



STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11988:
FLOODPLAIN MANAGEMENT; EXECUTIVE ORDER 13690: ESTABLISHING A
FEDERAL FLOOD RISK MANAGEMENT STANDARD AND A PROCESS FOR
FURTHER SOLICITING AND CONSIDERING STAKEHOLDER INPUT;
AND EXECUTIVE ORDER 11990: WETLANDS PROTECTION,
Chickasaw Heritage Center Access Road

Natchez Trace Parkway
Lee County, MS

Recommended:

Mary Zsasz
Superintendent, Natchez Trace Parkway

9.16.16
Date

Certified for Technical Adequacy and Servicewide Consistency:

F. Edwin Hamer
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9/15/16
Date

Approved:

Stan Custer
Director, Southeast Region

9/22/16
Date

INTRODUCTION

Executive Order (EO) 11988 (Floodplain Management), Executive Order 13690 (Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input), and EO 11990 (Protection of Wetlands) require the NPS and other federal agencies to evaluate the likely impacts of actions in floodplains and wetlands, and to improve the Nation's resilience to flood risk. The objective of EO 11988 is to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. EO 11990 was issued to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid new construction in wetlands wherever there is a practicable alternative. Lastly, EO 13690 was issued to establish a flood risk management standard to improve the nation's resilience to floods and to mitigate federal post-disaster recovery costs. National Park Service (NPS) procedures for complying with the wetland and floodplain Executive Orders are outlined in Procedural Manuals 77-1 and 77-2, respectively. This Statement of Findings (SOF) documents compliance with these NPS wetland protection and floodplain management procedures. For simplicity, and because the project area is small, the wetland and floodplain SOFs have been combined into one document. This document has been prepared in conjunction with an Environmental Assessment (EA) to analyze potential impacts under the National Environmental Policy Act of 1969.

PURPOSE AND NEED FOR ACTION

The NPS, in cooperation with the Chickasaw Nation (Nation), Chickasaw Inkana Foundation and the City of Tupelo, is considering a project to construct an access road within the boundaries of the Natchez Trace Parkway (Parkway) to a planned Chickasaw Cultural Heritage Center (Center) on adjacent land.

Discussions between the NPS and the Nation have been ongoing since 2002 with both parties agreeing upon the value of such a center constructed near Chickasaw Village Site (Site) at milepost 261.4 in Tupelo, MS. At that time, the NPS entered into a Memorandum of Understanding with the Nation and the City to develop a museum and cultural center that interpreted the Chickasaw's rich cultural heritage as it related to the old southwestern United States and the Old Natchez Trace. Such a center was envisioned to be mutually rewarding to the Nation, NPS, and the public. The current proposal continues with this early intent with the modification that the Center would be located on land adjacent to the NPS and include a new direct access from the Parkway. Chickasaw Inkana Foundation (Foundation), which seeks to preserve Chickasaw Nation sites, artifacts, and other cultural reminders in the Chickasaw's historic Homeland would construct the Center. This document analyzes the wetland and floodplain impacts of the construction of a new direct access from the Parkway motor road to the boundary of NPS land.

Proposed Road Access Chickasaw Heritage Center

National Park Service
U.S. Department of the Interior

Natchez Trace Parkway
Mississippi

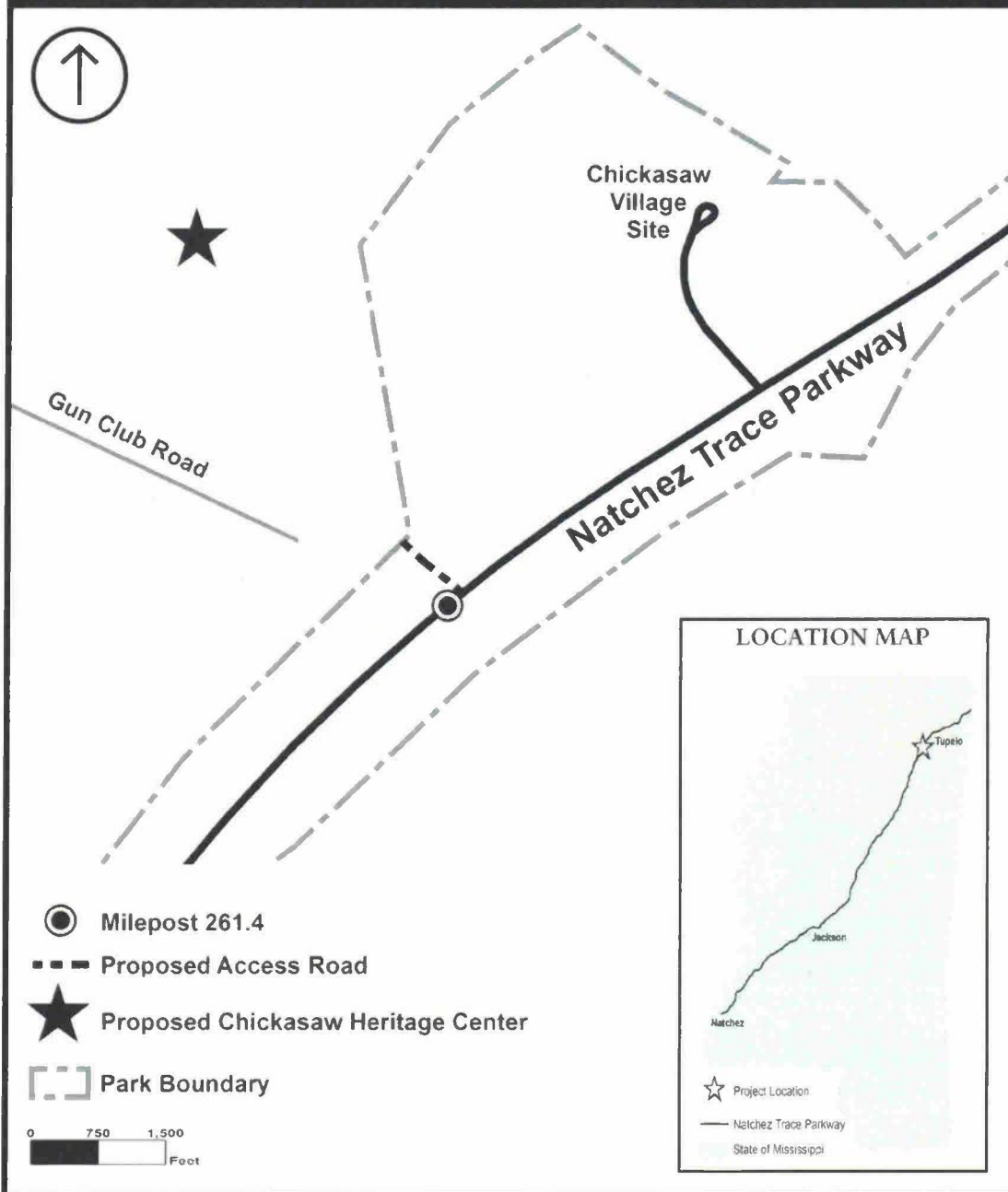


Figure 1. Project location, denoted as the proposed access road, on Natchez Trace Parkway in Tupelo, MS.

SITE DESCRIPTION

The project area is underlain by soils of the Oktibbeha silty clay soils on 2-5% severely eroded slopes (USDA, 1973). This soil series consists of moderately to well-drained medium to strong acid soils, formed in clay over calcareous formations (USDA, 1973). Geology of the area is of characterized by the demopolis chalk of the Selma group (Mississippi Department of Environmental Quality, 2011).

The general habitat of the project site is composed of deciduous forest on a minor grade. The overstory is dominated by water oak (*Quercus nigra*), hackberry (*Celtis occidentalis*) and eastern redcedar (*Juniperus virginiana*). The midstory is dominated by honey locust (*Gleditsia triacanthos*), black cherry (*Prunus serotina*), sparkleberry (*Vaccinium arboreum*), and non-native privet (*Ligustrum* species). The understory herbaceous cover is dominated by poison ivy (*Toxicodendron radicans*) and sedges (*Carex* species, Figure 2). The surrounding area has been previously disturbed by construction of the Parkway and Gun Club Road. Other previous disturbance includes the Natchez Trace National Scenic Trail, which runs through the project area in two locations (Figure 3).

The NPS consulted the United States Fish and Wildlife Service's Information for Planning and Conservation (IPaC) database on June 16, 2016. Records indicate there are three federally threatened species found in the vicinity of the project area in Lee County, including the wood stork (*Mycteria americana*), Price's potato-bean (*Apios priceana*), and the northern long-eared bat (*Myotis septentrionalis*). In addition, the IPaC database listed 24 migratory bird species that could potentially be affected by activities in the project area. Due to the disturbed nature of the area, as well as the proximity to the Parkway and urbanization, no suitable habitat for these species was evident in initial surveys. Therefore, we believe the eventual implementation of the project will not have any effect on federally listed species or their designated habitat. Refer to the environmental assessment entitled 'Construction of an Access Road to a Planned Chickasaw Cultural Heritage Center' (NPS 2016) for the consultations and responses from the United States Fish and Wildlife Service and other appropriate agencies.



Figure 2. Project area looking east from in the forest back toward the Parkway.

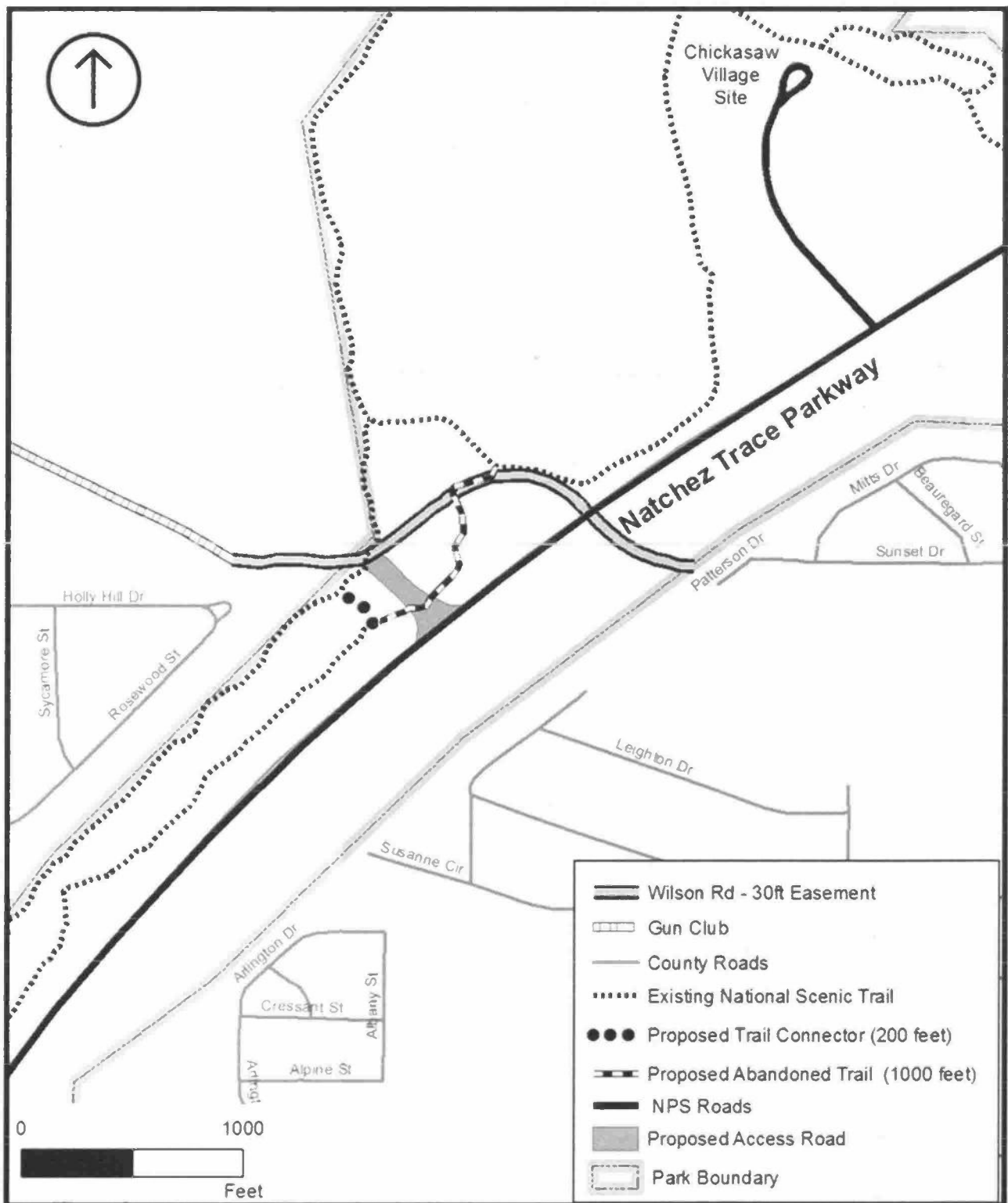


Figure 3. Existing trails, easements and roads in the vicinity of the project area.

Floodplain Disturbance and Risk

EO 11988, (Floodplain Management) was issued "to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." EO 13690 was recently issued to "improve the nation's resilience to floods and mitigate federal post-disaster recovery costs." These orders require Federal agencies to develop agency specific guidance. Director's Order 77-2 applies to all NPS proposed actions, including the direct and indirect support of floodplain development, that could adversely affect the natural resources and functions of floodplains or increase flood risks.

Federal Emergency Management Agency (FEMA) Flood Insurance Rate maps are available for the area surrounding the project area (Figure 4). The project area does not fall within a mapped flood zone, and the project does not have the potential to adversely affect floodplain processes. Therefore, floodplain disturbance and risk are not considered further in this document.

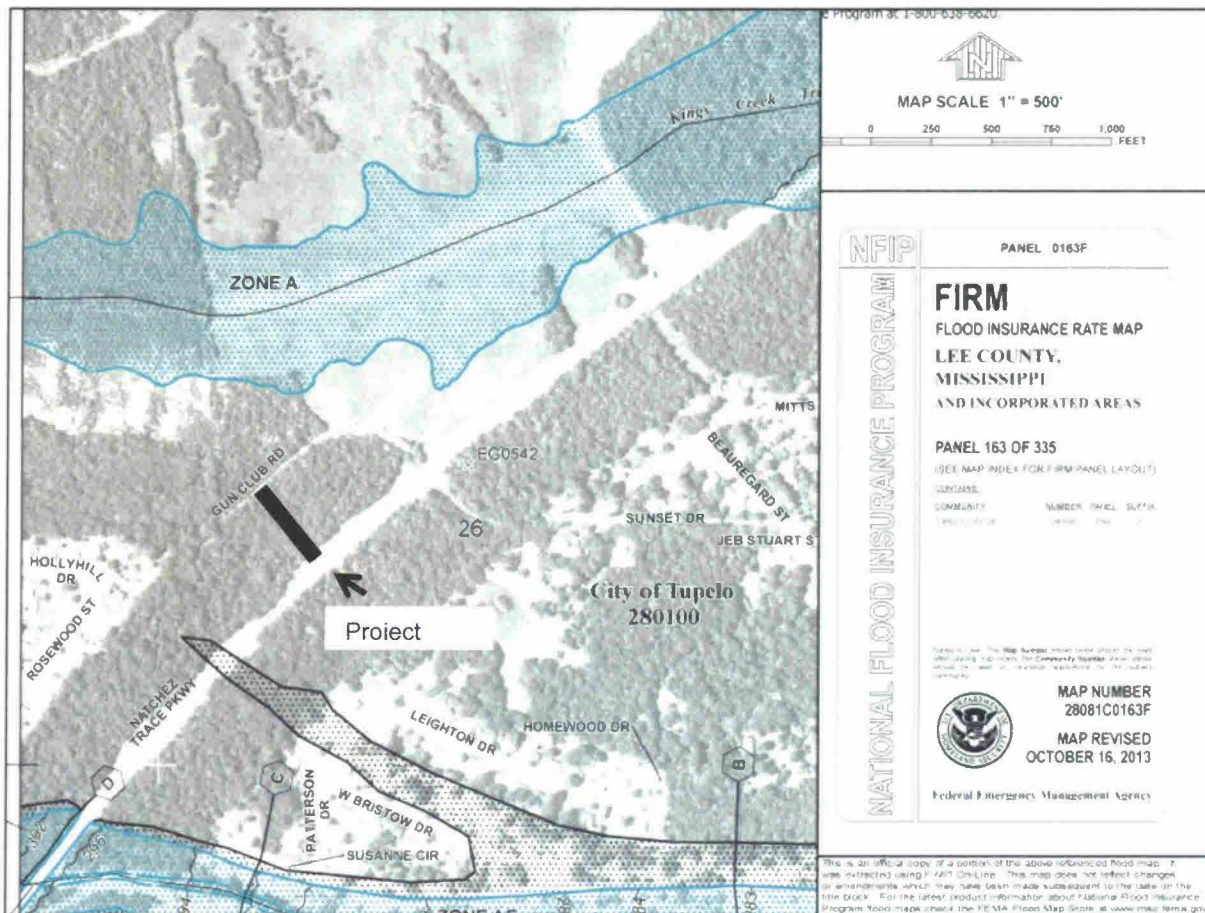


Figure 4. FEMA Flood Insurance Rate Map Firmette for the project area. The project area for the access road location is denoted by the black arrow.

Affected Wetlands

Wetlands in the proposed project area were delineated in June 2016 by the Natchez Trace Parkway Natural Resource Management Specialist Deanna Boensch, Chief of Resource Management Dr. Lisa McInnis and Biological Technician Timothy Davis in consultation with Southeast Region Wetlands Ecologist and Professional Wetland Scientist Dr. Mark Ford. Two distinct sites within the project area were delineated; including observation of soils (Figure 5), hydrophytic vegetation, and presence of wetland hydrology (see Appendix A for wetland delineation). Soils within the area, Oktibbeha silty clay, were determined to be non-hydric (Appendix A).

Two wetlands were identified within the study (Figure 5). Wetland 1 consisted of a shallow swale, and exhibited signs of surface flow and periodic inundation. Wetland 2 consisted of two small drainages that cross the existing trail, both with current inundation and hydrophytic vegetation. Both wetlands were determined to be Palustrine Forested Broad-leaved Deciduous Wetlands according to the Federal Geographic Data Committee Wetlands Classification Standard (FGDC, 2013), abbreviated to palustrine forested wetland from hereafter. Palustrine forested wetlands are common along the Parkway and within the region.

Palustrine System

The palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. The palustrine system was developed to group the vegetated wetlands traditionally called by such names as marsh, swamp, bog, fen, and prairie, found throughout the United States. It also includes the small, shallow, permanent or intermittent water bodies such as ponds. Palustrine wetlands may be situated shoreward of lakes, river channels, on river floodplains, in isolated catchments, or on slopes. They may also occur as islands in lakes or rivers. The erosive forces of wind and water are of minor importance except during severe flood (FGDC, 2013).

A palustrine-forested wetland, such as the project area, may be saturated or temporarily or seasonally flooded. Saturated means that the substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present. Temporarily flooded means that surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season. Plants that grow both in uplands and wetlands are characteristic of the temporarily flooded regime. Seasonally flooded means that surface water is present for extended periods, especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface (FGDC, 2013).

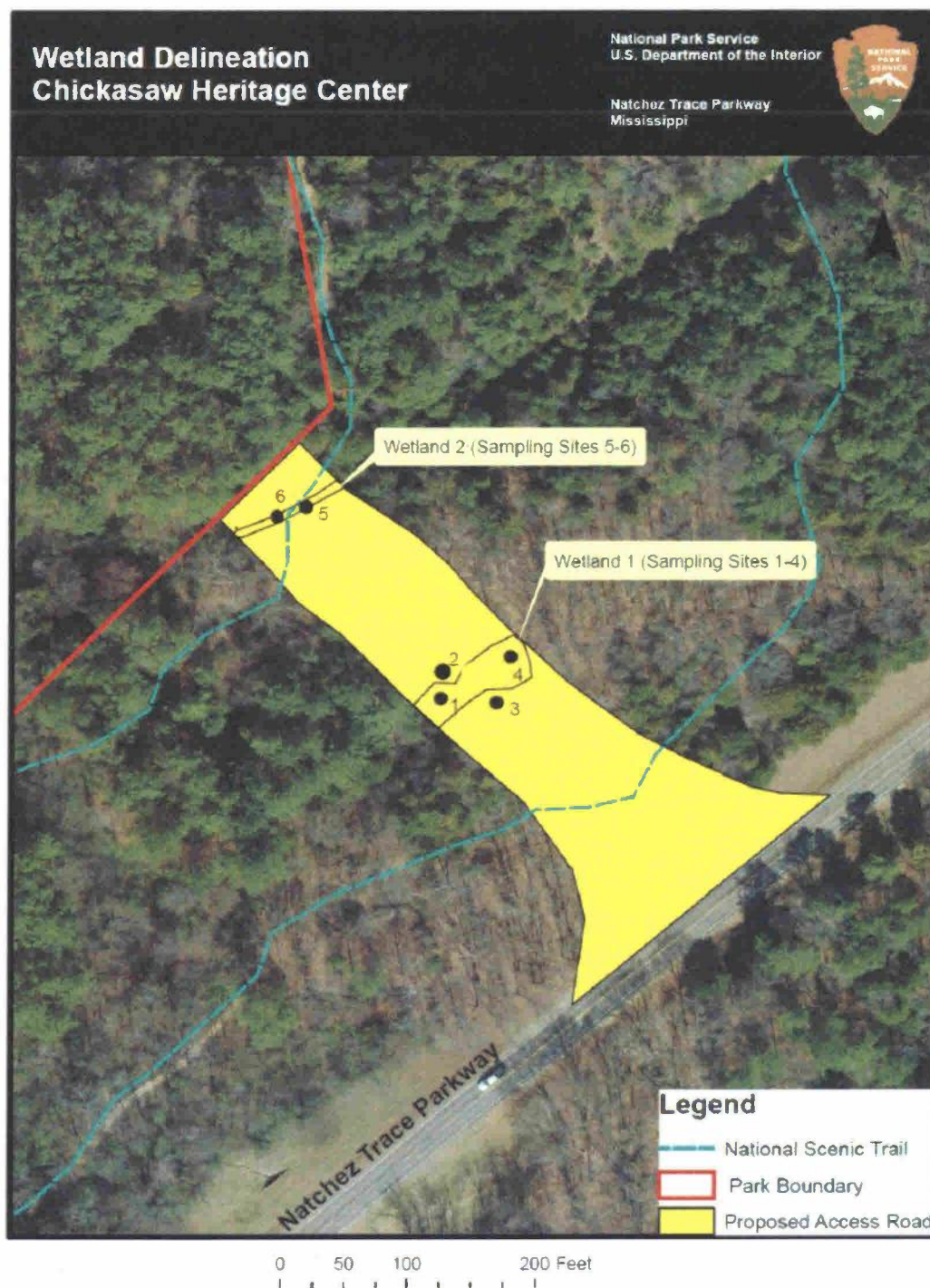


Figure 5. Delineated wetlands within the project area. Wetland 1 is 0.05 acres, and Wetland 2 is 0.02 acres.

Palustrine Forested Wetlands-Plants

Palustrine forested wetlands are characterized by woody vegetation that is at least 20 feet tall. Forested wetlands usually possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. The canopy in the project area is dominated by water oak (*Quercus nigra*), hackberry (*Celtis occidentalis*), and eastern redcedar (*Juniperus virginiana*). Refer to the site description for a listing of plants.

Palustrine Forested Wetlands-Wildlife

Birds

Palustrine forested wetlands, also known as bottomland hardwood forests, provide wildlife habitat in their overstory, understory, and also on the forest floor where small depressions may form as a result of flood water scouring and sediment deposition. Bottomland hardwood forests provide important breeding habitat for a variety of migratory and resident bird species. High water levels may provide high quality habitat for wintering waterfowl, yet diminish habitat suitability for numerous woodpeckers and other woodland species. During periods of low water levels, bottomland hardwoods may be utilized by several wading birds, including the great blue heron (*Ardea herodias*) and the white ibis (*Eudocimus albus*), and acorn-caching species, such as the red-headed woodpecker (*Melanerpes erythrocephalus*) (ABC, 2001a).

Southern bottomland hardwood forests also support a diverse array of nearctic migrants and year-round resident birds during the winter months (ABC, 2001a). Nearctic migrants account for about 55% of the bird community in southern bottomland hardwood forests. Typical nearctic species in southern bottomland hardwood forests include the ruby-crowned kinglet (*Regulus satrapa*), yellow-rumped warbler (*Dendroica coronata*), white-throated sparrow (*Zonotrichia albicollis*), brown creeper (*Certhia americana*), and yellow-bellied sapsucker (*Sphyrapicus varius*) (ABC, 2001a), almost all of which are known to occur on the Parkway and potentially occur in the project area. During high water levels, bottomland hardwoods may also support many wintering waterfowl species, including the wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*), and hooded merganser (*Lophodytes cucullatus*).

Southern bottomland hardwood forests also support numerous species of year-round resident birds. Year-round resident species comprise about 35-55% of seasonal bird communities. Common southern bottomland hardwood forest resident species are the white-breasted nuthatch (*Sitta carolinensis*), pileated woodpecker (*Dryocopus pileatus*), downy woodpecker (*Picoides pubescens*), red-bellied woodpecker (*Melanerpes carolinus*), tufted titmouse (*Baeolophus bicolor*), Carolina wren (*Thryothorus ludovicianus*), and Carolina chickadee (*Poecile carolinensis*) (ABC, 2001a), all of which are known to occur on the Parkway and potentially occur in the project area.

Southern bottomland hardwood forests are renowned for supporting large numbers of breeding bird species. While many resident and wintering species are found in a variety of forested habitats, many breeding species either breed exclusively in bottomland forests or have highest densities and/or reproductive success in these areas. Several species are considered forested wetland specialists, including the prothonotary warbler (*Protonotaria citrea*) and the swallow-tailed kite (*Elanoides forficatus*). The prothonotary warbler is known to occur on the Parkway (ABC 2001a) and potentially occurs in the project area.

The Avifauna Inventory (ABC, 2001a) and Reptile and Amphibian Inventory (ABC, 2001b) studies included two general habitat types, the bottomland hardwood woodland habitat type and the riparian woodland habitat type, which are considered to be part of the bottomland hardwood designation used above. Sixty-five species of birds were found in the bottomland hardwood general habitat, and 80 species of birds were found in the riparian woodland general habitat as part of the sampling for the Natchez Trace Parkway Avifauna Inventory Project (ABC, 2001a).

Amphibians

Shallow depressions in bottomland hardwood forests, sometimes known as vernal ponds, seasonal, or temporary wetlands, can provide important habitat for amphibians. These depressions will often fill with water during the spring or fall and dry up during the remaining seasons. Fish are not able to become established due to the temporary nature of surface water in the wetland. This makes depressional habitat especially important as breeding and rearing habitat for not only amphibians, but also crustaceans and insects (USFS, Biebighauser 2003). Approximately one-half of all frogs and one-third of all salamander species rely on seasonal or temporary wetlands for development. Three species of amphibians, the spring peeper (*Hyla crucifer*), the northern cricket frog (*Acris crepitans*), and the southern cricket frog (*Acris gryllus*), were found in the bottomland hardwood general habitat, and 12 species were found in the riparian woodland general habitat as part of the sampling for the Natchez Trace Parkway Amphibian and Reptile Inventory Project (ABC, 2001b).

Functional Assessment of Affected Wetlands

Impacts on Biotic Functions

Palustrine wetlands are found throughout the Parkway, and they provide wildlife habitat that is considered common habitat in the Park and region (see descriptions above). No threatened, endangered, or special status species have been recorded in the project area. Temporary and permanent impacts to wetlands associated with the preferred alternative would have a limited effect on habitat due to the small project size and the rapid succession/recolonization of the area after the project. Sedimentation control practices would be utilized during construction, with post-project vegetative bank stabilization. Impacts are estimated to be unmeasurable relative to current conditions and are therefore characterized as negligible.

Impacts on Hydrologic Functions

The palustrine forested wetlands in the project area function as flood water storage and wildlife habitat. They are considered to provide low-medium wetland function due to changes in hydrology resulting from previous road and trail construction. However, the wetlands in the area that would be permanently disturbed by the preferred alternative (0.07 acres) currently provide groundwater recharge, retaining water to provide time for infiltration to occur. Impacts are estimated to be unmeasurable relative to current conditions, and are therefore characterized as negligible.

Impacts on Cultural, Research, or Economic Values

There are no known archeological, ethnographic, Native American, or historic resources present, and the area has been surveyed archeologically. The project itself would result in increased interpretive, recreational, and educational opportunities for visitors due to the direct access to the Center and associated trails. With regard to scientific use value, there are no known attributes of concern for the project area. Aesthetically, the project area is in view of Parkway visitors, but the access road would be in keeping with the designed landscape of the

Parkway, and built to NPS standards. The impact of the preferred alternative on the aesthetics is negligible due to the small area of impact.

WETLAND IMPACTS

Preferred (Action) Alternative

The preferred alternative is construction of an access road. Within the proposed project limits, 0.07 acres of palustrine forested wetland would be impacted by the road fill of the access road. The preferred alternative was determined to have less impact on wetlands than any of the other alternatives considered in the EA for this project.

No Action Alternative

Under the No Action Alternative, no additional wetland acreage would be disturbed. This alternative would not meet the purpose and need, and would result in no new access road.

Alternatives Considered But Dismissed

The environmental assessment entitled 'Construction of an Access Road to a Planned Chickasaw Cultural Heritage Center' (NPS 2016) evaluates four possible access road alternatives. These alternatives were dismissed because they were determined to have greater natural, cultural or scenic impacts, including impacts to wetlands relative to the preferred alternative.

JUSTIFICATION FOR USE OF WETLANDS

This project is proposed to allow access for Parkway visitors to experience an interpretation of the Chickasaw's rich cultural heritage as it relates to the Old Southwest United States and the Old Natchez Trace. It is not possible to construct the access in this location without impact to some wetland areas. However, the impacted acreage has been reduced to the minimum size and is small in size (0.07 acres). The overall impact is negligible, and the NPS will compensate for this wetland impact, resulting in a net gain in wetland function.

WETLAND MITIGATION ACTIONS

Although the acreage of wetlands affected by the project is below the 0.10 acres threshold requiring mitigation, the Parkway will compensate for the impacts of the preferred alternative by enhancing adjacent palustrine forested wetlands. This will be accomplished by non-native Chinese privet (*Ligustrum sinense*) eradication in adjacent palustrine forested wetlands at a minimum mitigation to impact ratio of 10:1 (Figure 6). This will result in at least one acre of Chinese privet treatment in a nearby in-kind wetland.

Chinese privet is known to reduce wetland function by decreasing diversity and habitat quality. Eradication will consist of cutting and stump treatment, with follow-up treatments at from 1-3 years post-treatment. Cut privet will be piled and burned or broadcast on site. Mitigation will be funded by existing contracts in 2017 and by base operating funds in out years.

Mitigation Success Criteria

The mitigation will be considered successful when the mitigation area contains no more than 10% total cover of Chinese privet.

On-Site Monitoring and Maintenance

Monitoring will be conducted for the restoration beginning immediately after the herbicide treatment, which will be designated as time-zero or the beginning of the restoration time period. Qualified Parkway personnel will conduct monitoring surveys after the first growing season or approximately 1-year after treatment. A final monitoring survey will be done after the fourth growing season. Status/documentation of vegetation, photographs, wildlife, and general weather will be documented at the restoration site. Photo-monitoring of the area (beginning pre-treatment) will be conducted to document the progress of the restoration efforts and to document the success of Chinese privet reduction efforts. All reports will be kept on file at Parkway headquarters. Any issues that arise, or corrective action that needs to be taken, will also be included in the monitoring reports. Observations of vegetation will be made from fixed locations to ensure identical sampling procedures throughout the time-zero and the subsequent reporting cycles. Costs associated with monitoring are minimal and will be provided by base funding of the Resource Management program at the Parkway.

Mitigation Schedule

Fall 2017- first treatment

Late Fall, 2018- second treatment

Late Fall, 2019-third treatment

Winter 2020- area added to the maintenance regime for privet treatment in the Central District.

Final monitoring report/photos submitted.

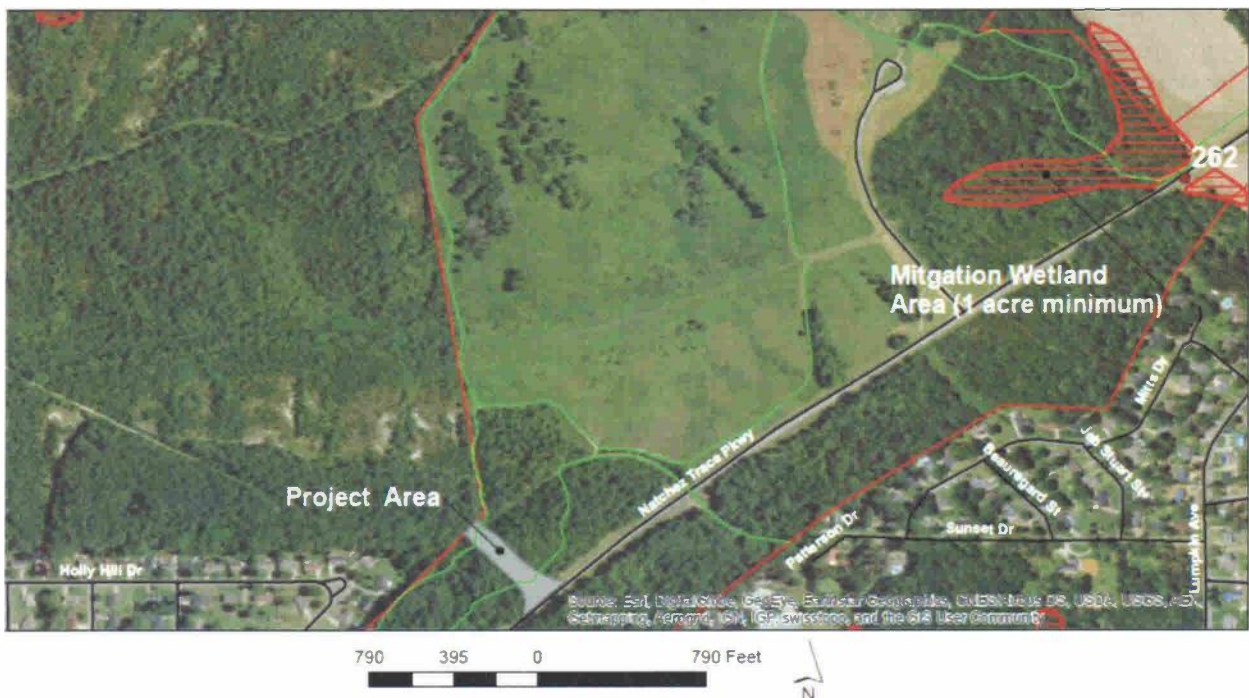


Figure 6. Wetland mitigation area (red hatched area). Mitigation will consist of eradication of Chinese privet within the nearby palustrine forested wetland. This wetland is 5.69 acres in size, and contains approximately 1 acre of Chinese privet in scattered locations. At least 1 acre of Chinese privet will be treated in this area over a 3-year timeframe in order to enhance wetland function.

CONCLUSION

The NPS concludes there is no practical alternative for an access road that would meet the purpose and need of the project and have less impact on wetlands. The 10:1 wetland enhancement compensation meets the NPS no-net-loss of wetlands policy. Therefore, the NPS finds the Preferred Alternative to be acceptable under EO 11988 and EO 13690 for the protection of floodplains, and under EO 11990 for the protection of wetlands.

COMPLIANCE

National Historic Preservation Act (NHPA)

The project area was surveyed for cultural resources in 2016, and the report is on file at the Natchez Trace Parkway. Per the provisions of Section 106 of the National Historic Preservation Act, a letter was mailed to the State Historic Preservation Office (SHPO) and Chickasaw Nation requesting the concurrence of no adverse effect from the proposed project. Response letters were received from the Chickasaw Nation and the SHPO, indicating concurrence of the no adverse effect determination.

Clean Water Act Section 401 and Section 404, and National Pollution Discharge Elimination System (NPDES)

The proposed project will be classified as a small construction project (disturbance of more than one to less than five acres) per the regulations promulgated and enforced by the Mississippi Department of Environmental Quality. It will be covered by the Small Construction General Permit and regulated in accordance with the effluent limitations, inspection requirements, other conditions set forth under the permit, and in accordance with the Mississippi Water Pollution Control Law (Section 49-17-1 et seq.), Mississippi Code of 1972, and the regulations and standards adopted and promulgated thereunder, and under the authority granted pursuant to Section 402(b) of the Federal Water Pollution Control Act.

The NPS consulted with the Army Corps of Engineers for a preliminary jurisdictional determination for the affected wetlands. Their determination, relative to Section 404 of the Clean Water Act, was that a Department of the Army permit will be required prior to initiating work (see Appendix B).

National Environmental Policy Act

Impacts to the environment that would occur as a result of this project are being analyzed in an EA entitled "Construction of an Access Road to a Planned Chickasaw Cultural Heritage Center" (NPS 2016). The EA and this SOF were open for public comment from August 15 to September 15, 2016. No comments were received. Therefore, the EA and this SOF complete the requirements for compliance with Executive Orders 11990, 11988, 13690, and the National Environmental Policy Act relative to this project.

REFERENCES

Accipiter Biological Consultants (ABC) 2001a "Final Report: Natchez Trace Parkway Avifauna Inventory Project." Report prepared for the NPS under contract are on file at Natchez Trace Parkway Headquarters.

ABC 2001b "Final Report: Natchez Trace Parkway Amphibian and Reptile Inventory Project." Report prepared for the NPS under contract are on file at Parkway Headquarters.

2007b "Natchez Trace Parkway Fish Inventory List." On file at Parkway Headquarters.

2007c "Mammals of the Natchez Trace Parkway." On file at Parkway Headquarters.

Federal Geographic Data Committee. 2013. Classification of Wetlands and Deepwater Habitats of the United States. Retrieved from <https://www.fgdc.gov/standards/projects/wetlands/nvcs-2013>.

Johnston, C. 2007. Fishes of the Natchez Trace Parkway.

Langbein, W. B. and K.T. Iseri. 1960. General Introduction and Hydrologic Definitions Manual of Hydrology. Part 1. General Surface-Water Techniques. Water-Supply Paper 1541-A.

Mississippi Department of Environmental Quality. 2011. Geologic map of Mississippi. Retrieved from [http://www.deq.state.ms.us/mdeq.nsf/pdf/Geology_MSGeology1969Map/\\$File/MS_Geology1969.pdf?](http://www.deq.state.ms.us/mdeq.nsf/pdf/Geology_MSGeology1969Map/$File/MS_Geology1969.pdf?)

National Park Service, U.S. Department of Interior. 2016. Draft Environmental Assessment for the Construction of an Access Road to a Planned Chickasaw Cultural Heritage Center.

National Park Service, U.S. Department of Interior. 2016. Director's Order #77-1: Wetland Protection. Washington, D.C.

National Park Service, U.S. Department of Interior. 2001. Director's Order #77-2: Floodplain Management. Washington, D.C.

United States Department of Agriculture. 1973. Soil Survey for Lee County, Mississippi.

United States Geological Survey. 2015. Hydrological Unit Code spatial data, Retrieved from <https://water.usgs.gov/GIS/huc.html> on November 9, 2015.

Appendix A
Wetland Delineation

National Park Service
U.S. Department of the Interior

Natchez Trace Parkway
Mississippi



Wetland Delineation Report for the Natchez Trace Parkway

Chickasaw Heritage Center Access

Lee County, MS

August 2016

Prepared By:
National Park Service
Natchez Trace Parkway
Resource Management Division

INTRODUCTION

The National Park Service (NPS) in cooperation with the Chickasaw Nation (Nation), Chickasaw Inkana Foundation, and the City of Tupelo is considering a project to construct an access road within the boundaries of the Natchez Trace Parkway (Parkway) to a planned Chickasaw Cultural Heritage Center (Center). Discussions between the NPS the Nation have been ongoing since 2002 with both parties agreeing upon the value of the Center constructed near Chickasaw Village site at milepost 262 in Tupelo, MS (Figure 1). The intent remains to develop a cultural center that would interpret the Chickasaw's rich cultural heritage as it related to the Old Southwest United States and the Old Natchez Trace. The Center would enhance interpretation of the rich Chickasaw heritage in Mississippi and be mutually rewarding to the Nation and NPS, as well as the American public as a whole. The current proposal continues with this early intent, with the modification that the Center will be located on land adjacent to the NPS and include a new direct access to the adjacent land from the Parkway. This document will analyze the impacts of the construction of a new direct access from the Parkway motor road to the boundary of NPS land. In addition to providing public access to the Center, the proposed improvements would ensure the safety of visitors and the preservation of the Parkway's natural and cultural resources. The purpose of this document is to identify wetlands that would be impacted by the construction of the access road.

METHODS

Fieldwork for the delineation was conducted on August 1, 2016 by the Natchez Trace Parkway Natural Resource Management Specialist and NPS Southeast Region Wetland Ecologist using the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0). Within the entire project area (1.05 acres), personnel scouted for evidence of wetland hydrology and hydrophytic vegetation. Two locations were identified. Vegetation, soils, and hydrology were evaluated at each site (6 sample plots 20 feet in diameter in two locations, Figure 2). Due to the small size of the perceived wetlands, larger plots were not possible without overlapping each of the sample plots. The soil profile was exposed (12 inches deep) and analyzed using a Munsell color chart. Dry conditions were present at the time of sampling. Although it rained during the previous week, it was not possible to excavate more than 12 inches. The wetland-upland boundary, based on signs of hydrology, was marked with flagging tape. All flags comprising the wetland-upland boundary were surveyed with a Trimble Global Positioning System (GPS) unit. Surveyed flag locations were plotted on aerial photography and wetland delineation notes were recorded in a field notebook.

RESULTS

Wetland 1 consisted of a shallow swale that is the likely result of the previous road disturbance. There was some evidence of surface flow during heavy rainfall or flood events in terms of erosion of soils at the surface and drift lines.

Overall, the canopy was closed; however, some canopy trees were rooted outside of the plot therefore were not counted in absolute cover. Below the tree canopy vegetation was fairly sparse; therefore the sapling and shrub layers and occasionally the herbaceous layers had low absolute cover, though species listed were dominant for those layers at specific sites. The vegetation was dominated by facultative species such as water oak (*Quercus nigra*), and eastern redcedar (*Juniperus virginiana*). The midstory was sparse with some dogwood (*Cornus drummondii*), red mulberry (*Morus rubra*), American beech (*Fagus grandifolia*) and non-native privet (*Ligustrum* species, Figure 3). The understory herbaceous cover is dominated by poison ivy (*Toxicodendron radicans*) and sedges (*Carex* species, see Appendix A for wetland delineation field forms). Soil characteristics and color for sampling sites 1-4 in Wetland 1 were determined to be nonhydric; sandy with no redox indicators. The boundaries of the wetland were determined visually when plot samples did not reveal wetland characteristics using visible signs of hydrology. For most samples, the boundary appeared obvious due to a clear change to upland plant species only and no signs of wetland hydrology. Therefore, no further samples were used to establish a boundary.

Wetland 2 consisted of a drainage crossing the Natchez Trace National Scenic Trail. The immediately adjacent land was populated by pines with no visual evidence of wetland hydrology or wetland plants. The vegetation was dominated by eastern redcedar and hydrophytes including black willow (*Salix nigra*), green ash (*Fraxinus pennsylvannica*), sedges (*Caryx* species), and lamp rush (*Juncus effuses*). Soil characteristics and color for sampling sites 5-6 were determined to be hydric, with signs of mottling and redox indicators. Natural Resource Conservation Service soil types within the project area can be found in Figure 4.

Both sites were classified according to the Federal Geographic Data Committee Wetlands Classification Standard as a Palustrine Forested Wetlands. The wetlands were both small in size (Figure 2) and showed evidence of previous disturbance by trail or road construction, which made each wetland appear isolated.

CONCLUSION

Within the 1.05 acre project area, a total of 0.07 acres of wetlands were identified across two sites. The NPS will prepare a wetland statement of findings as directed by Executive Order 11990.

Proposed Road Access Chickasaw Heritage Center

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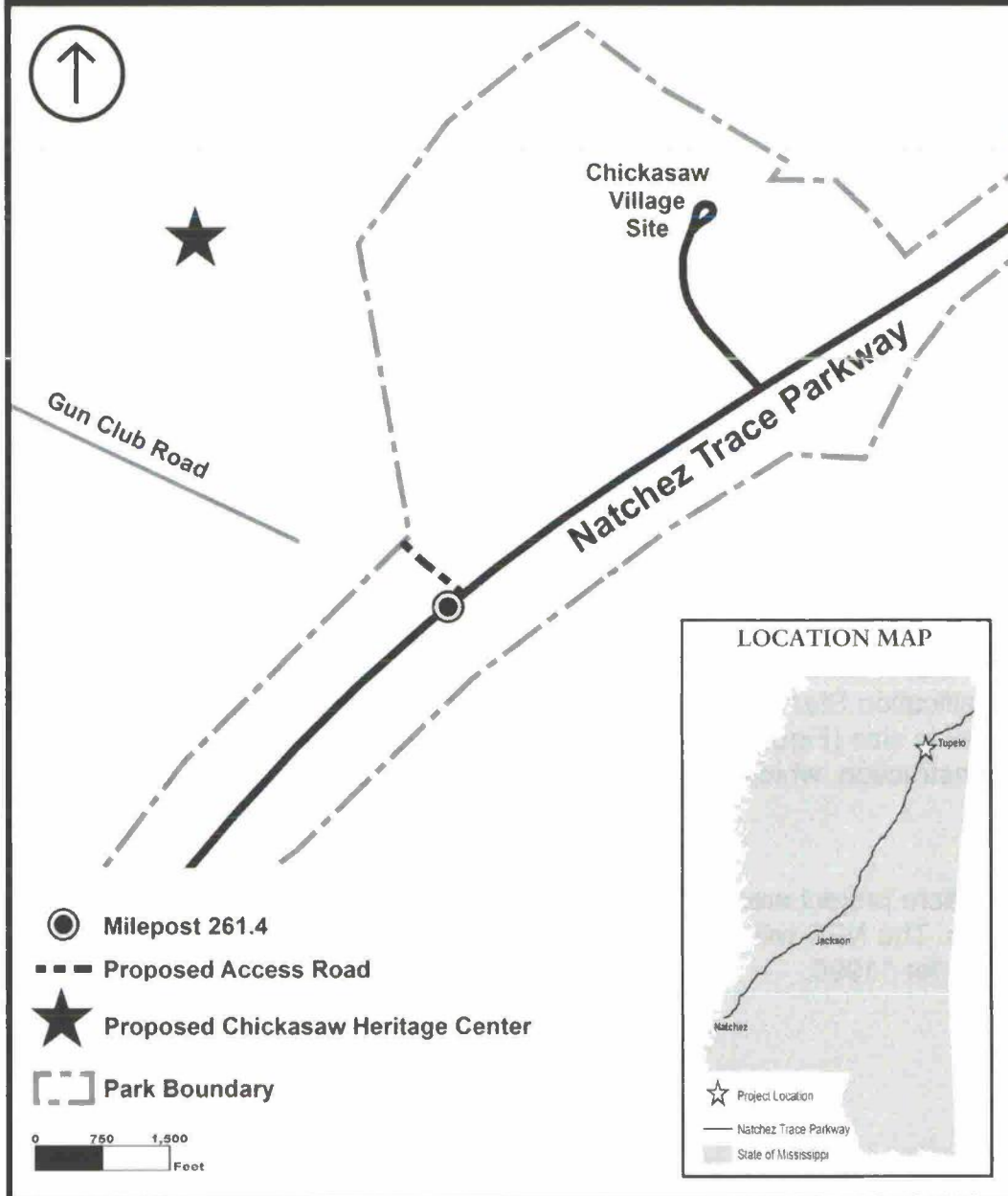


Figure 1. Project location, denoted as the proposed access road, on Natchez Trace Parkway in Tupelo, MS.

Wetland Delineation Chickasaw Heritage Center

National Park Service
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Mississippi

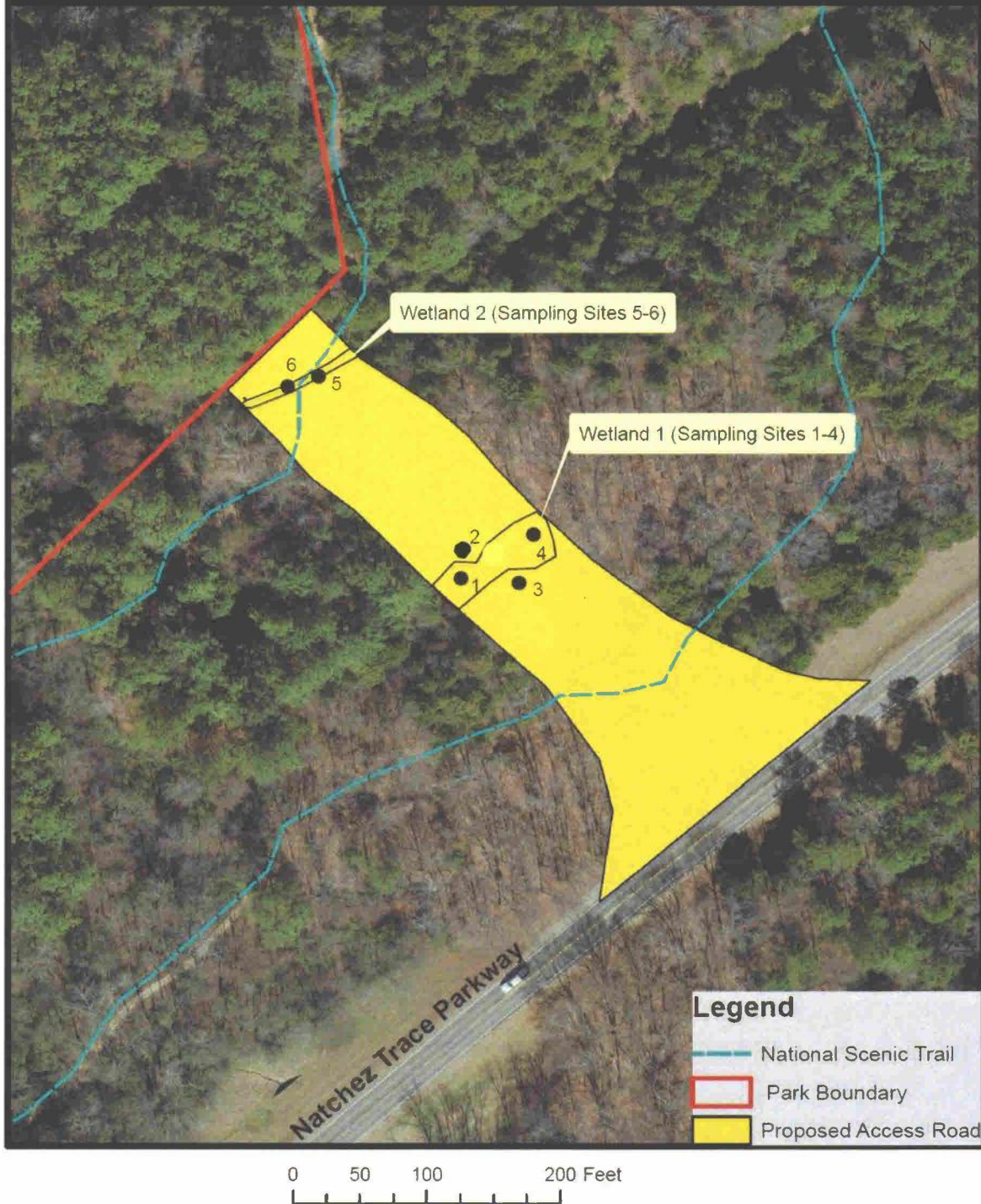


Figure 2. Wetland and sampling site locations (1-6) within the project area. Wetland 1 is 0.05 acres, and Wetland 2 is 0.02 acres,



Figure 3. Views of wetland near sample site 1 (top) and sample site 6 (bottom).

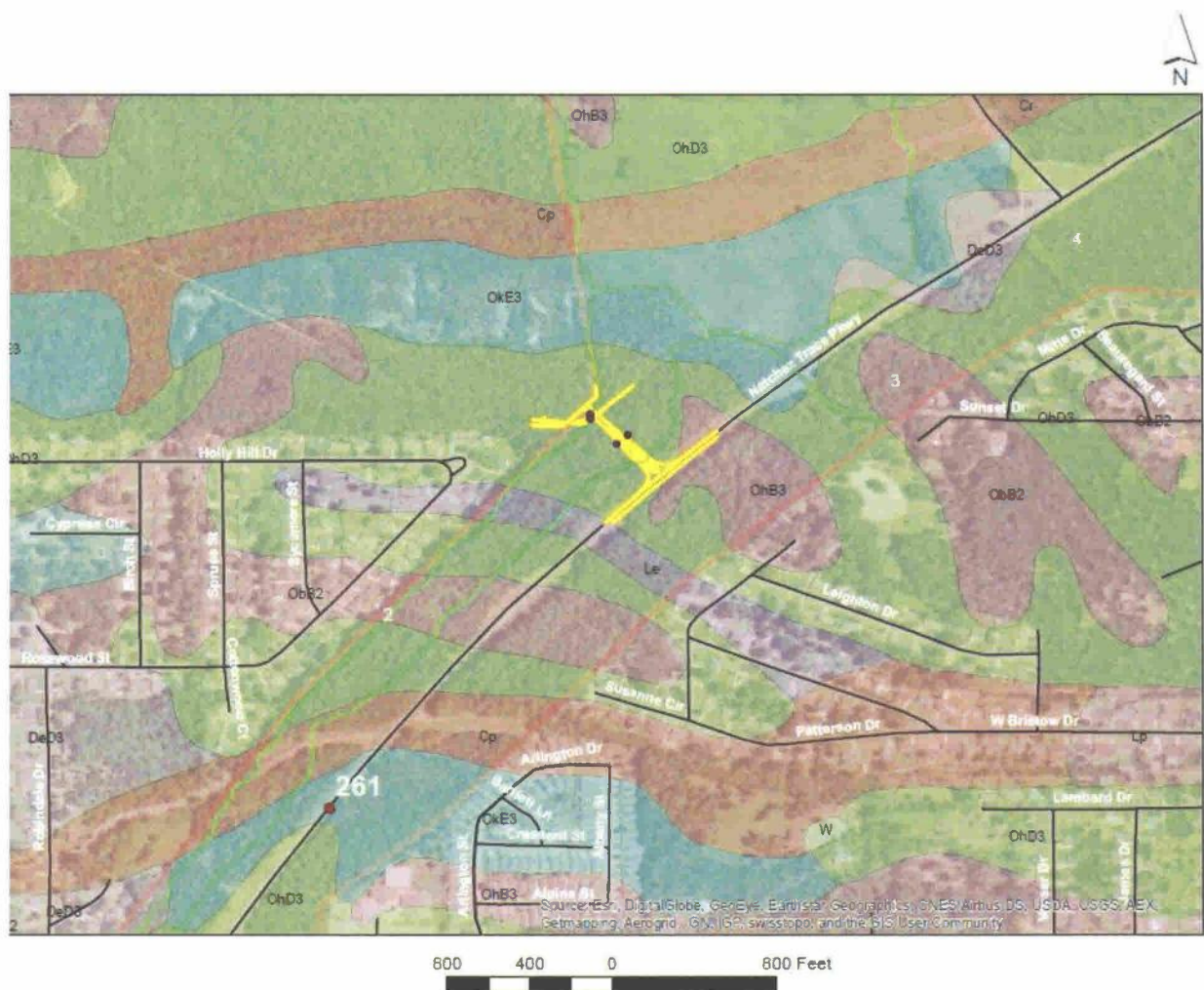


Figure 4. Natural Resource Conservation Service soil types within the project area (denoted as the roadway in yellow). Soils were delineated as OhD3, Oktibbeha silty clay, 5-12% severely eroded slopes (non- hydric).

Appendix 1

Wetland Delineation Field Forms

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: NATR Chickasaw Access Rd City/County: Tupelo/LE Sampling Date: 8-1-16
 Applicant/Owner: NPS State: MS Sampling Point: 1
 Investigator(s): Mark Ford, Deanna Boensch Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): P-135A Lat: 34°16'18.45"N Long: 88°41'47.50"W Datum: NAD 1984
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
Drift lines + downed woody debris + litter from surface
This is a seasonally ponded site with compacted soils; flow.
Characteristic of problematic soils described in regional Supplement.

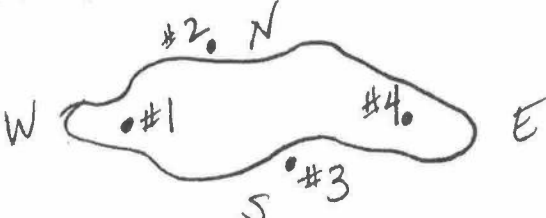
HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

Field Observations:
 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)
 Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland area defined using drift lines
plots were done inside + outside boundaries



VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 1

Tree Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Quercus nigra</i>	<u>25%</u>	<u>Y</u>	<u>FAC</u>
2.	<i>Juniperus virginiana</i>	<u>5%</u>	<u>Y</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover:		20% of total cover:		
Sapling Stratum (Plot size: <u>20'</u>)				
1.	<u>Ø - No saplings - open understory</u>			
2.				
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover:		20% of total cover:		
Shrub Stratum (Plot size: <u>20'</u>)				
1.	<i>Ligustrum sinense</i>	<u>5%</u>	<u>Y</u>	<u>FAC</u>
2.	<i>Liquidambar styraciflua</i>	<u>1%</u>	<u>Y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover:		20% of total cover:		
Herb Stratum (Plot size: <u>20'</u>)				
1.	<i>Calliergon (moss)</i>	<u>10%</u>	<u>Y</u>	<u>FAC</u>
2.	<i>Cercis canadensis</i>	<u>5%</u>	<u>Y</u>	<u>U</u>
3.	<i>Smilax sp.</i>	<u>1%</u>	<u>N</u>	<u>FAC</u>
4.	<i>Parthenocissis quinquefolia</i>	<u>1%</u>	<u>N</u>	<u>U</u>
5.	<i>Sassafras albidum</i>	<u>1%</u>	<u>N</u>	<u>FACU</u>
6.				
7.				
8.				
9.				
10.				
11.				
		= Total Cover		
50% of total cover:		20% of total cover:		
Woody Vine Stratum (Plot size: <u>20'</u>)				
1.	<u>Ø</u>			
2.				
3.				
4.				
5.				
		= Total Cover		
50% of total cover:		20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 = <u>126</u>
FACU species	x 4 = <u>24</u>
UPL species	x 5 = <u>30</u>
Column Totals:	<u>54</u> (A) <u>180</u> (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≥3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (If observed, list morphological adaptations below).

Sampling Point:

1

[illegible]²Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	<input type="checkbox"/> ² Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR Q, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (if observed):

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

marks:

Light colored & sandy

- No horizon
- No redox

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NARR Chickasaw Access Rd City/County: Tupelo/Lee Sampling Date: 8/1/16
 Applicant/Owner: NPS State: MS Sampling Point: 2
 Investigator(s): Mark Ford, Deanna Boersch Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): P-135A Lat: 34°16'18.70"N Long: 88°44'48.01"W Datum: NAD 1983
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks: <u>* No wetland plants or hydrology upland of site</u>		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B18)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____	
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): _____	
Saturation Present? Yes _____ No <u>X</u>	Depth (inches): _____	
(includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) -- Use scientific names of plants.

Sampling Point: 2

Tree Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<i>Quercus nigra</i>	15%	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u> (A)
2.	<i>Juniperus virginiana</i>	10%	Y	FAC	Total Number of Dominant Species Across All Strata:	<u>7</u> (B)
3.	<i>Quercus falcata</i>	10%	Y	FACU	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>71%</u> (A/B)
4.						
5.						
6.						
		= Total Cover				
50% of total cover: _____		20% of total cover: _____				
Sapling Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1.	<i>Fagus grandifolia</i>	29%	Y	FACU	Total % Cover of:	Multiply by:
2.	<i>Juniperus virginiana</i>	27%	Y	FAC	OBL species	x 1 = _____
3.					FACW species	x 2 = _____
4.					FAC species	x 3 = <u>117</u>
5.					FACU species	x 4 = <u>48</u>
6.					UPL species	x 5 = _____
		= Total Cover		Column Totals:	<u>51</u> (A)	<u>165</u> (B)
50% of total cover: _____		20% of total cover: _____		Prevalence Index = B/A = <u>3.236</u>		
Shrub Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1.					1 - Rapid Test for Hydrophytic Vegetation	
2.					2 - Dominance Test is >50%	
3.					3 - Prevalence Index is ≤3.0 ¹	
4.	Very open midstory				Problematic Hydrophytic Vegetation? (Explain)	
5.	no shrubs present					
6.						
		= Total Cover				
50% of total cover: _____		20% of total cover: _____				
Herb Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Five Vegetation Strata:	
1.	<i>Toxicodendron radicans</i>	10%	Y	FAC	Tree -- Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
2.	<i>Ligustrum sinense</i>	2%	Y	FAC	Sapling -- Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3.					Shrub -- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4.					Herb -- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
5.					Woody vine -- All woody vines, regardless of height.	
6.						
7.						
8.						
9.						
10.						
11.						
		= Total Cover				
50% of total cover: _____		20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1.					Yes <u>X</u> No _____	
2.						
3.						
4.						
5.						
		= Total Cover				
50% of total cover: _____		20% of total cover: _____				
Remarks: (If observed, list morphological adaptations below)						

Sampling Point: 2

[illegible]

²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ^aIndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present? Yes _____ No ☒

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NARR Chickasaw Access Rd City/County: Tupelo/Lee Sampling Date: 8/1/16
 Applicant/Owner: NPS State: MS Sampling Point: 3
 Investigator(s): Mark Ford, Deanna Branch Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): _____ Lat: 34°16'18.98"N Long: 88°44'48.23"W Datum: NAD83
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>+</u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <u>X</u>	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants

Sampling Point: 3

Tree Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Juniperus virginiana</i>	<u>25%</u>	<u>Y</u>	<u>FAC</u>
2.	<i>Fagus grandifolia</i>	<u>15%</u>	<u>Y</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Sapling Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>(Red Mulberry) Morus Rubra</i>	<u>29%</u>	<u>N</u>	<u>FACU</u>
2.				
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Shrub Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Quercus falcata</i>	<u>1%</u>	<u>N</u>	<u>FACU</u>
2.				
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Oxalis (unknown)</i>	<u>20%</u>	<u>Y</u>	<u>FAC</u>
2.	<i>Carex canadensis</i>	<u>3%</u>	<u>Y</u>	<u>U</u>
3.	<i>Ligustrum sinense</i>	<u>2%</u>	<u>N</u>	<u>FAC</u>
4.	<i>Toxicodendron radicans</i>	<u>1%</u>	<u>N</u>	<u>FAC</u>
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

2 - Dominance Test is >50% _____

3 - Prevalence Index is <3.0¹ _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Remarks: (If observed, list morphological adaptations below).

Due to low % cover in the sapling & shrub strata, these strata were grouped w/ trees for analysis.

Hydrophytic Vegetation Present? Yes _____ No X

Sampling Point:

[illegible]

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: NATR Chickasaw Access Rd City/County: Tupelo/Lee Sampling Date: 8/1/16
 Applicant/Owner: NPS State: MS Sampling Point: 4
 Investigator(s): Mark Ford, Deanna Boensch Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): _____ Lat: 34°16'19.13"N Long: 88°44'47.85"W Datum: NAD1984
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	
Welland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>This is a seasonally ponded site with very compacted soils - characteristic of problematic soils described in the regional supplement.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B6)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)
		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 4

Tree Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Fagus grandifolia</i>	10%	Y	FACU
2.	<i>Juniperus virginiana</i>	1%	N	FAC
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Sapling Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Fagus grandifolia</i>	5%	Y	FACU
2.				
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Shrub Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Cornus amomum</i>	15%	Y	FAC
2.	<i>Ligustrum sinense</i>	5%	Y	FAC
3.				
4.				
5.				
6.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Herb Stratum (Plot size: <u>20'</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Oxalis cherokeensis</i>	5%	Y	FACW
2.	<i>Toxicodendron radicans</i>	1%	Y	FAC
3.	<i>Ligustrum sinense</i>	1%	Y	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		
Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		= Total Cover		
50% of total cover: _____		20% of total cover: _____		

Remarks: (If observed, list morphological adaptations below).

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86.2 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

2 - Dominance Test is >50% _____

3 - Prevalence Index is ≤3.0¹ _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No _____

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NAR Chickasaw Access Rd City/County: Tupelo / Lee Sampling Date: 8/1/16
 Applicant/Owner: NPS State: _____ Sampling Point: 5
 Investigator(s): Mark Ford, Deanna Boensch Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)		Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		

Remarks:

Small Ditch under trail

#6

Culverts

raised trail

#5

Small wetland sites on either side of the trail


Parkway

US Army Corps of Engineers

Atlantic and Gulf Coastal Plain Region – Version 2.0

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 5

Tree Stratum (Plot size: <u>5x5'</u>)				Dominance Test worksheet:	
1.	Absolute % Cover	Dominant Species?	Indicator Status	Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
1. <u>Juniperus virginiana</u>	<u>100%</u>	<u>Y</u>	<u>FAC</u>	<u>4</u>	
2. _____	_____	_____	_____	<u>4</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100%</u> (A/B)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Sapling Stratum (Plot size: <u>5x5'</u>)				Prevalence Index worksheet:	
1.	Absolute % Cover	Dominant Species?	Indicator Status	Total % Cover of:	Multiply by:
1. <u>Fraxinus pennsylvanica</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	OBL species _____	x 1 = _____
2. _____	_____	_____	_____	FACW species _____	x 2 = _____
3. _____	_____	_____	_____	FAC species _____	x 3 = _____
4. _____	_____	_____	_____	FACU species _____	x 4 = _____
5. _____	_____	_____	_____	UPL species _____	x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____ (A)	_____ (B)
_____ = Total Cover				Prevalence Index = B/A = _____	
50% of total cover: _____ 20% of total cover: _____					
Shrub Stratum (Plot size: <u>5x5'</u>)				Hydrophytic Vegetation Indicators:	
1.	Absolute % Cover	Dominant Species?	Indicator Status	_____ 1 - Rapid Test for Hydrophytic Vegetation	
1. <u>Salix nigra</u>	<u>5%</u>	<u>Y</u>	<u>OBL</u>	_____ 2 - Dominance Test is >50%	
2. _____	_____	_____	_____	_____ 3 - Prevalence Index is ≤3.0 ¹	
3. _____	_____	_____	_____	_____ Problematic Hydrophytic Vegetation ¹ (Explain)	
4. _____	_____	_____	_____	_____ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5. _____	_____	_____	_____	Definitions of Five Vegetation Strata:	
6. _____	_____	_____	_____	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
_____ = Total Cover				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
50% of total cover: _____ 20% of total cover: _____				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb Stratum (Plot size: <u>5x5'</u>)				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
1.	Absolute % Cover	Dominant Species?	Indicator Status	Woody vine – All woody vines, regardless of height.	
1. <u>Junius effusus</u>	<u>30%</u>	<u>Y</u>	<u>OBL</u>		
2. <u>Ligustrum sinense</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>		
3. <u>Toxicodendron radicans</u>	<u>2%</u>	<u>X</u>	<u>FAC</u>		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. 	_____	_____	_____	Yes <u>X</u>	No _____
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Remarks: (If observed, list morphological adaptations below)					
<u>5x5' plot b/c of trail bisecting wetland area</u>					

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6"	10YR 3/2						Clay	mottling & redox
6"+	7.5YR 4/2							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input checked="" type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input checked="" type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Signs of crawfish
Mottled @ 6" deep - dark @ surface
Thick organic layer @ top
Redox present

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: NATR Chickasaw Access Rd City/County: Tupelo/Lee Sampling Date: 8/1/16
 Applicant/Owner: NPS State: MS Sampling Point: 6
 Investigator(s): Mark Ford, Deanna Boensch Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Marl Deposits (B15) (LRR U)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		

Remarks:

Signs of crawfish
 Small ditch under raised trail

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: 6

Tree Stratum (Plot size: <u>5x5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Juniperus virginiana</u>	<u>30%</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot size: <u>5x5'</u>)			
1. <u>Ø No saplings in sample plot</u>			
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot size: <u>5x5'</u>)			
1. <u>Fraxinus pennsylvanica</u>	<u>20%</u>	<u>Y</u>	<u>FACW</u>
2. <u>Ligustrum sinense</u>	<u>20%</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot size: <u>5x5'</u>)			
1. <u>Unknown Grass</u>	<u>100%</u>	<u>Y</u>	<u>?</u>
2. <u>Rubus trivialis</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>
3. <u>Sorghum halepense</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>
4. <u>Toxicodendron radicans</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>
5. <u>Cornus drummondii</u>	<u>1%</u>	<u>N</u>	<u>FAC</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. <u>xGrass could not be identified - no flowers</u>	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. <u>Ø</u>	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Remarks: (If observed, list morphological adaptations below)			

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>75%</u> (B)
Prevalence Index worksheet:	
Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____
Prevalence Index = B/A = _____	
Hydrophytic Vegetation Indicators:	
1 - Rapid Test for Hydrophytic Vegetation	
2 - Dominance Test is >50%	
3 - Prevalence Index is >3.0 ¹	
Problematic Hydrophytic Vegetation ¹ (Explain)	
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Definitions of Five Vegetation Strata:	
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Woody vine – All woody vines, regardless of height.	
Hydrophytic Vegetation Present? Yes <u>X</u> No _____	

SOIL

Sampling Point 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4"	10YR 3/2						Sandy/Clay	redox +
6-12"	10YR 5/2							mottling

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pure Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> (MLRA 153B)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input checked="" type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	³ Indicators of hydrophytic vegetation and
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	wetland hydrology must be present,
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

Restrictive Layer (if observed):

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Sandy surface, very mottled,
red roots (redox) present.

Appendix B
Department of the Army Preliminary Jurisdictional Determination



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, MOBILE
CORPS OF ENGINEERS
218 SUMMIT PARKWAY, SUITE 222
HOMEWOOD, ALABAMA 35209

August 31, 2016

North Branch
Regulatory Division

SUBJECT: Department of the Army Jurisdictional Number SAM-2016-00980-APW, US
Department of the Interior-National Parks Service, National Parks Service

United States Department of the Interior
National Park Service
Attention: Ms. Mary Risser
2680 Natchez Trace Parkway
Tupelo, Mississippi 38804

Dear Ms. Risser:

This is in response to your request for a Department of the Army (DA) preliminary jurisdictional determination. The project is located in Section 26, Township 9 South, Range 5 East, Tupelo, Lee County, Mississippi (34.2718, -88.7466).

Based on our review of the information and wetland determination data forms you furnished, and other desktop information available to our office, we have determined the boundary of waters of the United States (U.S.) to be accurate as shown on the enclosed delineation boundary figures. Under Section 404 of the Clean Water Act (CWA), a DA permit is required for the discharge of dredged or fill material into waters of the U.S., including wetlands. Please be advised that this determination reflects current policy and regulation.

Your delineation site was reviewed pursuant to Section 404 of the Clean Water Act. Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including streams and wetlands, prior to conducting the work (33 U.S.C. 1344). If future work proposed at this site includes a discharge or placement of dredged and/or fill material into waters of the U.S., a DA permit is required prior to initiating work.

Enclosed is a copy of the Preliminary Jurisdictional Determination (PJD) form for the tributaries identified on the project site. This PJD treats all waters of the U.S. on the site as jurisdictional for the purposes of determining impacts and mitigation requirements. The PJD is a non-binding action and shall remain in effect unless new information or a request for an approved jurisdictional determination supporting a revision is provided to this office.

Please note that since this jurisdictional determination is a preliminary, it is subject to change and therefore is not an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331.

The statements contained herein do not convey any property rights, or any exclusive privileges and do not authorize any injury to property or obviate the requirements to obtain other local, State or Federal approvals required by law. Nothing in this letter shall be construed as excusing you from compliance with other Federal, State, or local statutes, ordinances, or regulations which may affect this work.

We appreciate your cooperation with the Corps of Engineers' Regulatory Program. Please refer to file number **SAM-2016-00980-APW** in all future correspondence regarding this site or if you have any questions concerning this determination.

Please contact me by telephone at 205-290-9096 or by e-mail at albert.p.williams@usace.army.mil should you have any questions. For additional information about our Regulatory Program, visit our web site at <http://www.sam.usace.army.mil/Missions/Regulatory.aspx>. Also, please take a moment to complete our customer satisfaction survey located near the bottom of the webpage. Your responses are appreciated and will allow us to improve our services.

Sincerely,

A handwritten signature in black ink, appearing to read 'AW', is written over a faint, larger signature that appears to read 'Albert Williams'.

Albert Williams
Regulatory Specialist

Enclosures

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 08/31/2016

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
United States Department of the Interior
National Park Service
Attention: Ms. Mary Risser
2680 Natchez Trace Parkway
Tupelo, Mississippi 38804

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CESAM-RD-N, US Department of the Interior-National Parks Service, SAM-2016-00980-APW

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: The project is located in Section 26, Township 9 South, Range 5 East
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: Mississippi County/parish/borough: Lee County City: Tupelo
Center coordinates of site (lat/long in degree decimal format): Lat. 34.2718° N, Long. -88.7466° W.

Universal Transverse Mercator:

Name of nearest waterbody: Unnamed Tributary to Kings Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: linear feet: width (ft) and/or 0.07 acres.

Cowardin Class: PFO

Stream Flow:

Wetlands: acres.

Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: 08/30/2016

☐ Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit

applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:


SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply -

checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Project Location Map (Figure 1, NPS), Proposed Access Map (Figure 2, NPS), Wetland Delineation Chickasaw Heritage Center (NPS), and NRCS Soil Types with Project Location (NPS).
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - ☒ Office concurs with data sheets/delineation report.
 - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:

- ☐ U.S. Geological Survey Hydrologic Atlas
☐ USGS NHD data
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: 7.5min, Tupelo, Mississippi (1992).
☒ USDA Natural Resources Conservation Service Soil Survey Citation: Soil Web Layer for Google Earth Pro (2016).
☒ National wetlands inventory map(s). Cite name: FWS Wetlands and Riparian Layer for Google Earth Pro (2016).
☐ State/Local wetland inventory map(s).
☐ FEMA/FIRM maps.
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth Pro (05/19/2014).
 or ☒ Other (Name & Date): Site Photos 1-6.
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.


 Signature and date of
 Regulatory Project Manager
 (REQUIRED)

Signature and date of
 person requesting preliminary JD
 (REQUIRED, unless obtaining the
 signature is impracticable)

SAM-2016-00980-APW

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
1	34.2719	-88.7466	PFO	0.05	Section 404
2	34.2720	-88.7472	PFO	0.02	Section 404

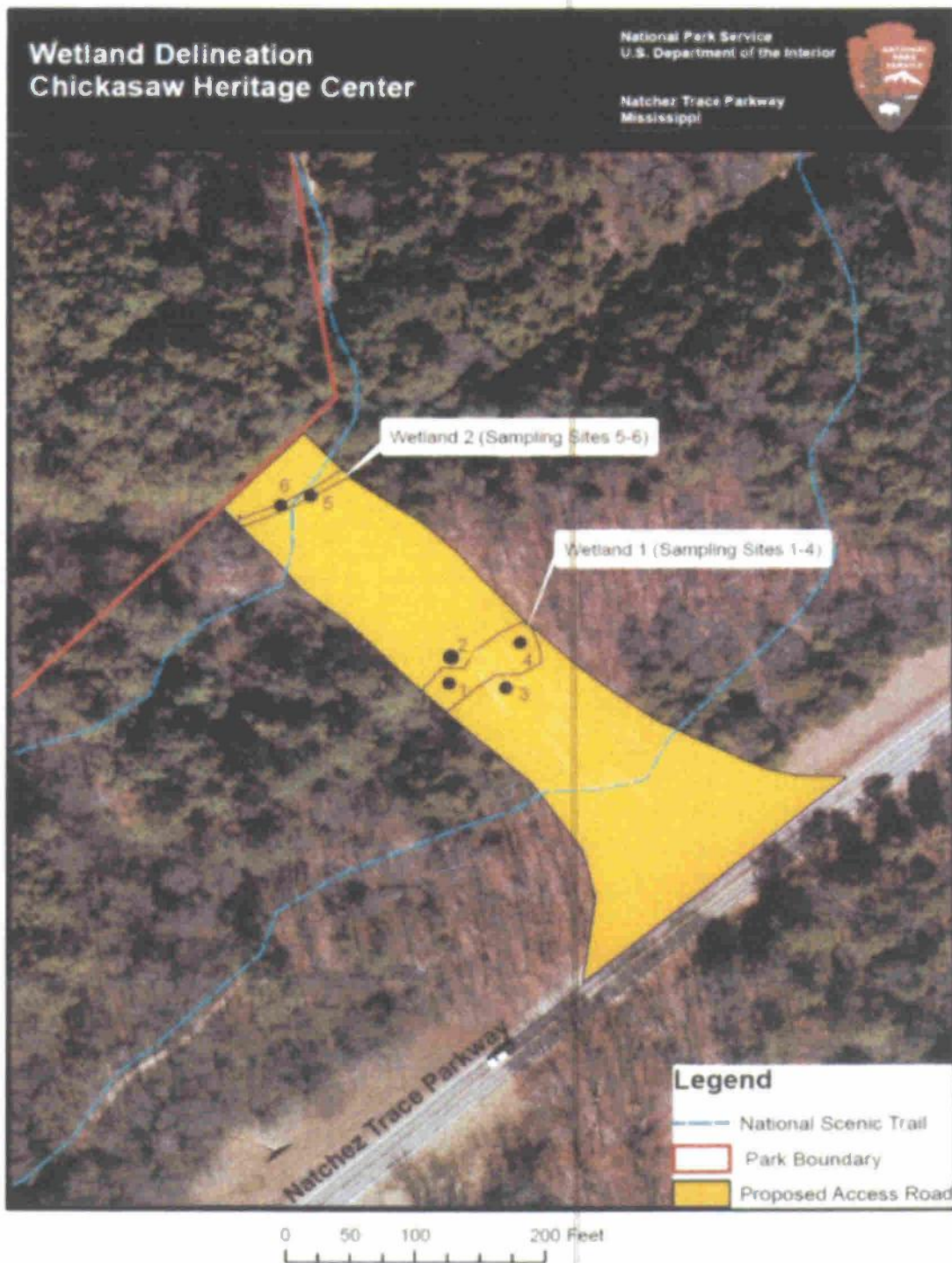


Figure 2. Wetland and sampling site locations (1-6) within the project area. Wetland 1 is 0.05 acres, and Wetland 2 is 0.02 acres,