

**PROSPECTUS
TENSAS RIVER MITIGATION BANK
TENSAS PARISH, LOUISIANA
MVK-2016-364**

Prepared for

U.S. Army Corps of Engineers
Vicksburg District
4155 Clay Street
Vicksburg, Mississippi 39183-3435

Submitted by

Triple S Farms, Inc.
3611 Front Street
Winnsboro, Louisiana 71295

Prepared by

Headwaters, Inc.
P.O. Box 2836
Ridgeland, Mississippi 39158
www.headwaters-inc.com

Harrison Law, LLC
One American Place, Suite 820
Baton Rouge, Louisiana 70825



Table of Contents

1.0	INTRODUCTION	1
1.1	Bank Sponsor and Owner	1
1.2	Site Location	1
1.3	Driving Directions	2
2.0	PROJECT GOALS AND OBJECTIVES	2
3.0	ECOLOGICAL SUITABILITY OF THE SITE	3
3.1	Historic Site Conditions	3
3.2	Summary of Current Site Conditions	4
3.2.1	Current Land Uses	4
3.2.2	Current Vegetation	4
3.2.3	Current Hydrology	5
3.2.4	Historic Hydrology	7
3.2.5	Mapped Soil Types	7
3.2.6	Property Encumbrances	8
3.2.7	Zoning and Adjacent Property Development	8
3.2.8	Preliminary Jurisdictional Determination	8
3.3	Water Rights and Hydrological Influences	9
3.3.1	Water Rights	9
3.3.2	General Watershed Characteristics	9
3.4	Water Quality	9
4.0	WILDLIFE VALUES	10
5.0	BANK ESTABLISHMENT	11
5.1	Mitigation Bank Overview	11
5.1.1	Bottomland Hardwood Wetland Mitigation	11
5.1.2	Stream Riparian Buffer	11
5.2	Mitigation Work Plan	12
5.2.1	Hydrologic Restoration Bottomland Hardwood Wetland	12
5.2.2	Streams (In Stream)	13
5.2.3	Streams Riparian Buffer	13

5.2.4	Soil Preparation	13
5.2.5	Vegetative Plantings.....	14
5.2.6	Riparian Buffer	16
5.2.7	Noxious/Exotic Species Control	16
5.2.8	Monitoring.....	16
5.3	Proposed Service Area.....	17
5.3.1	Primary Service Area	17
5.4	General Bank and Need and Technical Feasibility	17
5.5	Future Ownership and Long-Term Management Strategy.....	17
5.5.1	Sponsor/Operations Manager/Long-Term Management	17
5.5.2	Landowner/Long-Term Ownership.....	17
5.5.3	Agent(s)	17
5.5.4	Business Agent	18
5.5.5	Perpetual Site Protection Mechanism	18
5.5.6	Sponsor Qualifications.....	18
6.0	CONCLUSION.....	19
7.0	REFERENCES	19

FIGURES:

- Figure 1: Vicinity Map**
- Figure 2: Topographic Site Map**
- Figure 3: Aerial Site Map**
- Figure 4: Watershed Location Map**
- Figure 5: Historical Aerial Photograph**
- Figure 6: Current Hydrology Map**
- Figure 7: Historic Hydrology Map**
- Figure 8: Current Elevation Map**
- Figure 9: Soils Location Map**
- Figure 10: Current Land Use Map**
- Figure 11: Hydrological Work Plan Map**
- Figure 11A: Cross Section A-A'**
- Figure 11B: Cross Section B-B'**
- Figure 11C: Cross Section C-C'**
- Figure 11D: Cross Section D-D'**
- Figure 11E: Cross Section E-E'**
- Figure 11F: Cross Section F-F'**
- Figure 11G: Cross Section G-G'**
- Figure 12: Mitigation Plan Map**
- Figure 13: Service Area Map**

Appendix A: Survey Plat Map

Appendix B: Jurisdictional Determination

Prospectus
Tensas River Mitigation Bank
Tensas Parish, Louisiana

1.0 INTRODUCTION

Triple S Farms, Inc. (hereinafter the Sponsor), submits this prospectus to the U.S. Army Corps of Engineers, Vicksburg District (Vicksburg District), and the Interagency Review Team (IRT) to initiate evaluation of the proposed Tensas River Mitigation Bank (TRMB) pursuant to the plan to establish a bottomland hardwood wetland and stream mitigation bank in the Tensas watershed, Hydrology Unit Code (HUC) 08050003. The prospectus has been prepared in accordance with the Compensatory Mitigation for Losses of Aquatic Resources, 33 C.F.R. Part 332. The purpose of this document is to provide a sufficient level of detail to support informed public and IRT decisions regarding the objectives, establishment, and operation of the TRMB proposal.

1.1 Bank Sponsor and Owner

Triple S Farms, Inc. is the Sponsor of the TRMB. The land is owned in fee simple by Triple S Farms, Inc. which will perform long term management of the TRMB.

1.2 Site Location

The TRMB is approximately 292.60 acres and will include approximately 246.84 acres of bottomland hardwood restoration (re-establishment) and 12.11 acres of bottomland hardwood preservation. Additionally, the Sponsor proposes 12.21 acres of stream riparian buffer restoration (re-establishment) and 5.15 acres of stream riparian preservation along 7,310.27 linear feet of an unnamed stream within the boundary of the Bank Property. The TRMB is located in southwest Tensas Parish near the community of Cooter's Point. The TRMB is located 10 miles northeast of Sicily Island, 15 miles west of St. Joseph, and 37 miles south of Tallulah, Louisiana (Figure 1). The TRMB is located at latitude 31.919183 and longitude -91.496405 within partial Section 24, Township 11 North, Range 9 East and Section 19, Township 11 North, Range 10 East, Tensas Parish, Louisiana (Figure 2).

The TRMB is bordered on the south and north by agricultural fields. Undeveloped forestland borders TRMB along portions of the north, east, and west boundaries with Wetland Reserve Program (WRP) projects to the south. Hayes Bayou, Glades Bayou and Big Hog Glade are located in close proximity to the southwest and each is considered a direct tributary of the Tensas River which is located in close proximity to the west. Highway 573 and Big Choctaw Bayou transect the eastern portion of the TRMB. Cooter's Point Road is also found in close proximity to the north providing interior access to adjacent agricultural fields on the northern and western boundaries. TRMB may be accessed along the north boundary via an unimproved field road extending west from Highway 573. It should be noted that the Tensas River is located less than 1 mile to the west of the TRMB and is considered the primary receiving stream of the Bank Property (Figure 3).

The TRMB lies within the southern portion of the Boeuf-Tensas basin, HUC 080500, and specifically the Tensas watershed, HUC 08050003 (Figure 4). The Tensas watershed

(HUC 08050003) extends over portions of East Carroll, Franklin, Tensas, Catahoula, Concordia and Madison Parishes, Louisiana. The TRMB is within the southern portion of the Tensas watershed with a general drainage area of approximately 7,084 acres extending east to Big Choctaw Bayou, Little Choctaw Bayou and west to Big Hog Glade, tributaries of the Tensas River.

Much of the upper portions of Tensas Parish and the Tensas watershed consisted historically of bottomland hardwoods, bald cypress sloughs and scrub/shrub swamp hardwoods. However, as with many floodplains much of this area was deforested and converted to agricultural uses. This region also represents an important flyway for migratory bird species, such as, waterfowl and neotropical migrants, threatened and endangered species, and important recovering species, such as, the Louisiana Black Bear.

1.3 Driving Directions

- Proceed on I-20 West from Vicksburg, Mississippi.
- Travel approximately 19.5 miles along I-20 West to Highway 65 South (Exit 171).
- Travel approximately 35 miles south along Highway 65 South.
- Travel approximately 1.8 miles west along Highway 568.
- Travel approximately 6.5 miles west and north along Highway 892.
- Travel approximately 8.15 miles west and south along Highway 573.
- TRMB is located along the west boundary of Highway 573 with interior access provided via an unimproved field road along the north boundary.

2.0 PROJECT GOALS AND OBJECTIVES

The Sponsor plans to restore historic bottomland hardwood habitat that was once prevalent in this area. The Sponsor will also restore a riparian buffer zone along a direct tributary of Big Choctaw Bayou. The unnamed tributary of Big Choctaw Bayou flows along the northeast boundary of the TRMB and converges with Big Choctaw Bayou along the eastern edge of the Bank Property. The TRMB also abuts existing bottomland hardwood forest to the west and early successional forest enrolled in WRP on the south. Thus, reforestation of this site contributes to restoration of bottomland hardwoods within the floodplains of the Tensas River.

Existing bottomland hardwood forest that adjoins the Bank Property stretches south and west along Tensas Lake, Tensas River, Glades Bayou and Big Hog Glade within what may have been a relic meander of Tensas River. Regenerating forests also border the eastern side of the property and extend, almost unbroken, to Buckhorn Wildlife Management Area. Properties immediately north are, however, predominately open fields utilized for agricultural production. The TRMB will further promote the restoration of bottomland hardwood forest along both the Tensas River and Big Choctaw Bayou. Restoration will further reduce fragmentation of forestland within this region and provide connectivity to both primary drainage features within the southern portion of Tensas Parish. Historical imagery depicts the Bank Property as forestland in 1962 (Figure 5).

The goal of the TRMB is the restoration and preservation of approximately 276.31 acres of bottomland hardwood habitat.

Table 1: Current Habitat Types and Land Uses for TRMB

Habitat Type	Land Use	Acreage
PC Cropland*	Agriculture	259.99
BLH	BLH	17.36
Section 404 Waters	Perennial Stream (Big Choctaw Bayou)	9.00
Section 404 Waters	Intermittent Streams	0.89
Agricultural Drains	Agriculture Drains	0.36
Access Roads	Access Roads	5.00
Total	-	292.60

*Includes 1.04 acres identified as a pipeline easement.

Table 2: Proposed Mitigation Bank Habitat Types for TRMB

Present Habitat Type	Proposed Habitat Type	Acreage/Ft	Mitigation Type
PC Cropland	BLH	246.84 ac	Restoration
BLH	BLH	12.11 ac	Preservation
PC Cropland	Stream Riparian Buffer (BLH)	12.20 ac / 5,958.35 ft	Stream Riparian Buffer (Restoration)
BLH	Stream Riparian Buffer (BLH)	5.15 ac / 1,351.92	Stream Riparian Buffer (Preservation)
Section 404 Waters	Perennial Stream (Big Choctaw Bayou)	9.00	Preservation
Section 404 Waters	Intermittent Streams	0.89 ac / 5,958.35 ft	Preservation
	Wildlife Openings (Pipeline Easement)	1.04	Non-Mitigation
	Access Roads	5.00 ac	Non-Mitigation
	Agricultural Drain	0.36 ac / 3,986 ft	Non-Mitigation
Total		292.60	

3.0 ECOLOGICAL SUITABILITY OF THE SITE

3.1 Historic Site Conditions

Tensas Parish is located in the northeastern part of Louisiana and has a total land area of 413,440 acres, of which 20,805 acres are lakes, bayou, and rivers. The northern part of the parish is drained by Bayou Vidal, the central part by Bieler and Clark Bayous and the Big and Little Choctaw Bayous and the western part by the Tensas River. Tensas Parish is mainly a farming area with primary crops of cotton, corn, soybeans, and small grains and some cattle ranching. As described, historic aerial photography indicates that the

TRMB property was forestland around 1962. Since then, the site has been used for production of agricultural crops. Today, less than 62% of the Parish remains in hardwood forest, with additional lands cleared for crops, pasture, and other improvements annually.

3.2 Summary of Current Site Conditions

3.2.1 Current Land Uses

The vast majority of the TRMB property is utilized for agricultural row crop production purposes. Alterations to the historic landscape would include interior roadways and drainage improvements in support of the agricultural activities. One (1) linear pipeline easement totaling approximately 1.04 acres is also located within the southwest corner of the Bank Property, which will be excluded from mitigation use and the conservation servitude. The current land use for agricultural production purposes is similar to the adjacent property located to the north and east.

3.2.2 Current Vegetation

Prior Converted Croplands - The project site is predominately occupied by open field habitat historically used for agricultural row crop production. Due to the relatively flat topography, natural drainage patterns and the overall property location, the preponderance of the open field complex has hydric soil characteristics throughout. The Natural Resources Conservation Service (NRCS) has designated the property as prior converted cropland (PC) habitat.

The soils matrix color within the prior converted cropland habitat ranges from 4/1–5/1 (dark gray/gray), 4/2-5/2 (dark grayish-brown/grayish-brown) on the 10YR Munsell Soil Color chart. A matrix color of 3/1-4/1 (dark reddish gray) appears on the 2.5YR Munsell soil color chart. There is a soil mottling present (~20% - 30%) with a soil mottle color of 4/6 (dark yellowish-brown), 5/6-5/8 (yellowish-brown), on the 10YR chart.

Based upon coordination with the Tensas Parish U.S.D.A. NRCS office, the open agricultural fields are considered as Prior Converted Cropland (PC). PC is defined by the Soil Conservation Service (Section 512.15 of the National Food Security Act Manual, August 1988) as wetlands which were both manipulated (drained or otherwise physically altered to remove excess water from the land) and cropped before 23 December 1985, to the extent that they no longer exhibit important wetland values.

Normal circumstances for PC croplands generally do not support a prevalence of hydrophytic vegetative components and as such are not subject to regulation under Section 404 of the Clean Water Act. In most cases, because of the magnitude of hydrological alterations that have most often occurred on PC croplands, such cropland minimally, if at all, meets the hydrology requirements as

described within the 1987 Corps of Engineers' *Wetlands Delineation Manual*. Thus, "waters of the U.S." do not include PC cropland.

Intermittent Streams – Two (2) intermittent stream segments were identified within the subject property. The channels have been improved to facilitate storm water drainage to the east-northeast towards Big Choctaw Bayou. The channels are unnamed tributaries of Big Choctaw Bayou, which transects the eastern portion of the subject property. The intermittent streams are characterized as having well-defined stream channels with the overall lack of significant vegetative components within the channel. More specifically, the stream channels exhibit intermittent or seasonal flows. The intermittent streams identified within the limits of the project site would be considered as "other waters of the United States."

Agricultural Drainages – Field reconnaissance revealed the presence of a series of excavated drainages within the property. As with most agricultural lands, the channels were excavated within the open field habitats to aide in the surface water drainage across the property during rain events. The excavated drainages were designed and constructed to connect to the secondary and primary drainages located outside of the limits of the property. In most cases, the spoil that was excavated was placed along the top banks of the channels and/or land planed within the open fields.

3.2.3 Current Hydrology

Stormwater flows through unnamed tributaries to Big Choctaw Bayou and Glades Bayou. Big Choctaw Bayou, which transects a portion of the Bank Property, flows to the south and southwest before converging with the Tensas River approximately 5.5 miles southwest of the Bank Property. Glades Bayou, located to the southwest, is considered a direct tributary of Tensas River. It also receives stormwater flow from the property and converges with the River approximately 1.0 mile to the southwest. Glades Bayou and Big Hog Glade each appear to flow west directly into the Tensas River in close proximity to the Bank Property.

Field reconnaissance confirmed the presence of two (2) internal unnamed intermittent streams flowing along the northern and eastern portions of the Bank Property. The intermittent streams converge and eventually flow into a portion of Big Choctaw Bayou, which transect the eastern portion of the Bank Property. The intermittent streams originate within the open agricultural fields to the north and south of the Bank Property. Consequently, the presence of the intermittent streams conveys storm water from the northern and southern portions of the Bank Property and the adjacent properties to the north and south before flowing into Big Choctaw Bayou.

The central and southern portions of the Bank Property drain to the south and southwest through unnamed tributaries of Glade Bayou and Big Hog Glade, which are direct tributaries of the Tensas River.

Given the current land use, agricultural drains can be found within the agricultural fields. Agricultural drains were constructed to convey surface water across the property during rain events. The excavated drains were designed and constructed to connect to larger conveyances within and along the perimeter of the Bank property.

As described, current hydrology has been altered from the historical hydrologic regime through property improvements that have been completed over time in association with the agricultural land use. Each improvement was generally completed to increase surface water runoff away from agricultural fields and associated row crops. No impoundments are present within the limits of the Bank Property.

Approximately 18,193.12 linear feet of agricultural drains are present within the limits of the Bank Property. The agricultural drains can be described as shallow furrows located within the open agricultural fields. These drains convey storm water away from the agricultural row crops and towards intermittent drains located along field edges or wood lines. The larger agricultural drains located along field edges and wood lines are also regularly maintained to convey storm water away from the fields towards Big Choctaw Bayou or Glades Bayou (Section 404 Waters). The larger perimeter agricultural drains are associated with larger drainage basins conveying storm water from adjacent agricultural fields beyond the Bank Property.

Spoil material, consisting of earthen material, excavated from the construction of the agricultural drains was generally land planed within the open agricultural fields. In some instances, spoil materials can be found along the perimeter of the open fields as at grade access road with culvert crossings within each agricultural drain. As previously described, thirteen (13) primary agricultural drains are found within the interior portions of the Bank Property flowing predominantly in a north to south orientation. Each agricultural drain conveys storm water away from the open fields and into larger drainage features located along the perimeter of the Bank Property. Along the perimeter of the Bank Property is an existing at grade road providing access to portions of the agricultural fields. Eighteen (18) culverts are located within existing agricultural drains along the perimeter of the open fields. The current hydrology patterns, locations of agricultural drains, and Section 404 Waters are depicted in [Figure 6](#).

Historically, the natural storm water runoff was conveyed via overland flows to the east and southwest across the Bank Property. Property improvements have altered the historic drainage patterns to concentrate and convey storm water runoff through the improved drainages. The current topography continues to convey storm water runoff east and southwest through the Bank Property towards Big Choctaw Bayou and Glades Bayou. During periods of high rainfall and backwater events, flooding events would also extend flood waters from Big Choctaw Bayou and the Tensas River across large portions of the Bank Property. The agricultural drains have altered these flows to minimize or maximize storm water sheet flows supporting the current land use as croplands. To support the restoration of the

bottomland forestlands, approximately 14,231.12 linear feet of agricultural drains will be filled/graded returning the sheet flow of storm water across the Bank Property to historic conditions. All spoil materials associated with excavated agricultural drains will be graded and tilled to minimize spoil concentrations and promote the restoration of the historic hydrology regime. In many cases, spoil material previously excavated will be utilized to fill/grade and plug the drains. This work will also reduce existing fill materials present along the top banks of the drainages further restoring the connectivity of the drains and riparian buffer zones.

3.2.4 Historic Hydrology

The Bank Property is divided into two (2) drainage basins with a portion of the storm water flows conveyed through unnamed tributaries of Big Choctaw Bayou and Glades Bayou located to the east and southwest, respectfully. Big Choctaw Bayou flows through the Bank Property before turning south and southwest and converging with the Tensas River southwest of the Bank Property. Glades Bayou, located to the southwest, is also a direct tributary of the Tensas River converging with the River approximately 1.0 mile to the south of the Bank Property.

The drainage area associated with the Bank Property is approximately 7,084 acres that, as described, flow through the Bank Property prior to the convergence with the Tensas River. The historic hydrology of the Bank Property and the adjacent properties are depicted in [Figure 7](#).

Historic hydrology has been altered through the original conversion from bottomland hardwoods to open agricultural land and common agricultural practices during the 1950-60's. The historic hydrology and drainage patterns were determined through the use of available topographic maps and LIDAR remote sensing technology to determine elevations within the Bank Property and the adjacent properties located in the drainage area of the Bank Property ([Figure 8](#)).

3.2.5 Mapped Soil Types

Soils – As evidenced by the *Soil Survey for Tensas Parish Louisiana*, published in October 1968 by the USDA - Soil Conservation Service [now Natural Resources Conservation Service (NRCS)], the soils on the subject property primarily consist of Sharkey clay (Sc) with other soils present, such as, Tensas clay (Ta) and Dundee silty clay loam (Dd).

The Sharkey clay soil series consist of poorly drained soils occurring on broad flats or slight depressions in back swamps. These soils formed in fine textured alluvium deposited by the Mississippi River. They occur as wide, nearly level areas at some of the lowest elevations in the Parish, mainly in back swamps. The surface layer is dark grayish-brown clay. The subsoil is dark-gray clay mottled with dark yellowish brown. It is underlain by several feet of gray clay mottled with dark yellowish brown. Runoff is slow and permeability is very slow.

The Tensas clay series are somewhat poorly drained to poorly drained soils formed in fine-textured alluvium deposited by the Mississippi River. They occur on low natural levees and on long narrow ridges and swales. The surface layer is dark grayish-brown silty clay or silty clay loam. The upper part of the subsoil is grayish-brown clay or silty clay mottled with strong brown and gray. This layer is underlain by grayish-brown clay or silty clay mottled with dark brown and strong brown.

The Dundee silty clay loam series are somewhat poorly drained soils formed in stratified, medium textured and moderately fine textured alluvium deposited by the Mississippi River. They occur on natural levees along the Mississippi River and smaller streams. Typically, the surface layer is brown silt loam or loam. The subsoil is dark grayish-brown clay loam underlain by dark grayish-brown loam. The soil survey for the Bank Property is included as [Figure 9](#).

3.2.6 Property Encumbrances

The TRMB property is encumbered by one (1) linear pipeline easement extending across the southwest corner of the Bank Property. The scope of the pipeline easement is approximately 1.04 acres. The area covered by the pipeline easement will be excluded from the Conservation Servitude boundary and will remain as a wildlife opening (non-mitigation).

3.2.7 Zoning and Adjacent Property Development

TRMB and adjacent property is within unincorporated land and is absent of zoning regulations. When considering a one (1) mile radius around the Bank Property, the current land use consists of 36% bottomland hardwood forest, 28% cultivated cropland, 24% WRP, 9% water features, 2% rural development and 1% pasture/open field or fallow ([Figure 10](#)). The agricultural lands are generally concentrated along the banks of the primary drainages where fertile soils are located. The forestlands are concentrated to the south and southwest adjacent to the Tensas River and tributaries.

3.2.8 Preliminary Jurisdictional Determination

Approximately 225.40 acres of the TRMB property was delineated in April 2016 by Headwaters, Inc. A copy of the wetland delineation report was submitted to the USACE, Vicksburg District, and consequently, the USACE concurred with the findings of the report issuing a Preliminary Jurisdictional Determination (PJD) on June 23, 2016 referenced as MVK-2016-364. A copy of the preliminary jurisdictional determination is included within the Appendices of this report. The remaining acreage was delineated on March 5th, 2019. An addendum to the original delineation will be submitted concurrently with this document.

3.3 Water Rights and Hydrological Influences

3.3.1 Water Rights

Louisiana Civil Code, Article 490, treats water resources under the theory of absolute ownership and rule of capture, provided capture does not result in harm to neighbors.

3.3.2 General Watershed Characteristics

3.3.2.1 Water Sources and Losses

The sources of water to the project area include direct precipitation and surface flow from adjacent land from north to south. Additionally, overland flooding from the Tensas River and Big Choctaw Bayou provides a source of surface water during normal seasonal flooding events. Storm water flows across the site generally via overland flows into agricultural drainages interconnected to unnamed tributaries of Big Choctaw and Glade Bayou, located to the east and south, respectively. Both Big Choctaw Bayou and Glades Bayou are considered direct tributaries of the Tensas River, located to the west of the Bank Property. The Mississippi River forms the east boundary of the Parish while the Tensas River forms the west boundary of the Parish. Other notable streams include Bayou Vidal, Bieler Bayou, Clark Bayou and the Big and Little Choctaw Bayous.

The total annual average precipitation is 53.92+ inches. Of this, 28 inches, or 51 percent, usually falls in April through September which includes the majority of the growing season.

3.3.2.2 Hydroperiod

Hydric soils indicate that the site is either currently inundated or saturated in the upper soil profile for at least 14 consecutive days per year or was subject to these conditions prior to conversion of the site to agriculture. This site is comprised primarily of Tensas-Sharkey complex soils which, in this area, typically have a seasonal high-water table between the surface and 36 inches below the surface during the months of December and April.

3.4 Water Quality

The Tensas River Basin is located in the northeast portion of Louisiana. The Tensas River, known as Tensas Bayou in its upper reaches, begins in East Carroll Parish in the northeast corner of the State and runs approximately southwest for 250 miles more or less parallel to the Mississippi River. The Tensas River merges with the Ouachita River at Jonesville in Catahoula Parish to become the Black River. The Tensas basin comprises a part of the floodplain on the west side of the Mississippi River that extends from the Arkansas River to the Red River.

Based upon the Louisiana Department of Environmental Quality (LDEQ) 2018 listing for impaired waterbodies (303d), the Black River from Jonesville to the COE Control Structure at Mile 25 (waterbody ID LA080301_00) is impaired due to mercury with a fish consumption advisory and fecal coliform from sewage discharges. This stream reach is located south of the City of Jonesville within a reach of the Black River. As described, the Tensas River merges with the Ouachita River at Jonesville to form the Black River. The Tensas River is located west of the TRMB with all storm water flows directly or indirectly flowing into the Tensas River.

The removal of irrigated and non-irrigated crop production, filling of drainage features and planting of bottomland hardwood tree species for this project will result in overall water quality improvements due to increased filtration and plant uptake, reduction of agricultural pesticides and herbicides, reduction of use of nitrogenous or phosphorous fertilizers, and minimization of sedimentation/siltation as well as TSS and turbidity (i.e., nonpoint source pollution prevention).

4.0 WILDLIFE VALUES

Bottomland hardwood forests provide important ecosystem functions, including maintenance of water quality, habitat for fish and wildlife species, regulation of flooding and stream recharge. In addition to the many species present in bottomland hardwood forests, restoration of bottomland hardwood forests at TRMB will add to habitat and corridors of and for the Louisiana Black Bear. Once considered Critical Bear Habitat, the forestlands along the Tensas and Mississippi River remain vital to the continued success of the Louisiana Black Bear recovery. The Louisiana Department of Wildlife and Fisheries (LDWF) also identified Tensas Parish as falling within the current range of Louisiana Black Bears in its Rare Animals of Louisiana publication. The TRMB is uniquely located adjacent to the Tensas River on the northern edge of a major bottomland hardwood complex. East and northeast of the property is a long stretch of regenerating forests stretching all of the way to Buckhorn Wildlife Management Area, Big Lake Wildlife Management Area and the Tensas River National Wildlife Refuge, which are operated by state and federal wildlife agencies which promote the restoration and preservation of bottomland hardwood habitat within this region. Reforestation of this property will undoubtedly serve the purpose of increasing important habitat and reducing fragmentation and as an interconnecting corridor for the Louisiana Black Bear. The rehabilitation of the forest will also provide wintering habitat for neotropical migrants as well as important species which nest in the area.

5.0 BANK ESTABLISHMENT

5.1 Mitigation Bank Overview

5.1.1 Bottomland Hardwood Wetland Mitigation

5.1.1.1 Wetland Restoration

The Sponsor proposes the restoration (re-establishment) of 246.84 acres of bottomland hardwood forested wetlands from open agricultural fields by ceasing intensive agricultural practices for row crop production, restoring the relic hydrologic regime and planting desirable species of native bottomland hardwood vegetation.

5.1.1.2 Wetland Preservation

The Sponsor proposes the preservation of 12.11 acres of existing bottomland hardwood forested wetlands located along the top banks of Big Choctaw Bayou within the northeast corner of the Bank Property. The existing habitat is considered as a mature bottomland hardwood forested wetland providing an existing riparian buffer habitat along the perennial stream channel. The preservation of the habitat will maintain a connectivity from Big Choctaw Bayou to the remaining restoration areas within the Bank Property.

5.1.2 Stream Riparian Buffer

5.1.2.1 Stream Riparian Buffer Restoration

Approximately 12.21 acres of stream riparian buffer will be restored along the banks of approximately 5,958.35 feet of stream located along the north and east boundary of the Bank Property. Each stream is considered intermittent but has been improved and maintained for agricultural purposes providing storm water runoff relief for the historic and current land use. The proposal includes the restoration of the native bottomland hardwood component within the riparian buffer areas of each stream reach within the Bank Property. Native bottomland hardwood species will be planted within the designated 75-foot wide buffer on the south side of the north stream. Planting will also occur within a 75-foot wide buffer along either side of the east stream. Currently, agricultural row crop activities extend to the bank of each stream with ongoing maintenance activities in within the stream reaches.

5.1.2.2 Stream Riparian Buffer Preservation

Approximately 5.15 acres of stream riparian buffer will be preserved along the banks of approximately 1351.9 feet of Big Choctaw Bayou as it flows

through the northeast corner of the Bank Property. In association with the bottomland hardwood preservation component of this bank proposal, it is intended to preserve a 75-foot wide riparian buffer zone along either bank of the Bayou.

5.2 Mitigation Work Plan

5.2.1 Hydrologic Restoration - Bottomland Hardwood Wetland

1. The hydrology restoration work plan will include filling and grading, to as close as practicable natural conditions, of agricultural drains located within the Bank Property. Thirteen (13) agricultural drains, approximately 14,231.12 linear feet in length, are in the Bank Property and will be filled and graded to an elevation comparable to the adjacent open fields and forestlands, restoring the natural sheet flow of storm water runoff. [Figure 11](#) depicts the location of the agricultural drains to be filled and graded as a part of the mitigation work plan. A cross sectional view, representing the agricultural drains, has been prepared and is included within the appendices of this report.
2. The Sponsor will also construct seven (7) earthen plugs along the west boundary of an open agricultural field and abutting an agricultural drain to remain. Earthen plugs will be used to reduce concentrated storm water runoff from the open agricultural field and into the abutting agricultural drain to remain. The concept is to reduce storm water runoff rates off site and through the artificial storm water drains.

The Bank Property is positioned adjacent to agricultural fields to the north and east. Portions of the adjacent agricultural fields drain storm water through the Bank Property via unnamed tributaries of Glades Bayou and the Tensas River. To maintain this drainage and not impede flows within the adjacent agricultural fields, two (2) agricultural drains totaling 3,962 linear feet will be maintained.

Earthen material will be obtained from existing spoil material located adjacent to the previously excavated drains or from an approved location within the Bank Property. [Figure 11](#) depicts the location of each earthen plug and its juxtaposition to the agricultural drains as a part of the mitigation work plan. A cross sectional view, representing the existing agricultural drain and planned earthen plug, has been prepared and is included within the appendices of this report.

3. The Sponsor will maintain 5.00 acres of at-grade access roads located around the perimeter of the Bank Property. The at-grade access roads have been maintained as part of the current land use for agricultural purposes. Each at-grade access road depicted on [Figure 11](#) will be used for access, implementation of the mitigation work plan, monitoring and maintenance of the Bank Property. The at-grade access roads will be maintained by bush hogging, clipping, etc. The presence of the at-grade access roads will not impede sheet flow across the Bank Property as these are located along natural ridges or wood lines. A cross sectional view, representing the at-grade access road located

along the south boundary of the Bank Property, has been prepared and is included within the appendices of this report.

4. The Sponsor will also maintain three (3) culvert crossings located along the existing at-grade access road. The culvert crossings exist along the primary internal at-grade access road and within agricultural drains that will remain as a part of the hydrologic work plan. In addition, one (1) culvert will remain along the existing at-grade access road located along the south boundary of the Bank Property. The Sponsor will maintain the three (3) existing culverts and prevent the accumulation of drift/debris within the agricultural drains. The culverts are necessary to provide access to the interior portions of the Bank Property. [Figure 11](#) depicts the location of the culverts as a part of the mitigation work plan.

The Hydrologic Work Plan developed for TRMB is depicted as [Figure 11](#).

5.2.2 Streams (In Stream)

The Sponsor is not proposing to perform any specific in stream work relative to the stream mitigation work plan. Culverts shall be removed from the stream reaches as previously noted with stabilization of the stream banks as applicable. The Sponsor shall maintain these streams as each allows cross drainage providing a source of storm water runoff for adjacent properties and fields. The preservation of the stream reach will be reflected within the Charleston Methodology Worksheets.

5.2.3 Stream Riparian Buffer

The historic silvicultural land uses for TRMB have resulted in the removal of the natural bottomland hardwood riparian buffer habitats along the intermittent streams. Full details regarding the vegetative restoration activities is described below in Section 5.2.3. [Figure 11](#) depicts the location of the hydrologic work plan designed for TRMB.

5.2.4 Soil Preparation

Following the degradation of agricultural drains present within the Bank Property, furrows will be plugged in specific locations along the west boundary of the Bank Property to reduce increased runoff off site to the west. As described, a drainage feature is located to the west of the property but is positioned off site and not part of the Bank Property. Following the initial hydrologic restoration work plan, the Sponsor will mechanically prepare soils in the fields for vegetative plantings. Deep-ripping may be used to alleviate soil compaction and encourage air and water pore space for root growth. Herbicides may be used where necessary.

5.2.5 Vegetative Plantings

Wetland Restoration Work Plan

1. The Sponsor will restore 246.84 acres of bottomland hardwood forested wetlands and 12.21 acres of stream riparian buffer within the limits of the Bank Property. The restoration work plan for each habitat will be accomplished by preparing the site as needed (ripping, disking, tilling, mowing, etc.) during the fall prior to planting and by planting an appropriate species mixture indicative of bottomland hardwood ecosystems during the non-growing season of 2020-2021 (Table 3).
2. The restoration areas will be planted using a mixture of hard mast and soft mast species during the non-growing season (i.e., December – March). Prior to planting, site preparation will be conducted using mechanical and chemical means, such as, mowing, disking, ripping, shredding and herbicidal application. Invasive and undesirable species control will be conducted throughout the entire project area over the life of the Bank.
3. The Sponsor does not anticipate degrees of soil settlement requiring planting deferment. Soil disturbance will be avoided or minimized to the maximum extent practicable, and site preparation has been planned such that favorable conditions for planting will be established and maintained throughout the preparation activities. Site preparation activities will be documented with digital photographs and provided to the IRT during times in which these activities take place.
4. Planting procedures will adhere to the following specifications:
 - a. One (1) to two (2) year old bare-root seedlings obtained from a registered licensed regional nursery grower and of a regional eco-type species properly stored and handled to ensure viability will be planted at the Bank during the period December 15 through March 15 (planting season). Events, such as, spring flooding may warrant storage of trees with planting in late spring or early summer. If seedlings listed are not available, then substitutions may be made if they are approved by the IRT. The anticipated schedule for planting is the non-growing season of 2020-2021. The Sponsor will plant appropriate species in a manner to ensure adequate species diversity and to ensure that monotypic tree rows will not be established;
 - b. Seedlings will be planted following a 10' x 10' spacing to achieve an initial stand density of, at minimum, 432 seedlings per acre;
 - c. Species selected for planting will be planted in a random mixture as dictated by terrain and edaphic conditions. The species selected will be site appropriate in terms of habitat design, soil-moisture regime and species diversity. Seven (7) to ten (10) species may be represented in the planting assemblage to insure adequate species diversity. The exact

species and quantities for planting will be determined by the availability of species from commercial nurseries providing localized ecotype seedlings. Seedlings would certainly be mixed upon plantings so that areas are not comprised of a single species. The distribution of stems will create a mosaic of hard and soft mast species that will provide seasonally available forages for a wide range of indigenous wildlife including the Louisiana black bear. The availability of soft mast species is important during the summer and hard mast is critical in the fall and early winter for the buildup of fat reserves in black bears preparing for denning. Single species plantings will generally be avoided.

- d. The Bank will be maintained, on an as-needed basis, by the use of mechanical or chemical control or some combination thereof to control exotic species colonization or other plant competition.
- e. Sponsor will use all prudent efforts (physical, chemical, and/or mechanical) to remove and control Chinese tallow tree and any other exotic vegetation from the Bank Property. The Bank will be monitored to prevent infestation by noxious/exotic vegetation. Exotic species (e.g., Chinese tallow and Chinese privet) shall not comprise more than 5% cover and noxious species (e.g., honey locust, black willow and cottonwood) shall not comprise more than 20% of the total stem density. The Bank Property will be monitored for the colonization of exotic and noxious species throughout the life of the Bank.

Table 3: Plant Species Proposed for the Bank Property

Bottomland Hardwood Plantings		
Common Name	Scientific Name	Percent Composition
Nuttall oak*	<i>Quercus nuttallii</i>	20%
willow oak	<i>Quercus phellos</i>	15%
water oak	<i>Quercus nigra</i>	10%
Bald cypress*	<i>Taxodium distichum</i>	10%
Sweet pecan	<i>Carya illinoensis</i>	5%
overcup oak*	<i>Quercus lyrata</i>	5%
green ash	<i>Fraxinus pennsylvanica</i>	5%
Drummond red maple	<i>Acer rubrum var. drummondii</i>	5%
sweetgum	<i>Liquidambar styraciflua</i>	5%
common persimmon	<i>Diospyros virginiana</i>	5%
sugarberry	<i>Celtis laevigata</i>	5%
American elm	<i>Ulmus Americana</i>	5%
mayhaw	<i>Crataegus opaca</i>	2.0%
Buttonbush*	<i>Cephalanthus occidentalis</i>	1.0%
Water hickory*	<i>Carya aquatica</i>	1.0%
Box elder	<i>Acer negundo</i>	1.0%

*Species to be concentrated within natural low-lying swales and contours.

The Mitigation Work Plan developed for TRMB is depicted as [Figure 12](#).

For a given planting, a minimum of 240 trees/acre will be present following the third full growing season and 150 trees/acre following the 5th growing season. Tree species will be planted to achieve an overall composition, on average, of seven (7) to ten (10) target species or greater per acre from the species listed in Table 3 above, with no single species comprising more than 25% of the stocking and hard mast species comprising between 50 to 60% of the total species planted. At Year 10, the overall stand density shall be composed, on average, of seven (7) to ten (10) target tree species/acre or greater at a minimum density of 120 trees/acre, including desirable natural recruits with a target hard to soft mast ratio of 50/50 to 60/40.

5.2.6 Riparian Buffer

5.2.6.1 Riparian Buffer Restoration

The proposed mitigation work plan for the TRMB includes the restoration of approximately 12.21 acres of riparian buffer along the intermittent streams within the Bank Property. Vegetative restoration activities within these areas will target activities similar to those described within the Bottomland Hardwood Wetland Restoration areas described above.

5.2.7 Noxious/Exotic Species Control

Exotic and nuisance species (Chinese tallow tree and Chinese privet) species shall not comprise more than 5% cover and noxious species (e.g., honey locust, black willow and cottonwood) shall not comprise more than 20% of the total stem density. Exotic and/or noxious species will be removed using various techniques which may include pre and post-emergent herbicide applications, direct application by spray and/or injection, mowing and any other successful technique during initial planting. The percent cover of invasive plants will be monitored during short-term and long-term success monitoring and appropriate action taken, if needed. (Please reference 5.1.3. Vegetative Plantings 4.e.)

5.2.8 Monitoring

Monitoring shall commence immediately following plantings to establish a baseline. Monitoring will then occur following the growing seasons in years 1, 3, 5, 8 and 10 so that any necessary corrective measures by the Sponsor may be undertaken. Monitoring reports will be submitted to the Chair of the IRT no later than December 15th following monitoring activities. Monitoring efforts will be conducted to verify the success of the restoration activities and will include vegetative surveys, wildlife observations, hydrologic observations, and overall property assessments.

5.3 Proposed Service Area

5.3.1 Primary Service Area

The service area for the TRMB is the Boeuf-Tensas Watershed Accounting Units 08050003 (Tensas) and 08050001 (Boeuf). Use beyond this area will be determined on a case-by-case basis as deemed appropriate by the Vicksburg District ([Figure 13](#)).

5.4 General Bank and Need and Technical Feasibility

TRMB is proposed to provide compensatory mitigation for Vicksburg District approved projects within the Hydrologic Unit Code (HUC) 08050003 (Tensas) and HUC 08050001 (Boeuf).

In addition to providing mitigation for activities associated with continued population growth, the proposed service area has a history of oil and gas exploration and production, federal water control projects and considerable linear activities, including transportation, power transmission and pipelines.

5.5 Future Ownership and Long-Term Management Strategy

5.5.1 Sponsor/Operations Manager/Long-Term Management

Triple S Farms, Inc.
3611 Front Street
Winnsboro, LA 71295

5.5.2 Landowner/Long-Term Ownership

Triple S Farms, Inc.
P.O. Box 1566
Winnsboro, LA 71295
POC: Mr. Jimmy Street

5.5.3 Agent(s)

Headwaters, Inc.
P.O. Box 2836
Ridgeland, MS 39158
www.headwaters-inc.com
POC: Mr. Clay Cromwell

Harrison Law, LLC

One American Place, Suite 820
Baton Rouge, LA 70825
POC: Mr. Andrew J. Harrison, Jr.

5.5.4 Business Agent

Wetlands Mitigation Strategies, LLC
One American Place, Suite 820
Baton Rouge, LA 70825
POC: Mr. Andrew J. Harrison, Jr.

5.5.5 Perpetual Site Protection Mechanism

TRMB will be protected in perpetuity by Conservation Servitude, pursuant to Louisiana Revised Statute 9:1271, *et seq.* The Conservation Servitude will be held by a conservation-oriented 501(c)(3) organization to be determined and will inure and run with the property title.

The Conservation Servitude will prohibit activities, such as, clear cutting, fill discharges, cattle grazing or other commercial surface development that would diminish the quality or quantity of restored wetlands.

5.5.6 Sponsor Qualifications

Triple S Farms, Inc. will act as the Sponsor and long-term steward of the TRMB. The Sponsor has successfully established the Big Lake Mitigation Bank Phase I and II located within Franklin Parish, Louisiana and the Vicksburg District. Triple S Farms, Inc. will be supported by Headwaters, Inc. and Wetland Mitigation Strategies, LLC (WMS), who collectively, have experience establishing and managing mitigation banks throughout the southeast United States.

6.0 CONCLUSION

In summary, the TRMB has the potential to restore approximately 246.84 acres of bottomland hardwood habitat and 12.21 acres of stream riparian buffer bottomland hardwood habitat within the project boundary. Also, the TRMB has the potential to preserve and protect an additional 12.11 acres of bottomland hardwood habitat and 5.15 acres of stream riparian buffer habitat. These lands (excluding the pipeline easement and access road) will be protected and maintained by Conservation Servitude in perpetuity. More detailed information regarding financial assurances, monitoring provisions, and credit release schedules will be provided in the subsequent draft MBI and will reflect current standards within the Vicksburg District.

7.0 REFERENCES

Code of Federal Regulations, Title 33, Parts 325 and 332 and Title 40, Part 230, as published on pages 19594-19704 in the Federal Register dated 10 April 2008.

United States Department of Agriculture – Natural Resources Conservation Service, Web Soil Survey, Tensas Parish, Louisiana.

<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

United States Department of Agriculture – Soil Survey of Tensas Parish, Louisiana, issued October 1968.

Louisiana Department of Environmental Quality, Louisiana Water Quality Inventory: Integrated Report (305(b)/303(d)).

<http://www.deq.louisiana.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2012IntegratedReport.aspx>

<http://www.deq.louisiana.gov/portal/Portals/0/planning/305b/2012/12%20IR1%20Appendix%20A%20Text%20and%20Maps%20FINAL%201-25-13.pdf>

National Wetland Plant List, Version 3.2. U.S. Army Corps of Engineers, 2018.

http://wetland_plants.usace.army.mil/

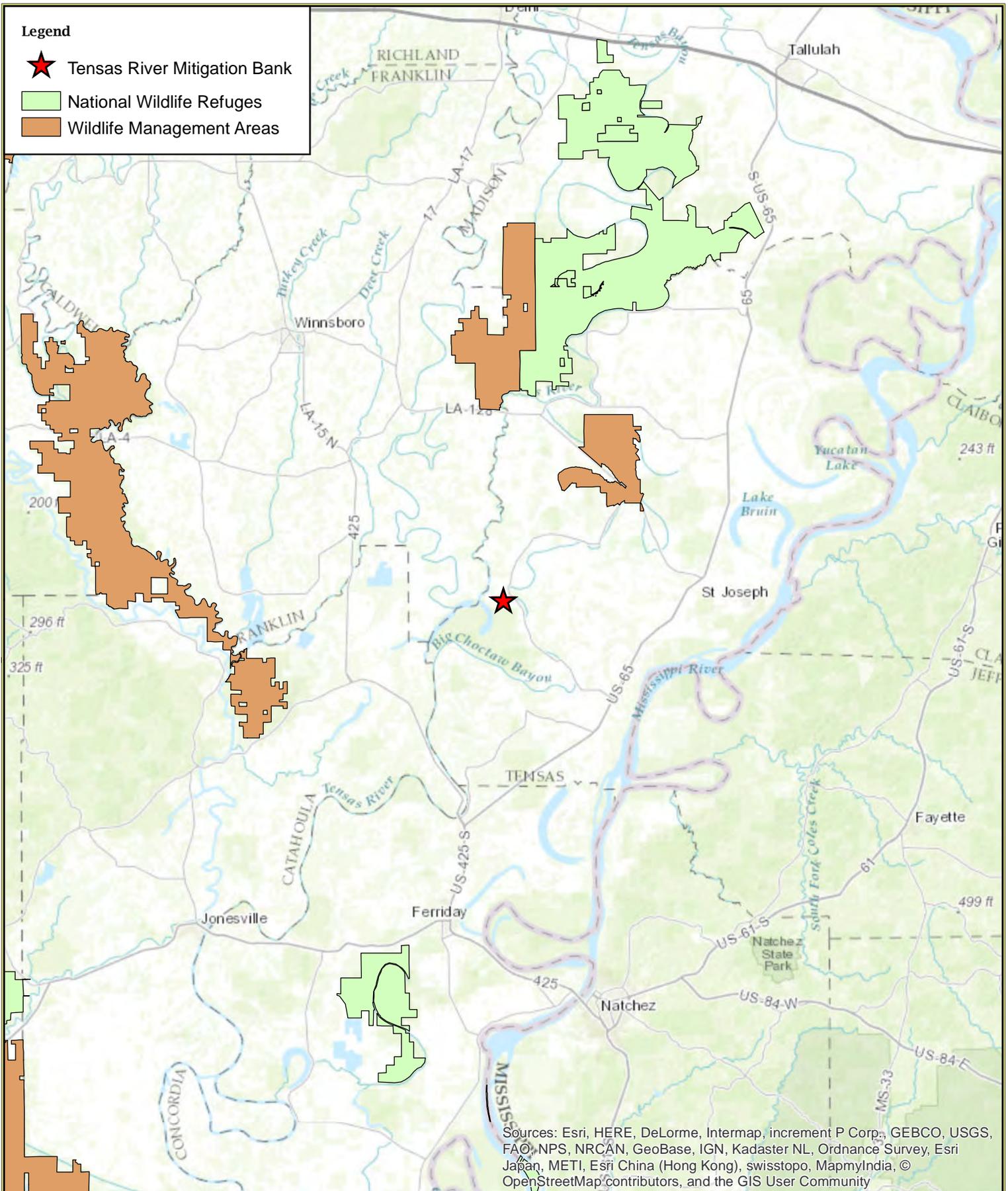
The Natural Communities of Louisiana. Louisiana Department of Wildlife and Fisheries Louisiana Natural Heritage Program 2009.

http://www.wlf.louisiana.gov/sites/default/files/pdf/page_wildlife/6776are%20Natural%20Communities/LA_NAT_COM.pdf

Figures

Legend

- ★ Tensas River Mitigation Bank
- National Wildlife Refuges
- Wildlife Management Areas



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



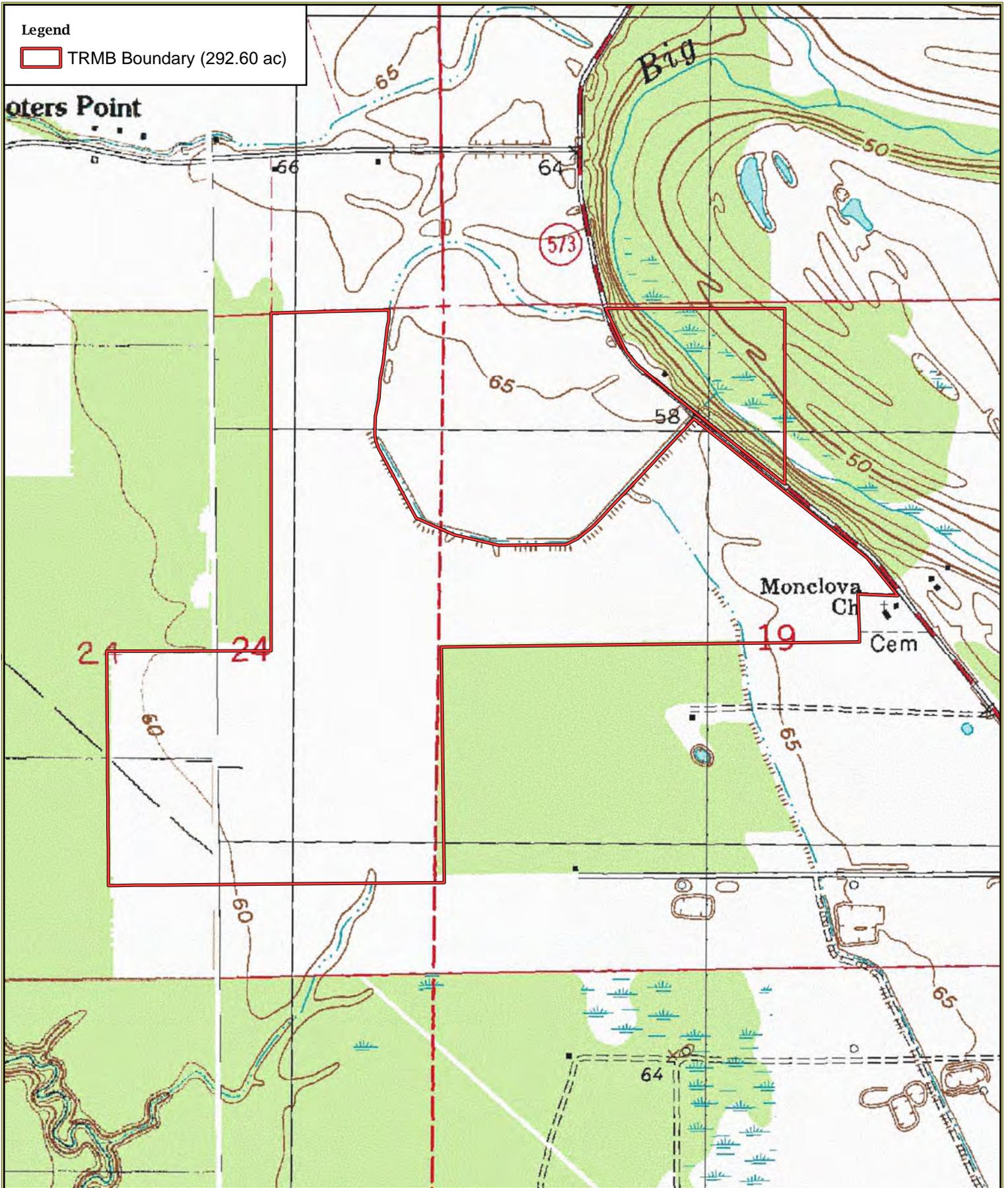
Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Figure 1 - Vicinity Map



ESRI World Topography Map



Legend

TRMB Boundary (292.60 ac)

Cooters Point

Big

Monclova Ch

Cem

24

24

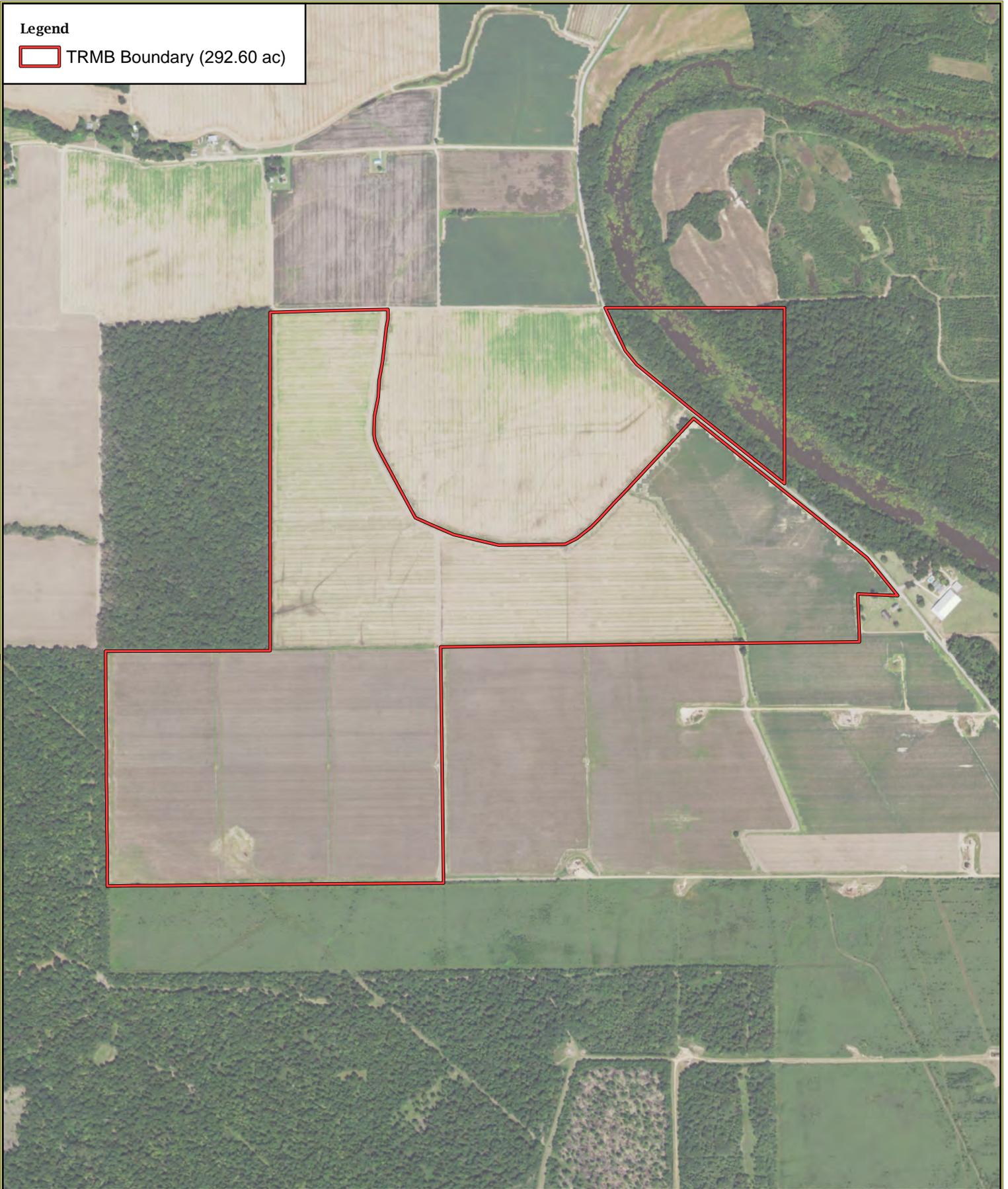
19

573

 <p>HEADWATERS^{INC.} NATURAL RESOURCES CONSULTING WWW.HEADWATERS-INC.COM</p>	<p>Tensas River Mitigation Bank</p> <p>Sec 24, T 11 N, R 9 E Sec 19, T 11 N, R 10 E Tensas Parish, Louisiana</p> <p>Figure 2 - Site Location Map</p>	 <p>NORTH 1:12,000</p> <p>0 750 1,500 Feet</p> <p>USGS Gretna Green SW (LA) Quad</p>
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Legend

 TRMB Boundary (292.60 ac)



Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Figure 3 - Site Location Map

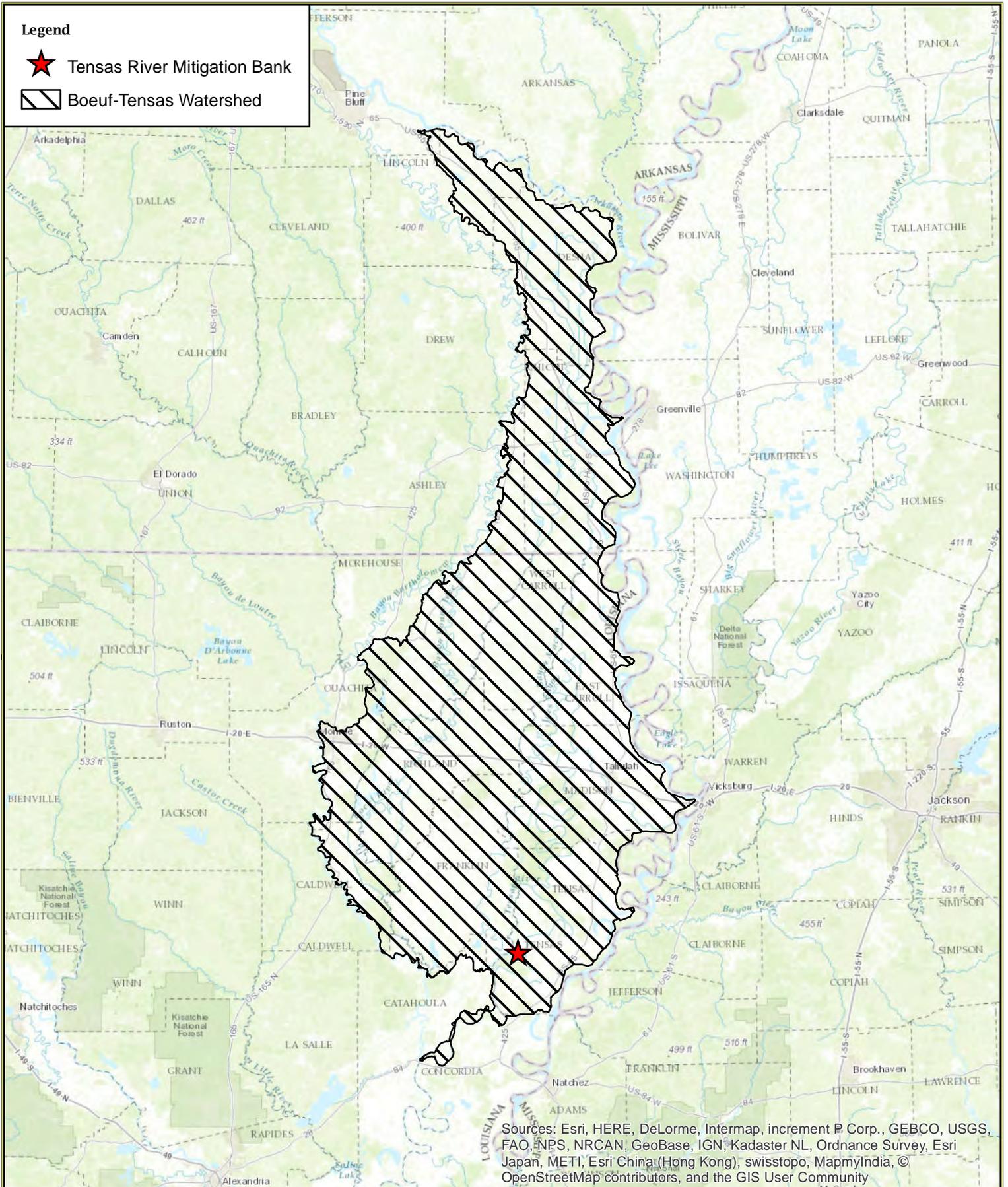


USDA NAIP 2017

Legend

 Tensas River Mitigation Bank

 Boeuf-Tensas Watershed



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Tensas River Mitigation Bank
Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana



Figure 4 - Watershed Location Map

Legend

 TRMB Boundary (292.60 ac)



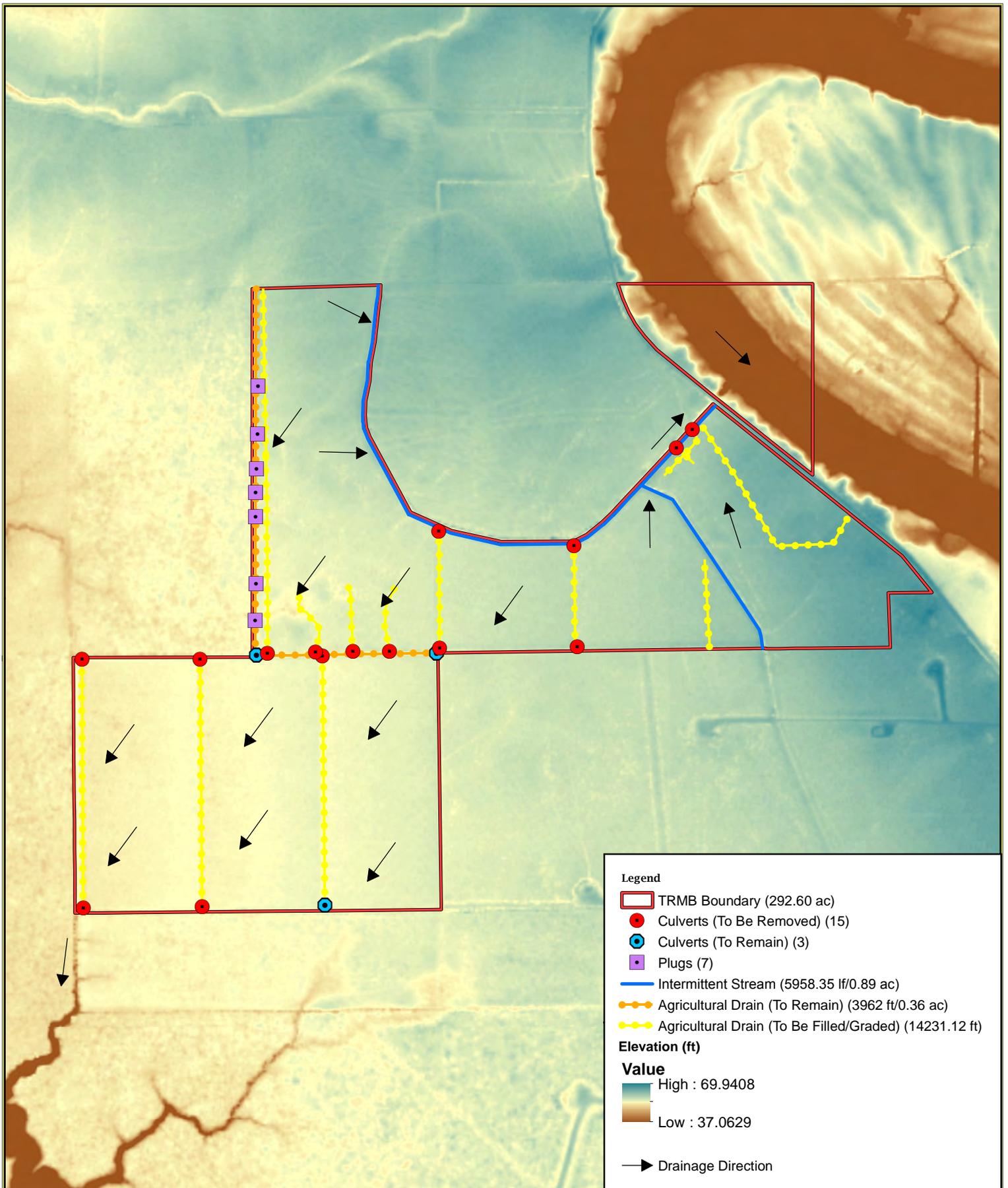
Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Figure 5 - Site Location Map

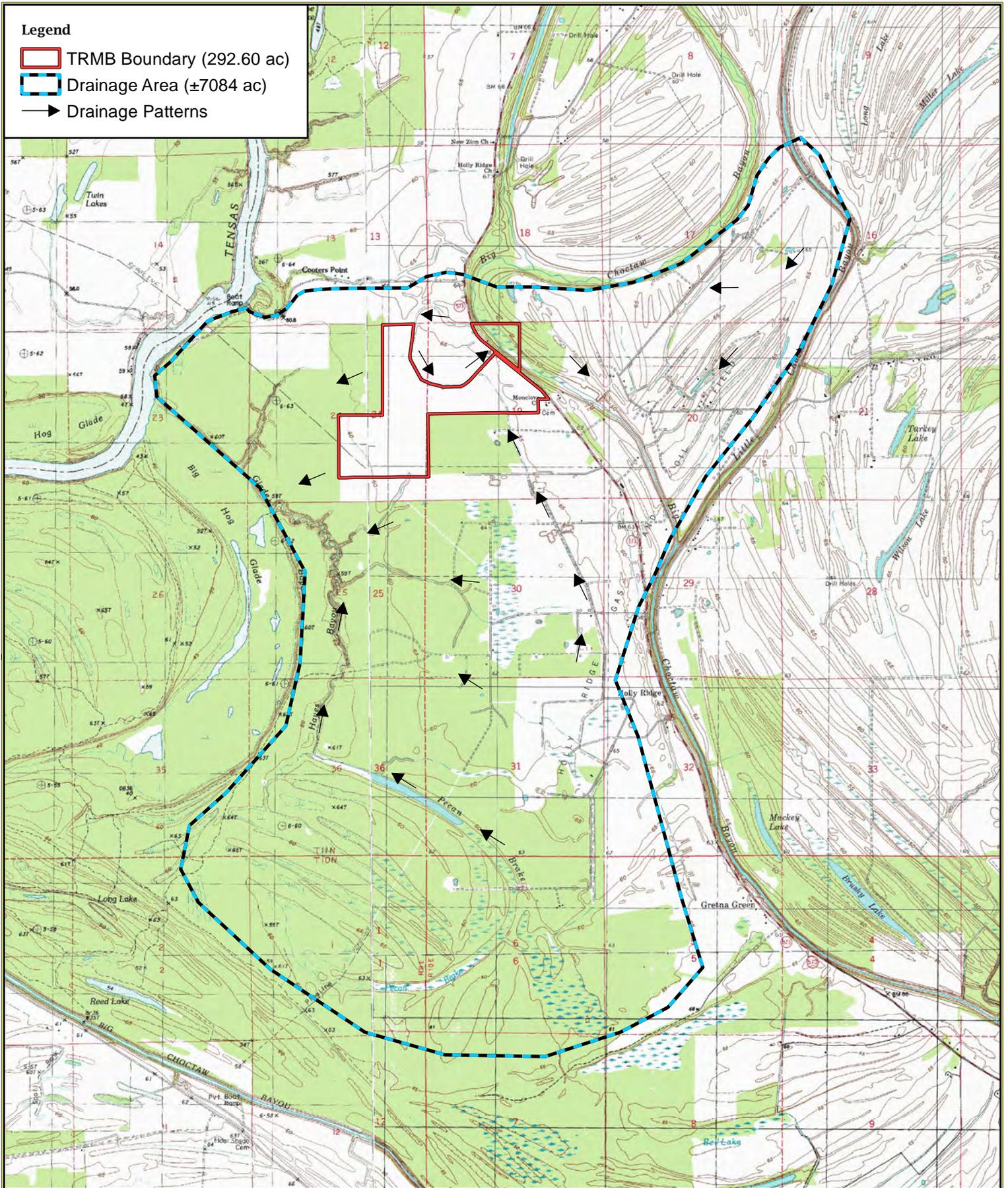


1962 Aerial Image



Legend

-  TRMB Boundary (292.60 ac)
-  Drainage Area (±7084 ac)
-  Drainage Patterns



Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Figure 7 - Historic Hydrology Map

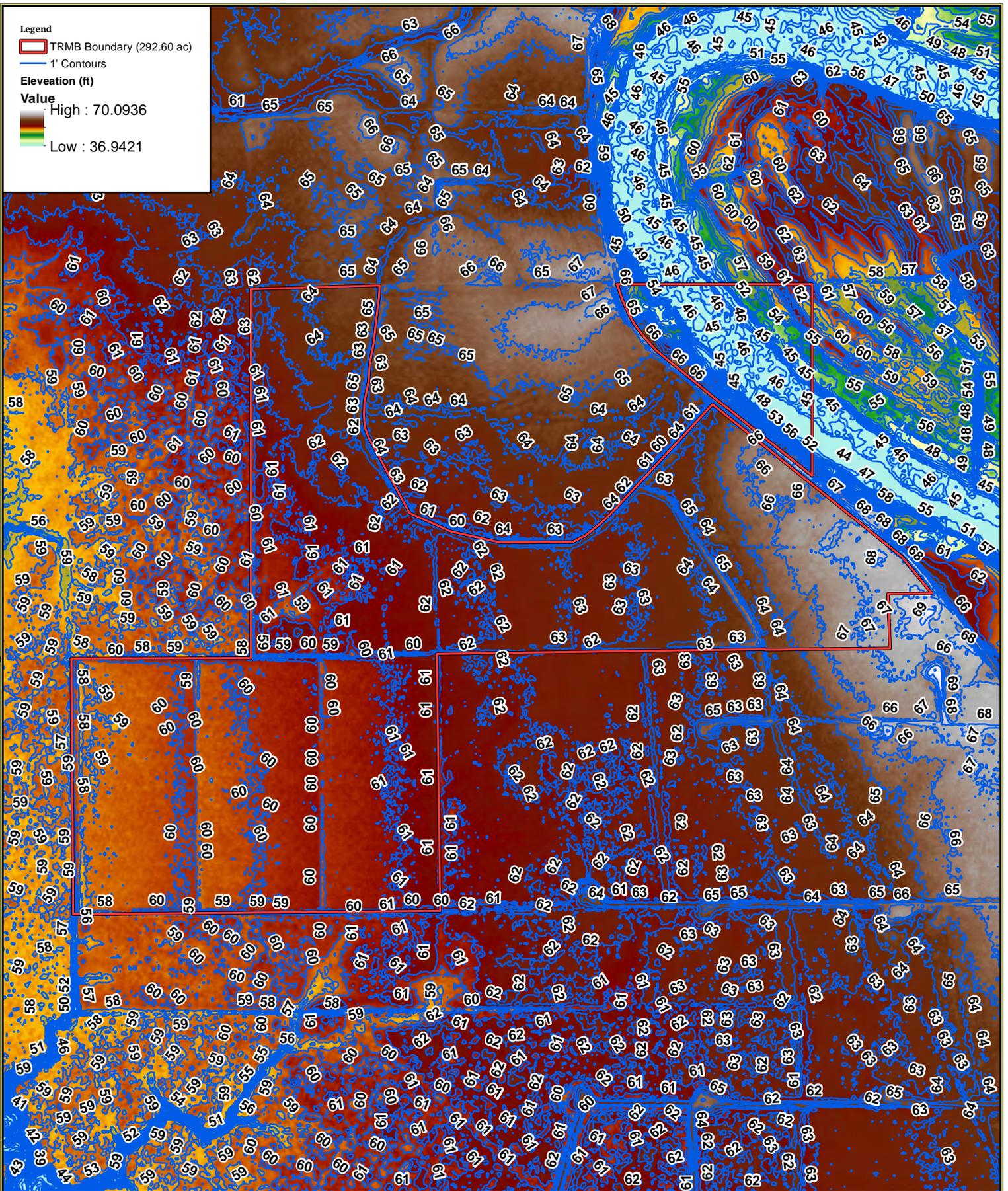


0 2,850 5,700
Feet

USGS Gretna Green SW (LA) Quad

Legend

- TRMB Boundary (292.60 ac)
- 1' Contours
- Elevation (ft)**
- Value**
- High : 70.0936
- Low : 36.9421



Tensas River Mitigation Bank
 Sec 24, T 11 N, R 9 E
 Sec 19, T 11 N, R 10 E
 Tensas Parish, Louisiana

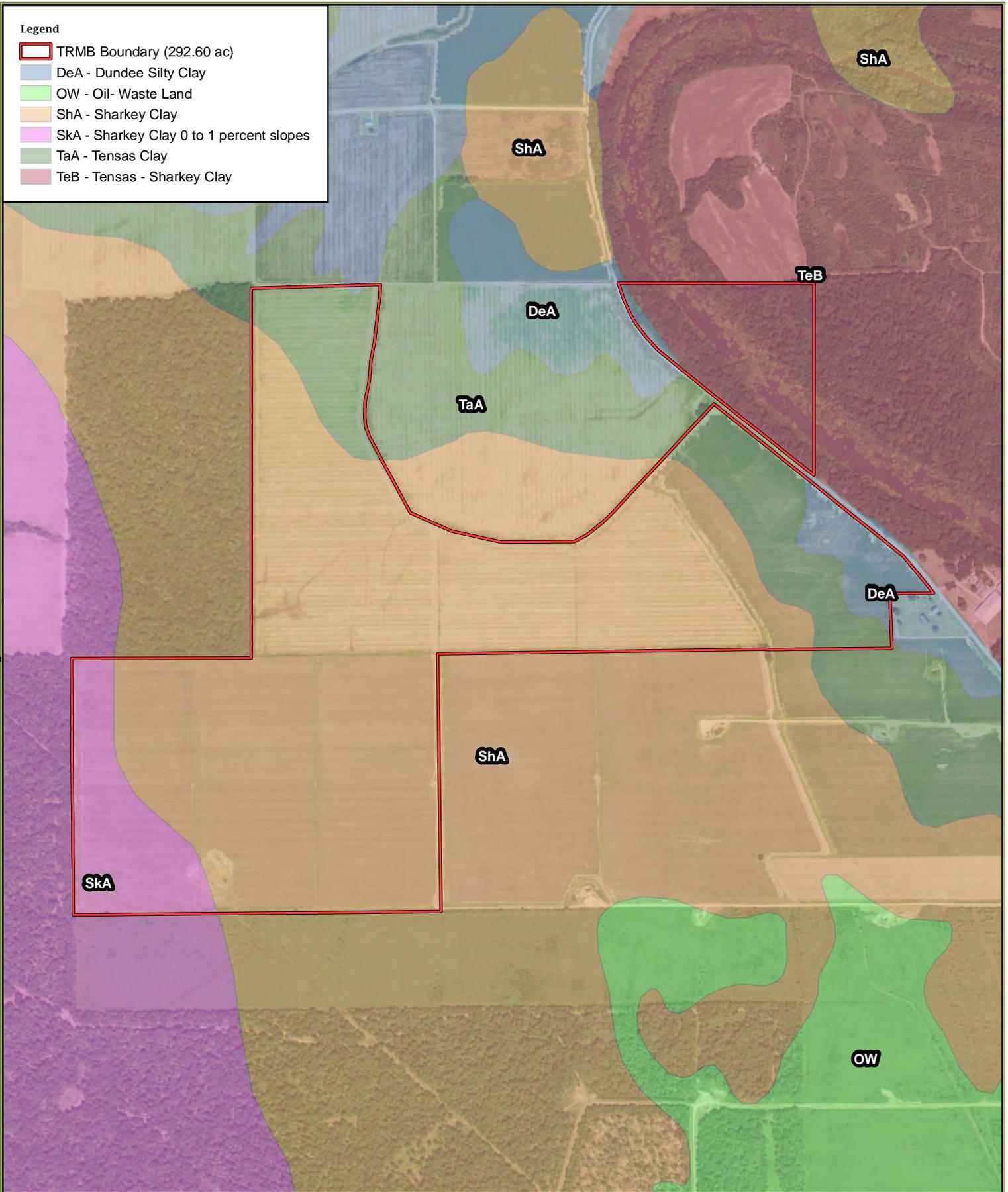


Figure 8 - Current Elevation Map

LiDAR (LSU Atlas)

Legend

- TRMB Boundary (292.60 ac)
- DeA - Dundee Silty Clay
- OW - Oil- Waste Land
- ShA - Sharkey Clay
- SkA - Sharkey Clay 0 to 1 percent slopes
- TaA - Tensas Clay
- TeB - Tensas - Sharkey Clay



Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

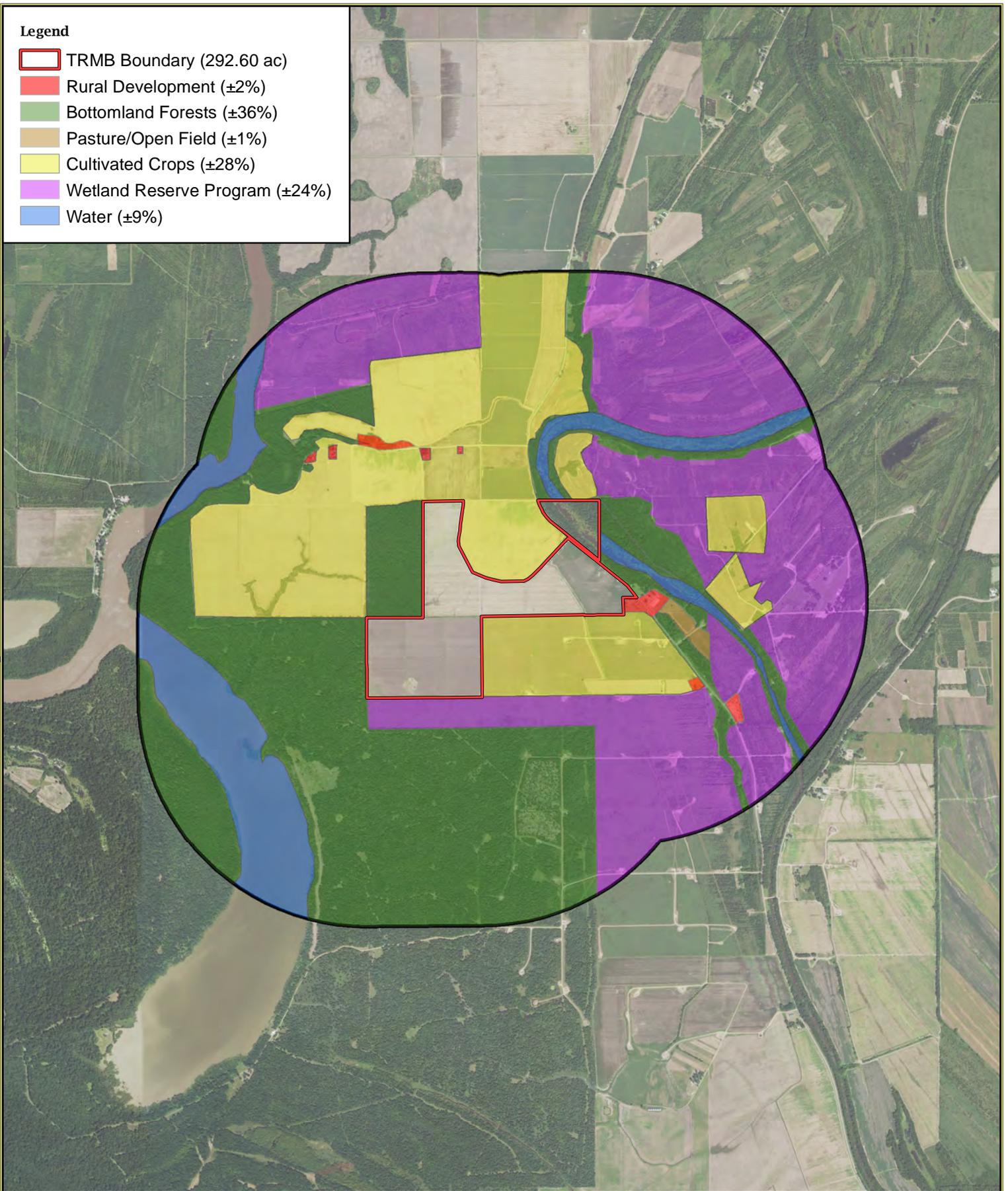
Figure 9 - NRCS Published Soils Map



USDA NAIP 2017

Legend

-  TRMB Boundary (292.60 ac)
-  Rural Development ($\pm 2\%$)
-  Bottomland Forests ($\pm 36\%$)
-  Pasture/Open Field ($\pm 1\%$)
-  Cultivated Crops ($\pm 28\%$)
-  Wetland Reserve Program ($\pm 24\%$)
-  Water ($\pm 9\%$)



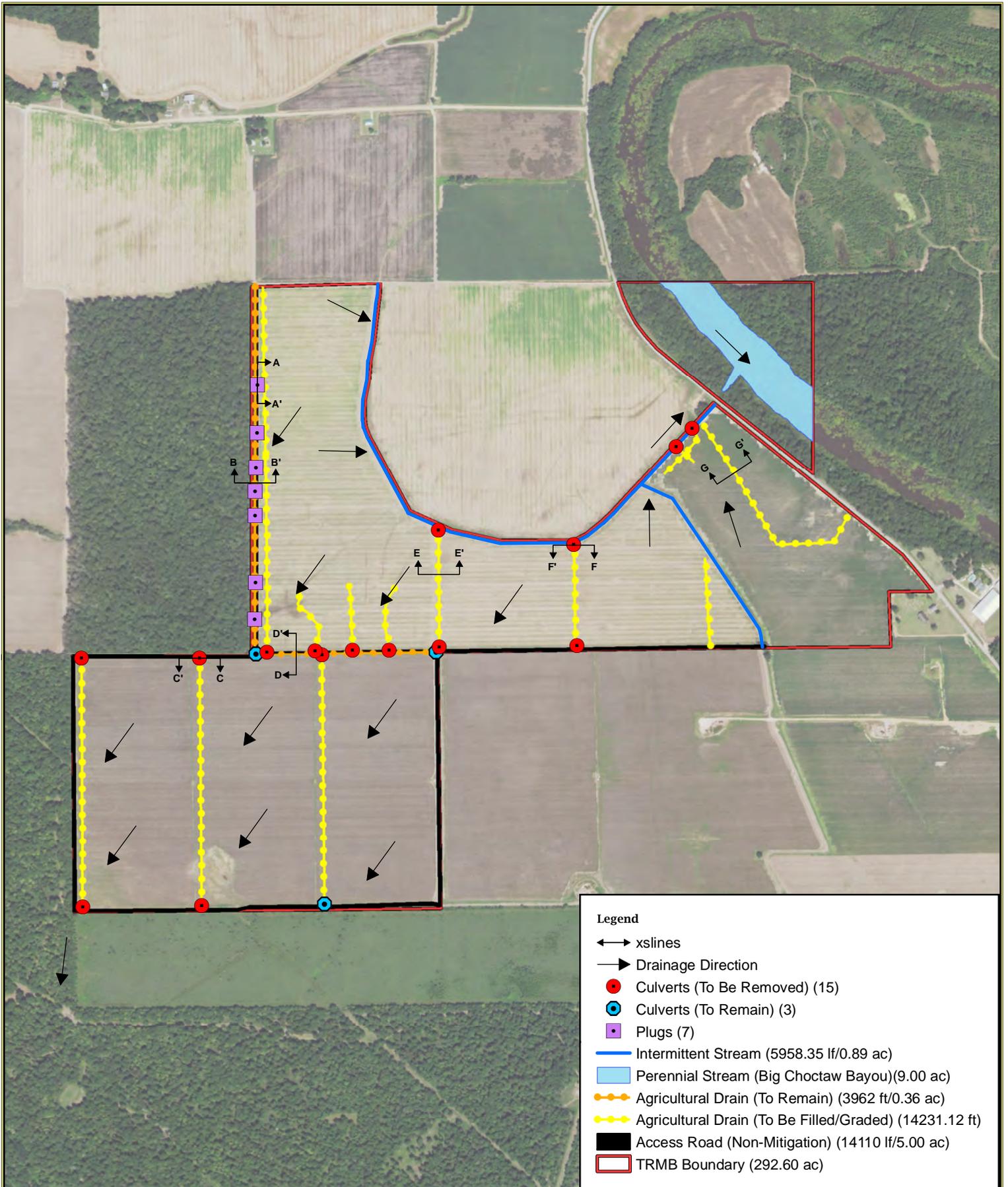
Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Figure 10 - Current Land Use Map



USDA NAIP 2017



Legend

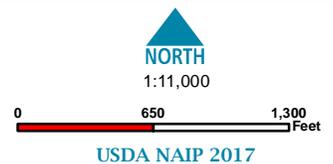
- ↔ xslines
- ➔ Drainage Direction
- Culverts (To Be Removed) (15)
- Culverts (To Remain) (3)
- Plugs (7)
- Intermittent Stream (5958.35 lf/0.89 ac)
- Perennial Stream (Big Choctaw Bayou)(9.00 ac)
- Agricultural Drain (To Remain) (3962 ft/0.36 ac)
- Agricultural Drain (To Be Filled/Graded) (14231.12 ft)
- Access Road (Non-Mitigation) (14110 lf/5.00 ac)
- ▭ TRMB Boundary (292.60 ac)



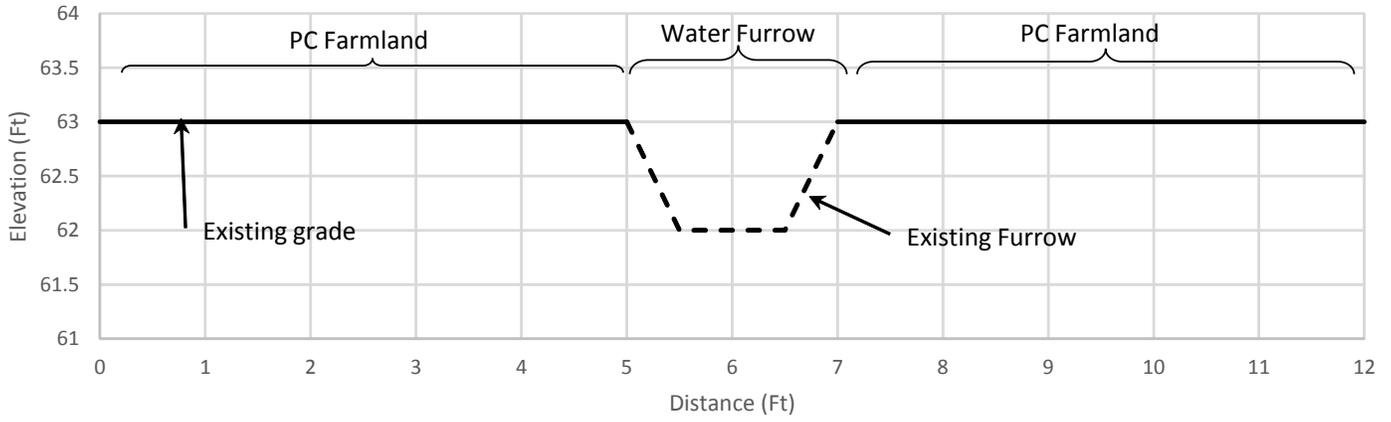
Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
 Sec 19, T 11 N, R 10 E
 Tensas Parish, Louisiana

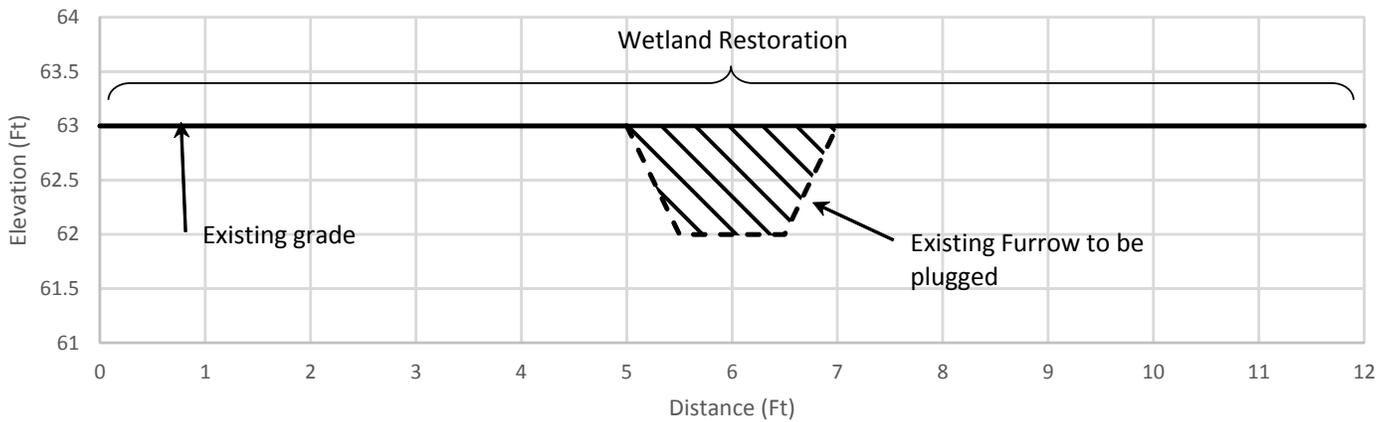
Figure 11 - Hydrologic Work Plan Map



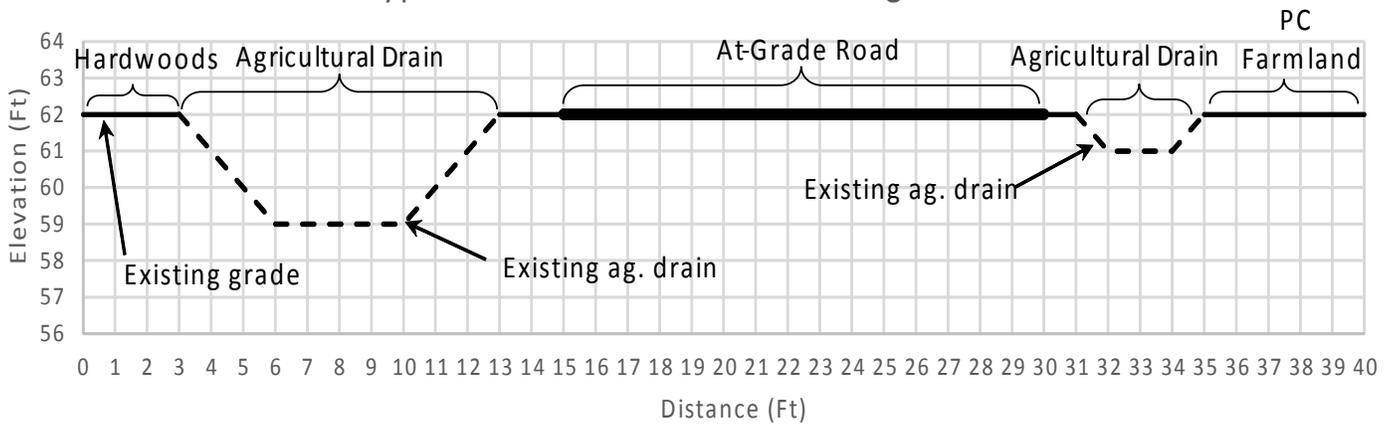
Typical Cross Section A - A' Existing Conditions



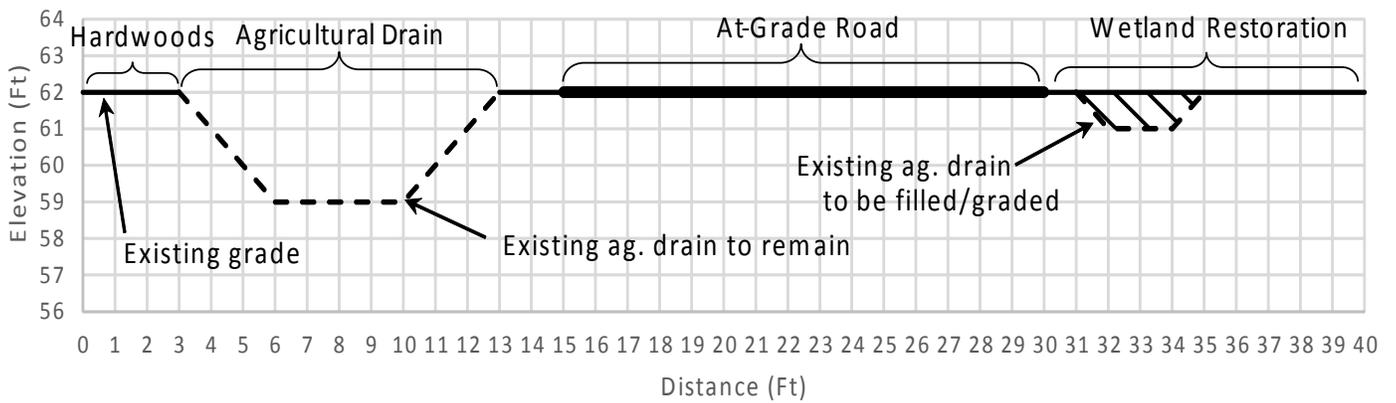
Typical Cross Section A - A' Proposed Conditions



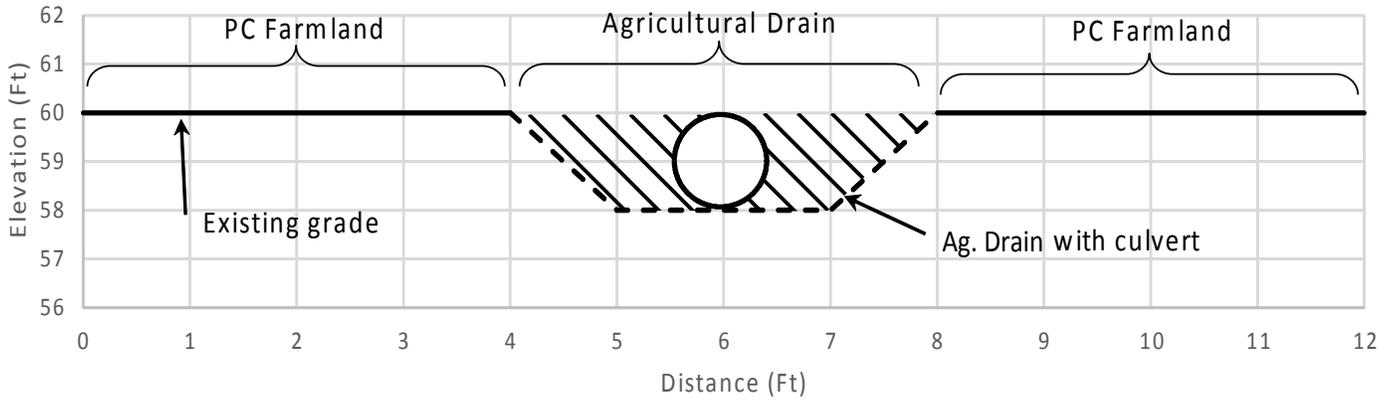
Typical Cross Section B - B' Existing Conditions



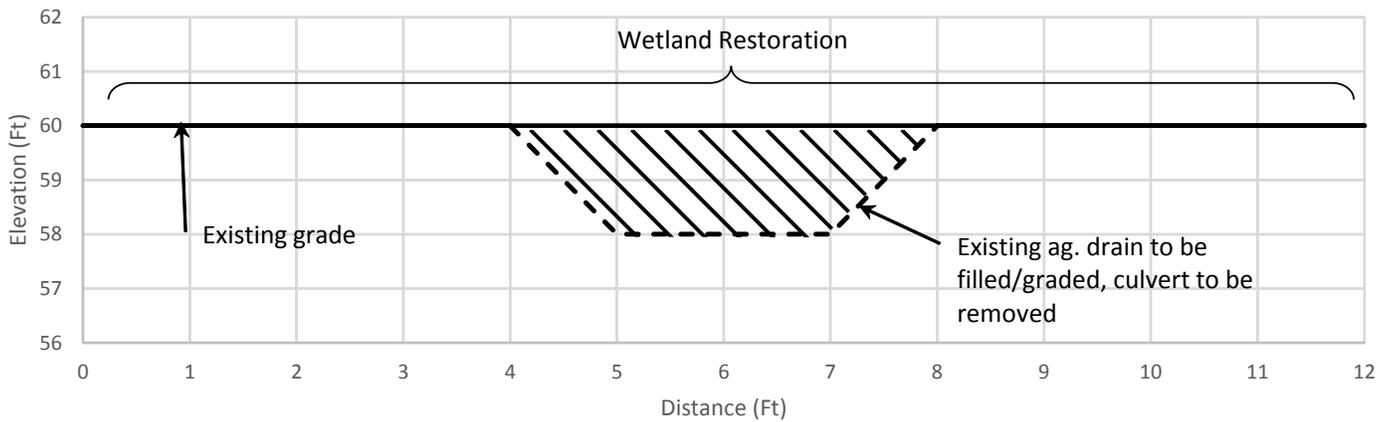
Typical Cross Section B - B' Proposed Conditions



Typical Cross Section C - C' Existing Conditions



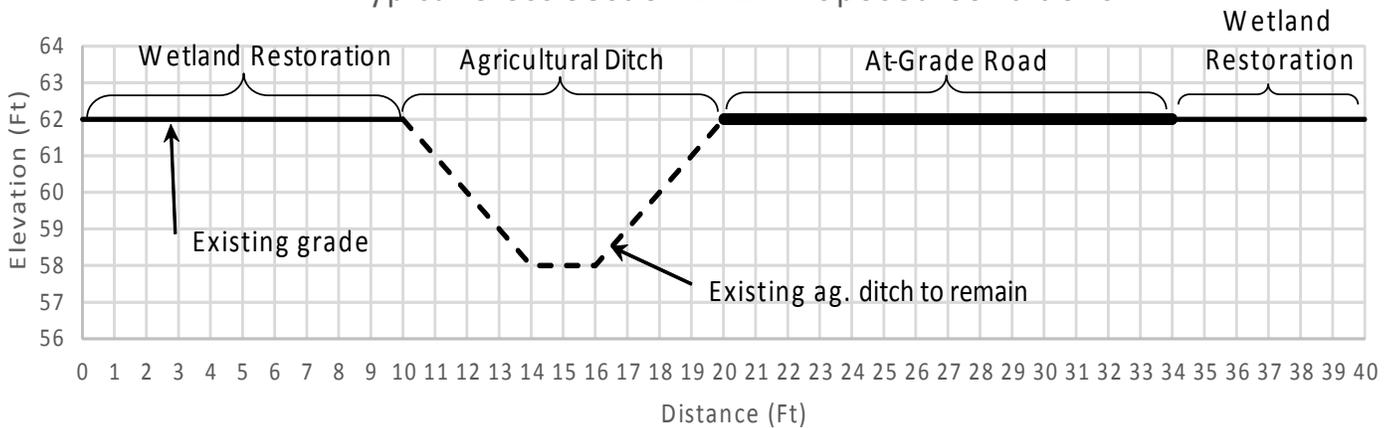
Typical Cross Section C - C' Proposed Conditions



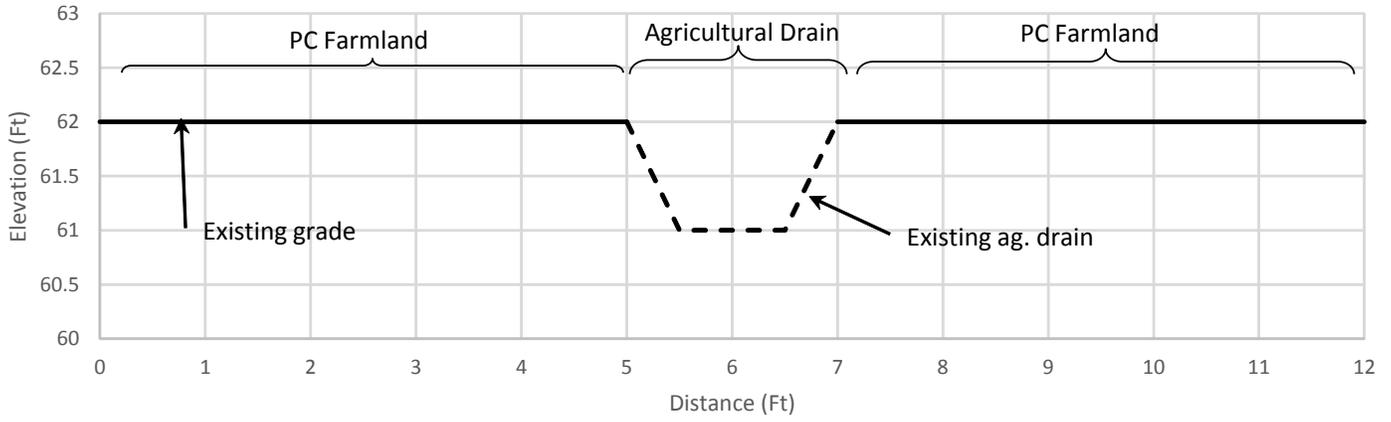
Typical Cross Section D - D' Existing Conditions



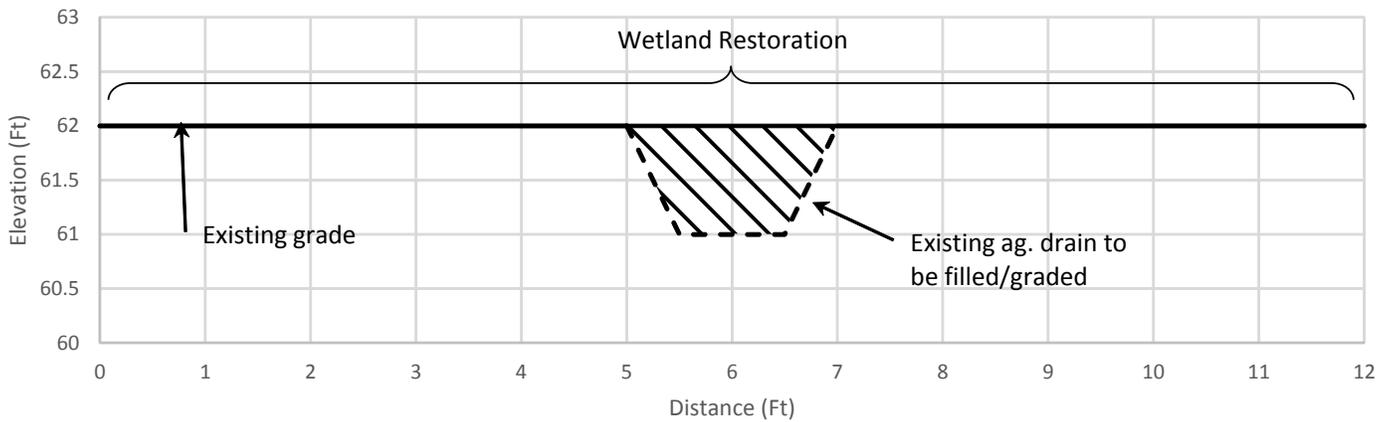
Typical Cross Section D - D' Proposed Conditions



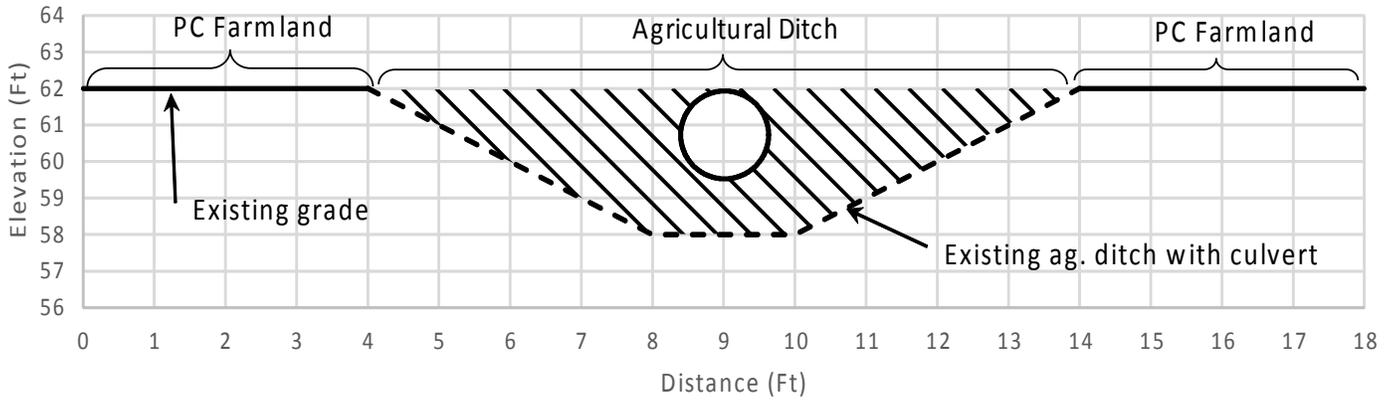
Typical Cross Section E - E' Existing Conditions



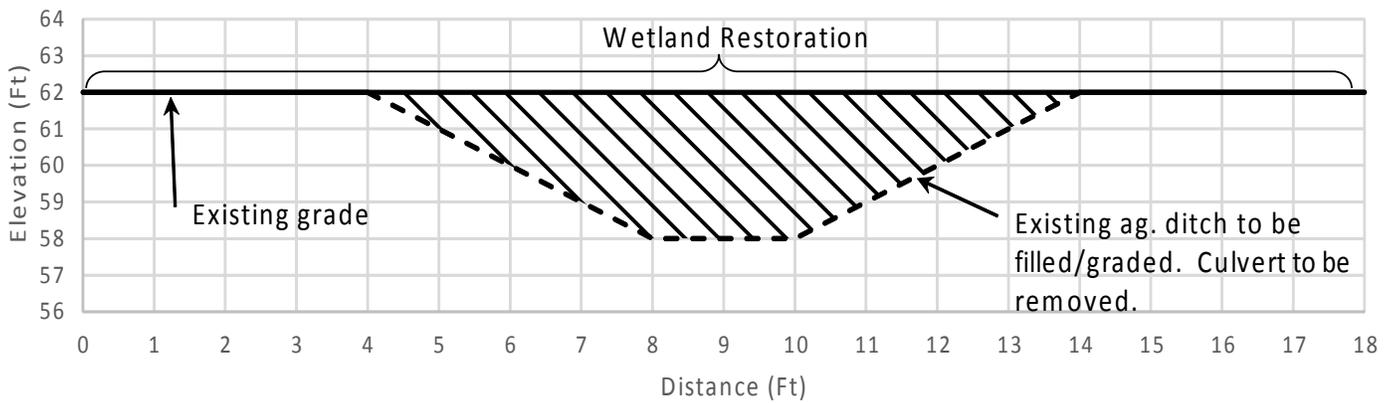
Typical Cross Section E - E' Proposed Conditions



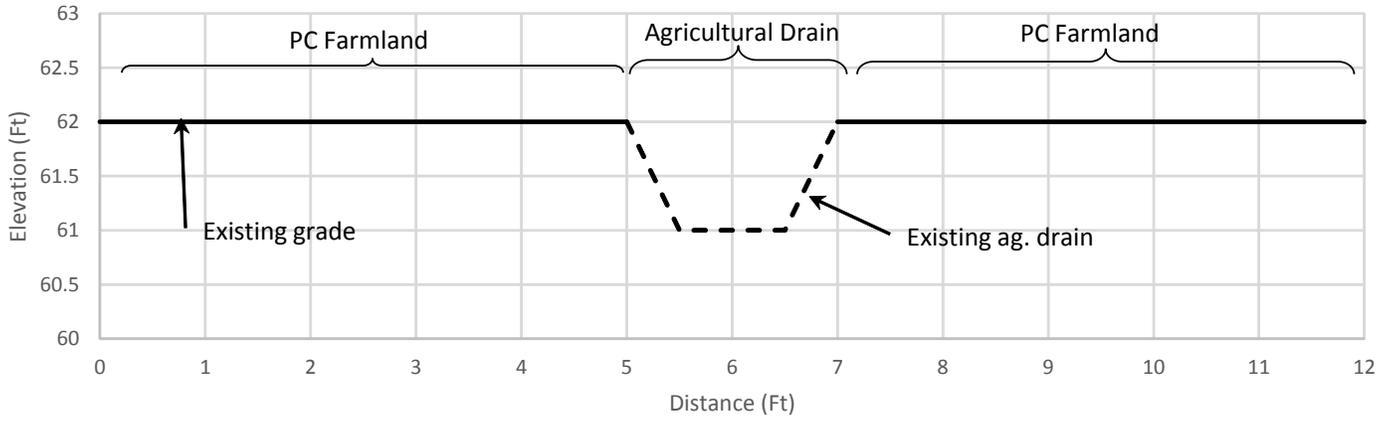
Typical Cross Section F-F' Existing Conditions



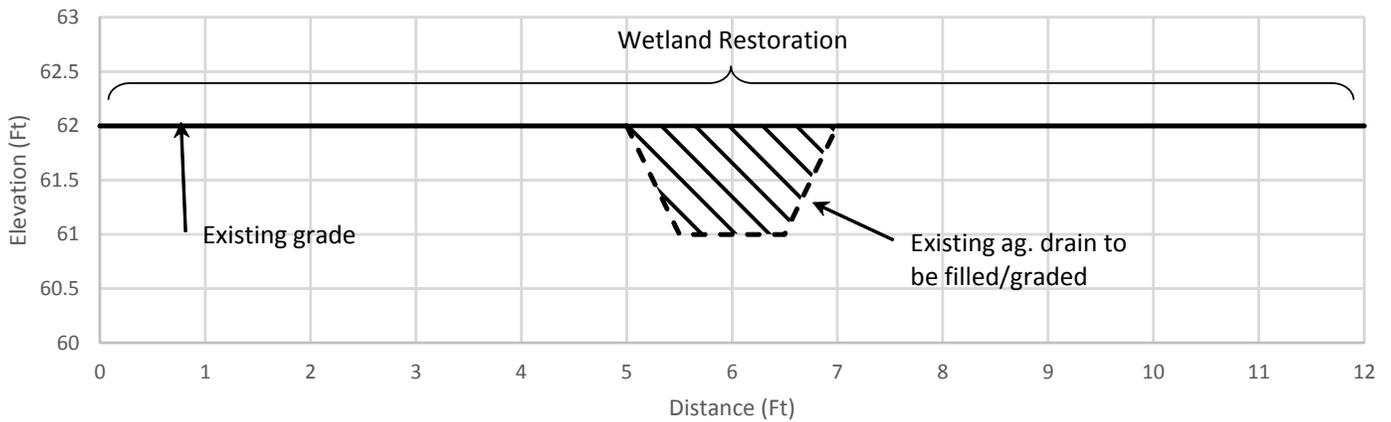
Typical Cross Section F - F' Proposed Conditions



Typical Cross Section G - G' Existing Conditions

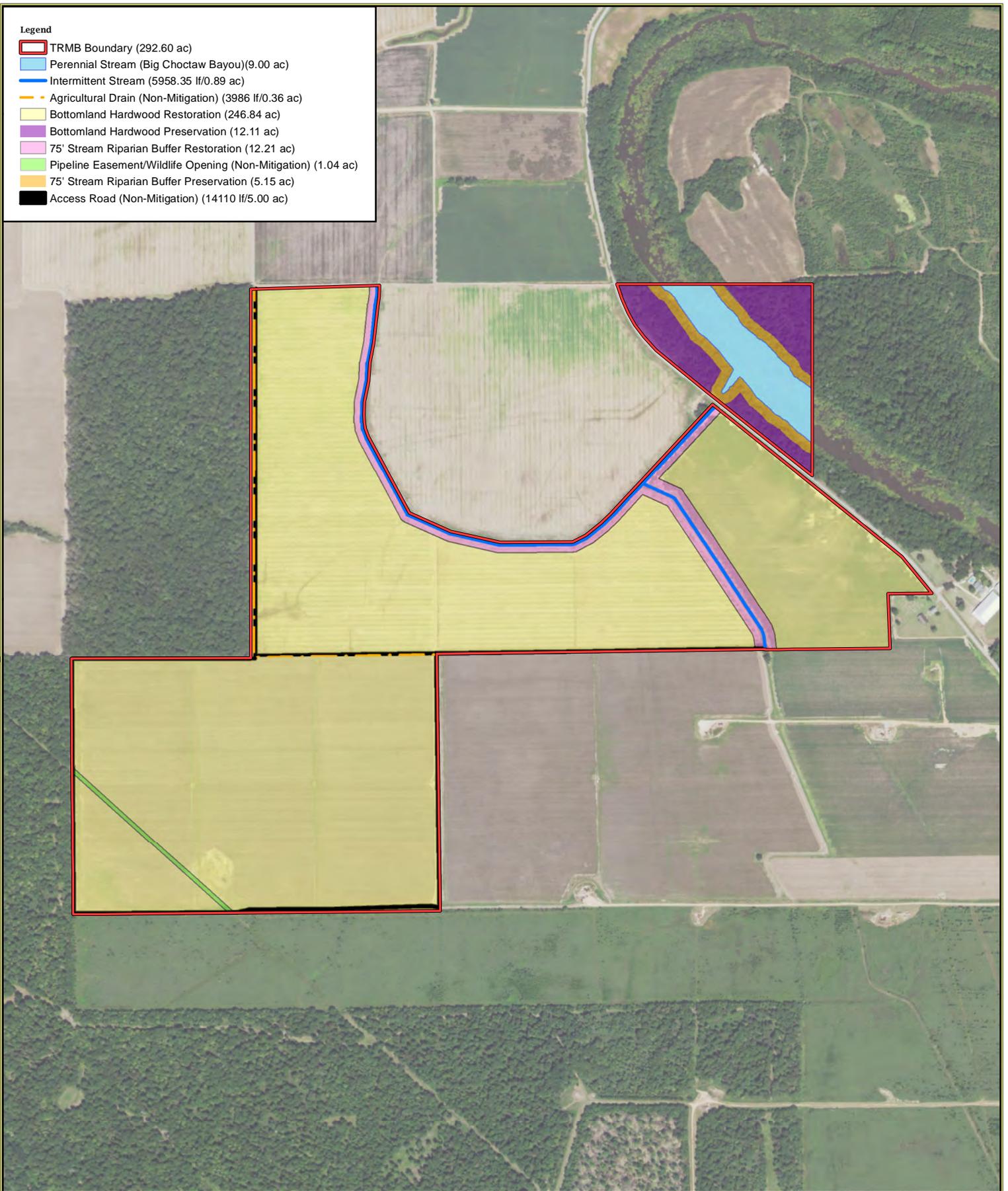


Typical Cross Section G - G' Proposed Conditions



Legend

-  TRMB Boundary (292.60 ac)
-  Perennial Stream (Big Choctaw Bayou)(9.00 ac)
-  Intermittent Stream (5958.35 lf/0.89 ac)
-  Agricultural Drain (Non-Mitigation) (3986 lf/0.36 ac)
-  Bottomland Hardwood Restoration (246.84 ac)
-  Bottomland Hardwood Preservation (12.11 ac)
-  75' Stream Riparian Buffer Restoration (12.21 ac)
-  Pipeline Easement/Wildlife Opening (Non-Mitigation) (1.04 ac)
-  75' Stream Riparian Buffer Preservation (5.15 ac)
-  Access Road (Non-Mitigation) (14110 lf/5.00 ac)



Tensas River Mitigation Bank
Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

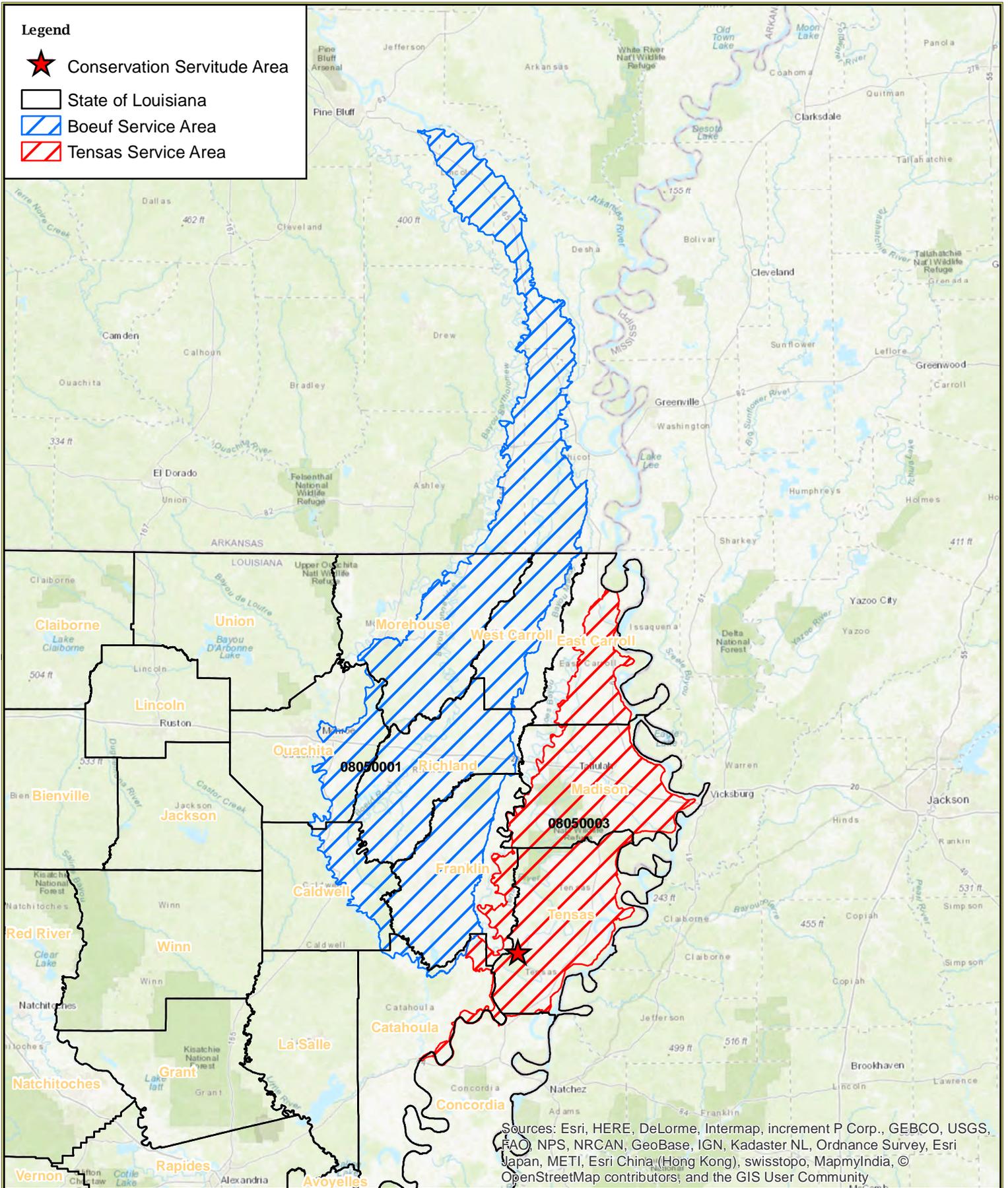
Figure 12 - Mitigation Plan Map



USDA NAIP 2017

Legend

- ★ Conservation Servitude Area
- State of Louisiana
- ▨ Boeuf Service Area
- ▨ Tensas Service Area



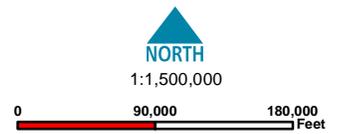
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

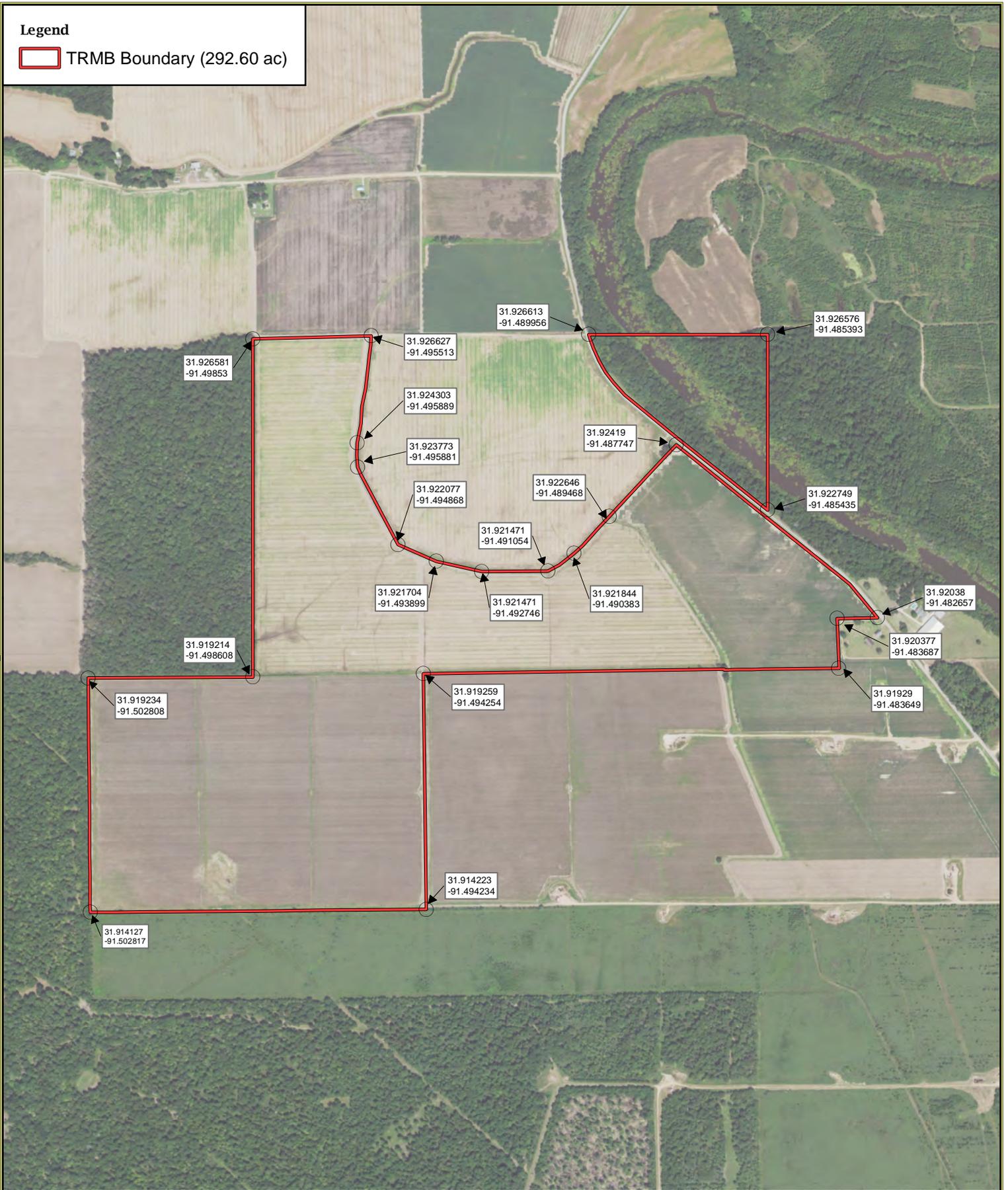
Figure 13 - Service Area Map



Appendices

Legend

 TRMB Boundary (292.60 ac)



Tensas River Mitigation Bank

Sec 24, T 11 N, R 9 E
Sec 19, T 11 N, R 10 E
Tensas Parish, Louisiana

Mitigation Bank Legal Survey



USDA NAIP 2017



DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS

4155 CLAY STREET

VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

June 23, 2016

Operations Division

SUBJECT: Determination of Permit Requirements – Triple S Farms, Inc., 225.40-Acre Proposed Mitigation Bank, Tensas Parish, Louisiana

Mr. J. Clay Cromwell
Headwaters, Incorporated
Post Office Box 2836
Ridgeland, Mississippi 39157

Dear Mr. Cromwell:

I refer to the information you submitted on behalf of Triple S Farms, Incorporated, in regards to a preliminary jurisdictional determination for the subject property located in Tensas Parish, Louisiana.

Based upon the information provided, including the information obtained from the local Natural Resources Conservation Service (NRCS), we have determined there are jurisdictional areas on the property subject to regulation pursuant to Section 404 of the Clean Water Act (CWA). The approximate extent of jurisdictional waters within the boundary of the property described in your letter is depicted on the enclosed preliminary map (enclosure 1). Any work involving the discharge of dredged and/or fill material (land clearing, ditching, filling, leveeing, etc.) within the limits of the jurisdictional areas identified will require a Department of the Army Section 404 permit prior to beginning work. I have enclosed a copy of an appeals form for this preliminary jurisdictional determination (enclosure 2).

Typically, agricultural land that is currently in row crops and classified as prior converted (PC) by the NRCS is considered non-jurisdictional under Section 404 of the (CWA). Normally, PC land contain drainage features that have reduced or altered the hydrologic regime on the site. This PC designation (non-jurisdictional status) remains in place as long as the property continues to be farmed and there is not a change in use. In this instance, the development of a mitigation bank would be considered a change in use. Based on the information provided, the property appears to contain hydric soils. During the review of the proposed mitigation bank, a determination will be made on the presence or absence of wetland hydrology on the property.

For your convenience, I am enclosing a Department of the Army permit application package, with instructions (enclosure 3). Your application for any proposed work in wetlands or other waters of the United States should be submitted at least 120 days in advance of the proposed starting date. To expedite the evaluation process, please refer to Identification No. MVK-2016-364 when submitting the application.

If you have any questions, please contact Mr. Aaron Posner of this office, telephone (601) 631-5591, fax (601) 631-5459, or e-mail address: aaron.w.posner@usace.army.mil.

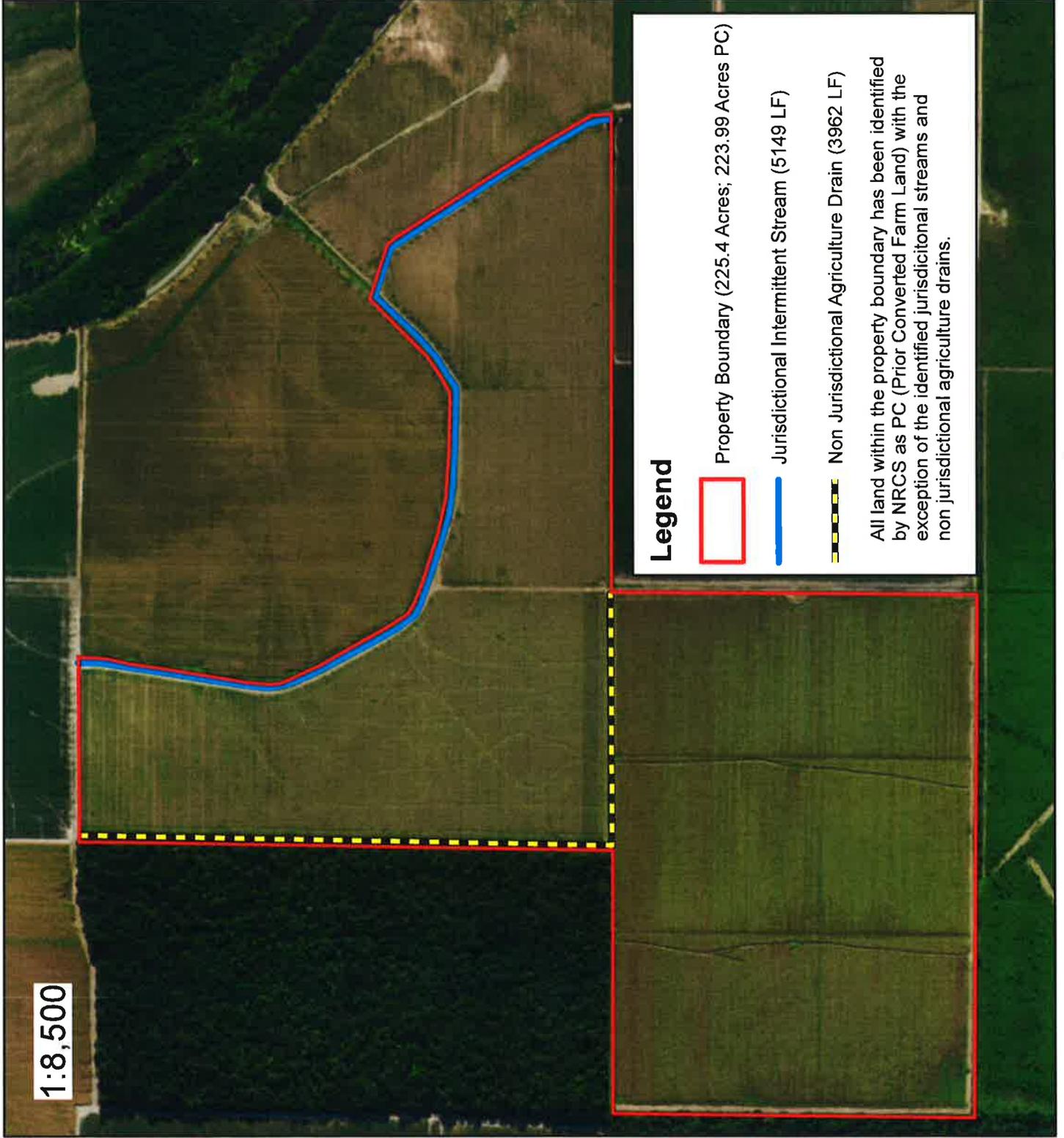
Sincerely,

A handwritten signature in black ink that reads "Charles R. Allred, Jr." in a cursive style.

Charles R. Allred, Jr.
Chief, Enforcement Section
Regulatory Branch

Enclosures

1:8,500



Tensas Parish, LA

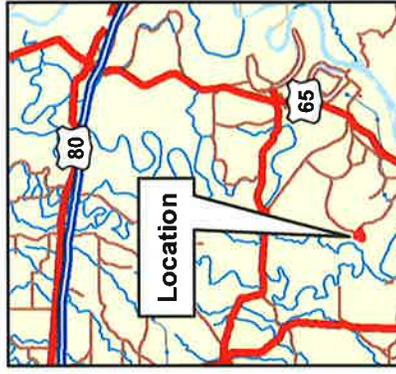


23 June 2016

MVK-2016-364

Triple S Farms
Proposed Mitigation Bank
225.40 Acre Parcel
Headwaters, LLC
Tensas Parish, LA
Preliminary
Jurisdictional Determination

Aaron Posner



**US Army Corps
of Engineers.**



Regulatory Branch

Enforcement Section



End 1



DEPARTMENT OF THE ARMY

VICKSBURG DISTRICT, CORPS OF ENGINEERS
4155 CLAY STREET
VICKSBURG, MISSISSIPPI 39183-3435

REPLY TO
ATTENTION OF:

September 5, 2019

Operations Division

SUBJECT: Determination of Permit Requirements – Triple S Farms, Inc., 67.20-Acre Addendum, Proposed Tensas River Mitigation Bank, Tensas Parish, Louisiana

Mr. J. Clay Cromwell
Headwaters, Incorporated
Post Office Box 2836
Ridgeland, Mississippi 39157

Dear Mr. Cromwell:

I refer to the information you submitted on behalf of Triple S Farms, Incorporated, in regards to a preliminary jurisdictional determination for the subject property located in Tensas Parish, Louisiana.

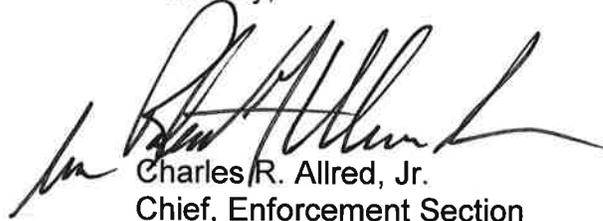
Based upon the information provided, including the information obtained from the local Natural Resources Conservation Service (NRCS), we have determined there are jurisdictional areas on the property subject to regulation pursuant to Section 404 of the Clean Water Act (CWA). The approximate extent of jurisdictional waters within the boundary of the property described in your letter is depicted on the enclosed preliminary map (enclosure 1). Any work involving the discharge of dredged and/or fill material (land clearing, ditching, filling, leveeing, etc.) within the limits of the jurisdictional areas identified will require a Department of the Army Section 404 permit prior to beginning work. I have enclosed a copy of an appeals form for this preliminary jurisdictional determination (enclosure 2).

Typically, agricultural land that is currently in row crops and classified as prior converted (PC) by the NRCS is considered non-jurisdictional under Section 404 of the (CWA). Normally, PC land contain drainage features that have reduced or altered the hydrologic regime on the site. This PC designation (non-jurisdictional status) remains in place as long as the property continues to be farmed and there is not a change in use. In this instance, the development of a mitigation bank would be considered a change in use. Based on the information provided, the property appears to contain hydric soils. During the review of the proposed mitigation bank, a determination will be made on the presence or absence of wetland hydrology on the property.

For your convenience, I am enclosing a Department of the Army permit application package, with instructions (enclosure 3). Your application for any proposed work in wetlands or other waters of the United States should be submitted at least 120 days in advance of the proposed starting date. To expedite the evaluation process, please refer to Identification No. MVK-2016-364 when submitting the application.

If you have any questions, please contact Mr. Robert Ulmer of this office, telephone (601) 631-5637, or e-mail address: robert.g.ulmer@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles R. Allred, Jr.", written in a cursive style.

Charles R. Allred, Jr.
Chief, Enforcement Section
Regulatory Branch

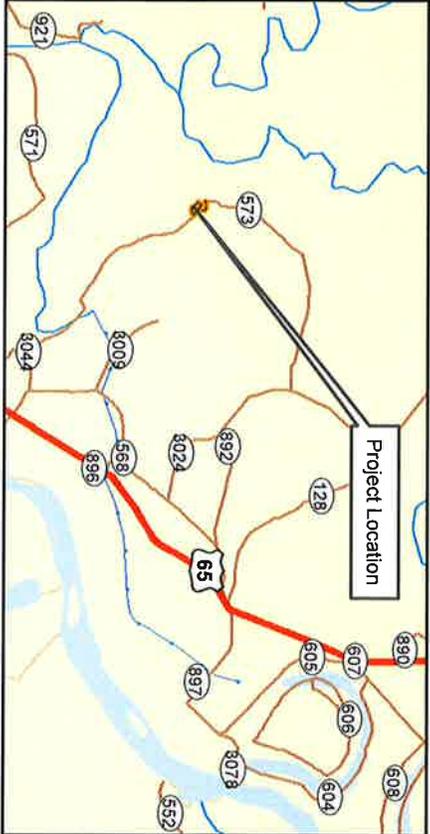
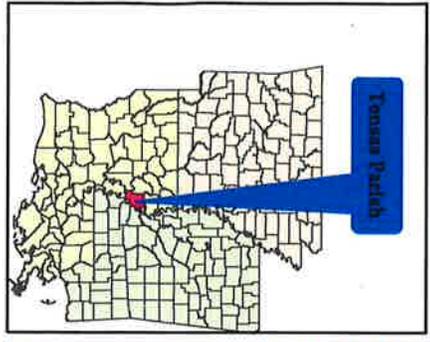
Enclosures

enc (1)



Legend

-  Project Area
-  Ephemeral Stream
-  Other Waters
-  Wetlands



September 5, 2019
MVK-2016-364
 Applicant:
 Triple S Farms
 Proposed Work:
 Proposed Mitigation Bank
 Location:
 Section 24, T11N-R9E
 Gretna Green, Quadrangle
 Tensas Parish, LA
 Map Background:
 NAIP Aerial (2010)
 Prepared by:
 Robert G. Ulmer, Jr.
Jurisdictional Determination
Preliminary

 **US Army Corps of Engineers**



Regulatory Branch
 Enforcement Section

0 490 980
 Feet