PROSPECTUS
LOWER BIG BLACK MITIGATION BANK
MVK-2018-317

COPIAH COUNTY, MISSISSIPPI

Sponsored by
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Thibodaux, Louisiana 70301

Submitted to:
U.S. Army Corps of Engineers, Regulatory Branch
Vicksburg District

June 2018

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1.0 INTRODUCTION

Wesson Timber, LLC (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 Lower Big Black Mitigation Bank (LBBMB) pursuant to the plan to establish a bottomland hardwood wetland and stream mitigation bank in the upper reaches of the Bayou Pierre watershed Hydrologic Unit Code (HUC) 08060203. The prospectus has been prepared in accordance with the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (Federal Registry/Vol. 73, No. 70/Thursday, April 10, 2008/Rules and Regulations) and with guidance presented by the U.S. Army Corps of Engineers (USACE), Vicksburg District, Prospectus (33 CFR §332.8(d)(2)/40 CFR §230.98(d)(2)). 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 LBBMB proposal.

1.1 Bank Sponsor and Owner Wesson Timber

Wesson Timber, LLC is the Sponsor of the LBBMB. The land will be owned in fee simple by Wesson Timber, LLC prior to the placement of the conservation easement. Wesson Timber, LLC will assume long term ownership and management of the LBBMB. Wesson Timber, LLC will remain as the bank Sponsor assisting with establishment and long-term management of the bank.

1.2 Site Location

Wesson Timber, LLC owns in fee simple 325.21 acres of land. The planned LBBMB will consists of approximately 279.66 acres of land that abuts Bayou Pierre along the west bank within the community of Wesson, Copiah County, Mississippi. As planned, the remaining 45.55 acres positioned within the southwest portion of the property and occupied by a forested upland habitat would remain in timberland and managed in similar fashion as the Bank Property described within this prospectus document. The LBBMB may be accessed from U.S. Interstate 55 taking Exit 51 and proceeding west along Sylvarena Road 1.4 miles to the intersection of Pleasant Lane. Proceeding north along Pleasant Lane 0.5 miles to the intersection of a gravel road being the primary entrance to the LBBMB. Access is provided within the southwest corner of LBBMB. Interior access throughout the property is relegated to UTV or foot travel. The LBBMB is located within the southern portion of Copiah County approximately 42 miles south of the City of Jackson, 12.3 miles north of the City of Brookhaven and 57 miles west of the City of Natchez within Copiah County, Mississippi (Figure 1). The LBBMB is more specifically located within portions of Sections 13, 14 and 24, Township 9 North, and Range 7 East, Copiah County, Mississippi (Figure 2).

The LBBMB is bordered to the north by undeveloped forestland, to the west and south by undeveloped forestland and rural residential. The property extends to the thawleg (centerline) of Bayou Pierre comprising the east property boundary with the extent of the property located within the Bayou Pierre floodplain. Sylvarena Road is located in close proximity to the south and U.S. Interstate 55 is also located in close to the east (Figure 3).

The LBBMB is located within the Big Black River Basin HUC 080602 and specifically the Bayou Pierre watershed HUC 08060203 found within the South Independent Streams Basin HUC 080602. The service area for LBBMB is proposed as the Bayou Pierre HUC 08060203 and the Lower Big Black HUC 08060202, all of which is located within the 6 digit HUC 080602 watershed of the Lower Big Black River. The Bayou Pierre drainage area covers approximately 1,070 square miles and extends over portions of Hinds, Claiborne, Copiah, Lincoln, and Jefferson County, Mississippi. The LBBMB is located within the southern portion of Copiah County, Mississippi and the Bayou Pierre watershed 8 digit HUC 08060203 (Figure 4).

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

2.0 PROJECT GOALS AND OBJECTIVES

LBBMB is bordered along the east boundary by a reach of Bayou Pierre, flowing north before converging with the Mississippi River approximately 56 miles northwest of the Bank Property. Additional, an unnamed intermittent and perennial tributary of Bayou Pierre transects portions of the LBBMB south to north across the property and converges with Bayou Pierre to the north of the Bank Property. The design of the LBBMB will provide the opportunity to enhance multiple stream channels, in which the natural flow regime has been altered due to culverts, road crossings, and other impediments described within this prospectus document. The LBBMB will also restore the riparian buffer zones along Bayou Pierre and its tributaries located within Bank Property. The tributaries are located flowing throughout the LBBMB property in a south to north orientation. The LBBMB is also abutting the existing bottomland hardwood forests to the north and south allowing the Sponsor to reduce habitat fragmentation by restoring the forestlands within the floodplains of the Bayou Pierre and the Bayou Pierre watershed.

The existing bottomland hardwood forests that adjoin the Bank Property stretch north and south along Bayou Pierre and its tributaries. The property to the west and south are predominately occupied by open fields and loblolly pine plantations utilized for agricultural production purposes. Rural residential is also located in proximity to the Bank Property but is concentrated along Sylvarena Road to the south. LBBMB will further promote the restoration of bottomland hardwood forest and riparian buffers along Bayou Pierre and its tributaries within Copiah County, Mississippi particularly within the upper reaches of this basin. The project will further reduce fragmentation of forestland within this region and provide connectivity to both primary drainage features within the upper portions of the Bayou Pierre watershed. The LBBMB project would remove the ongoing silviculture activities as pine timber management within the Bank Property and restore the Bank Property to its historic bottomland hardwood ecosystem within the Bayou Pierre watershed. Historical imagery depicts the majority of the Bank Property as native bottomland hardwood forestland as recently as 2006 (Figure 5).

As previously described, the goal of the LBBMB is to provide the opportunity to restore 114.21 acres and enhance 20.47 acres of bottomland hardwood forested wetland habitat. The LBBMB

will also provide the rare opportunity to enhance stream channels within the Bank Property. More specifically, it is proposed to increase the functions and services of 11,542.91 linear feet (2.18 miles) of stream channels including the restoration of riparian buffer zones along either bank of the stream channels within the Bank Property. Further, the Bank Property provides the opportunity to restore and protect 8,253.84 linear feet of Bayou Pierre and associated riparian buffer zone along the west bank within the boundary of the Bank Property. The planned riparian buffer and stream enhancement activities would be conducted in cohesion with the wetland restoration work plan described within the contents of this prospectus document.

Table 1: Current Habitat Types and Land Uses for LBBMB (Figure 6)

Habitat Type	Acreage	Linear Feet	Percentage
Pine Forested Wetlands	152.35		55%
BLH Wetlands	8.14		3%
Emergent Wetlands	2.76		1%
Scrub/Shrub Wetlands	12.33		4%
Intermittent Streams	0.37	1,620.84	1%
Perennial Streams	4.54	9,922.07	1%
Bayou Pierre	4.73	8,247.75	1%
Uplands	94.44		34%
TOTALS	**279.66**	**19,790.66**	**100.0%**

Table 2: Proposed Mitigation Bank Habitat Types for LBBMB

Proposed Mitigation Type	Current Habitat Type	Linear Feet	Acreage	Total Acres
BLH Wetland Restoration	Pine Forested Wetlands		114.21	114.21
BLH Wetland Enhancement	BLH Wetlands & Scrub/Shrub Wetlands		20.47	20.47
Upland Buffer	Pine Forestlands		43.21	43.21
Riparian Buffer Restoration	Various Habitat Types		80.91	80.91
In Stream Enhancement	Intermittent Stream	1,620.84	0.37	4.91
	Perennial Stream	9,922.07	4.54	
Non-Mitigation	Bayou Pierre	8,253.84	4.73	4.73
Non-Mitigation	Wildlife Openings		4.29	4.29
Non-Mitigation	Interior Access Roads		6.93	6.93
Total		19,796.75	279.66	279.66

3.0 ECOLOGICAL SUITABLITY OF THE SITE

3.1 Historic Site Conditions

LBBMB is located within the Community of Wesson and the lower portion of Copiah County, Mississippi. Copiah County is located in the southwest part of Mississippi having a total land area of 499,840 acres. The eastern portion of the county is bounded by the Pearl River. The eastern portion of the County is primarily drained via the Pearl River, which flows south into Lake Borgne and eventually discharging into the Gulf of Mexico. The central and northwest portions of the County is primarily drained by Bayou Pierre, which flows north and west before converging with the Mississippi River in Claiborne County, Mississippi approximately 56 miles to the northwest. The southwestern portion of the County is drained by the Homochitto River, which flows south and west before converging with the Mississippi River approximately 55 miles to the southwest. Historically, Copiah County was mainly a farming area with primary crops of cotton and soybeans. The LBBMB lands are currently, and have been historically, used for silviculture purposes.

3.2 Summary of Current Site Conditions

3.2.1 Current Land Uses

The vast majority of the LBBMB property is utilized for silvicultural purposes. Alterations to the historic landscape would include interior roadways, surface borrow, rutting, and drainage improvements in support of the silviculture activities. Beaver activity is also present within the Bank Property further altering the historic or relic hydrologic regime. The current land use for timber production purposes is similar to the adjacent properties with the exception of the mono cultural pine production.

3.2.2 Current Vegetation

Pine Forested Wetlands – This habitat type is broadly characterized as a planted loblolly pine forest cover type resultant of a post-harvest regeneration prescription. The current forest cover types lack the diversity and development to adequately transition to a bottomland hardwood forest cover type adapted to alluvial soils and frequent flooding. Intensive management also eliminates competition with native or naturally regenerating species. This habitat is located throughout the Bank Property within the low lying and upland habitat types. Alterations to historic hydrology was completed prior to the initial conversion to support the pine mono cultural habitat being non-native to this floodplain region of Bayou Pierre. Loblolly pine plantations are planted as short rotation to maximize timber production.

Soil colorations within the pine forested wetland habitat was observed as ranging from 10YR 5/2 (grayish brown) to 10YR 6/2 (light brownish gray) using the Munsell Soil Color Chart. Distinct or prominent redox concentrations are present (~5-20%) with a soil color of 5/6 to 5/8 (yellowish brown) on the 10YR chart.

Scrub-Shrub Wetland- The scrub-shrub wetlands within the property were historically managed as part of the pine forested habitat but in more recent years this portion of the property has been altered by beaver activity and surface water impairments. Encroachment within this habitat has been inconsistent but the persistent water has maintained a mixed hardwood timber stand comprised heavily of soft mast components. Species composition within the scrub shrub wetland includes loblolly pine (*Pinus taeda*), black willow (*Salix nigra*), willow oak (*Quercus phellos*), red maple (*Acer rubrum*), overcup oak (*Quercus lyrate*), buttonbush (*Cephalanthus occidentalis*), green ash (*Fraxinus pennsylvanica*), groundsel tree (*Baccharis halimifolia*), lamp rush (*Juncus effusus*) and cotton grass bulrush (*Scirpus cyperinus*) were also observed. In terms of a regenerating bottomland hardwood habitat, the species composition within the scrub- shrub habitat would be considered degraded. Additionally, the presence of the invasive Chinese tallow further degrades this habitat. The landscape of the beaver influenced area is evidenced by the lack of overstory canopy and desirable species composition.

Soil colorations within the scrub shrub wetland habitat was observed as ranging from 10YR 5/2 (grayish brown) to 10YR 6/2 (light brownish gray) using the Munsell Soil Color Chart. Distinct or prominent redox concentrations are present (~5-20%) with a soil color of 5/6 to 5/8 (yellowish brown) on the 10YR chart.

Bottomland Hardwood Forested Wetlands – The bottomland hardwood forested wetland habitats encountered on the Bank Property are more

depressional topographically and experience extended periods of inundation. These habitats serve to facilitate hydrology internally through the property as well as assist in the stabilizing the hydroperiod at normal water levels. These systems are critical in that they serve as important nutrient sinks and nutrient cycling complexes as well as by providing critical habitat functions. These areas are permanently to semi-permanently inundated depressions that receive nutrient input during increased hydroperiods and serve to store and later cycle the nutrients through plant uptake. These slough bodies also serve as vital habitat for certain piscivorous species as well as amphibians and reptiles. Wintering waterfowl also derive benefit from this type of habitat. While some of the bottomland hardwood forested habitats plant communities exist today others were noted as lacking the mid-story and overstory cypress and tupelo species that likely historically was present. Even with non-persistent inundation, an increased hydroperiod is evident within these areas, which has delayed vegetative regeneration and recruitment. Species found within the bottomland hardwood forested wetland habitats include river birch, button bush, black willow, red maple, sycamore, bald cypress, tupelo gum, swamp smartweed, ladies eardrop, wool grass, *Panicum* spp., *Juncus* spp., and *Cyperus* spp.

Soil colorations within the bottomland hardwood forested wetland habitats were observed as ranging from 10YR 5/2 (grayish brown) to 10YR 6/2 (light brownish gray) using the Munsell Soil Color Chart. Distinct or prominent redox concentrations are present (~15-20%) with a soil color of 5/6 to 5/8 (yellowish brown) on the 10YR chart.

Non-Wetland and Forested Uplands – The non-wetland and forested uplands are primarily located along and adjacent to the stream banks of Bayou Pierre as part of natural first terrace fronts. This is inclusive of a portion of the acreage planted in loblolly pine plantation. These habitats are defined by their landscape position or topography but are similarly managed for loblolly pine plantations. Other uplands may be found along the immediate banks of the smaller tributaries located within the central portion of the Bank Property.

3.2.3 Current Hydrology

The field reconnaissance confirmed the presence of one (1) main drainage system with a series of perennial streams that transect the central portion of the Bank Property in a south to north orientation. The perennial streams can be considered a braided system with defined channels, mean width of approximately 20 feet and all of which flow into Bayou Pierre off site to the north. The presence of the unnamed perennial streams provides the primary source of storm water runoff relief for the Bank Property. Given the general characteristics, these stream channels are believed to have persistent or continuous flows.

In addition, one (1) secondary drainage feature considered as an intermittent stream is located within the northwest corner of the Bank Property. The intermittent stream channel has a mean width of approximately 10 feet, similarly flowing to the north and northeast into Bayou Pierre off site to the north. The presence of the intermittent stream contains seasonal flows and provide the

secondary drainage source for storm water runoff for the west portion of the property.

Bayou Pierre makes up the east boundary of the Bank Property. Bayou Pierre contains a mean width of approximately 60 feet and is considered the property's primary drainage feature. Bayou Pierre has flows in a northerly direction before converging with the Mississippi River approximately 56 miles to the north and northwest.

The field reconnaissance also identified relic stream scars along Bayou Pierre that are current considered shallow warm water forested wetland habitats. These depressional habitats located along the west bank of Bayou Pierre within the limits of the Bank Property. In some cases, they are located in line with linear systems being recharged via overland flows and flooding events. These depressional habitats are considered as bottomland hardwood forested wetland habitats and are separate from the remaining pine forested habitats due to persistent water and vegetative components remaining although degraded due to timber harvesting and land conversions.

The current hydrology has been altered from the historical hydrologic regime through property alterations associated with the conversion to loblolly pine plantation and general silvicultural activities that have taken place. At the time of the original conversion, surface mining activities were conducted in locations for the general improvements to interior access roads, loading sites, stream crossings, etc. Further improvements included the realignment of streams to improve drainage within the Bank Property to promote the growth and establishment of loblolly pine as a short rotation timber stand. Although prominent bedding was not observed, soil disturbance is present throughout portions of the Bank Property that can be considered an alteration to the natural elevations and drainage patterns. Beaver activity was also observed in numerous locations within stream reaches and general low-lying habitat impeding natural sheet flows across the site.

The current topography continues to convey storm water runoff through the Bank Property towards Bayou Pierre and its tributaries. During periods of high rainfall and backwater events, flooding events will extend floodwaters from Bayou Pierre and other perennial streams across large portions of the Bank Property. The degradation and filling of ditches, surface mining sites and forestry rutting will restore natural sheet flow across the property and flow through the open water sloughs that remain within the site. This will promote the restoration of the historic hydrologic regime within the Bank Property by reducing flow concentrations, flow velocities and restoring the natural overbank flooding patterns. Additionally, removal of in-stream impediments caused by road crossings, culverts, and beaver activity will alleviate backwater congestion; promote exchange of surface and subsurface waters, and the transfer of materials between the stream channels, wetlands, and floodplain networks present within the Bank Property. The current hydrology of the Bank Property is depicted in Figure 7.

3.2.4 Historic Hydrology

The Bank Property is located within the Bayou Pierre watershed with portions of the storm water flows conveyed through Bayou Pierre and its unnamed tributaries. Bayou Pierre is also a direct tributary of the Mississippi River and the two (2) systems converge approximately 56 miles to the northwest of the Bank Property. The drainage area associated with the Bank Property is collectively approximately 42,940 acres that, as described, flow through the Bank Property prior to the convergence of the Bayou Pierre with Mississippi River. Given this, the Bank Property is specifically located within the upper reaches of the Bayou Pierre watershed.

Historic hydrology is believed to occur from south and southwest across the site via sheet flow and through unnamed tributaries of Bayou Pierre. Sources of hydrology on the Bank Property include rainfall, sheet flow and overbank flooding of Bayou Pierre and its direct tributaries. The historic hydrology of the Bank Property and the adjacent properties are depicted in Figure 8.

3.2.5 Mapped Soil Types

Soils – As evidenced by the *Soil Survey for Copiah County Mississippi*, published in October 1980 by the USDA - Soil Conservation Service [now Natural Resources Conservation Service (NRCS)], the soils on the subject property primarily consist of Gillsburg silt loams (Gb) (98%) and Oaklimeter silt loam (Ok) (2%) (Figure 9).

The Gillsburg soil series are somewhat poorly drained soils formed in silty alluvial. They occur on broad flood plains. The surface layer is dark grayish-brown silt loam. The subsoil is brown silt loam with pale brown mottles underlain with light brownish gray silt loam mottled with yellowish brown.

The Oaklimeter soil series are moderately well drained soils occurring on floodplains and low terrace bordering streams that drain the Southern Mississippi Valley Silty Uplands. These soils are moderately permeable and formed in silty alluvium. The surface layer is a brown silt loam. The subsoil is a yellowish-brown silt loam. It is underlain by several feet of gray clay mottled with dark yellowish-brown.

3.2.6 Property Encumbrances

The LBBMB property is considered as one (1) contiguous parcel of land with no encumbrances that would affect the restoration and hydrology work plan presented by the Sponsor.

3.2.7 Adjacent Property Development

LBBMB and adjacent property is within unincorporated land of Copiah County. LBBMB is connected to and primarily surrounded by natural tributaries and forested wetland areas, including large forestlands located along Bayou Pierre. As described, Bayou Pierre makes up the east boundary and flows to the north. When

considering a one (1) mile radius around the Bank Property, the current land use type consists of 73% forestland, 12% open field/pasture, 8% rural developed, 5% scrub/shrub and 2% open water (Figure 10).

The LBBMB is positioned between a larger contiguous bottomland hardwood habitat considered as a riparian buffer along Bayou Pierre. The Bank Property however, was converted to a loblolly pine monoculture habitat type and managed intensively for short rotation timber production purposes. The property improvements to increase drainage and promote the growth and establishment of pine has altered the natural and historic ecosystem within this watershed. the project will provide the opportunity for the current owners (Sponsor) to restore the historic bottomland hardwood forested habitat along the immediate banks of Bayou Pierre. The project will also provide the opportunity to restore stream reaches thereby improving floodplain connectivity within the upper reaches of Bayou Pierre. As mentioned, the significance of the Bank Property is located within the floodplain of Bayou Pierre and therefore would planned restoration activities would provide the opportunity to increase the functions and services of the entire system beginning within the headwaters of Bayou Pierre. A result of these activities will be a reduction in non-point source pollution filtration increasing water quality downstream from the project site.

3.2.8 Preliminary Jurisdictional Determination

The LBBMB property was delineated in December 2017 and March 2018 by Headwaters, Inc. A copy of the wetland delineation report was submitted to the USACE for review during March 2018. Headwaters is working with the USACE through the review of the delineation efforts.

3.3 Water Rights and Hydrological Influences

3.3.1 Water Rights

The State of Mississippi 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

3.2.2.1 Water Sources and Losses

The sources of water to the project area are currently direct precipitation and surface flow from adjacent land from the south to north. Additionally, overland flooding from Bayou Pierre and its tributaries provides a source of surface water during normal seasonal flooding events. Storm water flows across the site generally via overland flows into drainages interconnected to Bayou Pierre. Bayou Pierre is considered a direct tributary of the Mississippi River, located to the northwest of the Bank Property.

Copiah County is located within the southwestern part of Mississippi. Bayou Pierre transects the western portion of the County while the Pearl River forms the east boundary of the County. Other notable streams include Homochitto River, Haley Creek, and Brushy Creek.

The total annual average precipitation is 56+\- inches. Of this, 27 inches, or 48 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. This site is comprised primarily of Gillsburg soils which, in this area, typically have a seasonal high-water table between the 12 to 24 inches below the surface during the months of December and April.

3.4 Water Quality

Based upon the Mississippi Department of Environmental Quality (MDEQ) 2016 listing for impaired waterbodies (303d), the Bayou Pierre (waterbody ID 602812) in Claiborne County near Carlisle from the confluence with Storm Creek to the 6029 MWS boundary near the confluence with Whiskey Branch is impaired due to pH.

Bayou Pierre flows north and west from the Bank Property for approximately 25 miles before entering into Claiborne County, Mississippi. Bayou Pierre flows through Claiborne County for approximately 31 miles before its confluence with the Mississippi River along the west side of Claiborne County.

Consequently, the removal of spoil material, bank stabilization, removal of impediments, restoring channel connectivity to adjacent floodplains and the planting of bottomland hardwood tree species for this project will result in overall water quality improvements due to increased filtration and plant uptake. Elimination of current forestry activities will result in the 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, the LBBMB seems properly sited to add to habitat and corridors of and for the Louisiana Black Bear (*Ursus americanus luteolus*) as set forth by the U.S. Fish & Wildlife Services. Once considered Critical Bear Habitat, the forestlands along the Bayou Pierre remain vital to the continued success of the Louisiana Black Bear recovery. The LBBMB is uniquely located within the Bayou Pierre floodplain and within an important bottomland hardwood complex.

The threatened Bayou darter (*Etheostoma rubrum*) is a small 2-inch fish that is found only in Bayou Pierre and its tributaries. The bayou darter is particularly special because it is endemic to southwestern Mississippi, meaning it is found in no other state but Mississippi. The male fish can obtain an attractive turquoise hue to the body with bright red patches on the fins during the breeding season, whereas the females maintain a pale brown and spotted coloration year-round. It was listed as threatened on September 25, 1975 by USFWS. This darter inhabits fast rocky riffles of shallow, meandering creeks and small to medium rivers. Adults most commonly are collected near heads of gravel riffles in water less than 15-30 centimeters deep. Reproductively active females occur mid-April to mid-August at water temperature of 20-30 C, with peak spawning from April to early June during rising water temperatures. Most spawn after their first year and do not usually live beyond 3 years. The LBBMB contains multiple tributaries of Bayou Pierre.

There are no Wildlife Management Areas (WMAs) areas in close proximity to the LBBMB. As a result, restoration and enhancement of this property will undoubtedly serve the purpose of increasing habitat and reducing fragmentation and as an interconnecting corridor habitat for the Louisiana Black Bear and the Bayou Darter. The rehabilitation of the forest will also provide wintering habitat for neotropical migrants.

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 of 114.21 acres of bottomland hardwood forested wetlands from loblolly pine plantation by eliminating the scars from the previous conversion and silvicultural activities, restoring the natural hydrologic regime and planting native bottomland hardwood species. Filling ditches and forestry rutting will restore natural sheet flow across the site through the natural sloughs and streams observed onsite. Water that is currently routed through man-made improvements/ditches, improved channels and forestry rutting will again be allowed to sheet flow across the property (floodplain connectivity), thereby retaining surface water and upper soil saturation as it did historically. This restoration activity will increase water retention on the site and reduce excess water downstream during high water events. The Sponsor further proposes the restoration of the bottomland hardwood habitat through the re-establishment of native bottomland hardwoods. The restoration of the bottomland hardwood ecosystem is critical in this management process to ultimately return the bank property to its historic state (Figure 12).

5.1.1.2. Wetland Enhancement

The Sponsor proposes the enhancement of 20.47 acres of bottomland hardwood forested wetlands located within the Bank Property. The selected wetland enhancement areas currently exist as a degraded bottomland hardwood forested wetland that are concentrated along Bayou Pierre as old meanders or sloughs. As described, these may be considered as shallow warm water sloughs or relic channels located along Bayou Pierre. They are influenced via sheet flow and overland flooding events. In some cases, secondary drainages flow through these systems before their confluence with Bayou Pierre to the east. These habitats are currently degraded from the past silvicultural improvements and beaver activity within the property. The overstory vegetation within these areas are dominated heavily by soft mast species including tupelo gum (*Nyssa aquatica*), bald cypress (*Taxodium distichum*), green ash (*Fraxinum pennsylvanica*), American elm (*Ulmus Americana*) within minor occurrences of water oak (*Quercus nigra*), willow oak (*Quercus phellos*), nuttal oak (*Quercus nuttallii*) and overcup oak (*Quercus lyrata*). The wetlands enhancement areas include an understory component of Trumpet creeper (*Campsis radicans*), Chinese privet (*Ligustrum sinense*), poison ivy (*Toxicodendron radicans*), *Rubus spp*., Japanese climbing fern (*Lygodium japonicum*), muscadine (*Vitis rotundifolia*), greenbrier (*Smilax rotundifolia*), and yates (*Chasmanthium latifolium*).

Although it is common for the persistent water or deep-water habitats to be dominated by tupelo gum and bald cypress, the shallow water areas surrounding this habitat has been altered similar to the adjacent pine forested wetland habitat. As a result, it is the intention to enhance this habitat through the control of the soft mast and less desirable species and the establishment of desirable hard mast species comparable to the adjacent planned bottomland hardwood habitat.

The other selected wetland enhancement areas are currently located within the northwest portion of the bank property. This habitat was originally clear cut of timber components and converted to loblolly pine plantation in conjunction with the remaining bank property. However, persistent water due to beaver dams or other surface water impairments have prevented the successful transition to loblolly pine and has maintained a mixed hardwood component timber stand. This scrub-shrub habitat is comprised of a mixed soft mast and hard mast species but remaining fallow has prevented the successful regeneration of desirable hardwood species components. Further, the encroachment of invasive species within this complex has reduced the overall value of this timber stand compartment.

To complete the wetland enhancement activities, it is initially planned to restore the hydrology adversely impacted via previously conducted silvicultural activities and the management of beaver dams/impoundments within or adjacent to this complex. It is further intended to conduct timber stand improvement (TSI) activities within this complex, as applicable, to

remove a portion of the soft mast dominated overstory located along the shallow cove areas. These TSI activities may include selective timber harvest, individual stem injection, and/or forestry mowing. Following the removal of a portion of the overstory component, these areas will be underplanted with primarily hard mast tree seedlings in an effort to achieve a 50/50 to 60/40 hard mast to soft mast ratio mimicking the natural bottomland hardwood habitat that historically dominated area. Appropriate age, height seedlings and site-specific species will certainly be considered to increase survival and overall establishment of these habitats. These habitats are considered vital to this ecosystem as they are the transition from the slightly higher bottomland hardwood forested wetlands and the primary riverine systems. They also provide a unique habitat used by many wildlife species (Figure 12).

5.1.2 Stream Mitigation

5.1.2.1 Stream (In-Stream)

The Sponsor proposes to conduct in-stream improvements within the stream channels re-establishing the connectivity to the natural floodplain. As described, one (1) primary perennial stream is located within the central portion of the Bank Property. In additional, one (2) primary intermittent stream is located within the northwest portion of the Bank Property. Silvicultural activities discounted the presence of each stream or system within the Bank Property. Silvicultural activities have included the clear cutting of the historic bottomland hardwoods and the planting of pine plantation throughout the Bank Property. Stream side management zones (SMZ) were not considered during this transition and as a result, impairments to the stream systems have occurred that include crossings, culvert crossings, discarded debris and unstable stream banks. In other cases, beaver activity is present in-stream resulting in a stream impairment, bank alterations and open water impoundment.

It is proposed to improve connectivity of stream channels through the use of structure removal and hydrologic improvements at road crossings. Impediments also included beaver activities within stream reaches similarly altering the flows within each reach. Other items include the removal of discarded debris and the stabilization of stream embankments as a result of previous timber harvest/silvicultural operations.

The mitigation work plan will include the removal of impediments to re-establish the stream connectivity with the adjacent floodplains. This process renews the hydrologic and material transfers between the floodplains and stream channels, promotes the creation of riparian and aquatic habitats, and allows movement of aquatic species. The restoration of the channels and the improvements to the existing improved channels

will provide a more natural braided stream system through the Bank Property (Figure 13).

5.1.2.2 Stream Riparian Buffer

5.1.2.2.1 Stream Riparian Buffer Restoration

Approximately 80.91 acres of stream riparian buffer will be restored by initially restoring the natural floodplain connectivity to the stream channel and re-establishing native bottomland hardwood vegetation within the riparian buffer areas. Native bottomland hardwood species will be planted within the designated buffer on either side of the streams designated in the restoration areas and as specified within the plan. As described, SMZ's are not present and loblolly pine plantations may be found to the banks of each stream reach.

5.2 Mitigation Work Plan

5.2.1 Hydrologic Work Plan

5.2.1.1 Bottomland Hardwood Wetland

The historic silvicultural land uses on the Bank Property have resulted in a degraded habitat type. Evidence of rutting, surface mining activities, improved drainages, stream impairments, etc. all occurring as part of the original conversion and current land use. The sponsor proposes to restore the hydrology through the initial mechanical removal of the loblolly pine timber component. The seed bed will be prepared through mechanical site preparation including degrading or filling imperfections within the Bank Property including the items previously described. Although beds were not noted throughout, the overall site timber harvest and site preparation is expected to restore the natural or historic grade within the Bank Property. Other more prominent features will be filled or degraded with adjacent materials reducing ponding and reconnecting with the overland flows once present within the site. The Sponsor proposes to restore the LBBMB by planting an appropriate species mixture of bottomland hardwood seedlings during the 2018-2019 standard planting season (December-March).

5.2.1.2 Streams (In-Stream)

The historic silvicultural land uses on the Bank Property have resulted in impairments of stream channels and altered the natural stream dynamics. These stream channel alterations were conducted to initially harvest the native timber component, but also to facilitate storm water runoff away from the Bank Property to improve the conversion to loblolly pine. As a result, it is proposed to enhance stream connectivity through the removal of

impediments and utilizing mechanized equipment through grading and/or excavation as applicable. Other crossings would be restored through the implementation of acceptable low water crossings along existing interior access roads. The low water crossings will grant the ability to access the Bank Property, completing the mitigation and hydrology work plan, monitoring and the management of the success of the project.

5.2.1.3 Stream Riparian Buffer

The historic silvicultural land uses on the LBBMB Property have resulted in the removal of the natural bottomland hardwood riparian buffer habitats along Bayou Pierre. Full details regarding the vegetative enhancement activities is described in below in Section 5.2.2. Figure 11 depicts the location of the hydrologic work plan designed for the LBBMB.

5.2.2 Vegetative Plantings

5.2.2.1 Bottomland Hardwood Wetland Mitigation

5.2.2.1.1 Wetland Restoration

1. It is planned to restore 114.21 acres and enhance 20.47 acres of bottomland hardwood forested wetlands 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 2018-2019 (Table 3). Figures 12 and 13 depict the location of the wetland and stream mitigation work plan designed for the LBBMB.

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. The site will be prepared in such a manner that 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 2018-2019. The Sponsor will plant appropriate species in such 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, 435 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. Ten or more 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 such 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 Mississippi 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 in order 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 possible 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 cotton wood) 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*	*Quercus nuttallii*	20%
willow oak	*Quercus phellos*	15%
water oak	*Quercus nigra*	10%
bald cypress*	*Taxodium distichum*	10%
sweet pecan	*Carya illinoinensis*	5%
overcup oak*	*Quercus lyrata*	5%
green ash	*Fraxinus pennsylvanica*	5%
Drummond red maple	*Acer rubrum var. drummondii*	5%
sweetgum	*Liquidambar styraciflua*	5%
common persimmon	*Diospyros virginiana*	5%
sugarberry	*Celtis laevigata*	5%
American elm	*Ulmus Americana*	5%
mayhaw	*Crataegus opaca*	2.0%
buttonbush*	*Cephalanthus occidentalis*	1.0%
water hickory*	*Carya aquatica*	1.0%
box elder	*Acer negundo*	1.0%

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

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.

5.2.2.1.2 Wetland Enhancement

As previously discussed, it is proposed to enhance approximately 20.47 acres of bottomland hardwood wetlands within the Bank Property. Portions of the LBBMB property have been subjected to intensive silvicultural management activities over the years. These practices have resulted in a degraded bottomland hardwood habitat that is heavily dominated by soft mast species. The current vegetative composition of these areas is discussed above in Section 5.1.1.2. It is proposed to conduct Timber Stand Improvement (TSI) activities within these areas to reduce the amount of soft mast species. TSI activities may consist of selective timber harvest, individual stem injection, and/or forestry mowing.

Following the removal of a portion of the overstory component, these areas will be underplanted with primarily hard mast tree seedlings in an effort to achieve a 50/50 to 60/40 hard mast to soft mast ratio mimicking the natural bottomland hardwood habitat that historically dominated area. Tree seedlings species will consist of hard mast species included within Table 3 above.

5.2.2.2 Riparian Buffer

5.2.2.2.1 Riparian Buffer Restoration

The proposed mitigation plan for the LBBMB includes the restoration of approximately 80.91 acres of riparian buffer along the primary and secondary drainages within the Bank Property. Vegetative restoration activities within these areas will include activities similar to those described for the Bottomland Hardwood Wetland Restoration areas described in Section 5.2.2.1.1. above.

5.2.3 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, cotton wood, thistle, and baccharis) 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 5.2.2. Vegetative Plantings.)

5.2.4 Monitoring

Monitoring shall commence immediately following plantings such that a baseline is established for the LBBMB. Monitoring will then occur following the growing seasons in years 1, 3, 5, 8 and 10 so that any 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 LBBMB will be established to provide mitigation to compensate for impacts to Waters of the United States, including wetlands and streams, within the Vicksburg

District. The LBBMB is located within the U.S.G.S. 8-Digit HUC 08060203 and is included within a portion of Copiah County within that part of the cataloging unit occurring in Mississippi. The service area encompasses all, or portions of, the counties Webster, Choctaw, Montgomery, Carroll, Attala, Holmes, Leake, Madison, Yazoo, Hinds, Warren, Claiborne, Copiah, Jefferson, Lincoln, Adams, Amite and Wilkinson in Mississippi. It is proposed to include the HUC 08060203 and HUC 08060202 as the service area for the LBBMB project (Figure 15).

Decisions authorizing use of credits from the LBBMB for impacts outside of the designated service area and for out-of-kind impacts will be made on a case-by-case basis by the USACE Vicksburg District.

5.4 General Bank and Need and Technical Feasibility

LBBMB is proposed to provide compensatory mitigation for Vicksburg District approved projects within the HUC 08060203 Bayou Pierre and the HUC 08060202 Lower Big Black. Projects located outside this service area would be evaluated on a case by case basis by the District.

In addition to providing mitigation for activities associated with continued population growth within the community, 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

Wesson Timber, LLC
Attn: Ronny Sternfels
252 Blackberry Drive
Thibodaux, Louisiana 70301

5.5.2 Landowner/Long-Term Ownership

Wesson Timber, LLC
252 Blackberry Drive
Thibodaux, Louisiana, 70301

5.5.3 Agent

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

5.5.4 Perpetual Site Protection Mechanism

To ensure long-term protection of the Bank Property, the Sponsor will be responsible for maintaining and protecting lands contained within the LBBMB in perpetuity, unless the lands are transferred to a state or federal resource agency, non-profit conservation organization, or this responsibility is contractually conveyed to another person, all of which will be subject to approval by the Vicksburg District. A conservation easement will be prepared to include a non-profit or state agency as the Grantor and Holder. This conservation easement specifically prohibits activities that would reduce the quality of the restored wetlands. The conservation easement also specifies permissible activities such as hunting, fishing and recreational use given the activity causes no negative effect on the functions and values of the restored wetlands. Forest management within the conservation easement would be allowed, given that this activity is performed to maintain or improve the overall ecological function of the Bank. Impacts that adversely affect the function and value of the Bank, which are caused by permissible activities, will required permitting and subsequent mitigation.

5.5.5 Sponsor Qualifications

Lower Big Black Mitigation Bank, managed by Mr. Ronny Sternfels, will be the primary operator for the Bank Property, management and office operations. Mr. Ronny Sternfels will be supported by Mr. J. Clay Cromwell and Headwaters, Inc. who have considerable experience in mitigation banking in Vicksburg, New Orleans and the Mobile Districts.

6.0 Conclusion

In summary, the LBBMB has the potential to restore, enhance, and protect approximately 279.66 acres of bottomland hardwood habitat through a combination of approximately 114.21 acres of restoration and 20.47 acres of enhancement, 80.91 acres of stream riparian buffer restoration and the preservation of 8,253.84 linear feet of Bayou Pierre following the completion of the planned wetland and stream mitigation work plan described within the contents of this Prospectus (Figure 14). The planned Bank Property would be protected and maintained by a Conservation Easement 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, Copiah County, Mississippi.
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

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Mississippi Department of Environmental Quality, Mississippi Water Quality Inventory: Integrated Report (305(b)/303(d)).
http://www.deq.Mississippi.gov/portal/DIVISIONS/WaterPermits/WaterQualityStandardsAssessment/WaterQualityInventorySection305b/2012IntegratedReport.aspx

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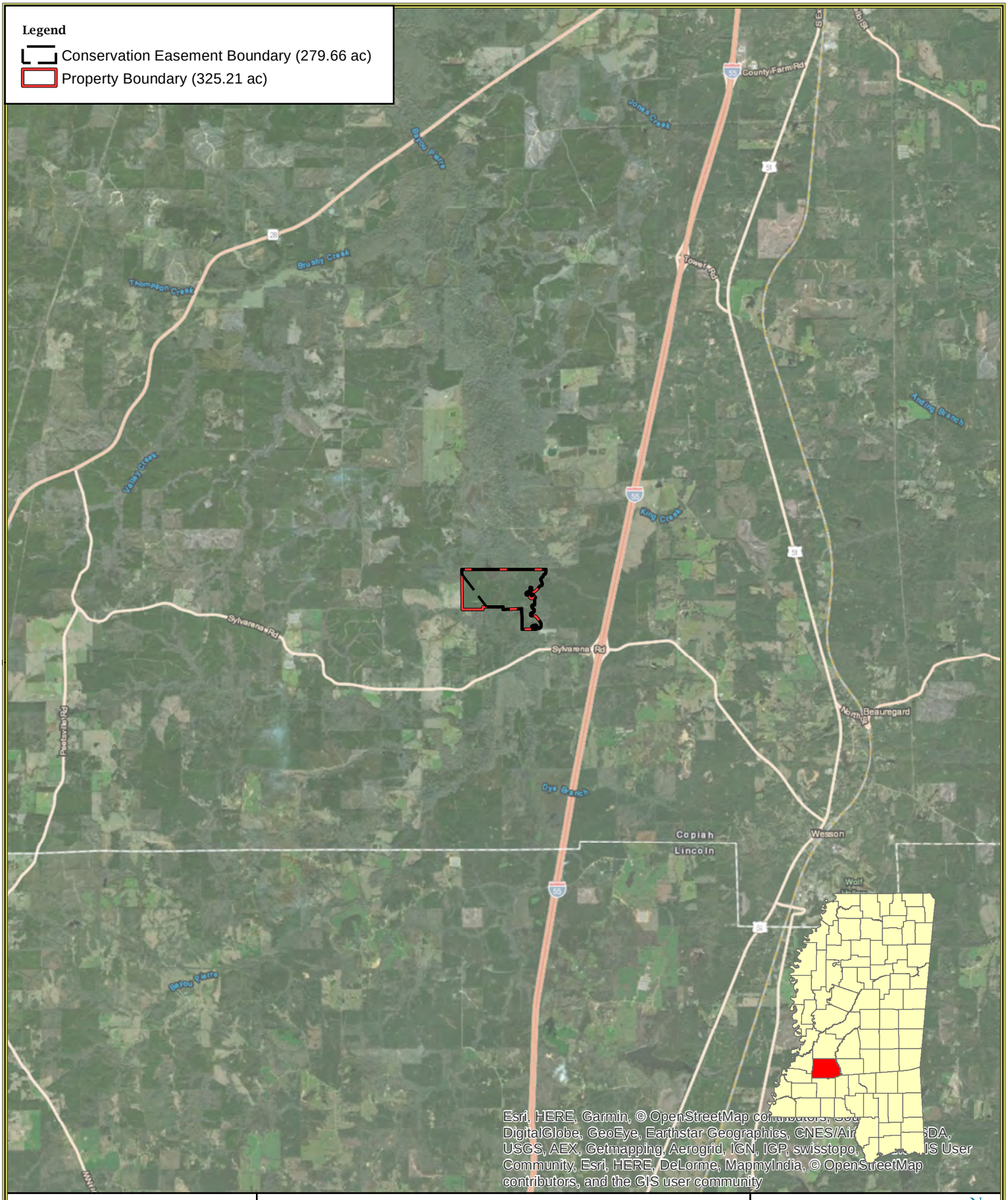
National Wetland Plant List, Version 3.2. U.S. Army Corps of Engineers, 2016.
http://wetland_plants.usace.army.mil/

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

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

http://law.justia.com/codes/mississippi/2015/title-51/chapter-3/article-1/section-51-3-7/

Figures



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Lower Big Black Mitigation Bank

Sec. 13,14 & 24 - T 9N - R 7E
Copiah County, Mississippi
Figure 1 - Vicinity Map

0 5,000 10,000 Feet
1:100,000

N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

ESRI World Imagery Basemap

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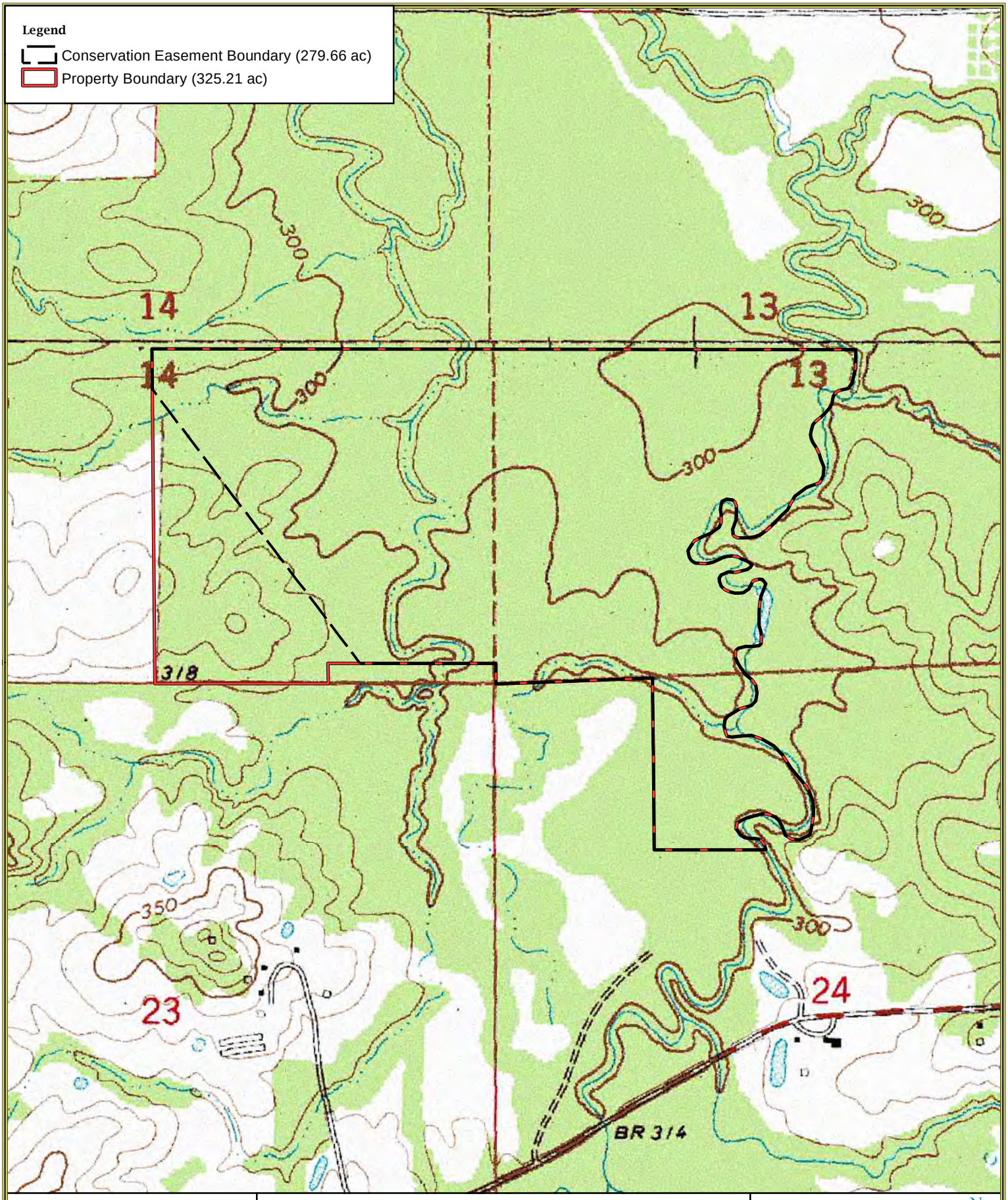

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Lower Big Black Mitigation Bank

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Copiah County, Mississippi

Figure 2 - Site Location Map

0 600 1,200 Feet

1:12,000

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USGS Wesson(MS) Quad Basemap

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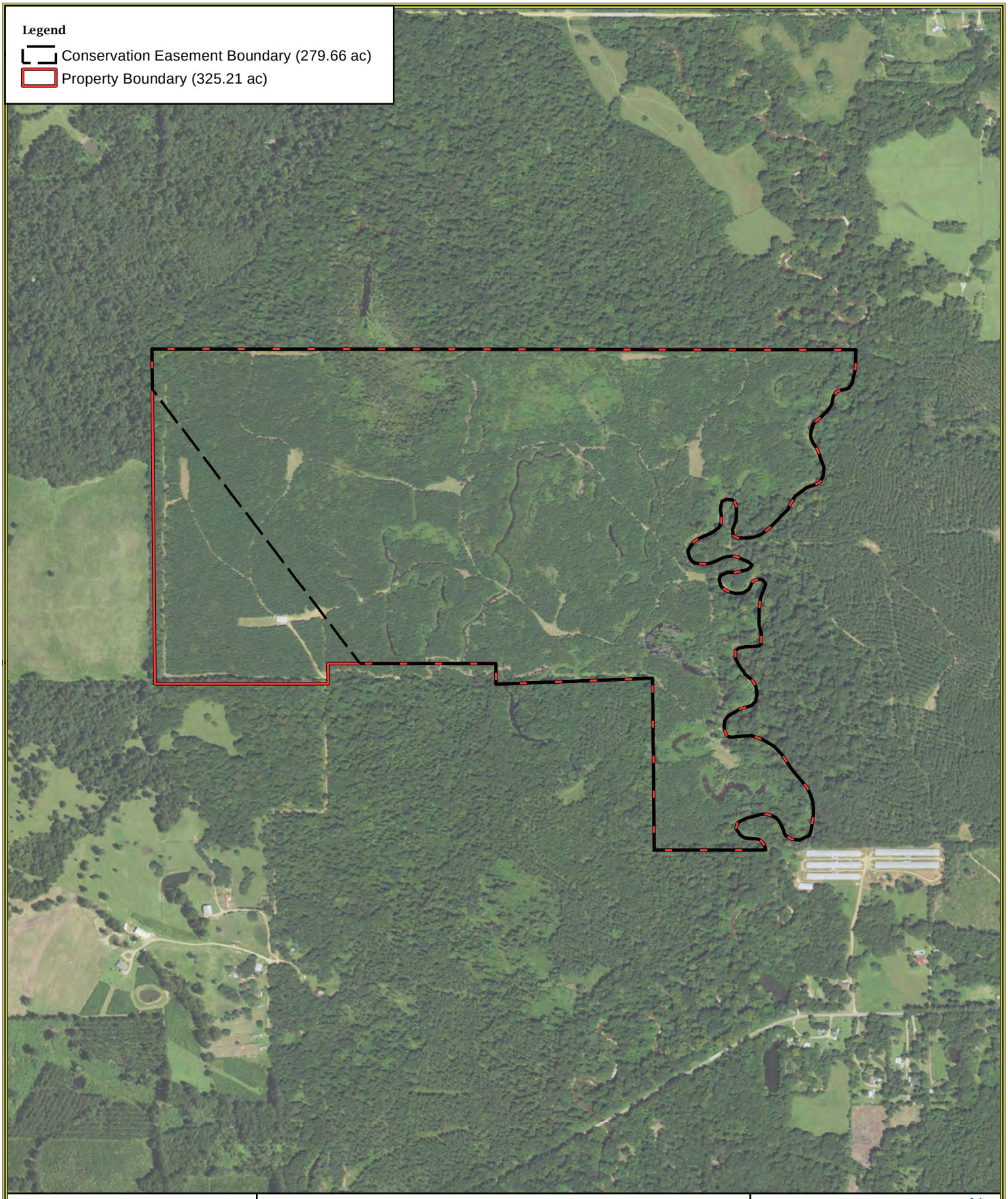

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Lower Big Black Mitigation Bank

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Copiah County, Mississippi

Figure 3 - Site Location Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

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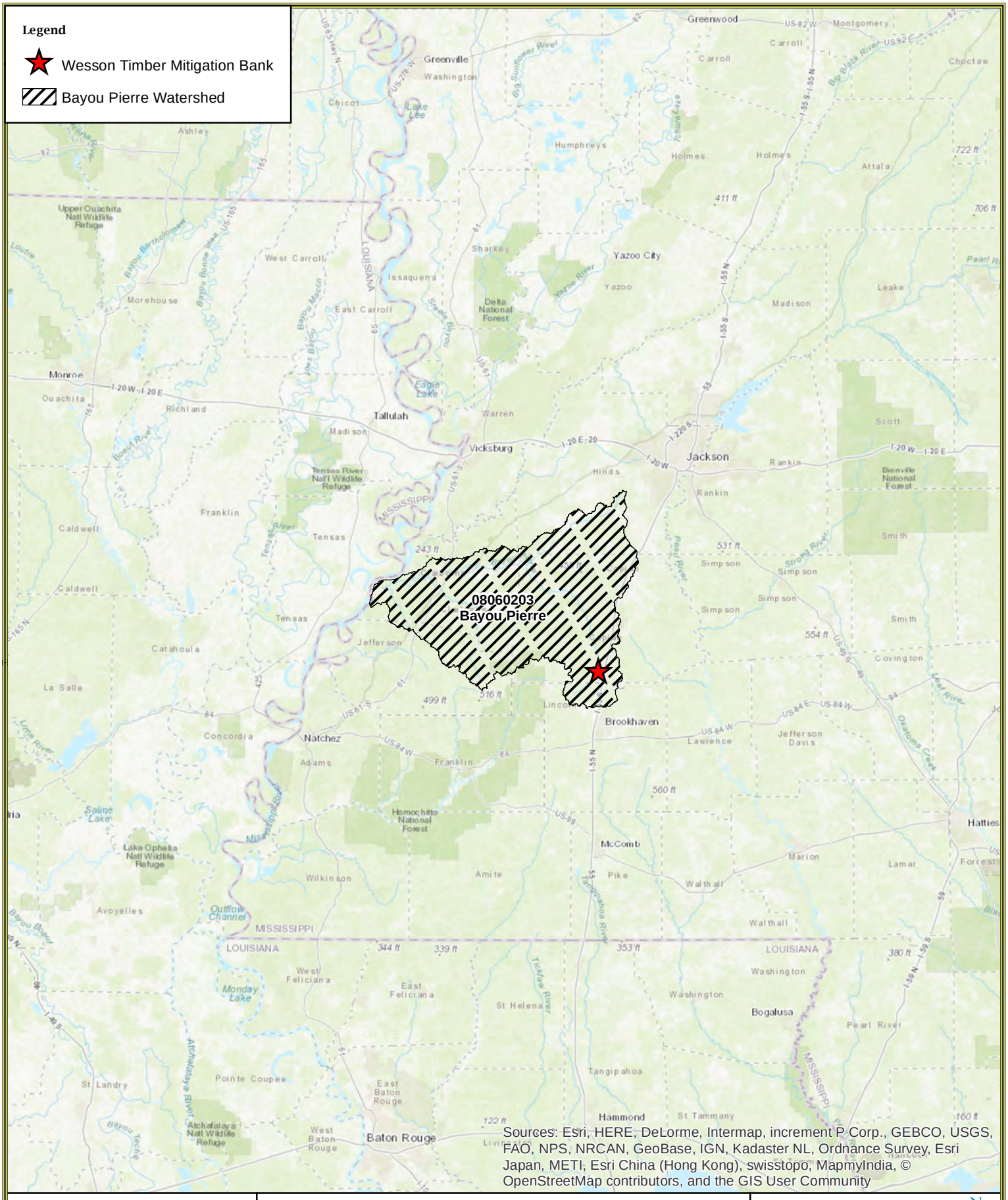

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Figure 4 - Watershed Location Map

0 75,000 150,000 Feet
1:1,500,000

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

ESRI Topographic Basemap

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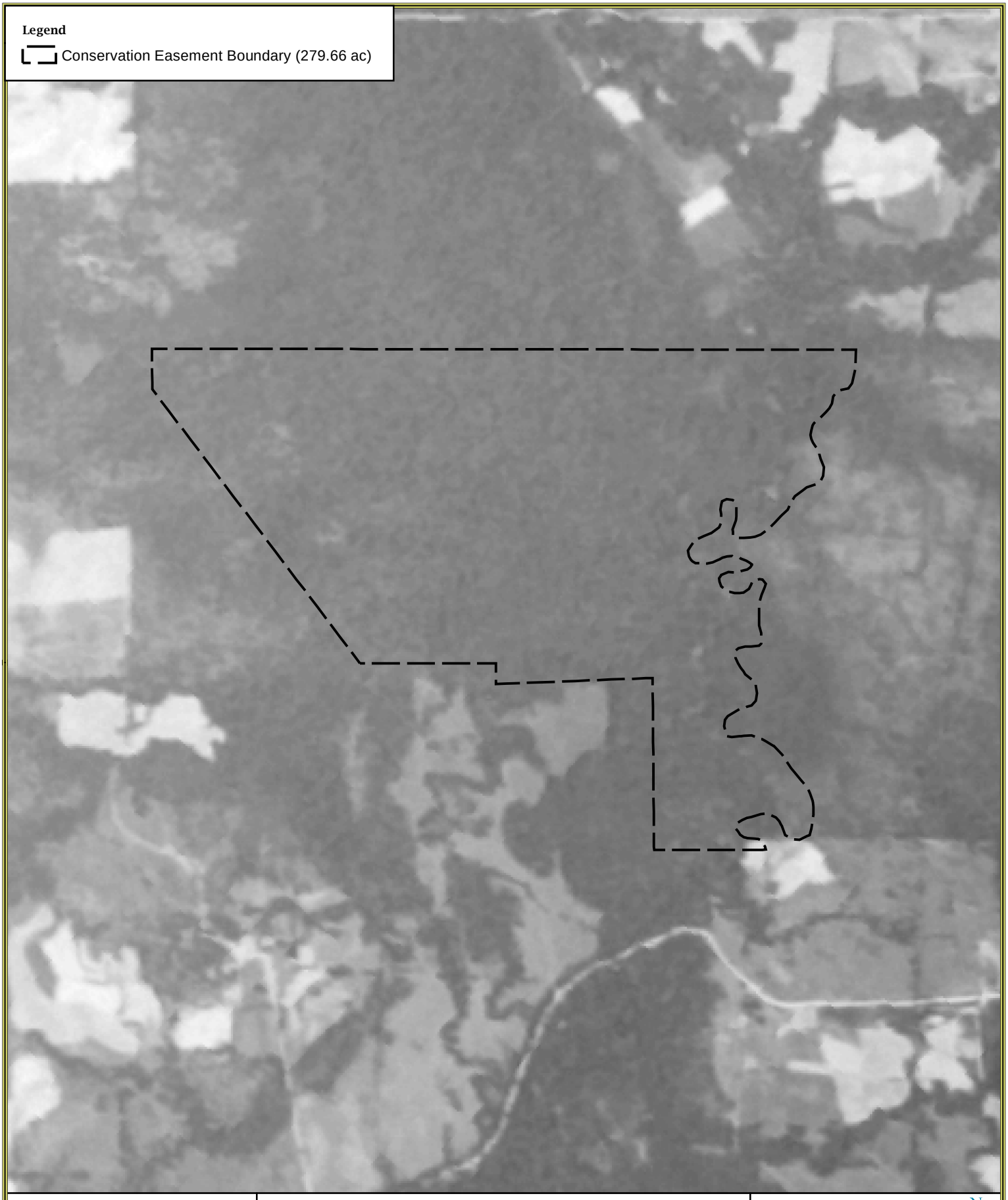

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Figure 5A - Historical Imagery Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

1952 Aerial Photography

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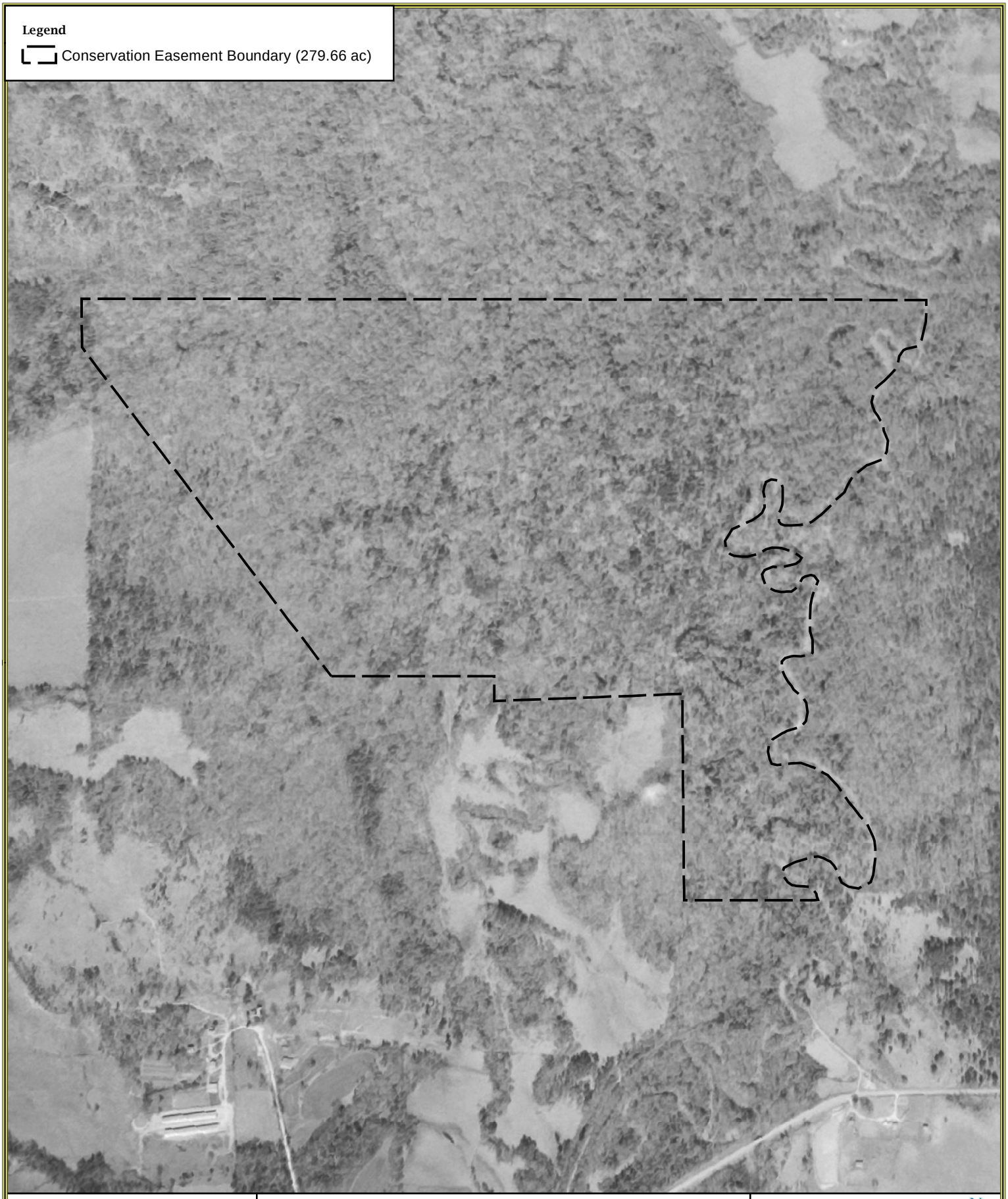

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Copiah County, Mississippi

Figure 5B - Historical Imagery Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

1971 Aerial Photography

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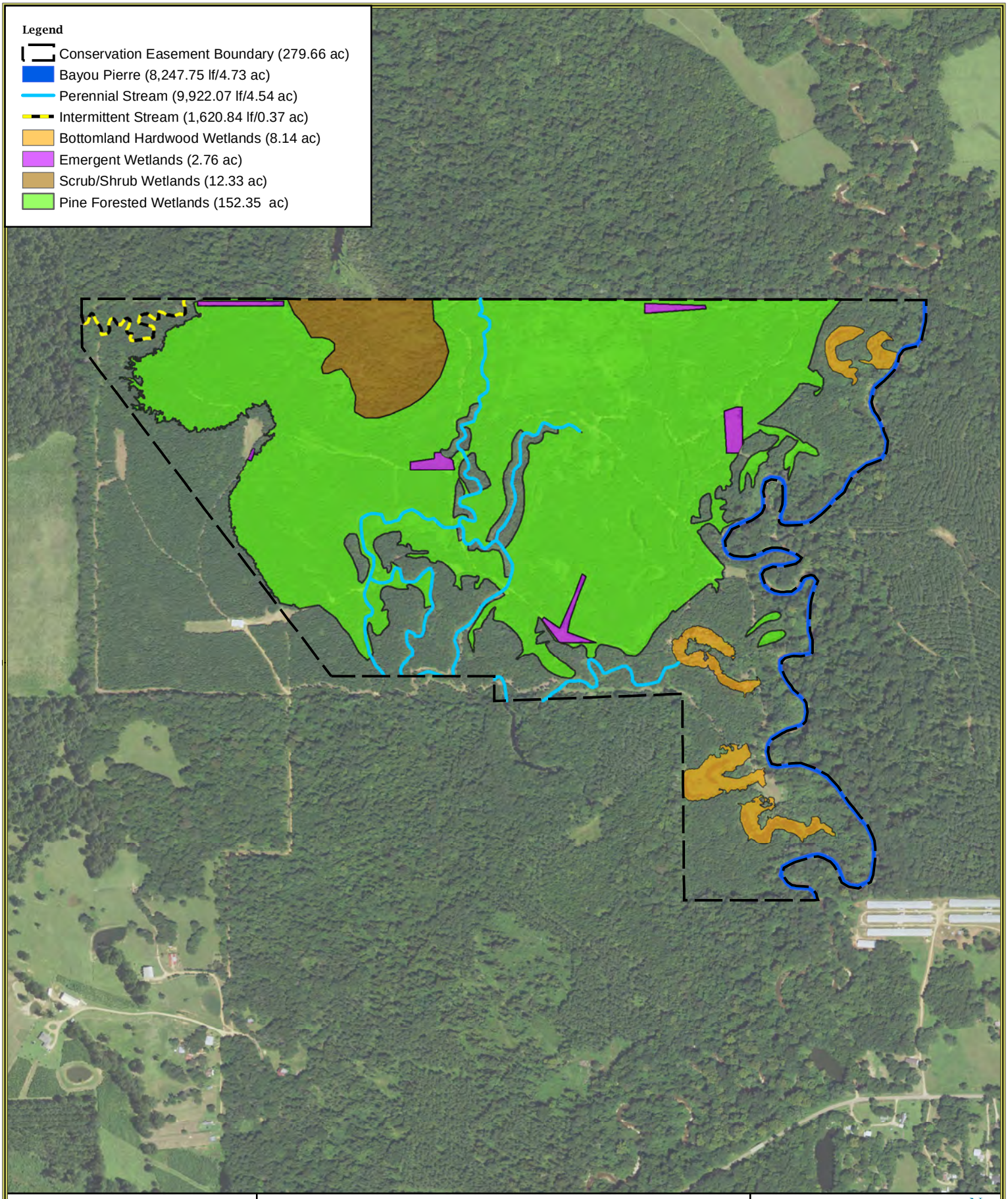

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Figure 6 - Current Habitat Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

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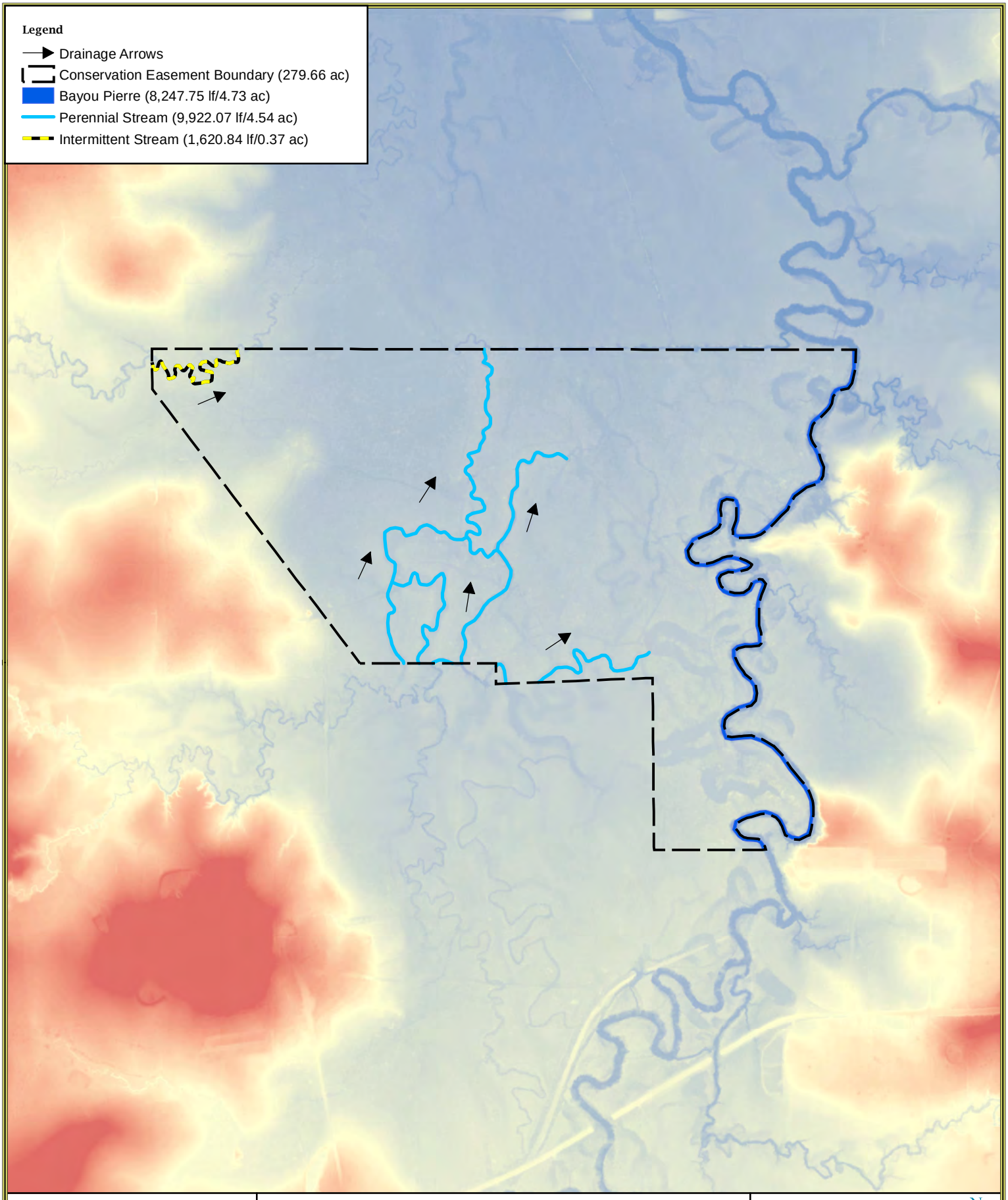

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Copiah County, Mississippi

Figure 7 - Current Hydrology Map

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USDA NAIP 2016 Imagery Basemap

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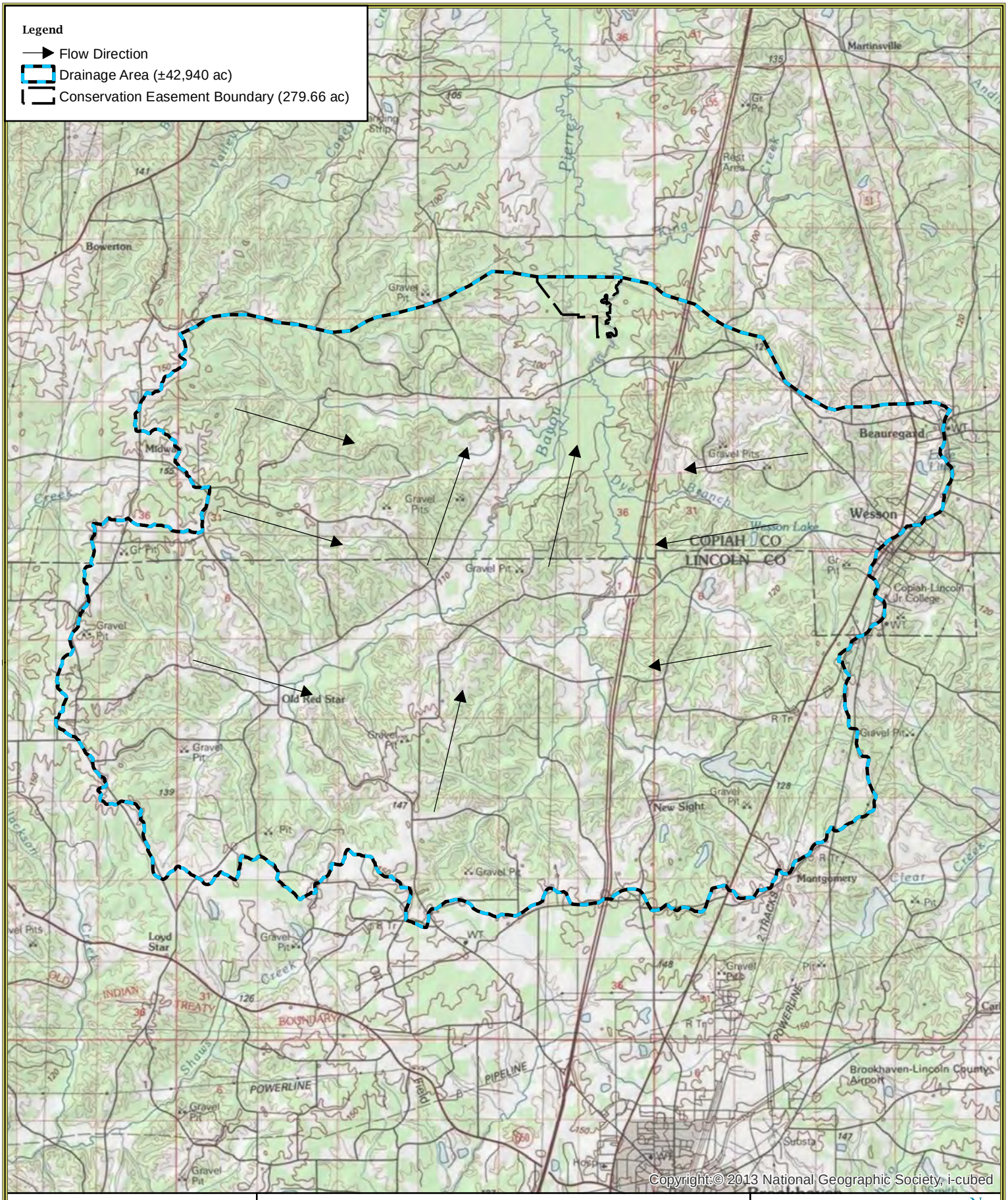

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Figure 8 - Historical Hydrology Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

ESRI USA Topographic Basemap

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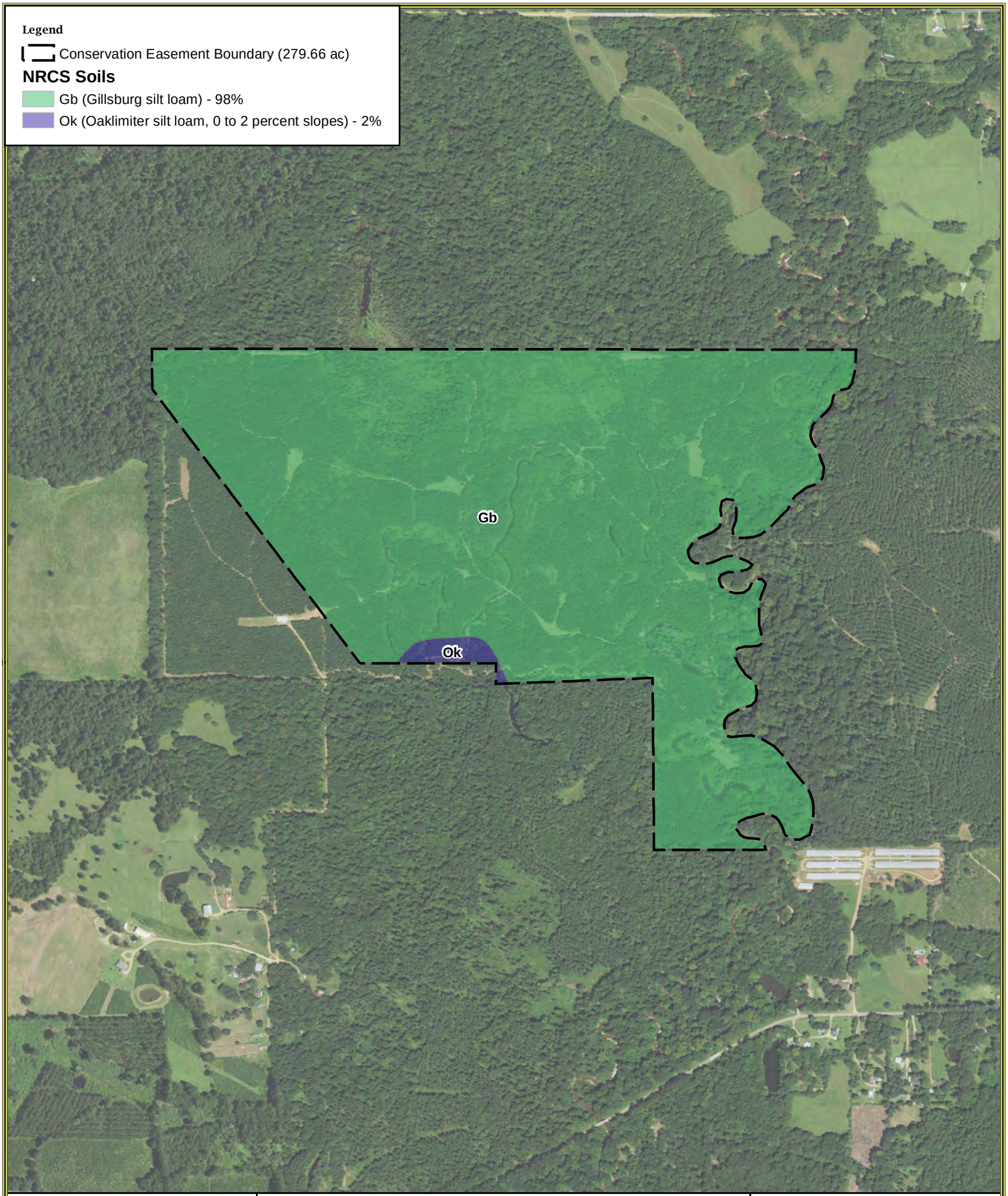

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Copiah County, Mississippi

Figure 9 - NRCS Soils Map

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

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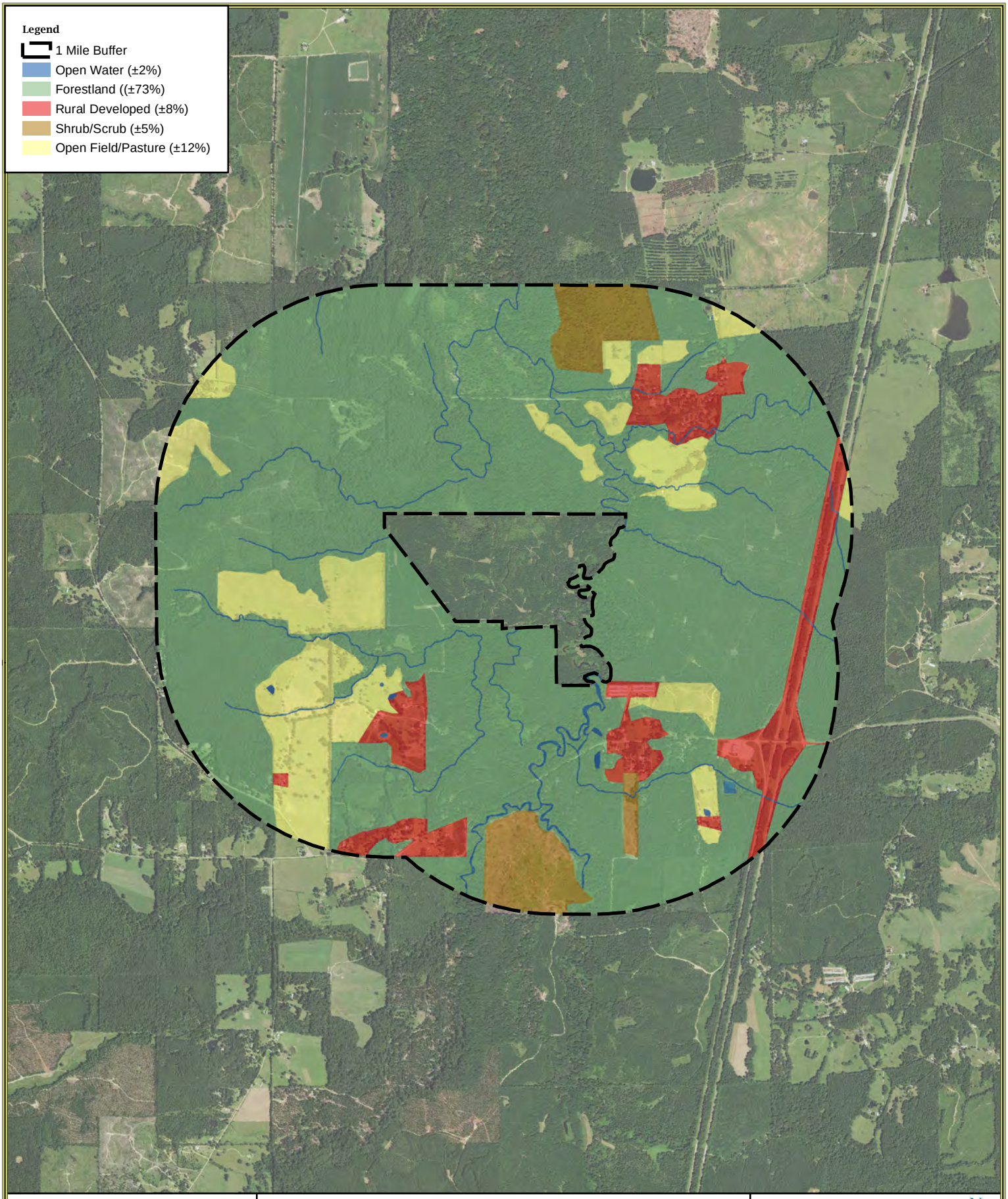

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Copiah County, Mississippi

Figure 10 - Surrounding Land Use Map

0 1,750 3,500 Feet

1:35,000

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

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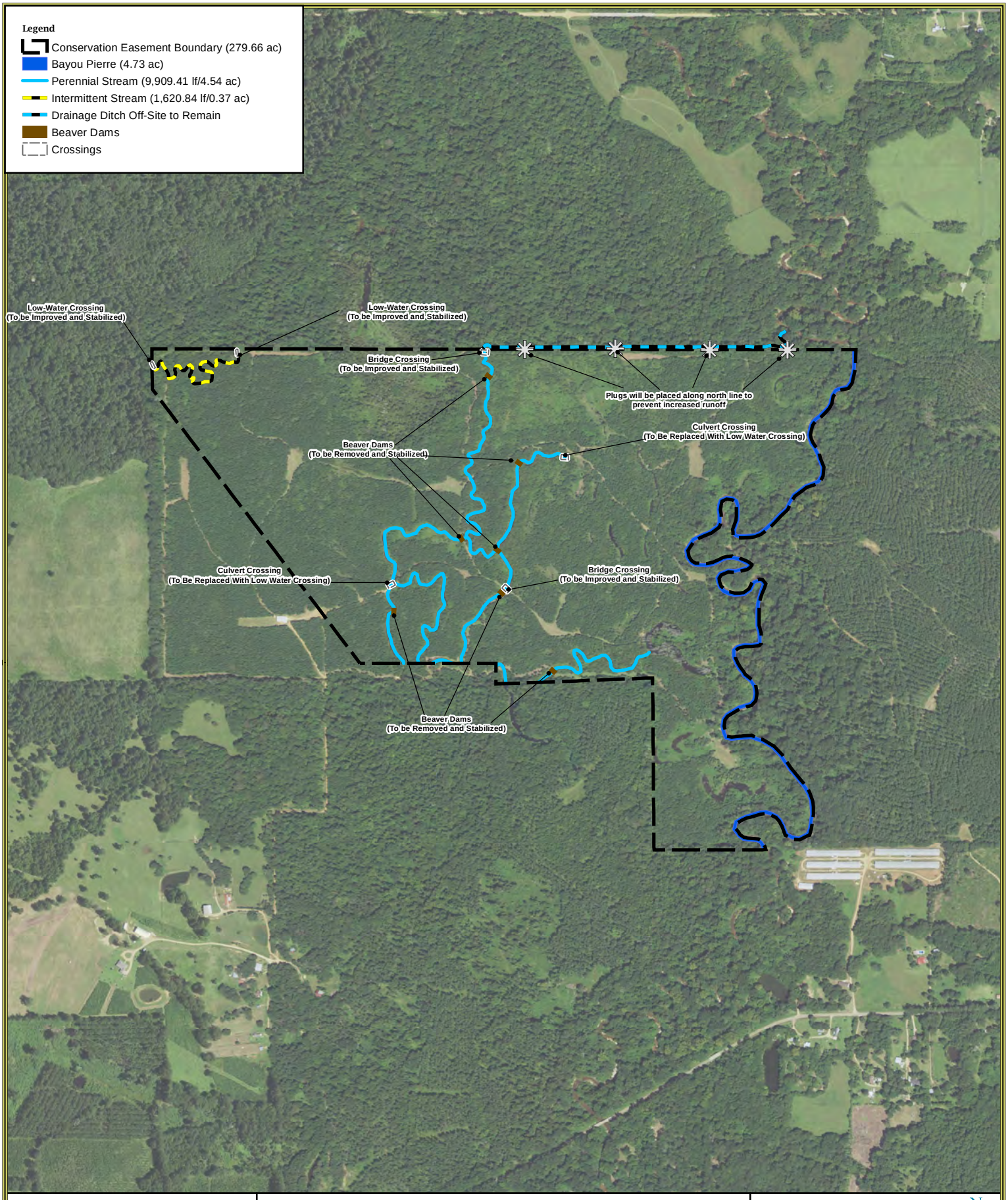

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Figure 11 - Hydrologic Work Plan Map

0 600 1,200 Feet
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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

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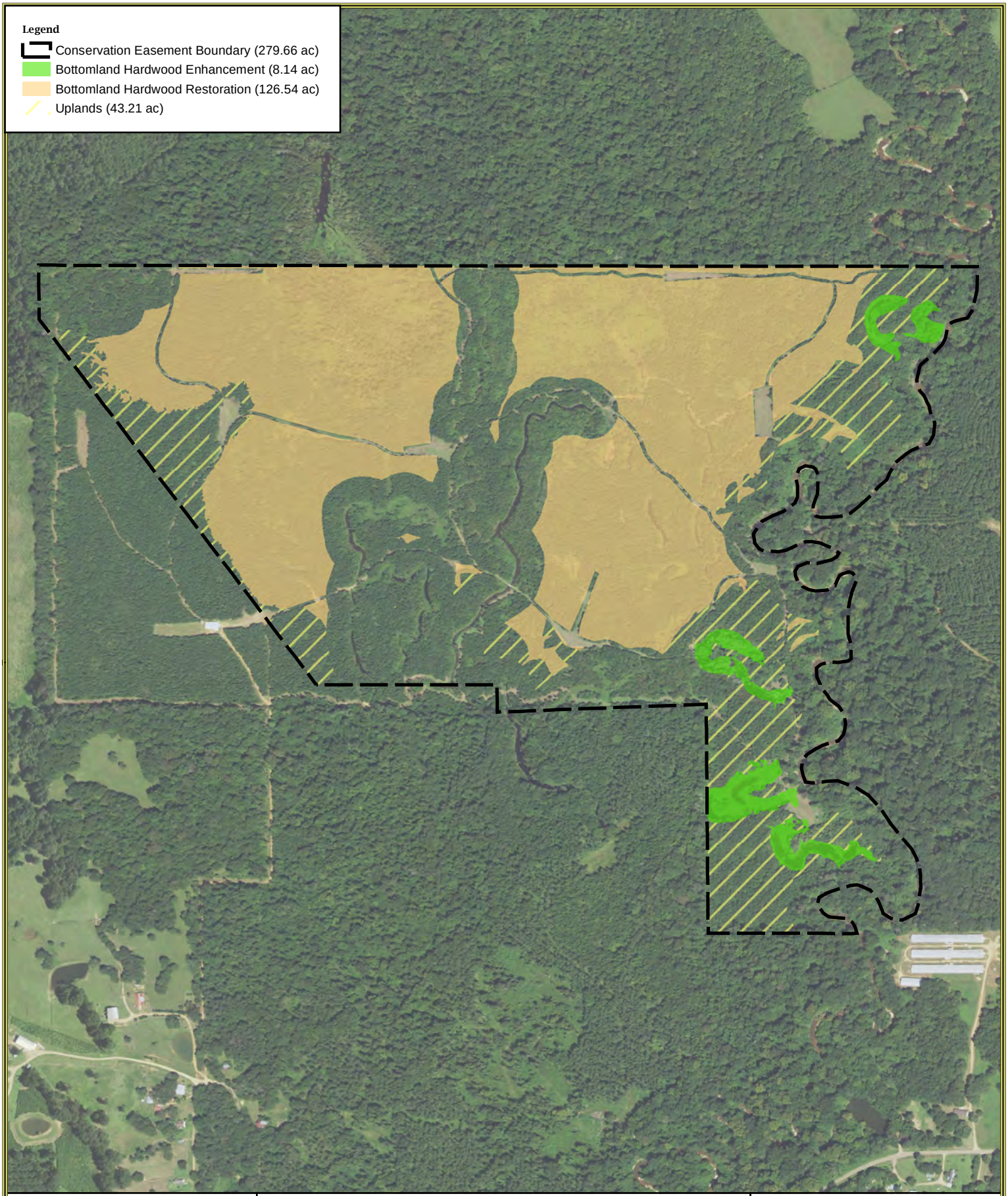

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Figure 12 - Wetland Mitigation Plan Map

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USDA NAIP 2016 Imagery Basemap

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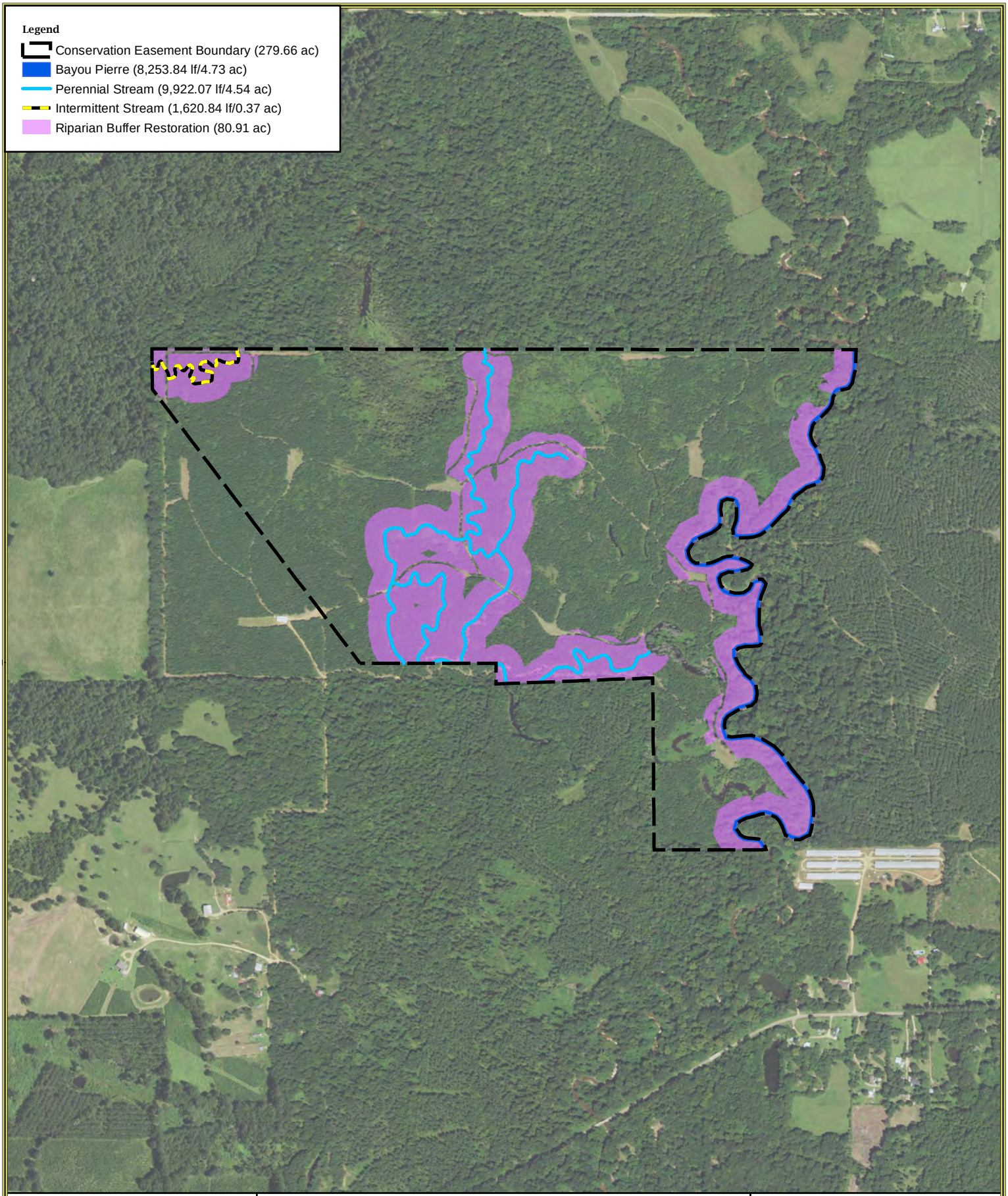

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Lower Big Black Mitigation Bank

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Copiah County, Mississippi

Figure 13 - Stream Mitigation Plan Map

0 600 1,200 Feet

1:12,000

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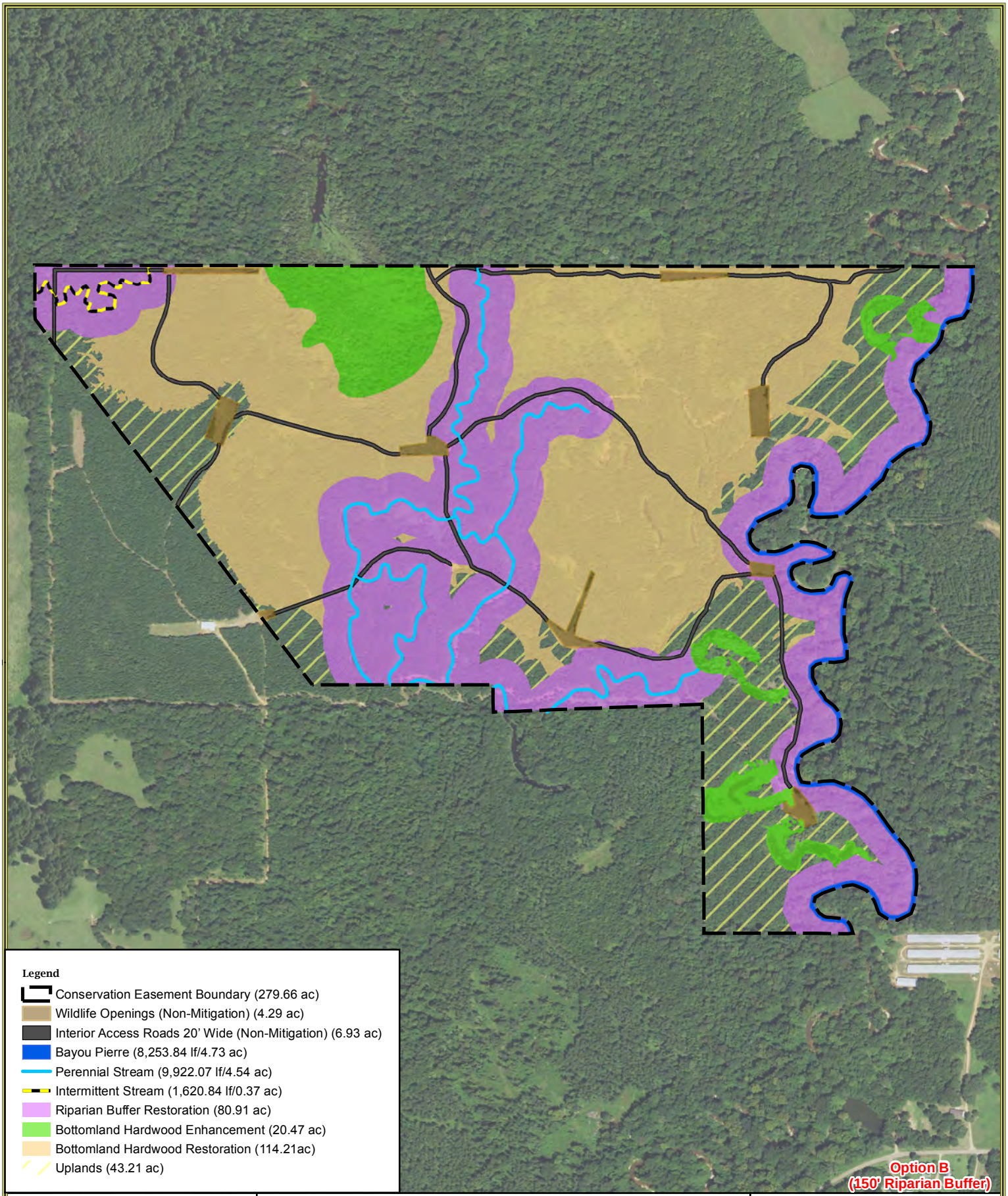
NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

S:\PROJECT FILES\Wesson Timber, LLC\Mapping\Figure 13 - Stream Mitigation Map.mxd



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Lower Big Black Mitigation Bank

Sec. 13, 14, 23 & 24 - T 9N - R 7E
Copiah County, Mississippi

Figure 14 - Overall Mitigation Plan Map

0 450 900 Feet

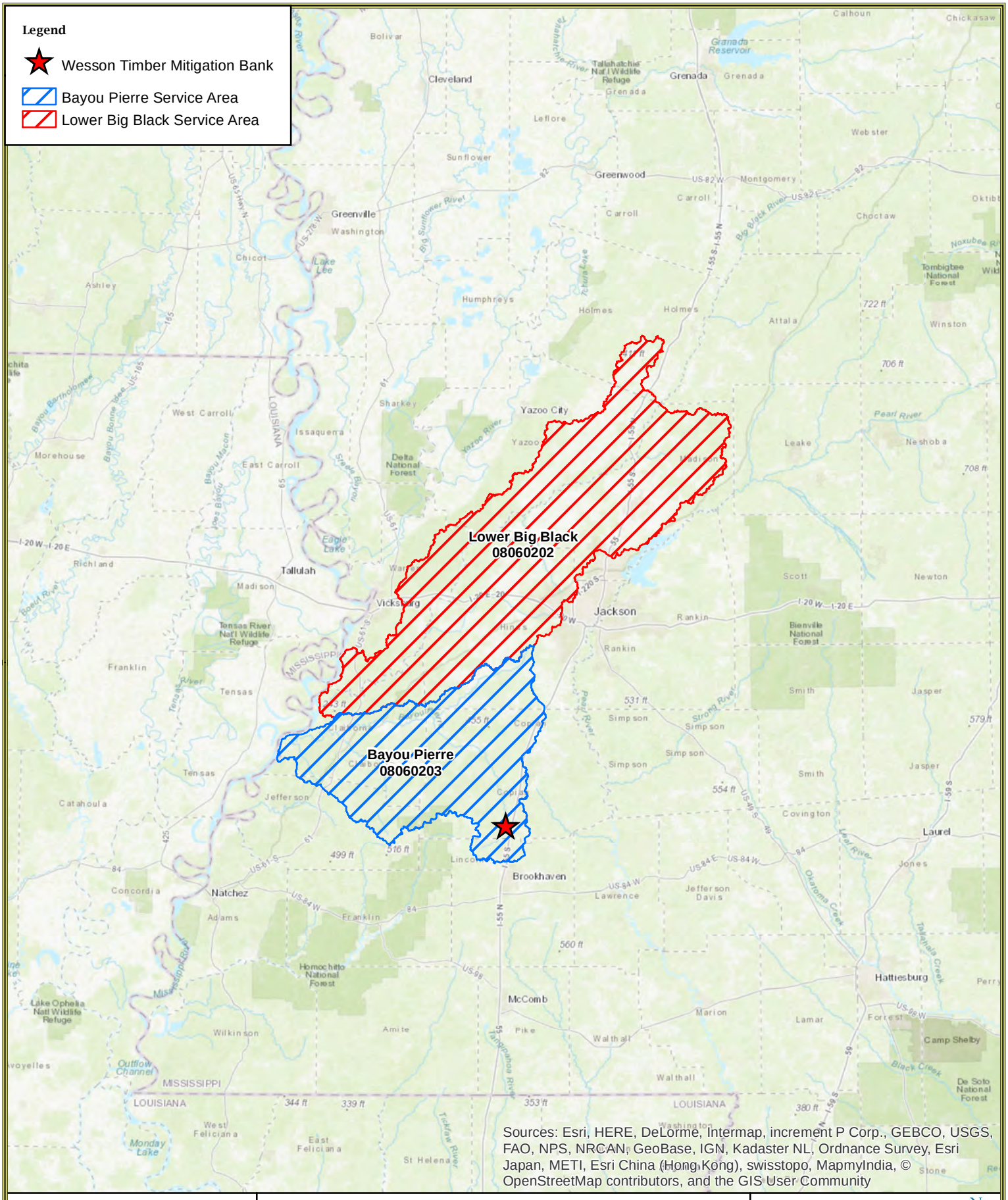
1:9,000

N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2016 Imagery Basemap

S:\PROJECT FILES\Wesson Timber, LLC\Mapping\Figure 14 - Overall Mitigation Plan Map.mxd



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Lower Big Black Mitigation Bank

Sec. 13,14 & 24 - T 9N - R 7E
Copiah County, Mississippi

Figure 15 - Service Area Map

0 75,000 150,000 Feet
1:1,500,000

N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

ESRI Topographic Basemap

S:\PROJECT FILES\Wesson Timber, LLC\Mapping\Figure 15 - Service Area Map.mxd