Mississippi Valley Division,
Regional Planning and Environment Division South

Amite River and Tributaries East of the Mississippi River, Louisiana Feasibility Study (ART)

Appendix D-2: Supporting information

December 2023

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1.1 ENVIRONMENTAL SETTINGS

1.1.1 Land Use

Table D:1-1 and Figure D:1-1 show the land use classification in acres in 2015 study area. This data indicates that majority of the land in the study area consists of forested wetlands (i.e. Woody Wetlands), Shrub/Scrub, and Evergreen Forest. The lower half of the Amite River Basin (ARB) is also more developed compared to the lands in the upper ARB.

Table D:1-1. Land Use Classification in the Study Area

Amite Land Use		
Type	Acres	Percent
Open Water	0	0%
Developed, Open Space	414,851	6%
Developed, Low Intensity	343,755	5%
Developed, Medium Intensity	143,804	2%
Developed, High Intensity	42,675	1%
Hay/Pasture	624,560	9%
Cultivated Crops	362,253	5%
Barren Land	39,880	1%
Deciduous Forest	171,630	2%
Evergreen Forest	1,116,398	16%
Mixed Forest	239,171	3%
Shrub/Scrub	1,165,556	17%
Herbaceuous	137,011	2%
Woody Wetlands	2,123,732	30%
Emergent Herbaceuous Wetlands	104,067	1%
Total	7,029,343	100%
Developed	945,085	14%
Agricultural	986,813	14%
Undeveloped	5,097,445	72%
Total	7,029,343	100%
Source: USGS National Land Cover Database 2015		

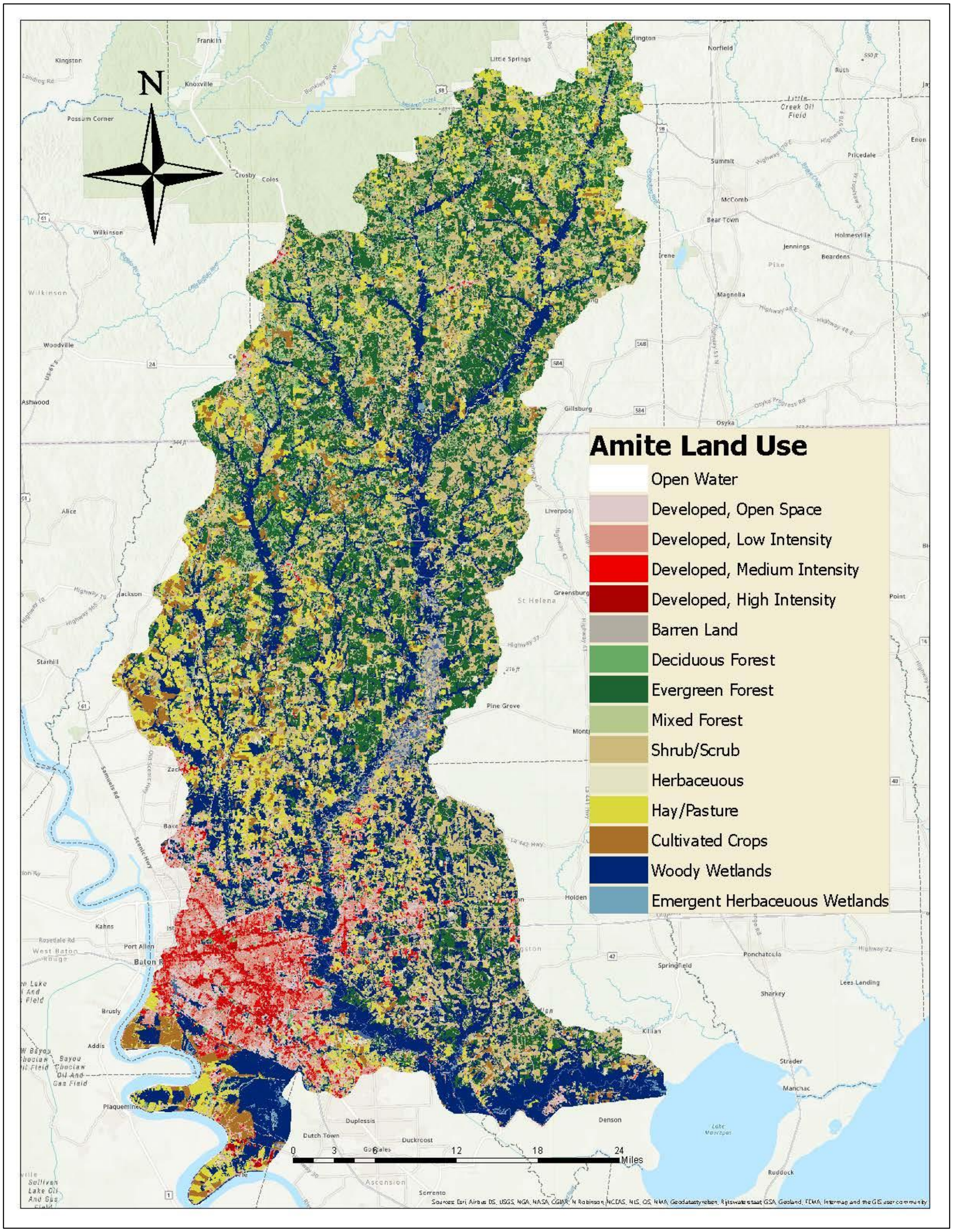

Figure D:1-1. Land Use Classification

1.1.2 Climate

Table D:1-2 consists of the monthly temperature normals recorded from the Baton Rouge Metro Airport, LA monitoring station by the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC). Retrieved 15 April 2019 from https://www.ncdc.noaa.gov/cdo-web/datatools/normals.

Table D:1-2. 1981-2010 Temperature Normals from Baton Rouge Metro Airport, LA US

MONTH	PRECIP (IN)	MIN TMP (°F)	AVG TMP (°F)	MAX TMP (°F)
Jan	5.72	41.2	51.7	62.3
Feb	5.04	44.5	55.1	65.7
Mar	4.41	50.3	61.5	72.7
Apr	4.46	56.8	68.1	79.3
May	4.89	65.2	75.7	86.2
Jun	6.41	71.4	81.1	90.9
Jul	4.96	73.7	83.0	92.2
Aug	5.82	73.4	82.9	92.5
Sep	4.54	68.5	78.6	88.7
Oct	4.70	57.9	69.3	80.8
Nov	4.10	48.9	60.4	71.9
Dec	5.60	42.7	53.4	64.1

Normal annual precipitation for the ARB is 60.5 inches, although for the period 1980 through 1991 rainfall averaged 64 inches a year. The ARB experienced drought conditions (-2 or less on the Palmer Drought Severity Index) during the modern era years of 1952, 1963, 1981, 1999, and 2000. Southerly, maritime winds prevail for much of the year, resulting in the potential for highly variable rainfall over the ARB. Daily variations are frequently measured in inches. Even for a 30-year averaging period, annual precipitation at various weather stations throughout the ARB ranged from 56 to 67 inches. The wettest month is December with an average monthly normal rainfall of 6.14 inches. October is the driest month averaging 3.50 inches.

High cumulative rainfall events (e.g., 6 inches or more in less than 72 hours) over large areas of the ARB are caused under two typical scenarios: slow moving cold fronts encountering warm moist coastal air in late-winter or early spring; and slow-moving tropical storms in summer or early fall. High short-term localized rainfall intensities (e.g., over one inch in an hour) can occur under these two scenarios and are also experienced in a third scenario—heavy summer-time thunderstorms. Severe riverine flooding in the lower ARB has occurred under extreme examples of all three scenarios, with minor localized flood events typically occurring at least once per year in small, poorly drained catchments. Record floods often result when significant rainfall events occur in the context of above-average seasonal rainfall patterns, which sustain high soil moisture saturation and floodplain water levels. In addition to rainfall-riverine flood events, the lower ARB is also subject to wind-driven coastal flooding associated with slow-moving tropical storms. Prolonged heavy southerly winds cause high water levels along the southeastern Louisiana coast (e.g., Breton and Mississippi Sounds), causing back-step rises in Lakes Borgne, Pontchartrain, and Maurepas. Lake Maurepas levels above 3 feet mean sea level (MSL) typically impact the lower ARB at least once per year. Tropical storms have pushed levels above 6 feet MSL.

1.1.3 Flood Events

Table D:1-3 indicates the top 10 pre-2016 crests based on USGS gauges for the Amite River at Denham Springs and Comite River at Joor Rd (with peak stage data as far back as 1921 and 1943, respectively) and the peak discharge for five of the Amite River floods at Denham Springs.

Table D:1-3. Pre-August 2016 ARB Flood Crests for Amite and Comite Rivers (2017 ARB Drainage and Water Conservation District)

	Amite River at Denham Springs, LA US 190			Comite River at Comite, LA Joor Road	
	Gauge Datum (ft)	Discharge (cfs)	Date	Gauge Datum (ft)	Date
1	41.5	112,000	4/8/1983	30.99	6/9/2001
2	41.08	110,000	4/23/1977	29.72	4/7/1983
3	39.88		1/27/1990	27.58	1/21/1993
4	39.27		3/15/1921	27.45	9/4/2008
5	38.34	82,700	6/9/2001	27.22	4/28/1997
6	38.15		1/22/1993	26.54	1/26/1990
7	36.7	68,600	4/24/1979	26.38	4/12/1995
8	36.5	60,200	3/27/1973	26.16	3/12/2016
9	36.33		5/20/1953	25.99	4/23/1979
10	36.23		9/5/2008	25.64	5/19/1953
Conversion from Gauge Datum to ft NAVD88					
	- 1.35			+ 22.1	

See NOAA, Advanced Hydrologic Prediction Services websites for gauges.

Table D:1-4 presents a summary of estimated damages from the August 2016 Louisiana flooding.

Table D:1-4. Summary of Damages by Category

Damages Category	Loss in Millions
Residential Housing Structures	$3,844.2
Residential Housing Contents	$1,279.8
Automobiles	$378.8
Agriculture	$110.2
Business Structures	$595.6
Business Equipment	$262.8
Business Inventories	$1,425.5
Business Interruption Loss	$836.4
Total	$8,733.3

Source: Terrell, D. 2016. The Economic Impact of August 2016 Floods on the State of Louisiana. http://gov.louisiana.gov/assets/docs/RestoreLA/SupportingDocs/Meeting-9-28-16/2016-August-Flood-Economic-Impact-Report_09-01-16.pdf

1.2 RELEVANT RESOURCES

This section contains a description of relevant resources that are in the area of influence of the proposed project. The important resources described are those recognized by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public.

Relevant resources that are in the area of influence of the project are: wetlands; uplands; aquatic resources and fisheries; wildlife; threatened, endangered, and protected species; geology, soils and water bottoms, and prime and unique farmland; water quality; and air quality.

Section 2
Natural Resources

2.1 WETLANDS

Figure D:2-1 shows the National Wetlands Inventory data within the study area (https://www.fws.gov/wetlands/). Table D:2-1 provides a list of the National Wetlands Inventory and the number of acres of each type within the study area.

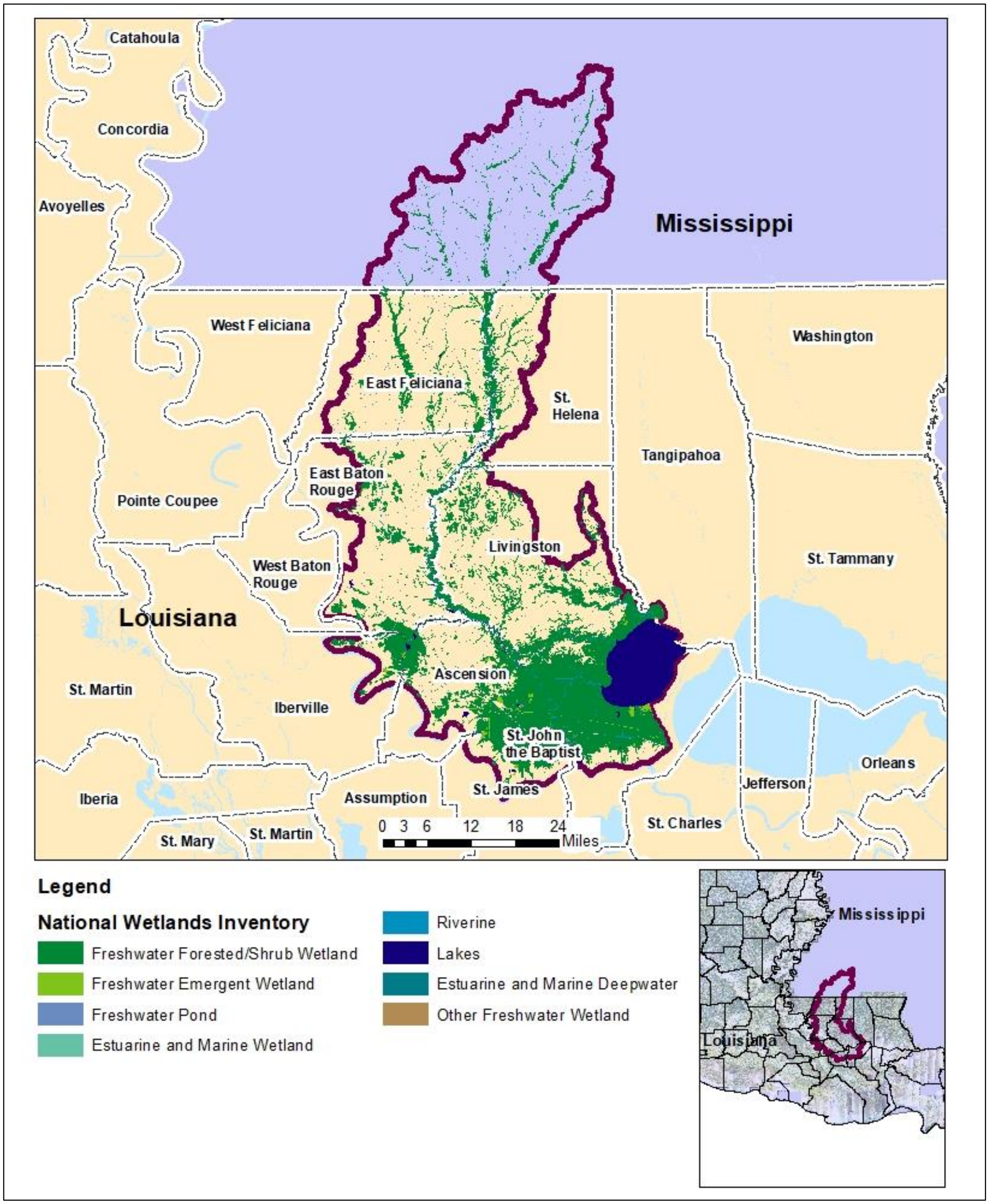

Figure D:2-1. Study Area Wetlands (National Wetlands Inventory)

Table D:2-1. National Wetlands Inventory for the Study Area

Wetland classification	Acres
Estuarine and Marine Deepwater	11.91
Freshwater Emergent Wetland	8,450.29
Freshwater Forested/Shrub Wetland	367,324.26
Freshwater Pond	7,984.49
Lake	61,879.89
Riverine	13,353.02

Mississippi Alluvial Plain vegetation includes:

- Swamp, found in low-lying areas typically adjacent to waterways, is dominated by cypress and tupelo-gum trees.
- Riverine habitats along stream and river bottoms and bottomland forests are comprised of water tupelo, willow, sycamore, cottonwoods, green ash, pecan, elm, cherrybark oak, and white oak trees; these are often interspersed with Chinese tallow. Depending upon the locations, riverine habitats grade into higher elevated and better drained areas comprised of oak-pine forests.
- Oak-pine forest types dominate the better drained areas especially surrounding Lake Charles and Sulfur and include longleaf pine, loblolly pine, slash pine, sweetgum, elm, southern red oak, water oak, black gum and Chinese tallow trees.
- Pasture and rangelands with mixtures of perennial grasses and legumes (e.g., bermundagrass, Pensacola bahiagrass, tall fescue, and white clover) comprise the majority of the outlying areas surrounding the cities of Abbeville, Erath, and Delcambre.

Mississippi Alluvial Plain consists of back barrier vegetated areas; freshwater, intermediate, brackish, and saline marsh; interspersed with bayous, lakes, ponds and other waters some of which may include submerged aquatic vegetation (SAVs). Vegetation typically follows the salinity gradient (O'Neil 1949; Chabreck et al. 1972; Gosselink et al. 1979; Visser et al. 2000).

- Gulf shorelines vegetation includes sea-beach orach, sea rocket, pigweed, beach tea, salt grass, seaside heliotrope, common and sea purslane, marsh-hay cordgrass, and coastal dropseed (LCA, 2004, Gosselink et al., 1979).
- Marsh types: Visser et al. (2000), expanding on previous studies by Penfound and Hathaway (1938) and Chabreck (1970), classified freshwater marsh in the Chenier Plain as a combination of maidencane and bulltongue arrowhead; intermediate marsh as sawgrass, saltmeadow cordgrass, and California bulrush; brackish marsh as saltmeadow cordgrass, chairmaker's bulrush, and sturdy bulrush; and saline marsh as smooth cordgrass, needlegrass rush, and saltgrass.

- Submerged Aquatic Vegetation: wild celery, duckweed, pickerelweed, sago pondweed, southern naiad.

2.2 INVASIVE PLANTS

Invasive plants include water hyacinth, alligatorweed, hydrilla, common salvinia, giant salvinia, Chinese tallow, Chinese privet, Cogon grass, Johnsongrass, Japanese privet, Japanese honeysuckle, common ragweed, rescuegrass, sticky Chickweek, purple nutsedge, mimosa tree. These invasive species compete with native flora for resources such as nutrients and light, community structure and composition, and ecosystem processes. Water hyacinth, common salvinia, giant salvinia, and hydrilla all limit the amount of light penetrating the water column which affects plankton biomass production. Alligatorweed, Chinese tallow, and Chinese privet are of minimal wildlife value and can proliferate until they become the only dominant plant species in the area, limiting food available for wildlife.

2.3 WETLAND LOSS

The processes of wetland loss can result from the gradual decline of marsh vegetation due to inundation and saltwater intrusion, as well as from storm surge events, both of which can eventually lead to complete loss of marsh vegetation. As marsh vegetation is lost, underlying soils are more susceptible to erosion and are typically lost as well, leading to deeper water and precluding marsh regeneration. Significant accretion of sediments is then required in order for marsh habitat to reestablish.

Perhaps the most serious and complex problem in the study area is the rate of land and habitat loss. Coastal Louisiana wetlands are one of the most critically threatened environments in the United States. These wetlands are in peril because Louisiana currently experiences greater coastal wetland loss than all other states in the contiguous United States combined (Couvillion, et al., 2017). The Louisiana coastal plain accounts for 90 percent of the total coastal marsh loss in the nation (USACE 2004). Couvillion et al. (2011) analyses shows coastal Louisiana has undergone a net change in land area of about -1,883 square miles of wetlands from 1932 to 2010. Trend analyses from 1985 to 2010 show a wetland loss rate of about 16.57 square miles per year.

Some wetland loss might also be related to livestock grazing. Moderate grazing alone is not believed to cause wetland loss, but it may be the "final straw" in marshes experiencing additional stresses such as flooding or saltwater intrusion.

The effects of recent hurricanes have accelerated forested wetland loss.

2.4 FUTURE CONDITIONS FOR VEGETATION RESOURCES AND INVASIVE PLANT SPECIES

The current wetland gain/loss trends as well as a change in wetland composition would continue to area vegetation zones.

Wetland losses are predicted to result in:

- Some unknown extent of existing riverine bottomland hardwood (BLH) and associated swamp habitats would be converted to more efficient water conveyance channels as human populations and development increase.
- Some unknown extent of existing pasture and rangelands would be converted to rural, suburban and urban human habitats, generally in the order presented, as human populations and development increase.
- Habitat switching would occur due to increasing sea level rise, subsidence, shoreline erosion and other land loss drivers.
- Gulf shoreline recession rates, varying between +8 feet to -52.9 feet per year, would result in Gulf shoreline rollover onto interior marshes thereby converting these existing habitats to barrier shorelines.
- Inland ponds and lakes shoreline loss rates, varying between 3.6 feet and 9.3 feet, would result in conversion of existing salt, brackish, and intermediate/fresh marsh to shallow open water habitats.

Invasive species will continue to proliferate. New species will become problematic in the future. This will add additional pressures to native animals and natural ecosystems. Invasive species management is and will continue to use money that could have been used for managing natural systems.

2.5 UPLANDS

Rare, Unique, and Imperiled Vegetative Communities. The Louisiana Natural Heritage Program (LNHP) documented the following rare, unique, and imperiled communities. These communities contribute to the diversity and stability of the coastal ecosystem. Table D:2-2 displays information from the LNHP database identifying rare, unique or imperiled vegetative communities.

Table D:2-2. Louisiana Natural Heritage Program Rare, Unique, or Imperiled Vegetative Communities

Vegetative Communities	Basins or Parish(es)
Cypress Swamp	Iberville
Cypress-Tupelo Swamp	Ascension, Iberville, Livingston, St. James, St. John the Baptist,
Baldcypress-Swamp Blackgum Swamp	Florida Parishes on northshore of Lake Maurepas
Bottomland Hardwood Forest	All Parishes
Small Stream Forest	All Florida Parishes
Hardwood Slope Forest	E. Feliciana, St. Helena
Spruce Pine-Hardwood Flatwood	Livingston, East Baton Rouge and Ascension Parishes

https://www.wlf.louisiana.gov/assets/Conservation/Protecting_Wildlife_Diversity/Files/rare_natural_communities_tracking_list_2022.pdf

Small stream forests (also called “Riparian Forests”) are relatively narrow wetland forests occurring along small rivers and large creeks in central, western, southeastern, and northern Louisiana. They are seasonally flooded for brief periods. The percentage of sand, silt, calcareous clay, acidic clay, and organic material in the soil is highly variable (depending on local geology) and has a significant effect on species composition. Soils are typically classified as siltloams. This community includes the phase formerly designated as riparian sandy branch 29 bottom. At times, the community is quite similar in species composition to hardwood slope forests (beech-magnolia forests). For a list of tree species in this community, see Table D:2-3.

Rare Vegetation Communities Future Conditions. Existing conditions and trends of land loss and development are expected to continue, resulting over time, in the loss of these valuable vegetative communities.

Table D:2-3. Rare Vegetative Species List for Forest Communities in the project area (From LDWF Natural Communities of Louisiana)

Small Stream Forest (Overstory Species)	
COMMON NAME	**SCIENTIFIC NAME**
southern magnolia	*Magnolia grandiflora*
blackgum	*Nyssa sylvatica*
white oak	*Quercus alba*
laurel oak	*Quercus laurifolia*
sweetgum	*Liquidambar styraciflua*
red maple	*Acer rubrum*
shagbark hickory	*Carya ovata*
white ash	*Fraxinus americana*
cherry laurel	*Prunus caroliniana*
yellow poplar	*Liriodendron tulipifera*
baldcypress	*Taxodium distichum*
sweet bay	*Magnolia virginiana*
beech	*Fagus grandifolia*
swamp white oak	*Quercus michauxii*
water oak	*Quercus nigra*
cherrybark oak	*Quercus pagoda*
sycamore	*Platanus occidentalis*
river birch	*Betula nigra*
bitternut hickory	*Carya cordiformis*
water ash	*Fraxinus caroliniana*
winged elm	*Ulmus alata*
spruce pine (Florida Parishes)	*Pinus glabra*
loblolly pine	*Pinus taeda*
Small Stream Forest (Midstory and Understory Species)	
COMMON NAME	**SCIENTIFIC NAME**
silverbell	*Halesia diptera*
arrow-wood	*Viburnum dentatum*
sweetleaf	*Symplocos tinctoria*
wild azalea	*Rhododendron canescens*
ironwood	*Carpinus caroliniana*
Virginia willow	*Itea virginica*
hazel alder	*Alnus serrulata*

bigleaf snowbell	*Styrax grandifolia*
starbush (FL Parishes)	*Illicium floridanum*
swamp cyrilla (FL Parishes)	*Cyrilla racemiflora*
leucothoe (FL Parishes)	*Leucothoe axillaris*
winterberry (FL Parishes)	*Ilex verticillata*
sebastian bush (FL Parishes)	*Sebastiana fruticosa*
fetterbush (FL Parishes)	*Lyonia lucida*
leucothoe (FL Parishes)	*Leucothoe racemosa*

2.6 AQUATIC RESOURCES AND FISHERIES

Table D:2-4. Fish Species in the Amite River Watershed by Family, Scientific and Common Names (from LDWF Amite River Water Body Management Plan)

Achiridae – American soles	
Trinectes maculates	northern hogchoker
Acipenseridae – sturgeons	
Acipenser oxyrhynchus desotoi	Gulf sturgeon
Amiidae – bowfin	
Amia calva	bowfin
Aphredoderidae – trout perches	
Aphredoderus sayanus	pirate perch
Anguillidae – freshwater eels	
Anguilla rostrata	American eel
Atherinopsidae	New World silversides
Labidesthes sicculus	brook silverside
Menidia beryllina	inland silverside
Catostomidae – suckers	
Carpiodes carpio	river carpsucker
Erimyzon sucetta	lake chubsucker
Erimyzon oblongus	creek chubsucker
Erimyzon claviformis	western creek chubsucker
Erimyzon tenuis	sharpfin chubsucker
Hypentelium nigricans	northern hogsucker
Minytrema melanops	spotted sucker

Moxostoma poecilurum	blacktail redhorse
Ictiobus bubalus	smallmouth buffalo
Ictiobus cyprinellus	bigmouth buffalo
Ictiobus niger	black buffalo
Centrarchidae - sunfishes	
Ambloplites ariommus	shadow bass
Centrarchus macropterus	flier
Elassoma zonatum	banded pygmy sunfish
Lepomis cyanellus	green sunfish
Lepomis humilis	orangespotted sunfish
Lepomis macrochirus	bluegill
Lepomis gulosus	warmouth
Lepomis marginatus	dollar sunfish
Lepomis megalotis	longear sunfish
Lepomis microlophus	redear sunfish
Lepomis symmetricus	bantam sunfish
Micropterus punctulatus	spotted bass
Micropterus salmoides	largemouth bass
Pomoxis annularis	white crappie
Pomoxis nigromaculatus	black crappie
Clupeidae – herrings	
Alosa chrysochloris	skipjack herring
Dorosoma cepedianum	gizzard shad
Dorosoma petenense	threadfin shad
Brevoortia patronus	Gulf menhaden
Cyprinidae - carps and minnows	
Macrhybopsis aestivalis	speckled chub
Macrhybopsis storeriana	silver chub
Hybopsis winchelli	clear chub
Notemigonus crysoleucas	golden shiner
Hybopsis amnis	pallid shiner
Luxilus chrysocephalus	striped shiner
Lythrurus fumeus	ribbon shiner

Notropis longirostris	longnose shiner
Notropis maculatus	taillight shiner
Lythrurus roseipinnis	cherryfin shiner
Notropis texanus	weed shiner
Cyprinella venusta	blacktail shiner
Notropis volucellus	mimic shiner
Opsopoeodus emiliae	pugnose minnow
Pimephales promelas	fathead minnow
Pimephales vigilax	bullhead minnow
Hybognathus hayi	cypress minnow
Cyprinus carpio	common carp
Notropis atherinoides	emerald shiner
Hypophthalmichthys molitrix	silver carp
Elopidae – tarpons	
Elops saurus	ladyfish
Engraulidae – anchovies	
Anchoa mitchilli	bay anchovy
Esocidae – pikes	
Esox americanus	grass pickerel
Esox niger	chain pickerel
Fundulidae – topminnows and killifishes	
Fundulus chrysotus	golden topminnow
Fundulus catenatus	studfish
Fundulus notatus	blackstripe topminnow
Fundulus olivaceus	blackspotted topminnow
Fundulus euryzonus	broadstripe topminnow
Ictaluridae - North American catfishes	
Ameiurus melas	black bullhead
Ameiurus natalis	yellow bullhead
Ameiurus nebulosus	brown bullhead
Ictalurus furcatus	blue catfish
Ictalurus punctatus	channel catfish
Pylodictis olivaris	flathead catfish

Noturus gyrinus	tadpole madtom
Noturus leptacanthus	speckled madtom
Noturus miurus	brindled madtom
Noturus nocturnes	freckled madtom
Lepisosteidae - gars	
Lepisosteus oculatus	spotted gar
Lepisosteus osseus	longnose gar
Lepisosteus platostomus	shortnose gar
Lepisosteus spatula	alligator gar
Moronidae – temperate basses	
Morone mississippiensis	yellow bass
Morone chrysops	white bass
Mugilidae – mullets	
Mugil cephalus	striped mullet
Petromyzontidae	northern lampreys
Ichthyomyzon gagei	southern brook lamprey
Paralichthyidae – flounders	
Paralichthys lethostigma	southern flounder
Percidae – perches	
Ammocrypta beanii	naked sand darter
Etheostoma chlorosomum	bluntnose darter
Etheostoma fusiforme	swamp darter
Etheostoma proeliare	cypress darter
Etheostoma stigmaeum	speckled darter
Etheostoma swaini	Gulf darter
Etheostoma zonale	banded darter
Percina maculata	blackside darter
Percina nigrofasciata	blackbanded darter
Percina vigil	saddleback darter
Percina sciera	dusky darter
Ammocrypta vivax	scaly sand darter
Percina caprodes	logperch
Poeciliidae – livebearers	

Gambusia affinis	western mosquitofish
Poecilia latipinna	sailfin molly
Heterandria formosa	least killifish
Polyodontidae – paddlefishes	
Polyodon spathula	paddlefish
Sciaenidae – drums	
Aplodinotus grunniens	freshwater drum
Micropogonias undulatus	Atlantic croaker
Sparidae – porgies	
Archosargus probatocephalus	sheepshead
Lagodon rhomboides	pinfish
Syngnathidae – pipefishes and seahorses	
Syngnathus scovelli	Gulf pipefish

2.7 WILDLIFE

Table D:2-5. Game and Non-Game Birds in Study Area

COMMON AND SCIENTIFIC NAME	OCCURENCE
American Kestrel (*Falco sparverius paulus*)	September to March
Anhinga (*Anhinga anhinga*)	July to March (FWS)
Bald Eagle (*Haliaeetus leucocephalus*)	August to May
Barn Swallow (*Hirundo rustica*)	February to November
Barred Owl (*Strix varia*)	Resident
Belted Kingfisher (*Megaceryle alcyon*)	Resident
Blue Jay (*Cyanocitta cristata*)	Resident
Carolina Chickadee (*Poecile carolinensis*)	Resident
Carolina Wren (*Thryothorus ludovicianus*)	Resident
Cattle Egret (*Bubulcus ibis*)	September to April (FWS)
Cedar Waxwing (*Bombycilla cedrorum*)	November to May
Chimney Swift (*Chaetura pelagica*)	March to November
Double-crested Cormorant (*Phalacrocorax auritus*)	July to March (FWS)
Downy Woodpecker (*Picoides pubescens*)	Resident

COMMON AND SCIENTIFIC NAME	OCCURENCE
Eastern Phoebe (*Sayornis phoebe*)	October to March
European Starling (*Sturnus vulgaris*)	Resident
Great Egret (*Ardea alba*)	August to February (FWS)
Reddish Egret	August to March (FWS)
Hooded Merganser (*Lophodytes cucullatus*)	November to May
Kentucky Warbler (*Oporornis formosus*)	March to September
Killdeer (*Charadrius vociferus*)	Resident
Lesser Scaup (*Aythya affinis*)	October to March
Little Blue Heron (*Egretta caerulea*)	Resident
Great Blue Heron	August to February (FWS)
Tricolored Heron	August to March (FWS)
Green Heron	September to March (FWS)
Black-crowned Night-Heron	September to March (FWS)
Yellow-crowned Night-Heron	September to March (FWS)
Mallard (*Anas platyrhynchos*)	Resident
Mississippi Kite (*Ictinia mississippiensis*)	April to August
Mourning dove (*Zenaida macroura*)	Resident
Northern Mockingbird (*Mimus polyglottos*)	Resident
Prothonotary Warbler (*Protonotaria citrea*)	March to October
Red-bellied Woodpecker (*Melanerpes erythrocephalus*)	Resident
Red-shouldered Hawk (*Buteo lineatus*)	Resident
Red-tailed Hawk (*Buteo jamaicensis*)	Resident
Ring-billed Gull (*Larus delawarensis*)	November to April
Ring-necked Duck (*Aythya collaris*)	October to March
Roseate Spoonbill (*Platalea ajaja*)	August to April (FWS)
Ruby-throated Hummingbird (*Archilochus colubris*)	Resident
Snowy Egret (*Egretta thula*)	August to March (FWS)
Turkey Vulture (*Cathartes aura*)	Resident
White Ibis (*Eudocimus albus*)	September to April (FWS)
White-eyed Vireo (*Vireo griseus*)	Resident
White-throated Sparrow (*Zonotrichia albicollis*)	October to April

COMMON AND SCIENTIFIC NAME	OCCURENCE
Wood duck (*Aix sponsa*)	Resident
Wood Thrush (*Hylocichla mustelina*)	March to October
Yellow-billed Cuckoo (*Coccyzus americanus*)	March to October

Table D:2-6. Mammals in the Study Area

COMMON NAME	SCIENTIFIC NAME
fox squirrel	*Sciurus niger*
grey squirrel	*Sciurus carolinensis*
mink	*Neovison vison*
opossum	*Didelphis virginiana*
raccoon	*Procyon lotor*
swamp rabbit	*Sylvilagus aquaticus*
white-tailed deer	*Odocoileus virginianus*

Table D:2-7. Amphibians in the Study Area

COMMON NAME	SCIENTIFIC NAME
bullfrog	*Lithobates catesbeianus*
cricket frog	*Acris crepitans*
Gulf coast toad	*Incilius valliceps*
southern leopard frog	*Lithobates sphenocephalus*

Table D:2-8. Reptiles in the Study Area

COMMON NAME	SCIENTIFIC NAME
American alligator	*Alligator mississippiensis*
snapping turtle	*Chelydra serpentina*
eastern spiny softshell	*Apalone spinifera*
red-eared slider	*Trachemys scripta elegans*
speckled kingsnake	*Lampropeltis holbrooki*
broad-banded water snake	*Nerodia fasciata confluens*
western cottonmouth	*Agkistrodon piscivorus leucostoma*

2.8 THREATENED, ENDANGERED, AND PROTECTED SPECIES

Factors regarding the existing conditions for threatened and endangered species in the study area principally stem from the alteration, degradation, and loss of habitats; and human disturbance. The continued high rate of commercial development throughout the study area continues to reduce available wetland habitat to threatened and endangered species. This creates increased intra- and interspecific competition for rapidly depleting resources between not only the various threatened and endangered species but also other more numerous fauna.

On March 13, 2019, U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN) obtained from the USFWS lists of threatened and endangered species that may occur in the proposed project location, and/or may be affected by the proposed project (See Appendix D-1). Table D:2-9 provides a summary of these findings including the presence of critical habitat. Descriptions for species that may be affected follow below.

Table D:2-9. Threatened (T), Endangered (E), & Protected (P) Species

Scientific name	Common name and status (T, E, or P)	Found in Study Area	Determination of Effects: May Affect, Not Likely to Adversely Affect (NLAA), or Likely to Adversely Affect (LAA)
Potamilus inflatus	Alabama Heelsplitter Mussel (T)	Yes	No effect
Acipenser oxyrhynchus desotoi	Atlantic Sturgeon (T)	Yes	No effect
Trichechus manatus	West Indian Manatee (T)	Yes	No effect
Myotis septentionalis	Northern long-eared bat (E)	Yes	No effect
Haliaeetus leucocephalus	Bald Eagle (P)	Yes	No effect

2.8.1 West Indian Manatee

Federally listed as a threatened species, *Trichechus manatus* (West Indian manatees) occasionally enter Lakes Pontchartrain and Maurepas, and associated coastal waters and streams during the summer months (i.e., June through September). Manatee occurrences appear to be increasing, and they have been regularly reported in the Amite, Blind, Tchefuncte, and Tickfaw Rivers, and in canals within the adjacent coastal marshes of Louisiana. The manatee has declined in numbers due to collisions with boats and barges, entrapment in flood control structures, poaching, habitat loss, and pollution. Cold weather and outbreaks of red tide may also adversely affect these animals.

Public data on manatee sightings have provided benefits for conservation efforts, according to Hieb et al. (2017). Ongoing manatee population growth, future climate change, or other large-scale environmental perturbations are likely to continue altering the timing, duration, and location of manatee visits to the northern Gulf of Mexico. Although publicly sourced data and citizen-science efforts have inherent biases, on a decadal time scale these datasets could provide comprehensive information on manatee habitat use than is possible by direct observations.

2.8.2 Gulf Sturgeon

Acipenser oxyrhynchus desotoi (the Gulf sturgeon), federally listed as a threatened species, is an anadromous fish that occurs in many rivers, streams, and estuarine waters along the northern Gulf coast between the Mississippi River and the Suwannee River, Florida. In Louisiana, Gulf sturgeon have been reported at Rigolets Pass, rivers and lakes of the Lake Pontchartrain basin, and adjacent estuarine areas. Spawning occurs in coastal rivers between late winter and early spring (i.e., March to May). Adults and sub-adults may be found in those rivers and streams until November, and in estuarine or marine waters during the remainder of the year. Sturgeon less than 2 years old appear to remain in riverine habitats and estuarine areas throughout the year, rather than migrate to marine waters. Habitat alterations such as those caused by water control structures that limit and prevent spawning, poor water quality, and over-fishing have negatively affected this species.

On March 19, 2003, the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) published a final rule in the Federal Register (Volume 68, No. 53) designating critical habitat for the Gulf sturgeon in Louisiana, Mississippi, Alabama, and Florida. The proposed project; however, does not occur within nor would it impact designated Gulf sturgeon critical habitat.

2.8.3 Inflated Heelsplitter Museel

Federally listed as a threatened species, the Alabama heelsplitter mussel (*Potamilus inflatus*) was historically found in Louisiana in the Amite, Tangipahoa, and Pearl Rivers. Many life history aspects of the species are poorly understood but are likely similar to that of other members of the Unionidae family. Although the primary host fish for the species is not certain, investigation by K. Roe et al. (1997) indicates that the freshwater drum (Aplodinotus grunniens) is a suitable glochidial host for the species.

Based on the most recent survey data, the currently known range for the Alabama heelsplitter in Louisiana occurs only in the lower third of the Amite River along the East Baton Rouge/Livingston Parish line from Spiller’s Creek, which is in the vicinity of Denham Springs downstream to the vicinity of Port Vincent. Because it has not been used widely for past or present gravel mining operations, the lower third of the Amite River (between

Louisiana Highway 37 and Louisiana Highway 42) is more typical of a coastal plain river; being characterized by a silt substratum, less channelization, and slower water flow, all of which are characteristic of heelsplitter habitat. This freshwater mussel is typically found in soft, stable substrates such as sand, mud, silt, and sandy gravel, in slow to moderate currents. Heelsplitter mussels are usually found in depositional pools below sand point bars and in shallow pools between sandbars and river banks.

Major threats to this species in Louisiana are the loss of habitat resulting from sand and gravel dredging and channel modifications for flood control, as shown by the apparent local extirpation of the species in the extensively modified upper portions of the Amite River.

2.8.4 Northern Long-Eared Bat

The northern long-eared bat (*Myotis septentrionalis*), federally listed as an endangered species, is a medium sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches and is distinguished by its long ears. Its fur color can range from medium to dark brown on the back and tawny to pale brown on the underside. The northern long-eared bat can be found in much of the eastern and north central United States and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and eastern British Columbia. In Louisiana, there have been confirmed reports of sightings in West Feliciana, Winn, and Grant parishes, although they can possibly be found in other parishes in the state. Some individuals were documented during mist net and bridge surveys on the Winn District of the Kisatchie National Forest and observed under bridges on the Winn District in Grant Parish.

Northern long-eared bats can be found in mixed pine/hardwood forest with intermittent streams. Northern long-eared bats roost alone or in small colonies underneath bark or in cavities or crevices of both live trees and snags (dead trees). During the winter, northern long-eared bats can be found hibernating in caves and abandoned mines, although none have been documented using caves in Louisiana. Northern long-eared bats emerge at dusk to fly through the understory of forested hillsides and ridges to feed on moths, flies, leafhoppers, caddis flies and beetles, which they catch using echolocation. This bat can also feed by gleaning motionless insects from vegetation and water surfaces.

The most prominent threat to this species is white-nose syndrome, a disease known to cause high mortality in bats that hibernate in caves. Other sources of mortality for northern long-eared bats are wind energy development, habitat destruction or disturbance, climate change and contaminants. If implementation of the proposed action has the potential to directly or indirectly affect the northern long-eared bat or its habitat, further consultation with this office will be necessary.

The USACE is responsible for determining whether the selected alternative is likely (or not likely) to adversely affect any listed species and/or critical habitat, and for requesting the Service's concurrence with that determination. If the USACE determines, and the Service concurs, that the selected alternative is likely to adversely affect listed species and/or critical habitat, a request for formal consultation in accordance with Section 7 of the Endangered Species Act should be submitted to the Service. That request should also include the USACE's rationale supporting their determination.

2.8.5 Bald Eagle

The project-area forested wetlands provide nesting habitat for *Haliaeetus leucocephalus* (the bald eagle), which was officially removed from the List of Endangered and Threatened Species on August 8, 2007. There is one active bald eagle nest that is known to exist within the proposed project area; however, other nests may be present that are not currently listed in the database maintained by the Louisiana Department of Wildlife and Fisheries.

Bald eagles nest in Louisiana from October through mid-May. They typically nest in mature trees (e.g., bald cypress, sycamore, willow, etc.) near fresh to intermediate marshes or open water in the southeastern Parishes. Areas with high numbers of nests include the north shore of Lake Pontchartrain and the Lake Salvador area. Major threats to this species include habitat alteration, human disturbance, and environmental contaminants (i.e., organochlorine pesticides and lead).

Breeding bald eagles occupy "territories" that they will typically defend against intrusion by other eagles, and that they likely return to each year. A territory may include one or more alternate nests that are built and maintained by the eagles, but which may not be used for nesting in a given year. Potential nest trees within a nesting territory may, therefore, provide important alternative bald eagle nest sites. Bald eagles are vulnerable to disturbance during courtship, nest building, egg laying, incubation, and brooding. Disturbance during this critical period may lead to nest abandonment, cracked and chilled eggs, and exposure of small young to the elements. Human activity near a nest late in the nesting cycle may also cause flightless birds to jump from the nest tree; thus, reducing their chance of survival.

Although the bald eagle has been removed from the List of Endangered and Threatened Species, it continues to be protected under the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The USFWS developed the National Bald Eagle Management (NBEM) Guidelines to provide landowners, land managers, and others with information and recommendations to minimize potential project impacts to bald eagles, particularly where such impacts may constitute "disturbance," which is prohibited by the BGEPA. A copy of the NBEM Guidelines is available at:

https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf.

Those guidelines recommend: (1) maintaining a specified distance between the activity and the nest (buffer area); (2) maintaining natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If a bald eagle nest is discovered within or adjacent to the proposed project area, then an evaluation must be performed to determine whether the project is likely to disturb nesting bald eagles. That evaluation may be conducted on-line at: https://www.fws.gov/media/bald-eagle-monitoring-guidelines-southeastern-us. Following completion of the evaluation, that website will provide a determination of whether additional consultation is necessary. A copy of that determination should be provided to this office.

2.9 GEOLOGY, SOILS AND WATER BOTTOMS, AND PRIME AND UNIQUE FARMLAND

Figure D:2-2 shows the study area divided into three regions with distinctive landforms, topographies, and associated floodplain characteristics.

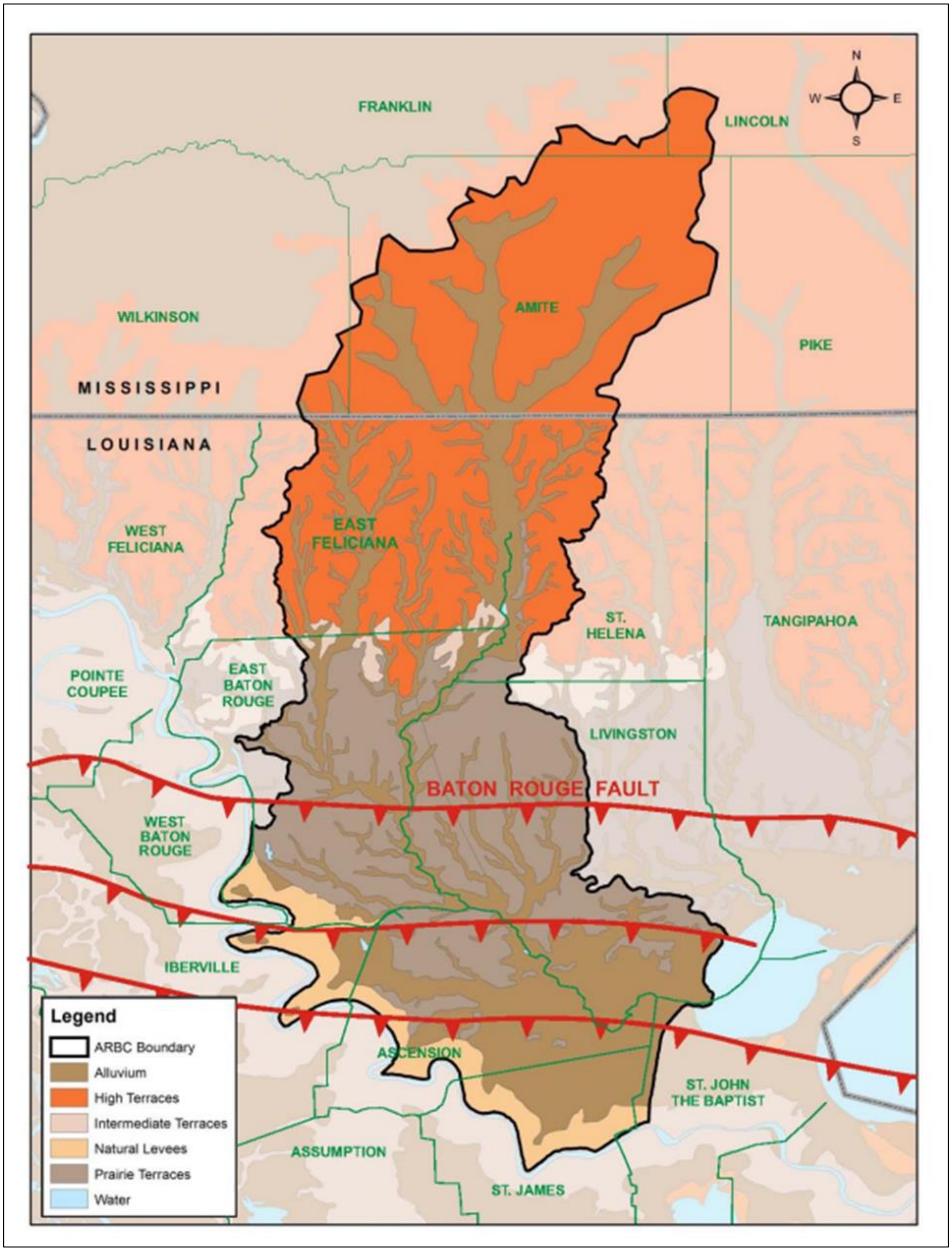

Figure D:2-2. Study Area Landforms

2.10 SOILS, WATER BOTTOMS, AND PRIME AND UNIQUE FARMLAND

The Farmland Protection Policy Act of 1981 (FPPA) was enacted to minimize the extent that Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, would be compatible with state, unit of local government, and private programs and policies to protect farmland.

Under this policy, soil associations are used to classify areas according to their ability to support different types of land uses, including urban development, agriculture, and silviculture. The USDA Natural Resource Conservation Service (NRCS) designates areas with particular soil characteristics as either “Farmland of Unique Importance,” “Prime Farmland,” “Prime Farmland if Irrigated,” or variations on these designations. Prime farmland, as defined by the FPPA, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. Farmland of unique importance is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, drought-prone, and less productive, and cannot be easily cultivated as compared to prime farmland (NRCS 2016).

For a map of the soil textures, see Figure D:2-3 and Table D:2-10.

For a map and acreage of land classification of prime and unique farmlands, see Figure D:2-4 and Table D:2-10.

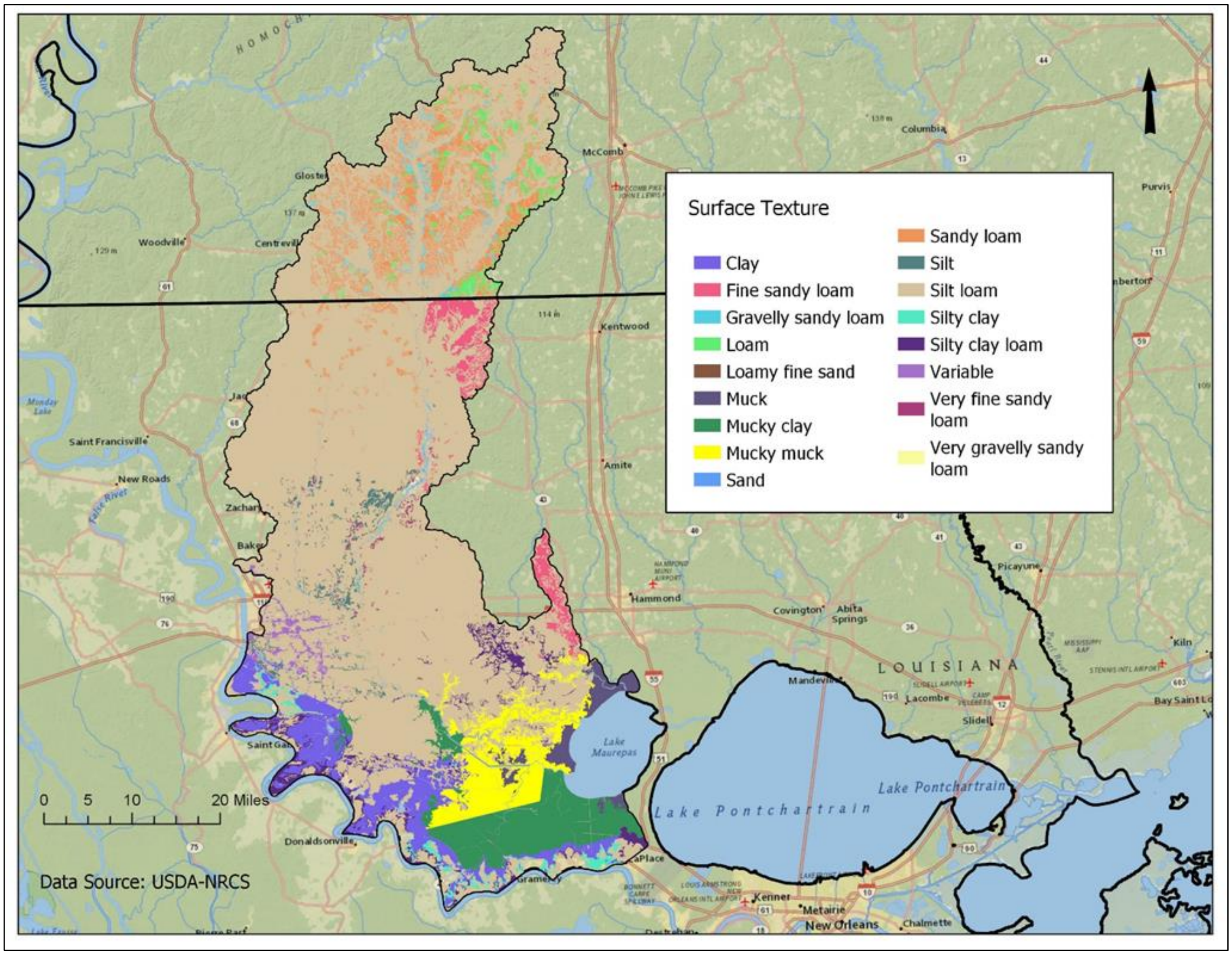

Figure D:2-3. Soil Textures in the Study Area

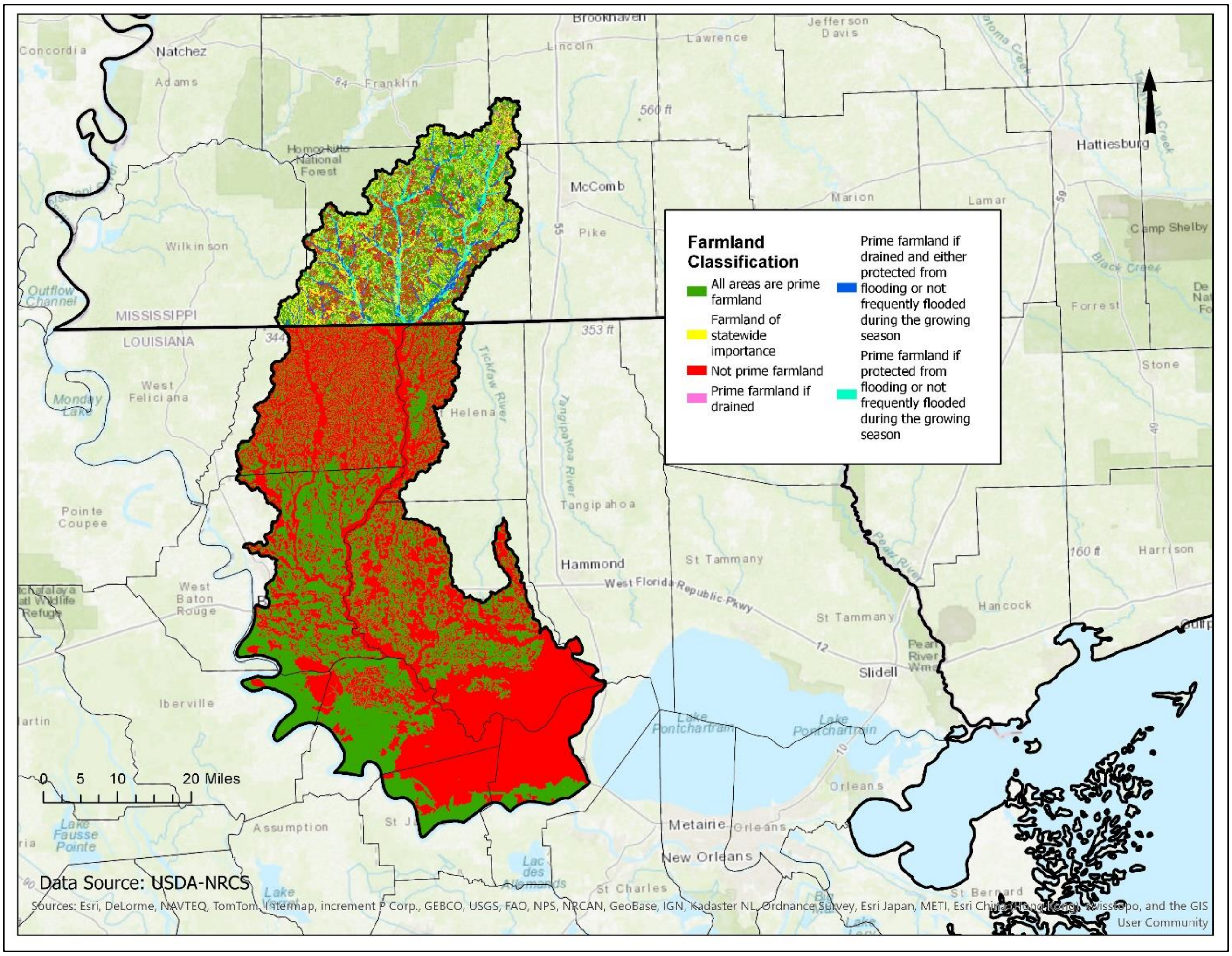

Figure D:2-4. Prime and Unique Farmland Classification Map of Study Area

Table D:2-10. Prime and Unique Farmland Acres in the Study Area

Mississippi Counties	
Acres	**Farmland Type**
148,443.12	All areas are prime farmland
94,551.75	Farmland of statewide importance
58,333.22	Not prime farmland
1,624.24	Prime farmland if drained
35,413.52	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
31,044.76	Prime farmland if protected from flooding or not frequently flooded during the growing season
369,410.63	**Total**

Louisiana Parishes	
Acres	**Farmland Type**
503,703.59	All areas are prime farmland
755,798.58	Not prime farmland
1,259,502.16	**Total**

2.11 WATER QUALITY

Nineteen water bodies in the Amite Watershed are listed as impaired for one or more designated uses in the *2016 Integrated Report of Water Quality in Louisiana.* Designated uses include swimming, boating, fishing, drinking water, and outstanding natural resource (i.e. Louisiana Scenic Rivers).

Most of the segments are impaired for fish and wildlife propagation and swimming. In the Amite Watershed, the top five suspected causes of impairment are 1) dissolved oxygen, 2) nitrate/nitrite (nitrite plus nitrate as N), 3) fecal coliform, 4) Phosphorus (Total), and 5) Turbidity (See Table D:2-11).

Table D:2-11. Water Quality 305(b) Impaired Waterbodies in the Study Area

Sub-segment Number	Subsegment Description	Size (mi)	Designated Water Body Uses*					Impaired Use for Suspected Cause	Suspected Causes of Impairment	Suspected Sources of Impairment
			PCR	SCR	FWP	DWS	ONR			
LA040301_00	Amite River-From Mississippi state line to La. Highway 37 (Scenic)	30	F	N	N		N	Fish and Wildlife Propogation (FWP)	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040301_00	Amite River-From Mississippi state line to La. Highway 37 (Scenic)	30	F	N	N		N	FWP	Mercury in Fish Tissue	Source Unknown
LA040301_00	Amite River-From Mississippi state line to La. Highway 37 (Scenic)	30	F	N	N		N	FWP	Turbidity	Sand/gravel/rock Mining or Quarries
LA040301_00	Amite River-From Mississippi state line to La. Highway 37 (Scenic)	30	F	N	N		N	FWP	Turbidity	Sand/gravel/rock Mining or Quarries
LA040301_00	Amite River-From Mississippi state line to La. Highway 37 (Scenic)	30	F	N	N		N	FWP	Fecal Coliform	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040302_00	Amite River-From LA 37 to Amite River Diversion Canal	69	N	F	N			FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040302_00	Amite River-From LA 37 to Amite River Diversion Canal	69	N	F	N			FWP	Mercury in Fish Tissue	Source Unknown
LA040302_00	Amite River-From LA 37 to Amite River Diversion Canal	69	N	F	N			FWP	Oxygen, Dissolved	Natural Sources
LA040302_00	Amite River-From LA 37 to Amite River Diversion Canal	69	N	F	N			FWP	Fecal Coliform	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040302_00	Amite River-From LA 37 to Amite River Diversion Canal	69	N	F	N			FWP	Fecal Coliform	Sanitary Sewer Overflows (Collection System Failures)
LA040303_00	Amite River-From Amite River Diversion Canal to Lake Maurepas	21	F	F	N			FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040303_00	Amite River-From Amite River Diversion Canal to Lake Maurepas	21	F	F	N			FWP	Mercury in Fish Tissue	Source Unknown
LA040303_00	Amite River-From Amite River Diversion Canal to Lake Maurepas	21	F	F	N			FWP	Nitrate/Nitrite (Nitrite + Nitrate as N)	Upstream Source

LA040303_00	Amite River-From Amite River Diversion Canal to Lake Maurepas	21	F	F	N			FWP	Oxygen, Dissolved	Upstream Source
LA040303_00	Amite River-From Amite River Diversion Canal to Lake Maurepas	21	F	F	N			FWP	Phosphorus (Total)	Upstream Source
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Chloride	Natural Sources
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Nitrate/Nitrite (Nitrite + Nitrate as N)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Nitrate/Nitrite (Nitrite + Nitrate as N)	Package Plant or Other Permitted Small Flows Discharges
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Oxygen, Dissolved	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Oxygen, Dissolved	Package Plant or Other Permitted Small Flows Discharges
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Phosphorus (Total)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Phosphorus (Total)	Package Plant or Other Permitted Small Flows Discharges
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Sulfates	Natural Sources
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Total Dissolved Solids	Natural Sources
LA040304_00	Grays Creek-From headwaters to Amite River	20	N	F	N			FWP	Fecal Coliform	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics

LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Mercury in Fish Tissue	Source Unknown
LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Nitrate/Nitrite (Nitrite + Nitrate as N)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Oxygen, Dissolved	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Phosphorus (Total)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)
LA040305_00	Colyell Creek; includes tributaries and Colyell Bay	76	F	F	N			FWP	Total Dissolved Solids	Source Unknown
LA040401_00	Blind River-From Amite River Diversion Canal to mouth at Lake Maurepas (Scenic)	5	F	F	N		N	FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040401_00	Blind River-From Amite River Diversion Canal to mouth at Lake Maurepas (Scenic)	5	F	F	N		N	FWP	Mercury in Fish Tissue	Source Unknown
LA040401_00	Blind River-From Amite River Diversion Canal to mouth at Lake Maurepas (Scenic)	5	F	F	N		N	FWP	Non-Native Aquatic Plants	Introduction of Non-native Organisms (Accidental or Intentional)
LA040401_00	Blind River-From Amite River Diversion Canal to mouth at Lake Maurepas (Scenic)	5	F	F	N		N	FWP	Oxygen, Dissolved	Natural Sources
LA040401_00	Blind River-From Amite River Diversion Canal to mouth at Lake Maurepas (Scenic)	5	F	F	N		N	FWP	Turbidity	Natural Sources
LA040402_00	Amite River Diversion Canal-From Amite River to Blind River	10	F	F	N			FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040402_00	Amite River Diversion Canal-From Amite River to Blind River	10	F	F	N			FWP	Mercury in Fish Tissue	Source Unknown
LA040402_00	Amite River Diversion Canal-From Amite River to Blind River	10	F	F	N			FWP	Oxygen, Dissolved	Natural Sources

LA040403_00	Blind River-From headwaters to Amite River Diversion Canal (Scenic)	20	F	F	N		F	FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040403_00	Blind River-From headwaters to Amite River Diversion Canal (Scenic)	20	F	F	N		F	FWP	Mercury in Fish Tissue	Source Unknown
LA040403_00	Blind River-From headwaters to Amite River Diversion Canal (Scenic)	20	F	F	N		F	FWP	Non-Native Aquatic Plants	Introduction of Non-native Organisms (Accidental or Intentional)
LA040403_00	Blind River-From headwaters to Amite River Diversion Canal (Scenic)	20	F	F	N		F	FWP	Oxygen, Dissolved	Natural Sources
LA040403_00 555632	Petite Amite River - Located within subsegment LA040403_00. This unit is added for advisory tracking purposes only and is not a subsegment as defined by LAC 33:IX.1123.A. et seq. No other assessment is made for this waterbody.	11			N			FWP	Mercury in Fish Tissue	Atmospheric Deposition - Toxics
LA040403_00 555632	Petite Amite River - Located within subsegment LA040403_00. This unit is added for advisory tracking purposes only and is not a subsegment as defined by LAC 33:IX.1123.A. et seq. No other assessment is made for this waterbody.	11			N			FWP	Mercury in Fish Tissue	Source Unknown

*Designated Use Descriptions
PCR = Primary Contact Recreation (swimming)
SCR = Secondary Contact Recreation (boating)
FWP = Fish and Wildlife Propagation (fishing)
DWS = Drinking Water Supply
ONR = Outstanding Natural Resource
F = Fully supporting designated use; N = Not supporting designated use

2.12 AIR QUALITY

The U.S. Environmental Protection Agency (EPA), Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards for six principal pollutants, called “criteria” pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (PM-10 and PM-2.5), and sulfur dioxide. Ozone is the only parameter not directly emitted into the air but forms in the atmosphere when three atoms of oxygen (03) are combined by a chemical reaction between oxides of nitrogen and volatile organic compounds in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of nitrogen and volatile organic compounds, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air. The Clean Air Act General Conformity Rule (58 FR 63214, November 30, 1993, Final Rule, Determining Conformity of General Federal Actions to State or Federal Implementation Plans) dictates that a conformity review be performed when a Federal action generates air pollutants in a region that has been designated a non-attainment or maintenance area for one or more National Ambient Air Quality Standards. A conformity assessment would require quantifying the direct and indirect emissions of criteria pollutants caused by the Federal action to determine whether the proposed action conforms to Clean Air Act requirements and any State Implementation Plan.

The general conformity rule was designed to ensure that Federal actions do not impede local efforts to control air pollution. It is called a conformity rule because Federal agencies are required to demonstrate that their actions “conform with” (i.e., do not undermine) the approved State Implementation Plan for their geographic area. The purpose of conformity is to (1) ensure Federal activities do not interfere with the air quality budgets in the State Implementation Plans; (2) ensure actions do not cause or contribute to new violations, and (3) ensure attainment and maintenance of the National Ambient Air Quality Standards.

The Amite River and Tributaries Study Area includes eight parishes in Louisiana and three counties in southwest Mississippi. Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, and St. Helena parishes are located in the Baton Rouge metropolitan area which has been designated by the EPA as a maintenance area for ozone under the 8-hour standard effective December 27, 2016. This classification is the result of area-wide air quality modeling studies, and the information is readily available from the LDEQ, Office of Environmental Assessment and Environmental Services.

Federal activities that are proposed in the ozone-maintenance area may be subject to the State’s general conformity regulations as promulgated under LAC 33:III.14.A, Determining Conformity of General Federal Actions to State or Federal Implementation Plans. A general conformity applicability determination is made by estimating the total of direct and indirect volatile organic compound (VOC) and nitrogen oxide (NO^X) emissions caused by the construction of the project. Prescribed de minimis levels of 100 tons per year per pollutant are applicable in Ascension Parish. Projects that would result in discharges below the de minimis level are exempt from further consultation and development of mitigation plans for reducing emissions.

Section 3
References and Resources

Project References

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