications will replace culverts to create functional and resilient infrastructure that accommodates seasonal flooding.
6. Opportunities for Collaboration	N/A

3.0 Restoration Goals and Evaluation Criteria – Feral Swine Management

The remainder of this document will evaluate feral swine management as a component of the broader invasive species management program analyzed in the 2017 RP/PEA. The 2017 RP/PEA selects invasive species management as a restoration type. In doing so, the document describes the Trustees' restoration goals, objectives, and criteria, as well as the biological, physical, and socioeconomic conditions within the Action Area (see Figure 1). The proposed restoration alternative in this Draft RPA/EA is evaluated as a new component of the broader invasive species management program analyzed and selected in the 2017 RP/PEA.

This Chapter summarizes the Trustees' restoration goals, objectives, and evaluation criteria that informed the development of the 2017 RP/PEA and this Draft RPA/EA, including those used to identify and evaluate the potential restoration alternatives considered herein. This Chapter also identifies project-specific objectives for the feral swine management restoration action based on the programmatic approach proposed in the 2017 RP/PEA for the future selection of restoration sites and projects.

3.1 Restoration Goals and Objectives

The overarching restoration goals derived from the 2017 RP/PEA include:

- Goal 1: Restore, create, or enhance bottomland hardwood forest habitat and other habitat types in the Upper Mobile-Tensaw River Delta and Tombigbee River to benefit injured fish and wildlife, including federally listed species.
- Goal 2: Restore or enhance disturbed habitats in the Upper Mobile-Tensaw River Delta and Tombigbee River to provide for greater ecological functions and services.
- Goal 3: Maximize the long-term beneficial effects and cost-effectiveness of restoration activities.

The 2017 RP/PEA identified broad restoration goals, but states that specific restoration project objectives will be identified for specific restoration projects developed at a later time. The project-specific objective identified by the Trustees that guided development of this Draft RPA/EA is:

- Restore disturbed habitats and ecological services in the Upper Mobile-Tensaw River Delta and Tombigbee River through invasive species control actions to mitigate the negative impacts of feral swine.

3.2 Restoration Evaluation Criteria

The CERCLA NRDAR regulations at 43 C.F.R. Part 11 lists factors for the Trustees to evaluate and consider in selecting a restoration alternative or project to pursue. These factors must be applied in restoration planning to identify a range of alternatives for consideration, as well as to identify the restoration alternatives or projects to pursue. The CERCLA NRDAR regulations at 43 C.F.R. Part 11 also permit the Trustees to evaluate possible alternatives based on other "relevant considerations."

To meet the Restoration Goals articulated in Chapter 3.1 of this Draft RPA/EA, the Trustees

identified a set of six Additional Restoration Criteria in the 2017 RP/PEA (listed below). The Trustees are evaluating the potential restoration alternatives using both the CERCLA NRDAR factors and the Additional Restoration Criteria to determine if the restoration alternatives analyzed herein should be moved forward for implementation. In Chapter 5 the Trustees are also evaluating whether significant effects may be associated with the two proposed restoration alternatives, as required by NEPA (40 C.F.R. §1501.3).

CERCLA NRDAR Factors:

1. **Technical Feasibility** (43 C.F.R. § 11.82 (d)(1)): The restoration type must be technically sound. The Trustees considered the level of risk or uncertainty involved in implementing the restoration type alternatives. A proven track record demonstrating the success of projects utilizing similar or identical restoration techniques can be used to satisfy this evaluation criterion.
2. **Benefits Relative to Costs** (43 C.F.R. § 11.82 (d)(2)): The Trustees considered the relationship of resource and service benefits to expected costs for each alternative.
3. **Cost-effectiveness** (43 C.F.R. § 11.82 (d)(3)): The Trustees considered the least costly activity when multiple actions provided the same or similar level of benefits.
4. **Results of Any Actual or Planned Response Actions** (43 C.F.R. § 11.82 (d)(4)): The contribution of any action to clean up the site will be considered in the identification and evaluation of restoration alternatives.
5. **Potential for additional injury resulting from the proposed actions** (43 C.F.R. § 11.82 (d)(5)): Proposed restoration type alternatives should avoid or minimize adverse impacts to the environment and the associated natural resources. The Trustees considered the future short- and long-term injuries, as well as mitigation of past injuries, when evaluating restoration types.
6. **Natural recovery period and ability of resources to recover with or without restoration** (43 C.F.R. § 11.82 (d)(6-7)): Consideration of the time required for injured resources to recover if no action is taken and whether the resource would be able to recover on its own versus the ability to recover associated with the preferred restoration alternative(s). The Trustees considered the ability of the injured natural resources to recover and required time for the recovery without restoration. In addition, the Trustees considered the time expected for future projects to begin providing benefits to the target ecosystem and/or public. A more rapid time to delivery of benefits was favorable.
7. **Adverse Effects to Public Health and Safety** (43 C.F.R. § 11.82 (d)(8)): The proposed alternatives cannot pose a threat to the health and safety of the public.
8. **Consistency and compliance with applicable/relevant laws, policies, and regulations** (43 C.F.R. § 11.82 (d) (9-10)): The proposed restoration type alternatives must comply with all applicable federal, state, and local laws, policies, and regulations.

Additional Restoration Criteria:

1. **Relationship to Injured Resources and Services**: Restoration type alternatives that restore, replace, enhance, or acquire the equivalent of the resources and services injured by the release are preferred to restoration types that benefit other comparable resources or services. The Trustees considered the types of resources or services injured, the location of the resources, and the connection or nexus of the restoration type benefits to those injured resources.

2. **Consistency with the Trustee's Restoration Goals**: The proposed alternative must meet the Trustee's intent to restore, replace, enhance, or acquire the equivalent of the injured resources or the services those resources provided.
3. **Likelihood of Success**: The Trustees considered the potential for success and the level of expected return of resources and resource services. The Trustees also considered the ability to monitor and evaluate the performance of future projects; the ability to correct any problems that arise during the course of projects; and the capability of individuals or organizations expected to implement projects. Success criteria were expected to be clear and measurable, such as those criteria listed in Table 8 (See 2017 RP/PEA, Chapter 5).
4. **Multiple Resource Benefits**: The Trustees considered the extent to which the proposed alternative benefits more than one natural resource or resource service in terms of quantity and quality of the types of natural resources or services expected to result from future projects.
5. **Duration of Benefits:** The Trustees considered the expected duration of benefits from the proposed restoration type alternatives. Project types expected to provide longer-term benefits were regarded more favorably.
6. **Opportunities for Collaboration**: The Trustees considered the possibility of enhancing benefits to natural resources or services by coordinating future restoration projects with ongoing or proposed projects or programs.

4.0 Restoration Alternatives – Feral Swine Management

To compensate the public for injuries to natural resources and associated lost services resulting from releases of DDT and DDT-isomers from the Site, the Trustees are required to develop alternatives for the restoration, rehabilitation, replacement, and/or acquisition of the equivalent of the natural resources and the services those resources provided (43 C.F.R. §11.82 (a)).

This Draft RPA/EA expands on the environmental analysis provided in Chapter 4.2 of the 2017 RP/PEA. The 2017 RP/PEA selected two preferred alternatives for the Proposed Action from the restoration evaluation criteria analysis: Habitat Enhancement and Restoration on Newly Acquired Lands (Alternative 2), and Habitat Enhancement on State-Owned Lands (Alternative 3). Restoration projects consistent with the 2017 RP/PEA preferred alternatives include land acquisition, hydrologic restoration, and invasive species management and revegetation. While the 2017 RP/PEA selected invasive species management broadly as a restoration type, it did not analyze invasive animal species, such as feral swine, as an invasive species management technique. The proposed feral swine management alternative discussed in this Draft RPA/EA is evaluated as a new component of the broader invasive species management program analyzed and selected in the 2017 RP/PEA. For the purposes of this analysis, the Action Area includes the Rigsby Tract since the Trustees determined that acquisition of that parcel met the criteria in the 2017 RP/PEA.

Expanding on Alternatives 2 and 3 from the 2017 RP/PEA, the Trustees present a No Action Alternative that would operate as a status quo with regards to restoration efforts outlined in the 2017 RP/PEA, and a Feral Swine Management Alternative. A comparative analysis of Alternatives A (No Action) and B (Feral Swine Management) applying the CERCLA NRDAR factors, and the Additional Restoration Criteria is presented in Table 2.

4.1 Alternative A: No Action Alternative

Under the No Action Alternative, restoration would be limited to the preferred restoration alternatives evaluated and selected in the 2017 RP/PEA. No additional restoration would be done by the Trustees to accelerate the recovery of injured natural resources or to compensate for lost services. Under the No Action Alternative, restoration activities described in the 2017 RP/PEA will continue, but no restoration action to address ongoing feral swine impacts will be undertaken.

4.2 Alternative B: Feral Swine Management

Feral swine (*Sus scrofa*) are significant contributors to the degradation of native habitats. Alternative B includes the implementation of feral swine management activities on newly acquired or existing state-owned lands in the Upper Mobile-Tensaw Delta. Feral swine damage soils, destroy native vegetation including sensitive plant communities, outcompete native wildlife for food resources, and destroy nests of ground nesting birds. The feeding behavior of these large animals ("rooting") has damaged large areas of vegetation in forested wetland and floodplain habitats throughout the Upper Mobile-Tensaw River Delta and the Action Area. The repeated disturbance of soils and vegetation by feral swine has also facilitated the spread of exotic and invasive vegetation, contributed to the loss of wildlife forage, and reduced the quality and ecological productivity of habitat. Invasive species management on newly acquired or existing state-owned lands in the Upper Mobile-Tensaw Delta was a selected restoration alternative in the 2017 RP/PEA; evaluation of this alternative expands on that environmental analysis. The broad invasive species management alternative evaluated in the 2017 RP/EA did not specify or analyze feral swine management. Alternative B in this Draft RPA/EA is proposed as an additional component of the previously selected invasive species management alternative.

Feral swine populations in the Upper Mobile-Tensaw Delta continue to increase and control is a year-round demand that is necessary to protect and restore native species and communities. Feral swine are highly mobile in their search for food, which makes eradication difficult. Alternative B is not expected to eliminate existing populations of feral swine from the Upper Mobile-Tensaw Delta; rather, the goal of these population management activities is to limit the adverse impacts of large populations of feral swine. Timing of feral swine management would be largely opportunistic and would be carried out when hydrologic conditions in the Upper Mobile-Tensaw Delta allow.

Feral swine management methods included in Alternative B of this Draft RPA/EA would involve (1) trapping and euthanizing, and (2) opportunistic euthanizing of animals. Both methods would be conducted by trained ADCNR staff. The trapping and euthanizing of feral hog populations are considered routine restoration actions for ADCNR. ADCNR has developed best practices and standard procedures for these activities, which will be followed under this restoration alternative.

Trapping and euthanizing would consist of placing a trap resembling a large metal pen enclosure in a targeted location and allowing the swine to enter on their own accord. Trapped feral swine would be quickly and humanely euthanized by trained agency staff with the use of a firearm. All traps are equipped with wi-fi enabled cameras that are connected via an app to the biologist's

phone. The biologist will receive a notification that there is movement in the trap and can verify what species is present before deciding whether to lower the trap door. Trap locations are identified by ADCNR staff based on proximity to access roads and evidence of feral swine rooting damage. Seven known locations for placement of feral swine traps have been initially selected in the Upper Management Area and one known location for trapping in the Rigsby Tract. ADCNR would initially utilize four traps and rotate them across the eight locations (see Figure 5).

The main benefit of the trapping and euthanizing method is that traps can be set and left unattended overnight. This method is safer for ADCNR personnel because there is less risk of direct human encounters with feral swine. Feral swine are large and often aggressive animals that are capable of injuring or killing humans. The main drawback to this method is that the traps are large in size, similar to a pen enclosure, but allows for multiple feral swine of a family group to be captured at one time. Due to the size of the traps, they require transport by vehicle and vehicular access is limited throughout much of the Upper Mobile-Tensaw Delta and is seasonal. The initial trapping locations were selected based on intensity of feral hog impacts, and proximity to an existing road system (see Figure 5).

A secondary method, opportunistic euthanizing, involves the use of firearms to humanely remove feral swine without the use of a trap. Opportunistic euthanizing may be conducted periodically by trained ADCNR staff in the Action Area. This method may be optimized by incorporating the use of high-tech gear such thermal imagery. The main benefit of this method is that it does not require vehicular access and can therefore be implemented across a broader area of the Upper Mobile-Tensaw Delta, including locations that are only accessible by boat or on foot. The main drawbacks of this method are that it is more labor intensive than trapping and presents greater safety risks for personnel. In order to minimize the safety risks to personnel to the maximum extent practicable, any ADCNR staff involved in opportunistic euthanizing will receive training, similar to firearm carrying, law enforcement personnel within the Agency. Additionally, ADCNR will codify policies and procedures for non-law enforcement personnel that handle firearms as part of their work responsibilities. These policies and procedures can be specific to the activities associated with this restoration plan or broader for general agency operations. Policies will include provisions of annual training, criteria for revocation, specifications of firearms necessary to conduct duties, and any other necessary provisions to ensure safety of the firearm operator and others.

Proper disposal of feral swine is important to protect human, animal, and environmental health. The goal is to reduce the potential for the spread of disease and prevent nutrient losses and groundwater contamination. Carcass disposal will primarily occur onsite. Burial pits may vary based on trapping locations and site conditions. Burial may be below ground or above ground. Below ground burial pits will be deep enough to ensure a soil layer of at least 3 feet to prevent carcass scavenging. The bottom of the pit should be at least 3 feet above seasonal maximum groundwater level to avoid contamination. Above ground organic burial (i.e., composting) is accomplished by covering the carcass with a sufficient amount of carbon material needed for decomposition. The location should be high enough to avoid groundwater and shaped in a manner to shed water. ADCNR will dispose of carcasses in compliance with all applicable state and local laws; carcass disposal is not expected to have a substantive impact on odor or air

quality.

Implementation of trapping and euthanizing, and opportunistic euthanizing, would commence within one year after finalizing this Draft RPA/EA. Feral swine management will be an ongoing restoration technique in the Action Area; the drafted initial budget will support this activity for five years. If new locations for feral swine management activities are identified within or adjacent to the Action Area, a Consistency Evaluation will be completed to ensure that the environmental analysis and conclusions within the 2017 RP/PEA and this Draft RPA/EA are still valid.

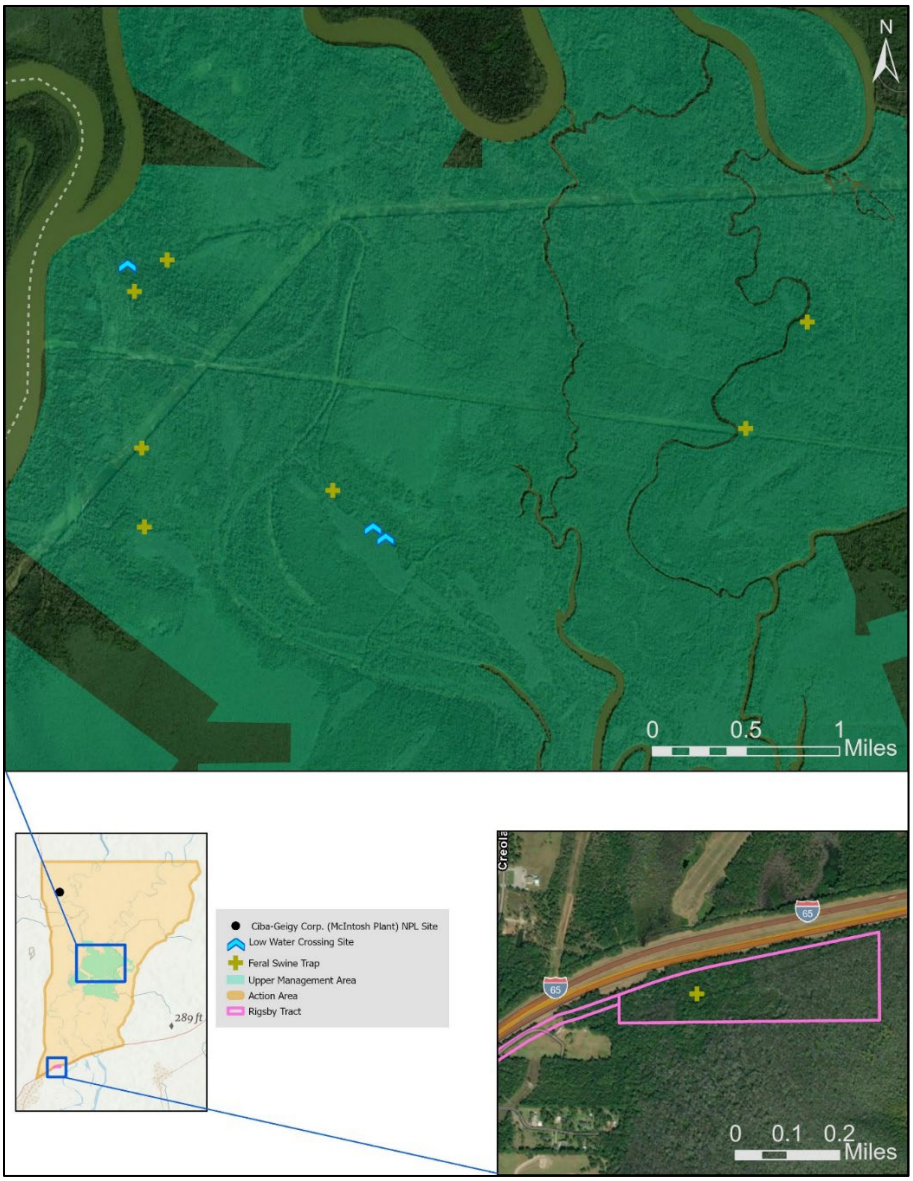

Figure 5. Proposed locations for feral swine traps in the Upper Management Area, denoted in green, and the Rigsby Tract, outlined in pink. Based on the findings of a 2019 Consistency Evaluation (Appendix A), discussion and evaluation of the Action Area in Chapter 5 of this document includes the Rigsby Tract. Locations for traps are indicated by yellow crosses.

Table 2. Comparison of the Alternatives against the Restoration Evaluation Criteria.

	Alternative A: No Action	Alternative B: Feral Swine Management
CERCLA Restoration Criteria		
1. Technical Feasibility	The No Action Alternative is technically feasible.	ADCNR staff, in addition to state and federal resource agencies in Alabama and neighboring states, have substantial experience successfully implementing this invasive species control method. Experience demonstrates that Alternative B is technically feasible.
2. Benefits Relative to Cost	The Trustees do not have sufficient data to compare the benefit: cost ratios of Alternatives A and B. The downside of pursuing Alternative A is that feral swine populations in the Delta will not be controlled.	The Trustees anticipate favorable benefit-to-cost ratios given the successful track-record of the ADCNR implementing similar restoration activities in the State of Alabama and that the project benefits multiple resources and services. The project has clear goals and objectives, both of which are measurable.
3. Cost-effectiveness	The No Action Alternative is assumed to be less costly than if the Trustees were to pursue restoration under the Preferred Alternative; however, the No Action Alternative does not provide the same level of benefits.	Trapping methods that incorporate monitoring can save considerable staff time when checking traps, decrease fuel usage, , and decrease the need for constant human presence in the area (USDA APHIS 2015). Trapping and euthanizing, and opportunistic euthanizing, are common and effective methods to remove free-ranging feral swine using low-cost equipment, making these methods cost-effective.
4. Actual or Planned Response Actions	There are no actual or planned remedial response activities.	There are no proposed remedial response activities.
5. Potential for additional injury resulting from the proposed actions	The No Action Alternative would cause further injury to natural resources by allowing feral swine to continue the degradation of native habitats.	This alternative is not expected to cause additional injury to natural resources. The methods for this project have been carefully chosen to avoid impacting non-target wildlife and protected species. The proposed trapping technologies offer instant views to species within the traps thereby eliminating the trapping of other wildlife species.
6. Natural recovery period and the ability of resources to recover without restoration	The time to provide natural resource benefits to feral swine-impacted areas under the No Action Alternative is greater than if the Trustees were to pursue restoration under the Preferred Alternative.	The recovery period of the Action Area will be enhanced by reducing feral swine populations because feral swine continue to disturb habitats that are otherwise protected and being restored.
7. Public Health and Safety	Any potential public health and safety issues or concerns that exist under current and future natural	The Trustees do not anticipate impacts to public health and safety. The project would include feral swine management utilizing

	Alternative A: No Action	Alternative B: Feral Swine Management
	resource management activities would likely remain the same.	trapping and euthanizing, and opportunistic euthanizing, in a rural area difficult to access by automobile. The use of a firearm involves a personnel-safety risk; however, ADCNR staff are highly qualified to conduct feral swine invasive species control activities. Traps can be set and left unattended overnight, and trapping is safer for personnel because there is less risk of direct human encounters with feral swine. These management activities would be carried out in areas where the public cannot easily access and would not be carried out during the recreational hunting season.
8. Consistency and compliance with applicable/relevant laws, policies, and regulations	The No Action Alternative does not meet the requirements and goals of CERCLA to provide restoration that compensates the public for the injury and loss of the natural resources and services.	Alternative B is consistent and compliant with applicable/relevant laws, policies, and regulations to provide restoration that compensates the public for the injury and loss of the natural resources and services.
Additional Restoration Criteria		
1. Relationship to Injured Resources and Services	The No Action Alternative would not compensate the public for lost services beyond the restoration actions described in the 2017 RP/PEA and would not address the negative impacts of feral swine.	Alternative B would enhance forested wetland and floodplain habitats in the Upper Mobile-Tensaw River Delta, an area impacted by releases from the Ciba-Geigy Site and the geographic focus of the 2017 RP/PEA.
2. Consistency with the Trustee's Restoration Goals	The No Action Alternative includes ongoing restoration actions described in the 2017 RP/PEA, and thus is consistent with the Trustee restoration goals listed in Chapter 3.1.	Alternative B is consistent with the Trustee restoration goals listed in the 2017 RP/PEA Chapter 3.1.
3. Likelihood of Success	The No Action Alternative has a low likelihood of success of accomplishing the project-specific objective.	The implementing Trustee and project partners have expertise in feral swine management and have successfully implemented similar projects in the past. The area proposed for feral swine management is easily accessible, therefore the implementing Trustee can concentrate restoration efforts to this area. As such, the Trustees anticipate this project would have a high likelihood of success during the time period in which Ciba-Geigy restoration funds support this effort.

	Alternative A: No Action	Alternative B: Feral Swine Management
4. Multiple Resource Benefits	The No Action Alternative includes the restoration actions identified in the 2017 RP/PEA, including land acquisition, hydrologic restoration, invasive species management, and revegetation activities. This alternative will achieve minor to moderate benefits for the physical environment, habitat resources, fish and wildlife, socioeconomics, and cultural resources, but will not address impacts to habitat from feral swine populations	Alternative B expands on the restoration techniques identified in the 2017 RP/PEA. By controlling and reducing impacts of feral swine on habitat and wildlife, this project would result in benefits to multiple resources including native bottomland forest habitats, sensitive ground-dwelling plant species, and a reduction in the spread of invasive species in the Upper Mobile-Tensaw Delta.
5. Duration of Benefits	The No Action Alternative ensures long-term benefits are being provided for habitat in the Upper Mobile-Tensaw Delta; however, without feral swine management these benefits will be reduced.	Alternative B helps ensure that the long-term benefits provided from habitat enhancement and restoration on newly acquired and state-owned lands are protected. Feral swine management efforts will initially be funded by the Trustees for 5 years. Negative impacts to the environment would be reduced immediately, and the habitat would begin to recover with a reduced feral hog population on the landscape. This alternative will require continued trapping and euthanizing feral swine to maintain those restoration benefits; additional trapping and euthanizing will be continued by ADCNR; thus, long-term benefits are expected.
6. Opportunities for Collaboration	The No Action Alternative would continue current collaboration opportunities. Potential for new collaboration opportunities is unknown.	Additional opportunities for collaboration may exist with other non-governmental organizations, private corporations, or state and federal programs.

5.0 Environmental Assessment – Feral Swine Management

This Chapter presents a description of the physical, biological, and cultural environments for the waterways and ecosystems adjacent to and in the vicinity of the Site, including those physical, biological and cultural environments in which the proposed restoration would occur, as required by NEPA (42 U.S.C. § 4321, et seq.), and the Trustees' analysis of the environmental consequences of Alternative A: No Action and Alternative B: Feral Swine Management. The goal of the following analysis is to determine whether implementation of these alternatives would significantly affect the quality of the human environment, particularly with respect to physical, biological, socio-economic, or cultural environments.

The preferred alternatives in the 2017 RP/PEA selected broad restoration techniques and analyzed their potential impacts on newly acquired lands or state-owned lands. These techniques targeted the enhancement of habitat impacted by hazardous substance releases, specifically: hydrologic modification, non-native species management, and/or revegetation of previously disturbed or logged forested wetlands. Given the alignment of Alternative B in this RPA/EA with the Preferred Alternatives selected in the 2017 RP/PEA, and the environmental analysis previously completed in the 2017 RP/PEA, the summary environmental information captured in the 2017 RP/PEA is incorporated here by reference.

5.1 Affected Environment

Natural resources injuries and service losses related to the Ciba-Geigy NPL Site occurred within the Upper Mobile-Tensaw River Delta. The 2017 RP/PEA defines an Action Area that includes the Site and generally defines an area of focus for potential restoration projects. Restoration alternatives discussed in this Draft RPA/EA would occur in the Upper Management Area, which is located within the Action Area defined in the 201717 RP/PEA, and in the Rigsby Tract (see Figure 5). A 2019 Consistency Evaluation found that the environment of the Rigsby Tract was similar geographically and hydrologically to the Action Area defined in the 2017 RP/PEA. Analysis and discussion of the Action Area in this chapter includes the Rigsby Tract. The 2019 Consistency Evaluation is attached as an appendix to this document (Appendix A).

Summary information about the Upper Mobile-Tensaw River Delta in Southwestern Alabama, including information regarding the physical, biological, and socioeconomic and cultural resources of the region, is contained in Chapter 4.1 ("Affected Environment") of the 2017 RP/PEA. These sections of the 2017 RP/PEA are incorporated by reference. Relevant updated information and data are included below, but generally there have not been any major changes within the Action Area.

5.1.1 Physical and Biological Resources

Summary information about physical and biological resources of terrestrial environments in the Upper Mobile-Tensaw River Delta is contained in Chapters 4.1.1 and 4.1.2 of the 2017 RP/PEA. The physical resources of the Action Area are the same as those described in the 2017 RP/PEA, and these Chapters are incorporated by reference herein.

The Endangered Species Act (ESA) of 1973 (16 U.S.C. §1531, *et seq*.) requires federal agencies to conserve endangered and threatened species and to conserve the ecosystems upon which these

species depend. The ADCNR also identifies species that are of special concern to the State. Many federally and state listed threatened or endangered species potentially occur in the vicinity of the Action Area (Tables 3 and 4). Additionally, the Alabama River provides critical habitat for the endangered Alabama sturgeon (*Scaphirhynchus suttkusi*), which is the only designated critical habitat in the Action Area. In addition to the state and federally listed species, there are 14 migratory bird species, which are USFWS Birds of Conservation Concern, occurring in the Action Area (Table 5).

Table 3. Federally protected species potentially occurring at or in the vicinity of the Action Area in the Upper Mobile-Tensaw Delta. Data from U.S. Fish and Wildlife Service Information, Planning, and Conservation System (https://ipac.ecosphere.fws.gov/) generated on August 17, 2024.

Key: E – Federally Endangered, T –Federally Threatened, C – Federal Candidate, PE – Proposed Federally Endangered, PT – Proposed Federally Threatened, CH – Federal Critical Habitat.

Common Name	Scientific Name	Status
Alabama Red-bellied Turtle	Pseudemys alabamensis	E
Alabama Sturgeon	Scaphirhynchus suttkusi	E, CH
Alligator Snapping Turtle	Macrochelys temminckii	PT
American Chaffseed	Schwalbea americana	E
Black pinesnake	Pituophis melanoleucus lodingi	T
Eastern Indigo Snake	Drymarchon couperi	T
Gopher Tortoise	Gopherus polyphemus	T
Gulf Sturgeon	Acipenser oxyrinchus desotoi	T
Georgia Rockcress	Arabis georgiana	T
Inflated Heelsplitter	Potamilus inflatus	T
Monarch Butterfly	Danaus plexippus	C
Northern long-eared bat	Myotis septentrionalis	E
Southern Clubshell	Pleurobema decisum	E
Tri-colored Bat	Perimyotis subflavus	PE
West Indian Manatee	Trichechus manatus	T

Table 4. Sensitive species potentially occurring at or in the vicinity of the Action Area in the Upper Mobile-Tensaw Delta. Some species listed below may also be protected under federal law (Table 3). Data provided from ADCNR.

Key: E – Federally Endangered, T – Federally Threatened, C – Federal Candidate, SP – State Protected.

Common Name	Scientific Name	Status
Alabama Map Turtle	Graptemys pulchra	SP
Alabama Red-bellied Turtle	Pseudemys alabamensis	E, SP
Alligator Snapping Turtle	Macrochelys temminckii	SP
Angular Dwarf Crayfish	Cambarellus lesliei	SP
Black-knobbed Map Turtle	Graptemys nigrinoda	SP
Common Kingsnake	Lampropeltis getula	SP
Crystal Darter	Crystallaria asprella	SP
Delta Map Turtle	Graptemys nigrinoda delticola	SP
Eastern Black Kingsnake	Lampropeltis nigra	SP
Gulf Sturgeon	Acipenser oxyrinchus desotoi	T, SP
Monarch Butterfly	Danaus plexippus	C
Rafinesque's Big-eared Bat	Corynorhinus rafinesquii	SP
Southeastern Myotis	Myotis austroriparius	SP
Tri-colored Bat	Perimyotis subflavus	SP
Wood Stork	Mycteria americana	SP

Table 5. Migratory Birds of Conservation Concern[4] potentially occurring at or in the vicinity of the Action Area in the Upper Mobile-Tensaw Delta. Data from U.S. Fish and Wildlife Service Information, Planning, and Conservation System (https://ipac.ecosphere.fws.gov/) generated on February 6, 2024.

Common Name	Scientific Name	Breeding Season
American Kestrel	Falco sparverius ssp. paulus	April 1 to August 31
Bachman's Sparrow	Aimophila aestivalis	May 1 to September 30
Bald Eagle[5]	Haliaeetus leucocephalus	September 1 to July 31
Brown-headed Nuthatch	Sitta pusilla	March 1 to July 15
Cerulean Warbler	Dendroica cerulea	April 26 to July 20
Chimney Swift	Chaetura pelagica	March 15 to August 25
Coastal Black-throated Green Warbler	Setophaga virens waynei	May 1 to August 15
Kentucky Warbler	Oporornis formosus	April 20 to August 20
Painted Bunting	Passerina ciris	April 25 to August 20
Prairie Warbler	Dendroica discolor	May 1 to July 31
Prothonotary Warbler	Protonotaria citrea	April 1 to July 31
Red-headed Woodpecker	Melanerpes erythrocephalus	May 10 to September 10
Rusty Blackbird	Euphagus carolinus	Elsewhere
Swallow-tailed Kite	Elanoides forficatus	March 10 to June 30
Wood Thrush	Hyocichla mustelina	May 10 to August 31

5.1.2 Environmental Justice

Executive Order 14096, "Revitalizing Our Nation's Commitment to Environmental Justice for All," requires each Federal agency, as appropriate and consistent with applicable laws, carry out environmental reviews under NEPA in a manner that analyzes direct, indirect, and cumulative effects of Federal actions on communities with environmental justice concerns. Executive Order 14096 updates and builds on the foundational efforts of Executive Order 12898 ("Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations") to address environmental justice. Summary information about the socioeconomic and cultural environment in the Upper Mobile-Tensaw River Delta, including a discussion of environmental justice, is contained in Chapter 4.1.3 of the 2017 RP/PEA. The socioeconomic

[4] The overall goal of the Birds of Conservation Concern (USFWS 2008) is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities.

[5] "This is not a Bird of Conservation Concern (BCC) in this area but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities" (https://ipac.ecosphere.fws.gov/).

environment of the Action Area is no different than that described in the 2017 RP/PEA, and thus Chapter 4.1.3 of the 2017 RP/PEA is incorporated by reference herein.

The Action Area is located within Mobile County and Baldwin County, Alabama (Census tract 2010, ID number 1003010100). The Climate and Economic Justice Screening Tool[6] (CEJST) uses datasets that are indicators of burdens in eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development. The tool identifies a tract as disadvantaged if the tract meets one burden threshold and the associated socioeconomic threshold. Tract 1003010100 is considered disadvantaged as it exceeds the transportation barriers threshold (above the 90th percentile; 93rd) and the low-income threshold (above the 65th percentile; 70th).

5.1.3 Recreational Services

Summary information about the socioeconomic and cultural environment in the Upper Mobile-Tensaw River Delta, including a discussion of regional recreation, is contained in Chapter 4.1.3.2 of the 2017 RP/PEA. The socioeconomic environment of the Action Area is no different than that described in the 2017 RP/PEA, and thus Chapter 4.1.3.2 of the 2017 RP/PEA is incorporated by reference herein.

The Lower Tombigbee River and the Upper Mobile-Tensaw River Delta, including the Action Area, offer a variety of recreational activities for residents and visitors. Recreational hunting of feral swine, deer, ducks, rabbit, turkey, and squirrel occur within the proposed area for feral swine traps and opportunistic euthanization.

5.1.4 Cultural and Historic Resources

Summary information about the socioeconomic and cultural environment in the Upper Mobile-Tensaw River Delta, including a discussion of cultural and historic resources, is contained in Chapter 4.1.3.3 of the 2017 RP/PEA. The socioeconomic and cultural resource of the Action Area are no different than those described in the 2017 RP/PEA, and thus Chapter 4.1.3.3 of the 2017 RP/PEA is incorporated by reference herein.

Several landmarks or other federal or state designated areas of historical significance are within the Upper Mobile-Tensaw River Delta. The Fort Mims site and Bottle Creek Indian Mounds are the only historic sites that are within the Action Area. A general map of these sites and a more robust discussion of cultural resources in the Upper Mobile-Tensaw River Delta in included in Chapter 4.1.3.3 of the 2017 RP/PEA.

The Alabama Historical Commission Historic Preservation Map Initiative[7], an accessible geographic information system containing historic resource locations, was used to perform a preliminary search of properties or locations included in the National Register of Historic Places in Alabama, the Alabama Register of Landmarks and Heritage, the Alabama Historic Cemetery Register, Historically African-American Schools, AHC Easements, Alabama State Rehabilitation Tax Credit Program, the Alabama Places in Peril Program, AHC Historical Markers, and the

[6] Climate and Economic Justice Screening Tool
[7] Historic Preservation Map Initiative

AHC Architectural Survey Files. The search did not result in any properties or locations being identified at or near the proposed project areas associated with Alternative B: Feral Swine Management. The Historic Preservation Map Initiative does not contain information about archaeological sites; therefore, the Trustees will consult with the Alabama Historical Commission to determine if any archaeological sites are located at or near the proposed project locations.

5.2 Components Not Affected or Not Analyzed in this Document

The following components have been identified as not being present or affected by either of the alternatives. These components are not brought forward for additional analysis in this Draft RPA/EA:

- Transportation – there will be no measurable change in transportation volume or patterns, and thus no anticipated transportation impacts associated with Alternative B; transportation impacts associated with the No Action Alternative in this Draft RPA/EA are described in Chapter 4.2.3.5 of the 2017 RP/PEA and are incorporated by reference herein.
- Air Quality – there will be no emissions, besides vehicle exhaust, and no other air quality impacts associated with Alternative B; air quality impacts associated with the No Action Alternative in this restoration plan are described in Chapter 4.2.1.1 of the 2017 RP/PEA and are incorporated by reference herein.
- Demographics and Socioeconomic Trends – there are no human communities within the Action Area. Accordingly, no impacts to demographic or socioeconomic variables, including noise, recreation, public health and safety, and local or regional economy indicators (e.g., housing or tourism), are anticipated. These elements are each discussed in the Socio-Economic Impacts Chapter of the 2017 RP/PEA (Chapter 4.2.3). Socioeconomic impacts associated with the No Action Alternative in this restoration plan are described in Chapter 4.2.3 of the 2017 RP/PEA and are incorporated by reference herein.

5.3 Environmental Consequences of Proposed Actions

In this Chapter, the environmental consequences of Alternative A: No Action and Alternative B: Feral Swine Management are assessed to determine whether implementation may significantly affect the quality of the human environment, particularly with respect to physical, biological, socio-economic, or cultural environments. The Trustees will make a conclusion for each alternative identifying whether it is a preferred alternative and should be implemented in the event the Federal Trustees issue a Finding of No Significant Impact.

Additionally, the Trustees will detail how the combination of proposed alternatives and reasonably foreseeable future actions may have an impact on the affected environment. Future impacts should not be speculative, but should be based on known long-range plans, regulations, or operating agreements.

The following definitions may be used to characterize the nature of the various impacts evaluated in this Draft RPA/EA:

- *Short-term or long-term impacts.* In general, short-term impacts are those that would

occur only with respect to an activity or for a finite period. Long-term impacts are those that are more likely to be persistent and chronic. All timeframes should be reasonably foreseeable.

- *Negligible, minor, moderate, or major impacts.* These relative terms are used to characterize the magnitude of an impact. Negligible impacts are generally not quantifiable and do not have perceptible impacts on the human environment. Minor impacts are generally those that might be perceptible but, in their context, are not amenable to measurement because of their relatively inconsequential effect. Moderate impacts are those that are more perceptible and, typically, more amenable to quantification or measurement. Major impacts are those that, in considering the potentially affected environment and the degree of effects of the proposed action, have the potential to have significant effects (40 C.F.R. § 1501.3(b)) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the requirements of NEPA in an Environmental Impact Statement.
- *Adverse or beneficial impacts.* An adverse impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial impact is one having positive outcomes on the man-made or natural environment. A single act might result in adverse impacts on one environmental resource and beneficial impacts on another resource.
- *Cumulative impacts (effects).* The CEQ regulations implementing NEPA define cumulative effects as the "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 C.F.R. § 1508.1(g)(3)).

Environmental consequences associated with implementation of general invasive species management activities in the Upper Mobile-Tensaw River Delta have been evaluated at a programmatic level in Chapter 4.2 of the 2017 RP/PEA. That Chapter is incorporated by reference herein. Because the 2017 RP/PEA did not include a more-detailed analysis of the specific invasive species management technique of managing feral swine populations, this document provides a more in-depth analysis.

5.3.1 Physical and Biological Environment Impacts

The 2017 RP/PEA includes a broad discussion of the impacts of general invasive species management techniques to the physical and biologic environment of the Upper Mobile-Tensaw River Delta in Chapters 4.1.1 and 4.1.2. The analysis and underlying assumptions of the 2017 RP/PEA remain valid, and that analysis is incorporated by reference herein.

Alternative A: No Action Alternative

The No Action Alternative would limit restoration actions to techniques analyzed in the 2017 RP/PEA. The No Action Alternative would not result in additional physical or biological environmental impacts since no additional restoration actions beyond those described in the 2017 RP/PEA would be undertaken. Adverse ecological impacts due to feral swine activity in the region would continue, and likely increase as the feral swine population increases over time.

Alternative B: Feral Swine Management
Feral swine populations are found throughout Upper Mobile-Tensaw River Delta. The feeding behavior of feral swine ("rooting") threatens native plant diversity and creates conditions that favor the growth of non-native invasive plants. Accordingly, feral swine management activities would have a beneficial minor to moderate impact on the physical environment (e.g., soils), habitat, and associated wildlife in the Upper Mobile-Tensaw River Delta (Florida TIG 2019).

The process of trapping and euthanizing feral swine might result in the short-term, minor, adverse impact of other wildlife. Management of animals by shooting is nearly 100 percent selective for target species (USDA APHIS-WS, 2002) and would be carried out by authorized ADCNR staff, so other wildlife would not be affected by this population management method. Feral swine compete with native wildlife for food, destroy habitat, prey on smaller native animals, destroy nests, consume reptile and bird eggs, and transmit diseases such as pseudorabies to other wildlife (USDA-APHIS 2015). The management of feral swine would, overall, have a long-term, minor to moderate beneficial impact on native vegetation and wildlife, including federally and state listed species and migratory birds.

Traps for feral swine are large in size and require the use of vehicles for transportation to the site. To limit ground disturbance associated with trap installation and maintenance, the state has focused on identifying trap locations that both demonstrate evidence of intense feral swine activity, are in close proximity to road location, and are in areas with limited ground cover or evidence of other wildlife nesting or aggregations. Limited ground and vegetation disturbance will result from the installation of traps and carcass burial. The ground disturbance in these areas are anticipated to have a short-term minor adverse impact on soils and terrestrial habitat. The management of feral swine on this landscape may offer the opportunity for these disturbed areas to stabilize and revegetate, providing a long-term minor to moderate beneficial impacts.

There will be a minor increase in noise levels in the vicinity of sites where feral swine management activities occur, from vehicles, laborers, and firearm discharge. Noise impacts will be short-term, minor, adverse, and limited to active periods of management activities.

5.3.2 Environmental Justice

The 2017 RP/PEA includes a broad discussion of the impacts of general invasive species management techniques to communities with Environmental Justice concerns in Chapter 4.2.3.8. The analysis and underlying assumptions remain valid, and that analysis is incorporated by reference herein.

Alternative A: No Action Alternative
The No Action Alternative would not result in any Environmental Justice impacts since no additional restoration actions beyond those described in the 2017 RP/PEA would be undertaken.

Alternative B: Feral Swine Management
Though this land is part of a CEJST defined disadvantaged community, there is no human settlement within the Wildlife Management Area nor are there any known remnants of previous human settlement in the Action Area. A Phase 1 archaeological survey, if required, will be

undertaken before any ground disturbing activities are implemented. Alternative B is not anticipated to result in any impacts, adverse or beneficial, to any disadvantaged community.

5.3.3 Recreational Services

The 2017 RP/PEA includes a broad discussion of the impacts of general invasive species management techniques to recreational resources in Chapter 4.2.3.3. The analysis and underlying assumptions remain valid, and that analysis is incorporated by reference herein.

Alternative A: No Action Alternative

The No Action Alternative would not result in any recreational impacts since no additional restoration actions beyond those described in the 2017 RP/PEA would be undertaken. Feral swine in the Upper Mobile-Tensaw River Delta would continue to result in long-term, minor to moderate adverse impacts to recreational activities including hunting and wildlife viewing.

Alternative B: Feral Swine Management

There is recreational hunting in the Action Area. During the 2022-2023 hunting season from September 1, 2022 through March 5, 2023, 2,662 hunters utilizing the Upper Management Area checked in to the Upper Delta Wildlife Management Area using the Outdoor Alabama App. An additional 155 hunters checked in via the paper copy check-in ticket system, totaling 2,817 hunters for the season. However, this total represents the number of check-ins reported, not the total number of individual hunters. Some hunters may only hunt one day, and others may check-in multiple times throughout the season. Hunters utilizing the Rigsby Tract access the area via the river, and therefore ADCNR is unable to track the number of hunters using the tract.

Feral swine management activities typically occur in the summer months. The primary hunting season in the Action Area is November to Mid-February, so feral swine management activities would not impact recreational hunting. Feral swine hunting is permitted in the Action Area, and feral swine management could adversely impact this recreational activity through a reduction in total number of feral swine. However, controlling feral swine populations may have minor, beneficial impacts on other wildlife, including game species, which may benefit recreational hunting opportunities. Feral swine are known to prey on deer fawns which may reduce opportunities for the public to hunt for white-tailed deer and sambar deer (USDA APHIS 2015). The management of feral swine also has the potential to result in long-term minor beneficial impacts to public wildlife viewing opportunities due to the positive effects that restoration activities would have on native wildlife in the Action Area (USDA APHIS 2015).

5.3.4 Cultural and Historic Resources

The 2017 RP/PEA includes a broad discussion of the impacts of general invasive species management techniques to cultural and historic resources in Chapter 4.2.3.7. The analysis and underlying assumptions remain valid, and that analysis is incorporated by reference herein.

Alternative A: No Action Alternative

The No Action Alternative would not result in any Cultural and Historic Resources impacts since no additional restoration actions beyond those described in the 2017 RP/PEA would be undertaken.

Alternative B: Feral Swine Management
Feral swine management activities, including trapping and shooting by qualified state or federal personnel, are anticipated to cause only short-term and minor ground disturbance, thus reducing the potential for adverse impacts to any cultural and historic resources. Carcass burial would result in ground disturbances and would avoid areas with identified cultural resources.

The Trustees will complete any required archaeological investigation and evaluation for each trapping and burial site prior to initiating trapping and burial activities. Proposed feral swine management activities will be planned to avoid impacts to any identified historical, cultural, or archaeological resources, subject to review under Section 106 of the National Historic Preservation Act of 1966, coordinated with the Alabama Historical Commission, and implemented in accordance with all applicable laws and regulations concerning the protection of cultural and historic resource

5.3.5 Cumulative Effects

The 2017 RP/PEA includes a broad discussion of the cumulative effects of general invasive species management techniques in Chapter 4.2.4. The analysis and underlying assumptions remain valid, and that analysis is incorporated by reference herein. This Chapter expands that analysis to a project-specific level.

Alternative A: No Action Alternative
The No Action Alternative would not result in any cumulative impacts since no additional restoration actions beyond those described in the 2017 RP/PEA would be undertaken.

Alternative B: Feral Swine Management
The CEQ regulations for implementing NEPA require the assessment of cumulative effects in the decision-making process. The alternatives evaluated in this Draft RPA/EA are designed to improve environmental quality or to increase access and enjoyment of natural resources. Generally, resources are expected to improve in quality long-term as a result of the restoration type described by Alternative B in this Draft RPA/EA.

Feral swine adversely impact native plant communities and water quality through “rooting” behavior, and recreational hunting through the predation of small deer. If Alternative B: Feral Swine Management is carried out in conjunction with other environmental stewardship and restoration efforts, there is the potential for beneficial synergistic effects with these activities. Alternative B activities carried out in conjunction with other restoration efforts have the potential to result in some long-term beneficial cumulative impacts to biological resources.

Feral swine management in the Action Area would have short term and minor adverse effects on resources, specifically ground disturbance during trap installation and carcass burial, and noise during firearm use. Adverse effects would not be anticipated to extend beyond project implementation. Thus, the Trustees conclude that, although Alternative B: Feral Swine Management may provide an incremental contribution to adverse cumulative impacts, the contribution would not be substantial over the long-term. Instead, the alternative has the potential to provide long-term beneficial cumulative impacts to physical, biological, and socioeconomic resources.

5.4 Evaluation of Alternative A: No Action/Natural Recovery

In sum, the Trustees find that the No Action Alternative meets some of the Restoration Evaluation Criteria identified by the Trustees for this restoration planning process (Table 1). The No Action Alternative would include restoration previously analyzed in the 2017 RP/PEA, and thus this alternative supports the purpose and need for restoration. However, the No Action Alternative does not align with the project-specific restoration objective (invasive species control actions to mitigate the negative impacts of feral swine) identified in this Draft RPA/EA; nor would it provide for the restoration of natural resource injuries resulting from releases at and from the Ciba-Geigy Site as quickly as active restoration in the form of feral swine management. Therefore, the No Action Alternative is not a preferred restoration alternative when evaluated against the Restoration Evaluation Criteria.

5.5 Evaluation of Alternative B: Feral Swine Management (Preferred Alternative)

The Trustees find Alternative B: Feral Swine Management to meet all the Restoration Evaluation Criteria established for this case (Table 1). Moreover, Alternative B is tailored to contribute to the restoration of natural resource injuries within the Upper Mobile-Tensaw River Delta and thus to compensate for Site-related natural resource injuries and service losses. Alternative B: Feral Swine Management is therefore selected by the Trustees as the Preferred Alternative in this Draft RPA/EA. The Trustees have found Alternative B to have negligible to minor short-term adverse impacts to the human environment, with the majority of the anticipated effects from the proposed restoration action being minor to moderate, beneficial, and long-term impacts. For these reasons, Alternative B has been identified as the Preferred Alternative.

6.0 Applicable Statutes, Regulations, and Policies

In the 2017 RP/PEA, the Trustees stated that all restoration projects proposed in the future would remain subject to meeting all permitting and other environmental compliance requirements to ensure that all projects would be selected and implemented in accordance with all applicable laws and regulations. That statement and related text in Appendix C of the 2017 RP/PEA is incorporated by reference herein since all federal and state statutes, regulations, and policies and local laws apply to the alternatives evaluated and proposed for selection in this Draft RPA/EA (Hydrologic Modifications Projects and Feral Swine Management).

7.0 Monitoring and Adaptive Management

7.1 Hydrologic Modification Projects

Monitoring for the hydrologic modification projects would assess whether hydrologic functions such as water flow have improved. The Implementing Trustee will gather pre- and post-restoration photos to evaluate the water levels and surrounding habitat. The Trustee will continue to monitor the hydrologic modification locations through site visits. Adaptive management for these hydrologic modifications will include seasonal modifications after flooding to ensure the structures are operating properly.

7.2 Feral Swine Management

Monitoring for the Preferred Alternative (Alternative B: Feral Swine Management) would assess

whether disturbed habitats and ecological services in the Upper Mobile-Tensaw River Delta and Tombigbee River are sufficiently restored to meet restoration goals and objectives. Under the Preferred Alternative, the actions to meet the restoration goals and objectives are to reduce the number of feral swine and improve habitat quality.

Monitoring methods would include count data of the number of feral swine removed and the location of the trapping/euthanization. Data collected on the number of feral swine removed would be compared to documentation of the evidence of feral swine over the course of the project. This would allow project implementers to evaluate whether the evidence of feral swine is decreasing as a result of the project (Florida TIG 2019). Monitoring for habitat quality would include assessment of the presence of rooting damage, natural community structure, and wildlife. To determine if the feral swine management efforts are improving habitat quality, the Trustees would expect to find a decrease in rooting damage in the Action Area and an increase in the natural community structure and presence of wildlife.

Performance criteria would be used to determine restoration success or the need for corrective action and would be defined in the Ciba-Geigy Natural Resource Damage Assessment 5-year Restoration Management Plan for the Upper Mobile-Tensaw River Delta. Monitoring information may also be used by the Trustees as an outreach tool to illustrate to the public continued progress over time (quantitatively and qualitatively).

8.0 Budget Summary and Timeline

The Trustees estimate approximately $265,530 will be needed to support the proposed restoration and management activities described in this Draft RPA/EA. Approximately $100,000 is needed for the materials for the three low water crossings and approximately $43,500 for five years of management of the new hydrologic modification project. Approximately $46,000 will be used for the materials for feral swine management via four traps and the purchase of a firearm, and an additional approximate of $65,200 will be used for five years of management of the trapping work. The remainder of the budget will be used for administrative costs.

After completion of the Final RPA/EA, anticipated by the end of the 2nd quarter of 2024, the Trustees would continue additional restoration planning activities for the restoration activities proposed herein, including permitting, and begin implementation. More about the tentative timeline is provided in Figure 6.

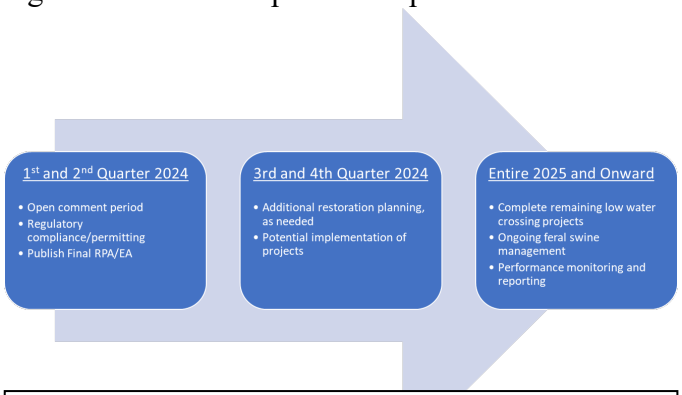

Figure 6. Estimated timeline for restoration planning, implementation, and monitoring of projects described in this Draft RPA/EA.

9.0 Literature Cited

Ciba-Geigy NRDA Trustees. 2017. Ciba-Geigy NPL Site Restoration Plan/Programmatic Environmental Assessment. Prepared by the U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, Alabama Department of Conservation and Natural Resources, and Geological Survey of Alabama. https://repository.library.noaa.gov/view/noaa/22772

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National Pesticide Information Center (NPIC). 2000. Technical fact sheet for DDT. 6 pp. http://npic.orst.edu/factsheets/archive/ddttech.pdf.

U.S. Department of Agriculture Animal and Plant Health Inspection Service Wildlife Services (USDA-APHIS-WS). 2002. Management of Predation Losses to State and Federally Endangered, Threatened, and Species of Special Concern; and Feral Hog Management to Protect Other State and Federally Endangered, Threatened, Species of Special Concern, and Candidate species of Fauna and Flora in the State of Florida. Prepared in coordination with U.S. Department of the Interior (USFWS and NPS), U.S. Department of Defense (U.S. Air Force), FDEP, and FWC.

U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS). 2015. Final Environmental Impact Statement Feral Swine Damage Management: A National Approach. May 2015. 550 pages.

U.S. Fish and Wildlife Service (USFWS). 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. http://www.fws.gov/migratorybirds.

Appendix A: Ciba-Geigy National Priorities List Site Rigsby Tract Description and Acquisition Evaluation

The Natural Resource Trustees (Trustees) for the Ciba-Geigy National Priorities List (NPL) Site Natural Resource Damage Assessment (NRDA) have evaluated the environmental consequences of a potential land acquisition to determine if such consequences are consistent with those evaluated in the Final Ciba-Geigy Restoration Plan and Programmatic Environmental Assessment (RP/PEA) published on September 15th, 2017.

Restoration type alternatives for the Ciba-Geigy NPL Site NRDA were evaluated in the RP/PEA. Alternative 2: Habitat Enhancement and Restoration on Newly Acquired Lands, explicitly identifies land acquisition as part of the alternative. The environmental consequences of land acquisition were considered during the evaluation of Alternative 2 in the RP/PEA. Alternative 2 is identified as a preferred alternative in the RP/PEA, indicating that the Trustees determined that land acquisition of sites with similar habitats as those injured is an appropriate activity as part of a restoration alternative. The RP/PEA also identified an Action Area (Figure 1) for restoration activities.

A potential parcel for acquisition, known as the Rigsby Tract, has been considered by the Trustees. The Rigsby Tract is adjacent to, but does not fall within, the Action Area defined in the RP/PEA. Figure 1 shows the parcel's approximate location in relation to the Action Area. The parcel consists of approximately 43 acres of uplands and wetlands. Approximately 29.9 acres (70%) of the tract has a National Wetlands Inventory classification of PF03/PFO IF, which correspond to Palustrine Forested Broad Leaf Evergreen and Palustrine Forested Deciduous Seasonally Flooded, respectively. A Natural Resources Conservation Service (NRCS) Soil Resource Map Unit and Report is shown in Figure 2. Based on the National Wetlands Inventory and NRCS data, the Trustees conclude that approximately 70% of the tract contains seasonally flooded bottomland wetlands. This habitat type was identified in the RP/PEA as a target for acquisition and restoration.

The Rigsby Tract is also north of and adjacent to approximately 1,910 acres of additional bottomland hardwood habitat, bordering the Mobile River, which is already under state ownership (Figure 3). However, the state does not currently have access to these 1,910 acres. Acquisition of the Rigsby Tract would allow management on the tract itself while also providing access to and allowing for future management and restoration of the adjacent state-owned property. Proximity to tracts currently under public ownership or management was identified as an important consideration for the land acquisition component of Alternative 2 (preferred alternative) of the RP/PEA. Further, Alterative 3: Habitat Enhancement and Restoration of State-Owned Lands is included in the preferred alternative in the RP/PEA. The ownership and management of these properties bordering the Mobile River would provide landscape scale management opportunities to restore habitats similar to those injured.

The Trustees have determined that acquisition of the Rigsby Tract is consistent with the restoration criteria identified in the RP/PEA as detailed in Table 1. In addition to being consistent with the restoration criteria, the Trustees also determined that the effects of acquiring the parcel are within the range of environmental consequences evaluated in the RP/PEA. Although the

Rigsby Tract is not within the Action Area, the parcel is directly adjacent to and hydrologically connected to the Action Area, contains similar habitats to those within the Action Area, and the Trustees have determined it would provide benefits equivalent to those from a similar parcel acquired within the Action Area. The Action Area was drawn with Interstate-65 (1-65) as the southern border, though 1-65 does not represent an ecologically relevant break or division in the species and habitats encountered to the north or south of 1-65.

No specific habitat enhancement or restoration activities are currently being proposed for the Rigsby Tract or the adjacent 1,910 acres. Prior to acquiring the Rigsby Tract, due diligence activities and onsite evaluations will be conducted on the parcel to determine whether sufficient and permanent access to the Rigsby Tract exists and to determine what the form such access takes (e.g., fee simple, right of way, etc.). Additionally, either before or after acquisition, the Trustees plan to identify specific restoration activities that may benefit the parcel, and/or the adjacent property. The Trustees will also identify what type of roadway(s) (e.g., temporary or permanent) may be required, both within the Rigsby Tract and the adjacent property, to support the implementation of those specific restoration activities.

As restoration activities, and any roadway(s) needed for those activities, are identified for the Rigsby Tract and/or adjacent properties, the Trustees will complete any necessary environmental compliance associated with those activities, including, but not limited to National Environmental Policy Act (NEPA), National Historic Preservation Act Section 106, Clean Water Act Section 404, and Endangered Species Act evaluations. This additional NEPA review will be conducted by the Trustees, prior to implementation of any restoration activities, to determine whether the environmental consequences of the potential restoration activities are consistent with those evaluated in the RP/PEA and, if not, so that the Trustees may conduct any additional, necessary NEPA analysis with public involvement. For example, additional NEPA evaluation will be conducted if a permanent road is proposed for the Rigsby Tract, as only the potential impacts associated with the construction of "temporary" roadways to access restoration sites was fully evaluated in the RP/PEA.

The Trustees have determined that the environmental consequences of the acquisition of the Rigsby Tract are consistent with those evaluated under a preferred alternative, Alternative 2: Habitat Enhancement and Restoration on Newly Acquired Lands, in the RP/PEA. Further, the environmental review process for the RP/PEA led the Trustees to conclude that land acquisition, and other proposed restoration type alternatives, would not have a significant adverse effect on the quality of the human environment, as documented in the Findings of No Significant Impact from the U.S. Fish and Wildlife Service dated July 18, 2017 and the National Oceanic and Atmospheric Administration dated August 16, 2017. While the parcel of interest does not fall within the Action Area identified in the RP/PEA, the proximity of the parcel to the Action Area, the equivalent habitat being conserved, and the equivalent expected benefits from the acquisition have led the Trustees to determine that acquiring the parcel would constitute a minor deviation from the land acquisition description under Alternative 2 in the RP PEA and would not require any additional NEPA evaluation.

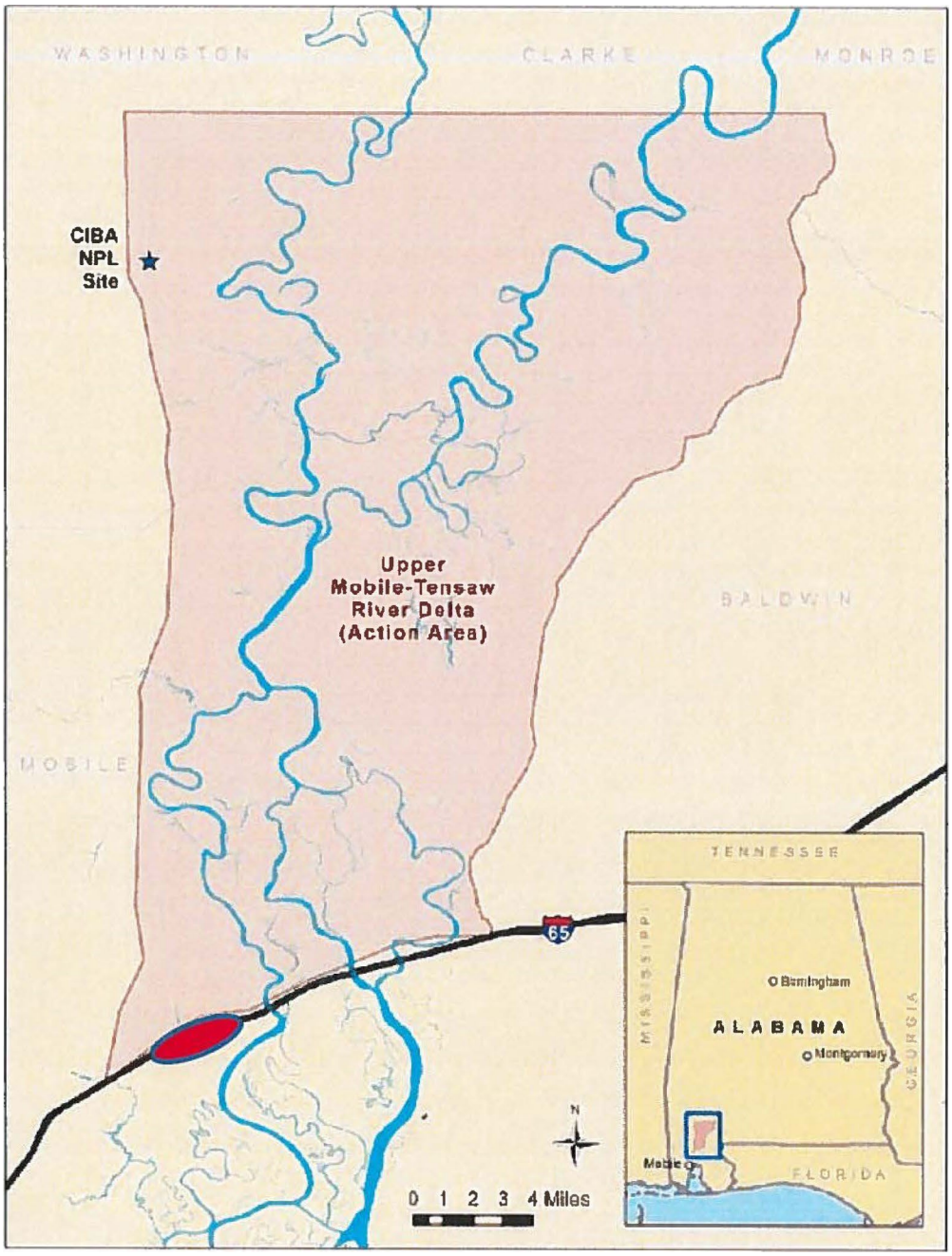
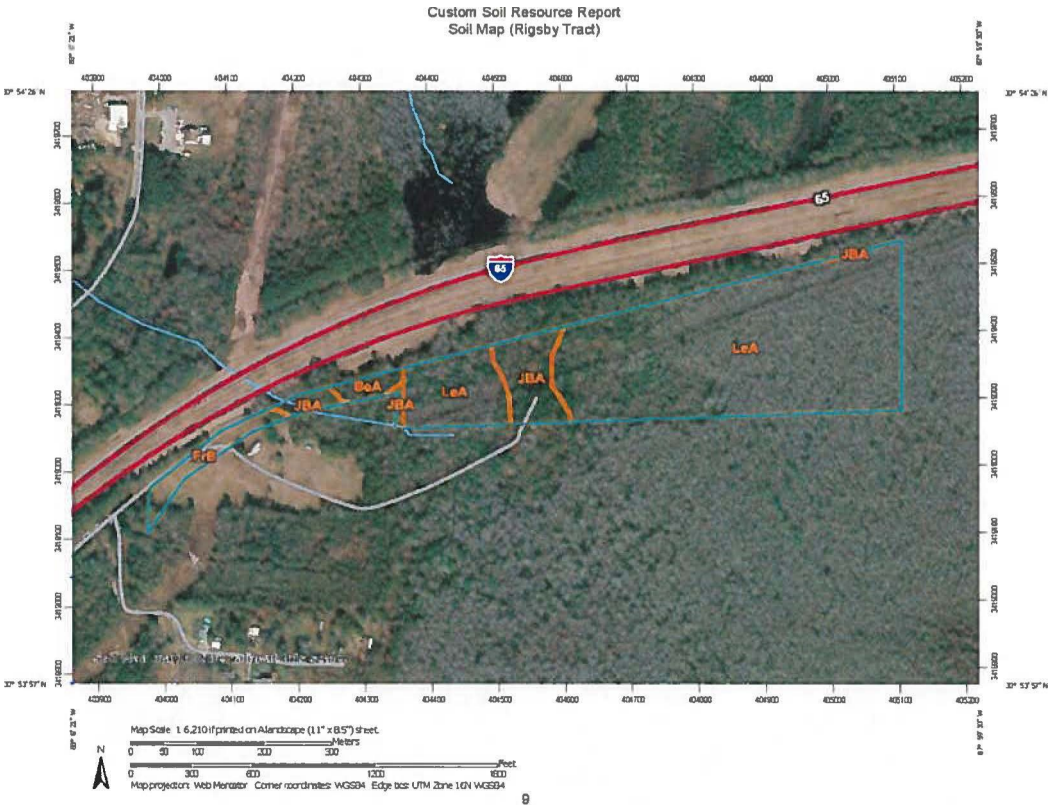


Figure 1. Ciba-Geigy NRDA Restoration Action Area and the approximate location of the Proposed Rigsby Acquisition Tract (shown in red).



Map Unit Symbol	Map Unit Name
BeA	Benndale fine sandy loam, O to 2 percent slopes
FrB	Fruitdale sandy loam, 2 to 5 percent slopes
JBA	Johnston, Bibb and Pamlico soils, O to 1 percent slopes, frequently flooded
LeA	Levy silty clay loam, O to 1 percent slopes, frequently flooded

Figure 2. Natural Resources Conservation Service (NRCS) Soil Map of the Rigsby Tract.

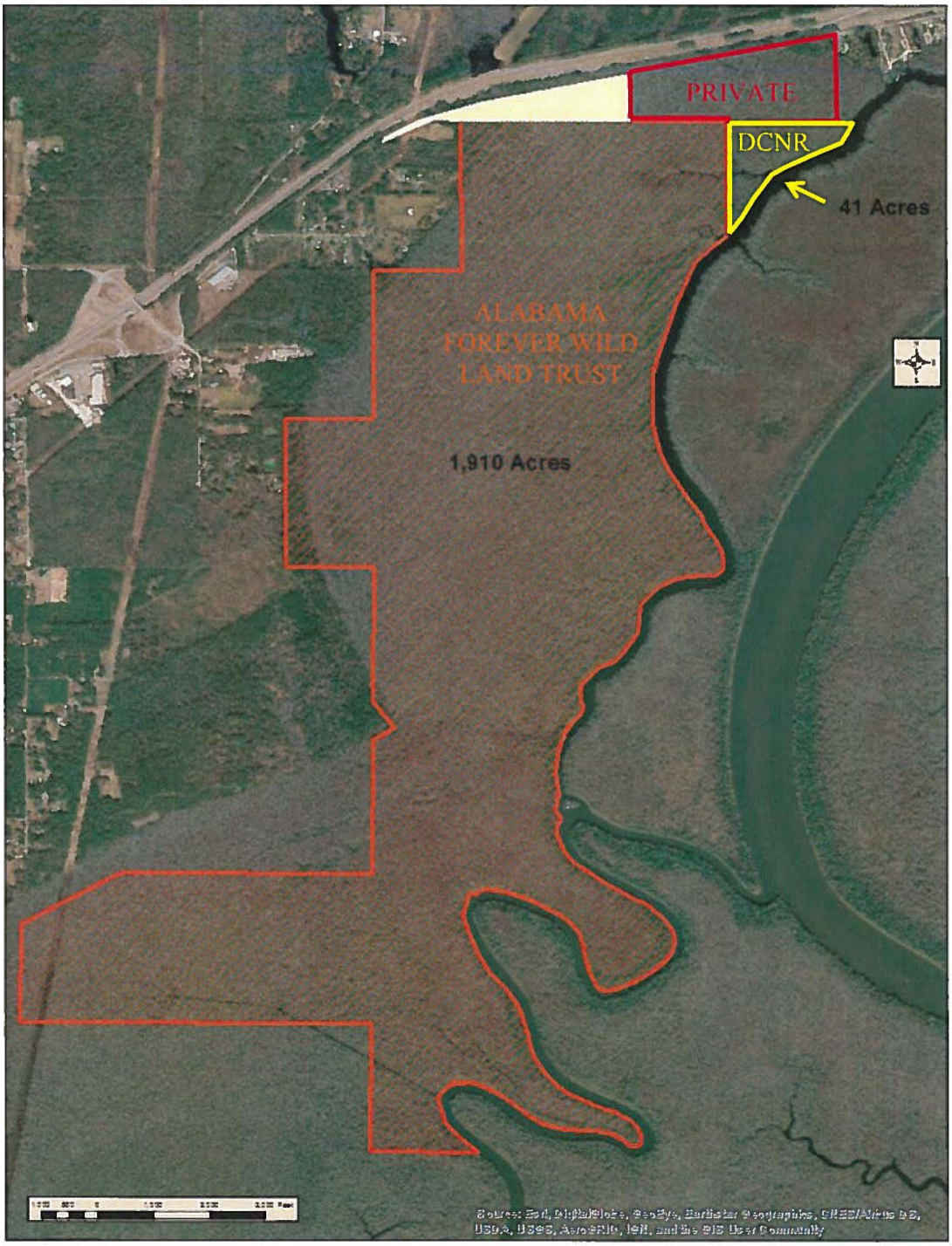


Figure 3. Conservation property adjacent to the Rigsby Tract.

Table 1. Evaluation of Land Acquisition within Action Area[1] Consistency with Restoration Criteria.

Required Criteria (Y/N answers)	Required Criteria (Y/N answers)	Required Criteria (Y/N answers)	Required Criteria (Y/N answers)	Required Criteria (Y/N answers)	
Consistent with relevant federal, state, and local laws and policies	Does not pose a risk to public health and safety, and the environment	Technically feasible	Relationship to injured resources and services	Consistency with Trustee restoration goals[2]	Meets Required Criteria (Y/N)
Yes - Land acquisition does not conflict with existing laws/policies. Additional restoration activities following acquisition will be evaluated for consistency with existing laws/policies prior to implementation.	Yes - Land acquisition does not pose a risk to public health or safety.	Yes - Land acquisition does not present a technical challenge.	Yes - Land to be acquired within the Action Area contains, and is adjacent to, injured resource habitat and will provide services associated with the habitat.	Yes - Land acquisition will preserve the desired habitat types, allow for future restoration on the acquired properties, and ensure the properties remain in conservation for perpetuity.	Yes

Additional Criteria	Additional Criteria	Additional Criteria	Additional Criteria	Additional Criteria	Additional Criteria	Additional Criteria
Avoidance of Further Injury	Likelihood of success	Benefits to multiple natural resource categories	Time to provide natural resource benefits	Duration of benefits (if known)	Opportunities for collaboration	Benefits relative to cost
Land acquisition will not cause injury.	Land acquisition will successfully preserve property for conservation efforts.	Multiple natural resources are expected to utilize the preserved habitat and associated services.	The benefits of land acquisition will be immediate as land is purchased and placed in conservation.	The benefits of land acquisition will be in perpetuity.	Land acquisition will place property under the ownership of the State which will allow for future collaborative	The Trustees have determined that the benefits of land acquisition relative to the expected costs

					restoration opportunities on the property.	is suitable.

[1] As defined in the Ciba-Geigy Restoration Plan and Programmatic Environmental Assessment.
[2] Restoration goals include: 1) Restore, create, or enhance bottomland hardwood forest habitat and other habitat types in the Upper Mobile-Tensaw River Delta and Tombigbee River to benefit injured fish and wildlife, including federally listed species. 2) Restore or enhance disturbed habitats in the Upper Mobile-Tensaw River Delta and Tombigbee River to provide for greater ecological functions and services. 3) Maximize the long-term beneficial effects and cost-effectiveness of restoration activities.