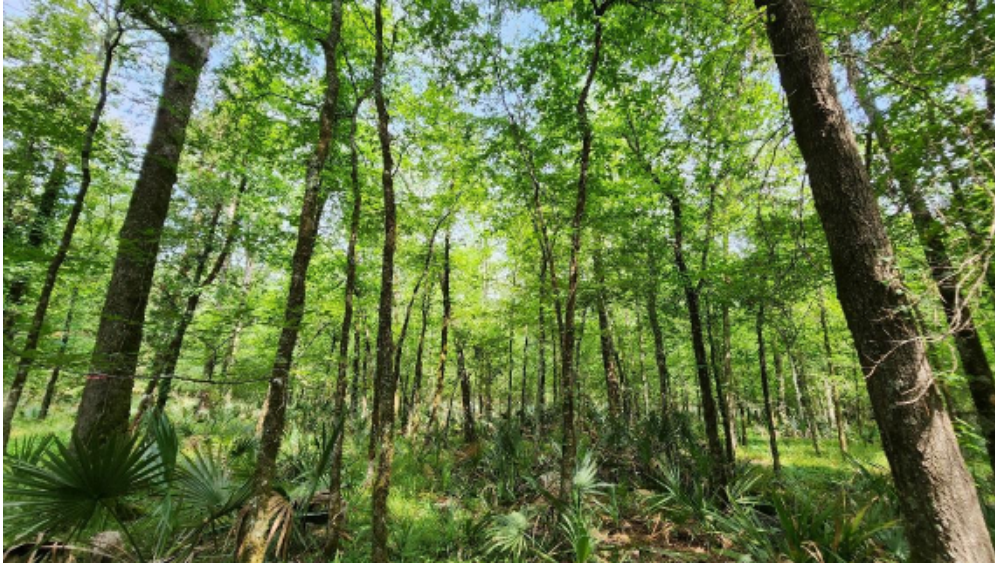


Forest Management Plan

Morehouse Parish School Board



Prepared for:

Morehouse Parish School Board

Morehouse Parish, LA

Plan Period:

February 2024 to February 2034

**American Tree Farm #: LA-5392, LA-5392A, LA-5392B, LA-5392C, LA-5392D, LA-5392E,
LA-5392F**



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SIGNATURES AND APPROVALS

NOTE: The forest management recommendations contained in this plan are intended to assist the landowner in pursuing a plan for improved forest management. These recommendations are subject to, and not intended to contradict any requirements and/or restrictions contained in a current carbon agreement. It is the responsibility of the landowner to ensure adherence to the carbon agreement requirements and/or restrictions. **No removal or reduction of standing timber volume should exceed the allowable harvest volume as calculated by NativState for this tract.**

I prepared this plan to achieve the landowner's timber and wildlife objectives and to meet the requirements of the American Tree Farm Program.



Tim Gables, RF (AL #1630, AR #1587, MS #2922 & TAF #198)
Management Forester
1510 Mill Street
Conway, AR 72034
(870) 260-2943
tgables@nativstate.com

2/ 5 /2024
Date

I have reviewed this plan and believe the management recommendations will help meet the goals and objectives for the property.

Ersula Downs
Morehouse Parish School Board
4099 Naff Avenue
Bastrop, LA 71221

2/ 5 /2024
Date

I have reviewed this plan to achieve the soil and water resource concerns for this property.

District Conservationist
USDA – NRCS

Date

I have certified this plan to meet the requirements of the Forest Stewardship Program.

District Forester

Date

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LANDOWNER & PROPERTY INFORMATION

Landowner Contact Information

Morehouse Parish School Board
Ersula Downs
4099 Naff Avenue
Bastrop, LA 71221

Introduction

This Forest Management Plan will be comprised of seven different tracts of land, each with a different Tree Farm number. Each tract of land will be covered separately with the following information:

- Property information
- Property description narrative
- Maps of the tract
- Individual stand information and stand map
- Soil maps
- Forest productivity information
- Information on threatened and endangered species
- Management activity scheduling and tracking

Landowner Objectives

Primary: Timber management to facilitate timber income

Secondary: Wildlife habitat enhancement

The landowner's management objectives are measured upon the stated wildlife, recreational and timber management objectives, which include:

1. Maintain a vigorous, healthy forest free from disease, insect infestation, and invasive species to produce additional income by maximum production of timber products.
2. Maintain habitat diversity and food plots to enhance the health and strength of the wildlife population on the properties.
3. Manage all property to effectively protect water quality and reduce soil erosion using the Louisiana Best Management Practices (BMPs) for water quality.

Resource Elements

This document was designed to provide basic details and other sources of information about the required resource elements for the Forest Stewardship, Tree Farm, and NRCS EQIP program plans. Your Management Plan should contain additional details of these resource elements as they relate to your property and management objectives. Your plan may not contain one or more of these resource elements if they are not present on your property. If you observe one of these elements at a later time or your management objectives change and you would like more information, contact your Forest Management Plan writer or local Louisiana Department of Agriculture and Forestry office. Additional information and brochures may be available through your local Forestry office.

Resource Concerns Checklist

This checklist is a comprehensive List of Resource Elements required by the National Tree Farm Program and is provided for the Landowner's management plan tract. Bolded elements are required for all Tree Farm plans.

Relevant?		Resource Element	Relevant?		Resource Element
YES	NO		YES	NO	
☒	☐	Wood and Fiber Production	☒	☐	Fish and Wildlife
☒	☐	Soil and Water	☒	☐	Biological Diversity
☒	☐	Forest Health and Invasive Species	☒	☐	Wetlands
☒	☐	Threatened and Endangered Species	☐	☒	Fire
☒	☐	Archeological, cultural & Historic Sites	☒	☐	Recreation
☒	☐	Carbon Sequestration	☒	☐	Conservation-based estate planning/legacy planning information.
☒	☐	Aesthetic Quality and Desired Species	☐	☒	Agroforestry/Silvopasture
☒	☐	Pesticide and Chemical Use	☐	☒	Forests of Recognized Importance (FORI)

NOTE: The forest management recommendations contained in this plan are intended to assist the landowner in pursuing a plan for improved forest management. These recommendations are subject to, and not intended to contradict any requirements and/or restrictions contained in a current carbon agreement. It is the responsibility of the landowner to ensure adherence to the carbon agreement requirements and/or restrictions. **No removal or reduction of standing timber volume should exceed the allowable harvest volume as calculated by NativState for this tract.**

Forest Recommendations



Forest management does not only mean management for timber production. Being a good steward of one's forest means considering what impact the forest management activities you implement have on the whole forest ecosystem. All aspects such as: wildlife; water quality; cultural, historic, or archaeological values; forest health; aesthetics; recreational values, and timber should be considered. While keeping these values in mind one can still reap the desired rewards whether it be timber, wildlife, aesthetics, or a combination. Soils play an important part in tree growth and in some cases may be a limiting factor in the tree species you desire versus those best suited for your property.

Your objectives are important to the development of any management plan. The following pages seek to combine your environmental values and objectives to enhance their rewards. Forests are dynamic and changing so you should update your plan periodically (every 5-10 years) to help make sure you are on track with your goals.

For any forest stand improvement, a tree can be considered sawtimber size at a minimum breast height diameter of 10 inches for pine and 12 inches for hardwoods. A tree is considered pulpwood size at diameters of 5 inches for pine and 6 inches for hardwoods. Also, tree quality and height are required parameters to be considered a merchantable product as well.

Boundary lines should be inspected before every practice is implemented. Re-paint or re-mark lines as necessary. Evaluation of the stands should be considered every 10 to 15 years, for a harvest or a thinning operation. You may contact the local forester to see which programs and practices may be available at that time for sign-up. The stand should be inspected for growth, insects or diseases, and other environmental factors on an annual basis.

With any practice implemented on the property, all laws, regulations, and ordinances shall be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete practices being implemented on the property. The appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

The following is an explanation of the forestry terms listed used within this plan. Basal area is a common forestry term used to describe the measure of tree density. Basal area is a useful index for understanding forest-wildlife habitat relationships and making timber harvest decisions. For example, percent canopy cover is correlated with basal area within forests. Higher basal area equals higher tree canopy cover; thus, as both increases, less sunlight reaches the ground.

This lack of sunlight impedes growth of grasses, forbs (nonwoody, broadleaf plants), and shrubs that provide important food and cover for some species of wildlife. More on basal area can be found further within this plan. The figure to the right illustrates graphically how many 6-, 10-, 14-, and 18-inch trees on a 1/5-acre circular plot to make 60 ft.²/ac (when viewed from above).

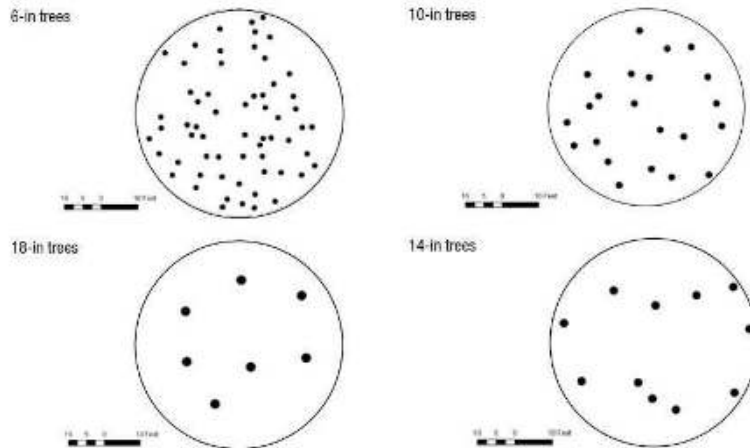


Figure 2. Representation of a 1/5-acre plot and the number of trees at 6, 10, 14, and 18 inches DBH that are needed to make 60 square feet of basal area per acre. (Graphic courtesy John Gilbert, Longleaf Pine Stand Dynamics Lab, School of Forestry and Wildlife Sciences, Auburn University)

Also, high basal area may lead to a decrease in tree growth and vigor from the increased competition for crown space, nutrients, and moisture. Typically, pine basal area greater than 120 ft.²/ac, 100 for hardwoods, decreases the understory and slows timber growth. Thinning operations should be planned when basal area reaches these levels or when canopy closure occurs. In stands with a residual basal area of greater than 80 square feet per acre, understory will be dominated by shade-tolerant species. These conditions will retain more timber volume but will not provide the desired wildlife habitat conditions. Conversely, stands with 60 ft.²/ac or less of basal area provide optimal herbaceous (grasses and forbs) cover.

DBH, or diameter at breast height, is a measure of the outside bark diameter at a standardized height of 4 ½ feet above the forest floor. Diameter measures the straight-line segment that passes through the center of the tree. Trees per acre is the average number of trees, or a given size or species, present on an average acre of a forested tract. Trees per acre is calculated from the basal area and diameter.

Crown density is the amount of crown branches and foliage that blocks sunlight through the crown. The higher the crown density, the less sunlight reaches the forest floor decreasing the amount of vegetation that can grow. Regeneration potential is calculated from the crown density. It is the potential for tree regeneration to occur. The greater the crown density, the lower the potential for regeneration to occur.

TREE FARM # LA-5392 RESOURCE ELEMENTS

Property Information

Total Acres: 638.1
Forested Acres: 638.1
Legal Description: Section 16; Township 21 North; Range 8 East;
Morehouse Parish, LA

Access: Access from the west off Little Missouri Loop Road

Latitude: 32.805893°
Longitude: -91.653523°

Watershed 12-digit HUC ID: 080500010704 & 080500010705
Watershed Name: The Swale & Cypress Bayou

Property Description Narrative

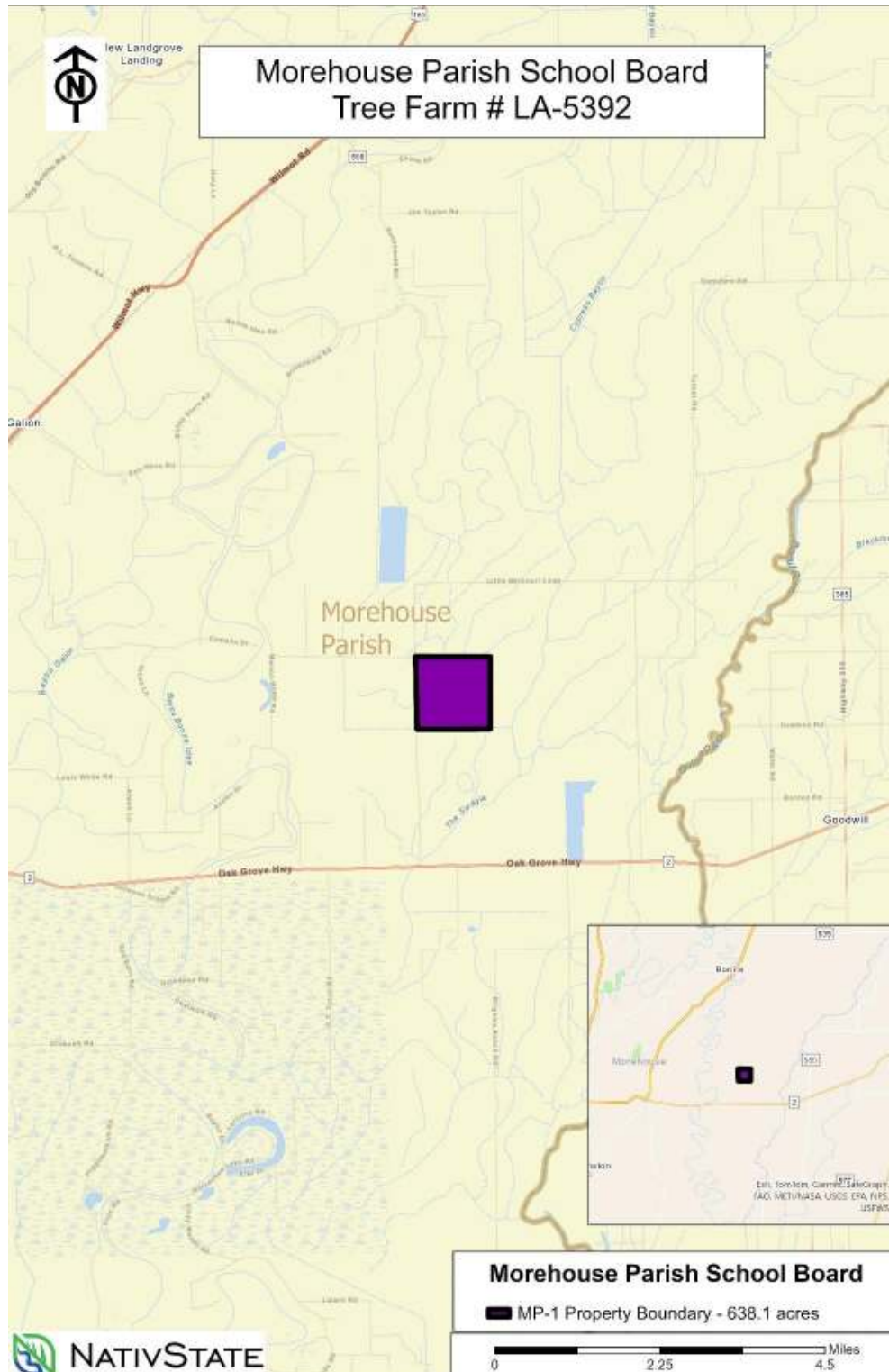
This property, Morehouse Parish School Board, is approximately 638.1 acres and is in Morehouse Parish, east-northeast of the town of Mer Rouge, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production.

The tract consists primarily of oak, hickory, hackberry, hornbeam, pine, persimmon and elm forests with the most common species being nuttall oak, water oak, overcup oak, willow oak, hickory, elm species, hackberry, persimmon, dogwood and pine. The topography of the tract is uniform and flat, with an elevation of approximately 85-90 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

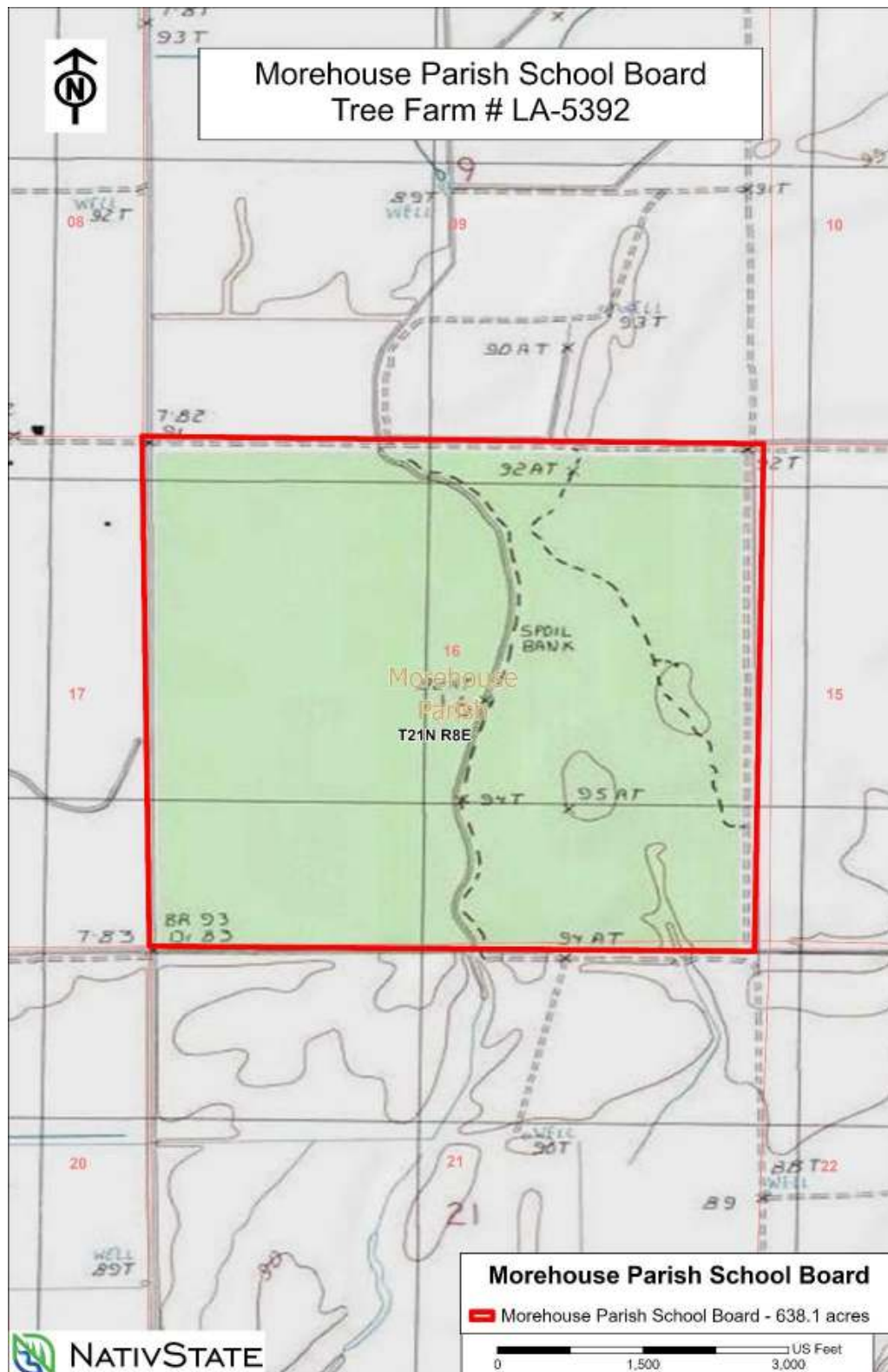
Location Map



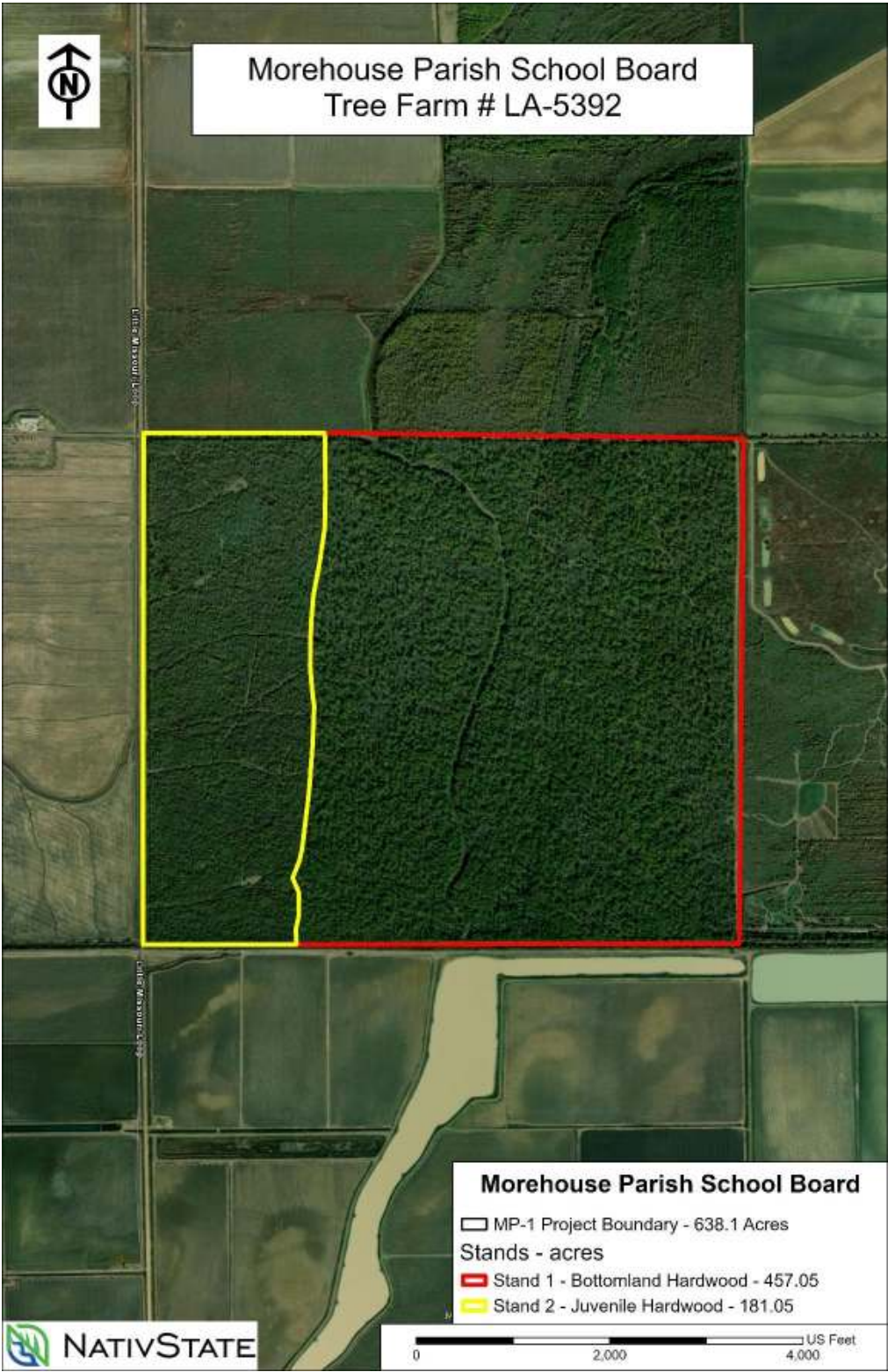
Aerial Map



Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

The forested acreage of this stand mainly consists of mixed oak, hickory, ash, elm species, hackberry, pine and hornbeam. Primary species across the entire stand consist of nuttall oak, water oak, willow oak, overcup oak, a variety of hickory species, various elm species, hackberry, ash, pine and hornbeam. The understory is comprised mainly of very dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto. This stand has not been thinned in quite some time due to low, heavy soils that are of poor quality, which equates into low nutrients and site index. The soils tend to hold moisture which has also contributed to the inability of conducting a sale.

Acres in stand: 457.1

Average Basal Area per acre: 72.0 ft² (Merch Basal Area: 51.2 ft²)

Average DBH: 3.6" (Avg. Merch DBH: 8.7")

Average trees per acre: 1,023.3 (Avg. Merch trees per acre: 123.3)

Desired Conditions

Improve overall condition of desirable merchantable and premerchantable trees by removing the majority of the less desirable premerchantable species (elm species, pine, hornbeam and hackberry) and favoring the oak and hickory as well as other hard and soft mast producing species. The residual basal area per acre should be approximately 60 sq. ft. after the TSI (timber stand improvement). After the TSI is completed, the stand will need time to respond and grow.

Recommendations:

1. Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 4" DBH and under. All persimmon, oak and hickory trees should be retained as well as any other mast producing trees. Remove such species as hackberry, pine, hornbeam and elm species. This operation should be delayed until 2027 to give the existing saplings time to grow so as not to take the basal area down too low with the treatment.
2. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
3. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
4. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
5. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 – Juvenile Hardwood

Current Stand Conditions

The forested acreage of this stand mainly consists of very young mixed oaks, pine, hackberry, hickory, dogwood, elm species and persimmon. Primary species consist of nuttall oak, willow oak, overcup oak, pine, hickory, persimmon, dogwood, hackberry and various elms. This stand does not have an understory due to its young age. This stand was thinned extremely heavy in 2007 and left to regenerate itself.

Acres in stand: 181.1

Average Basal Area*: 58.0 ft² (Merch Basal Area: 33.3 ft²)

Average DBH*: 2.6" (Avg. Merch DBH: 6.8")

Average trees per acre*: 1,520.0 (Avg. Merch trees per acre: 132.5)

Desired Conditions

Improve overall condition of desirable merchantable and premerchantable trees by removing the majority of the less desirable premerchantable species (elm species, pine, ash and hackberry) and favoring the oak, persimmon, dogwood and hickory as well as other hard and soft mast producing species. The residual basal area per acre should be approximately 55-60 sq. ft. after the TSI (timber stand improvement). After the TSI is completed, the stand will need time to respond and grow.

Recommendations:

1. Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 4" DBH and under. All persimmon, oak, dogwood and hickory trees should be retained as well as any other mast producing trees. Remove such species as hackberry, pine, ash and elm species. I would delay this operation until 2028 to give the existing saplings time to grow so as not to take the basal area down too low with the treatment.
2. Monitor the stand for growth and species diversity, especially the emergence of oak seedlings.
3. Routinely check stand for signs of beavers and eradicate and restore water flow if necessary.
4. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
5. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
6. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



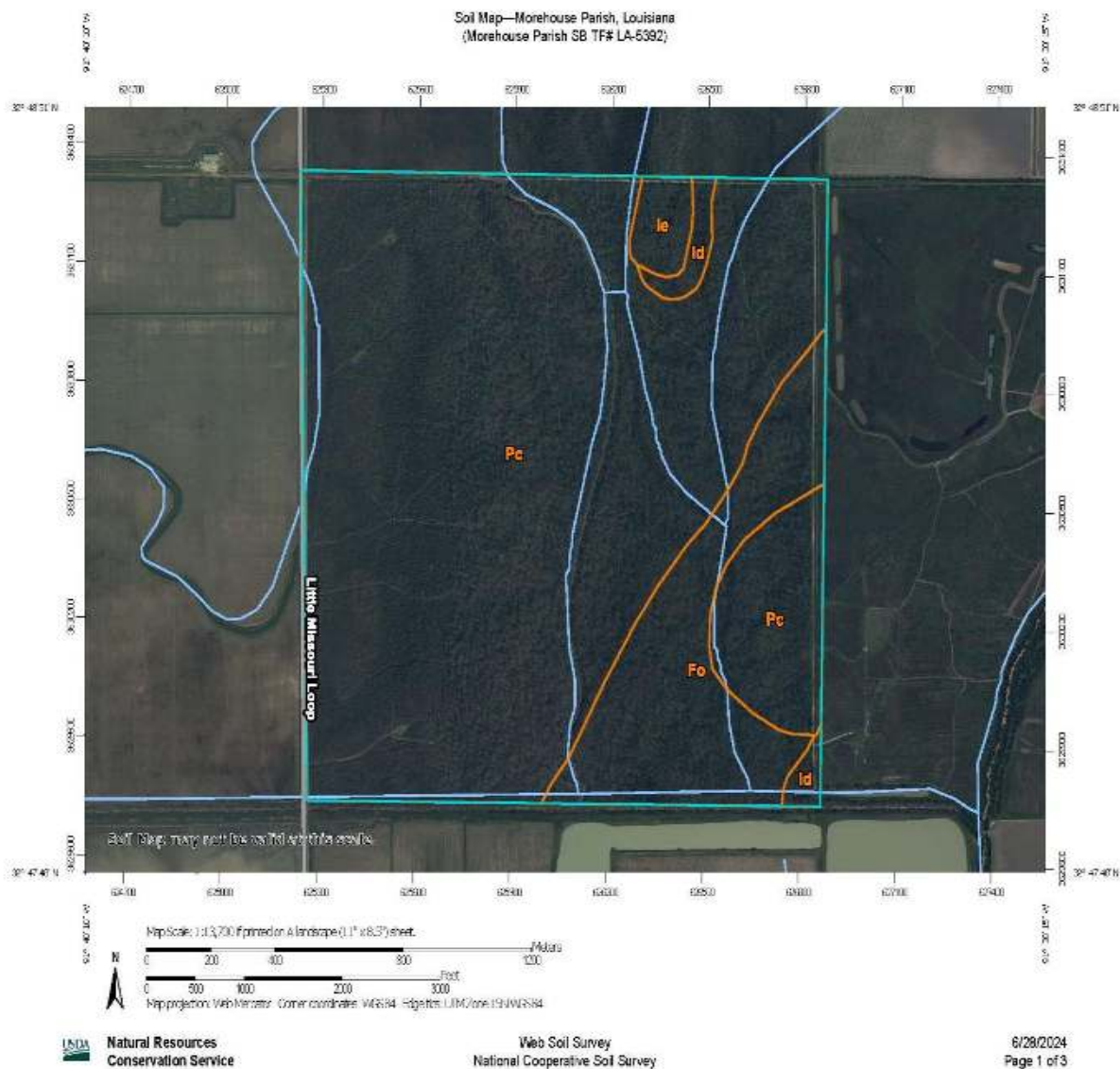
Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>



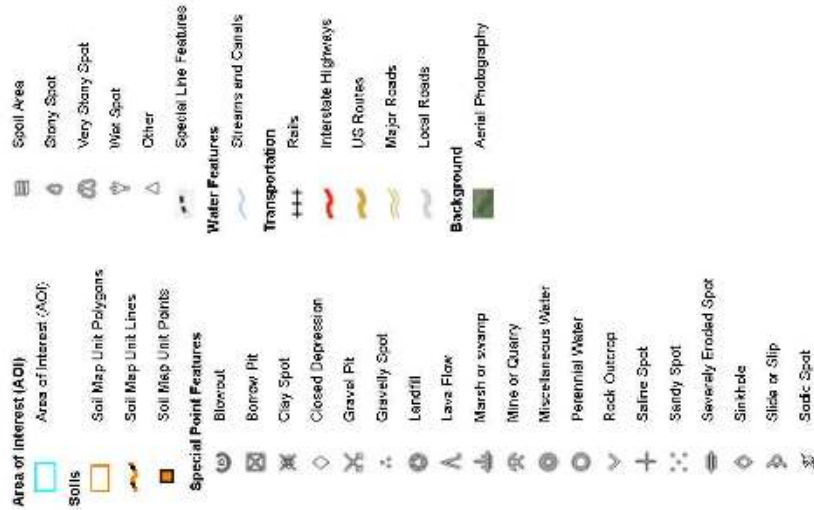
Recommendations:

1. BMP compliance shall be part of the timber sale agreement and fire lane contracts.
2. BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
3. Harvest operations should only be during dry months.
4. Protect and manage vegetation in areas around the SMZs.
5. Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
6. Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—May 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Fo	Forestdale silty clay loam, 0 to 1 percent slopes, rarely flooded, upland phase	92.1	14.4%
Id	Idee-Forestdale complex	10.0	1.6%
Ie	Idee-Goodwill complex	10.4	1.6%
Pc	Perry clay, 0 to 1 percent slopes	525.6	82.4%
Totals for Area of Interest		638.1	100.0%

Forest Productivity – TF #LA-5392

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF# LA-5392

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac/yr</i>	
Fo—Forestdale silty clay loam, 0 to 1 percent slopes, rarely flooded, upland phase				
Forestdale	Cherrybark oak	94	129.00	American sycamore, Eastern cottonwood, Green ash, Nuttall oak, Sweetgum
	Eastern cottonwood	100	129.00	
	Green ash	78	43.00	
	Nuttall oak	99	—	
	Sweetgum	100	143.00	
	Water oak	90	86.00	
	Willow oak	94	86.00	
Id—Ideo-Forestdale complex				
Ideo	Cherrybark oak	105	57.00	Cherrybark oak, Eastern cottonwood, Sweetgum, Tuliptree, Water oak
	Eastern cottonwood	100	0.00	
	Sweetgum	100	143.00	
	Water oak	95	0.00	
Forestdale	Cherrybark oak	94	129.00	American sycamore, Eastern cottonwood, Green ash, Nuttall oak, Sweetgum
	Eastern cottonwood	100	129.00	
	Green ash	78	43.00	
	Nuttall oak	99	0.00	
	Sweetgum	100	143.00	
	Water oak	90	86.00	
	Willow oak	94	86.00	
le—Ideo-Goodwill complex				
Ideo	Cherrybark oak	105	57.00	Cherrybark oak, Eastern cottonwood, Sweetgum, Tuliptree, Water oak
	Eastern cottonwood	100	0.00	
	Sweetgum	100	143.00	
	Water oak	95	0.00	
Goodwill	Cherrybark oak	100	57.00	American sycamore, Eastern cottonwood, Green ash, Nuttall oak, Sweetgum, Tuliptree
	Eastern cottonwood	100	0.00	
	Green ash	80	57.00	
	Nuttall oak	95	0.00	
	Shumard's oak	100	57.00	
	Sweetgum	95	114.00	
	Water oak	90	0.00	
	Willow oak	95	0.00	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Po—Perry clay, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana

Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle and Little Blue Heron. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>



This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/13/24, 9:10 AM

IPAC: Explore Location resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://pacexplorer.fws.gov/location/QWTKPVQQJENHIE4DDZOXZ4VY/resources#wetlands>

2/15

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus***Candidate**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week

12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

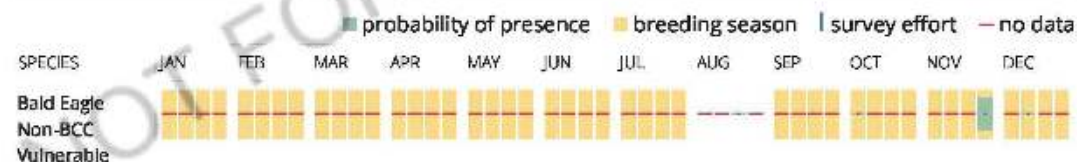
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the **PROBABILITY OF PRESENCE SUMMARY** below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Little Blue Heron <i>Egretta caerulea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 10 to Oct 15

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

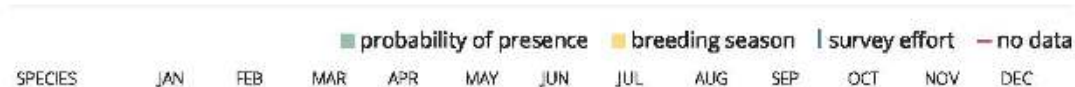
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

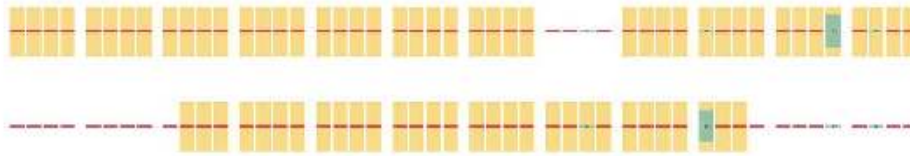


8/13/24, 9:10 AM

IPaC: Explore Location resources

Bald Eagle
Non-BCC
Vulnerable

Little Blue
Heron
BCC - BCR



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of

presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
FARM SERVICE AGENCY INTEREST OF LA	1,205.92 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

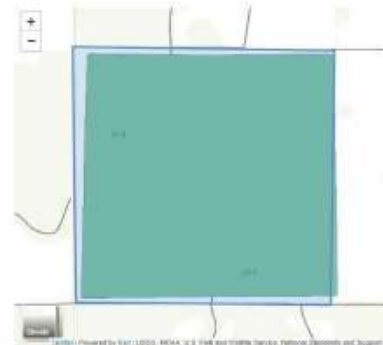
FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

RIVERINE

[R5UBFx](#)

[R4SBC](#)



A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	457.1	TSI – non-mast producing/non-native species 4” dbh and under	2027	
2	181.1	TSI – non-mast producing/non-native species 4” dbh and under	2028	
1 & 2	638.2	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1 & 2	638.2	Monitor stand for non-native/invasive species	Continually	
1 & 2	638.2	Check culverts and low water crossings	Continually	
1 & 2	638.2	Paint property lines	2025, 2032	
1 & 2	638.2	Monitor stand for presence of wild hogs & respond accordingly	Continually	
2	181.1	Monitor stand for growth & species diversity	Annually	
1 & 2	638.2	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	

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TREE FARM # LA-5392A RESOURCE ELEMENTS

Property Information

Total Acres: 642.0
Forested Acres: 599.7
Legal Description: Section 16; Township 20 North; Range 7 East;
Morehouse Parish, LA.

Access: Access from the north off of Grabault Road across
adjacent private landowner.

Latitude: 32.981894°
Longitude: -92.061503°

Watershed 12-digit HUC ID: 080402020403 & 080402020404
Watershed Name: Coffee Creek-Ouachita River & Shiloh Creek-Ouachita River

Property Description Narrative

This property, Morehouse Parish School Board, is approximately 642.0 acres and is in Morehouse Parish, southeast of the town of Mer Rouge, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production.

The tract consists primarily of mixed oak, hickory, hackberry, ash, persimmon and elm forests with the most common species being nuttall oak, overcup oak, willow oak, hickory, elm species, hackberry, persimmon and ash. The topography of the tract is uniform and flat, with an elevation of approximately 65 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

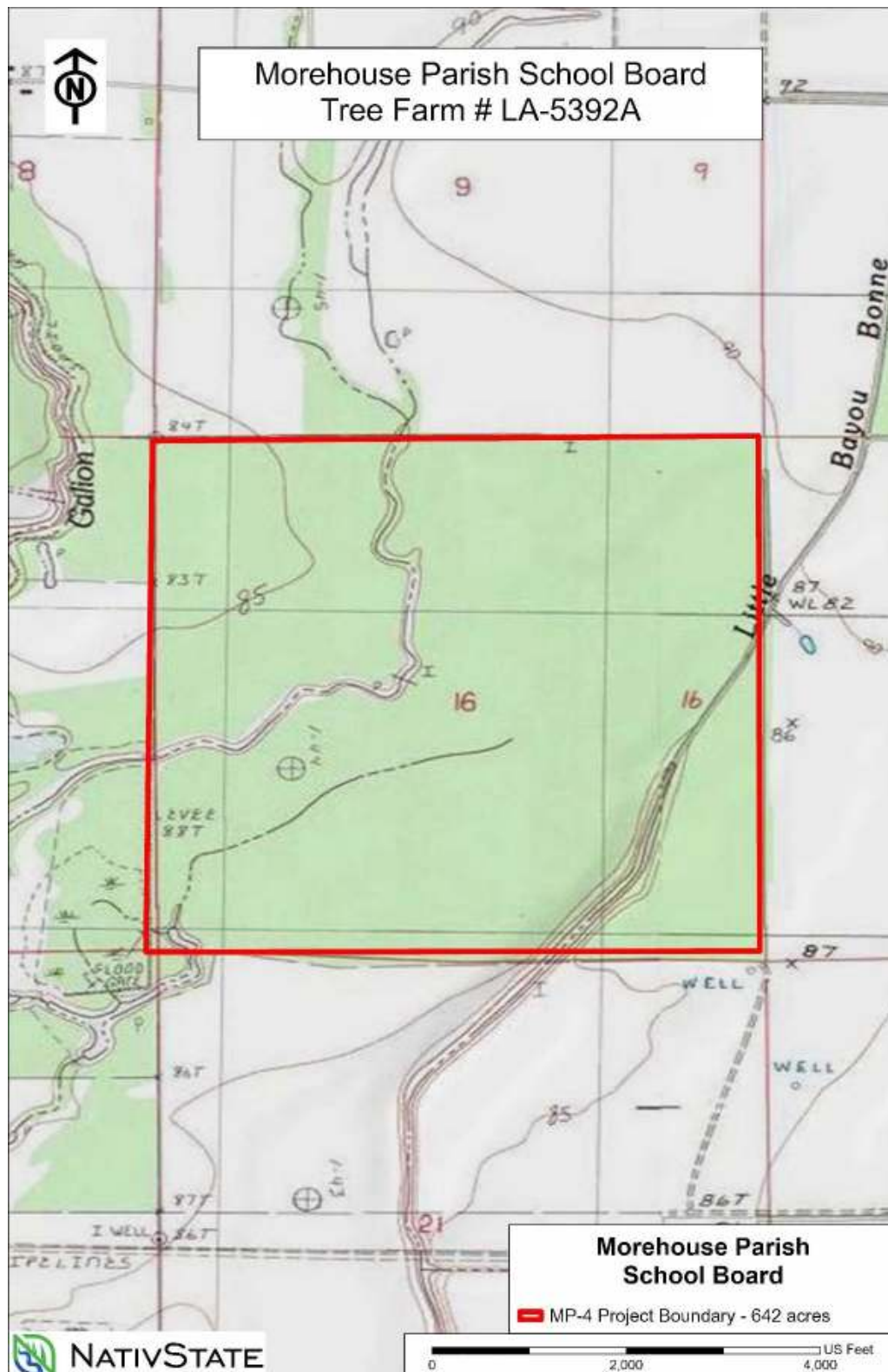
Location Map



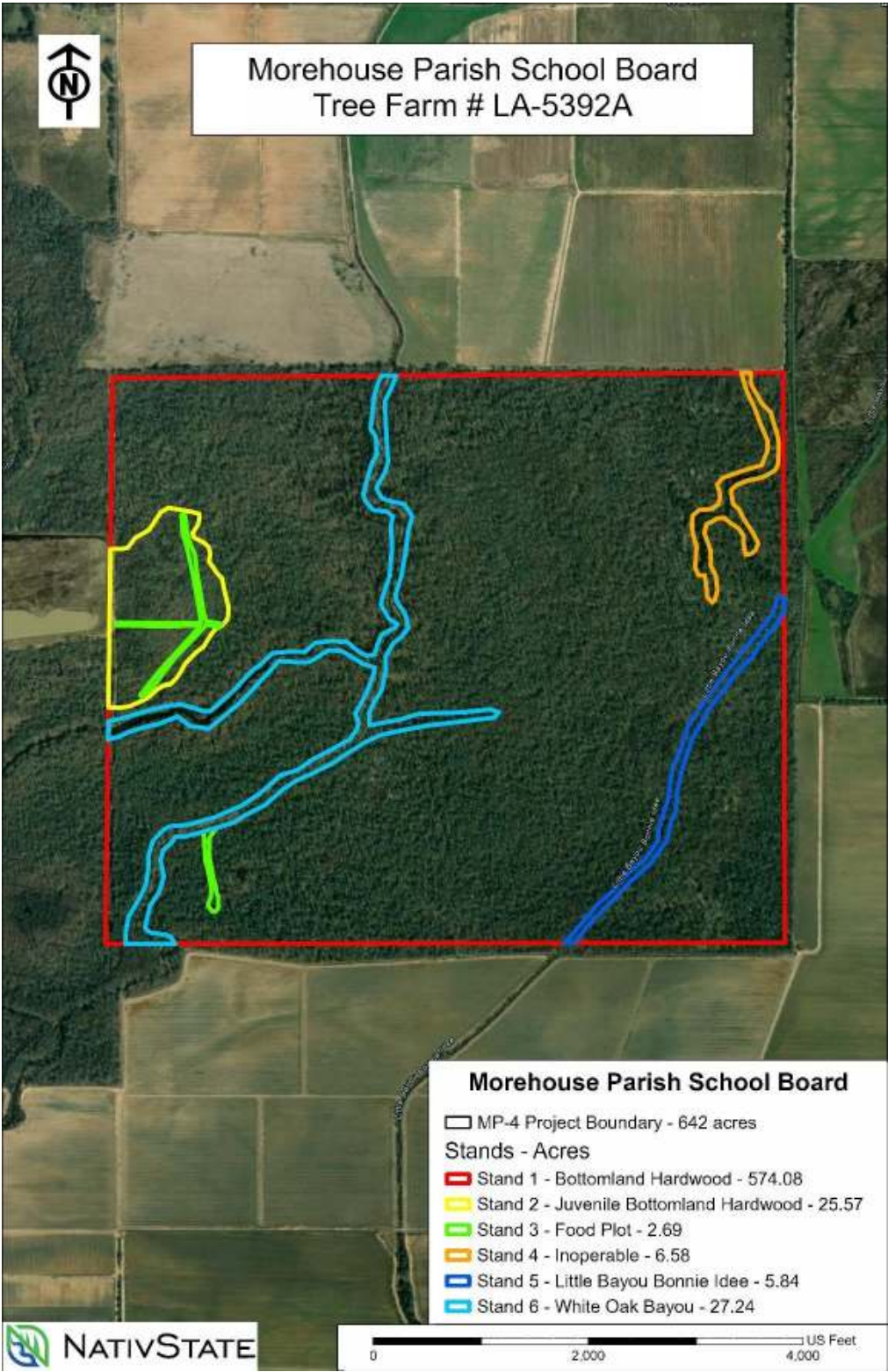
Aerial Map



Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

Approximately 225 acres near the center of this stand was thinned pretty heavily approximately 10 years ago. The elevation of this strip was just enough higher than the remainder of the stand to support good timber growth. The forested acreage of this stand mainly consists of mixed oak, hickory, ash, various elm species, hackberry, red maple, and persimmon. Primary species across the entire stand consist of nuttall oak, willow oak, overcup oak, a variety of hickory species, various elm species, hackberry, ash, and persimmon. The understory is comprised mainly of dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto.

Acres in stand: 574.1

Average Basal Area per acre: 96.1 ft² (Merch Basal Area: 70.1 ft²)

Average DBH: 5.8" (Avg. Merch DBH: 12.8")

Average trees per acre: 528.0 (Avg. Merch trees per acre: 78.0)

Desired Conditions

Improve overall condition of merchantable trees by removing the majority of the less desirable premerchantable species (ash, elm species, red maple, eastern hophornbeam and hackberry) and favoring the oak, persimmon, hickory and other hard and soft mast producing species. The residual basal area per acre should be approximately 70 sq. ft. after the TSI (timber stand improvement) treatment. After the TSI is completed, the stand will need time to respond and grow.

Recommendations:

1. Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 4" DBH and under. All persimmon, oak and hickory trees should be retained as well as any other mast producing trees. Remove such species as hackberry, red maple, ash, eastern hophornbeam and elm species. This operation should be delayed until 2027 to give the existing saplings time to grow so as not to take the basal area down too low with the treatment.
2. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
3. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
4. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
5. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 – Juvenile Bottomland Hardwood

Current Stand Conditions

The forested acreage of this stand mainly consists of very young ash, hackberry, eastern hophornbeam, elm species, red maple, persimmon and some oaks. Primary species consist of oak, ash, hackberry, hickory and various elms. This stand does not have an understory due to its young age.

Acres in stand: 25.6

Average Basal Area*: 0.0 ft² (Merch Basal Area: 0.0 ft²)

Average DBH*: 0.0" (Avg. Merch DBH: 0.0")

Average trees per acre*: 0.0 (Avg. Merch trees per acre: 0.0)

***No formal plots were taken in this stand due to the plot grid layout and the stands small acreage.**

Desired Conditions

Allow the existing stand of trees to grow to merchantable size. Timber stand improvement may be needed at some point to reduce overstocking.

Recommendations:

1. Monitor the stand for growth and species diversity, especially the emergence of oak seedlings.
2. Monitor the stand for the need for TSI (timber stand improvement) due to overstocking of current species mix.
3. Routinely check stand for signs of beavers and eradicate and restore water flow if necessary.
4. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
5. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
6. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 3 – Food Plots

Current Stand Conditions

This stand consists of planted food plots for wildlife. The plots are planted in the fall with a combination of species, such as ryegrass, oats or clover. Competing vegetation is kept under control by mechanical methods.

Acres in stand: 2.7
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

Continue to maintain and plant food plots for wildlife to provide nutrition. Expand benefits of these areas to provide nutrition year round for deer and turkeys on the property.

Recommendations:

1. Continue to plant the fall plantings.
2. Introduce summer plantings of soybeans while also introducing buckwheat, cowpeas, lablab, clover or certain vetches. These will provide some variety and good protein over the summer for antler production in deer.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 4 – Inoperable

Current Stand Conditions

The acreage of this stand mainly consists of sloughs and low areas that consistently hold water year-round. Due to the continuous flooded condition of these areas, they have very little to scattered timber growing in them. The timber that may be present will never be able to be commercially harvested due to the extremely wet conditions of the stand. Primary vegetation species are a variety of water grasses and herbaceous plants.

Acres in stand: 6.6
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract, especially waterfowl.

Recommendations:

1. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
2. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary with herbicides that are approved for aquatic use.

Stand 5 – Little Bayou Bonnie Idee

Current Stand Conditions

The acreage of this stand consists of the waters of Little Bayou Bonnie Idee. This bayou runs northeast to southwest across the southeastern corner of the tract. The only timber in this stand is scattered along the very edges of the bayou and will never be harvested.

Acres in stand: 5.8
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow, more stagnant areas for foraging. The bayou also provides great recreational opportunities for fishing and water sports.

Recommendations:

1. Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Stand 6 – White Oak Bayou

Current Stand Conditions

The acreage of this stand consists of the waters of White Oak Bayou. This bayou runs from the north down to the middle of the tract where it splits, and one branch runs in an westerly direction and the other branch runs in a southwesterly direction. The only timber in this stand is scattered along the very edges of the bayou and will never be harvested.

Acres in stand: 27.2
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow, more stagnant areas for foraging. The bayou also provides great recreational opportunities for fishing and water sports.

Recommendations:

1. Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



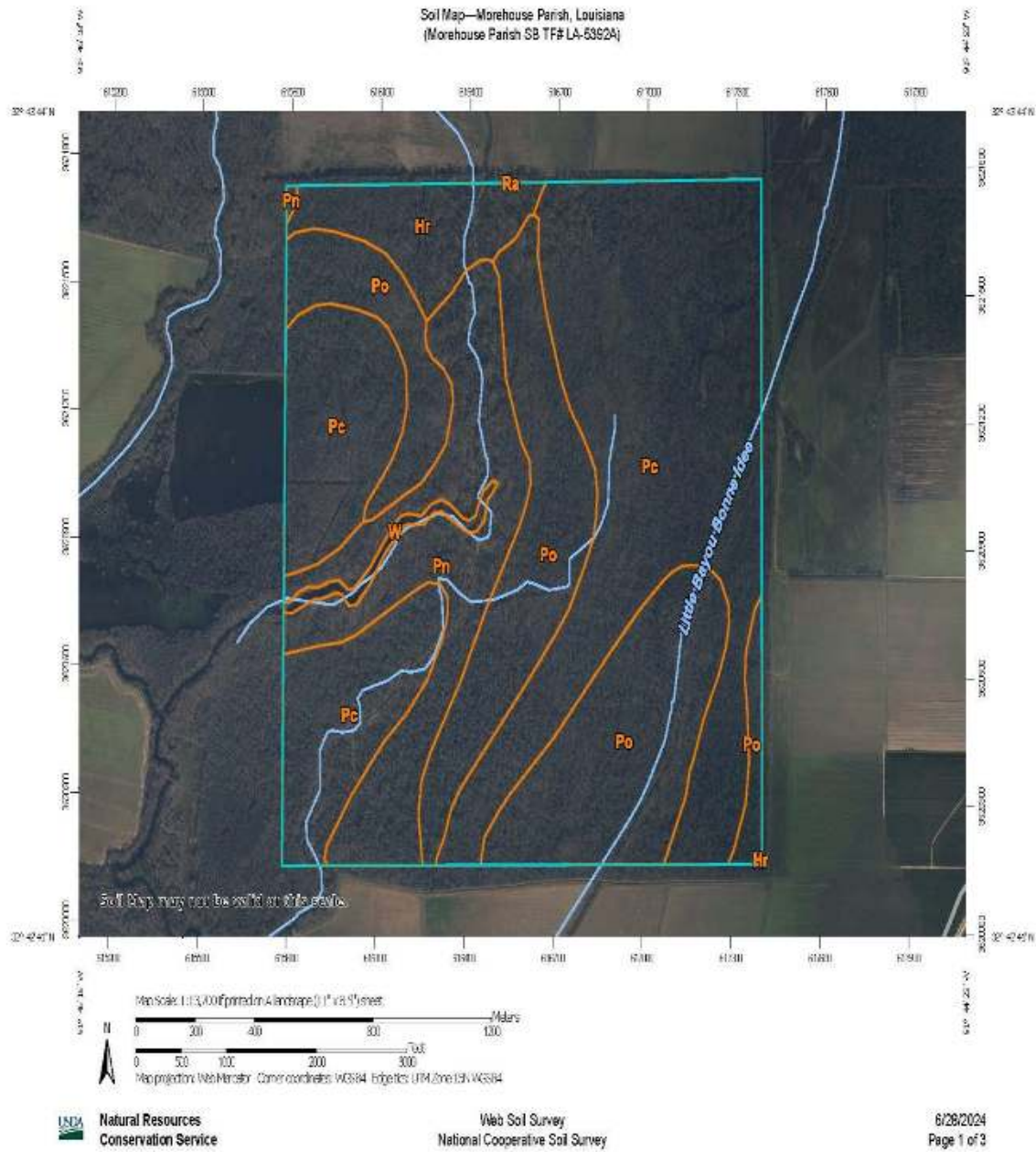
Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>



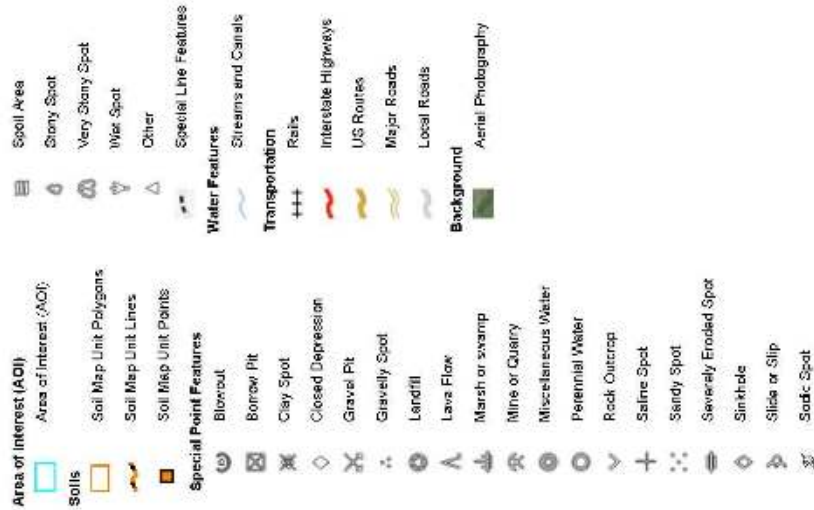
Recommendations:

1. BMP compliance shall be part of the timber sale agreement and fire lane contracts.
2. BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
3. Harvest operations should only be during dry months.
4. Protect and manage vegetation in areas around the SMZs.
5. Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
6. Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392A



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: websoilsurvey.sc.egov.usda.gov
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—May 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hr	Hebert silt loam, 0 to 1 percent slopes	35.2	5.5%
Pc	Perry clay, 0 to 1 percent slopes	309.5	48.4%
Pn	Portland silt loam	97.9	15.3%
Po	Portland clay	191.5	29.9%
Ra	Rilla silt loam, 0 to 1 percent slopes	0.0	0.0%
W	Water	5.9	0.9%
Totals for Area of Interest		640.0	100.0%

Forest Productivity – TF #LA-5392A

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF#
LA-5392A

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Hr—Hebert silt loam, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Hebert	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	133.00	
	Eastern cottonwood	95	114.00	
	Green ash	—	—	
	Nuttall oak	90	86.00	
	Pecan	—	—	
	Sweetgum	90	106.00	
	Water oak	90	86.00	
Po—Perry clay, 0 to 1 percent slopes				
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	
Pn—Portland silt loam				
Portland	Eastern cottonwood	100	129.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	
Po—Portland clay				
Portland	Eastern cottonwood	100	129.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Ra—Rilla silt loam, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Rilla	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	100	151.00	
	Eastern cottonwood	100	—	
	Nuttall oak	85	—	
	Pecan	—	—	
	Sweetgum	100	138.00	
W—Water				
Water	—	—	—	—

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana

Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: American Kestrel, Bald Eagle, American Golden-plover, Chimney Swift, Kentucky Warbler, Lesser Yellowlegs, Little Blue Heron, Pectoral Sandpiper, Prairie Warbler, Prothonotary Warbler, Semipalmated Sandpiper, Wood Thrush. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>



This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/13/24, 10:15 AM

IPAC: Explore Location Resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://pacexplorer.tws.gov/location/ZIBYC MJSHFAKZJW6YXOAOUVOXQ/resources#websites>

2/16

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus***Candidate**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week

12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

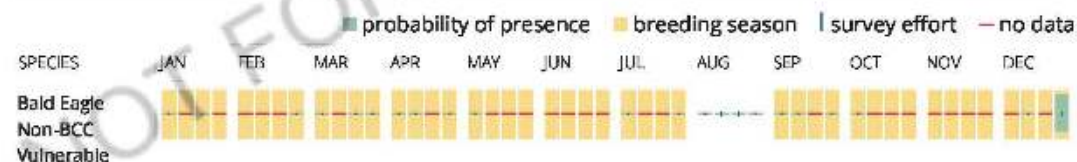
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the [PROBABILITY OF PRESENCE SUMMARY](#) below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

Lesser Yellowlegs *Tringa flavipes*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/9679>

Breeds elsewhere

Little Blue Heron *Egretta caerulea*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.

Breeds Mar 10 to Oct 15

Pectoral Sandpiper *Calidris melanotos*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Prairie Warbler *Setophaga discolor*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 1 to Jul 31

Prothonotary Warbler *Protonotaria citrea*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 1 to Jul 31

Semipalmated Sandpiper *Calidris pusilla*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.

Breeds elsewhere

Wood Thrush *Hylocichla mustelina*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey

effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

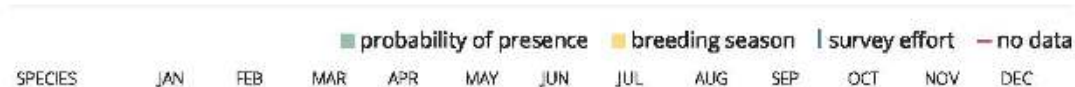
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

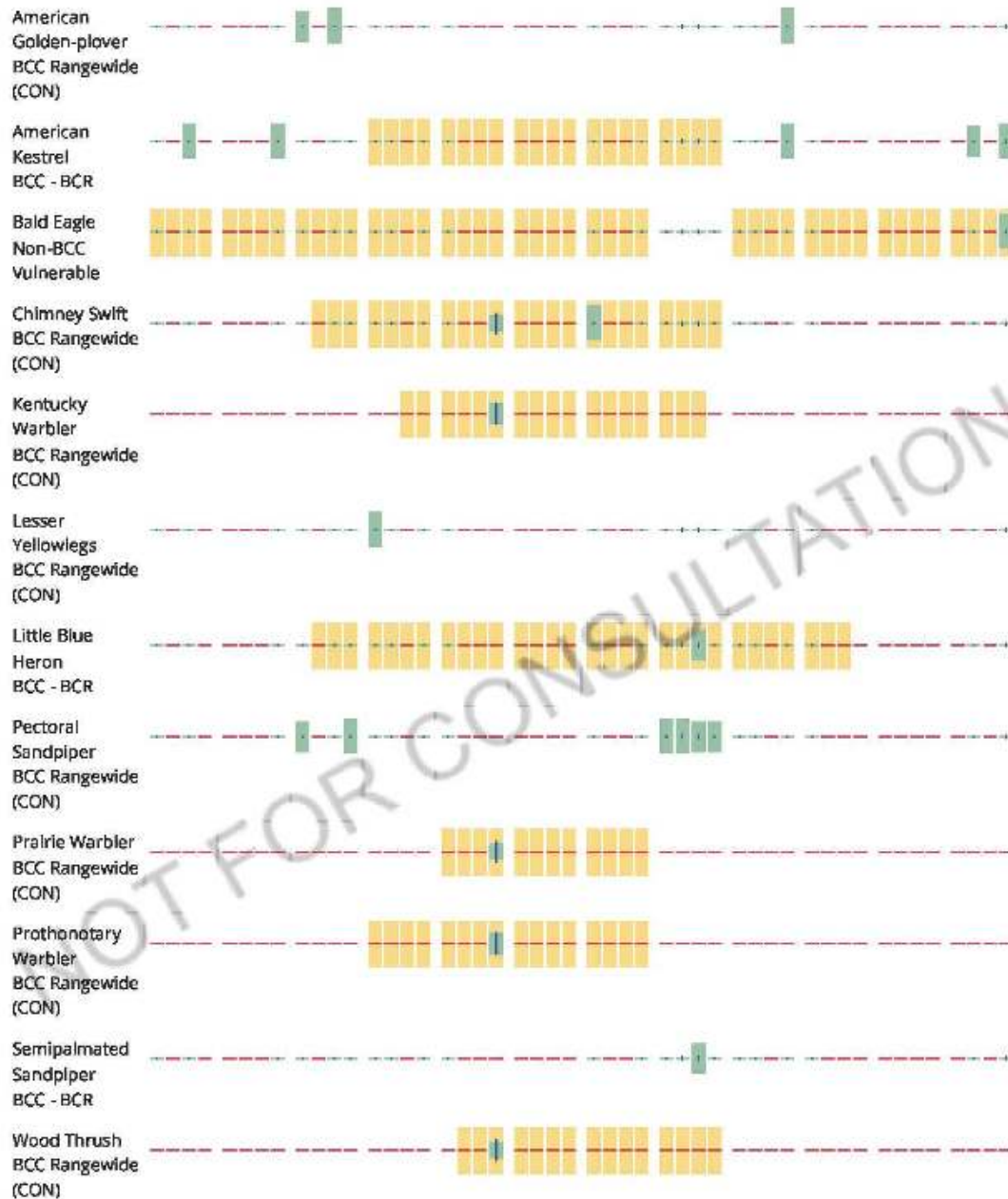
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the

locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and

3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEM1A](#)

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

[PFO1/2F](#)

FRESHWATER POND

[PABH](#)



RIVERINE

[R2UBH](#)[R4SBC](#)[R5UBFx](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does not replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392A

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	574.1	TSI – non-mast producing/non-native species 4” dbh and under	2027	
2	25.6	Monitor stand for hardwood growth and diversity	Annually	
1,2,4,5,6	639.3	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1,2,3,4	609.0	Monitor stand for non-native/invasive species	Continually	
1,2,4	606.3	Check culverts and low water crossings	Continually	
1,2,3,4,5,6	642.0	Paint property lines	2025, 2032	
1,2,3,4	609.0	Monitor stand for presence of wild hogs & respond accordingly	Continually	
3	2.7	Continue to plant cool season vegetation in food plots & introduce warm season vegetation plantings	Annually	
1,2,3,4	609.0	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	
2	25.6	Monitor stand for the need of TSI to reduce overstocking	Every three years	

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TREE FARM # LA-5392B RESOURCE ELEMENTS

Property Information

Total Acres: 635.0
Forested Acres: 586.4
Legal Description: Section 16; Township 18 North; Range 6 East;
Morehouse Parish, LA.

Access: Access from Lake Irwin Road (take parish road 5510 north to Ernest Road until it ends, then go north across adjacent landowner to tract), and also from the south on Lake Irwin Road to hunting camp, then turn west across adjacent landowner field to tract.

Latitude: 32.546044°
Longitude: -91.860906°

Watershed 12-digit HUC ID: 080500011302 & 080500011303
Watershed Name: Irwin Lake & Little Lake Lafourche-Bayou Lafourche

Property Description Narrative

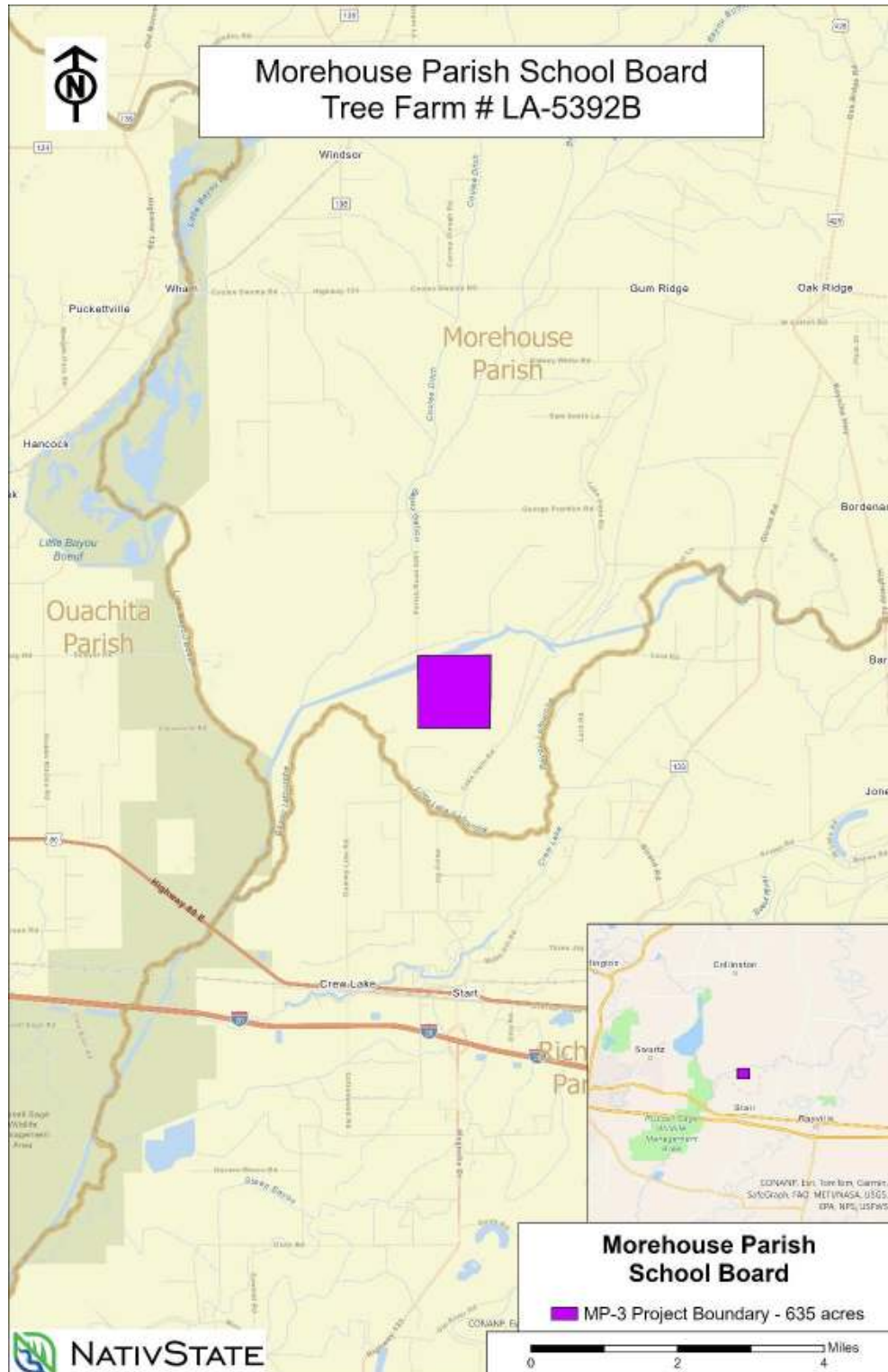
This property, Morehouse Parish School Board, is approximately 635.0 acres and is in Morehouse Parish, north of the town of Start, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production with some scattered timber production. The property is also within three miles of the Russell Sage State Wildlife Management Area.

The tract consists primarily of mixed oak, hickory, hackberry, ash, boxelder, bald cypress, sycamore and elm forests with the most common species being nuttall oak, overcup oak, hickory, elm species, hackberry, boxelder, sycamore and ash. The topography of the tract is uniform and flat, with an elevation of approximately 65 - 70 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

Location Map

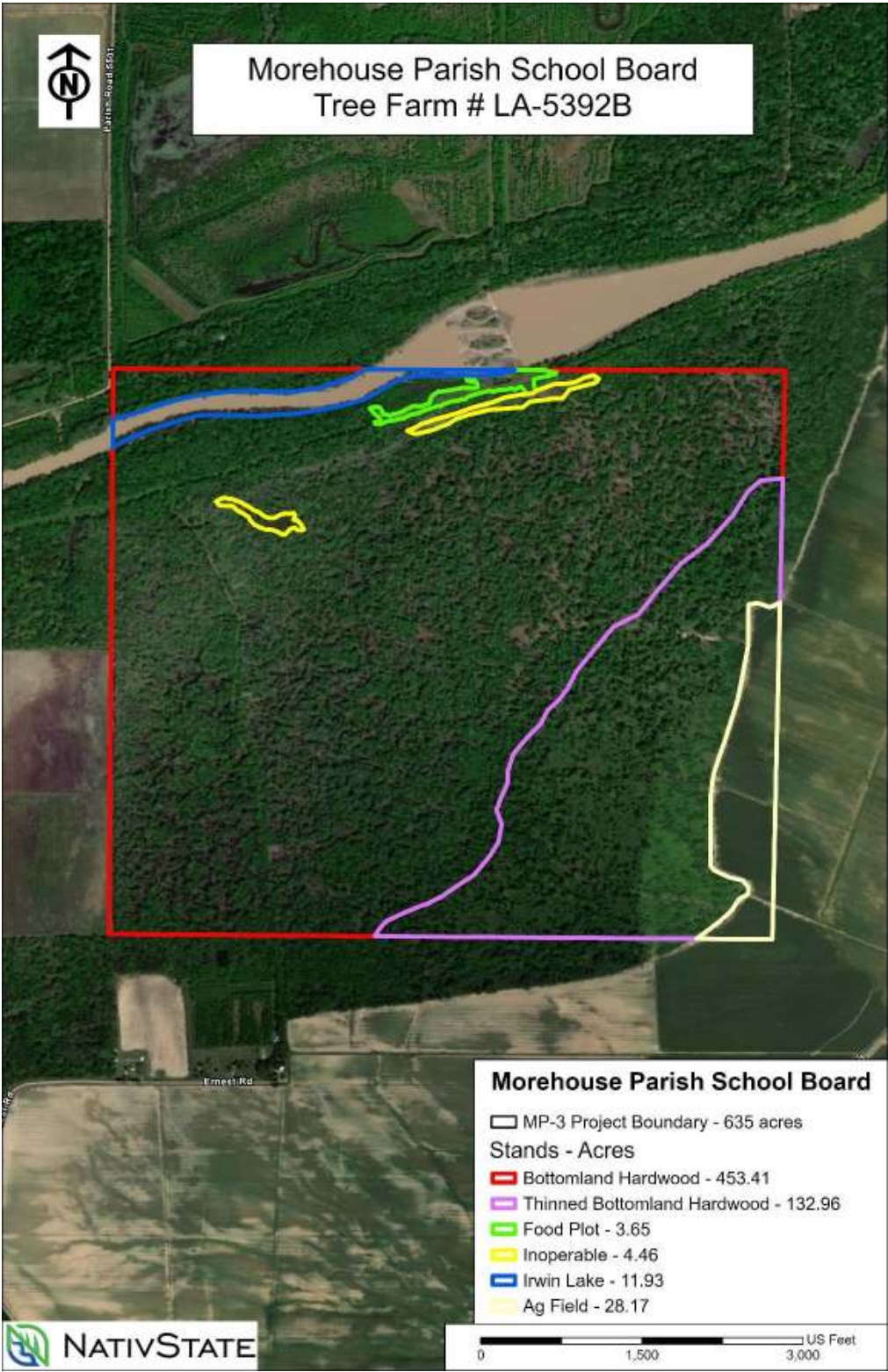




Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

This stand is very low but was able to be thinned approximately 8 years ago. Even though the thinning was pretty heavy, quite a few of the larger red and white oaks were left, which was of great benefit to wildlife. The forested acreage of this stand mainly consists of mixed oak, hickory, ash, bald cypress, various elm species, hackberry, red maple, and willow. Primary species across the entire stand consist of nuttall oak, overcup oak, hickory species, various elm species, hackberry and ash. The understory is comprised mainly of dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto. There are significant beaver problems in the northwest corner and along the western line of this stand. The hunting club has been trying to keep the water flowing in these areas by breaking the beaver dams.

Acres in stand: 453.4

Average Basal Area per acre: 103.7 ft² (Merch Basal Area: 83.5 ft²)

Average DBH: 7.3" (Avg. Merch DBH: 11.8")

Average trees per acre: 357.3 (Avg. Merch trees per acre: 110.7)

Desired Conditions

Improve overall condition of merchantable trees by removing the majority of the less desirable premerchantable species (ash, hickory, elm species and hackberry) and favoring the oak, bald cypress, and other hard and soft mast producing species. The residual basal area per acre should be no approximately 70 - 80 sq. ft. after the TSI (timber stand improvement) treatment.

Recommendations:

1. Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak, hickory and non-mast bearing trees should be removed if they are 5" DBH and under. All persimmon, oak and bald cypress trees should be retained as well as any other mast producing trees. Remove such species as hackberry, hickory, ash and elm species.
2. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary. Beaver trapping along with dam removal is highly recommended to try to get the current problem under control.
3. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
4. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
5. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 – Thinned Bottomland Hardwood

Current Stand Conditions

This stand was thinned very heavily in 2020 leaving just a few scattered sawtimber size oak trees per acre with the remaining residual stand being pulpwood. It has a little higher elevation than the remainder of the tract. The forested acreage of this stand mainly consists of young boxelder, hackberry, elm species, red maple and sycamore. Primary species consist of oak, boxelder and sycamore. This stand does not have much of an understory due to its young age.

Acres in stand: 133.0

Average Basal Area*: 34.3 ft² (Merch Basal Area: 30.0 ft²)

Average DBH*: 10.2" (Avg. Merch DBH: 12.5")

Average trees per acre*: 60.0 (Avg. Merch trees per acre: 35.0)

Desired Conditions

Allow the existing stand of trees to grow to merchantable size as well as into more valuable product classes. Timber stand improvement (TSI) may be needed at some point to reduce overstocking.

Recommendations:

1. Monitor the stand for growth and species diversity, especially the emergence of oak seedlings.
2. Monitor the stand for the need for TSI (timber stand improvement) due to overstocking of current species mix.
3. Routinely check stand for signs of beavers and eradicate and restore water flow if necessary.
4. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
5. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
6. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 3 – Food Plots

Current Stand Conditions

This stand consists of planted food plots for wildlife. The plots are planted in the fall with a combination of species, such as ryegrass, oats or clover. Competing vegetation is kept under control by mechanical methods.

Acres in stand: 3.7
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

Continue to maintain and plant food plots for wildlife to provide nutrition. Expand benefits of these areas to provide nutrition year round for deer and turkeys on the property.

Recommendations:

1. Continue to plant the fall plantings.
2. Introduce summer plantings of soybeans while also introducing buckwheat, cowpeas, lablab, clover or certain vetches. These will provide some variety and good protein over the summer for antler production in deer.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 4 – Inoperable

Current Stand Conditions

The acreage of this stand mainly consists of sloughs and low areas that consistently hold water year-round. Due to the continuous flooded condition of these areas, they have very little to scattered timber growing in them. The timber that may be present will never be able to be commercially harvested due to the extremely wet conditions of the stand. Primary vegetation species are a variety of water grasses and herbaceous plants.

Acres in stand: 4.5

Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)

Average DBH: 0.0" (Avg. Merch DBH: 0.0")

Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract, especially waterfowl.

Recommendations:

1. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
2. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary with herbicides that are approved for aquatic use.

Stand 5 – Irwin Lake

Current Stand Conditions

The acreage of this stand consists of the waters of Irwin Lake. The only timber in this stand is scattered along the very edges of the lake and will never be harvested.

Acres in stand: 11.9
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow areas for foraging. The lake also provides great recreational opportunities for fishing and water sports.

Recommendations:

1. Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Stand 6 – Ag Field

Current Stand Conditions

This stand is part of an adjacent commercial agriculture field planted with crops such as soybeans and corn. The fields are planted in the spring and harvested in the fall. A winter cover crop is sometimes planted to help with soil conservation. During the commercial agriculture process, pesticides are used on the fields. All pesticides are used in accordance with label directions and usage records are kept by the farming manager according to federal, state and local regulations.

Acres in stand: 28.2
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

Continue to maintain and plant the ag field in their current crop rotations. The planted fields do offer wildlife some seasonal nutritional benefits. The fields also offer some recreational hunting opportunities for deer, turkey and some migratory birds such as dove.

Recommendations:

1. Continue to plant the current rotations of ag crops.
2. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
3. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.
4. Routinely check all culverts and low water crossings for flow capacity and damage.
Repair or replace if necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



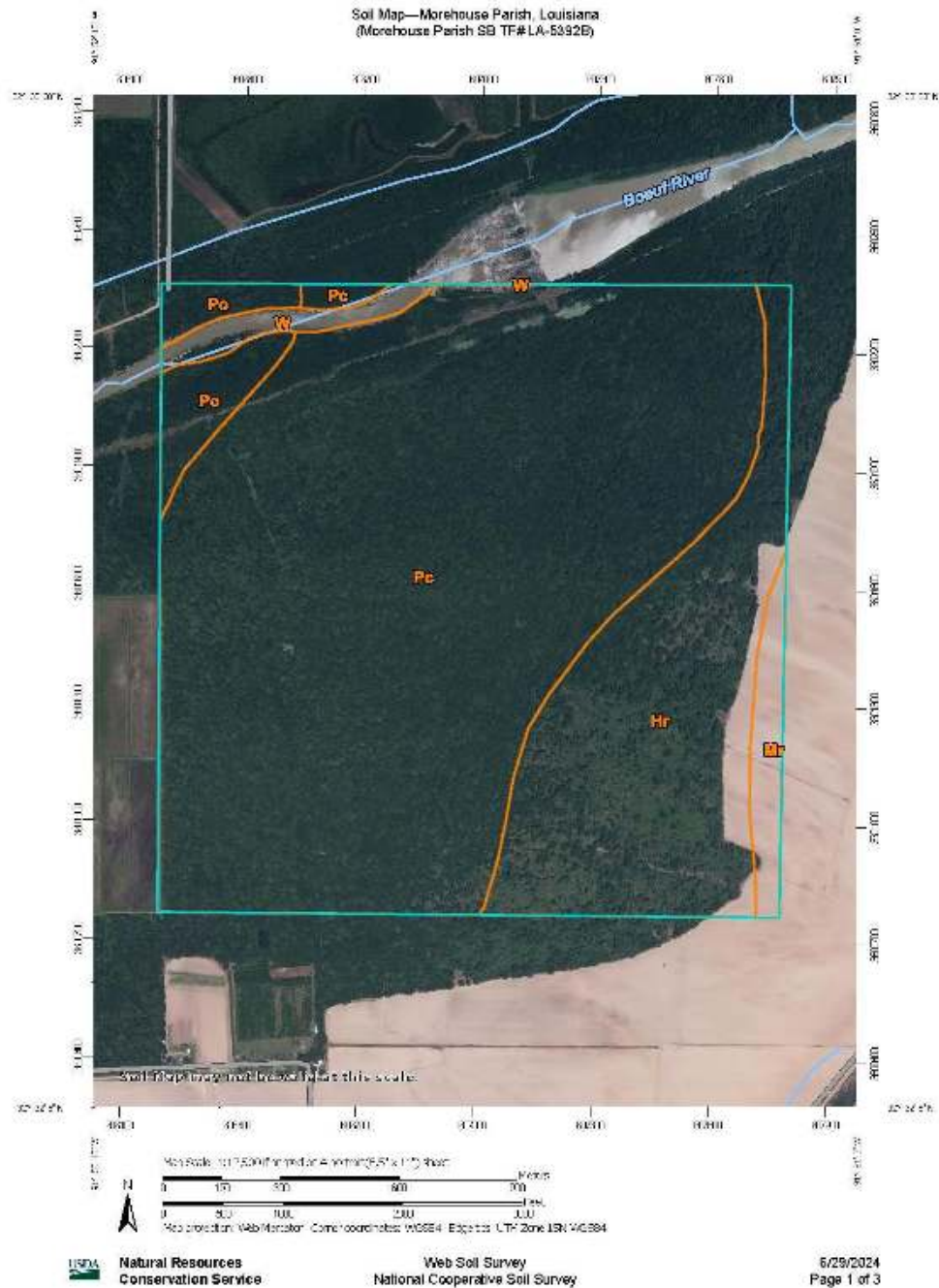
Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>



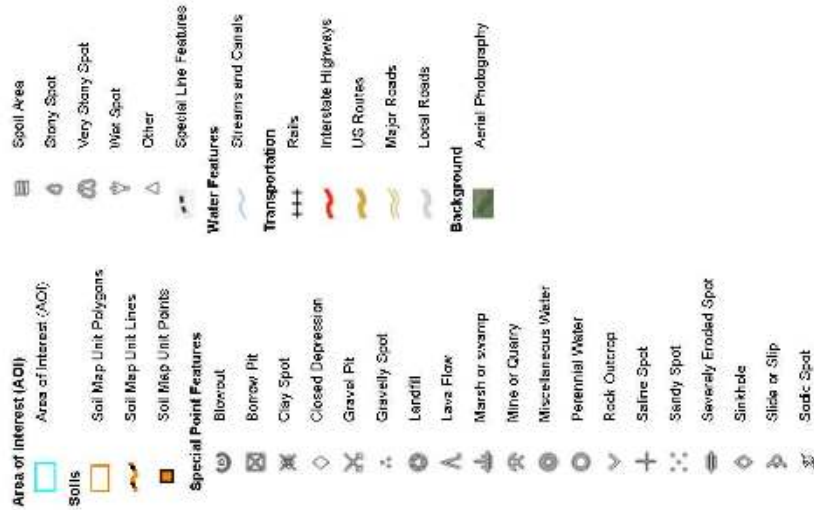
Recommendations:

- 1 BMP compliance shall be part of the timber sale agreement and fire lane contracts.
- 2 BMP's shall be installed on all roads, main skid trails, log sets and fire breaks.
- 3 Harvest operations should only be during dry months.
- 4 Protect and manage vegetation in areas around the SMZs.
- 5 Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
- 6 Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392B



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: [URL]
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—May 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hr	Hebert silt loam, 0 to 1 percent slopes	136.6	21.9%
Mr	Mer Rouge-Gallion complex	15.0	2.4%
Pc	Perry clay, 0 to 1 percent slopes	445.5	70.3%
Po	Portland clay	23.6	3.7%
W	Water	10.9	1.7%
Totals for Area of Interest		633.6	100.0%

Forest Productivity – TF #LA-5392B

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF#
LA-5392B

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Hr—Hebert silt loam, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Hebert	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	133.00	
	Eastern cottonwood	95	114.00	
	Green ash	—	—	
	Nuttall oak	90	86.00	
	Pecan	—	—	
	Sweetgum	90	106.00	
	Water oak	90	86.00	
Mr—Mer Rouge-Gallion complex				
Mer rouge	American sycamore	—	—	American sycamore, Eastern cottonwood
	Eastern cottonwood	90	100.00	
	Green ash	70	33.00	
	Pecan	—	—	
	Sweetgum	95	122.00	
Gallion	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	129.00	
	Eastern cottonwood	100	129.00	
	Green ash	80	49.00	
	Pecan	—	—	
	Sweetgum	83	87.00	
	Water oak	—	—	
Pc—Perry clay, 0 to 1 percent slopes				
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Po—Portland clay			<i>Cu ft/ac/yr</i>	
Portland	Eastern cottonwood	100	129.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	
W—Water				
Water	—	—	—	—

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle and Lesser Yellowlegs. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>



This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/13/24, 10:11 AM

IPAC: Explore Location resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://pacexplorer.tws.gov/location/DXXG6F456VG7VNBW023ZKP R MJQ/resources#websites>

2/13

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus***Candidate**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>

- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (!)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird

on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key

component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1C](#)

[PFO1A](#)

FRESHWATER POND

[PUBH](#)

RIVERINE

[R2UBH](#)

[R4SBCx](#)



A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this Inventory. There is no attempt, in either the design or products of this Inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392B

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	453.4	TSI – non-mast producing/non-native species 5” dbh and under	2025	
2	133.0	Monitor stand for hardwood growth and diversity	Annually	
1,2,4,5	602.8	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1,2,3,4,6	623.1	Monitor stand for non-native/invasive species	Continually	
1,2,4,6	619.4	Check culverts and low water crossings	Continually	
1,2,3,4,5,6	635.0	Paint property lines	2025, 2032	
1,2,3,4,6	623.1	Monitor stand for presence of wild hogs & respond accordingly	Continually	
3	3.7	Continue to plant cool season vegetation in food plots & introduce warm season vegetation plantings	Annually	
1,2,3,4	594.9	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	
2	133.0	Monitor stand for the need of TSI to reduce overstocking	Every three years	
6	28.2	Continue to plant ag fields in current crop rotations	Annually	

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TREE FARM # LA-5392C RESOURCE ELEMENTS

Property Information

Total Acres: 640.5
Forested Acres: 640.5
Legal Description: Section 16; Township 23 North; Range 4 East;
Morehouse Parish, LA.

Access: Access from the east. Main Line Road runs west into
Irvin Lake Road which continues west until it dead ends.
Access continues west across private landowners for
approximately 2 miles until on the subject property.
Access is very difficult.

Latitude: 32.720469°
Longitude: -91.755857°

Watershed 12-digit HUC ID: 080500011102
Watershed Name: Middle Bayou Galion

Property Description Narrative

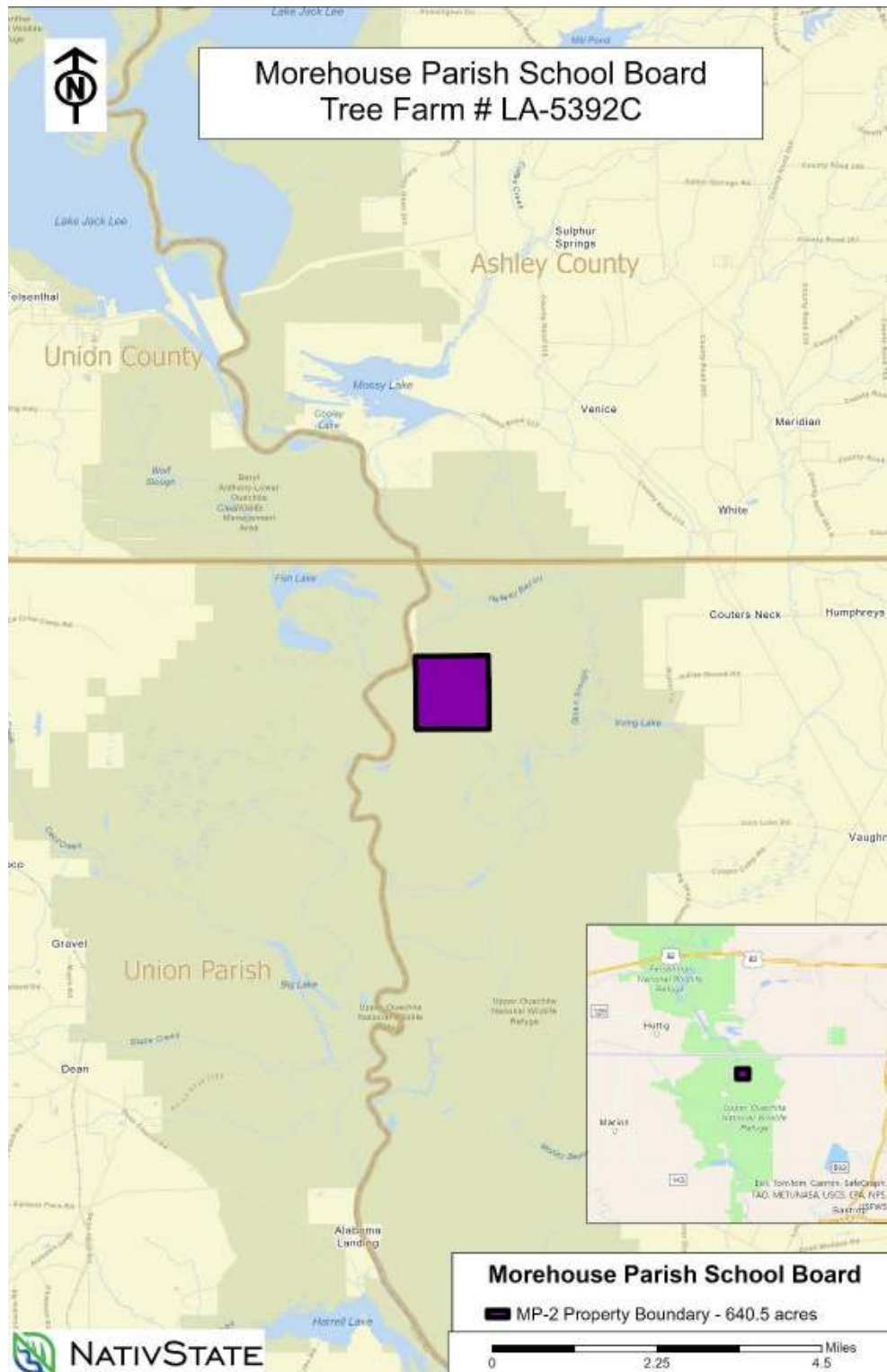
This property, Morehouse Parish School Board, is approximately 640.5 acres and is in Morehouse Parish, northeast of Dean, LA. The property is in the Upper West Gulf Coastal Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production and timber managed in the Upper Ouachita National Wildlife Refuge.

The tract consists primarily of oak, hickory and elm forests with the most common species being overcup oak, hickory, elm species and other miscellaneous hardwoods. The topography of the tract is uniform and flat, with an elevation of approximately 85-90 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

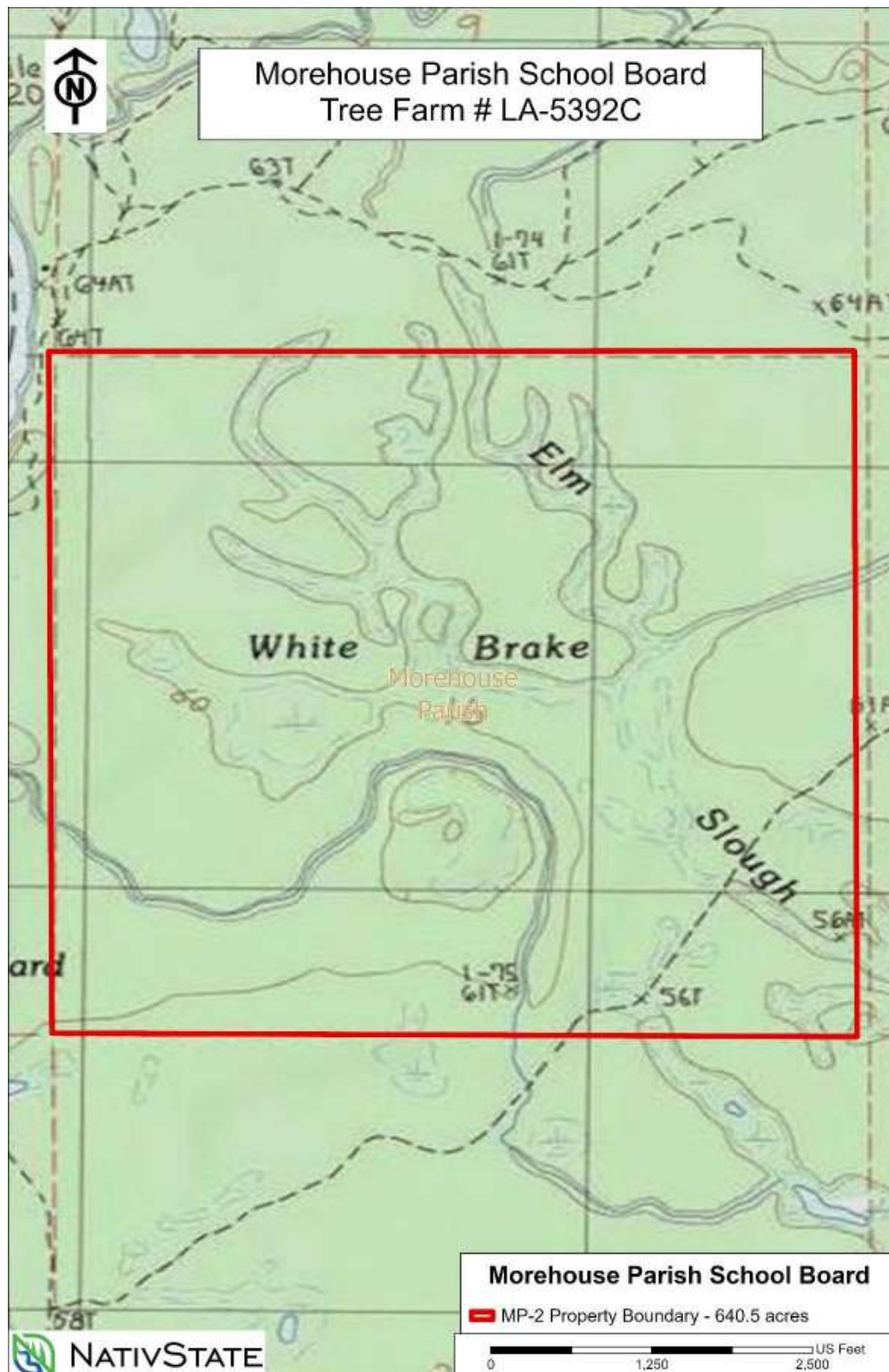
Maps

Location Map

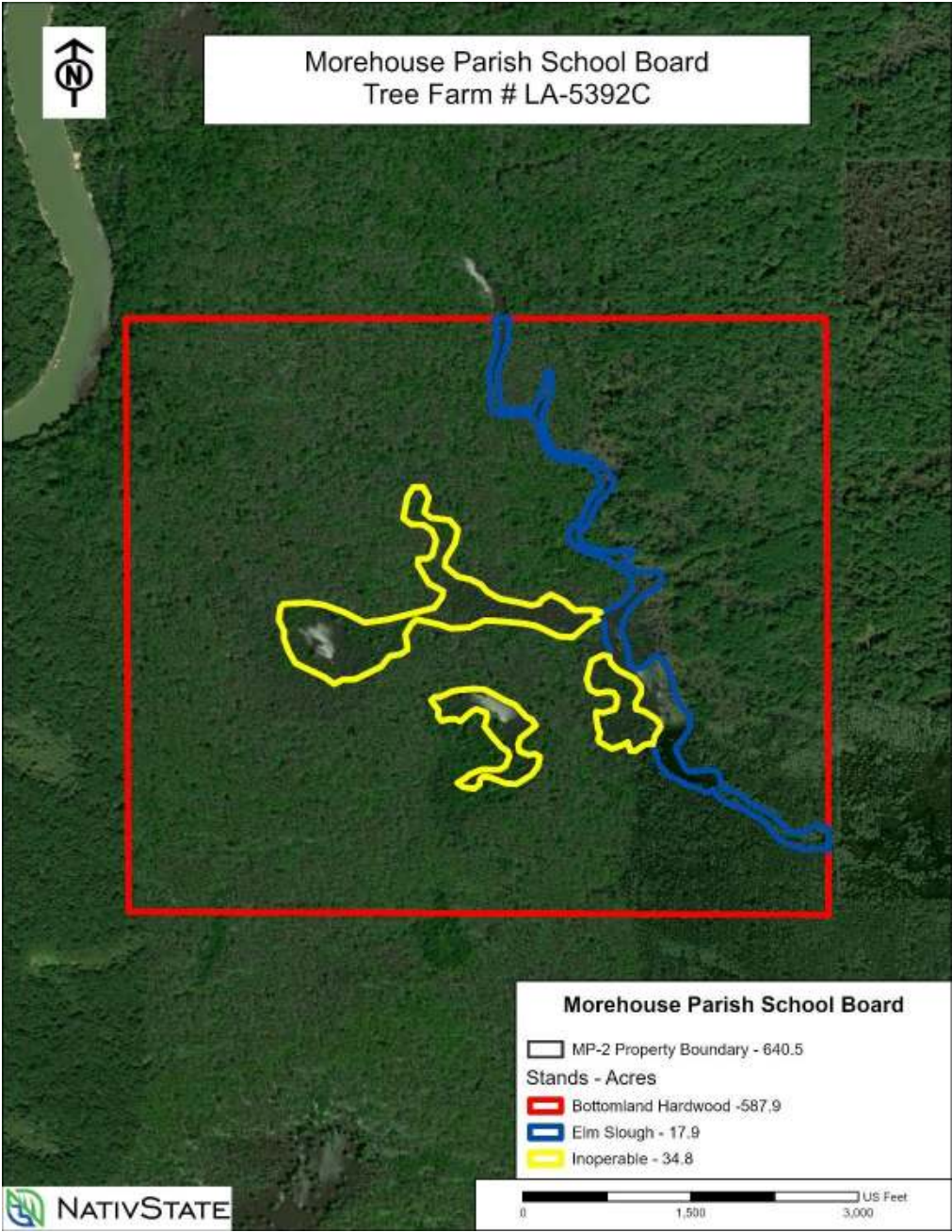




Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

The forested acreage of this stand mainly consists of mixed oak, hickory, elm species and other miscellaneous hardwoods. Primary species across the entire stand consist of overcup oak, a variety of hickory species, various elm species. The understory is comprised mainly of very dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto. This stand has not been thinned in quite some time due to low, heavy soils that are of poor quality, which equates to low nutrients and site index. Being near the Ouachita River, the soils tend to hold moisture which has also contributed to the inability of conducting a sale. Access into the stand is also extremely difficult.

Acres in stand: 587.9

Average Basal Area per acre: 107.7 ft² (Merch Basal Area: 88.4 ft²)

Average DBH: 8.3" (Avg. Merch DBH: 11.5")

Average trees per acre: 288.9 (Avg. Merch trees per acre: 122.2)

Desired Conditions

Improve overall condition of desirable merchantable and pre-merchantable trees by removing the majority of the less desirable pre-merchantable species (elm species and other miscellaneous hardwood species) and favoring the oak and hickory as well as other hard and soft mast producing species. Due to high numbers of pre-merchantable overcup oak and hickory, some of these should be removed to free up nutrients for midstory and overstory trees. The residual basal area per acre should be approximately 60 sq. ft. after the TSI (timber stand improvement) and commercial thinning treatments.

Recommendations:

- 1 Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 5" DBH and under. Oak and hickory trees should be removed if they are 3" DBH and under. All larger oak and hickory trees should be retained as well as any other mast producing trees. Remove such species as hackberry and elm species.
- 2 Perform a commercial thinning across the stand that removes only hardwood species (including oaks) that are between 13" – 18" DBH. Also remove any that are showing signs of heart rot regardless of diameter. The residual merchantable basal area should be no lower than 60 sq. ft. It is recommended to thin half of the total acreage per year over a two-year period during the summer and fall months. This will minimize soil compaction in the stand and damage to internal woods roads. Due to the carbon program harvesting constraints, no more than 2,050 tons (+/-76 loads) can be thinned off the target acreage (+/-294) per year. Although the initial thinning should be done in 2024, it will have to be delayed until 2029, again due to carbon program constraints.

- 3 Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
- 4 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 5 Routinely monitor stand for signs of wild hogs and eradicate if necessary.
- 6 Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 –Elm Slough

Current Stand Conditions

The acreage of this stand consists of the drainage of Puckett Slough running north to south through the property and draining into Horseshoe Brake and eventually into Horseshoe Lake to the south. The only timber in this stand is scattered along the very edges and in the shallower areas of the slough and will never be harvested.

Acres in stand: 17.9
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow areas for foraging. The slough also provides some recreational opportunities for fishing.

Recommendations:

1. Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Stand 3 – Inoperable

Current Stand Conditions

The acreage of this stand mainly consists of sloughs and low areas that consistently hold water year-round. Due to the continuous flooded condition of these areas, they have very little to scattered timber growing in them. The timber that may be present will never be able to be commercially harvested due to the extremely wet conditions of the stand. Primary vegetation species are a variety of water grasses and herbaceous plants.

Acres in stand: 34.8

Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)

Average DBH: 0.0" (Avg. Merch DBH: 0.0")

Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract, especially waterfowl.

Recommendations:

1. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
2. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary with herbicides that are approved for aquatic use.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.

Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website:

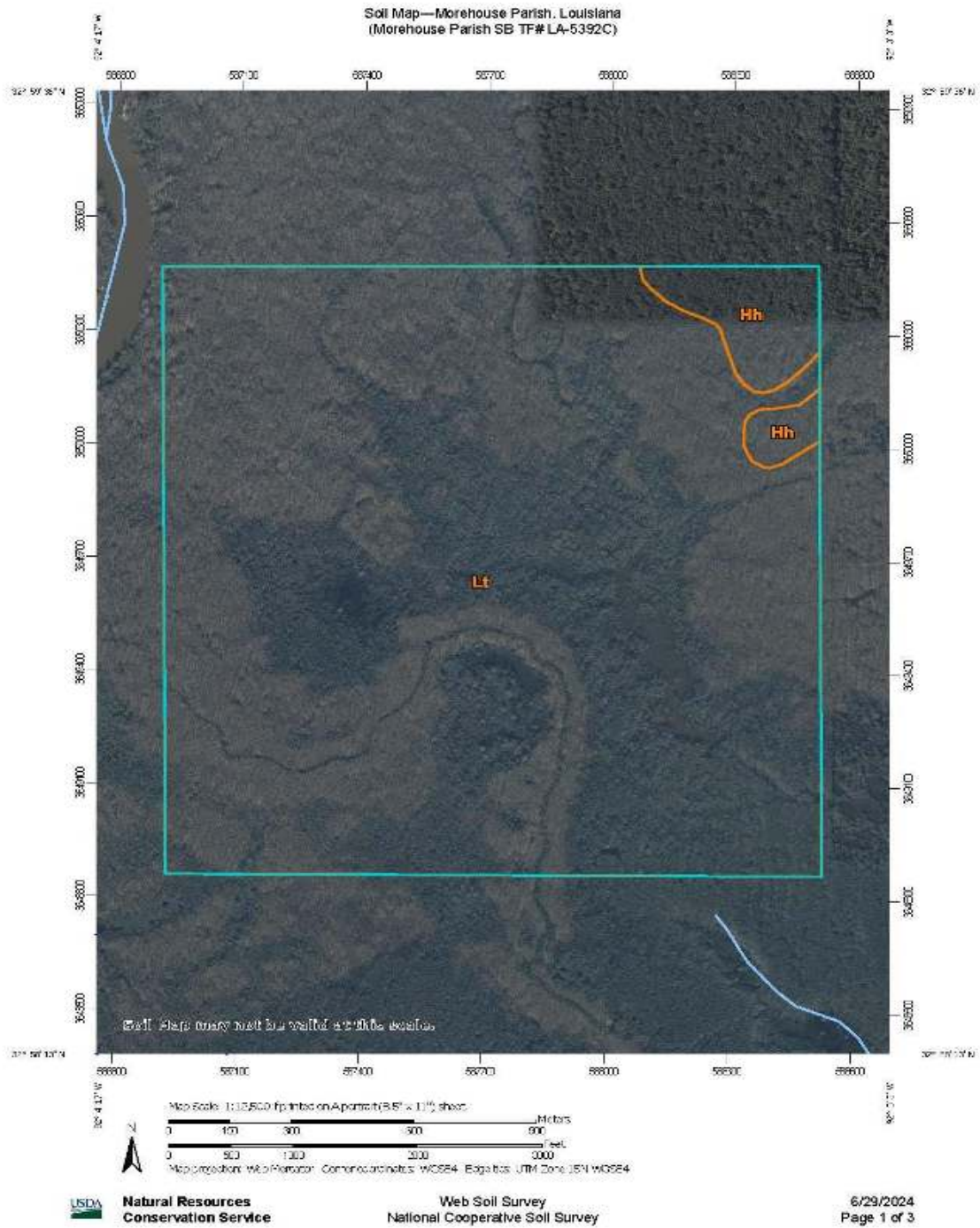
<http://soils.usda.gov/>



Recommendations:

- 1 BMP compliance shall be part of the timber sale agreement and fire lane contracts.
- 2 BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
- 3 Harvest operations should only be during dry months.
- 4 Protect and manage vegetation in areas around the SMZs.
- 5 Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
- 6 Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392C



MAP LEGEND

Area of Interest (AOI)	Soil Area
Area of Interest (AOI)	Stony Spot
Soils	Very Stony Spot
Soil Map Unit Polygons	Wet Spot
Soil Map Unit Lines	Other
Soil Map Unit Points	Special Line Features
Special Point Features	Water Features
Blowout	Streams and Canals
Borrow Pit	Transportation
Clay Spot	Reels
Closed Depression	Interstate Highways
Gravel Pit	US Routes
Gravelly Spot	Major Roads
Landfill	Local Roads
Lava Flow	Background
Marsh or swamp	Aerial Photography
Mine or Quarry	
Miscellaneous Water	
Perennial Water	
Rock Outcrop	
Saline Spot	
Sandy Spot	
Severely Eroded Spot	
Sinkhole	
Slide or Slip	
Soft Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 7, 2020—Nov 17, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hh	Haggerly silty clay, frequently flooded	28.9	4.5%
Lt	Litro clay, frequently flooded	611.6	95.5%
Totals for Area of Interest		640.5	100.0%

Forest Productivity – TF #LA-5392C

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF#
LA-5392C

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber <i>Cu ft/ac/yr</i>	
Hh—Haggerty silty clay, frequently flooded				
Haggerty	Baldcypress	—	—	American sycamore, Eastern cottonwood
	Common persimmon	—	—	
	Water oak	—	—	
	Water tupelo	—	—	
	Willow oak	—	—	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Lt—Litro clay, frequently flooded			<i>Cu ft/ac/yr</i>	
Litro	Baldcypress	70	—	Baldcypress, Green ash
	Common persimmon	70	—	
	Honeylocust	70	—	
	Overcup oak	75	—	
	Water hickory	75	—	
	Water tupelo	60	81.00	

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle, American Kestrel, Brown-headed Nuthatch, Chimney Swift, Kentucky Warbler, Prothonotary Warbler, Red-headed Woodpecker and Wood Thrush. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>



This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/29/24, 11:58 P.M.

IPaC: Explore Location resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://ipac.ecosplere.org/location/G30GVT8KR5ASTA8W6K8G2IXLXM/resources#wetlands>

2/15

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. **NOAA Fisheries**, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON

Bald Eagle *Haliaeetus leucocephalus*

Breeds Sep 1 to Jul 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (!)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

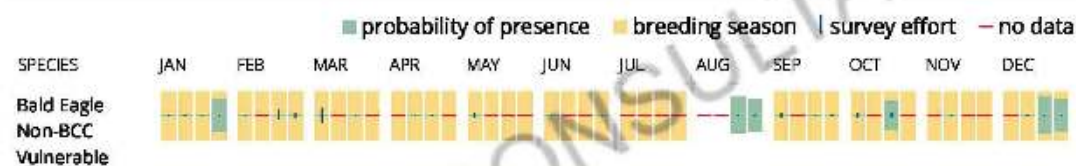
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\) list](#) or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your

list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel <i>Falco sparverius paulus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Brown-headed Nuthatch <i>Sitta pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 15
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (!)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

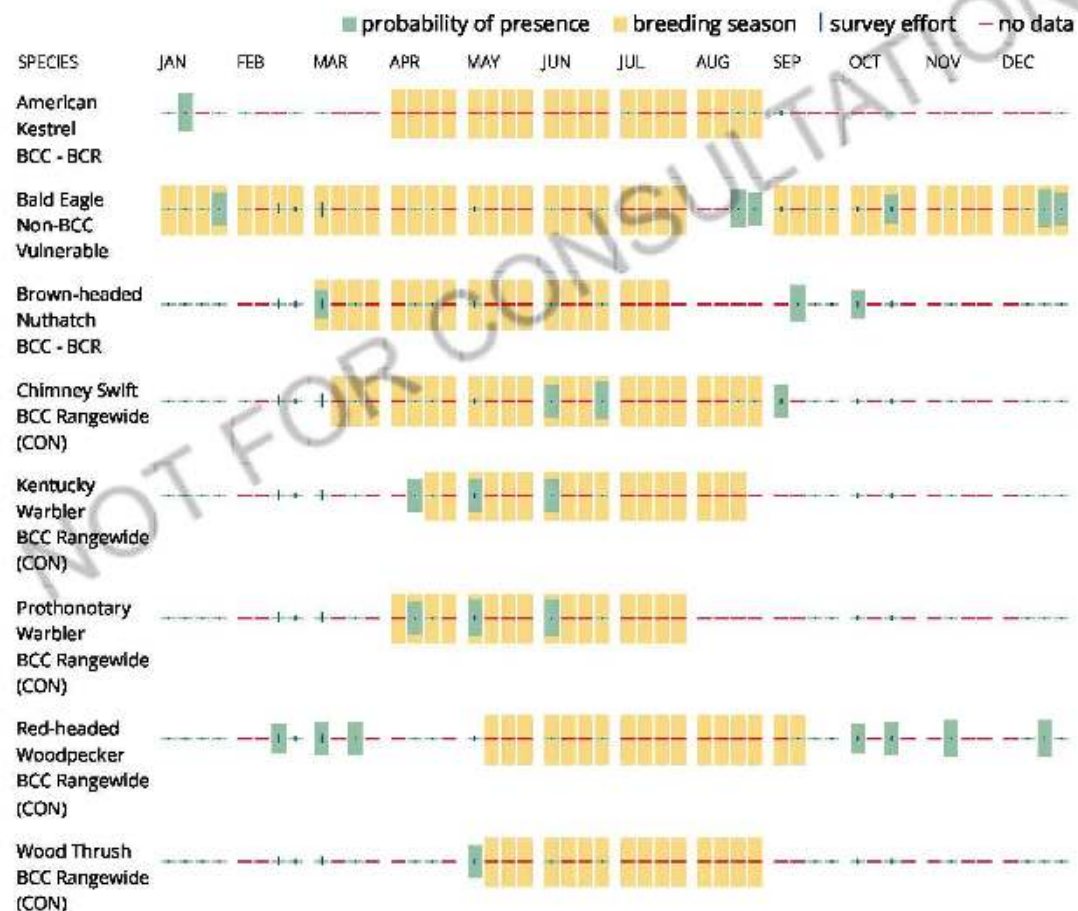
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
UPPER OUACHITA NATIONAL WILDLIFE REFUGE	54,548.9 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1/2F](#)

[PFO2/SS1F](#)

[PFO2F](#)

[PSS1F](#)



FRESHWATER POND

PUBH

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does not replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392C

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	587.9	TSI – non-mast producing/non-native species 5” dbh and under. Oak and hickory 3” dbh and under	2025	
1	587.9	Commercial thinning on +/- 294 acres of the stand removing no more than 2,050 tons	2029, 2030	
1,2,3	640.5	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1 & 3	622.7	Monitor stand for non-native/invasive species	Continually	
1 & 3	622.7	Check culverts and low water crossings	Continually	
1,2,3	640.5	Paint property lines	2025, 2032	
1 & 3	622.7	Monitor stand for presence of wild hogs & respond accordingly	Continually	
1 & 3	622.7	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	

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TREE FARM # LA-5392D RESOURCE ELEMENTS

Property Information

Total Acres: 245.0
Forested Acres: 236.3
Legal Description: Section 16; Township 19 North; Range 8 East;
Morehouse Parish, LA.

Access: Access from the west going east on Bull Chute Road.
When it dead ends at boat ramp, continue east across
private landowner to subject property. Access also from
the north across private landowner coming south off of
Trails End Road.

Latitude: 32.633286°
Longitude: -91.658492°

Watershed 12-digit HUC ID: 080500010707
Watershed Name: Fivemile Slough-Boeuf River

Property Description Narrative

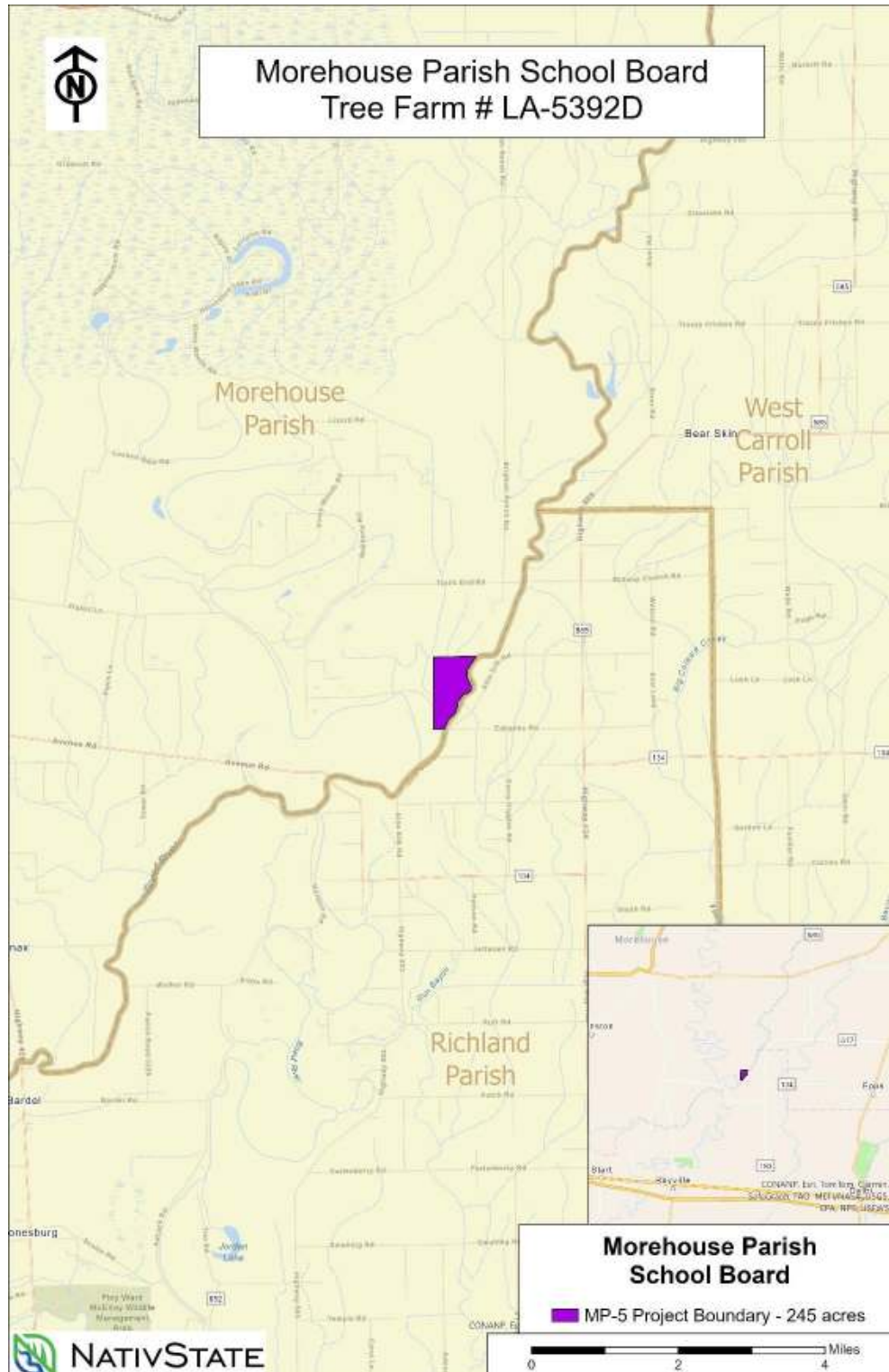
This property, Morehouse Parish School Board, is approximately 245.0 acres and is in Morehouse Parish, east of the town of Oak Ridge, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production.

The tract consists primarily of mixed oak, hackberry, ash, persimmon, pine, bald cypress, honey locust and elm forests with the most common species being cherrybark oak, nuttall oak, overcup oak, willow oak, water oak, elm species, hackberry and honey locust. The topography of the tract is uniform and flat, with an elevation of approximately 85-90 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

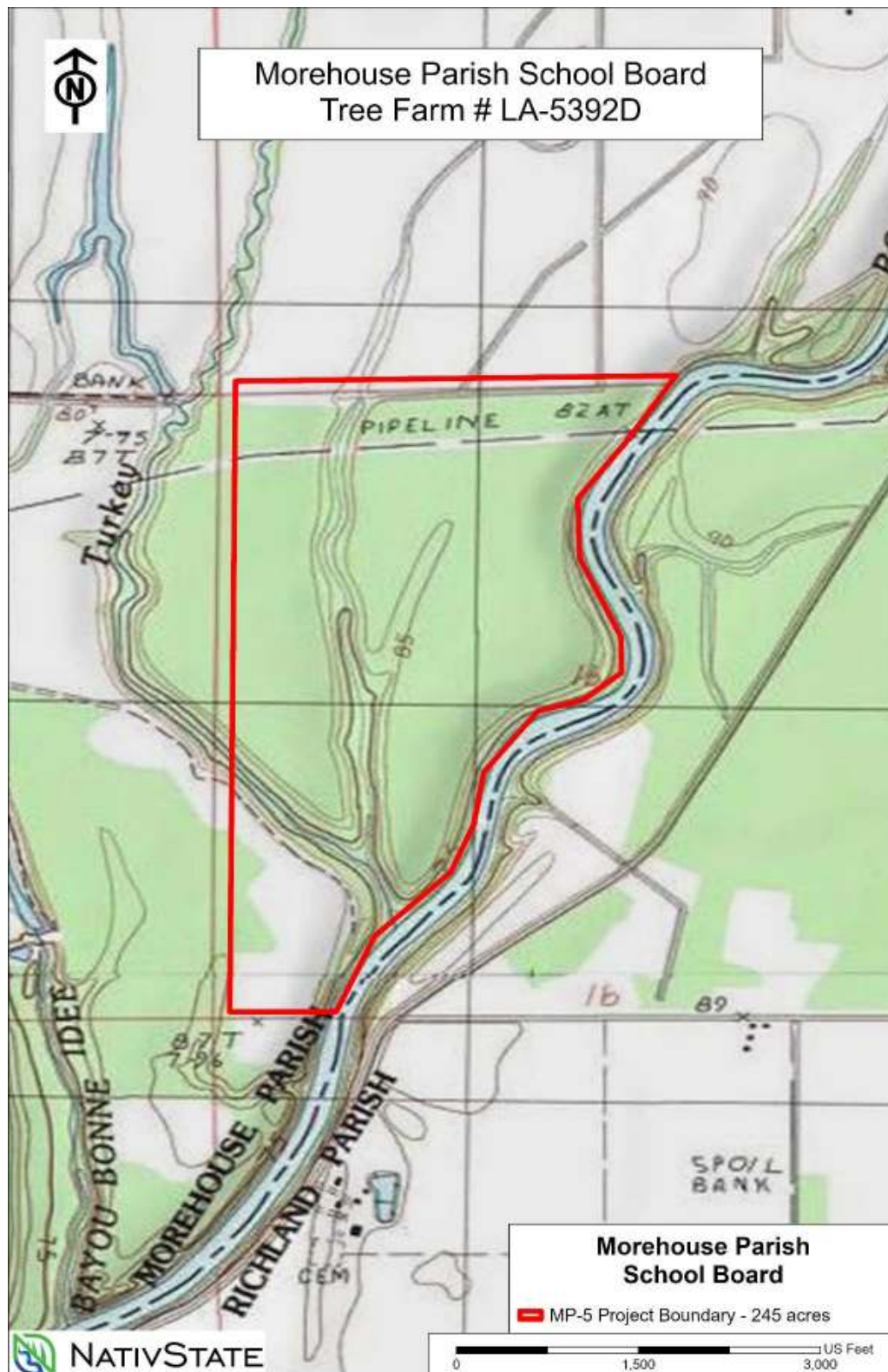
Location Map



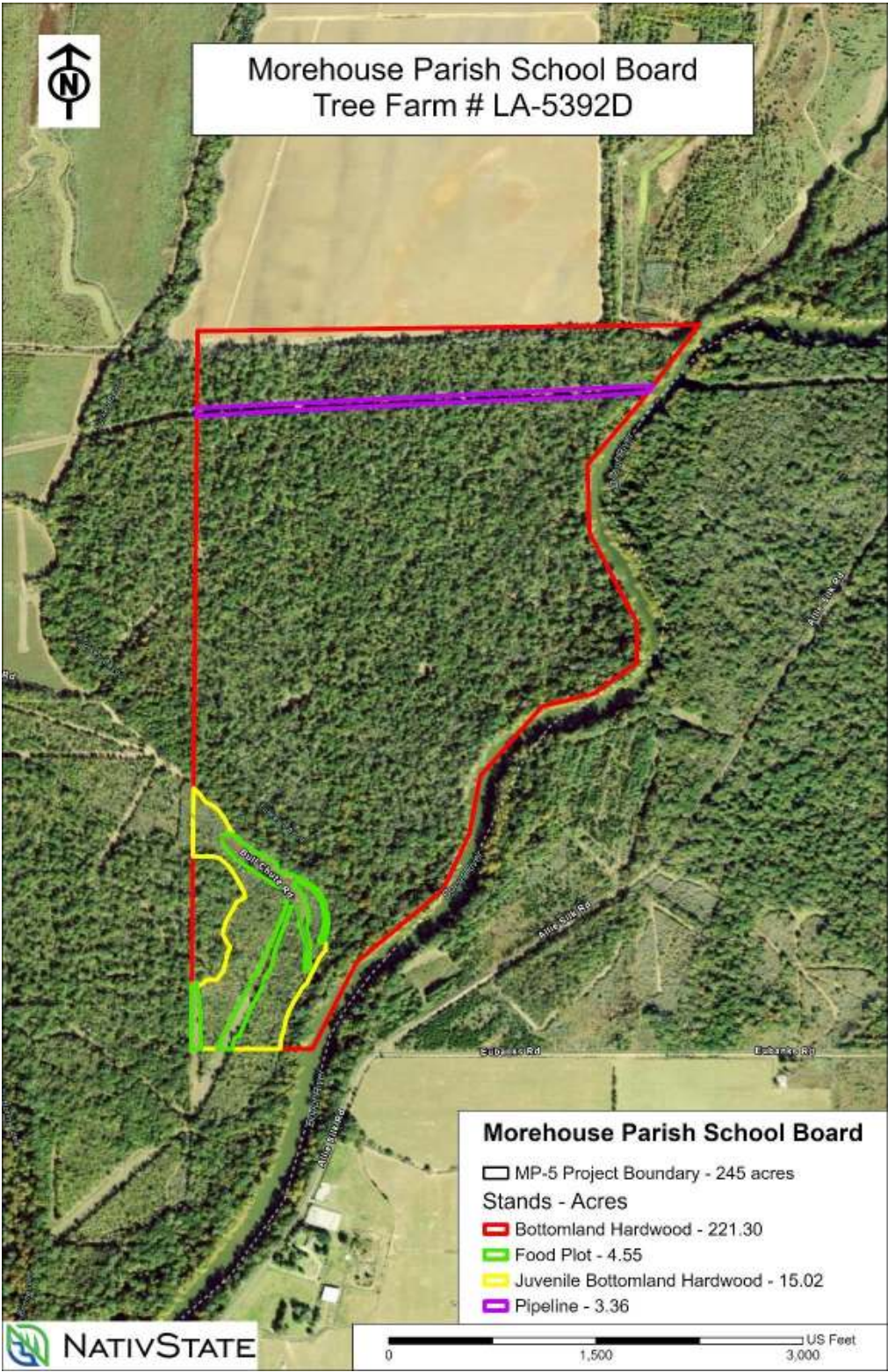
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Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

This stand was heavily thinned approximately 20 years ago. It has some low areas but for the most part it has quite a stocking of red oak and white oak. The forested acreage of this stand mainly consists of mixed oak, pine, ash, various elm species, hackberry, black locust, honey locust, and persimmon. Primary species across the entire stand consist of cherrybark oak, nuttall oak, willow oak, water oak, overcup oak, swamp chestnut oak, various elm species, hackberry, ash, and honey locust. The understory is comprised mainly of dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto.

Acres in stand: 221.3

Average Basal Area per acre: 112.0 ft² (Merch Basal Area: 78.0 ft²)

Average DBH: 5.5" (Avg. Merch DBH: 12.5")

Average trees per acre: 681.1 (Avg. Merch trees per acre: 91.6)

Desired Conditions

Improve overall condition of merchantable trees by removing the majority of the less desirable premerchantable species (ash, elm species, black locust, honey locust and hackberry) and favoring the oak, persimmon, bald cypress and other hard and soft mast producing species. The residual basal area per acre should be approximately 60 sq. ft. after the TSI (timber stand improvement) and commercial thinning treatments.

Recommendations:

1. Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 5" DBH and under. Oak trees should be removed if they are 3" DBH and under. All persimmon, larger diameter oak and bald cypress trees should be retained as well as any other mast producing trees. Remove such species as hackberry, black locust, ash, honey locust and elm species.
2. Perform a commercial thinning across the stand that removes only hardwood species (including oaks) that are between 13" – 18" DBH. Also remove any that are showing signs of heart rot regardless of diameter. The residual merchantable basal area should be no lower than 60 sq. ft. It is recommended to thin during the summer and fall months. This will minimize soil compaction in the stand and damage to internal woods roads. Due to the carbon program harvesting constraints, no more than 1,281 tons (+/-47 loads) can be thinned off the target acreage (+/-221). Although the initial thinning should be done in 2024, it will have to be delayed until 2029, again due to carbon program constraints.
3. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.

- 4 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 5 Routinely monitor stand for signs of wild hogs and eradicate if necessary.
- 6 Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 – Food Plots

Current Stand Conditions

This stand consists of planted food plots for wildlife. The plots are planted in the fall with a combination of species, such as ryegrass, oats or clover. Competing vegetation is kept under control by mechanical methods.

Acres in stand: 4.6
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

Continue to maintain and plant food plots for wildlife to provide nutrition. Expand benefits of these areas to provide nutrition year round for deer and turkeys on the property.

Recommendations:

- 1 Continue to plant the fall plantings.
2. Introduce summer plantings of soybeans while also introducing buckwheat, cowpeas, lablab, clover or certain vetches. These will provide some variety and good protein over the summer for antler production in deer.
3. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
4. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 3 – Juvenile Bottomland Hardwood

Current Stand Conditions

The forested acreage of this stand mainly consists of young oak, ash, honey locust and elm species. Primary species consist of oak and various elms. This stand does not have much of an understory due to its young age.

Acres in stand: 15.0
Average Basal Area*: 94.0 ft² (Merch Basal Area: 52.8 ft²)
Average DBH*: 4.7" (Avg. Merch DBH: 8.6")
Average trees per acre*: 780.0 (Avg. Merch trees per acre: 130.0)

Desired Conditions

Allow the existing stand of trees to grow to merchantable size and into more valuable product classes. Timber stand improvement may be needed at some point to reduce overstocking.

Recommendations:

- 1 Monitor the stand for growth and species diversity, especially the emergence of oak seedlings.
- 2 Monitor the stand for the need for TSI (timber stand improvement) due to overstocking of current species mix.
- 3 Routinely check stand for signs of beavers and eradicate and restore water flow if necessary.
- 4 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 5 Routinely monitor stand for signs of wild hogs and eradicate if necessary.
- 6 Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 4 – Pipeline

Current Stand Conditions

This stand is a natural gas pipeline and right-of-way (ROW) running from the east to west across the northern portion of the bottomland hardwood stand. There is no timber in this stand.

Acres in stand: 3.4

Average Basal Area per acre: 0.0 ft²

Average DBH: 0.0"

Average trees per acre: 0.0

Desired Conditions

This stand is best left in its current state. It can provide some benefit to the wildlife population on the tract in the form of food plots. It also provides outdoor recreation opportunities in the form of hunting, wildlife viewing, ATV riding, etc.

Recommendations:

1. Introduce fall plantings of clover and ryegrass in the food plots as described in Stand 2 above. Care should be taken to not disc and plant food plots directly over the pipelines.
2. Introduce summer plantings of soybeans while also introducing buckwheat, cowpeas, lablab, clover or certain vetches as described in Stand 2 above. Care should be taken to not disc and plant food plots directly over the pipelines.
3. Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
4. Care should be taken when crossing this pipeline with heavy equipment so as not to damage the pipes themselves. This could come into play as the bottomland hardwood stand lies on either side of the pipeline. Consult with the pipeline company with specific questions on crossing.
5. Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
6. Routinely monitor stand for signs of wild hogs and eradicate if necessary.
7. Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forests processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



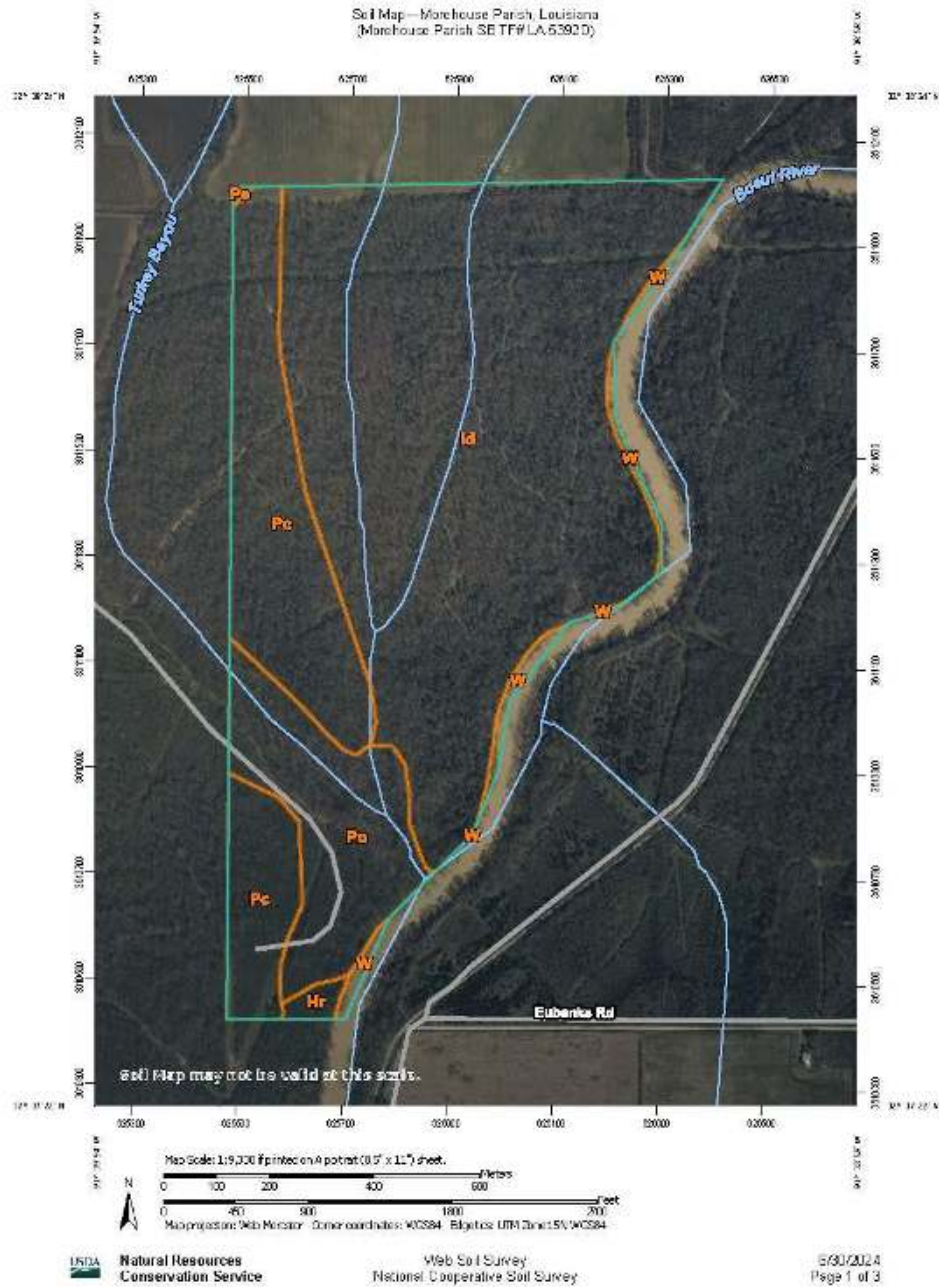
Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>



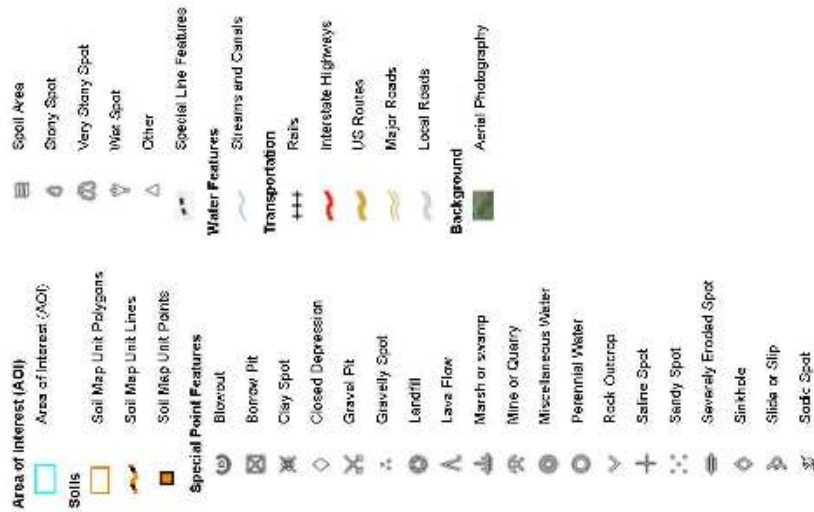
Recommendations:

- 1 BMP compliance shall be part of the timber sale agreement and fire lane contracts.
- 2 BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
- 3 Harvest operations should only be during dry months.
- 4 Protect and manage vegetation in areas around the SMZs.
- 5 Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
- 6 Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392D



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: websoilsurvey.sc.egov.usda.gov
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—May 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hr	Hebert silt loam, 0 to 1 percent slopes	1.6	0.7%
ld	Idee-Forestdale complex	159.1	65.2%
Pc	Perry clay, 0 to 1 percent slopes	49.0	20.1%
Pe	Perry clay, gently undulating	0.2	0.1%
Po	Portland clay	30.2	12.4%
W	Water	4.1	1.7%
Totals for Area of Interest		244.2	100.0%

Forest Productivity – TF #LA-5392D

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF#
LA-5392D

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Hr—Hebert silt loam, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Hebert	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	133.00	
	Eastern cottonwood	95	114.00	
	Green ash	—	—	
	Nuttall oak	90	86.00	
	Pecan	—	—	
	Sweetgum	90	106.00	
	Water oak	90	86.00	
Id—Idée-Forestdale complex				
Idée	Cherrybark oak	105	57.00	Cherrybark oak, Eastern cottonwood, Sweetgum, Tuliptree, Water oak
	Eastern cottonwood	100	0.00	
	Sweetgum	100	143.00	
	Water oak	95	0.00	
Forestdale	Cherrybark oak	94	129.00	American sycamore, Eastern cottonwood, Green ash, Nuttall oak, Sweetgum
	Eastern cottonwood	100	129.00	
	Green ash	78	43.00	
	Nuttall oak	99	0.00	
	Sweetgum	100	143.00	
	Water oak	90	86.00	
	Willow oak	94	86.00	
Po—Perry clay, 0 to 1 percent slopes				
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Pc—Perry clay, gently undulating			<i>Cu ft/ac/yr</i>	
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	
Po—Portland clay				
Portland	Eastern cottonwood	100	129.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	
W—Water				
Water	—	—	—	—

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle, Chimney Swift, Little Blue Heron, Prothonotary Warbler and Red-headed Woodpecker. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>

This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.



IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/13/24, 10:27 AM

IPAC: Explore Location resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://pac.explore.texas.gov/location/76YT6WXA4FFFJFJQDILU22VLY/resources#view=table>

2/13

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus***Candidate**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>

- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Little Blue Heron <i>Egretta caerulea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 10 to Oct 15
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

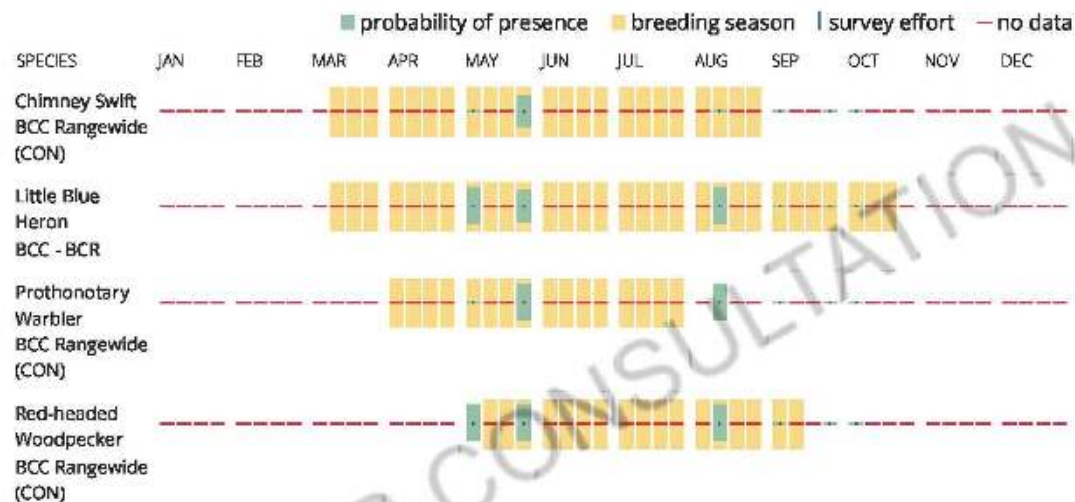
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the [Probability of Presence Summary](#). [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to

you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

[PFO2A](#)

RIVERINE

[R2UBH](#)



A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of Image Interpretation depends on the quality of the Imagery, the experience of the Image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source Imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the Imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubefield worm reefs) have also been excluded from the Inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this Inventory. There is no attempt, in either the design or products of this Inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392D

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	221.3	TSI – non-mast producing/non-native species 5” dbh and under. Oak 3” dbh and under	2025	
3	15.0	Monitor stand for hardwood growth and diversity	Annually	
4	3.4	Exercise caution when moving heavy equipment over pipelines	Continually	
1,3,4	239.7	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1,2,3,4	245.0	Monitor stand for non-native/invasive species	Continually	
1,3,4	239.7	Check culverts and low water crossings	Continually	
1,2,3,4	245.0	Paint property lines	2025, 2032	
1,2,3,4	245.0	Monitor stand for presence of wild hogs & respond accordingly	Continually	
2	4.6	Continue to plant cool season vegetation in food plots & introduce warm season vegetation plantings	Annually	
1,2,3,4	245.0	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	
1	221.3	Commercial thinning on +/- 221 acres of the stand removing no more than 1,281 tons	2029	
3	15.0	Monitor stand for the need of TSI to reduce overstocking	Every three years	
4	3.4	Introduce cool and warm season vegetation in food plot plantings	Annually	

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TREE FARM # LA-5392E RESOURCE ELEMENTS

Property Information

Total Acres: 485.0
Forested Acres: 475.9
Legal Description: Section 16; Township 23 North; Range 9 East;
Morehouse Parish, LA.

Access: Access from the south off Kilbourne Highway.

Latitude: 32.981712°
Longitude: -91.550804°

Watershed 12-digit HUC ID: 080500010702
Watershed Name: Camp Bayou Canal

Property Description Narrative

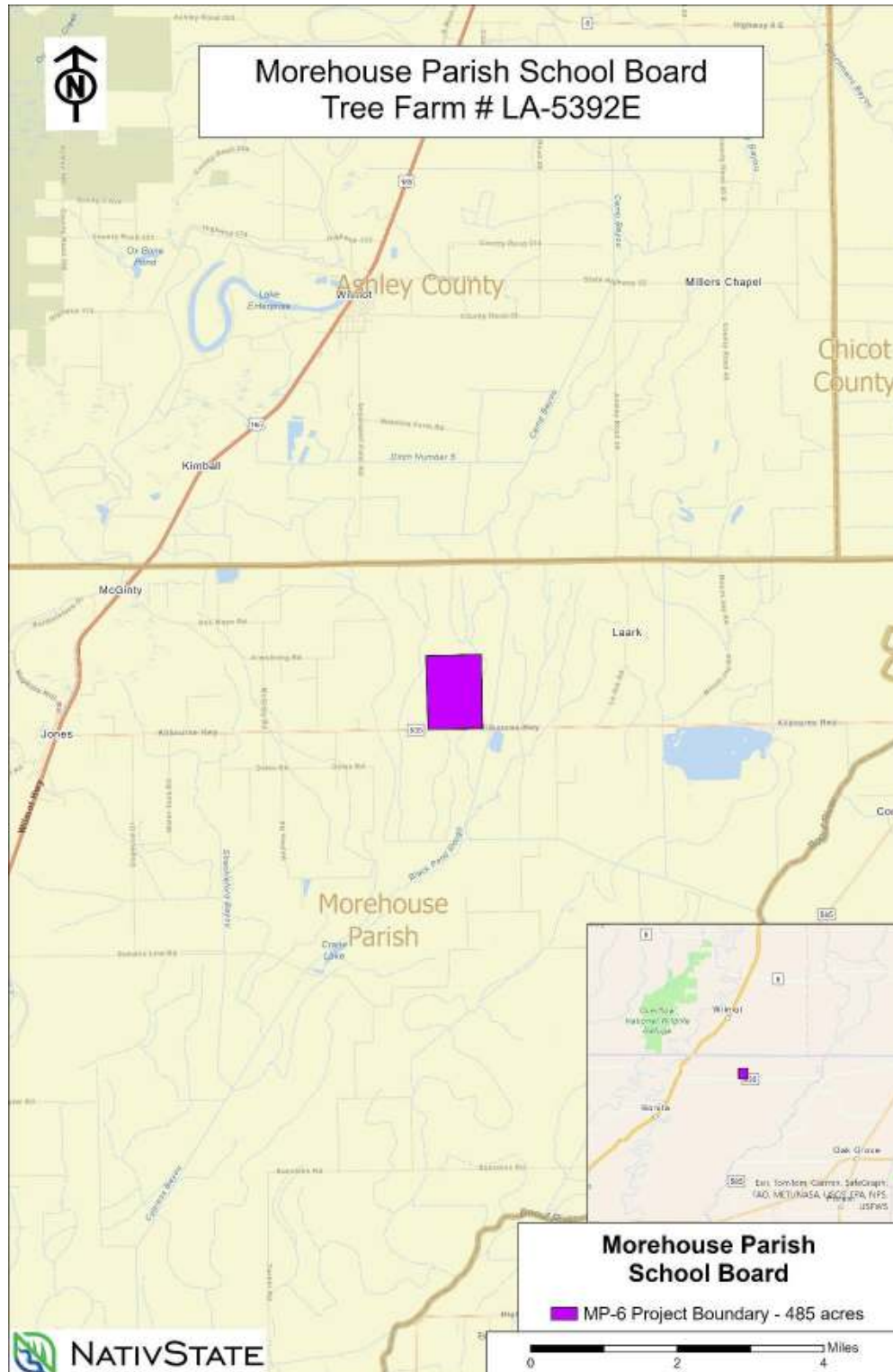
This property, Morehouse Parish School Board, is approximately 485.0 acres and is in Morehouse Parish, east of Jones, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana and the major land use in the surrounding area is agricultural production.

The tract consists primarily of oak, hickory, ash, hackberry, persimmon and elm forests with the most common species being nuttall oak, willow oak, overcup oak, hickory, elm species, ash and persimmon. The topography of the tract is uniform and flat, with an elevation of approximately 90-95 ft above sea level.

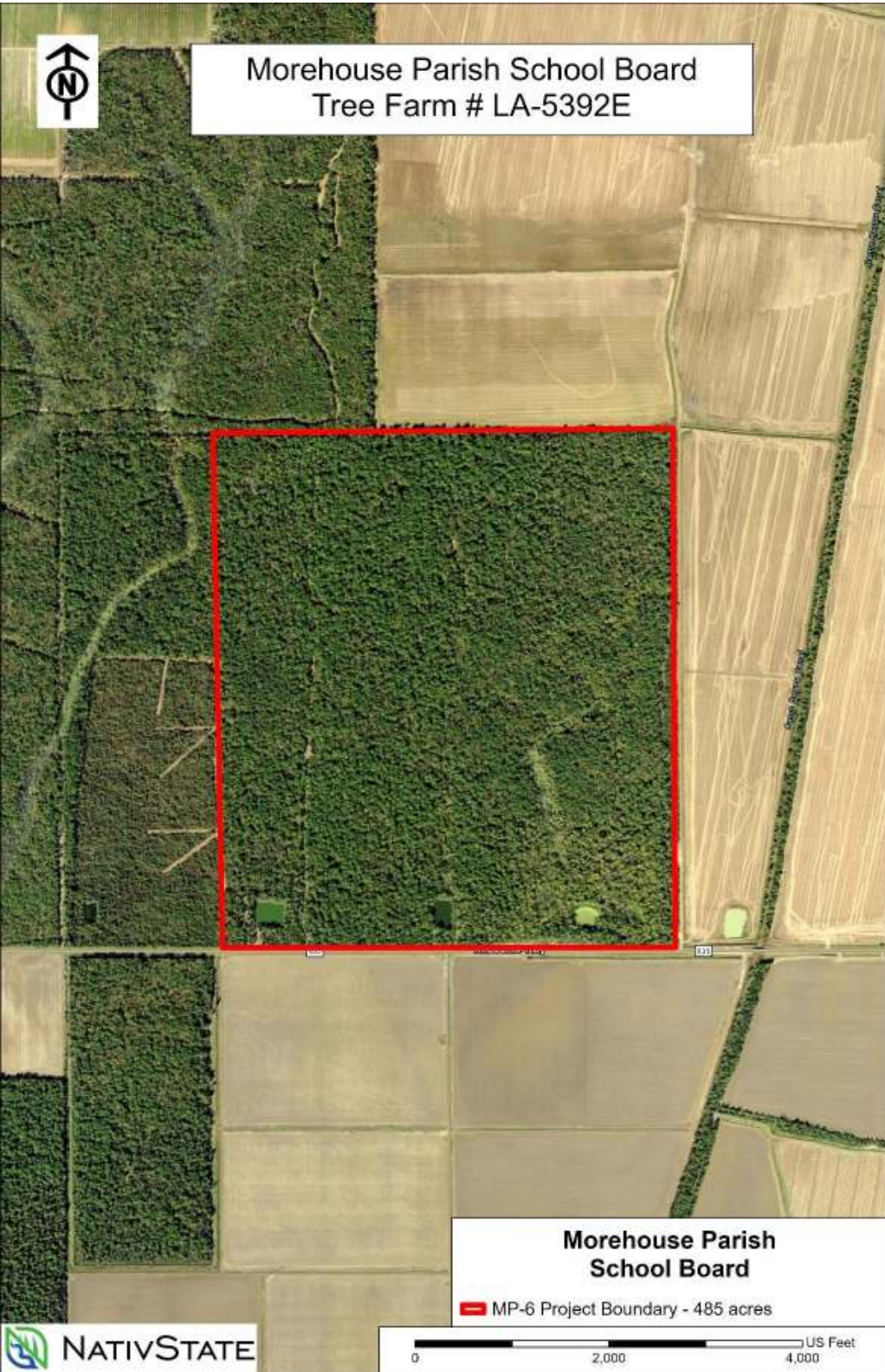
Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

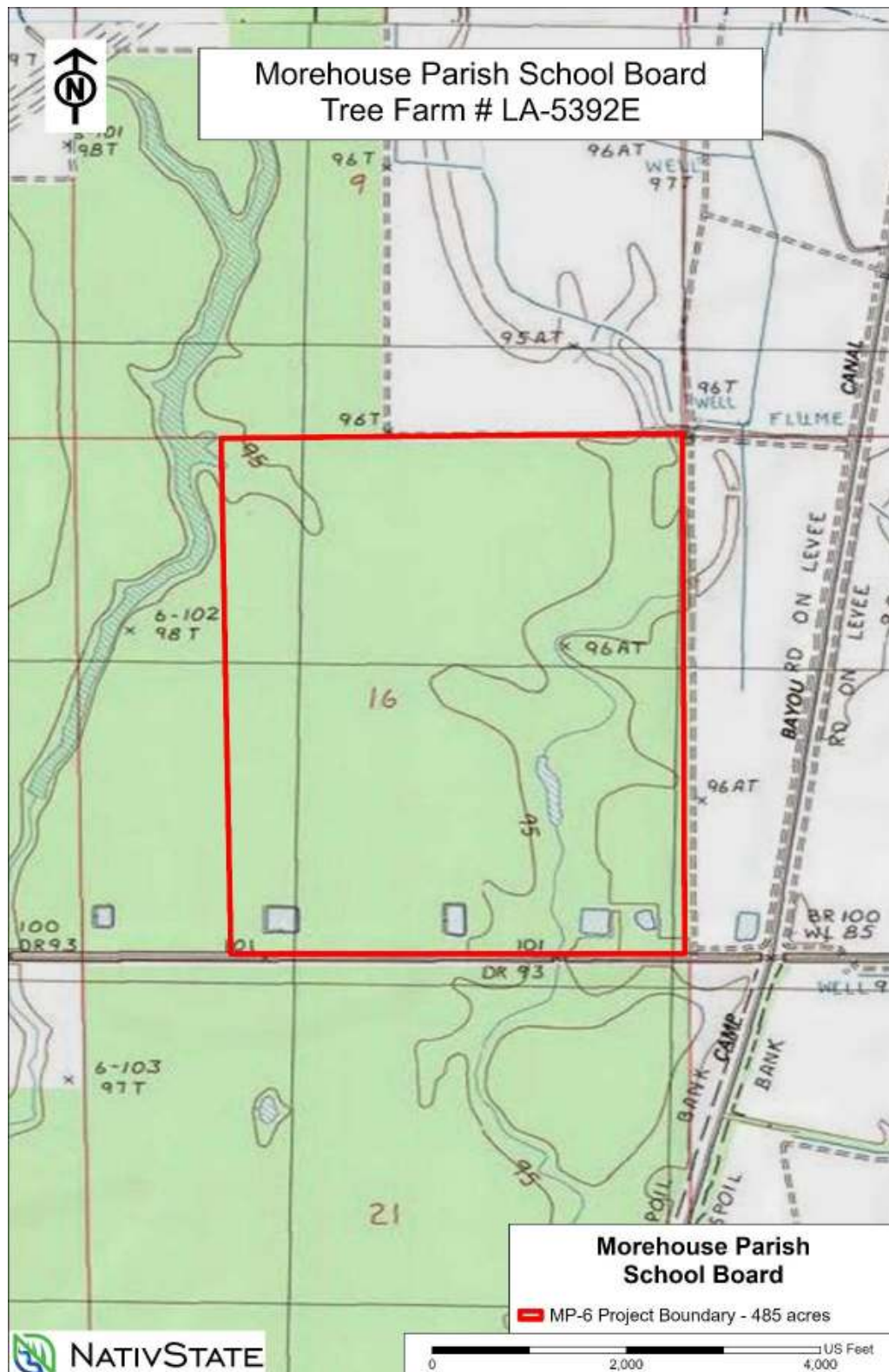
Location Map



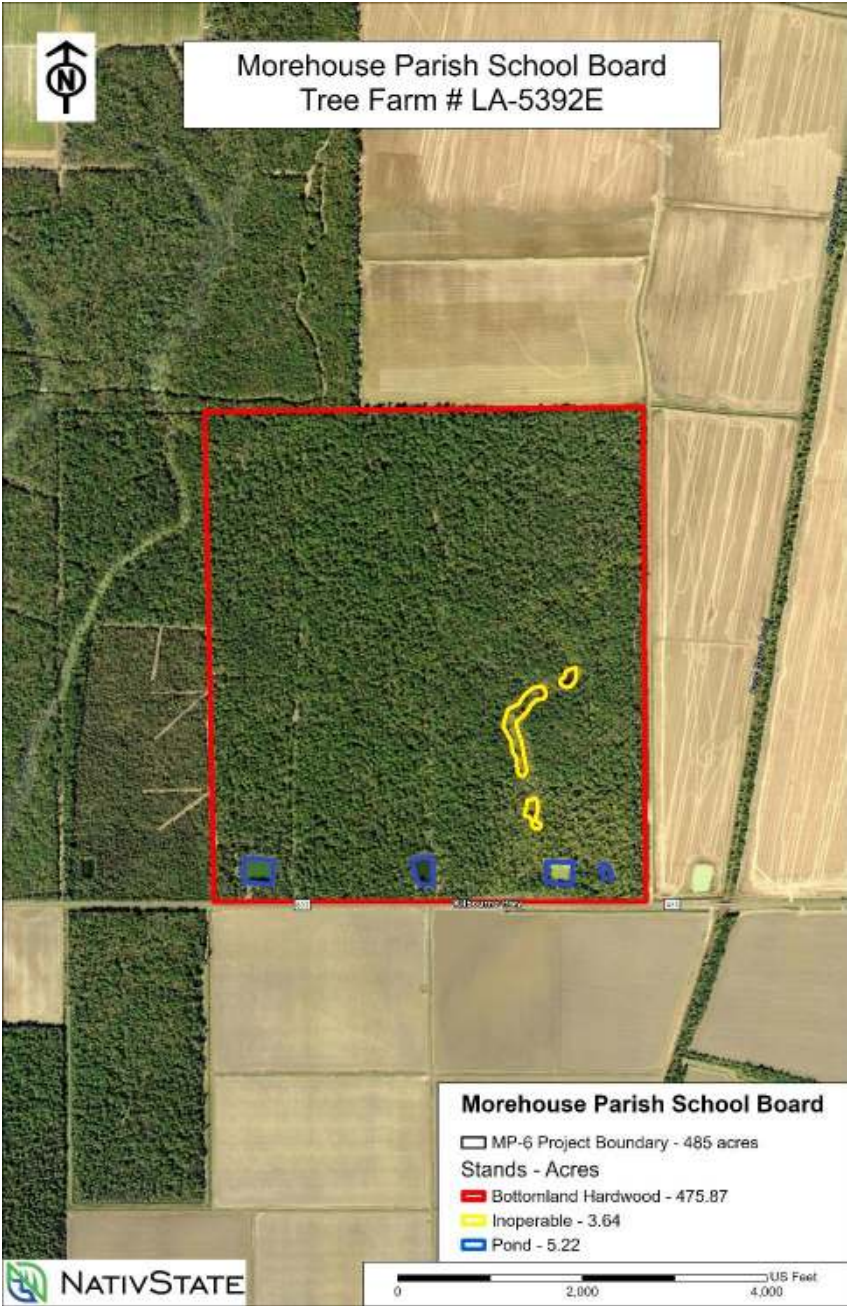
Aerial Map



Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

This stand has not been thinned in quite some time due to low, heavy soils that are of poor quality, which equates to low nutrients and site index and difficult harvesting conditions.

The forested acreage of this stand mainly consists of mixed oak, hickory, elm species, ash, red maple, hackberry and persimmon. Primary species across the entire stand consist of nuttall oak, willow oak, overcup oak, a variety of hickory species, various elm species and persimmon. The understory is comprised mainly of very dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto.

Acres in stand: 475.9

Average Basal Area per acre: 101.8 ft² (Merch Basal Area: 78.9 ft²)

Average DBH: 6.8" (Avg. Merch DBH: 13.2")

Average trees per acre: 399.6 (Avg. Merch trees per acre: 82.6)

Desired Conditions

Improve overall condition of merchantable trees by removing most of the less desirable and competing species (ash, elm species, hackberry and red maple) and favoring the oak, hickory and persimmon as well as other mast producing species. The residual basal area should be approximately 60-65 sq. ft. after the TSI (timber stand improvement) and commercial thinning treatments.

Recommendations:

- 1 Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 5" DBH and under. Remove such species as hackberry, ash, red maple and elm species. Residual tract basal area should be between 80 – 90 sq. ft.
- 2 Perform a commercial thinning across the stand that removes only hardwood species (including oaks) that are between 13" – 18" DBH. Also remove any that are showing signs of heart rot regardless of diameter. The residual merchantable basal area should be no lower than 60 sq. ft. It is recommended to thin half of the total acreage per year over a two-year period during the summer and fall months. This will minimize soil compaction in the stand and damage to internal woods roads. Due to the carbon program harvesting constraints, no more than 1,434 tons (+/-53 loads) can be thinned off the target acreage (+/-238). Although the initial thinning should be done in 2024, it will have to be delayed until 2029, again due to carbon program constraints.
- 3 Routinely monitor stand for signs of beavers; eradicate and restore water flow if necessary.
- 4 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 5 Routinely monitor stand for signs of wild hogs and eradicate if necessary.

- 6 Routinely monitor stand for non-native/invasive vegetation; eradicate as necessary.

Stand 2 – Inoperable

Current Stand Conditions

The acreage of this stand mainly consists of sloughs and low areas that consistently hold water year-round. Due to the continuous flooded condition of these areas, they have very little to scattered timber growing in them. The timber that may be present will never be able to be commercially harvested due to the extremely wet conditions of the stand. Primary vegetation species are a variety of water grasses and herbaceous plants.

Acres in stand: 3.6
Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)
Average DBH: 0.0" (Avg. Merch DBH: 0.0")
Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract, especially waterfowl.

Recommendations:

- 1 Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
- 2 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 3 Routinely monitor stand for signs of wild hogs and eradicate if necessary.
- 4 Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary with herbicides that are approved for aquatic use.

Stand 3 – Ponds

Current Stand Conditions

The acreage of this stand consists of four borrow pits that were created to aid the construction of Kilbourne Highway and have filled with water to become ponds. The only timber in this stand is scattered along the very edges of the ponds and will never be harvested.

Acres in stand: 5.2

Average Basal Area: 0.0 ft² (Merch Basal Area: 0.0 ft²)

Average DBH: 0.0" (Avg. Merch DBH: 0.0")

Average trees per acre: 0.0 (Avg. Merch trees per acre: 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow areas for foraging and thus provide recreational hunting opportunities.

Recommendations:

1. Routinely check stand for signs of beavers with bank dens and eradicate if necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>

Recommendations:

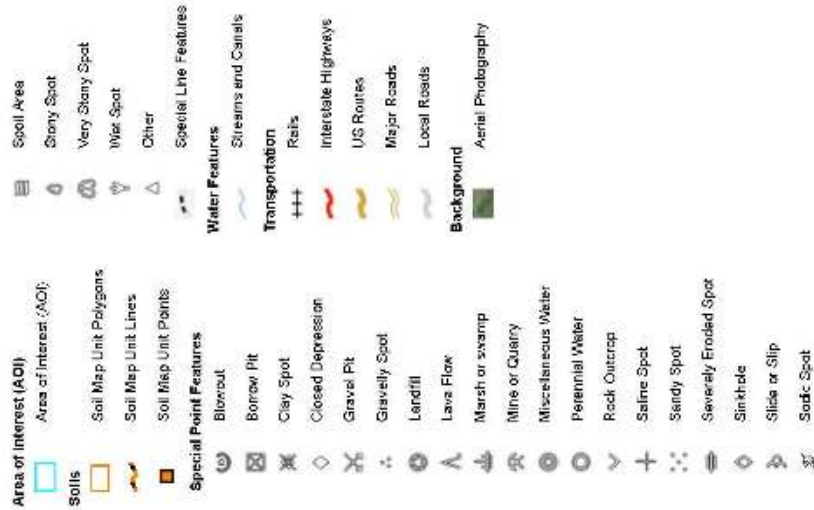
- 1 BMP compliance shall be part of the timber sale agreement and fire lane contracts.
- 2 BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
- 3 Harvest operations should only be during dry months.
- 4 Protect and manage vegetation in areas around the SMZs.
- 5 Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
- 6 Review NativState contract for BMP requirements.



Soil Map – TF #LA-5392E



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—Nov 17, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Pc	Perry clay, 0 to 1 percent slopes	446.1	92.2%
Po	Portland clay	34.6	7.2%
W	Water	3.0	0.6%
Totals for Area of Interest		483.7	100.0%

Forest Productivity – TF #LA5392E

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF#
LA-5392E

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber <i>Cu ft/ac/yr</i>	
Pc—Perry clay, 0 to 1 percent slopes				
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Po—Portland clay			<i>Cu ft/ac/yr</i>	
Portland	Eastern cottonwood	100	129.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	
W—Water				
Water	—	—	—	—

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana
Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle, Chimney Swift, Kentucky Warbler, Little Blue Heron, Red-headed Woodpecker and Wood Thrush. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>

This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.



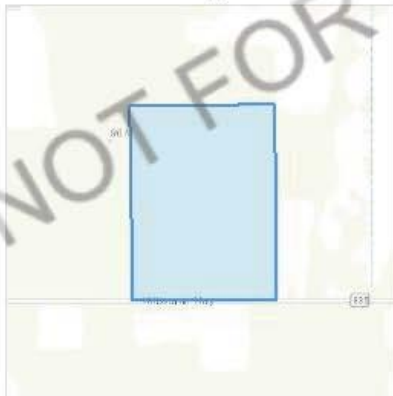
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/30/24, 4:39 P.M.

IPaC: Explore Location resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://ipac.ecosplines.us/gov/location/1HHDEL6AIVAXNH6YFADAPYZINTQ/resources#websites>

2/15

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. **NOAA Fisheries**, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus*

Candidate

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9743>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week

12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

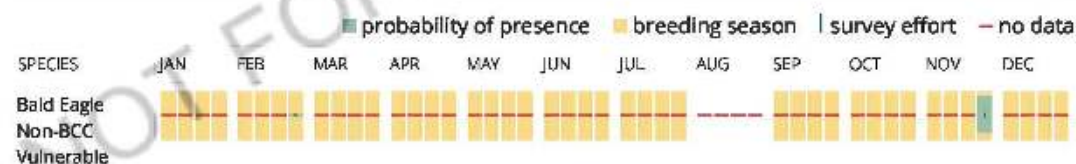
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Little Blue Heron <i>Egretta caerulea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.	Breeds Mar 10 to Oct 15
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Wood Thrush *Hylocichla mustelina*

Breeds May 10 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (●)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (!)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

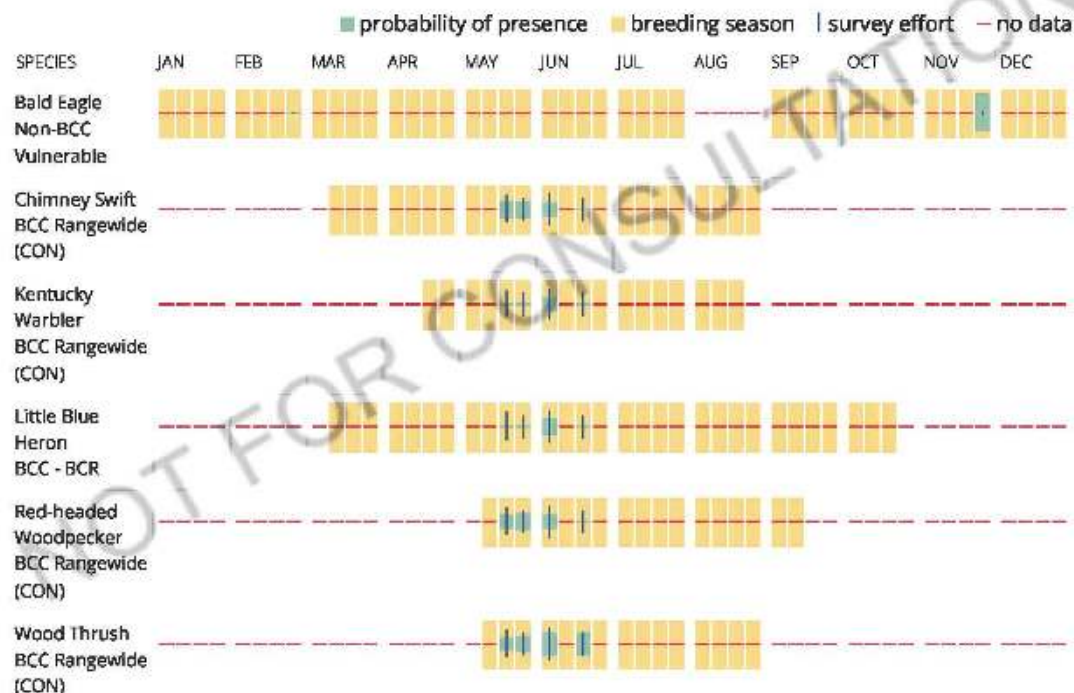
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the [Probability of Presence Summary](#). [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.



Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.



Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of Image Interpretation depends on the quality of the imagery, the experience of the Image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source Imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the Imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercled worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392E

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	475.9	TSI – non-mast producing/non-native species 5” dbh and under.	2025	
1	475.9	Commercial thinning on +/- 238 acres of the stand removing no more than 1,434 tons	2029, 2030	
1,2,3	485.0	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1 & 2	479.5	Monitor stand for non-native/invasive species	Continually	
1 & 2	479.5	Check culverts and low water crossings	Continually	
1,2,3	485.0	Paint property lines	2025, 2032	
1 & 2	479.5	Monitor stand for presence of wild hogs & respond accordingly	Continually	
1 & 2	479.5	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	

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TREE FARM # LA-5392F RESOURCE ELEMENTS

Property Information

Total Acres: 441.0
Forested Acres: 428.9
Legal Description: Section 16; Township 21 North; Range 7 East;
Morehouse Parish, LA.

Access: Access from the east off Louis White Road (go north on private road then turn left going west across private landowner into subject property), also access from the west off Highway 165 (go southeast along Delemar Bayou across private landowner into subject property)

Latitude: 32.809930°
Longitude: -91.754529°

Watershed 12-digit HUC ID: 080500011101
Watershed Name: Upper Bayou Galion

Property Description Narrative

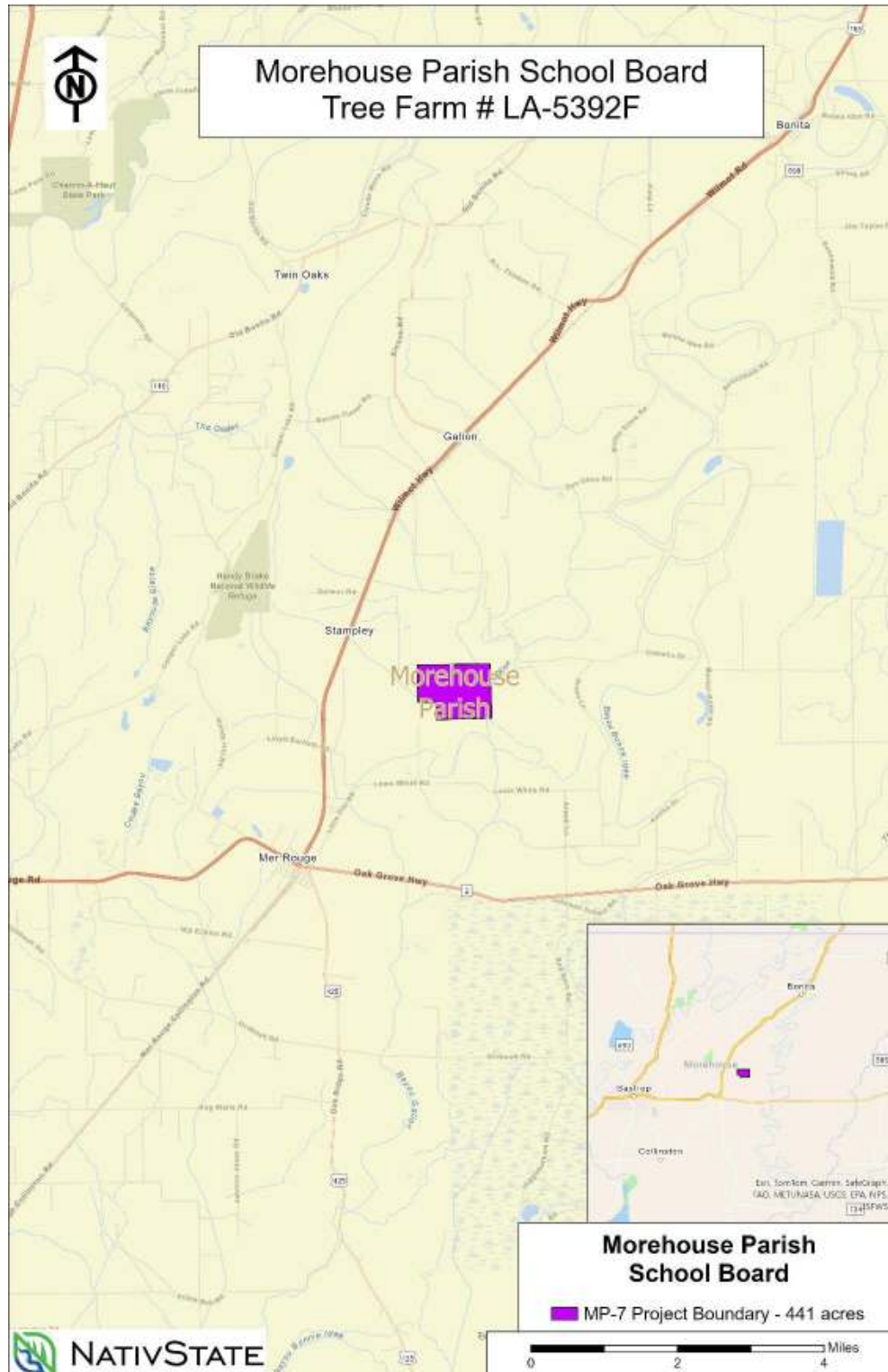
This property, Morehouse Parish School Board, is approximately 441.0 acres and is in Morehouse Parish, northeast of the town of Mer Rouge, LA. The property is in the Mississippi River Alluvial Plain physiographic region of Louisiana, and the major land use in the surrounding area is agricultural production.

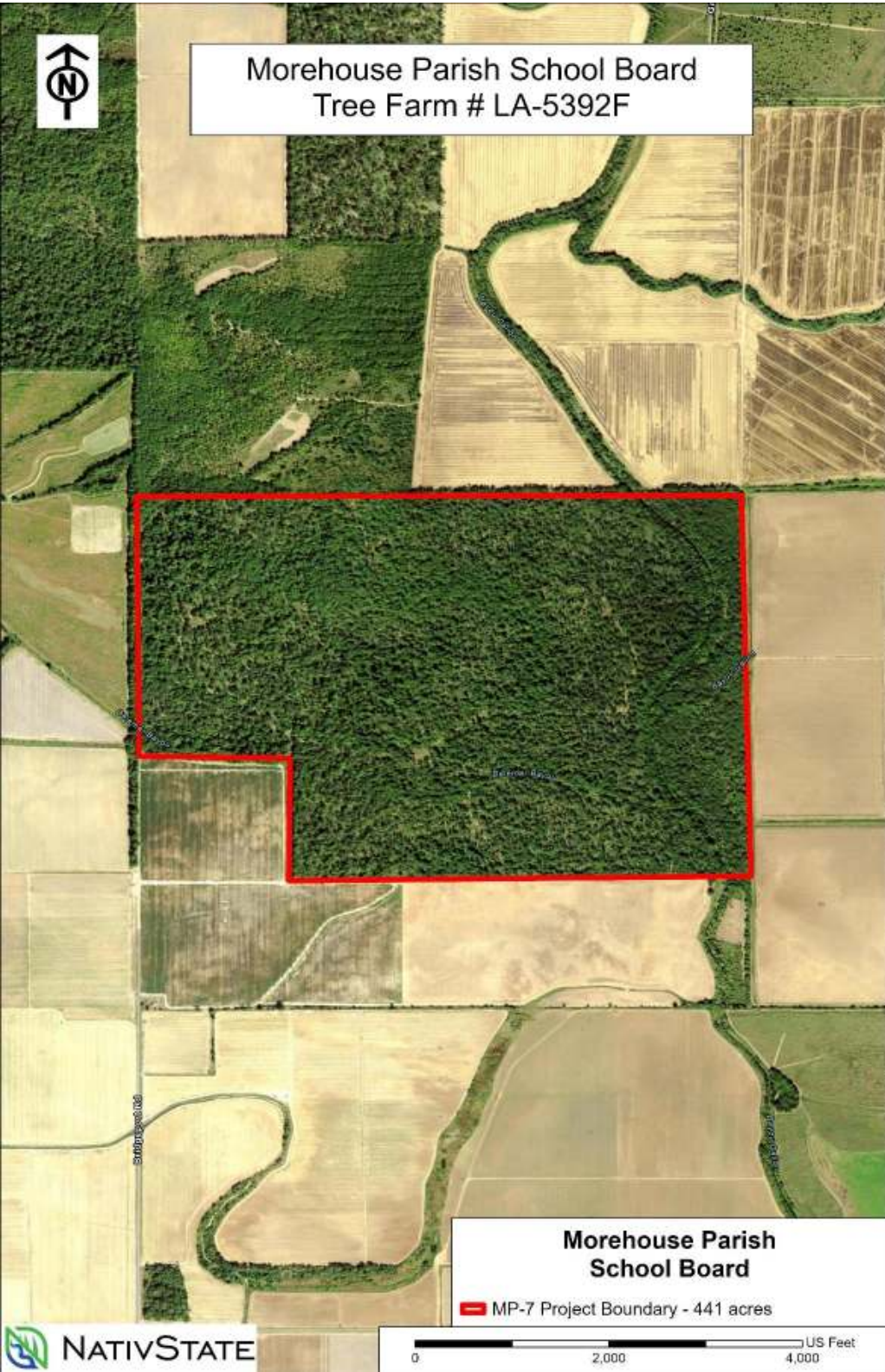
The tract consists primarily of mixed oak, hickory, hackberry, ash, persimmon and elm forests with the most common species being cherrybark oak, nuttall oak, water oak, overcup oak, willow oak, hickory, elm species, hackberry, persimmon and ash. The topography of the tract is uniform and flat, with an elevation of approximately 85 - 90 ft above sea level.

Boundary lines were either nonexistent or not very well established at the time of inspection. The entire tract boundary should be painted according to the Louisiana posting statute in the future. With any practice implemented on the property, all laws, regulations, and ordinances should be followed. The landowner should seek qualified natural resource professionals and qualified contractors to complete the practices being implemented, and appropriate records and contracts should be retained to demonstrate conformance with the Tree Farm Standards.

Maps

Location Map





Topographic Map



Stand Map



Stand 1 – Bottomland Hardwood

Current Stand Conditions

This stand was thinned heavily approximately 9 years ago. The forested acreage of this stand mainly consists of mixed oak, hickory, ash, various elm species, hackberry, pine pre-merch, red maple, honey locust and persimmon. Primary species across the entire stand consist of cherrybark oak, nuttall oak, water oak, willow oak, overcup oak, swamp chestnut oak, a variety of hickory species, various elm species, hackberry, ash, and persimmon. The understory is comprised mainly of dense areas of pre-merchantable hardwood. There are also some less dense areas of pre-merchantable hardwood with a variety of water grasses, herbaceous plants and scattered palmetto.

Acres in stand: 428.9

Average Basal Area per acre: 94.3 ft² (Merch Basal Area: 70.7 ft²)

Average DBH: 5.6" (Avg. Merch DBH: 12.4")

Average trees per acre: 551.4 (Avg. Merch trees per acre: 84.8)

Desired Conditions

Improve overall condition of merchantable trees by removing the majority of the less desirable premerchantable species (ash, elm species, pine, and hackberry) and favoring the oak, persimmon, hickory and other hard and soft mast producing species. The residual basal area per acre should be approximately 70 - 80 sq. ft. after the TSI (timber stand improvement) treatment. After the TSI is completed, the stand will need time to respond and grow.

Recommendations:

- 1 Perform TSI (timber stand improvement) on small non-oak species using herbicides in a hack and squirt method throughout the entire stand. All non-oak and non-mast bearing trees should be removed if they are 5" DBH and under. All persimmon, oak and hickory trees should be retained as well as any other mast producing trees. Remove such species as hackberry, ash, pine and elm species.
- 2 Routinely monitor stand for signs of beavers and eradicate and restore water flow if necessary.
- 3 Routinely check all culverts and low water crossings for flow capacity and damage. Repair or replace if necessary.
- 4 Routinely monitor stand for signs of wild hogs and eradicate if necessary.
- 5 Routinely monitor stand for non-native/invasive vegetation and eradicate as necessary.

Stand 2 – Bayou Galion

Current Stand Conditions

The acreage of this stand consists of the waters of Bayou Galion. This bayou runs north to south across the eastern portion of the tract. The only timber in this stand is scattered along the very edges of the bayou and will never be harvested.

Acres in stand: 5.9
Average Basal Area: 0.0 ft² (**Merch Basal Area:** 0.0 ft²)
Average DBH: 0.0" (**Avg. Merch DBH:** 0.0")
Average trees per acre: 0.0 (**Avg. Merch trees per acre:** 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow, more stagnant areas for foraging. The bayou also provides great recreational opportunities for fishing and water sports.

Recommendations:

- 1 Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Stand 3 – Delemar Bayou

Current Stand Conditions

The acreage of this stand consists of the waters of Delemar Bayou. This bayou runs from west to east across the southern portion of the tract and empties into Bayou Galion. The only timber in this stand is scattered along the very edges of the bayou and will never be harvested.

Acres in stand: 6.4
Average Basal Area: 0.0 ft² (**Merch Basal Area:** 0.0 ft²)
Average DBH: 0.0" (**Avg. Merch DBH:** 0.0")
Average trees per acre: 0.0 (**Avg. Merch trees per acre:** 0.0)

Desired Conditions

This stand is best left in its current state. It does have some benefit to the wildlife population on the tract as a drinking source. Waterfowl may use some of the shallow, more stagnant areas for foraging. The bayou also provides great recreational opportunities for fishing and water sports.

Recommendations:

- 1 Routinely check stand for signs of beavers with bank dens and eradicate and restore water flow if necessary.

Soil and Water Resource Element

Louisiana is fortunate to have vast, healthy, diverse, and productive forests. These forests are a tremendous asset to our environment and economy, providing wood products, recreation, and wildlife habitat. Forest processes maintain clean water. Sound management of forests is compatible with these values. Silvicultural practices can cause soil to move into streams.

Best Management Practices (BMPs) are an effective way to protect forest water quality. Forestry BMPs are important practices, which prevent or reduce the amount of erosion generated by silviculture. BMPs include structural and nonstructural controls, operations, and maintenance procedures that can be applied before, during, and after silvicultural activities.

Implementation of Louisiana's forestry BMPs is voluntary but are required by the American Tree Farm system and NativState. The Louisiana Office of Forestry adopted these BMPs in response to the Clean Water Act of 1977 and the Water Quality Act of 1987. The goals of these federal laws are to protect and improve the quality of America's water.



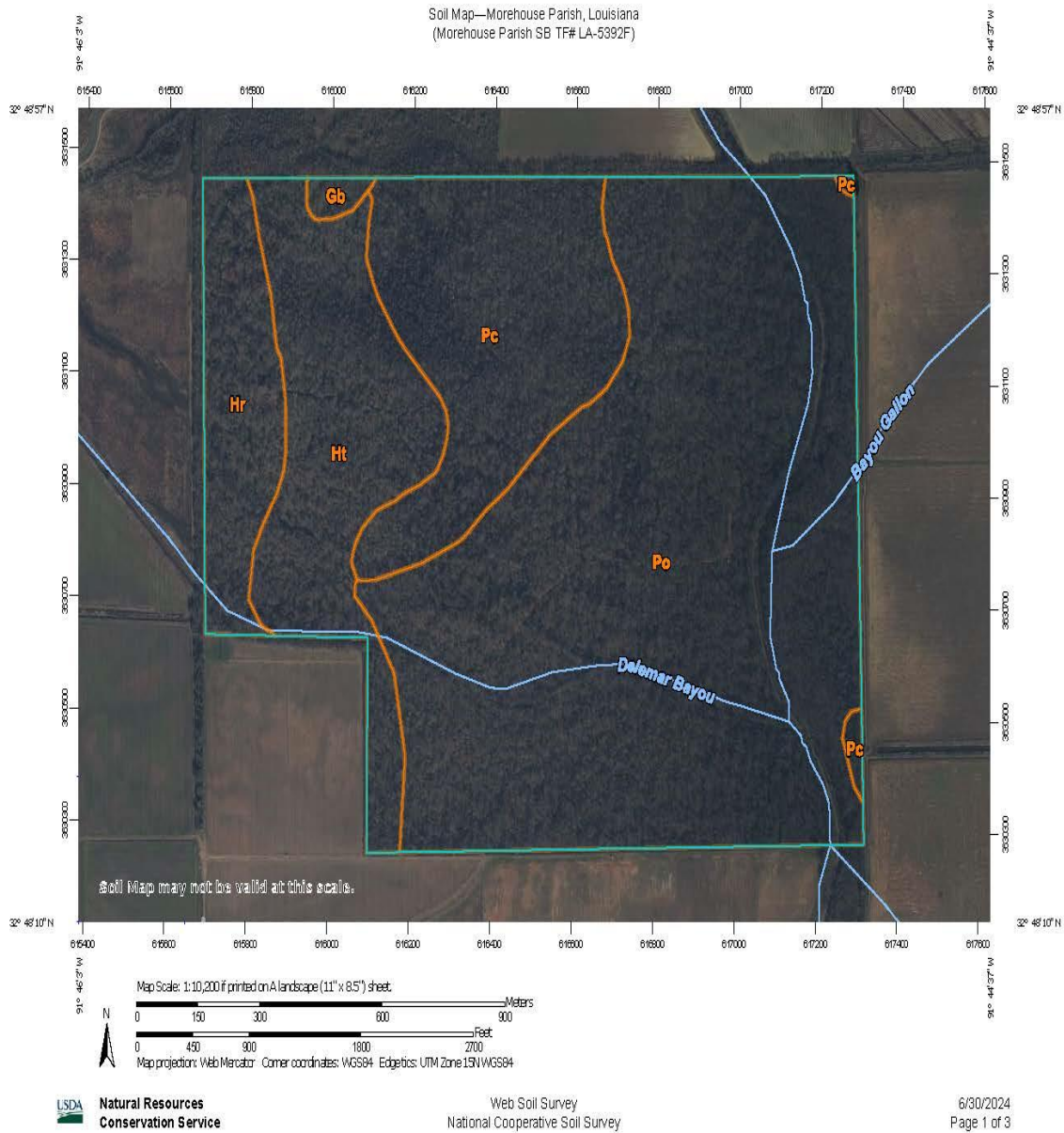
Soil fertility is of major importance in forest silvicultural practices. Just as fertile soil is needed to produce high quality agricultural commodities, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the "Site Index." Site index (SI) is the measure of height, in feet, for a tree species on a particular soil over a 25 or 50-year period. It is important to understand the nature of your tract's soils and to avoid heavy equipment use on certain soil types during wet conditions. Information on local soils, soils maps, and accompanying data can be found on the NRCS website: <http://soils.usda.gov/>



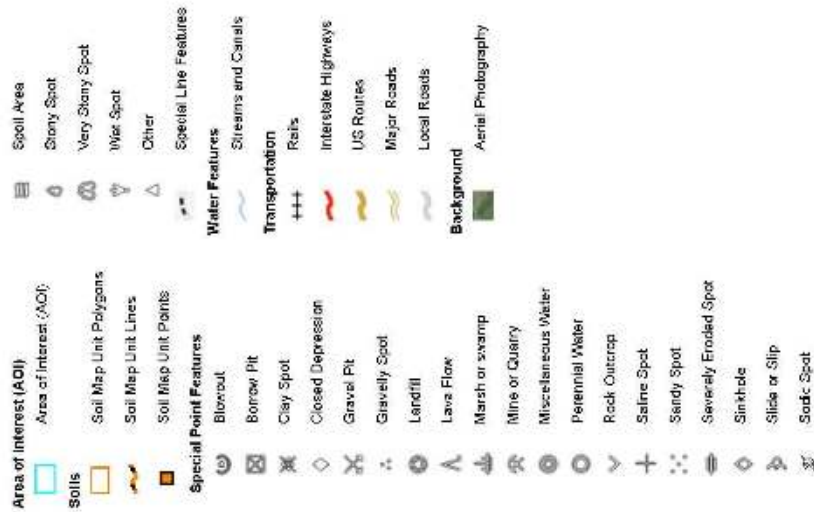
Recommendations:

- 1 BMP compliance shall be part of the timber sale agreement and fire lane contracts.
- 2 BMPs shall be installed on all roads, main skid trails, log sets and fire breaks.
- 3 Harvest operations should only be during dry months.
- 4 Protect and manage vegetation in areas around the SMZs.
- 5 Louisiana BMP guidelines can be found at this link:
https://www.laforestry.com/files/ugd/b18d24_24a21f91efd641f691a70f6201a09671.pdf
- 6 Review NativState contract for BMP requirements.

Soil Map – TF #LA-5392F



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.
 Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: websoilsurvey.sc.egov.usda.gov
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morehouse Parish, Louisiana
 Survey Area Data: Version 17, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 20, 2020—May 31, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Gb	Gallion silty clay loam	2.4	0.5%
Hr	Hebert silt loam, 0 to 1 percent slopes	32.0	7.3%
Ht	Hebert silty clay loam, 0 to 1 percent slopes	66.1	15.0%
Pc	Perry clay, 0 to 1 percent slopes	75.7	17.2%
Po	Portland clay	264.0	60.0%
Totals for Area of Interest		440.2	100.0%

Forest Productivity – TF #LA-5392F

Forestland Productivity—Morehouse Parish, Louisiana

Morehouse Parish SB TF# LA-5392F

Forestland Productivity

This table is designed to assist forestland owners or managers in planning the use of soils for wood crops. It provides the potential productivity of the soils for wood crops.

Potential productivity of merchantable or common trees on a soil is expressed as a site index and as a volume growth rate number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. *Common trees* are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *Base Age* is the age of trees in years on which the site index is based. "TA" indicates total age. "BH" indicates breast height age. "N/A" indicates that base age is not applicable.

The *Site Index Curve Number* is listed in the National Register of Site Index Curves. It identifies the site index curve used to determine the site index.

The *Volume Growth Rate* is the maximum wood volume annual growth rate likely to be produced by the tree species. This number, expressed as cubic feet per acre per year, is calculated at the age of culmination of the mean annual increment (CMAI). It indicates the maximum volume of wood fiber produced per year in a fully stocked, even-aged, unmanaged stand.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber Cu ft/ac/yr	
Gb—Gallion silty clay loam				
Gallion	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	133.00	
	Eastern cottonwood	100	129.00	
	Green ash	80	49.00	
	Pecan	—	—	
	Sweetgum	83	87.00	
	Water oak	—	—	

Forestland Productivity—Morehouse Parish, Louisiana				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
Hr—Hebert silt loam, 0 to 1 percent slopes			<i>Cu ft/ac/yr</i>	
Hebert	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	133.00	
	Eastern cottonwood	95	114.00	
	Green ash	—	—	
	Nuttall oak	90	86.00	
	Pecan	—	—	
	Sweetgum	90	106.00	
	Water oak	90	86.00	
Ht—Hebert silty clay loam, 0 to 1 percent slopes				
Hebert	American sycamore	—	—	American sycamore, Eastern cottonwood
	Cherrybark oak	95	129.00	
	Eastern cottonwood	95	114.00	
	Green ash	—	—	
	Nuttall oak	90	86.00	
	Pecan	—	—	
	Sweetgum	90	100.00	
	Water oak	90	86.00	
Pc—Perry clay, 0 to 1 percent slopes				
Perry	Green ash	75	41.00	Green ash, Nuttall oak, Sweetgum, Water oak
	Nuttall oak	—	—	
	Pecan	—	—	
	Sweetgum	92	112.00	
	Water hickory	—	—	
	Water oak	—	—	
Po—Portland clay				
Portland	Eastern cottonwood	100	120.00	Eastern cottonwood, Nuttall oak, Sweetgum, Water oak
	Green ash	80	57.00	
	Nuttall oak	90	114.00	
	Sweetgum	90	100.00	
	Water oak	90	86.00	

Data Source Information

Soil Survey Area: Morehouse Parish, Louisiana

Survey Area Data: Version 17, Sep 12, 2023

Threatened and Endangered Species Resource Element

Threatened and endangered species are those plant and animal species that are reduced in numbers, making extinction a high probability. The disappearance of these species would be a biological, cultural and in some cases an economic loss to the nation.

A review has been made using the United States Fish & Wildlife Service's IPaC (Information for Planning and Consultation) database. The following list of species has been identified as potentially affected by activities at the subject property location:

- Northern Long-eared Bat <https://ecos.fws.gov/ecp/species/9045>
- Tricolored Bat <https://ecos.fws.gov/ecp/species/10515>
- Alligator Snapping Turtle <https://ecos.fws.gov/ecp/species/4658>
- Monarch Butterfly <https://ecos.fws.gov/ecp/species/9743>
- Red-cockaded Woodpecker <https://ecos.fws.gov/ecp/species/7614>
- Pink Mucket <https://ecos.fws.gov/ecp/species/7829>

However, there are no known occurrences of these species, and no critical habitat has been designated at this property location.

A list of Birds of Conservation Concern (BCC) was also generated, and they are: Bald Eagle, Brown-headed Nuthatch, Henslow's Sparrow, Kentucky Warbler and Red-headed Woodpecker. Again, there are no known occurrences of any of these species at this location. The IPaC resource list that was generated for this property is included below.

If at any time any of the above species are encountered within the project area, please contact Michael Seymour, Wildlife Diversity Program Data Manager, at 225-763-3554 or MSeymour@wlf.la.gov.

The Fish & Wildlife Service also provides a list of species of concern at: <https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=LA&stateName=Louisiana&statusCategory=Listed>



This project location does overlap with known wetlands. Those wetlands are described below in the IPaC resource list. It is recommended that wetlands guidelines be followed when working in and around these wetlands. More wetlands information can be found at <https://www.fws.gov/program/national-wetlands-inventory>.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Morehouse County, Louisiana



Local office

Louisiana Ecological Services Field Office

☎ (337) 291-3100

📠 (337) 291-3139

6/13/24, 10:35 AM

IPAC: Explore Location Resources

200 Dulles Drive
Lafayette, LA 70506

NOT FOR CONSULTATION

<https://pac.cospire.nasa.gov/location/EWU44HTOJRECHLXQG LR6SM3RL4/resources#wetlands>

2/15

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found This species only needs to be considered if the following condition applies: This species only needs to be considered if the project includes wind turbine operations. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7614	Endangered

Reptiles

NAME	STATUS
Alligator Snapping Turtle <i>Macrochelys temminckii</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

Clams

NAME	STATUS
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Pink Mucket (pearlymussel) <i>Lampsilis abrupta</i>	Endangered
Wherever found	
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7829	

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i>	Candidate
Wherever found	
No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act¹ and the Migratory Bird Treaty Act².

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats³, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below.

Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>

- **Nationwide conservation measures for birds**
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- **Supplemental Information for Migratory Birds and Eagles in IPaC**
<https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted

Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (☀)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

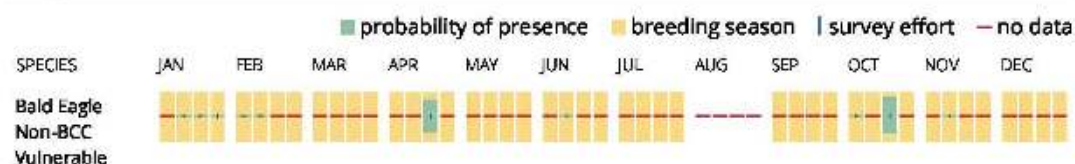
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply). To see a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the [Eagle Act](#) should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats³ should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the ["Supplemental Information on Migratory Birds and Eagles"](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>

- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Brown-headed Nuthatch <i>Sitta pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 1 to Jul 15
Henslow's Sparrow <i>Centronyx henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds elsewhere
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20

Red-headed Woodpecker *Melanerpes erythrocephalus*

Breeds May 10 to Sep 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

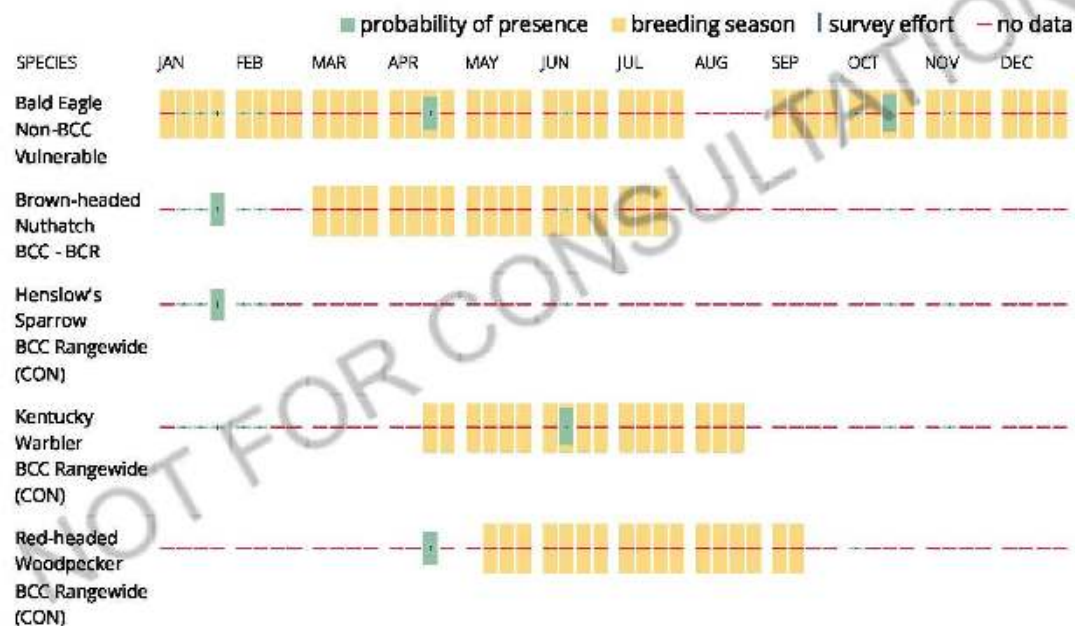
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the [Probability of Presence Summary](#). [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

[PFO1A](#)

[PFO1C](#)

[PFO1E](#)

RIVERINE

[R2UBH](#)

[R5UBFx](#)



[R4SBC](#)[R5UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

MANAGEMENT ACTIVITY SCHEDULING / TRACKING

TREE FARM # LA-5392F

Stand(s)	Unit (Acres/ Feet, etc.)	Treatment Activity Short Description (or reference to description in Plan)	Dates	
			Planned	Completed
1	428.9	TSI – non-mast producing/non-native species 5” dbh and under	2025	
1,2,3	441.0	Monitor for presence of beavers and beaver dams & respond accordingly	Continually	
1	428.9	Monitor stand for non-native/invasive species	Continually	
1	428.9	Check culverts and low water crossings	Continually	
1,2,3	441.0	Paint property lines	2025, 2032	
1	428.9	Monitor stand for presence of wild hogs & respond accordingly	Continually	
1	428.9	Spray woods road edges to keep roads daylighted and to promote native herbaceous weed growth for wildlife	2024, 2028, 2032	

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SHARED ADDITIONAL RESOURCE ELEMENTS

Forest Health and Invasive Species Resource Element

A healthy forest is a forest that possesses the ability to sustain the unique species composition and processes that exist within it. Active management of the forest helps to maintain and improve its productive capacity, considering all the factors that influence the resource elements addressed in the Tree Farm Plan. Silviculture harvest practices and the use of prescribed fire as a tool can reduce risk from wildfire, pests and invasive species, and ensure long-term forest health and vigor. Forest health protection issues are often directly related to the active management of insects and diseases, invasive plants, and wildfire. Yearly inspections for signs of insects, diseases, or invasive plant infestations should be completed by the landowner.

Recommendations:

1. Timber stand improvement when needed to reduce stocking or remove undesirable trees species.
2. Commercial thinning of merchantable size trees when needed to reduce overstocking and remove diseased or suppressed trees.
3. Be mindful of the length of time that hardwood stands are flooded for recreational use. Long periods of flooding are detrimental to timber stands.
4. Monitor for presence of beavers and remove with appropriate methods including dams.
5. Monitor for presence of wild hogs and remove them with appropriate methods.
6. Monitor for and address invasive species (such as privet or Japanese climbing fern) with appropriate remediation methods.

Archaeological, Cultural or Historical Sites Resource Elements

Cultural resources refer to landscapes, structures, archeological artifacts, and vegetation that represent a culture or society of historic value. Federal and state laws protect archeological, cultural, and historic sites from disturbances, destruction, or removal. Landowners should be made aware of laws pertaining to archeological, cultural, and historic sites in their state. Louisiana's historic places are a rich heritage of our cultural identity and human experience. They tell the story of those that lived throughout the state and provide evidence of historical events that reflect people's everyday life and accomplishments. This evidence includes buildings, landscapes, archeological sites, structures, and objects that teach future generations of Louisiana's past to help them understand how we got where we are today.

Cultural sites are those directly linked to a community's or groups historical identity like an Indian burial ground. Many of these sites are not easily visible to the untrained eye so careful observation of your property should be done before any major disturbances such as harvesting is done to ensure the preservation of such sites. Old homesteads, unusual rock formations, old cemeteries etc. are all examples of historical, cultural, and archeological sites that need to be preserved.

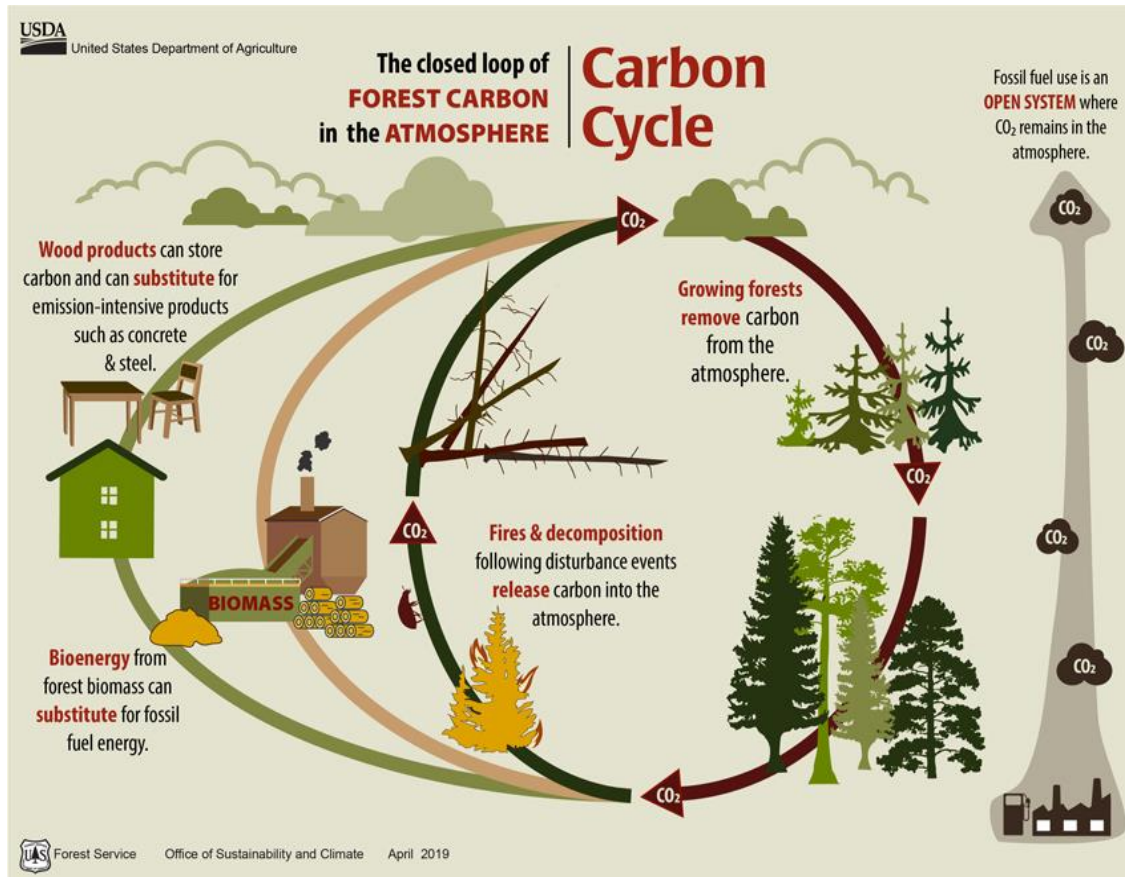
No cultural or archaeological features were noted during the field work or when referencing the National Park Service National Registry of Historic Places. Should some significant archaeological, cultural, or historical resources be discovered, you should report findings and arrange a file inspection with:



Louisiana Office of Cultural Development
Division of Archaeology
1051 N. 3rd Street, Room 316
P.O. Box 44247
Baton Rouge, LA 70804
Phone: (225) 342-8200
Fax: (225) 342-4480

Website: <https://www.crt.state.la.us/cultural-development/archaeology/CRM/index>

Carbon Sequestration Resource Element



Climate change impacts to forests will be increasingly direct, through changing temperature, precipitation, and severe weather conditions, as well as indirect, through more intense stress, shifting disturbance patterns, and effects on pests and diseases. Maintaining healthy, resilient forests over time will require a clear appraisal of the risks and opportunities presented by climate change, including consideration of how local site conditions and management history might make a particular property more or less vulnerable to climate change impacts. Tools and resources are available to help foresters and landowners consider climate change information and develop management recommendations that will help adapt or prepare forests for expected changes.

Ensuring that forests can adapt to climate change will also help ensure that forests continue to remove greenhouse gases from our atmosphere. Forests play a vital role in the earth's carbon cycle, as they remove carbon from the atmosphere and store it in biomass (trunks, branches, foliage, and roots) and soils. Sustainable forestry practices can increase the ability of forests to sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality. Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth.

More information and tools on climate change adaptation and carbon management can be found on the following websites:

www.fs.usda.gov/ccrc/
www.forestadaptation.org
www.adaptationworkbook.org
<http://climatehubs.oce.usda.gov/>
<http://www.southernforests.org/services/carbon-sequestration-faqs>



Recommendations:

1. Maintain healthy forest conditions by not allowing trees to become suppressed in growth.
2. Monitor for signs of tree mortality or crown decline.

Carbon Program Requirements for NativState – Louisiana

Deferred Harvest Election

For Landowners that have elected to pursue the deferred harvest model from NativState, the following program elements should be considered:

- No commercial harvest of forest products for the life of the agreement.
- Incidental cutting of individual trees is permitted for small food plots, firewood, or other personal use, not to exceed 2.5% of the total acreage in the program.
- All traditional silvicultural practices are acceptable (e.g., prescribed fire, TSI).
- Trees lost to insects, wind or ice damage, fire, or other natural causes may be harvested as salvage.
- Please contact NativState with questions regarding any harvest or timber management issues.

Select Harvest Election

For landowners that have elected to pursue the selective harvest model from NativState, the following program reminders should apply:

- No harvest within the first five years of the program.
- The total allowable harvest cannot exceed 1.5% of the initial forest inventory (tons) of merchantable timber per year, for the length of the agreement. For example, after 10 years, a total of 15% of the initial merchantable tons may be harvested.
- Allowable harvest tonnage may be removed by single tree selection, group tree selection, or patch clearcut, so long as the total tons harvested is not exceeded.
- All traditional silvicultural practices are acceptable, (e.g., prescribed fire, site preparation, planting, TSI).
- Prior to any harvest operation, please contact NativState to review the harvest plan.
- NativState should receive copies of any scale tickets or load summary for any harvest activity within the program.
- Harvest operations should follow the state BMP guidelines, as mentioned within this plan.

Nothing within the carbon agreement prohibits the landowner from taking advantage of certain popular conservation programs, such as EQIP and CSP, now or in the future. However, some conservation easements or long-term agreements (WRE or CRP) may require special attention or possibly be excluded for a carbon program. Be sure to notify NativState in the event you add or delete acres from the original forested acres enrolled in the program.

Periodic future inventories of the timber stocking and composition will be conducted to assess the growth of the forest, any potential forest development issues, and ultimately any removed emission credits that may have accumulated.

Aesthetic Quality and Desired Species Resource Element

The natural beauty of the land is referred to as aesthetics and is closely associated with recreational aspects of land use. Agricultural land, scenic overlooks, and wildlife habitat are examples of aesthetic qualities you may want preserved on your land. Aesthetics contribute to the quality of life that Louisianans have become accustomed to. Since most land is owned by the private landowner it is up to the landowner to conserve these places of beauty for all to see. When working in your woodland, be aware of your woodland's aesthetic value and the desired species. You can improve the appearance of your property by leaving flowering trees or those that are unique or unusual. Also try to leave trees that have good fall color.

Recommendations:

1. Maintain streams, riparian and wetland areas.
2. Maintain different forest habitats.

Fish and Wildlife Resource Element



Fish and other aquatic species depend on healthy water quality and quantity. The forest management choices you make have a direct impact on both. Proactive and positive things landowners can do include establishing streamside management zones, mitigating or preventing sources of sedimentation, and leaving unmown areas around ponds. Landowners that have water bodies present on their property may contact various natural resource professionals to obtain technical assistance on improvement, aquatic maintenance, and fish stocking.

Since one of the primary goals of this landowner is to enhance the wildlife habitat, the habitat requirements for these species are given below. (Adapted from “Master Wildlifer, 2003, and NRCS leaflet #11, Nov. 1999). Development of good deer and turkey habitat will also be beneficial to other game and non-game species.

White-tailed deer – Habitat requirements – White-tailed deer are extremely adaptable animals. Their essential requirements include food, cover, and water. Abundant forest land provides suitable cover, except where large acreages are in agricultural production and cover for deer may be limiting. An interspersion of brushland, woodland, and non-forested land creates more diversity in the types and amounts of food and cover present. Ideal habitat resembles a “patchwork quilt” with a variety of cover types interspersed randomly across a property.

The transition zone between two cover types is often referred to as an “edge.” Deer as well as other wildlife species utilize such areas heavily. Many timber harvesting operations today create an “edge effect” and add diversity to a habitat. White-tailed deer have a large and varied diet and eat practically all plant species at one time or another. Leaves, bark, and herbaceous material such as grasses, weeds, and soft stemmed plants have been found to be important in their diets. Acorns and other nuts, fruits, mushrooms, algae, and mosses are also heavily utilized when available. White-tailed deer seem to be able to determine which foods or plants are most nourishing. Foods eaten readily in one area may not be taken in another due to differences in soil types, succulence, deer numbers, and other factors.

Land management practices exert a direct influence upon the value of an area for deer habitat. Habitat manipulation through timber harvest, controlled burning, and wildlife plantings have been shown to be important in providing a proper combination of food and cover necessary to maintain healthy deer populations. Food plots can provide a proper combination necessary to maintain healthy deer populations. Deer habitat is nearly always a by-product of forest management or some other land use.

Deer readily use plants growing in natural or developed forest openings. These openings can compensate for yearly and seasonal fluctuations in food supplies, especially mast. They are less important, however, if the habitat is enhanced through coordinated and sustained timber cutting for deer.

Retain natural openings in timber stands. Forest openings of 1 to 3 acres per 100 acres should be developed in pine or mixed pine-hardwood types. These openings should be irregularly shaped, preferably linear, and strategically located throughout an area to provide maximum diversity and edge. Openings should not be adjacent to major roads or other access routes. Unused logging roads, skid trails, and other trails can be “opened up” and seeded to provide additional supplemental food.

A diversity in the management of wildlife openings is desirable. Rotation of the following alternative should be practiced:

1. Allow some openings to grow in native vegetation and maintain these in an early stage of plant succession by annual disking, or prescribed burning on a 2-3-year rotation.
2. Plant some openings in annual crops such as corn, soybeans, cowpeas or one of the grain sorghums.
3. Plant some openings in wheat, oats, or rye for winter grazing.
4. Plant some openings in perennials such as red or white clover and maintain these by late summer mowing and periodic fertilization.

Waterfowl – Waterfowl, where applicable, are a part of a diverse group of waterbirds. Most of the time, waterfowl will seek out habitats such as lakes, ponds, marshes, rivers, flooded agricultural fields, and flooded forests during their migrations. Different species will favor more specific habitat requirements. Usually, waterfowl will differ depending on water volume preferences, see diagram below. Waterfowl will consume a variety of food sources such as, but not limited to, marsh and forest invertebrates, row crops, moist-soil seeds, and acorns.

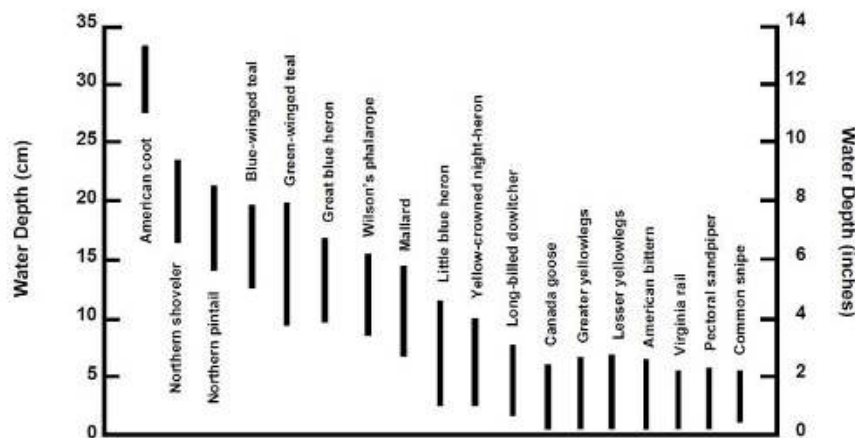


Fig. 2. Preferred water depths for wetland birds commonly associated with moist-soil habitats.

For fall and spring waterbird migration according to the Wetland Management for Waterfowl Handbook of 2001, there are six flood seasons. For the early flood fall migration, species present may include blue-winged teal, pintail, rails, and shorebirds from August to early November. Normal flood species may include widgeon, gadwall, green-winged teal, snipe, white geese, small Canada geese in November. The reserve flood species presence may include mallards and large Canada geese from late November to early January. For the spring migration early drawdown, species present may include mallards, pintail, and geese in March. Mid drawdown species may include teal, shoveler, shorebirds, rails, arriving herons, early waterfowl broods from April to late May. The late drawdown species may present waterfowl broods, resident and young herons, rail broods, and breeding shorebirds from late May to early June. See the diagram for possible invertebrates during these flood seasons from the Techniques for Wildlife Investigations and Management textbook of 2005.

Moist Soil Units, or seasonally flooded impoundments are areas where flooding is controlled to encourage native vegetation and discourage undesirable vegetation. Green tree reservoirs are typically bottomland hardwood stands that can be artificially flooded to allow dabbling ducks to feed on the mast crop. Both areas are beneficial to waterfowl but require careful planning and management to maximize the benefit to waterfowl.

A very beneficial resource for waterfowl management is “Wetland Management for Waterfowl, A Handbook” published by Mississippi River Trust, NRCS, and U.S. Fish and Wildlife Service.

Wild Turkey – Habitat Requirements – In general, the wild turkey requires many factors that a deer or quail may require, but it also requires some specific needs of the land that the other species do not. The absence of these factors can be the difference between having or not having turkeys. Wild turkeys are flocking animals and spend most of the year in close association with other turkeys. The key is providing enough habitat to support a flock on a year-round basis.

Suitable turkey habitat includes scattering of mature, mast-producing hardwoods consisting of mainly oaks with smaller hardwoods establishing to replace those over-mature trees. Also needed is a mixture of understory plants, like dogwood and wild cherry, which provide food and cover. Turkeys make good use of green plants and seed heads found in pastures, fields, roadsides, and elsewhere. These areas also provide the insects needed by poults to obtain the high quantity of protein necessary for their first few weeks of growth. Turkeys need water daily and must have easy access to permanent water sources. In good quality turkey habitat, the area will support one bird per 30 acres or one flock per 640-800 acres.

Table 6. Invertebrates associated with different flooding regimes in seasonally flooded impoundments.

Flooding regime	Invertebrates
Late drawdown	Mosquitoes
	Pond snail
	Water boatmen
	Chironomids
Early drawdown	Mosquitoes
	Pond snail
	Water boatman
Autumn–winter	Mosquitoes
	Water boatman
	Chironomids
Long vernal flooding	Fairy shrimp
	Mosquitoes
	Water boatman
Short vernal flooding	Fairy shrimp
	Mosquitoes

Some principal wild foods of turkeys include acorns, fruits of dogwoods, grape, black gum, wild cherry, blackberry, huckleberry, seed heads from grasses, sedges, ferns, greenbrier, beggar's ticks, and honeysuckle. Acorns are the most important, because they are available during the fall and winter when most other foods are scarce. Acorns are very nourishing and provide the high-energy content needed by turkeys to brave periods of extreme cold.

Young poults, especially during the first 2 weeks of life, require a high protein diet. This protein is largely fulfilled by insects. Grasshoppers, crickets, stink bugs, beetles, flies, wasps, ants, moths, millipedes, snails, and spiders include the bulk of what is consumed. In addition, grit is an important material needed in the gizzard to aid in grinding the food to a digestible stage.

Wild turkeys respond well to food plots. Chufa makes an excellent supplementary winter food source. Several clovers, as well as wheat, ryegrass, oats, soybeans, cowpeas, and vetch make excellent plantings.

Wild Turkey – Predator Control – Much work has gone into improving wild turkey populations, and many times a reasonable conclusion would be to eliminate or drastically reduce the number of predators, therefore allowing a population to flourish. However, this theory has not been supported by research. The following article by Dr. Kennamer, with the National Wild Turkey Federation, explains the role of predator control:

In nature, relationships revolve around one animal eating another animal. The food web begins with microscopic plants, extends through the various levels of animal, and results in predator-prey relationships.

Predators are opportunistic feeders that are looking for the easiest meal. They usually target specific species but aren't picky and will eat creatures outside of their norm. Prey species must produce many more offspring than will survive to offset the multitude of predators that used them for food.

Wild turkeys eat insects and other small animals, so they are predators, in a sense, but they become the prey of other birds, reptiles or mammals. Wild turkey eggs and poults are threatened by several predator species including:

Snakes	Rodents	Foxes
Skunks	Dogs	Cougars
Crows and ravens	Coyotes	Eagles
Opossums	Hawks	
Raccoons	Owls	

Controlling predator populations is a controversial issue and there are situations where it may have a place, however making an impact on predator population is expensive and labor intensive. Not to mention, removing predators from a habitat completely can off-set the balance of the ecosystem. Therefore, to increase the population of threatened species, biologists and conservationists turn to habitat management for a bigger impact and more results.

Habitat quality is an important part of how a species survives pressure from predators. Early successional plant stages, or those that follow a habitat disturbance and need full sunlight, provide shelter for small mammals, including rats and mice. Those habitats, full of plant

diversity, can mean life or death for wild turkeys. If vegetation is sparse hens and poults are vulnerable to predators. If suitable habitat with good cover is available to the brood group, poults have a better chance of living.

What we have learned:

- How we manage plant communities is critical to wildlife populations.
- Habitat quality and its distribution are more important than the number of predators.
- Man's activities can help maintain herd numbers below what the habitat can sustain.
- Conservation efforts must ensure population and plant communities remain healthy.

Ultimately, the long-term solution to wild turkey populations is not dependent on predator control, but on man's activities and good habitat management. — James Earl Kennamer, Ph. D.

Food Plots

Small (less than 1 acre) areas located or created on the property can be converted into wildlife food plots. Recommendations would be to maintain these food plots with minimal soil disturbance to avoid erosion. Light disking and broadcasting or no-till drilling of seed would be preferred. Maintain a mix of fall plantings – clover, wheat, or oats along with turnips or daikon radishes. The location of these plots can vary, but is recommended on the highest ground possible, to allow adequate drying prior to planting. Individual plot size can range from ¼ acre to 2 acres, if feasible. Remember, long narrow food plots offer more edge than a square or round opening. Width should not be less than about 75-100 feet wide to allow adequate sunlight during the growing season. The following charts give some suggestions for warm and cool season food plot plantings, their rates, and recommended varieties.

Common Warm Season Food Plot plantings (MSU Deer Lab)					
Grains					
<i>Species</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Buckwheat	Not shade tolerant	4/15-6/1	40 lbs/ac (drill) 60 lbs/ac (broadcast)	Japanese Silverhull Common Gray	¼ to ½ inch
Corn	Not shade tolerant	3/15-6/1	12 lbs/ac (drill) 15 lbs/ac (broadcast)	Commercial varieties Dwarf Tropical	½ to 1 inch
Grain Sorghum	Not shade tolerant	4/15-6/15	8 lbs/ac (drill) 15 lbs/ac (broadcast)	Kafir Gegair Dwarf Milo	1 inch
Legumes					
<i>Species (inoculant)</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Alyceclover (EL)	Not shade tolerant	5/1-6/15	15 lbs/ac (drill) 20 lbs/ac (broadcast)	N/A	¼ inch
Cowpeas (EL)	Not shade tolerant	5/1-7/1	15 lbs/ac (drill) 45 lbs/ac (broadcast)	Iron Clay Red Ripper Combine	½ to 1 inch
Deer Vetch (EL)	Tolerant	3/15-6/15	15 lbs/ac (drill) 20 lbs/ac (broadcast)	Lee Glenn	1 inch
Forage Soybeans (S)	Not shade tolerant	4/15-6/1	30 lbs/ac (drill) 60 lbs/ac (broadcast)	Tyron Large Ladd Hutchinson	½ inch
LabLab (EL)	Moderate	4/1-6/1	5 lbs/ac (drill) 10 lbs/ac (broadcast)	Rongai Highworth Rio Verde	1 inch
Other					
<i>Species</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Chicory	Not shade tolerant	9/1-10/15	2 lbs/ac (drill) 4 lbs/ac (broadcast)	Choice, Puna.Puna II. Brow Tyne`	¼ to ½ inch

Common Cool Season Food Plot plantings

Grains

<i>Species</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Oats	Not shade tolerant	8/15-10/15	90 lbs/ac (drill) 120 lbs/ac (broadcast)	Buck Forage Arkansas 604 & 833 Buck Magnet Chapman	1 inch
Rye	Not shade tolerant	8/15-10/15	90 lbs/ac (drill) 120 lbs/ac (broadcast)	Elbon Wondergraze Vitagraz	½ to 1 inch
Triticale	Not shade tolerant	8/15-10/15	90 lbs/ac (drill) 120 lbs/ac (broadcast)	Tamcale 5019 Beagle 82 Trical 102 & 336	1 inch
Wheat	Moderate	8/15-10/15	90 lbs/ac (drill) 120 lbs/ac (broadcast)	Commercial forage varieties Longhorn Lockett	1 inch

Legumes

<i>Species (inoculant)</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Alfalfa (A)	Not shade tolerant	9/1-10/15	15 lbs/ac (drill) 20 lbs/ac (broadcast)	Alfagraz Ameristand Bulldog 505	¼ to ½ inch
Arrowleaf clover (O)	Moderate	9/1-10/15	10 lbs/ac (drill) 15 lbs/ac (broadcast)	Meechee Yuchi Apache	¼ inch
Austrian Winter Peas (C)	Not shade tolerant	8/15-10/14	30 lbs/ac (drill) 40 lbs/ac (broadcast)	Granger Fenn Melrose	1 inch
Crimson Clover (R)	Not shade tolerant	8/15-10/15	20 lbs/ac (drill) 30 lbs/ac (broadcast)	Auburn Autauga Dixie	¼ inch
Ladino White Clover (B)	Moderate	9/1-10/15	4 lbs/ac (drill) 5 lbs/ac (broadcast)	Osceola Regal Patriot	½ inch
Red Clover (B)	Moderate	9/1-10/15	8 lbs/ac (drill) 12 lbs/ac (broadcast)	Kenland Redland Max Redland Graze	¼ inch
Subterranean Clover (WR)	Tolerant	8/15-10/15	15 lbs/ac (drill) 20 lbs/ac (broadcast)	Mt. Barker Daliak Clare	¼ inch

Brassica

<i>Species</i>	<i>Shade Tolerance</i>	<i>Planting Dates</i>	<i>Planting rate</i>	<i>Varieties</i>	<i>Planting depth</i>
Rape	Not shade tolerant	9/1-10/15	5 lbs/ac (drill) 8 lbs/ac (broadcast)	Dwarf Essex T-Raptor	¼ to ½ inch
Turnips	Not shade tolerant	9/1-10/15	5 lbs/ac (drill) 8 lbs/ac (broadcast)	Purpletop Appin	¼ to ½ inch

Biological Diversity Resource Element

Biodiversity is the variety of life (including diversity of species, genetic diversity, and diversity of ecosystems) and the processes that support it. Landowners can contribute to the conservation of biodiversity by providing diverse habitats. It is important to select management options that offer the greatest opportunities for promoting wildlife habitats and conserving biodiversity while fulfilling other land ownership objectives. Some of these options include, but are not limited to, the conservation of wildlife habitats and biodiversity by:

1. Managing stand-level habitat features.
2. Promoting aquatic and riparian areas.
3. Managing landscape features.
4. Conserving rare species and communities.
5. Protecting special features and sites.
6. Developing partnerships with natural resource agencies and conservation organizations.

For more information on managing for biological diversity, please refer to the following websites:

<http://www.southernforests.org/>

<http://www.forestfoundation.org/>



Recommendations:

1. Using a Certified Wildlife Biologist is a great resource for creating and improving wildlife habitat.
2. Maintain and manage different healthy forest habitats.
3. Maintain and protect streamside management zones.
4. Maintain current food plots with annual and perennial plantings.

Wetlands Resource Element

Wetlands are areas where the periodic or permanent presence of water controls the characteristics of the environment and associated plants and animals. Wetlands occur in many forms, ranging from extensive, deeply flooded swamp forests to tiny seeps to prairies and forests that are wet for only part of the year. The U.S. Army Corps of Engineers, using the Federal Manual for Declining Jurisdictional Wetlands, determines under which conditions hydrophytic vegetation, hydric soils and wetland hydrology must be on the same site under normal circumstances for an area to be classified as a wetland. Today wetlands cover approximately thirty-two percent of Louisiana's land surface.



The Fish & Wildlife Service provides a Wetlands Mapper, that delineates all currently known wetlands at: <https://www.fws.gov/wetlands/data/mapper.html>.

Wetlands provide many hydrologic, ecological, and biogeochemical functions. They play important roles in maintenance of water reserves and quality, recharge of groundwater, cycling of nutrients, sequestering of carbon, and production of food that supports entire food chains. By supplying pockets of shallow water with an abundance of food, wetlands serve as the major nurseries for many fish, amphibians, invertebrates, and waterfowl. They serve as critical habitat for many unique types of wildlife. In addition, they provide recreational opportunities for people to view and photograph wildlife, hike, boat, hunt, fish, and enjoy their natural beauty. If wetlands are present, management activities should be implemented in such a way as to protect and enhance the integrity of the wetlands.

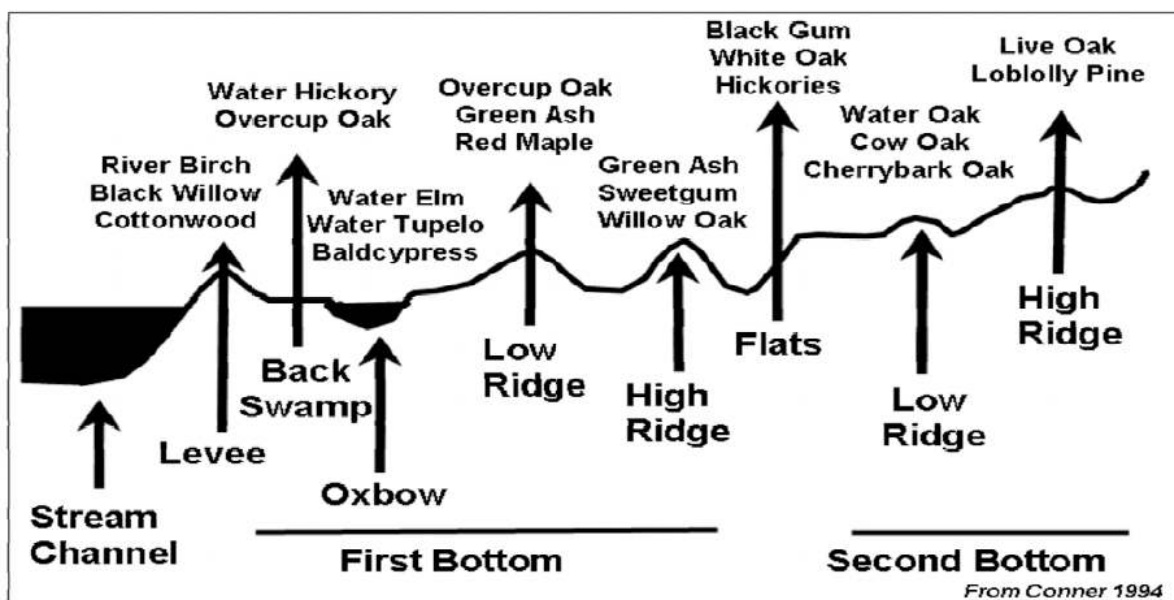


Figure 3. Distribution of tree species along hydrologic gradient (Conner 1994).

Recreation Resource Element

Management practices to enhance recreation opportunities may be easy to implement depending on the type of forest-oriented recreational activities valued by the landowner. Examples of recreational management activities include birding, hiking trails, hunting, fishing, and camping. For tips on recreational management, please visit the following website:

<https://www.wlf.louisiana.gov/>



Recommendations:

1. Maintain existing road/trail network.
2. Update and maintain boundary lines.

Pesticide and Chemical Use Resource Element

There are several ways to manage vegetation: manual, mechanical, biological, cultural, and chemical. Integrated vegetation management (IVM) uses a combination of these techniques.

Herbicides are a proven safe and effective method for managing forest vegetation and are appropriate for achieving many objectives, including regeneration establishment, increased timber production, enhanced wildlife habitat, non- native plant control, and road and facility maintenance. When properly applied, herbicides can increase property value, productivity, aesthetics, and utility. However, understand that choices exist. A forest management plan will include alternative vegetation control approaches with and without the use of herbicides.

No single herbicide, rate, or application method works for all vegetation management needs. Each situation requires advanced assessment to ensure that the lowest risk, most efficient, and most cost-effective control program is chosen. For a given situation the soil type, plant species, density, and size affect the herbicide prescription. Additional factors such as time of year and weather conditions are important because they affect plant growth, herbicide uptake, and translocation.

The Environmental Protection Agency (EPA) approves pesticide use and establishes restrictions. Only certified applicators can apply “restricted use” pesticides. Restricted use pesticides have a prominently displayed statement on the product label (see “Specimen Label” below). The restricted use statement will often indicate why the product has received a restricted use status.

In accordance with Indicator 4.2.2 of the AFF 2021 Standards of Sustainability, Tree Farmers are required to maintain documentation of pesticide (insecticides or herbicides) use on their property. The kind of records depends on the size, scale, and scope of use. The Louisiana Tree Farm Program has put together a pesticide documentation form that should be used to initially and broadly document pesticide applications on your property. This form can be found following this pesticide section. Records should also be kept for each pesticide application. The Louisiana State University AgCenter also has a pesticide usage record booklet that you can purchase online at <https://store.lsuagcenter.com/c-7-pesticide-applicators.aspx>. However, if you prefer to use a computerized file, the Arkansas Tree Farm Committee has developed a table to make it easier for you. The table can be saved electronically and updated as pesticides are used and printed to be included with the management plan. You may download the Pesticide Usage Tracking Form at www.arkforests.org/treefarm. The table can also be found following this pesticide section.

Recommendations:

1. Seek assistance from a certified pesticide applicator, LDAF District Forester or Forestry Consultant.
2. Always read and follow the label directions with any herbicide.



Pesticide Documentation

In accordance with Indicator 4.2.2 of the AFF 2021 Standards of Sustainability, Tree Farmers are required to maintain documentation of pesticide (insecticides or herbicides) use on their property. This requirement applies only to lands certified in the American Tree Farm System and does not apply to household or yard applications:

Indicator 4.2.2: Pesticides used are EPA-approved and applied, stored, and disposed of in accordance with EPA-approved labels and by persons appropriately trained, licensed, and supervised. Landowner documents pesticide usage.

Required: Do you use pesticides in the management of your forest? (Check all that apply):

- ☐ No, I do not use pesticides on my property.
- ☐ I apply herbicide myself. I have read the EPA-approved label for use of pesticide.
- ☐ I hire an appropriately trained, licensed, and supervised contractor to apply pesticides.

Required: If pesticides are used, are they applied, stored, and disposed of in accordance with the EPA-approved labels?

☐ Yes ☐ No

How are pesticides applied on your property? (Check all that apply)

- ☐ Aerial application (aircraft)
- ☐ Tractor, ATV, or other mechanical ground application
- ☐ Backpack, garden sprayer, or other "hand" application

How much total area do you treat?

- ☐ Spot applications as needed.
- ☐ Less than 1/10th acre.
- ☐ 1/10th to 1/2 acre.
- ☐ 1/2 to 1 acre.
- ☐ More than one acre.

Pesticide Usage Tracker

Performance Measure 4.2

Landowner shall consider a range of forest management activities to control pests, pathogens, and unwanted vegetation.

Indicator 4.2.2

Pesticides used shall be approved by the Environmental Protection Agency (EPA) and applied, stored, and disposed of in accordance with EPA-approved labels and by persons appropriately trained, licensed and supervised.



Additional requirement to maintain records of all pesticide usage.

Applicator	Pesticide	Tract/Location	Acre(s)	Timing	Purpose	Other options considered

Conservation-Based Estate/Forest Legacy Planning

Resource Element

Development of the nation's forested areas poses an increasing threat to maintaining the integrity of our country's valuable forest lands. Intact forest lands supply timber products, wildlife habitat, soil and watershed protection, aesthetics, and recreational opportunities. However, as these areas are fragmented and disappear, so do the benefits they provide. While local governments commonly guide development away from the most sensitive areas through traditional land use controls (like zoning and performance standards), sometimes these measures are not sufficient to fully protect the forested component of our natural resource base.

The Forest Legacy Program (FLP), a United States Department of Agriculture – Forest Service (USDA-FS) program in partnership with States, supports State efforts to protect environmentally sensitive forest lands. Designed to encourage the protection of privately owned forest lands, FLP is an entirely voluntary program. To maximize the public benefits it achieves, the program focuses on the acquisition of partial interests in privately owned forest lands. FLP helps the States develop and carry out their forest conservation plans. It encourages and supports acquisition of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another, without removing the property from private ownership. Most FLP conservation easements restrict development, require sustainable forestry practices, and protect other values.

To participate in the Forest Legacy Program, each state must complete an Assessment of Need (AON) and submit it to the USDA-FS for approval. As the lead state agency, the Louisiana Department of Agriculture and Forestry has contracted with The Nature Conservancy to prepare the AON, see link below. Presently, one Forest Legacy Area has been identified in Louisiana and mapped on the AON. The AON will be submitted to the USDA-FS for approval following public meetings scheduled July 18, 2007 in Hammond and July 25, 2007 in Alexandria. Louisiana program implementation is anticipated for October 2007.

For more information, please visit the Forest Legacy website:

<https://www.ldaf.state.la.us/wp-content/uploads/2014/04/LAforestlegacyapp.pdf>

If you would like to talk with someone about the Forest Legacy Program, please contact the Louisiana Department of Agriculture and Forestry-Office of Forestry or visit the USDA Forest Legacy website:

<http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml>

Cost Share Programs

Cost-share programs are available from the federal government to help you implement forest stewardship practices. Landowners can receive financial reimbursements, in the form of a flat rate fee, varied by practice, for their conservation efforts. There are many programs available that are targeted at specific goals depending on what your primary landowner objectives are. Practices such as 1) site preparation, 2) tree planting, 3) forest stand improvement, 4) control burning, 5) firebreaks, 6) wildlife habitat improvement, and 7) Best Management Practices are eligible for cost-sharing. For most programs, funds are short, and demand is high. Some programs will rank landowners before awarding the funds.

The programs listed below may be able to assist you with conservation work on your lands. To determine which program may best suit your needs, contact your Consultant Forester, Louisiana County Forester, County FSA, or County NRCS office. Landowners may sign up for the programs at the appropriate agency offices. Cost-share programs change from year to year as policy changes are made. Please check with your local agency office for up-to-date program guidelines.

Cost shares available are subject to the County NRCS, FSA, and appropriate resource professional's approval. Please do not start any practice before approval is received. Most practices shall be maintained for a minimum of ten (10) years after the calendar year of installation. Practices must be carried out according to program guidelines. Cost shares must be refunded if the landowner destroys this practice during this period.

Before you can receive cost share payments for completing the forestry and/or stewardship practices, the work will usually be inspected by personnel of the Louisiana Division of Forestry or other appropriate representative and **payment will be made only on acres or practices satisfactorily treated**. Therefore, we recommend when contracting with a vendor to carry out your forestry and/or stewardship practice(s), you make arrangements with a vendor as to how payment will be handled according to vendor's performance.

Completed forestry and/or stewardship practices are evaluated according to standards established by the agency administering the program. As a program participant, it is your responsibility to make sure your forestry and/or stewardship practice(s) meet stated requirements. Appropriate agency personnel will gladly answer any questions you may have regarding proper application procedures.

ATTACHMENTS

Attachment A

Forest Stand Improvement

Forest stand improvement (FSI), as referred to as Timber Stand Improvement (TSI), or Wildlife Stand Improvement (WSI) is the removal or deadening of undesirable vines, shrubs, and trees in a forest stand. It is a major forest management tool to help woodland owners achieve their management objectives. The less desirable trees can be removed to favor the growth of those that better satisfy the owner's objectives (e.g., quality timber, wildlife habitat, etc.). At the same time, woody plants that pose a threat to human health or safety, such as poison ivy, can be eliminated. Several forest stand improvement techniques can also be used to develop standing dead trees to provide various types of wildlife habitat such as perches, dens, and foraging trees for animals and birds.

Forest stand improvement can be accomplished by cutting the less desirable woody vegetation or by killing it in place. Undesirable trees with commercial value can be sold, making the forest stand improvement operation an income-generating forest management activity. In most forest stand improvement operations, however, the undesirable vegetation is of little economic value or use. Although it can be cut and left in the woods, the safest and most efficient way to remove undesirable vegetation is often to kill the trees, shrubs, or vines and leave them standing.

The most effective method for killing standing trees, shrubs and vines will usually involve the use of a herbicide. For those who prefer not to use pesticides, cutting, frilling, or girdling can be used without herbicides. However, physical methods of deadening standing trees that do not use herbicides are generally less dependable (particularly with hard-to-kill species such as red maple, hickories, and dogwoods) and require longer to be effective than those that incorporate herbicides into the treatment.

Directed Foliar Sprays

Directed foliar sprays are herbicide-water-adjuvant solutions aimed at target plant foliage to wet all leaves, applied by either low- or high-volume sprayers. Herbicide application by directed foliar spray is one of the most cost-effective methods for treating many types of herbaceous and woody invasive plant species. With this method, herbicide mixtures are applied to the foliage and especially the growing tips of woody plants, or to completely cover herbaceous plants. Foliar sprays can be applied whenever leaves are present but, for woody plant control, are usually most effective from midsummer to late fall. Winter and spring applications are also effective in controlling specific species and are often required to prevent seed formation. Selective treatment is possible because the applicator can direct the spray towards target plants and away from desirable plants. The addition of a spray shield to the end of the wand confines spray to the target. Another safeguard is to only use foliar-active herbicides, because directed sprays of soil-active herbicides can damage or kill surrounding plants when their roots are within the treatment zone. Never use herbicides with soil activity to treat invasive plants under desirable trees or shrubs that are susceptible to the herbicide. If nontarget foliage is accidentally sprayed, clip off the foliage to prevent uptake. (Miller, Manning, Enloe, A Management Guide for Invasive Plants in Southern Forests,

2010, p.21)

Selected Forest Stand Improvement Techniques

The following is a discussion of when and how to use two commonly applied forest stand improvement techniques: frilling or girdling and spaced cuts or injection. Tables 1-2 below present herbicides commonly used with each method, along with brief recommendations for their use. These recommendations are not complete instructions; they are provided to help you select among the herbicides. It is essential that you read the entire label before using any herbicide. The label contains complete instructions for use, along with other valuable information such as personal and environmental safety considerations and procedures. Many of the labels also list information about the effectiveness of the herbicide in controlling different species of trees, shrubs, and vines. All herbicides are not equally effective in controlling different species.

Herbicides, like all pesticides, are approved (labeled) for specific uses by the Environmental Protection Agency. These approved uses are listed and described on the pesticide's label. The herbicides listed in Tables 1 were appropriately labeled at the time of publication. Because pesticide labeling may change at any time, you should verify that a particular herbicide is still labeled for your intended use.

Girdling or Frilling

Girdling and frilling are methods of killing standing trees that may be done with or without an herbicide. Girdling involves cutting a groove or notch into the trunk of a tree to interrupt the flow of sap between the roots and crown of the tree (Figure 1). The groove must completely encircle the trunk and should penetrate the wood to a depth of at least 1/2 inch, preferably 1 to 1 1/2 inches on larger trees. Girdling can be done with an ax, hatchet, or chainsaw. When done with an ax or hatchet, the girdle is made by striking from above and below along a line around the trunk so that a notch of wood and bark is removed. The width of the notch varies with the size of the tree. Effective girdles may be as narrow as 1 or 2 inches on small-diameter trees, and as wide as 6 or 8 inches on very large-diameter trees. When a chain saw is used to girdle, usually two horizontal cuts between 2 and 4 vertical inches apart are made completely around the tree (Figure 2).

Frilling is a variation of girdling in which a series of downward angled cuts are made completely around the tree, leaving the partially severed bark and wood anchored at the bottom (Figure 3). Frilling is done with an ax or hatchet.

By themselves, girdling and frilling are physical methods to deaden trees that require very little equipment and may be done without herbicides. Both techniques require considerable time to carry out, particularly with an ax or hatchet. Girdling with a chain saw is much faster. The effectiveness of girdling and frilling depends on the tree species and on the size and completeness of the girdle or frill. To be effective, girdles and frills must completely encircle the tree. Because frills can heal-over more easily, girdling is usually more effective.

The effectiveness of both girdling and frilling can be increased by using herbicides (Table 1). With frilling and girdling, water soluble forms of herbicides are most commonly used to get maximum movement of herbicide within the plant. When using water-soluble herbicides, the herbicide/water mixture is commonly applied by squirting it on the girdle or frill until the cut surface is wet. Hand-held, pint or quart spray bottles, such as those available at local garden stores, are ideal for applying herbicide to the girdle (Figure 4). Exceptions to the above recommendations are the commonly used forestry herbicides that contain the ester formulation of 2,4-D + 2,4-DP, such as Weedone 170 and

Acme Super Brush Killer. They are labeled for use with frilling in an oil carrier, and the recommendation is to fill the frill with the mixture. They are commonly applied with a backpack or hand-held, hand-pumped sprayer.

The herbicides listed in Tables 1 were appropriately labeled at the time of publication. Because pesticide labeling may change at any time, you should verify that a particular herbicide is still labeled for your intended use.

Hack and Squirt - Tree Injection

Tree injection involves introducing an herbicide into the undesirable tree through spaced cuts made around the trunk of the tree with an ax, hatchet, and machete or tree injector (Figure 5). The procedure can be visualized as a discontinuous frill with a small amount of herbicide placed in each cut. With an ax or hatchet, non-overlapping horizontal cuts penetrating the sapwood (the outer area of lighter-colored wood in the stem cross section) are made completely around the tree. Cuts are approximately 2 inches long and are spaced 1 to 3 inches apart, depending on tree species and specific herbicide being used. A small amount of herbicide is then placed in each cut (Table 2). This can be done conveniently with a pint or quart spray bottle (such as those available at garden stores). The amount of herbicide to be placed in the cut is specified on the herbicide label but is generally 1 to 2 milliliters. There are also various tree injectors available including the "hypo-hatchet," which is a hatchet constructed to inject herbicide when it is struck into the tree.

Tree injection is generally more effective than mechanical girdling or frilling without herbicide because of the use of the herbicide. However, on difficult-to-control species, such as red maple, hickories, and dogwoods, a continuous frill or girdle with herbicide may be necessary to obtain acceptable control. For this reason, many commercial FSI contractors routinely use a single chainsaw girdle with herbicide on all species to maximize effectiveness.

As with most of the herbicides suggested for use with girdling and frilling, the herbicides for tree injection are mostly water-soluble materials that move vertically and horizontally within the tree to complete a chemical girdle.

Figure 1.



Figure 2.



Figure 3.

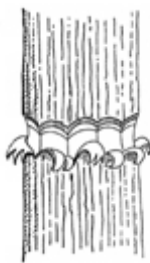


Figure 4.

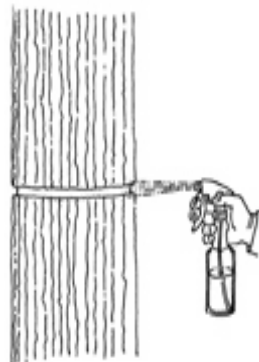


Figure 5.

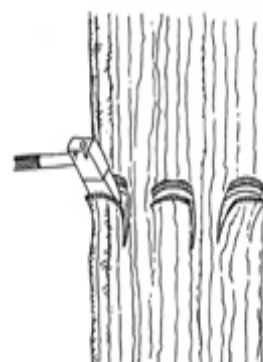


Table 1. Herbicides commonly used when girdling or frilling undesirable trees in a forest stand improvement operation. Column one contains the common names of frequently used herbicides; column two contains one or more examples of commonly used brands along with their manufacturers or distributors; and column three contains a brief summary of use recommendations.

COMMON NAMES	BRAND NAMES (MANUFACTURER OR DISTRIBUTOR)	RECOMMENDATIONS**
Dicamba	Banvel CST (Sandoz or Riverdale)	Spray or paint cut surface of girdle with undiluted Banvel CST.
Glyphosate	Accord (Monsanto)	Spray or paint Accord on the cut surface of girdle or frill at a rate of 1 ml for each 2 inches of trunk diameter, either undiluted or mixed with water at a concentration of no less than 25 percent. For best results, application should be made during periods of active growth and full leaf expansion.
	Roundup (Monsanto)	Spray or paint Roundup on the cut surface of girdle or frill at a rate of 1 ml for each 2 to 3 inches of trunk diameter, either undiluted or mixed with water at a concentration of no less than 50 percent. For best results, application should be made during periods of active growth and full leaf expansion.
Imazapyr	Chopper, Arsenal AC, (American Cyanamid)	Mix 8-12 oz. of Chopper in one gallon of water, diesel oil, or penetrating oil (such as Cide-Kick, Cide-Kick II, or ArborChem Basal Oil) and spray or paint mixture on cut surface of girdle or frill. Apply enough of the spray mixture to completely wet the cut surface. Can be done anytime except active growing season.
Picloram + 2,4-D	Pathway, Tordon RTU (DowElanco)	Spray or paint the girdle or frill with undiluted Pathway or Tordon RTU. Apply enough herbicide to wet the cut surface completely.
	Tordon 101*, Forestry Tordon 101* (DowElanco)	Spray or paint the cut surface of the girdle with Tordon 101 or Forestry Tordon 101 diluted 1:1 with water. Apply enough of the spray mixture to completely wet the cut surface.
Triclopyr	Garlon 3A (DowElanco)	Wet the cut surface of a single girdle that completely encircles the tree with Garlon 3A, undiluted or diluted 1:1 with water.
2,4-D + 2,4-DP Ester	Weedone 170 (Rhône-Poulenc)	Fill frill with mixture of Weedone 170 or Brush Killer 2D + 2DP and oil mixed at a rate of 3.8 to 5.1 ounces of herbicide in 1 gallon of oil.
	Brush Killer 2D + 2DP (Riverdale)	
2,4-D + 2,4-DP Amine	Riverdale 2D + 2DP Amine (Riverdale)	Fill fresh frill with mixture equivalent to 3.8-5.1 oz. of Riverdale 2D + 2DP Amine in 1 gallon of water.
2,4-D + 2,4-DP Ester + Dicamba	Acme Super Brush Killer, BK 800 (pbi/Gordon)	Fill fresh frill with mixture equivalent to 3.8-5.1 oz. of Acme Super Brush Killer or BK 800 in 1 gallon of diesel oil or mineral oil.

*** Restricted Use Pesticide, must be certified applicator to purchase and use.**

**** Be sure to read and follow all label directions when applying any herbicide.**

Glossary of Terms

Acre (Ac) – An acre is an area of land containing 43,560 square feet. A square acre would be 208.71 feet by 208.71 feet on each side. A circular acre would have a radius of 117.75 feet.

Aesthetics – The pleasurable sensations, mental and physical, which humans may experience because of certain environmental resources.

Afforest – To establish trees on a previously un-forested area by planting trees, setting tree seeds, or seeding-in from adjacent trees. Also see “Reforestation.”

Artificial Regeneration – Establishing a new forest by planting or direct seeding.

Aspect – is the direction that the land faces. A north aspect means that the ground is tilted to the north. This is an important indicator of moisture regimen, suitable forest type, and site productivity.

Basal Area (BA) – (A) Of a tree: the cross- sectional area (in square feet) of the tree stem including bark at breast height (4 1/2 feet above the ground). For example, the basal area of a tree 14 inches in diameter at breast height is about 1 square foot. Basal area 0.005454 times diameter squared. (B) On an acre of forest: the sum of basal areas of the individual trees on the area. For example, a well-stocked pine stand might contain 80 to 120 square feet of basal area per acre.

Board Foot – The amount of timber or lumber equivalent to a board 1 " thick by 12" wide by 1' long totaling 144 cubic inches, or 1/12th of a cubic foot. It is used to express the amount of wood in trees, sawlogs, veneer logs, and lumber.

Buffer – A designated zone or strip of land of varying size and shape along a road, trail, stream, or lake. Buffer strips of standing trees may be used to shield an area from view or protect a stream or lake from sedimentation.

Browse – Leaves, buds, and twigs of shrubs and trees that are eaten by wildlife (especially deer).

Chip-n-saw – Standing or harvested trees of an appropriate size (for example 10 to 12 inches DBH) and species to be processed using a chipping headrig, which simultaneously produces small sizes of dimension lumber and pulp chips.

Clear-cut Harvest – A harvesting method that removes all the merchantable standing trees on the area at the same time. Clear-cutting is mostly used with species like pine that require full sunlight to reproduce and grow well. Clear-cutting produces an even-aged forest stand. Stands that are over mature, insect or disease affected, or have been high graded can be considered for clear cutting.

Co-dominant – One of the four crown classes is co-dominant. Trees with medium-sized crowns forming the general level of the crown cover. They receive full light from above but are crowded on the sides and thus receive comparatively little light from the sides.

Competition – The struggle among adjacent trees for growth requirements such as sunlight, nutrients, water, and growing space is competition. Competition occurs with both roots and crowns of trees in the same stand.

Conservation Reserve Program (CRP) – The CRP program was first introduced in the Food Security Act of 1985 to encourage farmers to enroll highly erodible cropland and/or land contributing to a serious water quality problem into the reserve for 10 -15 years. It aids farmers with converting cost-share dollars in highly erodible cropland and eligible pastureland to vegetative cover such as grasses, wildlife plantings, bottomland hardwood, pine trees or riparian buffers. Farmers receive an annual rental payment for the term of the contract. The CRP program is administered by the FSA.

Consulting Forester – A forester available for hire on a contract basis is called a Consultant Forester. Consulting foresters typically charge a daily fee plus expenses for certain types of service and provide other services on a fixed contract basis. Some charge a fixed percentage of the sale price of timber to provide services in connection with a timber sale. Landowners usually receive higher net returns in timber sales when using a consultant forester than selling themselves.

Contract – A written; legally binding document used to accomplish the sale of standing timber. The contract specifies various provisions covering the expectations and desires of both the buyer and seller.

Coppice Forest – A forest originating primarily from stump sprouts and/or root suckers. The coppice

method refers to how these forests are regenerated.

Cord – A unit of measurement for stacked round or split wood containing 128 cubic feet including wood, bark, and air space. A standard cord measures 4 feet by 4 feet by 8 feet. A cord contains about 85 cubic feet of solid wood. It is used in conjunction with trees of suitable size to be converted into pulpwood, chip-n-saw, firewood, or other products not measured in terms of board feet.

Cost Basis – The cost element of basis in a capital asset that naturally increases in volume or size over time. Timber is an example of this type of asset.

Cost-Share Program – Government programs provide financial assistance (usually 50 %–75%) to landowners to do conservative practices. See CRP, EQIP, FLEP, PFW, SPBPRP, WHIP and WRP Programs.

Crop Tree – A tree identified to be grown to maturity and for the final harvest cut. It is usually selected based on its location with respect to other trees and its species, quality, and vigor.

Crown – The upper part of a tree carrying the main branch system and foliage.

Cubic Foot – A wood volume measurement containing 1,728 cubic inches, such as a block of wood measuring 1 foot on a side. A cubic foot of wood contains about 6 to 10 usable board feet of lumber rather than 12 board feet because some wood is lost as sawdust and shavings during processing.

Cull – A tree of merchantable size made useless for all but firewood or wildlife benefits because of shape, disease, insect infestation, or injury.

Cutting Cycle – The planned timber interval between major harvesting operations in the same stand. Cutting cycles occur in even-aged and in uneven-aged stands. For example, a cutting cycle of 8 years means a harvest every 8 years.

DBH – Abbreviation (Diameter Breast Height) for tree diameter including bark at breast height (4 1/2 feet above the ground). DBH is usually measured in inches. For example, 6, 8, 10, 12, etc. inches.

Deciduous Tree – A tree that loses all its leaves at some time during the year. These are primarily hardwoods such as oak, hickory, ash, sweet gum, but southern magnolia and American holly are evergreen hardwoods.

Deductible Item – An expense for which a taxpayer can take a deduction when calculating his or her federal income tax. Deductible items include the cost of tools of short life or small costs, salaries or other compensation for services rendered by others (except the cost of services related to the purchase of timber or forest land or reforestation or afforestation, which must be capitalized, or services related to a timber sale, which are deducted from sale proceeds), taxes, interest, and insurance premiums.

Defect – The portion of a tree or log unusable for the intended product and, therefore, not measured. Defects include decay, crookedness, cavities, excessive number of limbs, etc.

Delivered Price – Price per cord, per thousand board feet, or per ton at the first point of concentration or the wood yard. Delivered price is meant to cover the cost of standing trees, labor, plus equipment expenses to log and transport them.

Depletion – The using up or wasting of a natural resource. In the case of timber, depletion is the recovery of reforestation investment tax credit on up to \$10,000 per year of establishment costs; additional amounts must be recovered through depletion.

Den Tree – A living tree with a cavity large enough to shelter wildlife.

Depletion Unit – A measure of cost basis per unit of volume in a timber account at a particular point in time. Depletion unit = Adjusted Cost Basis divided by Total Timber Volume.

Diameter Breast Height (DBH) – The diameter of a tree at 4.5 feet above the ground.

Diameter Limit Cutting -- A selective method of harvesting whereby all merchantable trees above a specified, minimum diameter size are harvested. This method of harvesting is not recommended.

Dibble bar – Also called a planting bar. A tool for hand planting bare root seedlings. It is about 4 1/2 feet in length with a 10-inch blade.

Directed Foliar Spray – Using ground spray application equipment such as a skidder or backpack sprayer, mist herbicide mixture onto the foliage of targeted plants. Direct the spray to evenly cover plant foliage.

Diversion Ditch – A shallow channel that has been cut across the top of a slope, or the side of a hill for the purpose of diverting surface runoff.

Dominant Tree – One of four-crown classes. Having a crown in the upper most layers of the canopy and recovering full light from above and partly from the side. Dominant trees are generally larger than the

average trees in the stand and have well-developed crowns but possibly somewhat crowded on the sides.

Environmental Quality Incentives Program (EQIP) – A United States Department of Agriculture conservation program for landowners to treat identified soil, water, forest, and related natural resource concerns on eligible land. It provides cost share assistance to eligible landowners. EQIP is administered by the NRCS.

Ephemeral Stream – Ephemeral streams have a defined channel but no banks so water flows only during or immediately after rain. SMZ's are not required.

Establishment Cost – The cost required to afforest or reforest an area with trees of desired species and capable of surviving. Included are the costs of site preparation, seedlings or tree seeds, and hired labor, including supervision. The IRS takes the position that establishment cost also includes the cost of brush and weed control essential to the survival of a natural stand. Establishment cost is capital cost and cannot be deducted.

Even-aged – A stand or forest in which all or nearly all of the growing stock of trees are approximately the same age.

Even-aged Forest Management – Forest management with periodic harvesting of all trees on part of the forest at one time or in several cuttings over a short time to produce stands with trees of the same or nearly the same age.

Farm Service Agency (FSA) – The Farm Service Agency is part of the United States Department of Agriculture tasked with enhancing the environment through development and implementation of programs to ensure adequate protection of agricultural producers and landowners' natural resources. The Farm Service Agency administers CRP.

Forest Land Enhancement Program (FLEP) – A federal cost-sharing program that provides payments to landowners, who complete certain approved conservation practices such as tree site preparation, planting, and establishing wildlife food plots. The Arkansas Forestry Commission administers FLEP.

Firebreak – A natural or man-made barrier, between 12' and 20' wide, created by removing brush, trees, leaves, and other vegetation. Firebreaks are used to control fire spread.

Forest Type – A category of forest based on its composition (species makeup). Arkansas examples are loblolly-shortleaf pine, oak-pine, oak-hickory, oak-gum-cypress, and elm-ash-cottonwood.

Growing Stock – All live trees (except rough and rotten trees) in a forest or stand, including sawtimber, pole timber, saplings, and seedlings that can be sold for or grown into commercial timber products.

Habitat – The natural environment of a specific plant or animal. An area containing all the necessary resources for the plant or animal to live, grow and reproduce.

Hardwood – (A) Broad-leaved trees belonging to the botanical group, "Angiosperm." Examples are oaks, hickories, maples, ashes, elms, etc. Usually deciduous (shedding all leaves each fall) holly, live oak, and southern Magnolias are the exceptions. (B) The wood of such trees, regardless of hardness. Major uses are for materials handling pallets, furniture, flooring, decorative paneling, flakeboard, strandboard, and increasingly pulp and paper.

Herbicides – Chemicals that kill specific species of plants.

High Grading – The practice of removing only the biggest and best trees from a stand during harvest operation and leaving the poorest, lowest quality trees. "Diameter limit cutting" can be a form of high grading and is not recommended.

Improvement Cut – A type of intermediate cut with primary objective of eliminating fewer valuable trees in favor of more valuable ones.

Increment Borer – A hollow, auger-like instrument and extractor used to bore into the tree trunk to remove radial wood core that shows the tree's growth rings.

Intermediate Trees – One of four crown classes. Trees shorter than dominant and co-dominant trees with crowns extending into the canopy formed by the dominant and co-dominant trees. These trees receive little light from above and none from the sides. They usually have small crowns considerably crowded on the sides.

Log Rule – A table that gives the board foot contents for logs of various diameters and lengths. It is assumed that the entire log is sawn into 1-inch boards. Several rules have been developed, based on varying assumptions about thickness of the saw and sawing practice used, including Doyle, International Inch, and

Scribner Decimal C.

Louisiana Department of Agriculture and Forestry (LDAF) – The mission of the LDAF is “to protect and develop forestry resources of the state.” The LDAF also offers a variety of technical assistance and technical service programs to promote sound forest management on private non-industrial forestlands.

Louisiana Department of Wildlife & Fisheries – The Louisiana Department of Wildlife & Fisheries is responsible for managing the state’s fish and wildlife resources to provide sustainable public hunting and fishing opportunities. Their mission is “to preserve, protect, and enhance Louisiana wildlife populations and their habitat for public benefit.”

Louisiana Forestry Association (LFA) – The Louisiana Forestry Association is a nonprofit organization that represents and promotes the special interests of its membership, which includes private non-industrial forest landowners. The mission of the LFA is to advance the cause of forestry, develop a public appreciation for the environment and economic value of Louisiana’s forests, encourage the wise use and management of the forest resources, and serve a watchful guardian of private property rights. The LFA administers the Tree Farm Program.

Louisiana Office of Cultural Development/Division of Archaeology - The Office of Cultural Development serves the citizens of Louisiana by preserving, supporting, developing and promoting Louisiana culture, including archaeology, arts, French language and historic places. The mission of the Division of Archaeology is to promote Louisiana’s cultural history through the protection of archaeological sites and preservation of material culture. The division is responsible for coordinating and implementing state and federal guidelines for the investigation and preservation of prehistoric and historic sites on land and underwater.

Louisiana Wildlife Diversity Program (LDWF) – LDWF is responsible for conserving Louisiana’s rare, threatened, and endangered plant and animal species, nongame birds, and natural communities. Program staff conduct, guide, fund, and facilitate research, monitoring, and inventory of Species of Greatest Conservation Need and their associated habitats as identified in LDWF’s Wildlife Action Plan.

Lump Sum Sale – A specified volume of standing trees sold for a cash price before harvest that can include all trees or only those of certain diameter or species.

Mature Tree – A tree that has reached the desired size or age for its intended use. Size or age will vary considerably depending on the species involved.

MBF – Thousand board feet, a unit of measure for tree volume or sawed timber.

Merchandising – The practice of selling and using timber for the highest value product possible.

Marking – The process of designating trees in an area to be cut and sold. A common marking practice is to spray indelible paint on the tree at eye level and at ground level. This allows the buyer to identify the trees to be sold and the seller to determine that only marked trees were cut.

Merchantable Height – The height (length) of the usable portion of a tree trunk. It is measured up to a point on the trunk where the diameter just becomes too small to obtain the desired product. For example, four inches in diameter outside bark is a widely used minimum size for pulpwood.

Merchantable Timber – A stand in which trees are of sufficient size and volume per acre to provide a commercial cut.

Mortality – The number of or volume of growing stock trees dying from natural causes during a certain period.

Multiple Use – Forestland management for more than one purpose, such as wood production, water, wildlife, recreation, forage, aesthetics, or clean air.

Natural Resource Conservation Service (NRCS) – The NRCS of the U.S. Department of Agriculture helps individuals, groups, organizations, cities and towns, and county and state governments reduce the costly waste of land and water resources and put these natural assets to good use. NRCS administers the EQIP and WHIP cost-share programs.

Natural Regeneration – Reforestation accomplished by seeding-in from adjacent trees or sprouts from the stumps or roots of harvested trees. The process may include site preparation to provide a suitable seedbed.

Natural Stand – A stand of trees resulting from natural seeding or sprouting.

Non-Ephemeral Streams (perennial or intermediate) – A defined channel and often banks. Water flows more than immediately after rain. SMZ’s are recommended.

Non-point Source Pollution – Pollution which is (1) materials such as chemicals, nutrients and soil carried

into water bodies by precipitation, sewage, percolation, and runoff; (2) not traceable to any discrete or identifiable point source; and (3) controllable through the implementation of BMP's.

Overstocked – Forest of stand condition where too many trees are present for optimum growth.

Overstory – That portion of the trees in a stand forming the upper crown cover.

Overtopped Trees – Suppressed trees. One of four-crown classes. These trees have crowns entirely below the general level of the canopy and receive no direct light either from above or from the sides.

Partners For Fish and Wildlife Program -- Offers financial and technical assistance to landowners for habitat restoration, especially prior-converted or farmed wetlands. The U.S. Fish and Wildlife Service administers this program.

Pesticides – A collective term meaning chemicals including herbicides, insecticides, and silvicides which are used to kill pests such as weeds, insects, unwanted trees, etc. This involves removing all trees from the harvest area except for a small number of seed bearers left singly or in small groups.

Plantation – Forested areas established artificially by planting or direct seeding. It is usually made up of a single species.

Prescribed Burn Fire (PB) – The planned application of burning natural fuels and logging slash to achieve forest management objectives on a predetermined area. Prescribed fire can be used to reduce hazardous fuel levels, control unwanted vegetation, improve wildlife habitat, improve grazing, and improve visibility.

Release Cutting – Cutting made to free trees of desired species and quality from overtopping competition.

Reproduction – Young trees which will grow to become the older trees of the future forest.

Rotation – The number of years required to establish and grow trees to a specified size, product, or condition of maturity.

Sale Area – The area that will be affected by the harvesting operations. Sale areas are normally marked with flagging or paint.

Salvage Cut – Harvesting dead trees or those in danger of being killed (by insect, disease, flooding, ice, etc.) before the timber becomes worthless.

Sapling – A small tree, usually between 1 and 5 inches DBH.

Sawlog – A log large enough to saw into lumber; usually pine greater than 9.1 inches in diameter, and for hardwood greater than 11.1 inches in diameter.

Seed Tree Method – An even-aged system that removes most of the trees in an area leaving a few for seed production to allow for natural regeneration.

Seedling – (A) A tree, usually less than 2 inches in DBH, which has grown from a seed (in contrast to a sprout); or (B) A nursery grown tree which is lifted and replanted. Planting spacings vary with the species and objectives of the landowner. Usually, plantings range from 303 - 436 seedlings /acre for hardwoods and 436 - 622 seedlings/acre for pines.

Selection Method – An uneven-aged system in which individual trees or small groups of trees are selected for harvesting. Trees are harvested at periodic intervals (usually 5 to 15 years) based on their size, age, physical condition, or degree of maturity. Trees selected for harvest are usually marked and tallied.

Shade Tolerance – A tree's ability to develop and grow satisfactorily in the shade of, and in competition with, other trees.

Shelterwood Harvest – An even-aged system that involves removing trees on the harvest area in a series of two or more harvesting operations. Sale areas are normally marked with flagging or paint.

Shrub – A woody, low growing, perennial plant, usually less than 3" in diameter that ordinarily lacks a well-defined main stem.

Site Index – A measure of productive capacity of a forest site based on the height (in feet) of the dominant trees at a specified age (usually 50 years).

Site Preparation -- - Preparing an area of land for planting, direct seeding, or natural regeneration by clearing, chemical vegetation control, burning, disking, bedding, windrowing, or raking, or combinations of these practices.

Skidding – Pulling logs (by machine or animal) from the stump to the skidway, landing, or mill.

Slash – Tree tops, branches, bark, or other residue left on the ground after logging, pruning, or other forest operations.

Southern Pine Beetle Prevention and Restoration Program (SPBPRP) – A cost-share assistance program (40%-75%) for landowners in south Arkansas to help reduce the outbreaks and/or spread of Southern Pine Beetle.

Stand Prescription – A document prescribing present and future treatments for a forest stand, the smallest unit of management.

Stewardship Program – The Forest Stewardship Program is a means by which a landowner has access to resource professionals to assist them in obtaining a written forest management plan addressing multiple use management. The AFD administers the Forest Stewardship Program.

Stocking – The number of trees in a forestland. Often, stocking level is compared to the desirable number of trees for best growth and management, such as partially stocked, well stocked, or over stocked.

Stumpage Value – The economic value of standing trees.

Streamside Management Zone (SMZ) – A strip of land immediately adjacent to water bodies where timber management activities are particularly designed to protect water quality.

Thinning – Generally, a cutting in an overstocked immature stand to reduce the number of trees per acre, favor the best quality trees, and maintain or increase their growth rate.

Timber Cruise – The process by which the volume, type, and quality of timber within a designated area is determined.

Timber Sale – Activities dealing with the exchange of timber for money. At least three or more bids are recommended. A Timber Sales Contract should be used when selling timber.

Tree – A woody perennial plant with a single well-defined stem, a definitely formed crown, and usually reaching a height of at least 13 feet.

Timber Stand Improvement (TSI) – Improving composition and growth rate of a forest stand by removing cull or dying trees. Also referred to as Forest Stand Improvement (FSI).

Uneven-aged – A stand or forest in which the ages of the growing stock trees are distributed over a broad range.

Uneven-aged Forest Management – Managing by periodically removing oldest or largest individual trees, or groups of trees, from a stand while preserving a natural appearance. See also "Selection Method".

Variable Retention Improvement Thinning (VRIT) – a thinning of the trees in the forest that creates canopy gaps of a range of sizes while retaining trees better capable of expanding their crowns for increased growth rates and mast production. Trees of all sizes are retained or removed depending upon their condition and juxtaposition with other trees. Gaps range from a fraction of an acre to several acres, depending upon the expected response of the forest.

Veneer Log – Logs of appropriate size, species, and quality to be peeled, sawn, or sliced into veneer. Veneer is used in the production of a wide variety of products, including plywood, paneling, boxes, baskets, and furniture.

Water Bar – A cross drainage diversion structure for inactive roads, fire lanes, and trails. Acts to divert surface water runoff into side vegetation, ditches, or dispersion area to reduce water volume and velocity.

Wetlands – The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency jointly define wetlands as "Those areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

Wetlands Resource Program (WRP) – WRP is a voluntary program offering landowners a chance to receive payments for restoring and protecting wetlands on their property. Under WRP, landowners are provided with cost-share funds and/or land payments to restore wetlands. WRP is administered by the NRCS.

Wildlife Habitat Incentives Program (WHIP) – WHIP provides both technical assistance and cost-share payments to help establish and improve fish and wildlife habitat. WHIP is administered by the NRCS.

Windrow – Slash, residue, and debris raked together into piles or rows normally by use of bulldozers.

Wing Ditch – A water turnout or diversion ditch constructed to move and dispense water away from the road and side ditches into adjacent undisturbed areas.

Wolf Tree – A very large, overmature tree that is or was open grown.



ATFS Management Plan Addendum FOR THE 2021 STANDARDS OF SUSTAINABILITY

The American Tree Farm System® (ATFS) Management Plan Addendum is a tool designed to support Certified Tree Farmers and Family Forest owners as they seek resources for consideration in the managing of your woodlands. As you consider your stewardship objectives, this tool will help ensure your activities align with the AFF 2021 Standards of Sustainability (the Standards). The Standards are the benchmark for all Certified Tree Farmers and Family Forest owners, verifying the good stewardship that is expected from participants in ATFS.

This document is designed as a complement to your current management plan. Your management plan should outline the goals you have for your land and a strategy for achieving those goals. This addendum should be retained for your personal records; you may be requested to show this addendum along with your management plan to demonstrate conformance to the Standards.

SUSTAINABLE FORESTRY

Having a current, up-to-date management plan is an important indicator of conformance to the Standards. Your management plan must include:

- A description of the current forest conditions (may include tree species composition, age, density, health conditions and other descriptors)
- A list of the current goals and objectives that you have for your land
- An up-to-date schedule of activities
- A map showing significant forest resources (may include stand boundaries and acreage amounts, special sites, water bodies, roads and trails, buildings, fences, etc.)
- A narrative demonstrating consideration of each of the following resource elements: forest health, soil, water, wood and fiber production, threatened and endangered species, special sites, invasive species and forests of recognized importance. Where present and relevant to the property, the plan describes management activities related to these resource elements. If an element is not present on the property, the plan should outline which resources (such as natural heritage databases) were consulted to make the determination.

This addendum is a tool for considering and incorporating these resource elements into your stewardship. You may also consider contacting your forester or a qualified natural resource professional to discuss your management plan and upcoming activities.

- ☐ **My management plan is up to date and addresses all the Standards requirements noted above.**

Initial: _____ Date: _____

FOREST HEALTH

ATFS recommends regular monitoring of your woods, including an annual review of your management plan and documenting of any changes. These changes may include natural disasters, damage from trespassers, pests, invasive species, weeds, and disease. To assist you with these activities, please visit AFF and ATFS online resources. Your forester or qualified natural resource professional(s) are important partners to help identify and address current and potential forest health issues.

- ☐ **My woods are monitored for changes that could interfere with my stated objectives, including damage from storms or other natural disasters, trespassers, weeds, pests, invasive species, diseases and other forest health concerns.**

Initial: _____ Date: _____

I, or my designated representative, monitor for these changes through (check all that apply):

- ☐ Regular walks of my property
- ☐ Consultation of local resources (for example, local educational materials or workshops)
- ☐ Consultation with qualified natural resource professionals
- ☐ Online resources (insert blank line)
- ☐ Other

Based on my research and regular monitoring (check all that apply):

- ☐ I currently do not have any of these forest health issues present on my property

☐ I currently have the following present on my property (check all that apply):

- ☐ Damage from natural disasters
- ☐ Damage from trespassers
- ☐ Pests
- ☐ Weeds
- ☐ Disease
- ☐ Invasive species

Therefore, I will take the following steps to address these issues:

BEST MANAGEMENT PRACTICES

I understand the importance of the soil, water and other natural resources on my land. Therefore, I agree to abide by the Best Management Practices (BMPs) for my state, _____ and commit to implementing all applicable BMPs on my land.

Initial: _____ Date: _____

SOILS (check all that apply):

- ☐ My management plan includes general information about the soils on my land
- ☐ My management plan did not include soil information but based on my research, the soils on my property are:

Primary: _____

Secondary: _____

WATER

My property includes the following types of water bodies (check all that apply):

- ☐ Lake
- ☐ Creek
- ☐ Pond
- ☐ Vernal Ponds
- ☐ Other
- ☐ Not applicable because no water bodies on my land

During management activities, I, or my designated representative, will take the following steps to ensure that my soil and water resources are protected:

PESTICIDES

Pesticides are approved for use by the U.S. Environmental Protection Agency (EPA) for specific uses; however, as a landowner, it is your responsibility to ensure that you understand and comply with all EPA label requirements for application, storage and disposal.

There are alternatives to pesticides that can be effective and easy to use. As part of the Standards, you should evaluate alternatives to pesticides for the prevention or control of pests, pathogens, unwanted plants and weeds to achieve specific management objectives. For more information on alternatives to pesticides, please consult online resources or contact a local qualified natural resource professional to find state-specific information on pests, weeds and diseases.

When addressing a pest, weeds, unwanted plants or disease outbreak on my land, I will evaluate alternatives to pesticides for prevention or control.

Initial: _____ Date: _____

When utilizing pesticides, I will maintain a record of use.

- ☐ My management plan contains a record of pesticide usage.
- ☐ My management plan does not contain a record of pesticide usage. I have used the following pesticides (include pesticide name, purpose, and date of application):

Based on my research, some alternative approaches I, or my designated representative, considered include (check all that apply):

- ☐ Preventative Measures
- ☐ Mechanical
- ☐ Biological
- ☐ Genetic
- ☐ Other

Date: _____

PRESCRIBED BURN

Where appropriate, prescribed burning can be a valuable management technique to help you achieve your goals, including creating wildlife habitat, promoting the restoration of a desired species, or addressing unwanted trees or plants. Contact your local qualified natural resource professional to learn more about prescribed burning use and regulations in your state.

Do you or your designated representative use fire in the management of your land?

- ☐ Yes
- ☐ No

If Yes, how is fire used (check all that apply)?

- ☐ Burn Piles
- ☐ Prescribed Burns
- ☐ Other

To ensure the safety of prescribed burns on my land, I, or my designated representative, do pre-fire planning and obtain all applicable permits. I, or my designated representative, understand and abide by the local and state laws and regulations around prescribed burning.

Initial: _____ Date: _____

Include dates of any recent burns and permits obtained



WILDLIFE

Threatened or endangered species are those species that have been identified by either the federal or state governments as in need of special protections. Protection of occupied habitats and communities for these species is required by the Standards and by law. Please consult online resources, including the ATFS website, to research threatened or endangered species or contact your local qualified natural resource professional.

I, or my designated representative, have undertaken research to identify occurrences of threatened or endangered species (listed by my state or the federal government) on my land and am committed to protecting those habitats and communities where they exist.

Initial: _____ Date: _____

My research included:

- ☐ Walked property with a qualified natural resource professional.

Date: _____

Findings: _____

- ☐ Consulted with state natural resource agency.

Date: _____

Findings: _____

- ☐ Researched online.

Date: _____

Website: _____

Findings: _____

- ☐ Other.

Date: _____

Findings: _____

Based on my research I found:

- ☐ Threatened or endangered species are not currently known to be present on my property
- ☐ Threatened or endangered species are present on my property. Therefore, I will take the following steps to protect the threatened or endangered species on my land:

FOREST OF RECOGNIZED IMPORTANCE (FORI)

Forests of Recognized Importance (FORI) are globally, regionally and nationally significant large landscape areas of exceptional ecological, social, cultural or biological value. These forests are evaluated at the landscape level, rather than at the stand level and are recognized for a combination of unique values, rather than a single attribute. To learn more, please contact an ATFS Inspecting Forester or visit the ATFS website.

I, or my designated representative, have undertaken research on Forests of Recognized Importance in my area.

Initial: _____ Date: _____

I consulted these resources when researching FORIs

Date: _____

Based on my research, I found:

- ☐ My land does not contribute to or fall within an area identified as a FORI
- ☐ My land does contribute to or fall within an area identified as a FORI. Therefore, I will take the following steps to conserve the FORI described below:

SPECIAL SITES

Special sites can be places of personal significance that you and your family designate, like a special tree or a campsite or other location with a personal meaning. Special sites also include areas offering unique historical, archaeological, cultural, geological, biological or ecological values; for example, cemeteries, cave entrances or outcroppings. The Standards provide guidance for identifying special sites and how to protect special sites on your land. You may consult the online resources, including the ATFS website, to research special sites or contact your local qualified natural resource professional.

I, or my designated representative, have undertaken research to identify special sites on my land and am committed to protecting any sites on my land.

Initial: _____ Date: _____

My research included (check all that apply):

- ☐ Walked the property with a qualified natural resource professional

Date: _____

Findings: _____

- ☐ Researched online resources:

Date: _____

Website: _____

Findings: _____

- ☐ Reviewed current and historic property maps:

Date: _____

Findings: _____

- ☐ Contacted local resources (cultural/heritage organizations):

Date: _____

Group Name: _____

Findings: _____

- ☐ Other:

Date: _____

Findings: _____

Based on my research, I found:

- ☐ I have no special sites on my land.
- ☐ I do have special sites on my land. Therefore, I will take the following steps to protect these sites:
