DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT
7400 LEAKE AVENUE
NEW ORLEANS LA 70118-3651

June 24, 2024

Regulatory Division
Special Projects and Policy Team

Project Manager:
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(601) 631-5721
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Application #: MVN-2022-00392

PUBLIC NOTICE

Interested parties are hereby notified that a permit application has been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [X] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [X] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).
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Steep Gully Mitigation Bank in Vernon and Rapides Parishes

NAME OF APPLICANT:
RES Calcasieu, LLC, attn: Mr. Dustin Romero, 2341 S. Acadian Thruway, Suite 285, Baton Rouge, LA 70808

LOCATION OF WORK: The 1,116.6-acre site is located in Section 31, Township 1 South, Range 4 West, Section 6, Township 2 South, Range 4 West, and Sections 1 and 12, Township 2 South and Range 5 West. The proposed bank is located approximately 7 miles southeast of the community of Pitkin, in Vernon Parish (lat. 30.936523, long. -92.936171) and 12.3 miles northwest of the Town of Oakdale, in Allen Parish, Louisiana (lat. 30.81607, long. -92.658438), as shown within the attached drawings. (Hydrologic Unit Code 08080204, Whisky Chitto watershed).]

CHARACTER OF WORK: The purpose of the proposed project is intended to provide compensatory mitigation requirements for BLH and cypress/tupelo swamp impacts in the Louisiana Wetland Rapid Assessment Method (LRAM). The Sponsor plans to rehabilitate 509.5 acres of bottomland hardwood (BLH) wetlands, rehabilitate 14.0 acres of cypress/tupelo swamp, enhance 318.1 acres of BLH wetlands, and preserve 34.8 acres of cypress/tupelo swamp. The project as proposed would include the degradation of an existing dummy line railbed to further restore the surface hydrology to the natural conditions. Prior to tree planting, pine plantation vegetation is proposed to be harvested and removed from the site, utilizing standard silvicultural practices and appropriate forest management strategies. Management of the bank would also include the reforestation of native vegetation and the control of nuisance, invasive, and/or noxious

species within areas of the bank using appropriate mechanical and/or chemical control methods. Hand planting of appropriate vegetative species for the two targeted wetland types will be conducted during the non-growing season (December 15-March 15). Disking and/or herbicide application may be used during the first three years of growth to reduce competition for seedlings.

The comment period on the requested Department of the Army Permit will close **30 days** from the date of this public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit request, and must be submitted so as to be received before or by the last day of the comment period. Letters and/or comments concerning the subject permit application must reference the Applicant's Name and the Permit Application Number and can be preferably emailed to the Corps of Engineer's project manager listed above or forwarded to the Corps of Engineers at the address above, **ATTENTION: REGULATORY DIVISION, RG, [William J. McFarland]**. Individuals or parties may also request an extension of time in which to comment on the proposed work by mail or preferably by emailing the specified project manager listed above. Any request for an extension of time to comment must be specific and substantively supportive of the requested extension and received by this office prior to the end of the initial comment period. The Division Chief will review the request and the requester will be promptly notified of the decision to grant or deny the request. If granted, the time extension will be continuous and inclusive of the initial comment period. This public notice is also available for review online at https://go.usa.gov/xennJ

Corps of Engineers Permit Criteria

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision,

comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. Further, all factors that may be relevant to the proposal will be considered, including the potential cumulative effects associated with the proposed project.

The New Orleans District is presently unaware of properties listed on the National Register of Historic Places at or near the proposed work but is pending further review in accordance with the National Historic Preservation Act. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. As deemed necessary, copies of this public notice will be sent to the State Archeologist, State Historic Preservation Officer, and federally listed tribes regarding potential impacts to cultural resources.

Based on the Information Planning and Consultation (IPaC) tool for Endangered Species in Louisiana, as signed on January 27, 2020, between the U.S. Army Corps of Engineers, New Orleans and the U.S. Fish and Wildlife Service, it has been determined that the project would have no effect to any species listed as endangered by the U.S. Fish and Wildlife Service, nor affect any habitat designated as critical to the survival and recovery of any such species.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the LA Department of Environmental Quality before a Department of the Army permit is issued.

Any person may request, (preferably by email to the project manager, or in writing), within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

You are invited to communicate the information contained in this notice to any other parties whom you deem likely to have interest in the matter.

Brad A. Guarisco
Deputy Chief, Regulatory Division

Enclosures

FINAL PROSPECTUS
STEEP GULLY MITIGATION BANK
VERNON & RAPIDES PARISHES, LOUISIANA
MVN-2024-00392

MAY 2024

Prepared for:
U.S. Army Corps of Engineers
New Orleans District
7400 Leake Avenue
New Orleans, Louisiana 70118

Sponsor:
RES Calcasieu, LLC
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Baton Rouge, Louisiana 70808

HEADWATERS

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FINAL PROSPECTUS
RES CALCASIEU, LLC
STEEP GULLY MITIGATION BANK
VERNON AND RAPIDES PARISHES, LOUISIANA
MAY 2024

1. INTRODUCTION

RES Calcasieu, LLC (hereinafter the Sponsor) has prepared this prospectus for submittal to the U.S. Army Corps of Engineers – New Orleans District (CEMVN) and the Interagency Review Team (IRT) to provide overview of the establishment and operation of the proposed Steep Gully Mitigation Bank (SGMB) and to initiate evaluation in accordance with 33 CFR 332.8(d)(2). The details pertaining to the use and operations of this site as a mitigation bank will be specified in the subsequent mitigation banking instrument (MBI).

SGMB is being proposed to provide compensatory mitigation requirements for BLH and cypress/tupelo swamp impacts in the Louisiana Wetland Rapid Assessment Method (LRAM). The Sponsor plans to rehabilitate 509.5 acres of bottomland hardwood (BLH) wetlands, rehabilitate 14.0 acres of cypress/tupelo swamp, enhance 318.1 acres of BLH wetlands, and preserve 34.8 acres of cypress/tupelo swamp. SGMB would also include 29.1 acres of non-mitigation Section 404 Waters, 7.0 acres of non-mitigation interior access roads, and 24.1 acres of non-mitigation wildlife openings, totaling a 1,116.6-acre mitigation bank.

1.1 Site Location

SGMB is located on a tract (to be owned by the Sponsor at Bank establishment) in Eastern Vernon Parish and Western Rapides Parish, Louisiana, 7.0 miles southeast of the Community of Pitkin and 12.3 miles northwest of the Town of Oakdale (**Figure 1**). The 1,116.6-acre tract is located along Tenmile Creek within the Upper Calcasieu Watershed and is centered on the point 30.907947N, 92.829471W, within a portion of Section 31, Township 1 South, Range 4 West, Section 6, Township 2 South, Range 4 West, and Sections 1 and 12, Township 2 South, Range 5 West, Rapides and Vernon Parishes, Louisiana (**Figure 2, Figure 3**).

The SGMB is closely bordered to the west by Coker Road and closely bordered by Ten Mile Creek Road to the north, W. Cemetery Road to the east, and LA-10 (Pitkin Road) to the south. The Community of Pitkin is in proximity to the west.

The perimeter of the bank property is defined as shown on **Figure 4** by the following coordinates in decimal degrees:

Table 1 – Property Boundary Coordinates

Point	Latitude	Longitude	Point	Latitude	Longitude
1	30.892477	-92.841692	27	30.925224	-92.817768
2	30.894255	-92.84159	28	30.921474	-92.817828
3	30.895678	-92.84159	29	30.92144	-92.815328
4	30.89565	-92.839444	30	30.914055	-92.815557
5	30.899348	-92.839402	31	30.914163	-92.819875
6	30.899371	-92.84157	32	30.910375	-92.819732
7	30.901298	-92.841571	33	30.910396	-92.824105
8	30.903112	-92.841576	34	30.903398	-92.824055
9	30.903115	-92.8372	35	30.903385	-92.825048
10	30.90678	-92.837218	36	30.902564	-92.825042
11	30.911259	-92.837282	37	30.902567	-92.824537
12	30.911766	-92.835542	38	30.902732	-92.82405
13	30.912766	-92.835681	39	30.899736	-92.824029
14	30.912943	-92.835838	40	30.8993	-92.824105
15	30.913037	-92.836173	41	30.896828	-92.824008
16	30.913118	-92.83673	42	30.897114	-92.824698
17	30.913426	-92.83716	43	30.897296	-92.82516
18	30.913641	-92.837223	44	30.897581	-92.825166
19	30.914016	-92.837184	45	30.897597	-92.825952
20	30.914252	-92.837325	46	30.89694	-92.825959
21	30.914221	-92.833048	47	30.896935	-92.825616
22	30.92157	-92.833015	48	30.895693	-92.825617
23	30.92153	-92.824326	49	30.895715	-92.827485
24	30.917799	-92.824238	50	30.895748	-92.833877
25	30.917866	-92.819879	51	30.892047	-92.833877
26	30.925309	-92.819914	52	30.892095	-92.83878
			53	30.892411	-92.840093

SGMB is within the Calcasieu – Mermentau basin, USGS Hydrologic Unit Code (HUC) 080802, and the Whisky Chitto watershed, USGS HUC 08080204 (**Figure 5**). The Whisky Chitto subbasin is approximately 564,000 acres and is positioned adjacent to the Upper Calcasieu River drainage basin. The site is also located within the Steep Gully and Tenmile Creek floodplains.
Tenmile Creek flows into the Whisky Chitto River south of the SGMB property. The Whisky Chitto River then confluences with the Calcasieu River just north of LA-190. The Calcasieu River flows south into Calcasieu Lake and the Calcasieu Ship Channel before its confluence with the Gulf of Mexico. The Gulf of Mexico is approximately 83 miles from the south of the bank property.

Much of these floodplains historically consisted of mixed bottomland hardwoods, pine-hardwood flatwoods, pine savanna, bald cypress sloughs and scrub/shrub swamp hardwoods. However, as with many floodplains, much of this area was deforested and converted to pine

plantations or a variety of agricultural uses. The Whisky Chitto floodplain also represents an important flyway for migratory bird species, such as waterfowl and neotropical migrants, other species, such as, the white-tailed deer and the Louisiana Black Bear.

1.2 Driving Directions

To reach SGMB from Lafayette, Louisiana, proceed north along Interstate 49 to exit 23. Turn left at the exit to US-167 North toward Ville Platte for 18.4 miles. Continue straight on LA-10 for 37.7 miles. Access to the southern portion of the property will appear on your right.

2. PROJECT GOALS AND OBJECTIVES

The SGMB is located within a region currently used for agricultural and silvicultural production. The bank property is bounded by BLH and loblolly pine plantation habitats. In proximity to the southeast and west are few residential dwellings with commercial developments along LA-10 within the Town of Pitkin and Oakdale. The SGMB project will extend and enhance the forestland and associated riparian buffer zone along Tenmile Creek and Steep Gully. The SGMB project will enhance and restore the bank property to its historic bottomland-hardwood ecosystem within the Whisky Chitto watershed (**Figure 6**).

The goal of the SGMB is to rehabilitate 509.5 acres of BLH wetlands, rehabilitate 14.0 acres of cypress/tupelo swamp, enhance 318.1 acres of BLH wetlands, and preserve 34.8 acres of cypress/tupelo swamp within the 1,116.6-acre parcel. The SGMB will also re-establish natural stormwater flows across the property through restoration of the historical hydrology of Tenmile Creek and Steep Gully. The SGMB will reduce the amount of non-point source pollution downstream within the watershed through the removal of agricultural and certain silvicultural activities. The Sponsor will also re-establish the riparian buffer zone along Steep Gully, Tenmile Creek, and associated direct tributaries within the property.

When considering the habitat community historically present within the bank property, the Sponsor reviewed historic photography and soils information as well as other literature utilized by the USACE. Based upon our review of the USGS, Soil, Geomorphology and Pre-European settlement vegetation associations of Southwest Louisiana, it was confirmed that the bank property is located within the Swamp and Forest habitat type.

See: https://www.sciencebase.gov/catalog/item/5925eb8de4b0b7ff9fb3cc09

This conclusion was considered consistent with our field investigations and review of the bank property region.

The Natural Resource Conservation Service (NRCS) has designated one Major Land Resource Area (MLRA's) within Vernon and Rapides Parish, Louisiana, this land resource is the Western Coastal Plain MLRA. In accordance with the MLRA designation, the bank property is located within the Western Coastal Plain. Dominant vegetative communities within the Western Coastal Plain habitat type include pine-hardwood forest vegetation. Loblolly pine and shortleaf pine grow with sweetgum, southern red oak, white oak, flowering dogwood, and post oak. American beautyberry, greenbrier, hawthorns, berry vines, and others make up the woody understory.

Little bluestem and pinhole bluestem are the dominant herbaceous species. Other major grasses include beaked panicum, longleaf uniola, spike uniola, and yellow indiangrass. Many species of low-growing panicums and paspalums and perennial forbs such as tickclovers, lespedezas, wildbean, and several composites contribute significantly to the total annual yield.

The Louisiana Natural Heritage Program's (LNHP) The Natural Communities of Louisiana, 2023, utilized by the Louisiana Wetland Rapid Assessment Method (LRAM) Version 2.0 would consider the BLH forests as a natural mixed forest community indigenous to southern regions of Louisiana. Following the requirements of 33 CFR Part 332.3(e) and 40 CFR Part 230.93(e), the New Orleans District compensatory mitigation requirements include in-kind habitat replacement. Several of the habitats described in Section I.F.1 of the LRAM Version 2.0 methodology provide similar wetland functions or naturally exist together as a BLH community (i.e., bottomland hardwoods, hardwood flats, pine-hardwood flatwoods, forested batture and small stream forest) and, therefore, when offsetting impacts to any of these BLH communities, the New Orleans District should consider the SGMB as in-kind for compensatory mitigation. For purposes of this prospectus document, the bank property is considered as a BLH forest within the BLH habitat and mitigation category.

Table 2 – Current Habitat Types and Land Uses for SGMB

Current Habitat Type	Land Use	Acreage
BLH Forested Wetlands	Forestland	318.1
Cypress-Tupelo Swamp	Forestland	34.8
Emergent Wetlands	Pasture/Herbaceous	1.9
Pine Plantation Wetlands	Silviculture/Forestland	132.3
Mixed Hardwood/Pine Cutover Wetlands	Silviculture/Forestland	391.2
Uplands - Herbaceous	Pasture/Herbaceous	5.1
Uplands - Pine Plantation	Silviculture/Forestland	204.1
Section 404 Waters	Drainage Features	29.1
Total		**1,116.1**

Table 3 – Proposed Mitigation Bank Habitat Types for SGMB

Current Habitat Type	Proposed Habitat Type	Acreage	Mitigation Type
BLH Forested Wetlands	BLH Forested Wetlands	318.1	BLH Enhancement
Cypress-Tupelo Swamp	Cypress-Tupelo Swamp	34.8	Cypress-Tupelo Preservation
Pine Plantation Wetlands	BLH Forested Wetlands	132.3	BLH Rehabilitation I
Mixed Hardwood/Pine Cutover Wetlands	BLH Forested Wetlands	377.2	BLH Rehabilitation II
Mixed Hardwood/Pine Cutover Wetlands	Cypress-Tupelo Swamp	14.0	Cypress-Tupelo Rehabilitation
Uplands - Pine Plantation	Hardwood Uplands	180.0	Upland Inclusion
Section 404 Waters	Drainage Features	29.1	Non-Mitigation
Uplands –Pine Plantation	Wildlife Openings	24.1	
Emergent Wetlands/Uplands-Herbaceous	Interior Access Road	7.0	
TOTAL		**1,116.6**	

3. ECOLOGICAL SUITABILITY OF THE SITE/BASELINE CONDITIONS

This section describes the ecological suitability of SGMB to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the SGMB site and how that site will support the planned types of aquatic resources and function, as stated in 33 CFR 332.8(d)(2)(vii)(B). This section provides the baseline/current site conditions on and adjacent to the proposed site.

Despite extensive anthropogenic alteration associated with silvicultural practices, SGMB is ecologically suited to support BLH and cypress/tupelo wetland habitats based on location, historic and current habitats, proximity to existing forested wetland habitats, historic hydrology, and soil types. These site characteristics provide ideal conditions for the establishment of a mitigation bank that will provide additional areas of contiguous forested wetland habitat to support resident and migratory wildlife native to BLH and cypress/tupelo ecosystems in an area that has experienced significant loss of wetlands to agricultural conversion and intensive timber management prescriptions.

3.1 Land Use

3.1.1 Historical Land Use

Historically, several varieties of BLH forests existed throughout the Parish, but large portions of the land were cleared for silviculture, livestock grazing and agricultural uses. Historic imagery dating back to 1952 depicts the bank property as a mixture of predominately bottomland hardwoods, mixed pine-hardwood, and agricultural fields

(**Figures 7A-D**). Forested habitats were present adjacent to the bank property and would be considered of similar landscape and geographic position. The SGMB lands are currently a mixture of BLH forest, scrub shrub, and pine plantation. Historic aerial imagery shows that the bank property has been used for silvicultural practices since the early 1980s and has continued to be in that state to the present day. Pine plantation has been present on the property's outer portions of the property since roughly 1985. Additionally, timber management plans for the property indicate that the previous owner harvested timber in the areas now existing as cutover habitats with the intention of converting the areas into short-rotation pine plantation. However, there was no planting conducted after the last harvest and as a result, vegetation within the cutover areas is composed of early successional, naturally regenerated vegetation species.

The soils mapped on the bank property, particularly the Caddo and Guyton series, indicate that the historical plant community was likely that of bottomland hardwoods. Hardwoods, such as oak (*Quercus spp.*), hickory (*Carya spp.*), walnut (*Juglans spp.*) maples (*Acer spp.*) and gum (*Nyssa spp.*), would have likely dominated the bank property, and some remain present on the interior of the property.

3.1.2 Current Land Use

The SGMB is currently used for silvicultural practices and outdoor recreation in its current state. Alterations to the historic landscape would include interior roadways, row grading for pine plantation, and degradation of historical vegetation composition. The current land uses within the property can be broken down into 39.7% Mixed Forest, 36.3% Scrub/Shrub, and 24.0% Pine Silviculture. No other land uses were observed within the bank property (**Figure 8A**).

The SGMB and adjacent property is within unincorporated land and is absent of zoning regulations. The SGMB is connected to and primarily surrounded by undeveloped forestlands and Loblolly Pine plantations. The bank property is zoned in rural zone (R). Maintaining the watershed from future development will promote the reduction in non-point source pollution downstream and flooding upstream within the watershed. When considering a one (1) mile radius around the bank property, the current land use surrounding the property consists of 18.6% Woody Wetlands, 17.0% Shrub/Scrub, 36.0% Evergreen Forest, 14.0% Herbaceous, 8.2% Hay/Pasture, and 3.0% Developed, Open Space (**Figure 8B**).

3.2 Soils

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) dataset for Vernon and Rapides Parishes show that the Bank is underlain by eleven (11) soil map units (**Figure 9**). Table 4 shows the soil map unit's individual soil component description, hydric status, and percentage of the Bank the map unit encompasses.

Table 4 – Soil Types Present Within SGMB (Figure 9)

Map Unit Symbol	Map Unit Name	% Hydric	% of Site
BaB	Beauregard fine sandy loam, 1 to 3 percent slopes	15	0.0
BeB	Beauregard silt loam, 1 to 3 percent slopes	4	0.0
Ca / CaA	Caddo silt loam, 0 to 1 percent slopes	90	0.4
ChB	Cahaba fine sandy loam, 1 to 3 percent slopes	10	1.9
GuoA / Gy	Guyton-Ouachita complex, 0 to 1 percent slopes, frequently flooded	95	70.8
KbB / KcB	Kirbyville-Niwana complex	15	9.1
MaB / MaC	Malbis fine sandy loam, 1 to 3 percent slopes	15	2.9
MaC	Malbis fine sandy loam, 3 to 5 percent slopes	15	5.4
RsB / RuB	Ruston fine sandy loam, 1 to 3 percent slopes	0	1.3
RsC / RuD	Ruston fine sandy loam, 3 to 8 percent slopes	0	8.1
SmE	Smithdale fine sandy loam, 8 to 12 percent slopes	0	0.1

Generally, the soils that occur within the site are described as gently sloping and poorly drained. The soil textures are generally silty loam or sandy loam with parent materials of loamy alluvium derived from igneous, metamorphic, and sedimentary rock or loamy fluviomarine deposits of the early Pleistocene age. The dominant soil map units consist of the Guyton-Ouachita complex, 0 to 1 percent slopes, frequently flooded (GuoA/Gy) and the Kirbyville-Niwana complex (KbB/KcB).

The Guyton series consists of very deep, poorly drained associated with flood plains. The typical profile of these soils consist of silt loam from the surface to 44 inches deep, with silty clay loam from 40 to 80 inches deep. Guyton soils are frequently flooded unless protected by levees.

The Kirbyville series consists of very deep, somewhat poorly drained associated with flats. The typical profile of these soils consist of loam from the surface to 79 inches deep. Kirbyville soils are also considered rarely flooded.

SGMB has been historically utilized for silviculture practices and recreational uses throughout its existence.

3.3 Hydrology

3.3.1 Contributing Watershed

The contributing watershed was identified using data from the USGS HUC dataset and the USGS Steep Gully, Louisiana 1:24,000 topographic map (**Figure 11**). Flow directional arrows were added to identify the approximate water flow direction of the contributing

watershed. Based on these data, it was estimated that the contributing watershed upgradient of SGMB is approximately 46,675 acres.

3.3.2 Historical Hydrology and Drainage Patterns

All storm water within this region flows south and southeast into the Whisky Chitto River system to the south and southeast. Although the bank property is considered within the Whisky Chitto watershed, the bank property is specifically within the lower watershed of the river providing a significant opportunity to reduce non-point source pollution within this watershed before natural storm water flows progress into the more urbanized and developed regions of the watershed. Historical quadrangle site maps were considered when determining the historic hydrology and drainage patterns within the bank property (**Figure 12A-D**). Available quadrangle site maps included 1947, 1959, 1997 and 2012. The historic hydrologic regime of the bank property and the adjacent properties are depicted on the Historic Hydrology Map (**Figure 13**).

The Calcasieu River downstream from the bank property extends through an area concentrated in petroleum refineries, lumber and wood processing facilities, and other industrial/manufacturing plants. Industrial facilities are the largest users of the water in Calcasieu Parish. As such, the Calcasieu River and its estuarine environment have been impacted with industrial pollutants. With increased filtration and plant uptake proposed within the SGMB, it is expected that the SGMB will contribute to improving the water quality in the Whisky Chitto and Calcasieu River Basin.

3.3.3 Current Hydrology and Drainage Patterns

The primary drainage pattern of the bank property flows southeast via overland and sheet flows and through Tenmile Creek and Steep Gully along with other unnamed tributaries (**Figure 11**). These streams generally go to the southeast until their confluence with Tenmile Creek and then its confluence with Whisky Chitto Creek roughly 13.5 miles downstream. Current hydrology has been altered from the historic hydrologic regime, previously described, through previous silvicultural land use practices. Furthermore, a dummy line railroad bed historically utilized by timber companies transects the central portion of this site. Although wetland characteristics exist within the area and along the dummy line, the presence of this relic rail bed has altered the natural sheet flow hydrology associated with the floodplain of Tenmile Creek and has forced surface flows to be concentrated through existing gaps in the dummy line .

As described, historically, the natural storm water runoff was conveyed via overland flows in a southernly direction across the bank property. Storm water runoff was conveyed through the unnamed tributaries and natural drainage patterns in wetland systems, which were historically present. The current topography continues to convey storm water runoff south and southeast through the bank property along Tenmile Creek and towards the Whisky Chitto Creek River system.

In terms of the current hydrology patterns within the adjacent properties, the bank property would not be affected. As described within this prospectus, storm water flows

southeast across the property through Tenmile Creek and associated tributaries. Pine plantations are similarly located to the north, south, east, and west within the same drainage basin. Surface water runoff from the adjacent properties to the north, south, east, and west also flows towards the bank property. The presence of the unnamed tributary along the east boundary of the bank property provides a conveyance for storm water runoff from these adjacent fields and improvements. This overall drainage basin is expected to support a self-sustaining BLH ecosystem within the Whisky Chitto Creek subbasin (**Figure 6**).

3.3.4 Jurisdictional Wetlands

On behalf of RES Calcasieu, LLC, Headwaters, Inc. performed a wetland delineation and determination on the SGMB property in May and October 2023. The determination report will be submitted to the USACE New Orleans District for a preliminary jurisdictional determination (PJD) under separate cover. A wetland location exhibit from this report has been provided within **Appendix B** of this Prospectus document. A table depicting the breakdown of potentially jurisdictional wetlands and habitats was included in Section 2 above.

3.4 Vegetation

3.4.1 Historical Plant Community

SGMB is located in the South-Central Plains Level III Ecoregion and the Southern Tertiary Uplands Level IV Ecoregion (35e; Environmental Protection Agency [EPA]), the South Atlantic and Gulf Slope Cash Crops, Forest, and Livestock Region (LRR P), and the Western Coastal Plain (MLRA 133B; Natural Resources Conservation Service [NRCS]).

The property is located in the lower portions of the Western Coastal plain, which according to the NRCS, primarily supports pine-hardwood vegetation. It consists of steep uplands intricately dissected by streams, which occasionally have broad flood plains and terraces. Tree species commonly supported in this area include the loblolly pine (*Pinus taeda*), sweetgum (*Liquidambar styraciflua*), southern red oak (*Quercus falcata*), and white oak (*Quercus alba*), among others. However, due to the location of the property along an alluvial flood plain, species such as overcup oak (*Quercus lyrata*), willow oak (*Quercus phellos*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*) would have likely dominated the property, and some remain present on the interior of the property presently.

3.4.2 Current Plant Community

The wetland delineation surveys conducted identified five distinct wetland habitat types existing on the Bank including mature, but degraded BLH wetlands, mixed hardwood/pine cutover wetlands, mature cypress/tupelo swamps, emergent wetlands, and actively managed pine plantation wetlands (**Figure 10**). Due to the topography, natural drainage patterns of the site, and the overall property location, the preponderance

of the lower lying areas within the floodplains of Tenmile Creek and Steep Gully have hydric (soils and hydrology) characteristics throughout.

- The BLH wetland habitats are dominated by a mixture of species commonly found in native BLH forests. The tree stratum consists of species such as swamp tupelo (*Nyssa sylvatica*), water oak (*Quercus nigra*), bald cypress (*Taxodium distichum*), red maple (*Acer rubrum*), Green ash (*Fraxinus pennsylvanica*), sweetgum (*Liquidambar styraciflua*), Chinese privet (*Ligustrum sinense*), and Chinese tallow (*Triadica sebifera*). The sapling/shrub stratum in this habitat includes the aforementioned species as well as sweetbay magnolia (*Magnolia virginiana*), eastern baccharis (*Baccharis halimifolia*), and wax myrtle (*Morella cerifera*). The herbaceous layer in this habitat is primarily comprised of marsh flat sedge (*Cyperus pseudovegetus*), sweetbay magnolia (*Magnolia virginiana*), lizard's-tail (*Saururus cernuus*), shallow sedge (*Carex lurida*), and green arrow arum (*Peltandra virginica*).

- The cypress/tupelo swamp habitat is dominated by species such as bald cypress and swamp tupelo. Species identified on the fringe of this habitat include red maple, Chinese tallow and sweetgum in the tree stratum. The sapling/shrub layer in this habitat is common buttonbush (*Cephalanthus occidentalis*) and the herbaceous layer in this stratum is limited due to periodic inundation.

- The mixed hardwood/pine cutover wetland habitats are dominated by early successional sapling/shrubs including loblolly pine, Chinese tallow, sweetgum, Chinese privet, wax myrtle, and baccharis. There is no overstory stratum present within this area. The herbaceous stratum within these areas consists of lizard's tail, shallow sedge, marsh flat sedge, broadleaf cattail, and swamp smartweed among others.

- The emergent wetland habitats are dominated by species such as eastern baccharis, marsh flat sedge, globe flat sedge (*Cyperus enchinatus*), common buttonbush, herbwilliam (*Ptilimnium capillaceum*), prickly bog sedge (*Carex atlantica*), broadleaf cattail, winged loosestrife (*Lythrum alatum*), and blunt spike rush (*Eleocharis obtusa*).

- The actively managed pine plantation wetland habitats are dominated by loblolly pine (*Pinus taeda*), with a secondary component of American holly (*Ilex opaca*), sweetgum, American beautyberry (*Callicarpa americana*), yaupon (*Ilex vomitoria*), common greenbrier (*Smilax rotundifolia*), and saw-tooth blackberry (*Rubus argutus*).

Through the increase in timber management towards short rotation loblolly pine, and overall lack of habitat management, the expanse of the BLH wetlands has drastically decreased. As a result, current plant species and composition in these areas have been degraded.

3.5 General Need for the Project in this Area

Steep Gully Mitigation Bank is proposed to provide compensatory mitigation for New Orleans District approved projects within the Calcasieu-Mermentau basin USCG HUC's 08080201, 08080202, 08080203, 08080204, 08080205 and 08080206.

The mitigation bank project is intended to serve the continued growth and development occurring within southwest Louisiana. The proposed service area is positioned within a substantial growth zone that includes industrial developments, infrastructure and, of course, hydrocarbon exploration and production. This development trend has presented a need for environmental permitting management and compensatory wetland mitigation banking. The position of the bank project along the perimeter of the development, but within the immediate Calcasieu River watershed, provides an immediate opportunity to service future projects while rehabilitating and protecting the important BLH ecosystem within this watershed. It is believed that the location of the bank is ideal in terms of existing and future growth trends along important tributaries of the Whisky Chitto River.

As will be described below, the Sponsor's development team, has extensive experience in the establishment and management of BLH habitat and mitigation banking within the New Orleans, Vicksburg, Mobile, and other districts. Further, the mitigation bank development team has experience with commercial, industrial and infrastructure developments within the region by assisting with the regulatory affairs, such as, securing environmental clearances, permits and authorizations as required by the National Environmental Policy Act, and Sections 404 and 401 of the Clean Water Act. It is believed that this experience, knowledge, and relationship with the resource agencies regulating the region will provide the tools for a successful bank project.

Various natural communities of BLH 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 BLH forests, SGMB is properly sited to add to habitat and corridors of and for the Louisiana Black Bear. The Louisiana Department of Wildlife and Fisheries (LDWF) identified Vernon Parish as falling within the historic range of Louisiana Black Bears. Currently, Louisiana supports three (3) core bear populations: the Tensas River Basin population in the north, the upper Atchafalaya River Basin population in central Louisiana, and the coastal population in the southern Atchafalaya River Basin. However, black bears particularly dispersing males, can be found throughout Louisiana. Although black bears are not currently known to utilize the bank property, improving, and protecting a forested corridor along the Whisky Chitto River and greater Calcasieu River watershed will maintain this opportunity. The rehabilitation of the forest will also likely provide wintering habitat for neotropical migrants.

The SGMB is uniquely located within the lower reaches of the Whisky Chitto River watershed and generally adjacent to the Calcasieu River system. The bank property is also positioned uniquely between the West Bay, Fort Polk, Clear Creek Alexander Forest and Peason Ridge State Wildlife Management Areas, and Palustris Experimental Forest Longleaf tract all of which are located within the Whisky Chitto River and adjacent Calcasieu River watershed. Rehabilitation and protection 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. The rehabilitation of the forest will also provide wintering habitat for neotropical migrants.

No significant known conditions exist off site that would impinge upon the Sponsor's ability to sustain the use of this parcel as a mitigation bank. The Sponsor does not foresee any negative impacts associated with the adjacent land uses or future land uses. In fact, given the location of the bank property, hydrologic influence, and association with the Whisky Chitto and Calcasieu River watershed, it is believed that the bank property will be successful as a self-sustaining BLH forested wetland ecosystem with minimal risks from outside influences.

4. ESTABLISHMENT OF A MITIGATION BANK

This section describes how the mitigation bank will be established, as stated in 33 CFR 332.8(d)(2)(ii); the technical feasibility of the proposed mitigation bank, as stated in 33 CFR 332.8(d)(2) (iv); and the assurance of sufficient water rights to support the long-term sustainability of the mitigation bank, as stated in 33 CFR 332.8(d)(2)(vii)(A).

4.1 Site Restoration Plan

This section provides information on the proposed soils, hydrologic, and vegetative work that was determined to be necessary for the establishment of the proposed SGMB.

The Sponsor plans to rehabilitate 509.5 acres of bottomland hardwood (BLH) wetlands, rehabilitate 14.0 acres of cypress/tupelo swamp, enhance 318.1 acres of BLH wetlands, and preserve 34.8 acres of cypress/tupelo swamp. SGMB would also include 29.1 acres of non-mitigation waters, 7.0 acres of non-mitigation interior access roads, and 24.1 acres of non-mitigation wildlife openings, totaling a 1,116.6-acre mitigation bank that will provide compensatory mitigation for unavoidable wetland impacts in the Calcasieu-Mermantau Basin.

The proposed mitigation bank work plan (**Figures 14A and 15**) involves the cessation of silvicultural operations, improvement and preservation of surface hydrology, and reforestation of native vegetation.

4.2 Soil Work Plan

The only anticipated intentional soil movement will be during site preparation and modification of the dummy line railbed. Silvicultural harvesting practices will likely disturb soil in some areas; however, it will be required that those practices adhere to the most current Best Management Practices. Additionally, the soil roughness introduced as a result of the site work will improve ecological function and biodiversity within the bank.

4.3 Hydrologic Work Plan

The existing hydrology of the site satisfies the wetland criteria as described in the USACE 1987 Wetlands Delineation Manual and will be maintained hereafter. As previously mentioned, historical silviculture practices on the site, to include a relic dummy line railroad bed, have altered the natural surface hydrology of the site. As such, the dummy line railbed will be degraded

where necessary to further restore the surface hydrology to the natural conditions existing prior to any manmade alterations (**Figure 14A**). Existing gaps in the dummy line railbed will be modified, as dictated by field conditions, to meet adjacent stream bed elevations. Additionally, two additional gaps will be incorporated into the dummy line railbed to further improve the hydrology through the site. The locations of the additional gaps will be field-fitted and dictated by site conditions as observed during restoration.

4.4 Vegetative Work Plan

Numerous bank objectives shall be achieved through reforestation of native plant species. Planting shall positively affect the physical structure of the area and restore biogeochemical processes in the soil considerably through additional plant and invertebrate detritus. Additionally, it shall provide improved biotic conditions and create habitat for mammals, amphibians, arachnids, insects, and migratory birds. Restored forested and vegetative habitats filter sediment runoff into the site and help prevent deposition downstream. Furthermore, it provides atmospheric maintenance and natural aesthetics to the area. Management categories proposed for the Bank are described herein.

4.4.1 BLH Rehabilitation I

BLH Rehabilitation I is proposed in areas presently managed as mature pine plantations which are considered degraded and lack the physical structure of wetland habitats defined in the LRAM Version 2.0 Section I.F.1, but still meet the criteria for wetlands. In these areas, the Sponsor can restore the natural BLH vegetative component by the removal of pine plantation and planting of more appropriate native BLH species. Work in this area will also include the control of nuisance, invasive, and/or noxious species. According to vegetative data for this management type, Chinese tallow comprises approximately 10 to 20 percent of the vegetative coverage in these areas (**Figure 16**).

4.4.2 BLH Rehabilitation II

BLH Rehabilitation II is proposed in areas existing as recent mixed/hardwood cutover habitats, with nearly no existing trees or overstory, which are considered degraded and lack the physical structure of wetland habitats defined in the LRAM Version 2.0 Section I.F.1, but still meet the criteria for wetlands. In these areas, the Sponsor can restore the natural BLH vegetative component by the planting of native BLH species. Work in this area will also include the control of nuisance, invasive, and/or noxious species. According to vegetative data for this management type, Chinese tallow comprises approximately 10 to 75 percent of the vegetative coverage in these areas (**Figure 16**).

4.4.3 BLH Enhancement

BLH Enhancement is proposed in areas of existing mature bottomland hardwoods which are considered degraded and lack the physical structure of wetland habitats defined in the LRAM Version 2.0 Section I.F.1, but still meet the criteria for wetlands. In these areas, the Sponsor can restore the natural BLH vegetative component by the removal of the existing invasive and/or noxious species (i.e. Chinese tallow, Chinese privet, etc.) and to

improve the existing habitat through selective herbicide treatment, supplemental replanting of hard mast species, and timber stand improvement. According to vegetative data for this management type, Chinese tallow comprises approximately 10 to 50 percent of the vegetative coverage in these areas (**Figure 16**).

4.4.4 Cypress/Tupelo Rehabilitation

Cypress/Tupelo Rehabilitation is proposed in areas that have been subject to the same clear-cut silvicultural practices as the mixed/hardwood cutover habitats. These areas exist in lower, depressional areas that are subject to more prolonged inundation and are considered degraded and lack the physical structure of wetland habitats defined in the LRAM Version 2.0 Section I.F.1, but still meet the criteria for wetlands. In these areas, the Sponsor can restore the cypress/tupelo vegetative component by the planting of more appropriate native species. Work in this area will also include the control of nuisance, invasive, and/or noxious species. According to vegetative data for this management type, Chinese tallow comprises approximately 20 percent of the vegetative coverage in these areas (**Figure 16**).

4.4.5 Cypress/Tupelo Preservation

Cypress/Tupelo Preservation is proposed in areas of existing cypress/tupelo swamp which exhibit the structure of wetland habitats defined in the LRAM Version 2.0 Section I.F.1 and meet the criteria for wetlands. These areas exist at lower elevations within the property and are subject to more frequent and/or permanent inundation and meet the standards of a high quality cypress/tupelo swamp. In these areas, the Sponsor can attempt to prevent encroachment of undesirable, invasive, or noxious species through selective herbicide treatment if needed. According to vegetative data for this management type, Chinese tallow comprises a negligible percent of the vegetative coverage in these areas (**Figure 16**). These areas are considered functioning and integral to the quality and functionality of adjacent wetlands.

The following sections provide details on planting specifications for each of the proposed mitigation habitat types.

4.4.6 BLH Rehabilitation I and BLH Rehabilitation II Planting Specifications

A. The sponsor plans to rehabilitate 132.3 acres of BLH wetlands within the BLH Rehabilitation I management type and 377.2 acres of BLH wetlands within the BLH Rehabilitation II management type.

B. Tree plantings shall consist of one (1) or two (2) year old bare-root seedlings and/or potted trees composed of a mixture of the hard and soft mast species listed in **Table 5**, obtained from a Louisiana registered, licensed nursery grower. If seedlings listed in **Table 5** are not available or there is only a limited supply, then substitutions may be made from the listed substitution species if approved by the IRT. The sponsor will mix species, off site, in such a manner that will ensure adequate species diversity and that

monotypic tree rows will not be established. Adequate time will be allowed for reserving seedlings from nurseries.

C. Prior to tree planting, pine plantation vegetation within these areas will be harvested and removed from the site utilizing standard silvicultural practices and appropriate forest management strategies.

D. Seedlings will be hand planted on approximately 9′ by 9′ spacing to achieve an initial stand density of approximately 538 seedlings per acre. Hard and soft mast species will be planted with a composition, on average, of 60-70 percent hard mast species. The species mix for BLH habitat may include any mixture of the native species listed in **Table 5**. Please note that due to the existing soft mast seed bank present (based on wetland delineation report and multiple field site visits), soft mast species are anticipated to naturally regenerate; therefore, the soft mast species diversity, over time, shall exceed that noted in **Table 5**. Planting will occur between December 15 through March 15.

E. Seedlings 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 ensure adequate species diversity. The exact species and quantities for planting will be determined by the availability from commercial nurseries providing localized ecotype seedlings. Seedlings will 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 in southwest Louisiana. Single species plantings will generally be avoided.

F. The sponsor will employ mechanical or chemical control or some combination thereof to control noxious/invasive species colonization or other plant competition, on an as needed basis. The sponsor will use all prudent efforts (physical, chemical, and/or mechanical) to remove and control Chinese tallow and any other existing noxious/invasive vegetation from the bank property to the nearest seed sources for colonization by these species. The sponsor will monitor the bank to prevent infestation by noxious/invasive vegetation. Noxious/invasive vegetation stem density will be controlled to prevent the colonization of species or the effect of target species establishment. Sponsor may use disking and/or herbicide application during the first three (3) years of growth to reduce competition for seedlings (i.e., disking or mowing between rows of planted trees or chemical applications to encourage survival and growth of desirable plant species).

Table 5 – Planting List for BLH Rehabilitation

Scientific Name	Common Name	Mast	Percentage
Quercus lyrata	Overcup Oak	Hard	15
Quercus texana	Nuttall Oak	Hard	15
Quercus nigra	Water Oak	Hard	10
Quercus shumardii	Shumard's Oak	Hard	10

Carya aquatica	Water Hickory	Hard	10
Quercus michauxii	Swamp Chestnut Oak	Hard	10
Taxodium distichum	Bald Cypress	Soft	10
Acer rubrum	Red Maple	Soft	5
Liquidambar styraciflua	Sweetgum	Soft	5
Celtis laevigata	Sugarberry	Soft	5
Ulmus americana	American Elm	Soft	5
Substitution List			
Scientific Name	**Common Name**	**Mast**	
Quercus laurifolia	Laurel Oak	Hard	
Quercus pagoda	Cherrybark Oak	Hard	
Quercus phellos	Willow Oak	Hard	
Carya lecontei	Bitter Pecan	Hard	
Platanus occidentalis	American Sycamore	Soft	

4.4.7 BLH Enhancement Planting Specifications

A. The sponsor plans to enhance 318.1 acres of BLH wetlands within the BLH Enhancement management type.

B. Tree plantings shall consist of one (1) or two (2) year old bare-root seedlings and/or potted trees composed of a mixture of the species listed in **Table 6**, obtained from a Louisiana registered, licensed nursery grower. If seedlings listed in **Table 6** are not available or there is only a limited supply, then substitutions may be made from the listed substitution species if approved by the IRT. The sponsor will mix species, off site, in such a manner that will ensure adequate species diversity and that monotypic tree rows will not be established. Adequate time will be allowed for reserving seedlings from nurseries.

C. Prior to tree planting, undesirable vegetation within this area will be removed.

D. Due to existing vegetation in the BLH Enhancement areas, soil ripping and rowing will not be utilized prior to planting. Seedlings will be hand planted on approximately 12' by 12' spacing, to achieve a stand density of approximately 302 planted seedlings per acre. Hard mast species will be planted among the existing trees to achieve an initial stand density, on average, of 60-70 percent hard mast species. The species mix for BLH habitat may include any mixture of the native species listed in **Table 6**. Please note that due to the existing soft mast seed bank present (based on wetland delineation report and multiple field site visits), soft mast species are anticipated to naturally regenerate; therefore, the soft mast species diversity, over time, may exceed that noted in **Table 6**. Planting will occur between December 15 through March 15.

E. Seedlings 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 or more species may be represented in the

planting assemblage to ensure adequate species diversity. The exact species and quantities for planting will be determined by the availability from commercial nurseries providing localized ecotype seedlings. Seedlings will 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 in southwest Louisiana. Single species plantings will generally be avoided.

F. The sponsor will employ mechanical or chemical control or some combination thereof to control noxious/invasive species colonization or other plant competition, on an as needed basis. The sponsor will use all prudent efforts (physical, chemical, and/or mechanical) to remove and control Chinese tallow and any other existing noxious/invasive vegetation from the bank property to the nearest seed sources for colonization by these species. The sponsor will monitor the bank to prevent infestation by noxious/invasive vegetation. Noxious/invasive vegetation stem density will be controlled to prevent the colonization of species or the effect of target species establishment. Sponsor may use herbicide application to achieve desired hard/soft mast ratios and/or to reduce competition for seedlings.

Table 6 – Planting List for BLH Enhancement

Scientific Name	**Common Name**	**Mast**	**Percentage**
Quercus lyrata	Overcup Oak	Hard	20
Quercus texana	Nuttall Oak	Hard	15
Quercus nigra	Water Oak	Hard	20
Quercus shumardii	Shumard's Oak	Hard	15
Carya aquatica	Water Hickory	Hard	15
Quercus michauxii	Swamp Chestnut Oak	Hard	15
Substitution List			
Scientific Name	**Common Name**	**Mast**	
Quercus laurifolia	Laurel Oak	Hard	
Quercus pagoda	Cherrybark Oak	Hard	
Quercus phellos	Willow Oak	Hard	
Carya lecontei	Bitter Pecan	Hard	

4.4.8 Cypress/Tupelo Rehabilitation Planting Specifications

A. The sponsor plans to rehabilitate 14.0 acres of cypress/tupelo wetlands within the Cypress/tupelo rehabilitation management type.

B. Tree plantings shall consist of one (1) or two (2) year old bare-root seedlings and/or potted trees composed of a mixture of bald cypress and water tupelo species from a Louisiana registered, licensed nursery grower. Adequate time will be allowed for reserving seedlings from nurseries.

C. Prior to tree planting, undesirable vegetation within this area will be removed.

D. Seedlings will be hand planted on approximately 12′ by 12′ spacing to achieve an initial stand density of approximately 302 seedlings per acre. Planting will occur between December 15 through March 15.

E. Seedlings will be mixed upon plantings so that areas are not comprised of a single species. The distribution of stems will create a mosaic of species that will provide seasonally available forages for a wide range of indigenous wildlife in southwest Louisiana.

F. The sponsor will employ mechanical or chemical control or some combination thereof to control noxious/invasive species colonization or other plant competition, on an as needed basis. The sponsor will use all prudent efforts (physical, chemical, and/or mechanical) to remove and control Chinese tallow and any other existing noxious/invasive vegetation from the bank property to the nearest seed sources for colonization by these species. The sponsor will monitor the bank to prevent infestation by noxious/invasive vegetation. Noxious/invasive vegetation stem density will be controlled to prevent the colonization of species or the effect of target species establishment. Sponsor may use disking and/or herbicide application during the first three (3) years of growth to reduce competition for seedlings (i.e., disking or mowing between rows of planted trees or chemical applications to encourage survival and growth of desirable plant species).

4.4.9 Cypress/Tupelo Preservation Planting Specifications

A. The sponsor plans to preserve 34.8 acres of cypress/tupelo wetlands within the Cypress/Tupelo Preservation management type.

B. No planting is proposed in the Cypress/Tupelo Preservation areas; however, the sponsor will manage for noxious or invasive species that negatively affect the physical structure of the area through selective herbicide treatment.

4.5 Technical Feasibility

Construction work required to develop SGMB is routine, feasible, and based on currently accepted restoration methods. The construction work and subsequent mitigation activities will consist of 1) site preparation, 2) vegetation planting, and 3) monitoring. The presence of hydric soils and suitable wetland hydrology of the bank indicate that minimal soil work shall be required for the successful restoration of BLH and cypress/tupelo habitats. The existence of these habitats in close proximity to the bank and within the Tenmile Creek watershed indicate a high potential for successful restoration. Furthermore, the bank's conservation objective shall be achieved through preservation of the bank from future development activities through legal documentation (e.g., conservation easements).

4.6 Current Site Risks

The sponsor does not foresee any adverse impacts to the bank resulting from continued existence and operation of neighboring land uses. There are no existing hydrologic disturbances on or adjacent to the site at the present time.

Since this is the Prospectus, no official survey has been completed on the property. Should the IRT approve this project and recommend that it should move forward, a survey will be completed and contained within the draft MBI.

4.7 Long-Term Sustainability of the Site

The sponsor shall be the responsible agent for the long-term management of SGMB, unless a third-party entity is established and given authority to maintain the bank in perpetuity through approval by the IRT.

The primary long-term strategy of the bank is to be self-sustaining with relatively low maintenance. This management strategy is linked to the development stage of the mitigation banking process, particularly in the design and establishment of the bank. Native planting plans and increased natural flood attenuation shall provide these ecological benefits with minimal routine maintenance or attention after establishment. Prior to final release and in accordance with the timelines established by the MBI, the sponsor shall establish a non-wasting endowment supporting the bank's long-term maintenance plan.

5. PROPOSED SERVICE AREA

This section identifies the proposed services areas as stated in 33 CFR § 332.8(d) (2) and the general need for the proposed bank in this area as stated in 33 CFR § 332.8(d)(2)(iv).

The proposed SGMB is located within the Whisky Chitto subbasin (USGS HUC 08080204), which includes portions of Rapides, Allen, Beauregard, and Vernon Parishes, Louisiana. The SGMB will provide compensatory mitigation service to the Whisky Chitto subbasin (USGS HUC 08080204), the Mermentau Headwaters subbasin (08080201), The Mermentau subbasin (08080202), the Upper Calcasieu subbasin (08080203), the West Fork Calcasieu subbasin (08080205), and the Lower Calcasieu subbasin (08080206) of the Calcasieu-Mermentau Basin (080802). The proposed service area for the SGMB is depicted in **Figure 17**.

6. OPERATION OF THE MITIGATION BANK

This section describes how the proposed Bank will be operated, as stated in 33 CFR 332.8(d)(2) (ii) and provides details on the proposed ownership arrangements and long-term management strategy for the mitigation bank, as stated in 33 CFR 332.8(d)(2) (v).

6.1 Project Representatives

Sponsor/Landowner/Operations Manager:

RES Calcasieu, LLC
c/o Resource Environmental Solutions, LLC
2341 S. Acadian Thruway, Suite 285
Baton Rouge, Louisiana 70808
Point of Contact: Dustin Romero
Email: dromero@res.us
Phone: (337) 962-0177

6.2 Qualifications of Sponsor

RES' experiences and qualifications include:

- Restoration, enhancement, and preservation of 58,024 acres of wetlands;
- Restoration of over 328 miles of streams;
- Rehabilitation, preservation, and/or management of over 15,000 acres of special-status species habitat;
- Successful close-out of over 100 Banks;
- Permitted and developed over 200 permittee-responsible mitigation projects;
- Designed, permitted, managed, and developed 138 wetland, stream, species and conservation banks;
- Delivered of 20,000 acres of custom, turnkey mitigation solutions;
- Designed and constructed over 350 stormwater management facilities;
- Reduced over 267 tons of water quality nutrients;
- Planted over 17,400,000 trees across all operating regions;
- Developed and operated nurseries in three (3) states including the largest coastal nursery in Louisiana;
- Facilitated compensatory mitigation and nutrient offsets for over 3,434 federal and state permits; and
- Currently, monitoring for over 50,000 acres of mitigation habitat.

A company profile may be viewed at www.res.us.

6.3 Proposed Long-Term Ownership and Management Representatives

RES Calcasieu, LLC is under contract to purchase the property and intends to purchase it prior to the first credit request. RES Calcasieu, LLC will be the Bank Sponsor.

6.4 Site Protection

The Owner of the proposed bank shall burden the bank with a perpetual Conservation Servitude in accordance with the Louisiana Conservation Servitude Act, R.S. 9:1271 et seq. The Conservation Servitude shall be signed and filed with Vernon and Rapides Parish offices with the MBI and Department of Army (DA) permits attached. The conservation servitude shall be filed prior to performing any work authorized by the DA permit to be attained.

After filing, a copy of the recorded Conservation Servitude will be provided to CEMVN clearly showing the book, page, and date of filing. Upon receipt of a copy of the recorded Conservation Servitude, CEMVN will advise the sponsor in writing that work may proceed.

Prior to execution of the Conservation Servitude, the sponsor shall ensure that the entity proposed to hold the Conservation Servitude is a CEMVN approved Holder by virtue of being either a governmental body empowered to hold an interest in immovable property under the laws of the State of Louisiana or the United States of America; or a non-profit corporation organized pursuant to Louisiana's Non-Profit Corporation Law, Title 12, Sections 201-269 of the Louisiana Revised Statues, the purposes or powers of which include retaining or protecting the natural, scenic, or open–space values of immovable property; assuring the availability of immovable property for agricultural, forest, recreational or open-space use; protecting natural resources; maintaining or enhancing air or water quality; or preserving the historical, archaeological or cultural aspects of unimproved immovable property. Upon execution of the Conservation Servitude previously described, the Holder shall hold and enforce the conservation servitude placed on the Bank and the Bank shall be protected in perpetuity.

Modification of the conservation servitude is not permissible without prior written authorization from CEMVN. Any request to modify the Conservation Servitude, or to the rights and obligations created under it, shall be made in writing and forwarded to CEMVN for review and approval. All requests must describe existing language and the requested modification.

6.5 Long-Term Strategy

The Long-Term Steward will undertake the management of the PRM Site after closeout. The Long-Term Steward will be RES, unless a different Long-Term Steward is appointed in accordance with the 2008 Final Rule (33 CFR § 332.7(d)(1)) and subject to an approval by the USACE. The goal of long-term management is to foster the long-term viability of the PRM Site's aquatic resources. The Long-Term Steward will conduct inspections of the PRM Site to determine the specific needs of the PRM Site to meet this goal. The Long-Term Steward actively manages the property as needed. To assist the Long-Term Steward in achieving this goal, the following is a list of objectives that will define the long-term viability:

1. The Long-Term Steward will maintain native vegetation on the PRM Site by using the best

available science and current forestry practices (i.e., planting, thinning, application of pesticides, removal of destructive wildlife.).
2. The Long-Term Steward will control the encroachment of invasive plant species on the PRM Site by using the best available science and practices (i.e., herbicides, manual removal, burning, chainsaw).
3. The Long-Term Steward will repair erosion and obstructions to drainage at the PRM Site utilizing appropriate natural materials to ensure the PRM Site maintains riparian buffer conditions. In order to ensure that funds are available to provide for the perpetual management of the Mitigation Site, RES will fund a long-term management investment account. The investment account is designed to be a non-wasting endowment with earnings sufficient to fund the annual maintenance cost while accounting for inflation.

7. REFERENCES

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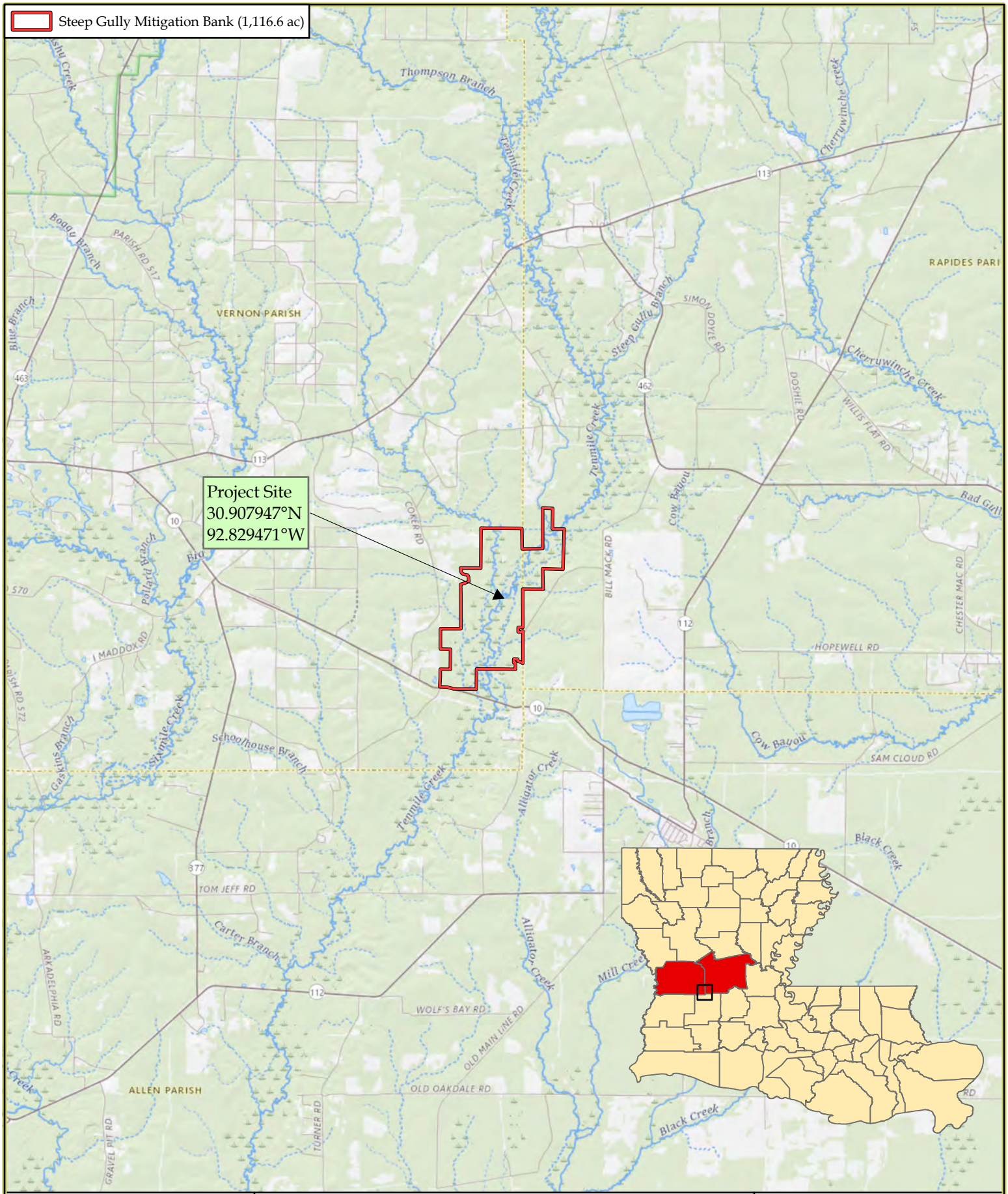
FIGURES



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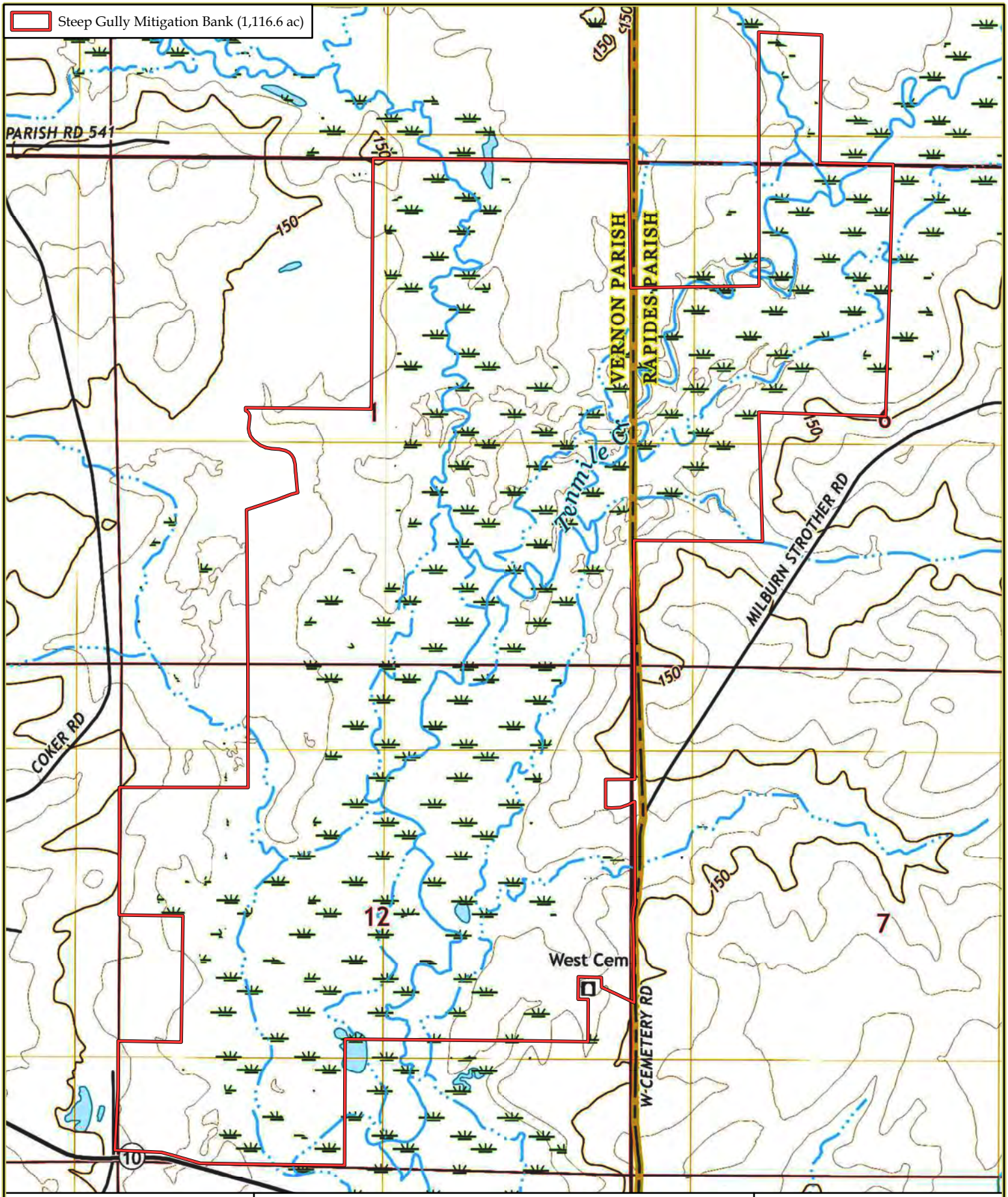
RES Calcasieu, LLC
Steep Gully Mitigation Bank
Sec. 31 - T1S - R4W/Sec. 6 - T2S - R4W/Sec. 1 & 12 - T2S - R5W
Rapides and Vernon Parishes, Louisiana
Figure 1 - Vicinity Map

0 4,500 9,000 Feet
1:100,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS National Map, April 2023



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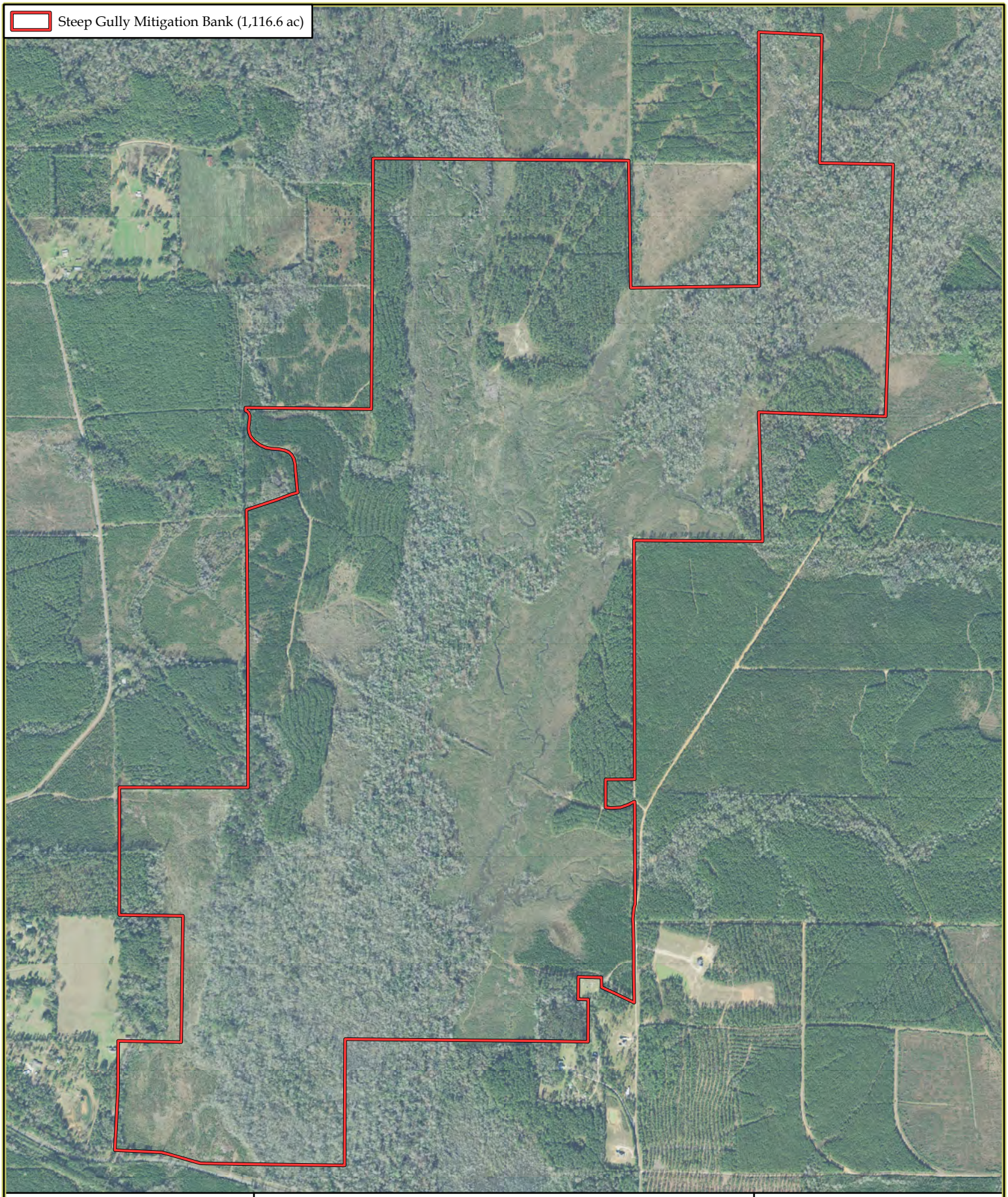
Rapides and Vernon Parishes, Louisiana
Figure 2 - Site Location Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (2020)



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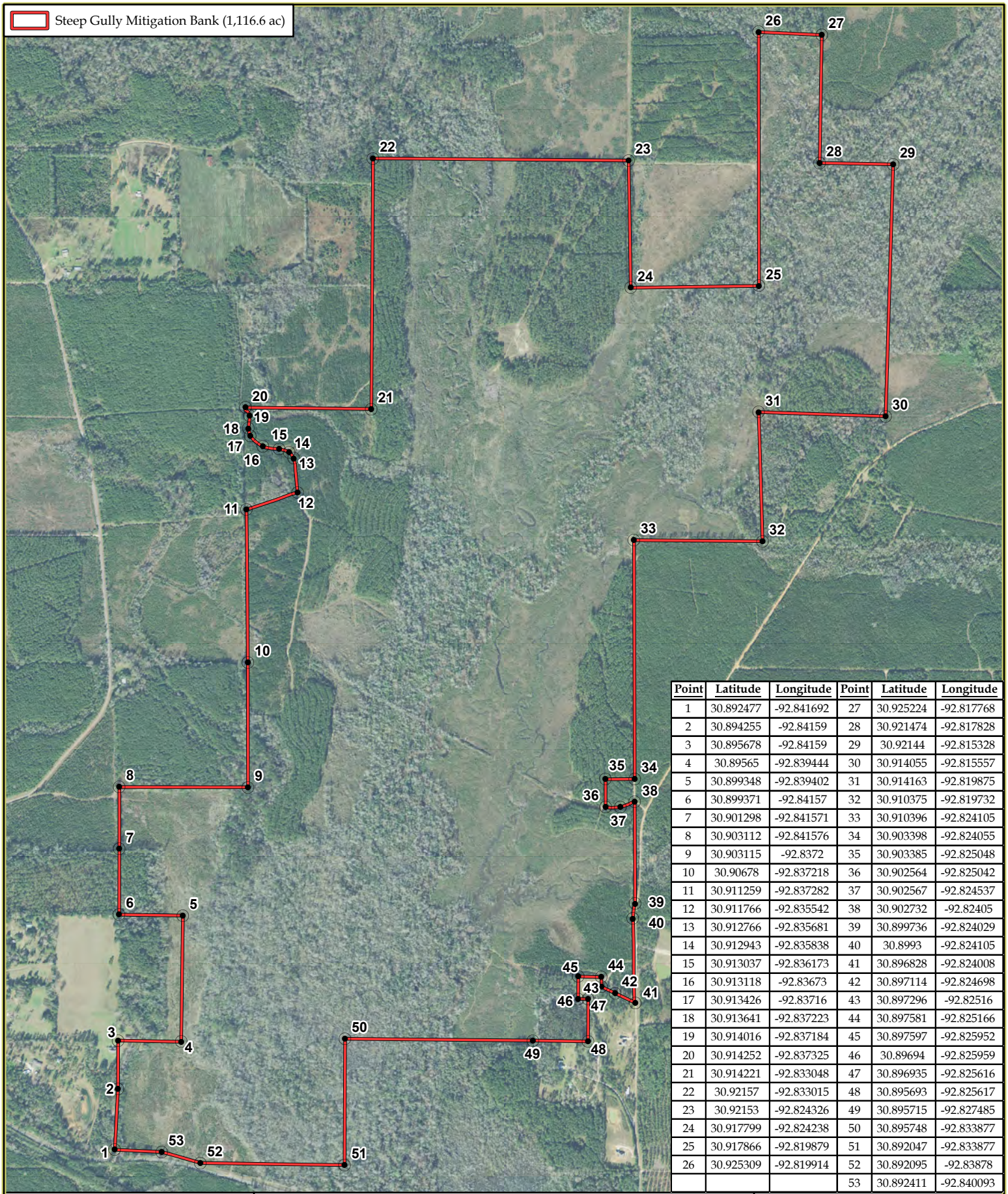
Rapides and Vernon Parishes, Louisiana
Figure 3 - Site Location Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap



Point	Latitude	Longitude	Point	Latitude	Longitude
1	30.892477	-92.841692	27	30.925224	-92.817768
2	30.894255	-92.84159	28	30.921474	-92.817828
3	30.895678	-92.84159	29	30.92144	-92.815328
4	30.89565	-92.839444	30	30.914055	-92.815557
5	30.899348	-92.839402	31	30.914163	-92.819875
6	30.899371	-92.84157	32	30.910375	-92.819732
7	30.901298	-92.841571	33	30.910396	-92.824105
8	30.903112	-92.841576	34	30.903398	-92.824055
9	30.903115	-92.8372	35	30.903385	-92.825048
10	30.90678	-92.837218	36	30.902564	-92.825042
11	30.911259	-92.837282	37	30.902567	-92.824537
12	30.911766	-92.835542	38	30.902732	-92.82405
13	30.912766	-92.835681	39	30.899736	-92.824029
14	30.912943	-92.835838	40	30.8993	-92.824105
15	30.913037	-92.836173	41	30.896828	-92.824008
16	30.913118	-92.83673	42	30.897114	-92.824698
17	30.913426	-92.83716	43	30.897296	-92.82516
18	30.913641	-92.837223	44	30.897581	-92.825166
19	30.914016	-92.837184	45	30.897597	-92.825952
20	30.914252	-92.837325	46	30.89694	-92.825959
21	30.914221	-92.833048	47	30.896935	-92.825616
22	30.92157	-92.833015	48	30.895693	-92.825617
23	30.92153	-92.824326	49	30.895715	-92.827485
24	30.917799	-92.824238	50	30.895748	-92.833877
25	30.917866	-92.819879	51	30.892047	-92.833877
26	30.925309	-92.819914	52	30.892095	-92.83878
			53	30.892411	-92.840093

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Rapides and Vernon Parishes, Louisiana
Figure 4 - Survey Plat Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap

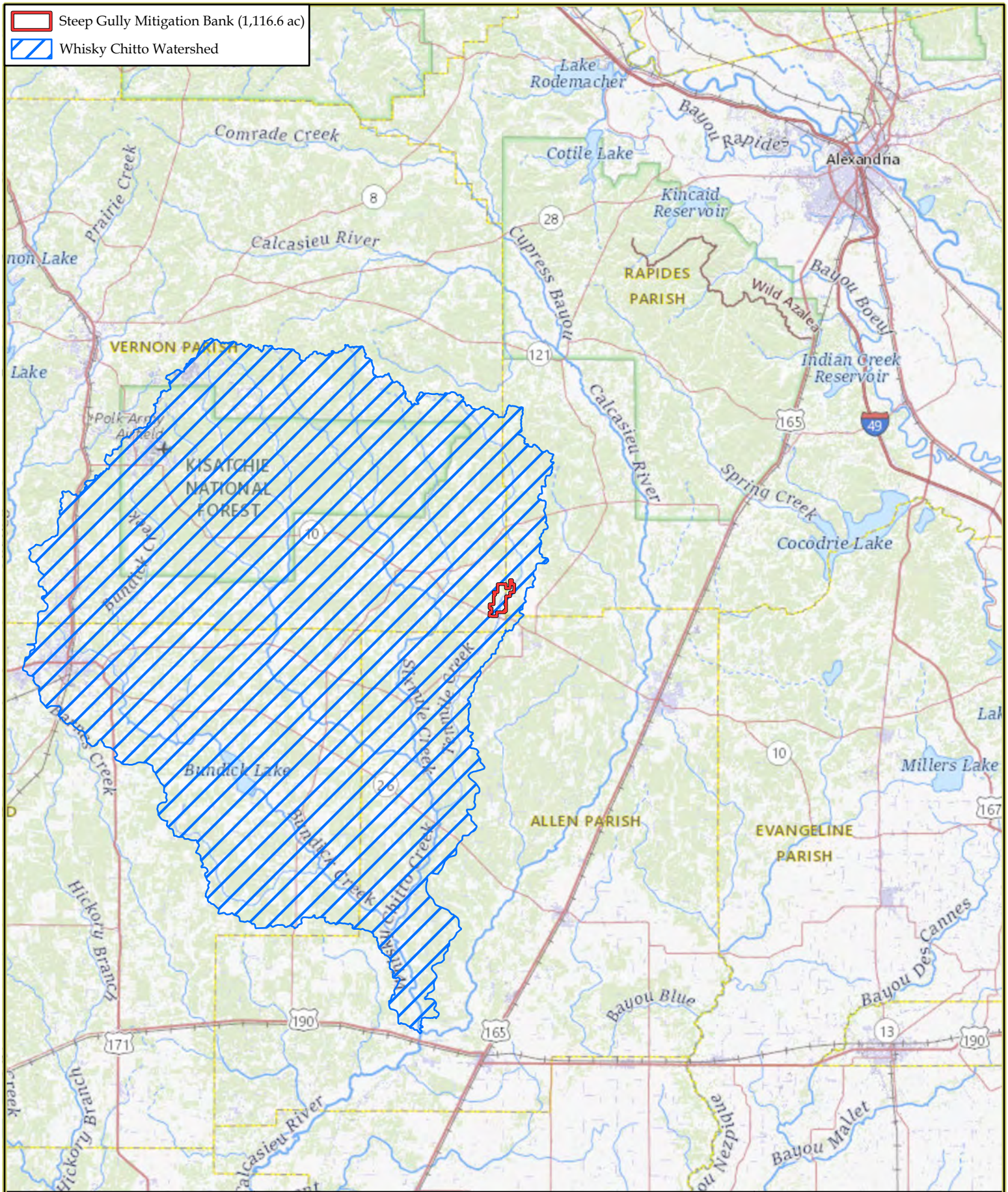

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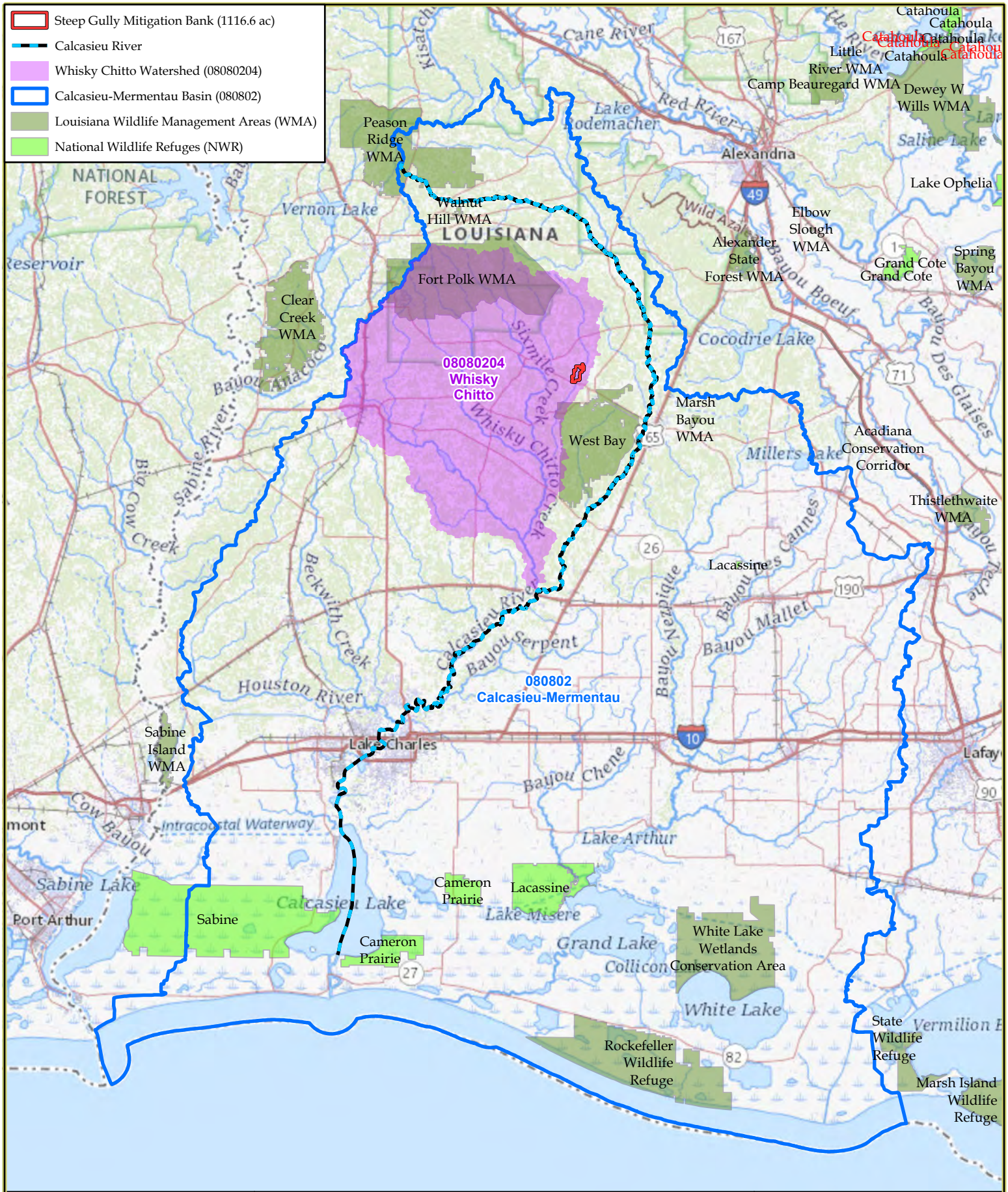
Figure 5 - Watershed Location Map

0 20,000 40,000 Feet
1:500,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS National Map, April 2023



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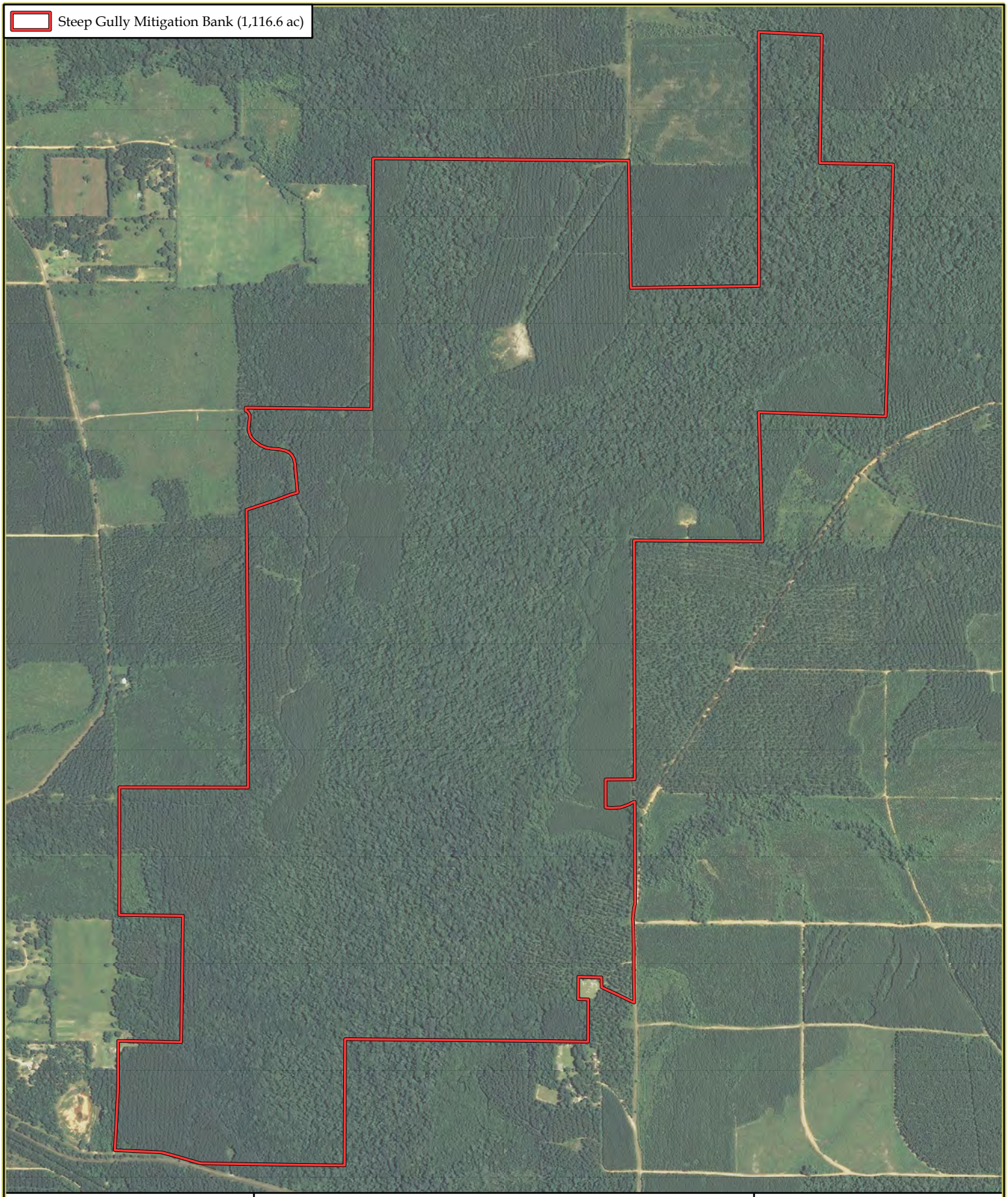
Rapides and Vernon Parishes, Louisiana
Figure 6 - Calcasieu River Basin Map

0 45,000 90,000 Feet
1:1,000,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS National Map, April 2023



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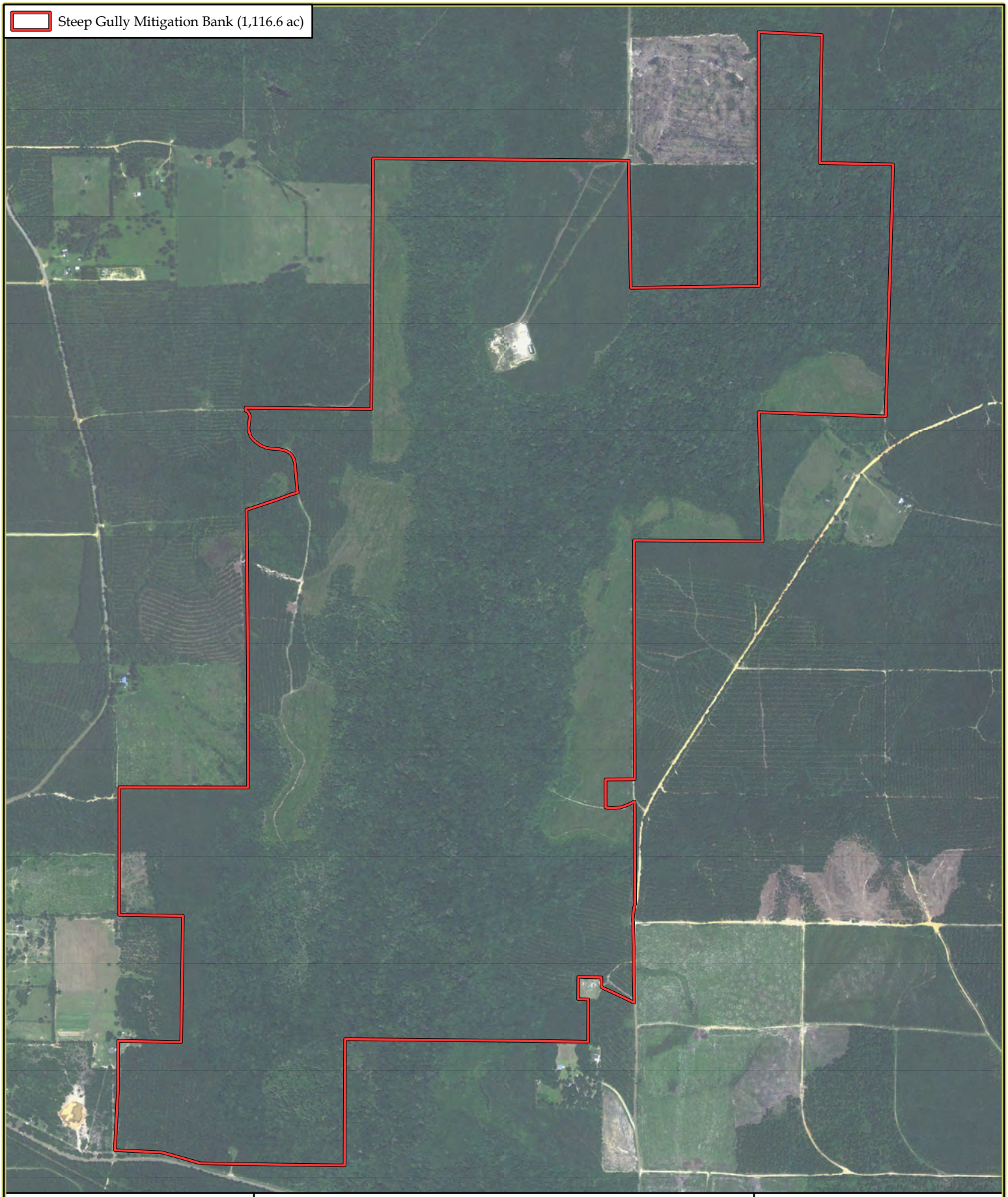
Rapides and Vernon Parishes, Louisiana
Figure 7A - Historical Aerial Site Map (2013)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2013 Imagery Basemap



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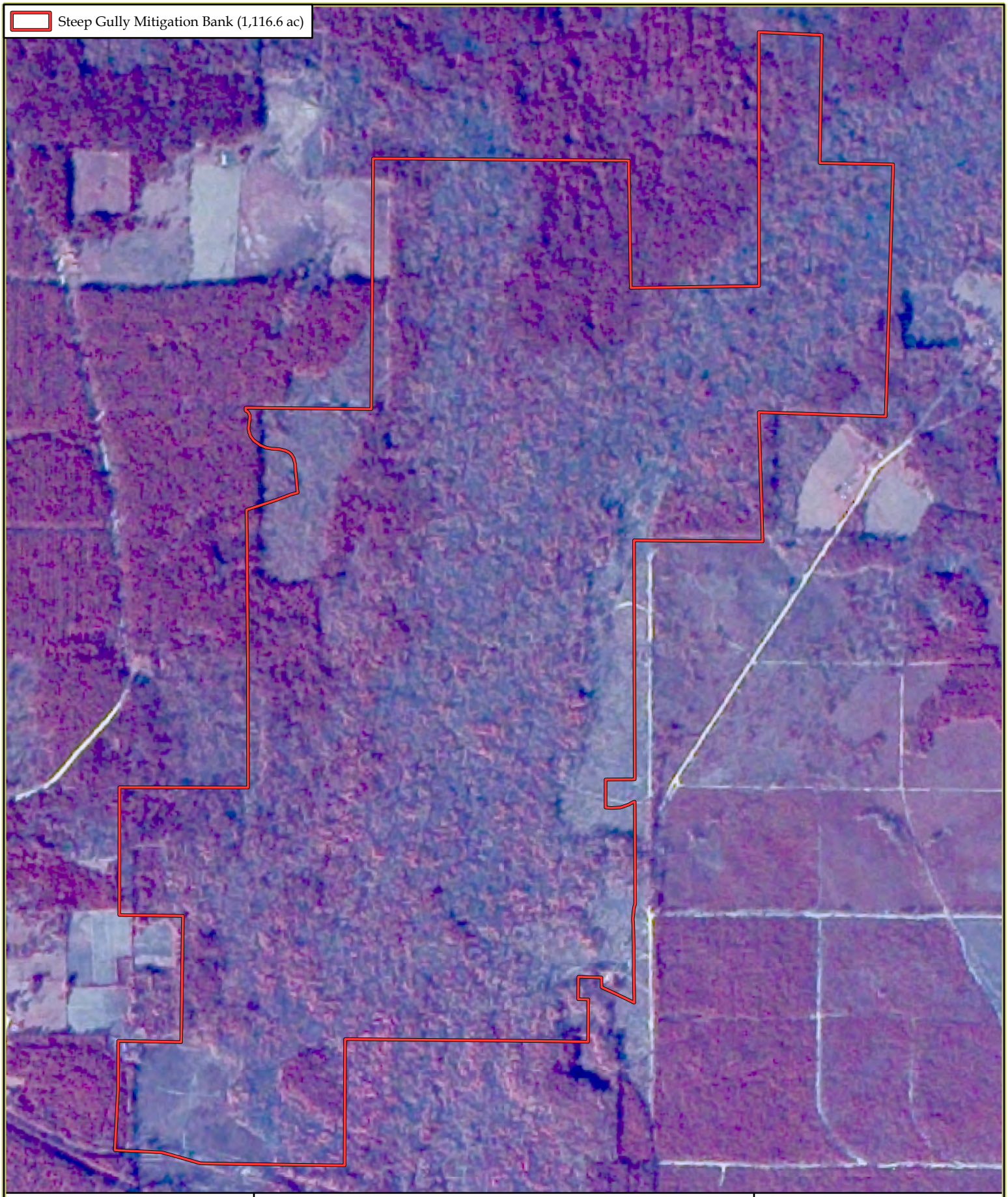
Rapides and Vernon Parishes, Louisiana
Figure 7B - Historical Aerial Site Map (2005)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2005 Imagery Basemap



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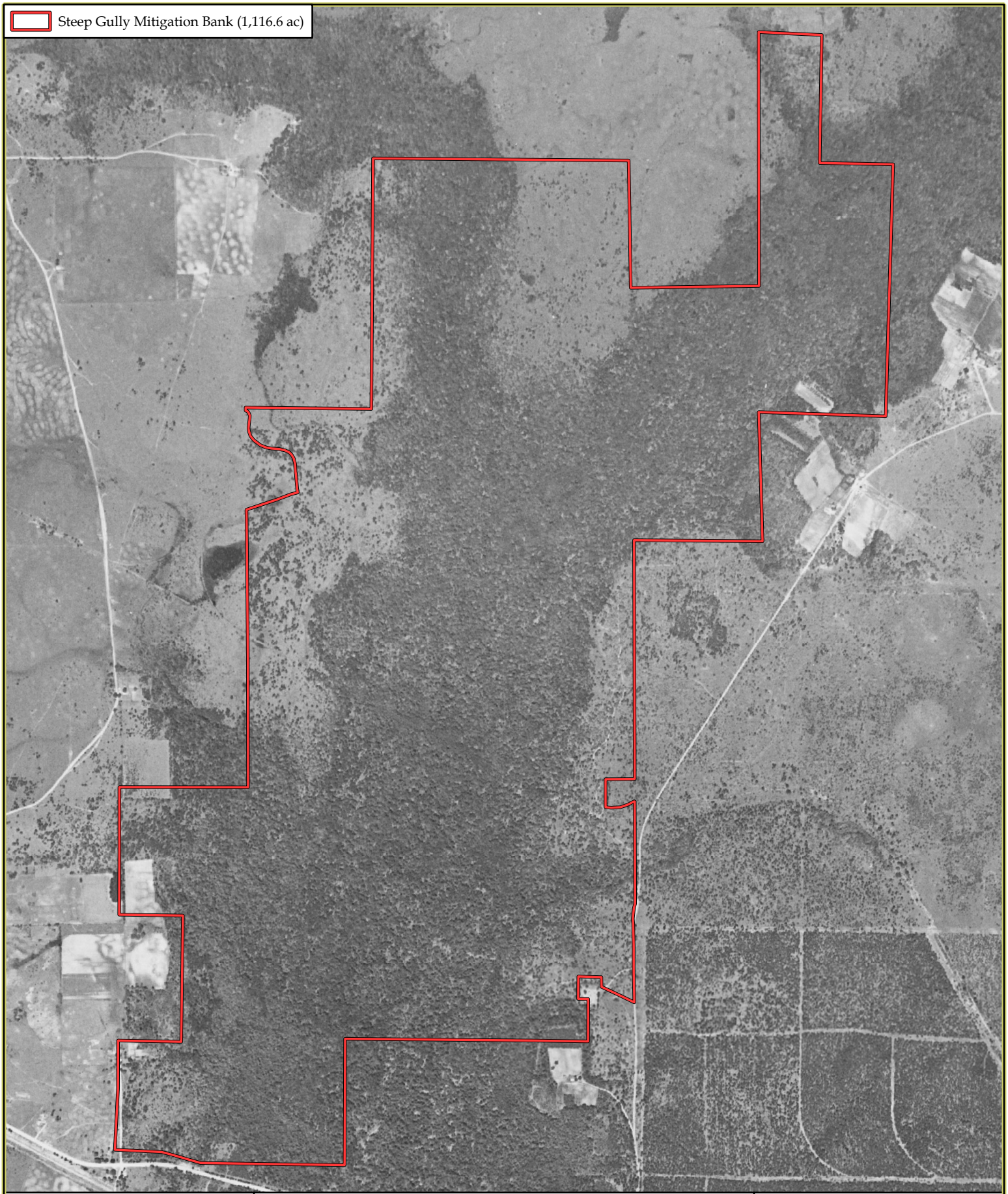
Rapides and Vernon Parishes, Louisiana
Figure 7C - Historical Aerial Site Map (1985)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS-EROS Aerial Photography (1985)



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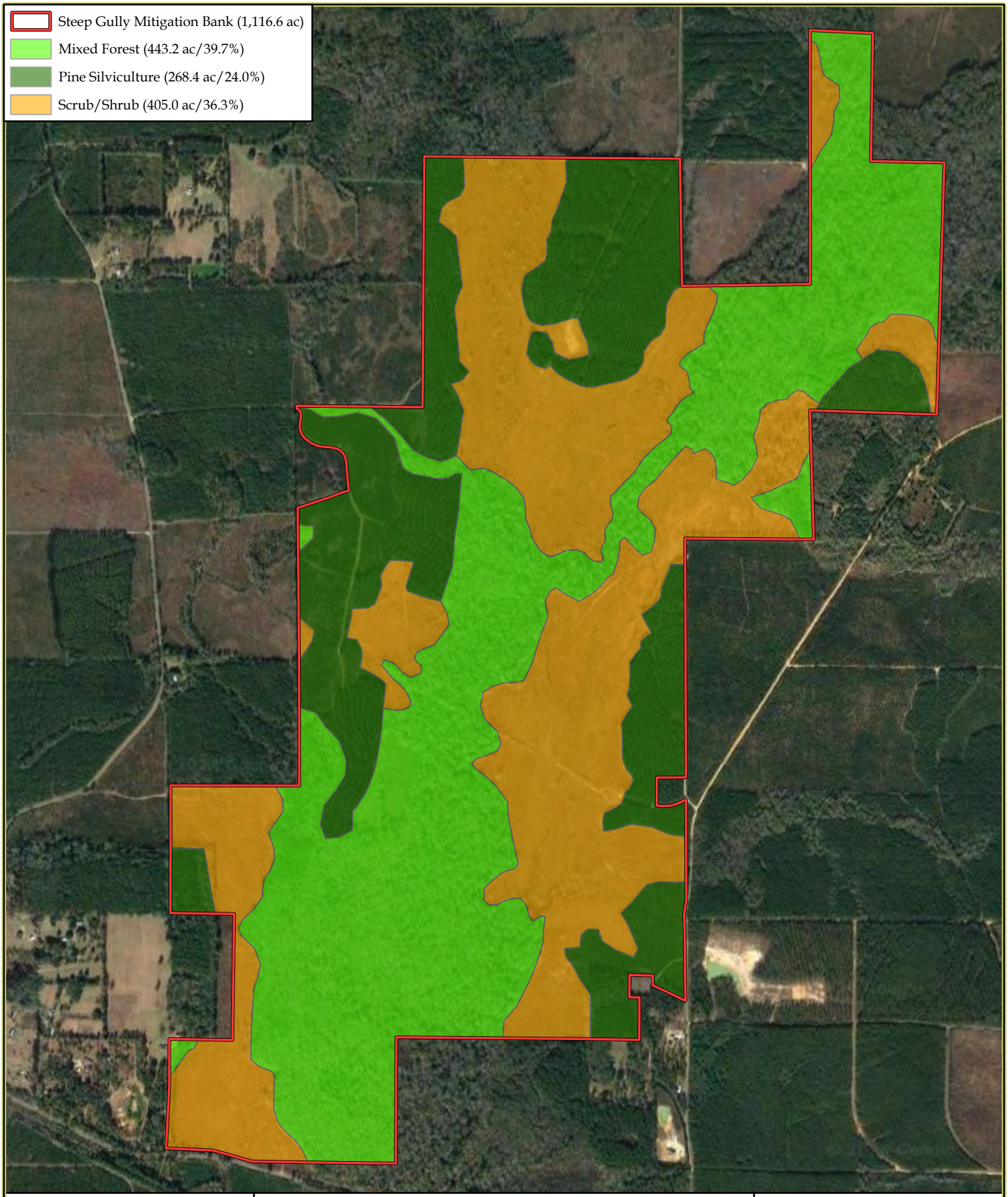
Rapides and Vernon Parishes, Louisiana
Figure 7D - Historical Aerial Site Map (1952)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS-EROS Aerial Photography (1952)



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Rapides and Vernon Parishes, Louisiana
Figure 8A - Current Land Use/Land Cover (Within Site)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

Google Maps Aerial Imagery

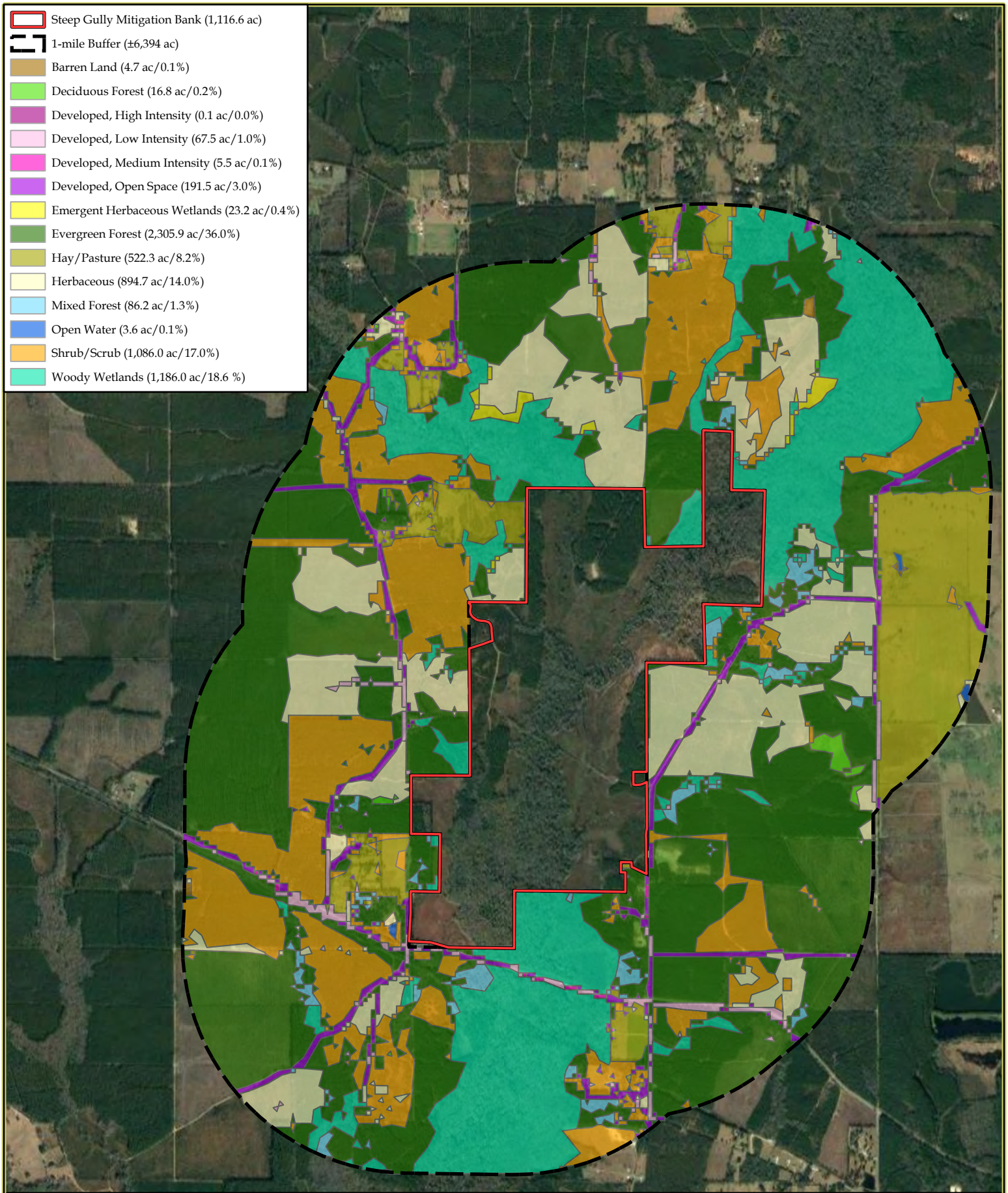

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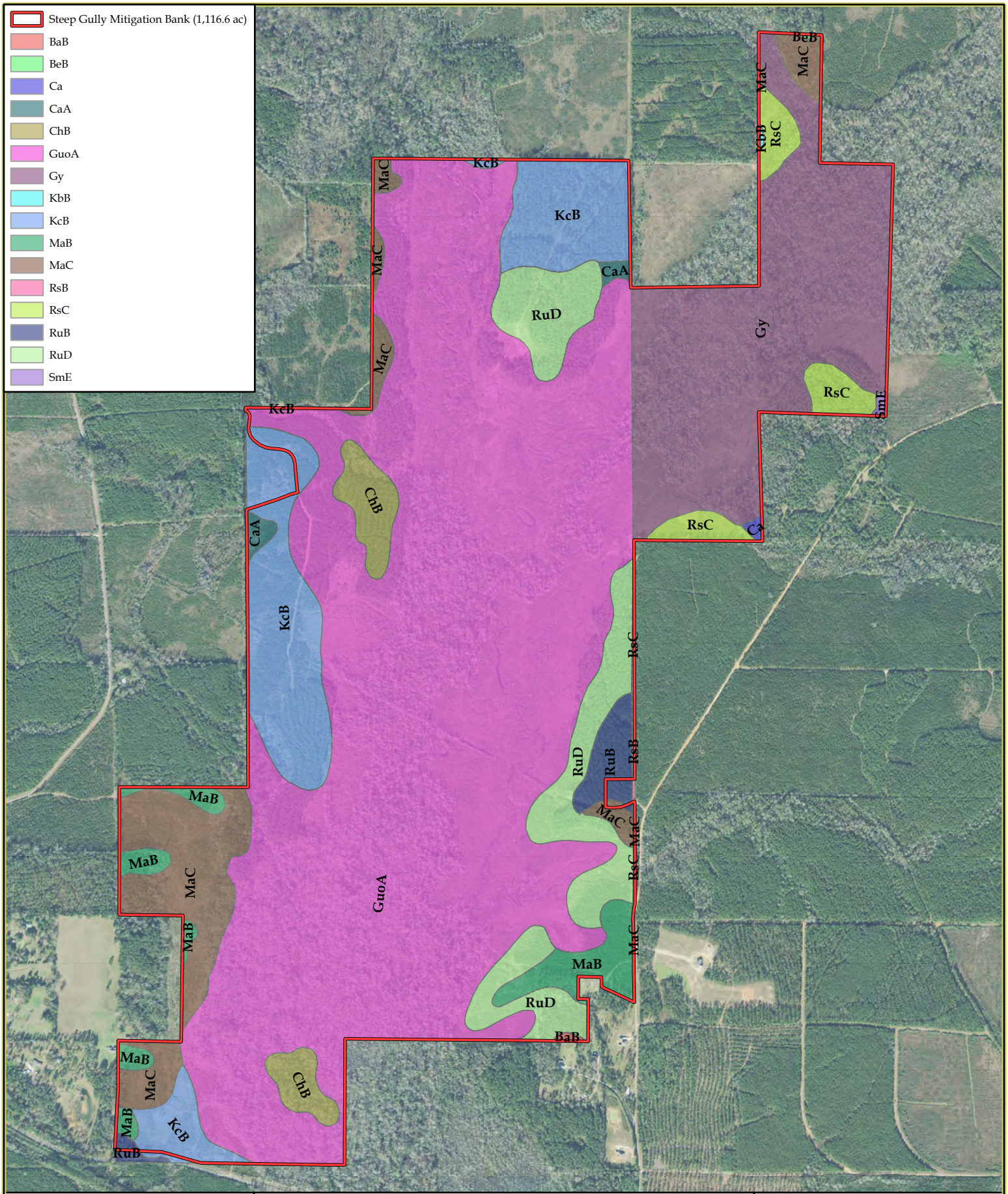
Figure 8B - Current Land Use/Land Cover (Within 1-Mile)

0 1,500 3,000 Feet
1:35,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

Google Maps Aerial Imagery



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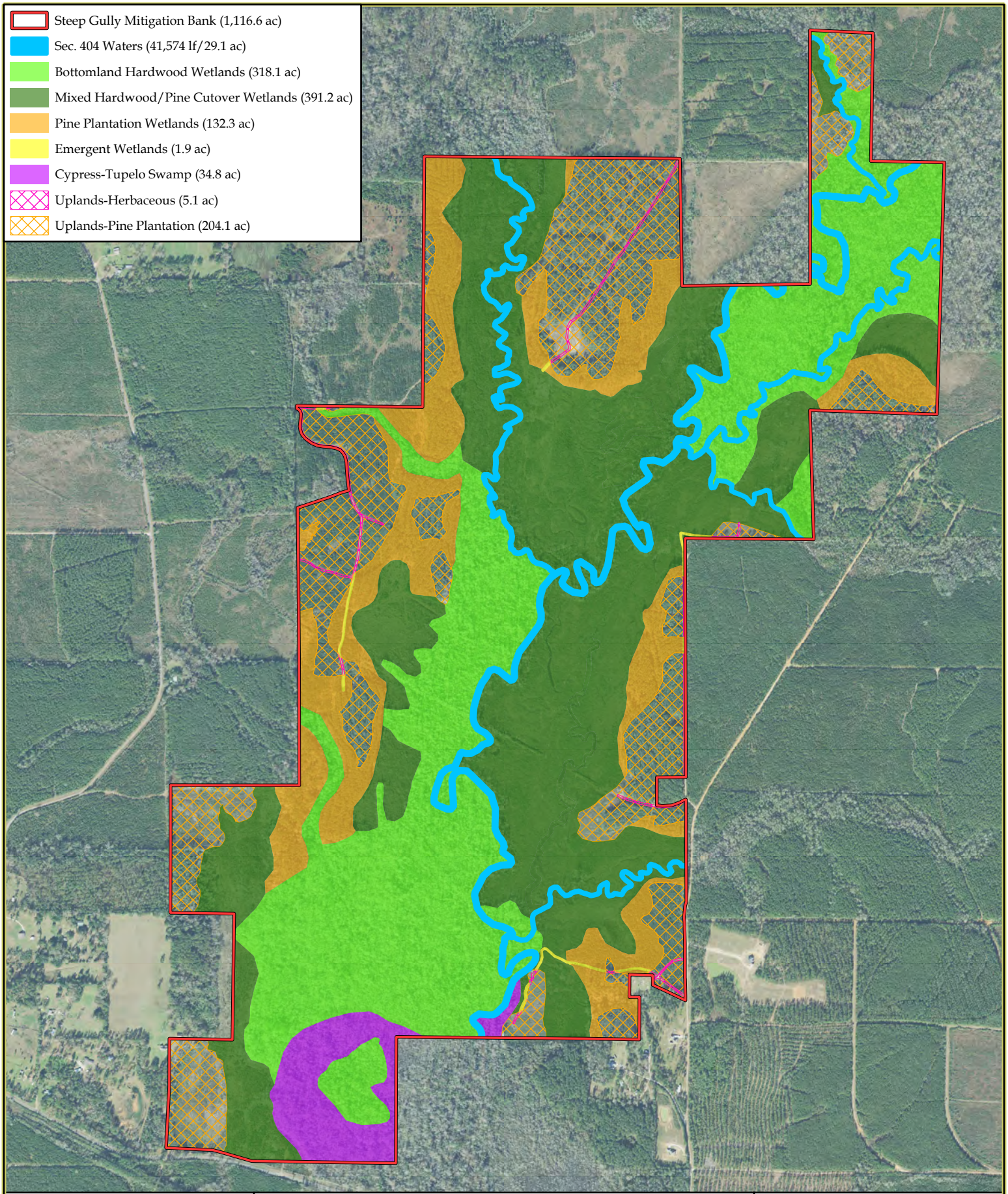
Rapides and Vernon Parishes, Louisiana
Figure 9 - NRCS Soils Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap



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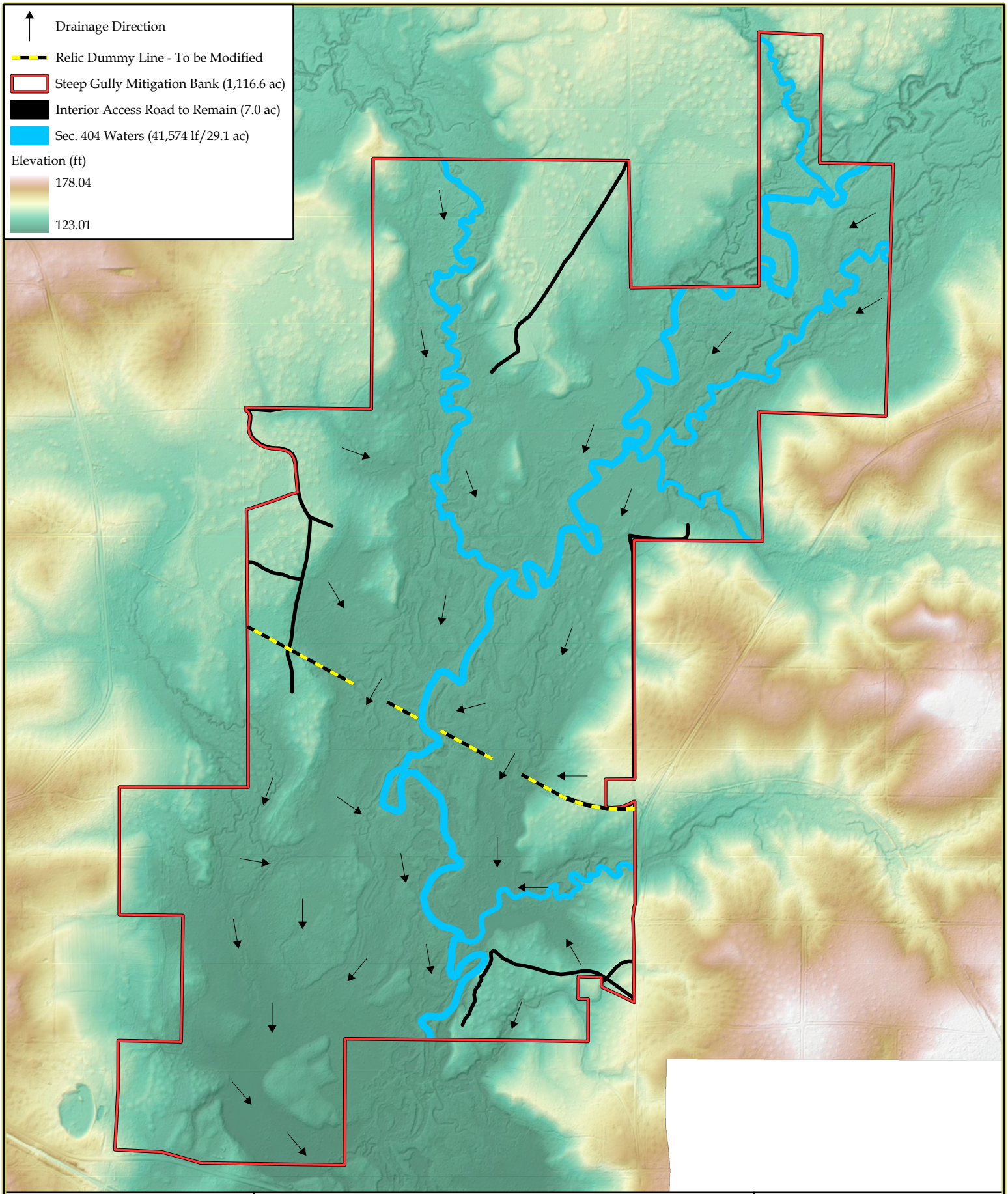
Rapides and Vernon Parishes, Louisiana
Figure 10 - Current Habitat Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap



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Rapides and Vernon Parishes, Louisiana
Figure 11 - Current Hydrology Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

2018 NRCS LA Bayou Nezpique/Sabine River LiDAR

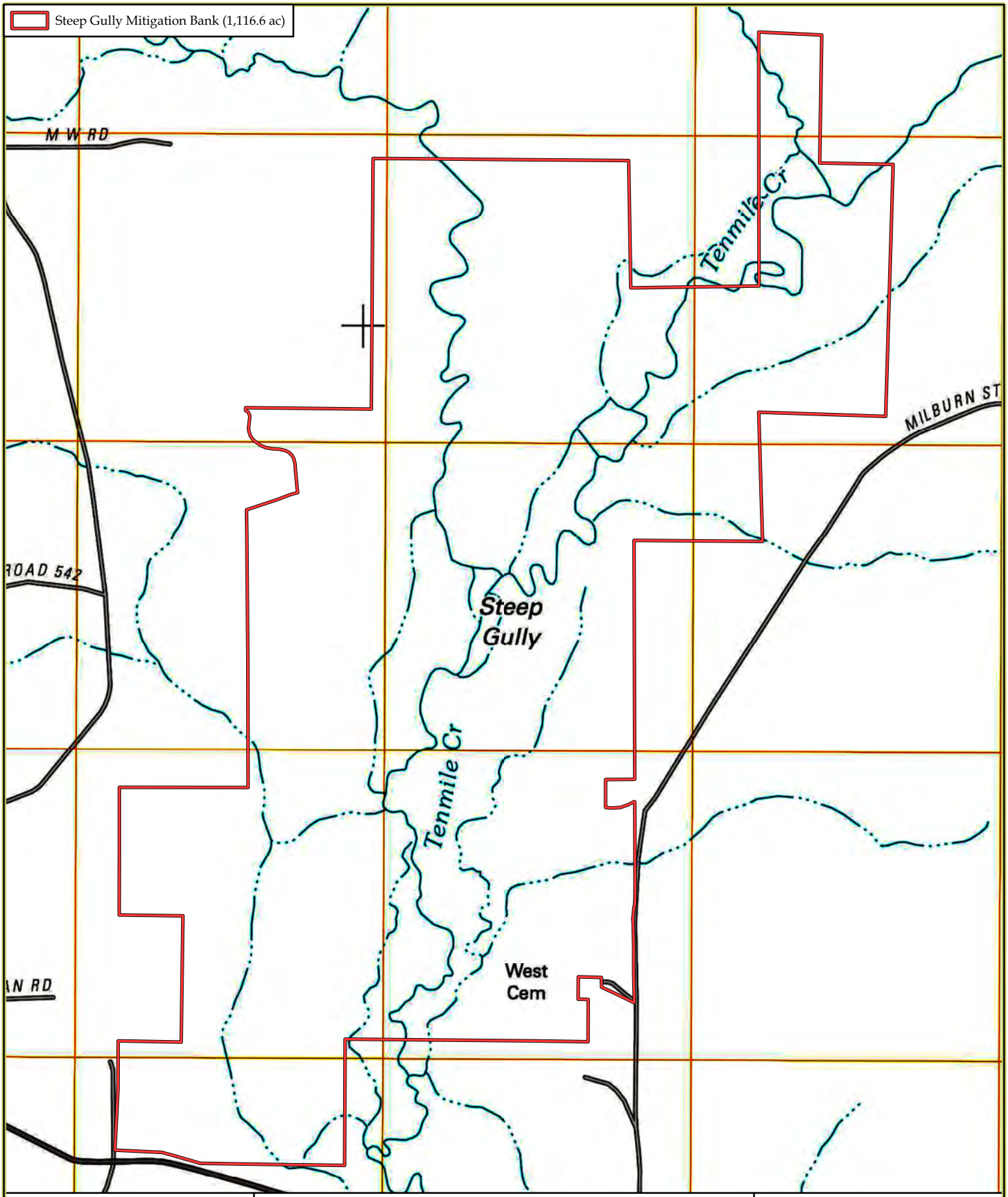

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Figure 12A - Historical Quadrangle Site Map (2012)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (2012)

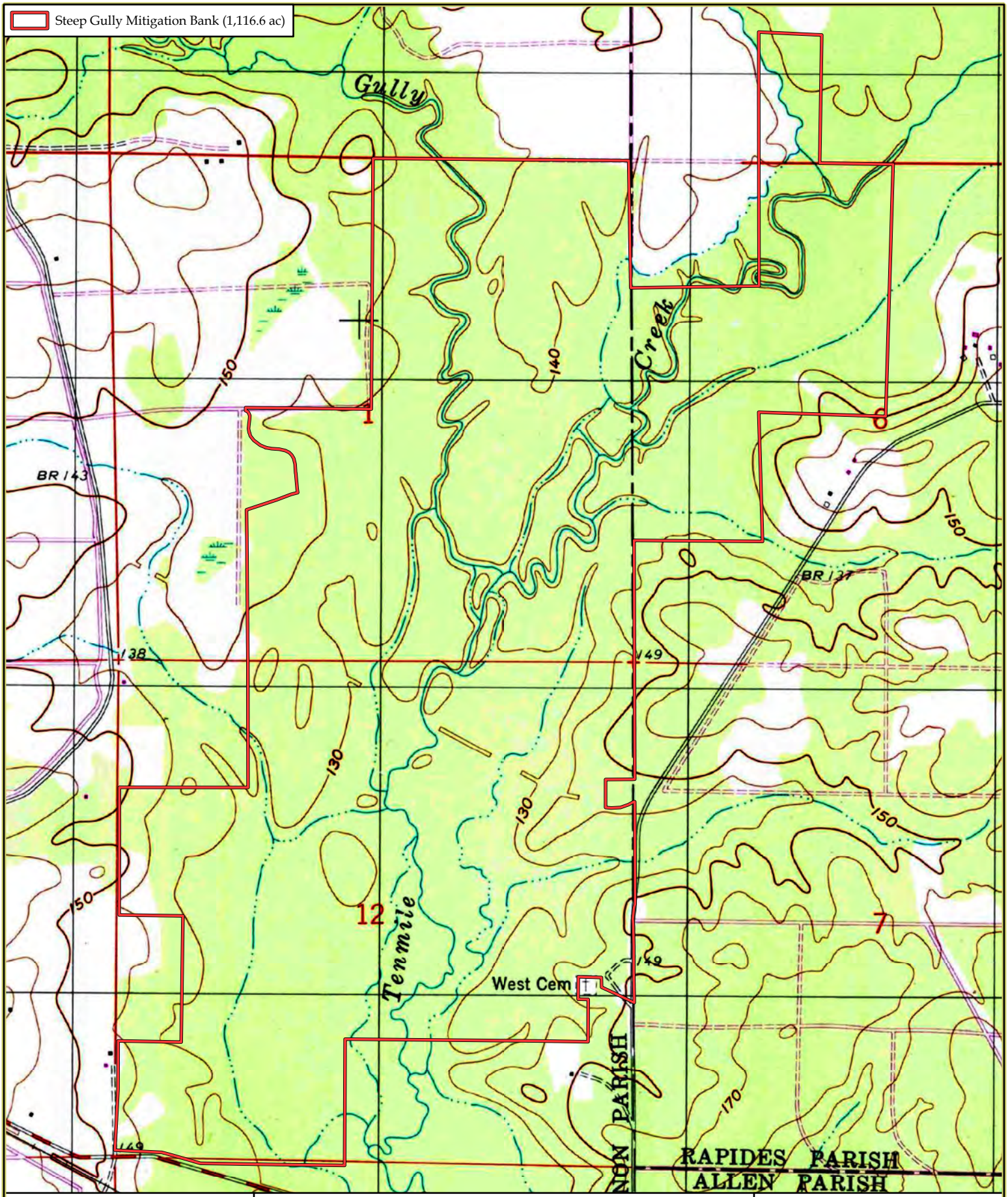

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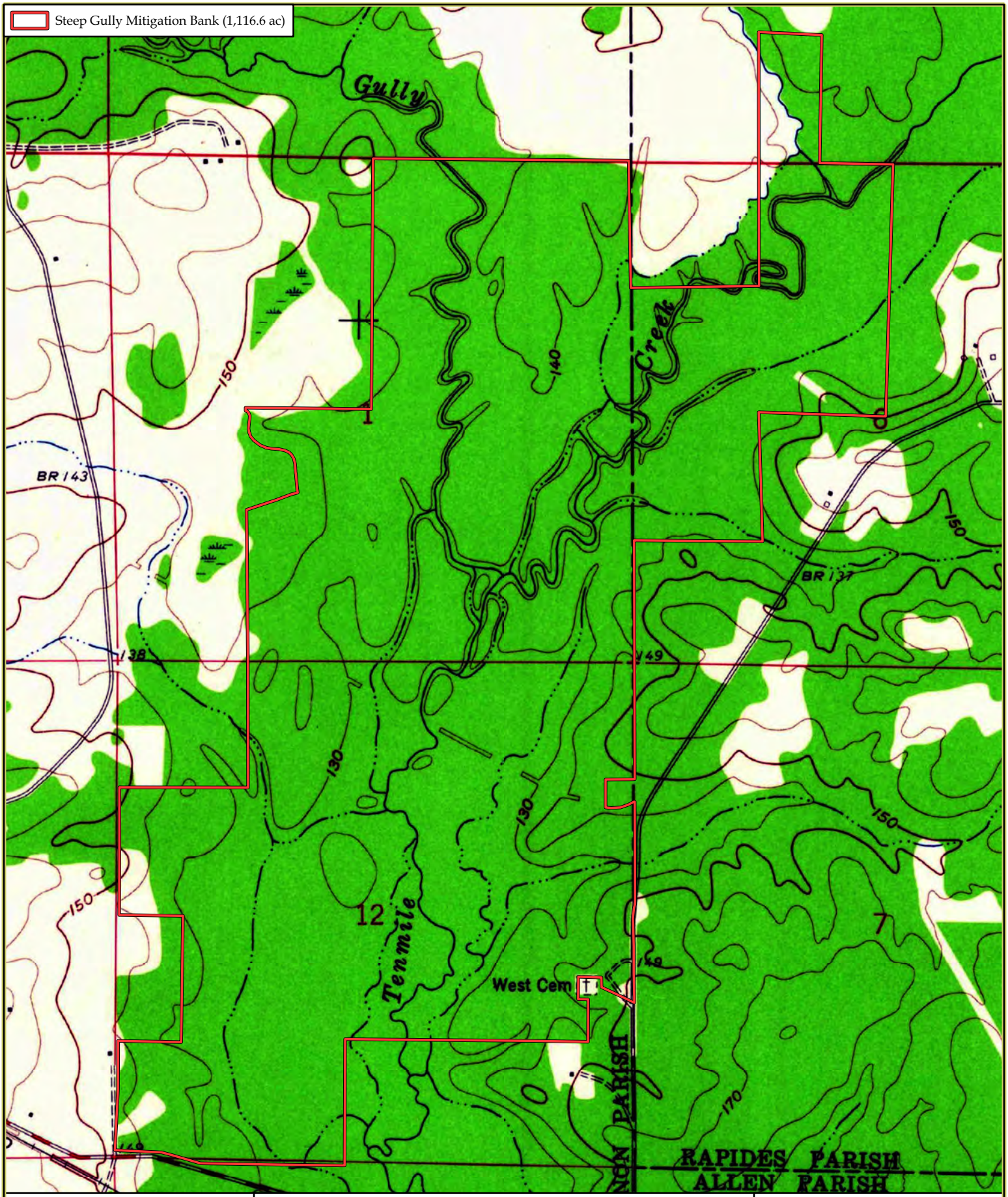
Figure 12B - Historical Quadrangle Site Map (1997)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (1997)



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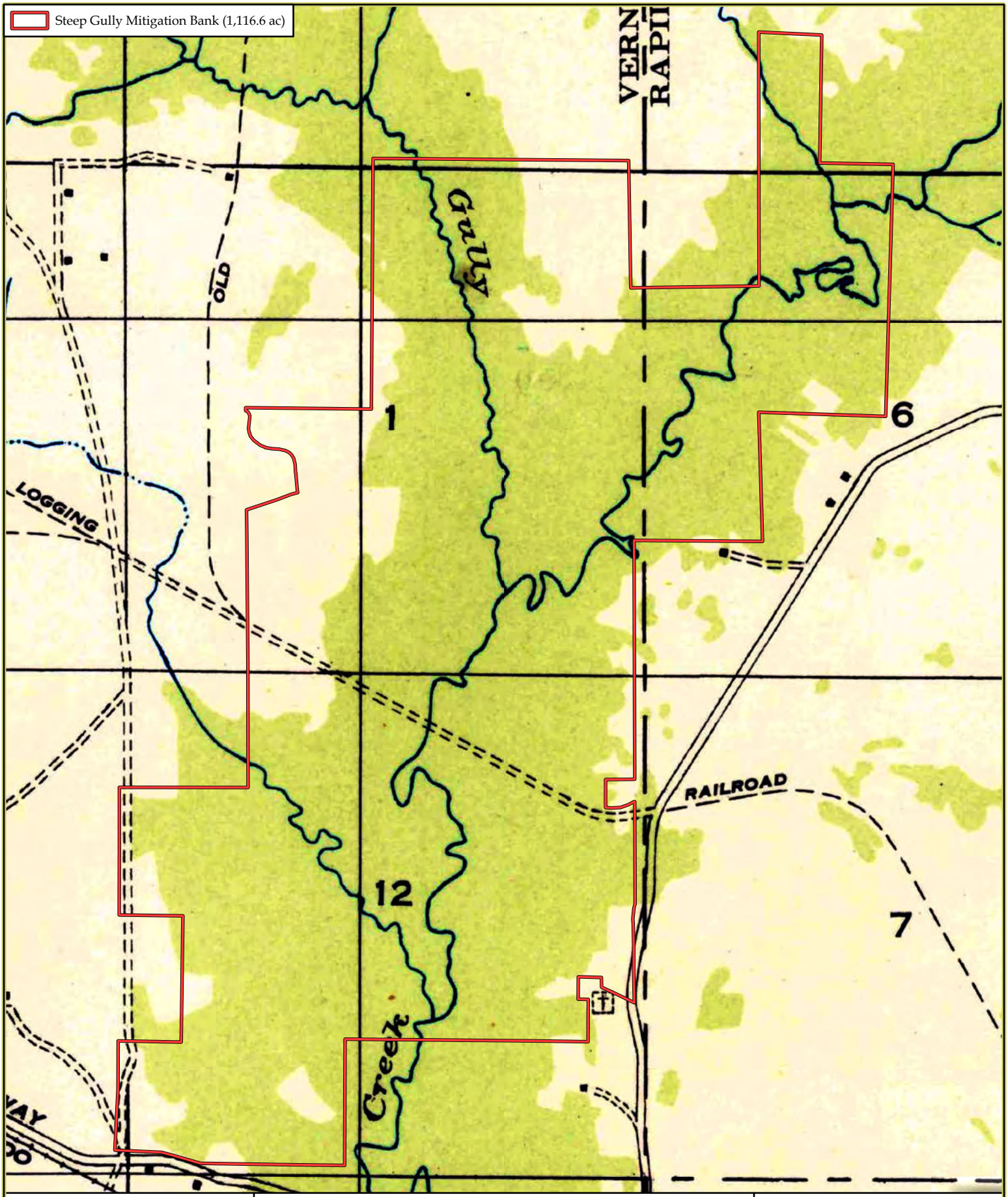
Rapides and Vernon Parishes, Louisiana
Figure 12C - Historical Quadrangle Site Map (1959)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (1959)



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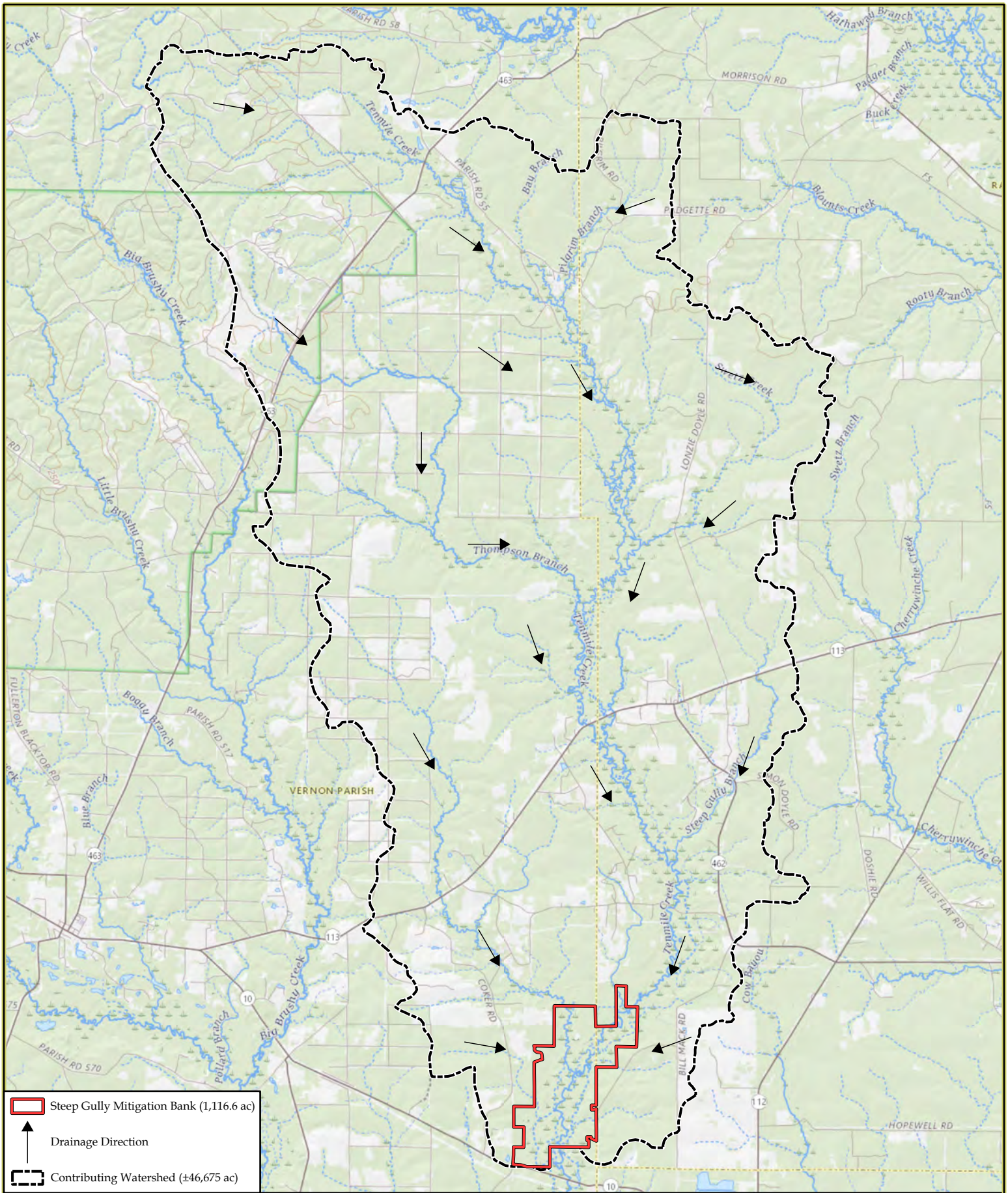
Rapides and Vernon Parishes, Louisiana
Figure 12D - Historical Quadrangle Site Map (1947)

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (1947)



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Rapides and Vernon Parishes, Louisiana
Figure 13 - Historic Hydrology Map

0 4,500 9,000 Feet
1:100,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS National Map, April 2023

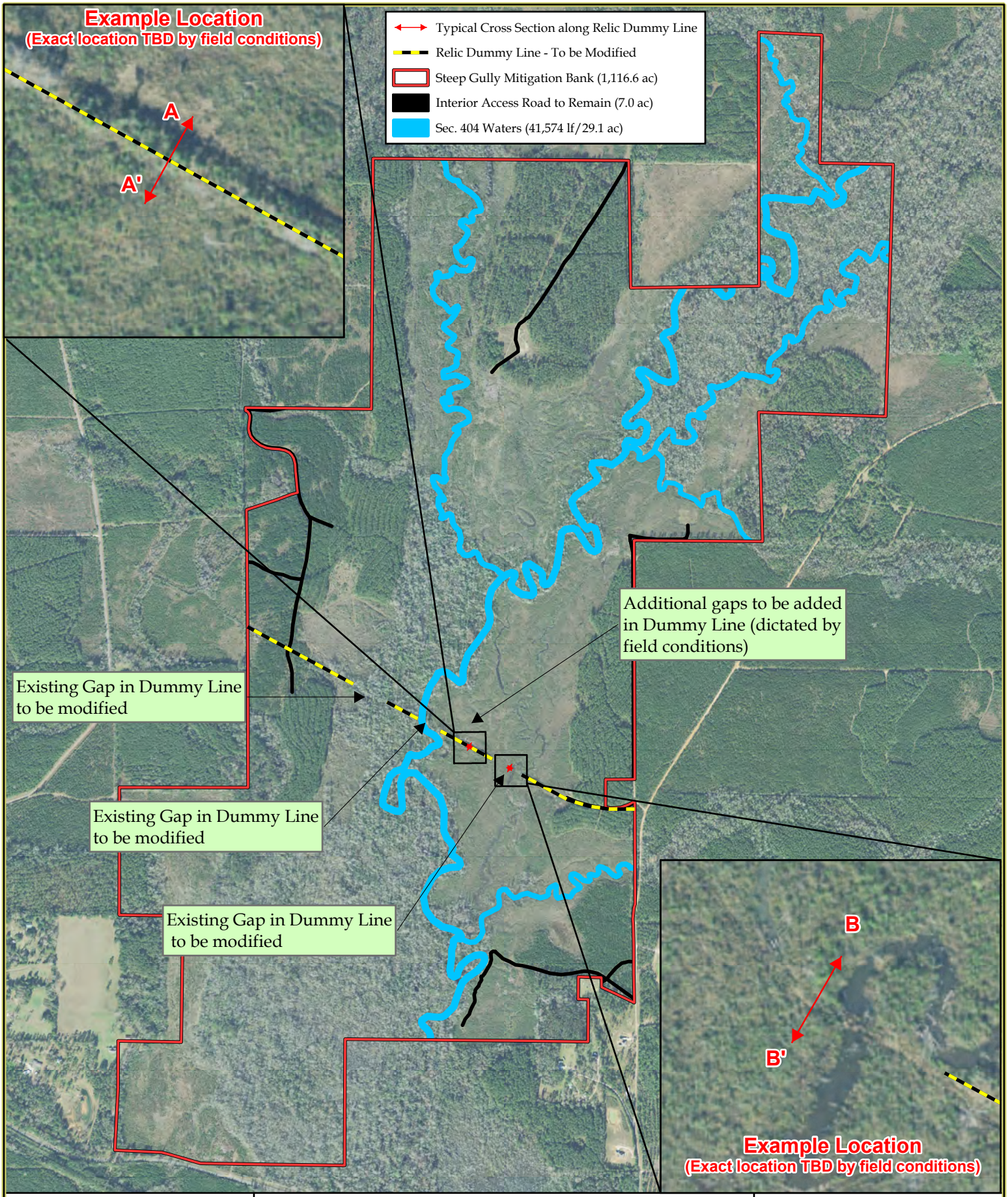

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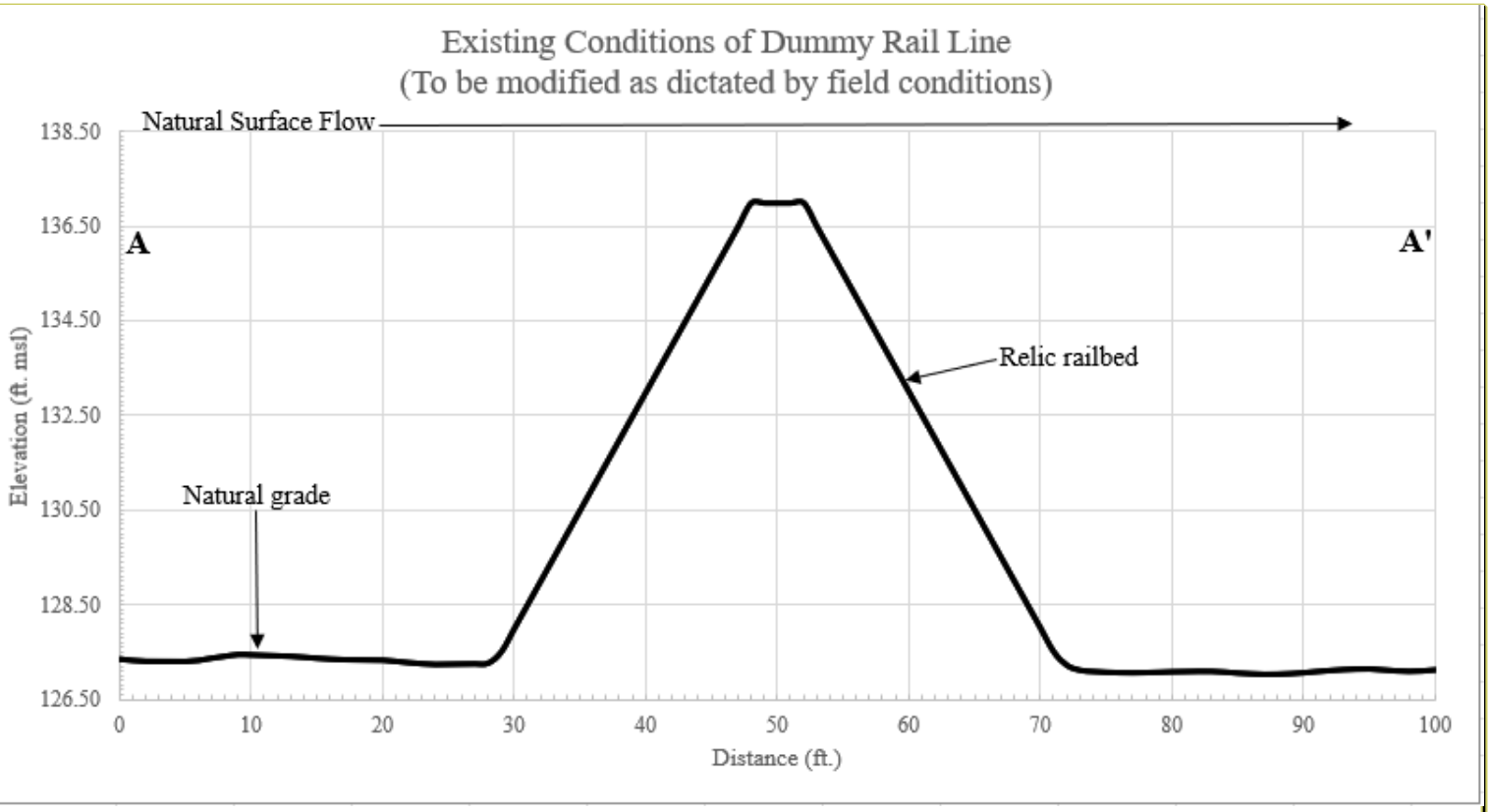
Figure 14A - Hydrologic Work Plan Map

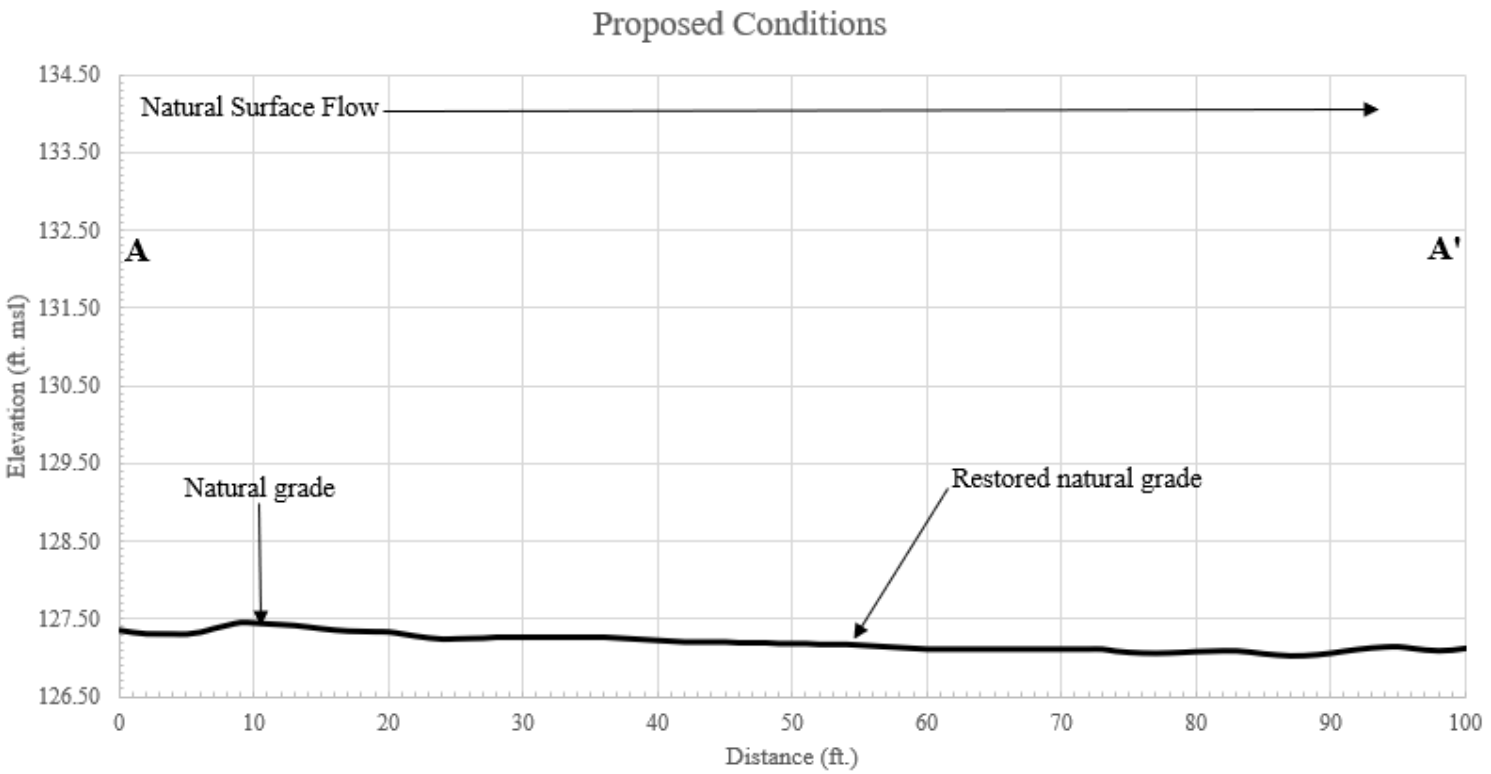
0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap





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Rapides and Vernon Parishes, Louisiana
Figure 14B - Hydrologic Work Plan Typical Cross Section A-A'

Not to Scale
For Illustration Purposes Only

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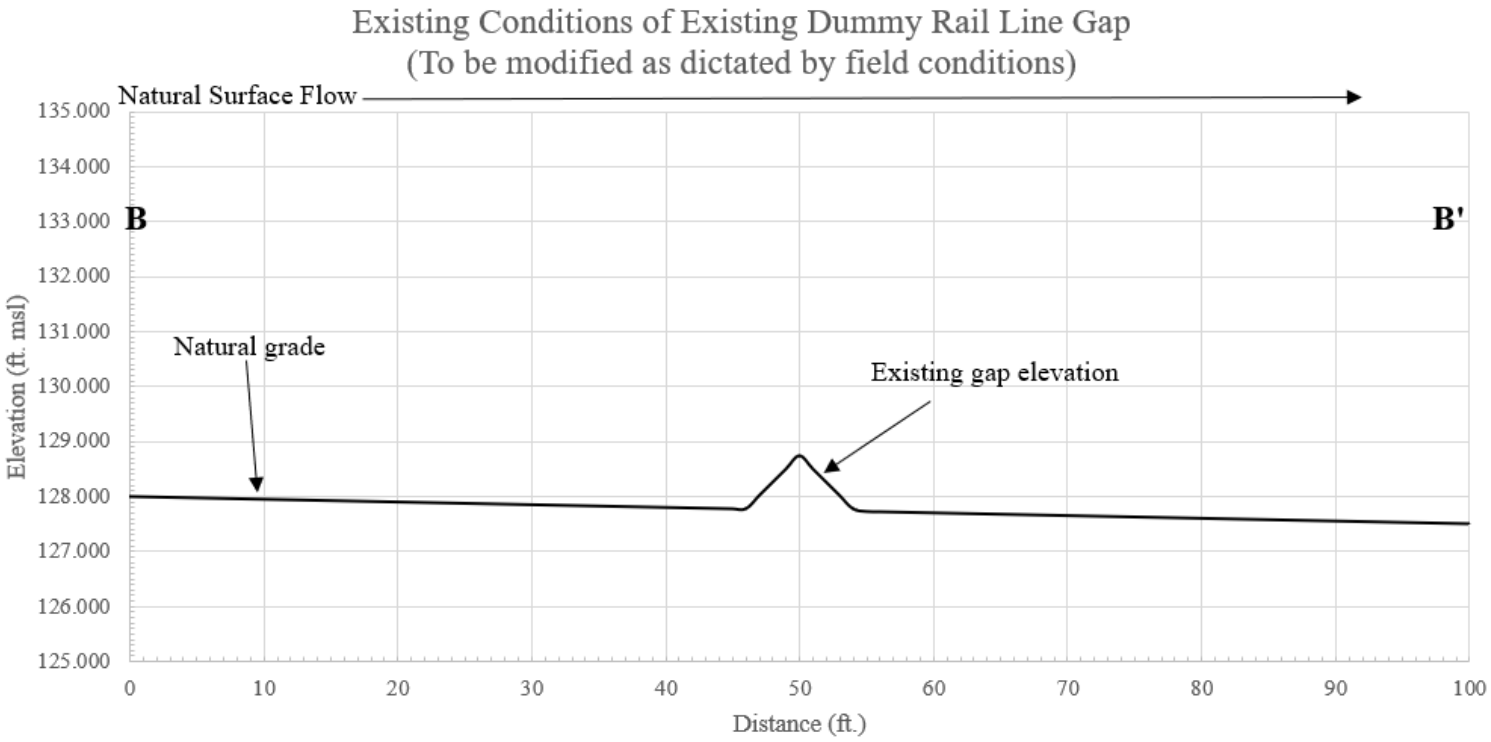

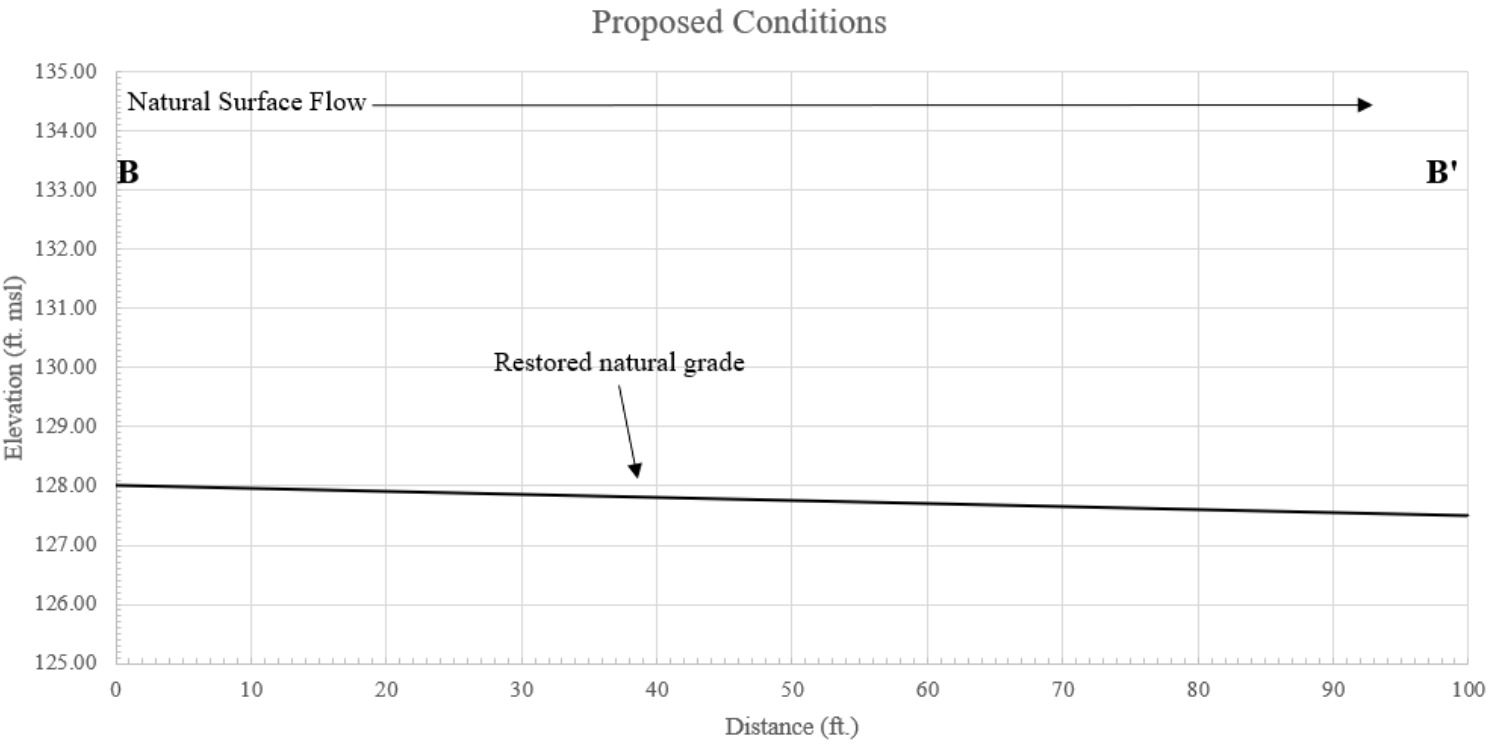

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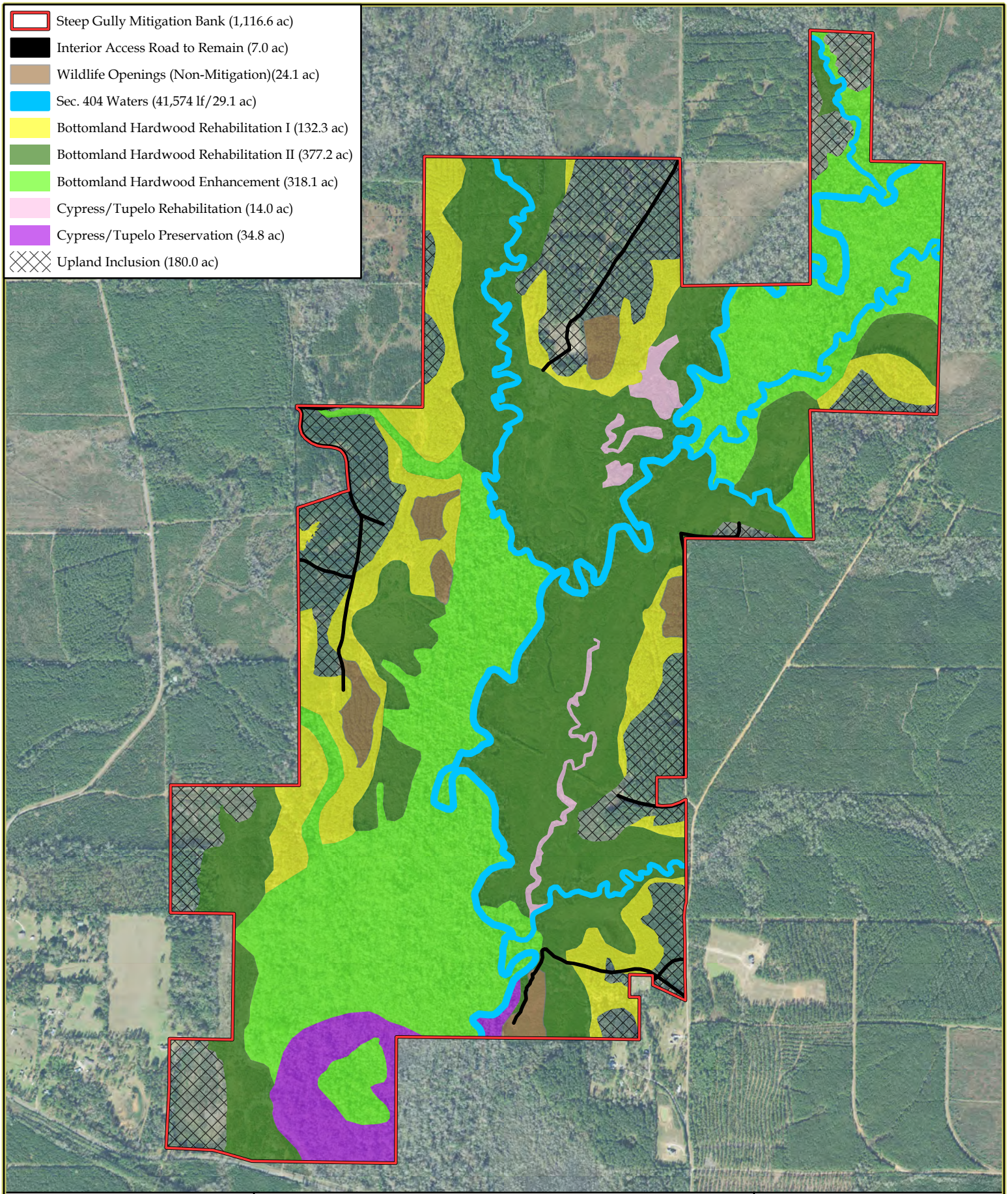
Rapides and Vernon Parishes, Louisiana
Figure 14C - Hydrologic Work Plan Typical Cross Section B-B'

Not to Scale
For Illustration Purposes Only



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Rapides and Vernon Parishes, Louisiana
Figure 15 - Wetland Mitigation Plan Map

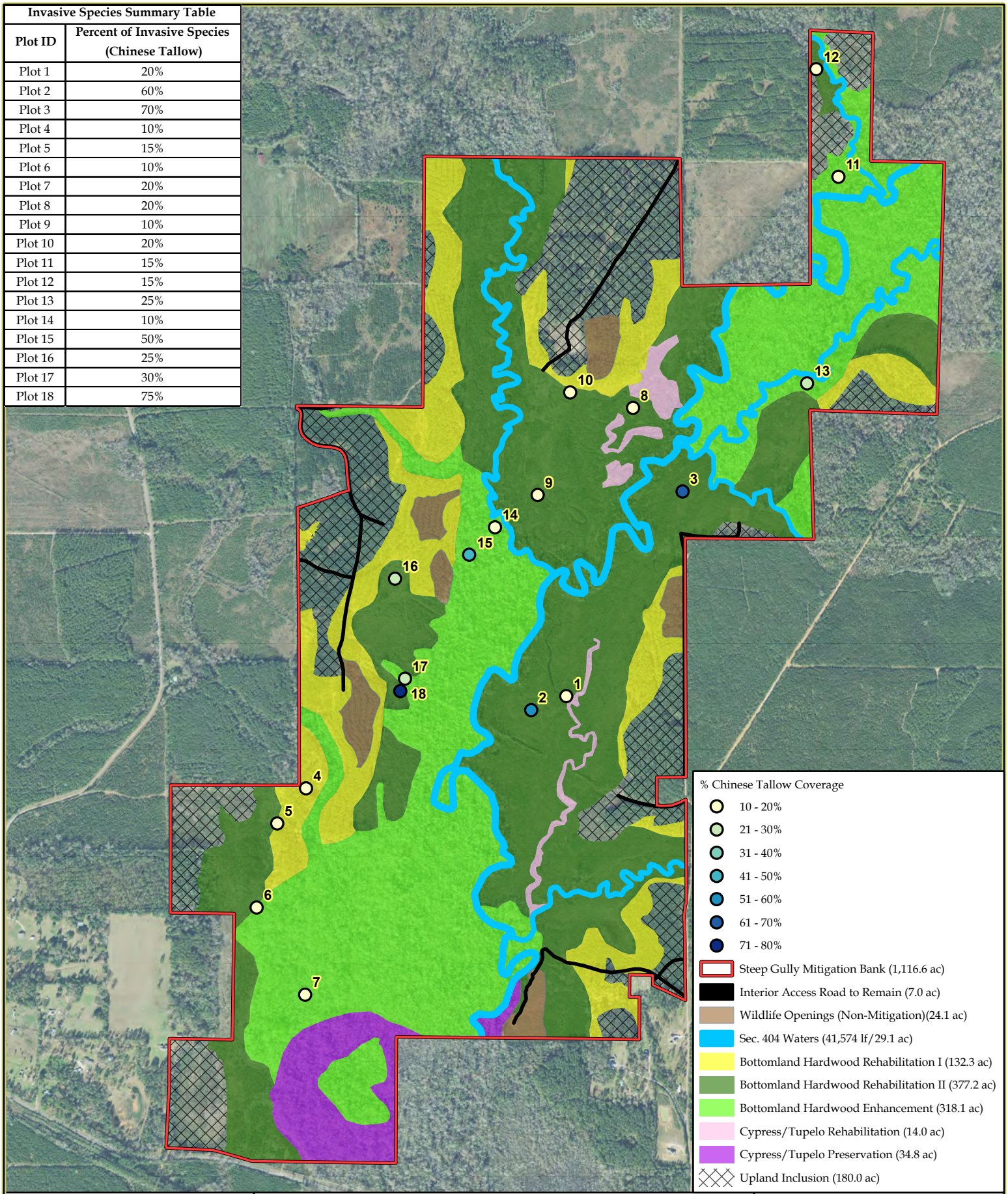
0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap

Invasive Species Summary Table	
Plot ID	Percent of Invasive Species (Chinese Tallow)
Plot 1	20%
Plot 2	60%
Plot 3	70%
Plot 4	10%
Plot 5	15%
Plot 6	10%
Plot 7	20%
Plot 8	20%
Plot 9	10%
Plot 10	20%
Plot 11	15%
Plot 12	15%
Plot 13	25%
Plot 14	10%
Plot 15	50%
Plot 16	25%
Plot 17	30%
Plot 18	75%



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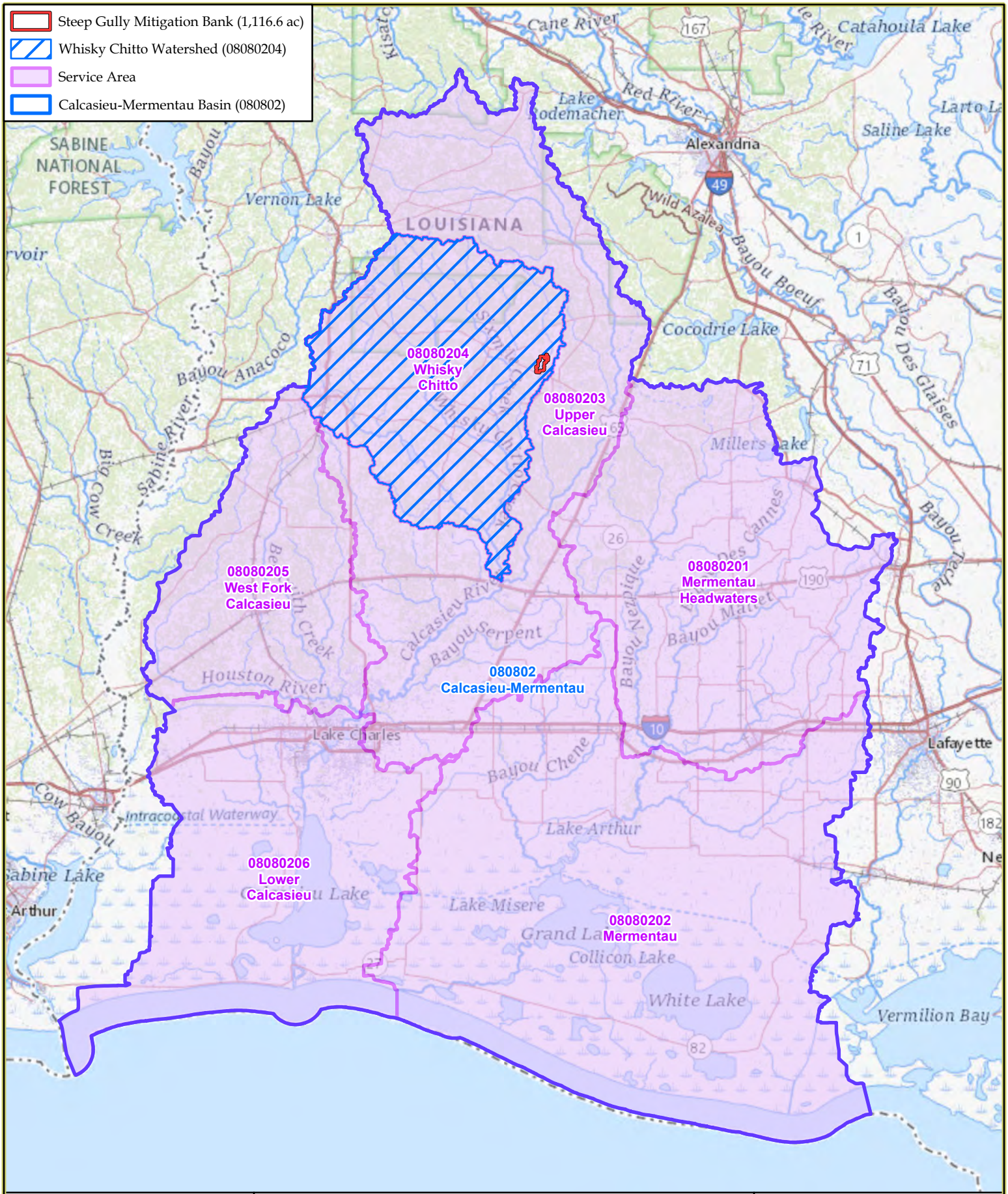
Steep Gully Mitigation Bank
Sec. 31 - T1S - R4W/Sec. 6 - T2S - R4W/Sec. 1 & 12 - T2S - R5W
Rapides and Vernon Parishes, Louisiana
Figure 16 - Vegetation Data Plot Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap



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Sec. 31 - T1S - R4W/Sec. 6 - T2S - R4W/Sec. 1 & 12 - T2S - R5W
Rapides and Vernon Parishes, Louisiana
Figure 17 - Service Area Map

0 45,000 90,000 Feet
1:1,000,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS National Map, April 2023

APPENDIX A

LEGAL DESCRIPTION

STEEP GULLY MITIGATION BANK

RES CALCASIEU, LLC

VERNON & RAPIDES PARISHES, LOUISIANA

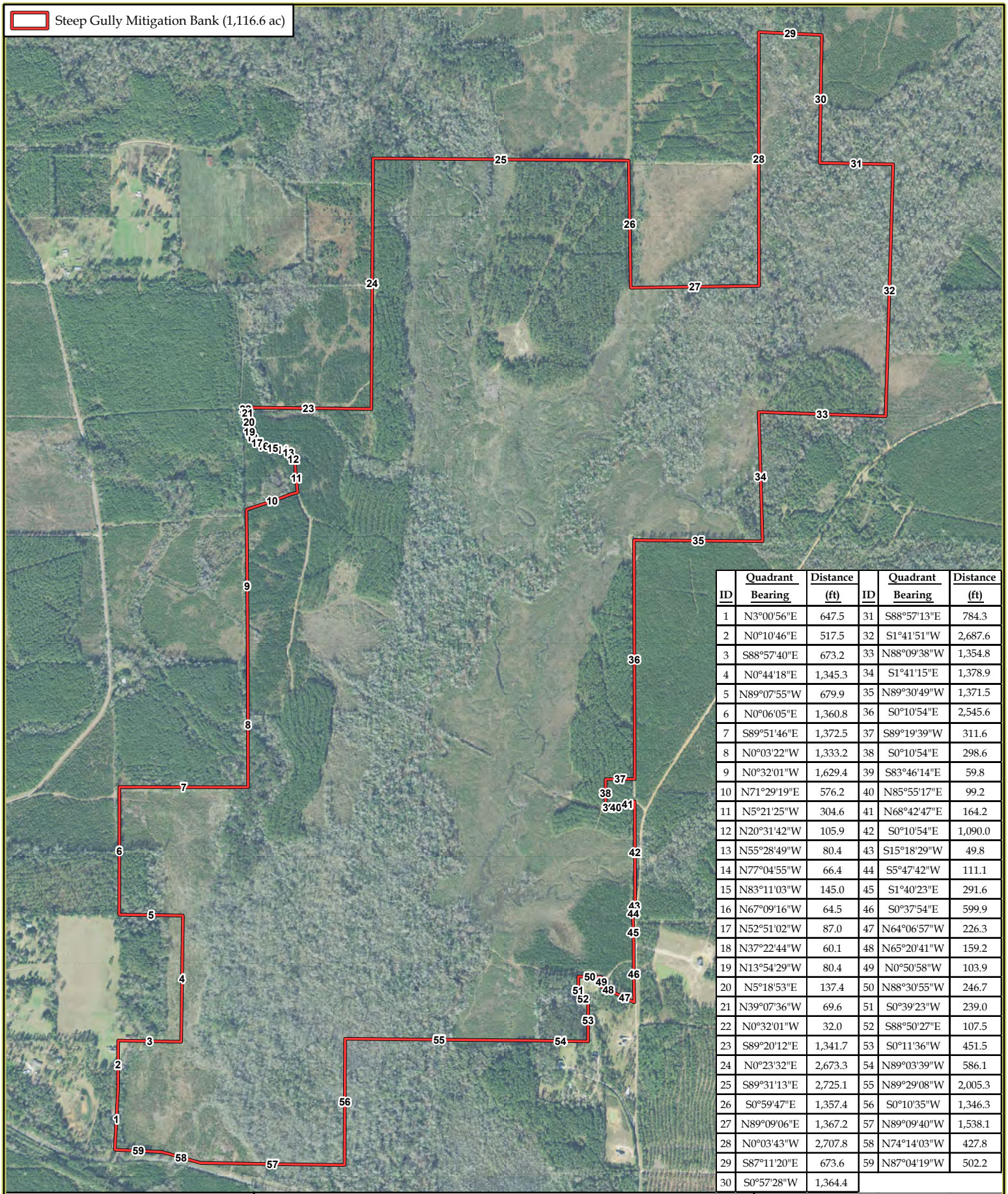
STEEP GULLY MITIGATION BANK ("SGMB") is composed of approximately 1,116.6 acres of land within Vernon and Rapides Parishes, Louisiana. The parcel is described as follows:

SGMB is a parcel of land situated primarily within Section 31, Township 1 South, Range 4 West, Section 6, Township 2 South, Range 4 West, and Sections 1 and 12, Township 2 South, Range 5 West, Vernon and Rapides Parishes, Louisiana, and is comprised of +/- 1,125.9 acres and is more particularly described as follows;

BEGINNING at the southwest corner of Section 12, Township 2 South, Range 5 West, Vernon Parish, Louisiana, proceed at a bearing of N14°52'52"W a distance of 110.3 feet to the approximate "POINT OF BEGINNING" of **SGMB.** Thus, proceed at a bearing of N3°00'56"E a distance of 647.5 feet, then proceed at a bearing of N0°10'46"E a distance of 517.5 feet, then proceed at a bearing of S88°57'40"E a distance of 673.2 feet, then proceed at a bearing of N0°44'18"E a distance of 1345.3 feet, then proceed at a bearing of N89°07'55"W a distance of 679.9 feet, then proceed at a bearing of N0°06'05"E a distance of 1360.8 feet, then proceed at a bearing of S89°51'46"E a distance of 1372.5 feet, then proceed at a bearing of N0°03'22"W a distance of 1333.2 feet, then proceed at a bearing of N0°32'01"W a distance of 1629.4 feet, then proceed at a bearing of N71°29'19"E a distance of 576.2 feet, then proceed at a bearing of N5°21'25"W a distance of 304.6 feet, then proceed at a bearing of N20°31'42"W a distance of 105.9 feet, then proceed at a bearing of N55°28'49"W a distance of 80.4 feet, then proceed at a bearing of N77°04'55"W a distance of 66.4 feet, then proceed at a bearing of N83°11'03"W a distance of 145 feet, then proceed at a bearing of N67°09'16"W a distance of 64.5 feet, then proceed at a bearing of N52°51'02"W a distance of 87 feet, then proceed at a bearing of N37°22'44"W a distance of 60.1 feet, then proceed at a bearing of N13°54'29"W a distance of 80.4 feet, then proceed at a bearing of N5°18'53"E a distance of 137.4 feet, then proceed at a bearing of N39°07'36"W a distance of 69.6 feet, then proceed at a bearing of N0°32'01"W a distance of 32 feet, then proceed at a bearing of S89°20'12"E a distance of 1341.7 feet, then proceed at a bearing of N0°23'32"E a distance of 2673.3 feet, then proceed at a bearing of S89°31'13"E a distance of 2725.1 feet, then proceed at a bearing of S0°59'47"E a distance of 1357.4 feet, then proceed at a bearing of N89°09'06"E a distance of 1367.2 feet, then proceed at a bearing of N0°03'43"W a distance of 2707.8 feet, then proceed at a bearing of S87°11'20"E a distance of 673.6 feet, then proceed at a bearing of S0°57'28"W a distance of 1364.4 feet, then proceed at a bearing of S88°57'13"E a distance of 784.3 feet, then proceed at a bearing of S1°41'51"W a distance of 2687.6 feet, then proceed at a bearing of N88°09'38"W a distance of 1354.8 feet, then proceed at a bearing of S1°41'15"E a distance of 1378.9 feet, then proceed at a bearing of N89°30'49"W a distance of 1371.5 feet, then proceed at a bearing of S0°10'54"E a distance of 2545.6 feet, then proceed at a bearing of S89°19'39"W a distance of 311.6 feet, then proceed at a bearing of S0°10'54"E a distance of 298.6 feet, then proceed at a bearing of S83°46'14"E a distance of 59.8 feet, then proceed at a bearing of N85°55'17"E a distance of 99.2 feet, then proceed at a bearing of N68°42'47"E a distance of 164.2 feet, then proceed at a bearing of S0°10'54"E a distance of 1090 feet, then proceed at a bearing of S15°18'29"W a distance of 49.8 feet, then proceed at a bearing of S5°47'42"W a distance of 111.1 feet, then proceed at a bearing of S1°40'23"E a distance of 291.6 feet, then proceed at a bearing of S0°37'54"E a

distance of 599.9 feet, then proceed at a bearing of N64°06'57"W a distance of 226.3 feet, then proceed at a bearing of N65°20'41"W a distance of 159.2 feet, then proceed at a bearing of N0°50'58"W a distance of 103.9 feet, then proceed at a bearing of N88°30'55"W a distance of 246.7 feet, then proceed at a bearing of S0°39'23"W a distance of 239 feet, then proceed at a bearing of S88°50'27"E a distance of 107.5 feet, then proceed at a bearing of S0°11'36"W a distance of 451.5 feet, then proceed at a bearing of N89°03'39"W a distance of 586.1 feet, then proceed at a bearing of N89°29'08"W a distance of 2005.3 feet, then proceed at a bearing of S0°10'35"W a distance of 1346.3 feet, then proceed at a bearing of N89°09'40"W a distance of 1538.1 feet, then proceed at a bearing of N74°14'03"W a distance of 427.8 feet, then proceed at a bearing of N87°04'19"W a distance of 502.2 feet to the “POINT OF BEGINNING” for **SGMB**.

The above-described tract contains approximately 1,116.6 acres, more or less, situated primarily within Section 31, Township 1 South, Range 4 West, Section 6, Township 2 South, Range 4 West, and Sections 1 and 12, Township 2 South, Range 5 West, Vernon and Rapides Parishes, Louisiana.



ID	Quadrant Bearing	Distance (ft)	ID	Quadrant Bearing	Distance (ft)
1	N3°00'56"E	647.5	31	S88°57'13"E	784.3
2	N0°10'46"E	517.5	32	S1°41'51"W	2,687.6
3	S88°57'40"E	673.2	33	N88°09'38"W	1,354.8
4	N0°44'18"E	1,345.3	34	S1°41'15"E	1,378.9
5	N89°07'55"W	679.9	35	N89°30'49"W	1,371.5
6	N0°06'05"E	1,360.8	36	S0°10'54"E	2,545.6
7	S89°51'46"E	1,372.5	37	S89°19'39"W	311.6
8	N0°03'22"W	1,333.2	38	S0°10'54"E	298.6
9	N0°32'01"W	1,629.4	39	S83°46'14"E	59.8
10	N71°29'19"E	576.2	40	N85°55'17"E	99.2
11	N5°21'25"W	304.6	41	N68°42'47"E	164.2
12	N20°31'42"W	105.9	42	S0°10'54"E	1,090.0
13	N55°28'49"W	80.4	43	S15°18'29"W	49.8
14	N77°04'55"W	66.4	44	S5°47'42"W	111.1
15	N83°11'03"W	145.0	45	S1°40'23"E	291.6
16	N67°09'16"W	64.5	46	S0°37'54"E	599.9
17	N52°51'02"W	87.0	47	N64°06'57"W	226.3
18	N37°22'44"W	60.1	48	N65°20'41"W	159.2
19	N13°54'29"W	80.4	49	N0°50'58"W	103.9
20	N5°18'53"E	137.4	50	N88°30'55"W	246.7
21	N39°07'36"W	69.6	51	S0°39'23"W	239.0
22	N0°32'01"W	32.0	52	S88°50'27"E	107.5
23	S89°20'12"E	1,341.7	53	S0°11'36"W	451.5
24	N0°23'32"E	2,673.3	54	N89°03'39"W	586.1
25	S89°31'13"E	2,725.1	55	N89°29'08"W	2,005.3
26	S0°59'47"E	1,357.4	56	S0°10'35"W	1,346.3
27	N89°09'06"E	1,367.2	57	N89°09'40"W	1,538.1
28	N0°03'43"W	2,707.8	58	N74°14'03"W	427.8
29	S87°11'20"E	673.6	59	N87°04'19"W	502.2
30	S0°57'28"W	1,364.4			

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Rapides and Vernon Parishes, Louisiana
Exhibit A

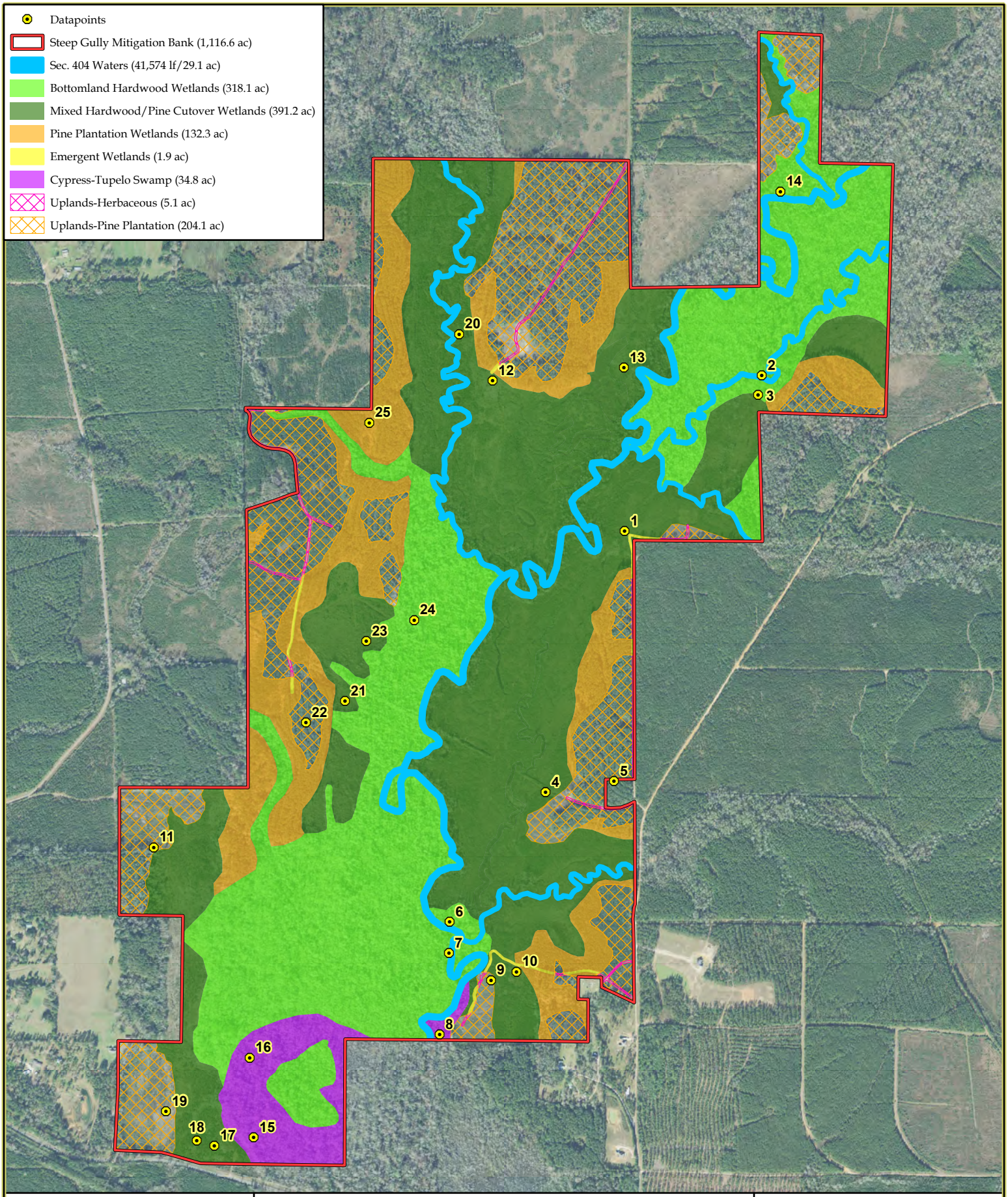
0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap

APPENDIX B



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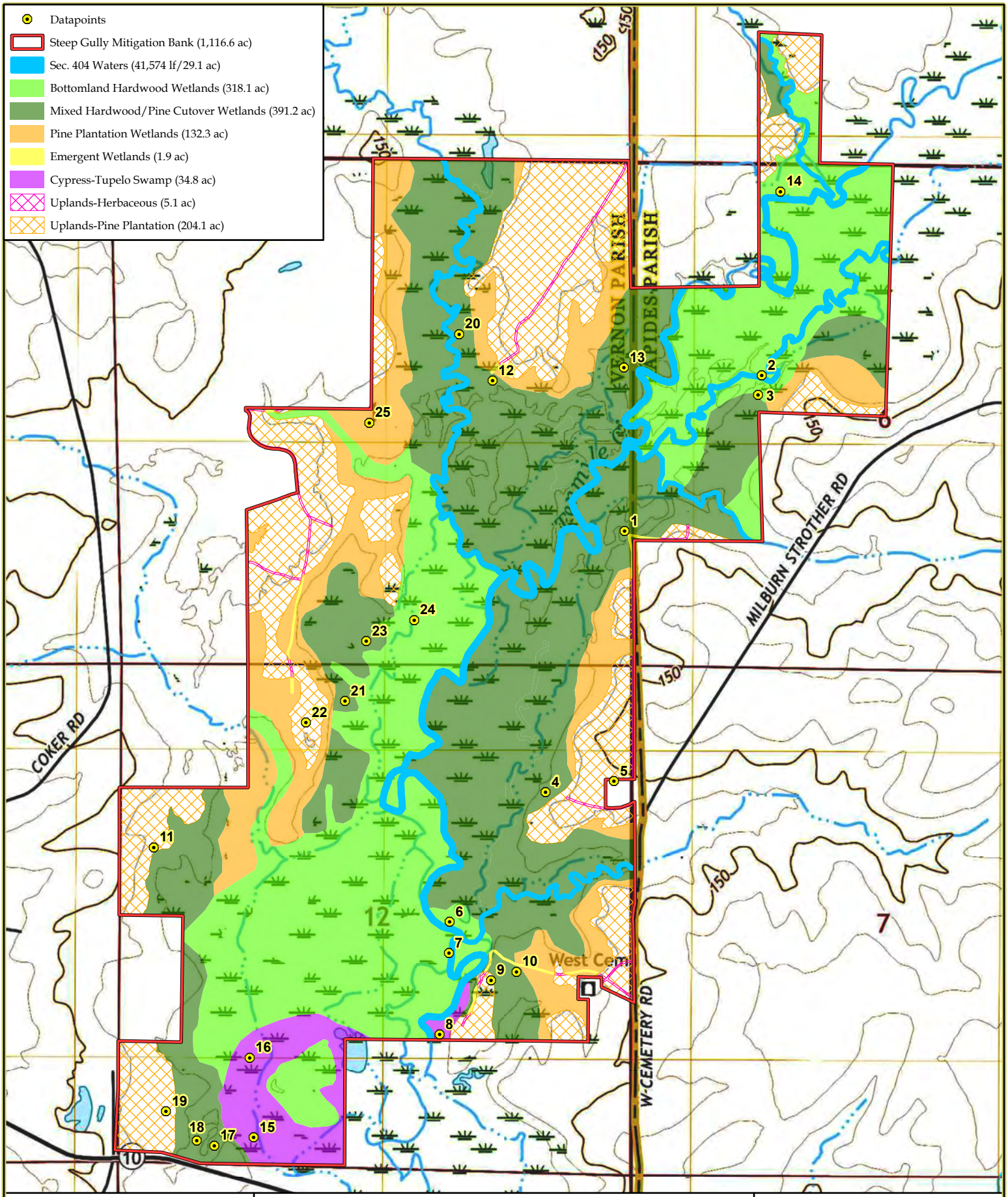
Rapides and Vernon Parishes, Louisiana
Sec. 404 Wetland/Waters Existing Habitat Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USDA NAIP 2021 Imagery Basemap



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Rapides and Vernon Parishes, Louisiana
Sec. 404 Wetland/Waters Existing Habitat Map

0 500 1,000 Feet
1:16,000

N

NAD 1983 2011 StatePlane Louisiana North FIPS 1701 Ft US

USGS Steep Gully (LA) 1:24,000 Quad (2020)