Appendices

Appendix A: Resource Inventory and Analysis

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Natural resources									
Mint Spring Bayou and associated ravine and bottomlands	^				N/A	pre-settlement		good/fair	
Glass Bayou and associated ravine	^				N/A	pre-settlement		good/fair	
Stouts Bayou and associated ravine	^				N/A	pre-settlement		good	
Durden Creek (Big Bayou) and associated ravine	^				N/A	pre-settlement		fair	soil disturbance has degraded this water resource
Wet meadows, vernal pools, riparian areas	^				N/A	pre-settlement		fair/good	generally good except where sedimentation has occurred
Springs and seeps	^			^	N/A	pre-settlement		good	springs and seeps may have been affected by sedimentation from clearing
Forested wetlands		^			N/A	pre-settlement	cleared during the siege	fair	infested with invasive plants
Mint Spring Bayou waterfall	^				N/A	pre-settlement		good	
Limestone geology	^				N/A	pre-settlement		good	
Loess bluffs characterized by highly erodible soils	^				N/A	pre-settlement		fair	
Two major ridge networks encircling city, with east-west trending ridges	^				N/A	pre-settlement		good/fair	
Relatively level slopes of some upland areas	^				N/A	pre-settlement		good	
Mixed mesophytic forest, partially derived from CCC planting efforts		^			N/A	late 19th c.; 1933–38		fair	invasives
Successional forest derived from reduced maintenance			^		N/A	since 1960		fair	invasives
Bottomland forest	^				N/A	pre-settlement; post 1863		good	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Responses to Natural Resources									
Siting of farmsteads along ridgelines with cultivation of fields along relatively level slopes				^	N/A	pre-Civil War		N/A	
Siting of roads (Graveyard Road, Jackson Road, Baldwin Ferry Road) along east-west trending ridgelines	^			^	Not listed	circa 1812–1863		fair/poor	Baldwin Ferry Road no longer retains integrity within the park
Establishment of bridges and culverts to cross ravines and wet areas (pre-Civil War)				^	N/A	circa 1812–1863		N/A	need establishment dates
Siting of Shirley House on a ridgeline with access to a good spring	^				N/A	1837–1838		fair/poor	is spring site still known/available?
Siting of Confederate earthworks and rifle pits on elevated terrain for military advantage, and fortified earthen defensive structures to defend likely avenues of approach (road, river, and railroad corridors)	^			^	Some listed	1862–1863		fair/poor	
Confederate introduction of obstacles to movement into the potential avenues of approach (i.e. abatis, cables, downed brush, cheveaux-de-frise)				^	N/A	1862–1863		N/A	
Union establishment of zigzag trenches and other approach routes through sapping and mining and use of sap rollers for concealment				^	Not listed	1863		N/A	archeological evidence survives
Use of high points for observation and lookout positions and towers during the Civil War	^			^	N/A	1862–1863		fair	locations remain interpretable
Use of high points to site observation towers for the park				^	N/A	1900s	razed 1963–1966	N/A	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Clearing of forest cover to establish fields of fire for artillery (ridgelines and level topography were mostly clear at the beginning of the siege due to agricultural use. Clearing began with ridges and upper side slopes, progressing to ravines and bottomlands over the course of the siege. Some woodland and slash retained to create obstacles to approach.				^	N/A	1862–1863			
Construction of bridges and culverts to cross ravines and wet areas in support of park development		^		^	Not listed	1903–1908; 1937		fair/poor	four steel bridges and one Melan arch bridge established as part of early park development have been demolished
Establishment of drain structures, curbs, and paved channels to convey stormwater away from erodible soil		^		^	Not listed	1901–1903; 1933–1938		good/poor	
Extensive soil erosion control efforts by Civilian Conservation Corps, including terracing, importation of soil, regrading, sodding, and planting of trees to hold resculpted landforms.		^			Not listed	1933–1938		good/fair	
Stabilization of park soils; establishment of additional curbing, drain structures, and paved channels			^			1960s–present			
Tree clearing for park restoration			^		N/A	2000–2007		good/fair	2005–2006: 10-11 acres cleared at Railroad Redoubt
Invasive plant control programs resulting in plant removal and management			^		N/A	1960s–present		fair	
Topography and Topographic Modifications									
Loess bluffs formed after retreat of last glaciation	^				N/A	pre-settlement		fair/good	
Dissected landforms and ravines formed from overland flow of stormwater and groundwater-sourced springs and seeps	^				N/A	pre-settlement		fair/good	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Grading during Civil War by Confederates to establish fortifications, batteries, rifle pits, trenches, glacis, fields of fire	^				N/A	1862–1863		fair/poor	
Grading during Civil War by Union army to establish batteries, rifle pits, trenches, glacis	^				N/A	1863		fair/poor	
Approach trenches, saps, and mines constructed by Union army to approach Confederate fortifications	^			^	Not listed	1863		poor	primarily archeological resources
Severe erosion of portions of the battlefield between the Civil War and the 1930s due to agricultural activities and a lack of protective land cover			^		N/A	1863–1930s		N/A	
Erosion control measures conducted by CCC, various locations documented in primary source reports:		^			Not listed	1933–1939		fair/good	
Along Pemberton Avenue									
At the intersection of Pemberton Avenue and Jackson Road									
At the intersection of Confederate Avenue, Jackson Road, Louisiana Avenue, and Pemberton Avenue									
At the intersection of Confederate Avenue and Jackson Road									
North of the Wisconsin State Memorial									
Along the road leading to Tower No. l									
Behind the Illinois State Memorial									
Along Graveyard Road									
East of the 37th and 38th Mississippi trench line									
Slope stabilization			^		N/A	1963		good/fair	described as "throughout the park"
Regrading of landform near the former Indiana Circle to establish a new park Visitor Center			^		N/A	1968–1970		good	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Construction of an earthwork exhibit near the Visitor Center as an interpretive aid			^		N/A	1968–1970		good	
Regrading primarily using fill to establish Clay Street along park margin			^		N/A	1967		good	
Grading to construct the U.S.S. *Cairo* museum and exhibit			^		N/A	1980		good	
Patterns of Spatial Organization									
Indian village sites existed in the vicinity				^	N/A	pre-settlement		N/A	
French and Spanish military fortification sites (Fort Hill)				^	N/A	18th century		N/A	
Antebellum farmsteads. Small subsistence-level farms including cultivation on relatively level terrain. Pasturage for livestock. Cotton plantations to the east.				^	N/A	early to mid 19th century		N/A	
System of batteries established by the Confederate army on the bluffs overlooking the Mississippi to protect the city from attack and maintain control over the river	^			^	N/A	1861		fair/poor	many are potential archeological resources or were lost to erosion
Beginning in September 1862, Confederate construction of the defensive system of earthworks, batteries, rifle pits on the ridgelines to the north, east, and south of the city of Vicksburg	^			^	N/A	1862–1863		fair/poor	many are potential archeological resources or were lost to erosion
Positioning of Union troops in a semicircle around the Confederate defensive system on elevated positions; avenues of approach created leading toward heavily defended fortifications stationed to protect against the best routes for entering the city by land. These avenues included zigzag trenches and other sapping methods	^			^	N/A	1863		fair/poor	many are potential archeological resources or were lost to erosion
Federal attack focused on the fortifications protecting Jackson Road	^			^	N/A	1863		fair/poor	many are potential archeological resources

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Vicksburg National Cemetery established in 1866 over a portion of the Union line		^			N/A	1866		good	
Vicksburg National Military Park established in 1899 over a large portion of the siege landscape		^		^	N/A	1899		good/poor	loss of southern land area
The park donated 2 parcels to the city for a school and highway weighing station			^		N/A	1958			lands totaled 3.1 and 1.32 acres
Vicksburg NMP gained 544 acres of land to the north of the original park, and quitclaimed 154 acres of land in the southern portion of the park to the city of Vicksburg in 1963			^		N/A	1963			lands quitclaimed totaled 154 acres; gained totaled 544 acres
Vicksburg NMP quitclaimed ownership of 24 acres along Sherman Avenue north of Sherman Circle to Warren County in 1963			^		N/A			N/A	
The park acquired lands associated with Grant's failed efforts to construct a by-pass canal along the Mississippi River			^		Not listed				lands totaled 2 acres
The park acquired Confederate General Pemberton's Headquarters located in downtown Vicksburg.	^		^		Not listed	2002		good	Willis House used by General Pemberton as his headquarters during the siege
Land Uses and Activities									
Residential villages of the Natchez and Choctaw Indians are said to have been located in the region prior to European settlement of the area. French and Spanish military posts in the region likely included barracks for soldiers stationed there.				^	N/A	pre-settlement to early 19th century		N/A	
Agriculture occurred within the area encompassed by the park prior to and after the Civil War. Agricultural land uses occurred within the park until the last of the life leases expired in the 1930s.				^	N/A	19th and early 20th centuries		N/A	
Farmsteads represented a residential land use prior to and after the Civil War until life leases ended in the 1930s.				^	N/A			N/A	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Military land uses continued to be associated with the area, including Union occupation of Fort Hill after the siege, and use of the park for staff rides involved in military training.	^	^			N/A	1861–1865; 1899–present		poor	
Cemetery land uses have been associated with the area since before the Civil War. The Vicksburg National Cemetery includes over 17,000 interments. The Shirley House is the final resting place of the Shirleys. The Anshe Chesed Cemetery is established in 1864 on land adjacent to the future park.	^	^			N/A	pre-settlement to present		good	
Four CCC camps were established at the park in the 1930s where hundreds resided.				^	N/A	1833–1939		N/A	
Union and Confederate soldiers resided near their military earthworks and batteries prior to and during the siege. Union troops continued to occupy the area after the Civil War.				^	N/A	1861–1865		N/A	
National Park Service personnel resided within the park until the 1960s.				^	N/A	1933–1960s		N/A	
Commemoration of the siege began with the placing of a monument to mark the surrender interview site in 1864.			^	^	N/A	1864; 1867		N/A	the first monument was a marble shaft. It was replaced with a cannon tube between 1867 and 1940.The tube was later moved to other sites, and returned to this location in 1990.
Veterans gathered periodically at Civil War battlefields after the war including Vicksburg. An important gathering occurred at Vicksburg in 1890, and another in 1917. Veterans formed the Vicksburg National Military Park Association in 1895.				^	N/A	late-19th through early 20th centuries		N/A	
Establishment of the park in 1899 focused on commemorating the events of the siege.		^			N/A	1899		good	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Along with commemorating the siege, establishment of the park required the development of administrative, maintenance, and educational land uses.		^			N/A	1899		good	
The park was also used by the public for passive recreation, through use of the tour roads for walking and driving, and later picnic grounds. Horseback riding and camping were once permitted within the park.		^		^	N/A	1903		good	horseback riding and camping are no longer permitted land uses within the park.
Park land uses include visitor services.		^			N/A	1933		good	
Circulation									
Vicksburg & Meridian Railroad line (now Kansas City Southern Railroad) passes through the park landscape	^	^			Not listed	pre-Civil War		good	date of origin?
Yazoo City Road				^	N/A	pre-Civil War		N/A	portions of this road now part of Fort Hill Drive
Mint Spring Bayou ford				^	N/A	pre-Civil War		N/A	
Jackson Road	^	^			Not listed	pre-Civil War	1970	fair	road through the park follows historic alignment in many locations. No longer connects to former route outside of park boundaries.
Modern Jackson Road			^			1970			overpass built through the park in 1972.
Graveyard Road	^	^			Not listed	pre-Civil War		fair	altered by CCC; repaved and regraded
Baldwin Ferry Road	^			^	Not listed	pre-Civil War	1960s	fair	altered during park circulation changes; regraded and realigned as the east/west connection from Confederate Avenue to the Visitor Center and Union Avenue 1969
Halls Ferry Road	^	^			Not listed	pre-Civil War		fair	has been altered by regrading as city road
Warrenton Road	^	^			Not listed	pre-Civil War		fair	now part of Washington Avenue and US Business Route 61; portions have been realigned or lost
Small-scale residential circulation (Shirley House driveway and walk)				^	Not listed	pre-Civil War		N/A	contemporary walk may be sited on 19th century alignment
Internal roads network servicing Confederate defensive line				^	N/A	1862–1863		N/A	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Union attack routes developed through trenching				^	N/A	1863		N/A	
Vicksburg National Cemetery entrance drive marked by arch		^			Not listed	1866; 1920			
Union Avenue		^			Not listed	1903	1933–1938; 1959; 1963; 1969; 2003	fair	CCC regraded and paved 1934–1938; section between Graveyard and Jackson Roads reconstructed 1959; failure of section north of Mint Spring Bayou 1962 repaired; direction reorientation 1963; southward extension to Highway 80 removed and section between Grant Avenue and the US Navy Monument and south of Railroad Redoubt reconstructed 1969; landslide 2003 repaired
Confederate Avenue		^			Not listed	1903	1927; 1934–1938; 1963; 1969	fair/poor	sections known as Louisiana and Mississippi Avenues integrated into Confederate Avenue through repair in 1930s; paved with concrete 1931; regrading and paving by CCC, direction reorientation; southward extension to Highway 80 removed 1969
Circle drives at various monuments				^	N/A	early 20th century	Removed between 1940 and 1978	N/A	
Indiana Circle				^	N/A	early 20th century	Removed 1968–1970	N/A	
Alabama Circle				^	N/A	early 20th century		N/A	
Iowa Circle				^	N/A	early 20th century		N/A	
Maloney Circle						early 20th century			
Mississippi Circle				^	N/A	early 20th century		N/A	
Minnesota Circle				^	N/A	early 20th century		N/A	
Tilghman Circle				^	N/A	early 20th century	Removed 1940	N/A	
Logan Circle				^	N/A	early 20th century		N/A	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Missouri Circle				^	N/A	early 20th century	Removed 1940	N/A	
Arkansas Circle				^	N/A	early 20th century	Removed 1940	N/A	
Ohio Circle				^	N/A	early 20th century		N/A	
Kansas Circle				^	N/A	early 20th century	Removed 1940	N/A	
New York Circle				^	N/A	early 20th century	Removed 1940	N/A	
Tennessee Circle			^		N/A	early 20th century		N/A	
Observation Towers 1 & 2				^	N/A	early 20th century	Removed 1963–1966	N/A	
Sherman Circle		^			Not listed	early 20th century		N/A	
Illinois Circle				^	N/A	early 20th century		N/A	obliterated by shopping mall development
Wisconsin Circle				^	N/A	early 20th century	Removed 1959	N/A	
Pennsylvania Circle				^	N/A	early 20th century	Removed 1940	N/A	
Pemberton Circle		^			Not listed	early 20th century		good	surrounds the Pemberton Statue
Connecting Avenue		^			Not listed	early 20th century	1961; 1962; 1980; 2005		road reconstructed 1961; landslide damage repaired 1962; reconstructed 1980
Grant Avenue		^			Not listed	early 20th century	1961–1962		northern loop reconstructed 1961–1962
Grant Circle		^			Not listed	early 20th century			
Sherman Avenue		^			N/A	19th century	1961; 1963	N/A	reconstructed 1961; northern section beyond Sherman Circle quitclaimed to Warren County
Sherman Circle		^			Not listed	early 20th century			
Kentucky Avenue				^	N/A				
Pemberton Avenue		^			Not listed	early 20th century	1935		paved
South Confederate Avenue		^			Not listed	early 20th century			transferred to city of Vicksburg as part of quitclaim of southern third of the park in 1963
Indiana Avenue		^			N/A	early 20th century			transferred to city of Vicksburg as part of quitclaim of southern third of the park in 1963

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Wisconsin Circle		^			N/A	early 20th century			transferred to city of Vicksburg as part of quitclaim of southern third of the park in 1963
Halls Ferry Road		^			N/A	early 20th century			area around the road quitclaimed to the city in 1963
Iowa Avenue		^			N/A	early 20th century			transferred to city of Vicksburg as part of quitclaim of southern third of the park in 1963
North Frontage Road		^			N/A	early 20th century			transferred to city of Vicksburg as part of quitclaim of southern third of the park in 1963
Louisiana Circle access road		^			Not listed	by 1903	paved, 1930s	fair/good	
Navy Circle access road		^			Not listed	by 1903	paved, 1930s	fair/good	
Mission 66 Road			^		N/A	1979			
Cairo exhibit parking			^		Not listed	1980		good	
Curatorial and shop complex parking			^		Not listed	circa 1990s		good	
South Confederate Avenue					Not listed				
US Highway 80/Clay Street		^	^		N/A	undetermined	1968–1970		
Visitor Center parking lot and new entrance			^		N/A	1968–69			
Cultural Vegetation									
Agricultural cultivation to grow grains, fruits, vegetables, and cotton				^	N/A	pre-siege and post-siege to 1933			
Ornamental plantings associated with farmsteads (notable plantings associated with the Shirley House)				^	N/A	pre-siege and post-siege to 1933			
Surrender interview site oak				^	N/A	pre-siege to 1864			
Mown grass of park landscape		^			N/A	early twentieth century; additions by CCC in 1930s	1930s	good	area maintained under grass cover has diminished since the 1930s
CCC-generated forested areas		^			N/A			good/fair	infested with invasives
Ornamental plantings associated with Old Administration Building and Visitor Center			^		N/A	circa 1960s		good	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Views									
Views to fortifications and between the opposing lines of Confederate and Union artillery positions	^	^		^	N/A	established during the siege		fair/poor	tree cover has affected the extent of views available
View along Graveyard Road	^	^			N/A	established during the siege		fair/good	tree cover has affected the extent of views available
View along Thayer's Approach	^	^			N/A	established during the siege		fair/good	tree cover has affected the extent of views available
View toward Third Louisiana Redan	^	^			N/A	established during the siege		fair/good	tree cover has affected the extent of views available
View from Battery De Golyer	^	^			N/A	established during the siege		fair/good	tree cover has affected the extent of views available
View to Railroad Redoubt	^	^			N/A	established during the siege		fair/good	tree cover has affected the extent of views available
View between Fort Garrott and Hovey's Approach	^	^			N/A	established during the siege	1998	good	clearing was conducted in 1998
Views to the river from Fort Hill, Battery Barnes, Water Battery	^	^			N/A	established during the siege		fair/good	river now Yazoo River Diversion Canal to north
Buildings									
Residences in area during early settlement				^	N/A	19th century		N/A	
Shirley House	^				LCS001362	1837–1838	1902; 1931; 1938; 1966; 1983; 2006	Poor	used as a Union hospital; Superintendent's Residence, NPS housing
Willis House/Pemberton's Headquarters	^				Not listed	1835–1836	2002; 2006–2007	Good	acquired by NPS 2002; repaired 2006–2007
Riddle House				^	N/A			N/A	
Edward House				^	Not listed			N/A	
Lynd House				^	N/A			N/A	
First park Visitor Center in Mississippi River Commission headquarters building				^	N/A	1929	1944–1970; 1976	N/A	served as park visitor center 1944–1970; demolished 1976
Cemetery Superintendent's Lodge		^			LCS007290	1927			need condition information
CCC camp buildings (barracks and other facilities)				^	N/A	1933–1939		N/A	demolished after CCC activities ended
Old Administration Building		^			Not listed	1934–1936	1944–1978; 2000s	fair	served as superintendent's residence 1944–1970; stabilized 2000s
Maintenance complex		^			Not listed	1934–1936	1964	good/fair	additions added 1964
Residences for park employees				^	N/A	pre-1930s	circa 1960s	N/A	

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Mission 66 Visitor Center			^		N/A	1968–1970	1980; 1995; 1997	good/fair	elevator added, roof replaced
Cairo Museum			^		N/A	1980		good?	
Curatorial Management Facility			^		N/A	1998		good?	
Garage near Cairo			^		N/A	circa 1990s		good?	
Open storage shed			^		N/A	circa 1990s		good?	
Structures									
Fort Mount Vigio on Fort Hill				^	N/A	18th century		N/A	
Fort McHenry replaced Fort Mount Vigio				^	N/A	1797	1862	N/A	
Fort Nogales battery				^	N/A			N/A	
Levees along river to protect crop fields				^	N/A	1800–1863		N/A	
Outbuildings associated with Shirley House (cistern, hen house, stable)				^	N/A			N/A	
Confederate fortifications including fortification, batteries, rifle pits	^				Many not listed	1862–1863; early 1900s; 1933–1936		fair/poor	features partly archeological resources; repaired during early park development period and by CCC
Fort Hill	^				LCS001360	1790s	1862; 1933–1936	good	CCC renovated structure; see LCS
Second Texas Lunette	^				Not listed	1862		fair	
Great Redoubt	^				LCS007287	1862	1933–1936	good	CCC renovated structure; see LCS
Third Louisiana Redan	^				Not listed	1862		fair	
Green's Redan	^				Not listed	1862		fair	
Stockade Redan	^				Not listed	1862		fair	
Twenty-seventh Louisiana Lunette	^				Not listed	1862		fair	
Fort Garrott	^				LCS007292	1862	1933–1936	good	CCC renovated structure; see LCS
Railroad Redoubt	^				LCS007286	1862	1933–1936	good	CCC renovated structure; see LCS
South Fort	^				Not listed	1862		fair	
Louisiana Circle	^				Not listed	1862		fair	
Water Battery	^				Not listed	1862		?	condition and status unknown
Federal earthworks including batteries, rifle pits, trenches	^				Not listed	1863			features partly archeological resources; repaired during early park development period and by CCC
Battery Selfridge	^				Not listed	1863		fair	
Battery De Golyer	^				Not listed	1863		fair	
Battery Benton	^				Not listed	1863		fair	
Vicksburg National Cemetery includes numerous structures including the arch placed in 1920 to mark the entrance		^			some features listed	1866		fair/good	
Surrender Interview Site Monument		^			LCS091212	1864; 1867			Cannon relocated; replaced on site in 1990

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Three observation towers erected in the early 1900s		^			N/A				
No. 1 (east of Fort Hill)				^	N/A	1900s	1963–1966	N/A	demolished
No. 2 (south of Jackson Road)				^	N/A	1900s	1963–1966	N/A	demolished
No. 3 (south of current park boundaries)				^	N/A	1900s	1963–1966	N/A	demolished
Melan arch bridges		^							
No. 1 (Union Avenue north of Visitor Center		^			Not listed	1903			
No. 2 (Union Avenue north of Pemberton Avenue)		^			Not listed	1903			
No. 3 (Union Avenue north of Thayer's Approach)		^			Not listed	1903			
No. 4 (Union Avenue west of No. 3)		^			Not listed	1903			
No. 5 (Union Avenue west of No. 4)				^	Not listed	1903	Demolished 1997		replaced with box culvert
No. 6 (Confederate Avenue over Glass Bayou)		^			Not listed	1903			
No. 7 (Union Avenue east of Indiana State Monument)		^			Not listed	1903			
No. 8 (Union Avenue near Hovey's Approach)		^			Not listed	1903			
No. 9 (Union Avenue north of No. 8)		^			Not listed	1903			
No. 10 (Union Avenue north of No. 9)		^			Not listed	1903			
Maloney Circle Bridge (over rail line)		^			Not listed	1908			
Halls Ferry Road Bridge		^			Not listed	1937			
Stout's Bayou Steel Bridge				^	Not listed	1903	1938		
Confederate Avenue Steel Bridge				^	LCS091215	1903	Demolished 2002		
Steel bridge (Confederate Avenue across Glass Bayou)				^		1900s	1970s; 2003	N/A	closed to traffic 1970s; demolished 2003
Steel bridge (N. Union Avenue between Wisconsin and West Virginia monuments)				^		early 1900s		N/A	demolished, replaced with culvert
Iron bridges (3)						early 1900s	1970s	N/A	replaced with culverts
Confederate Avenue bridge across Mint Spring Bayou				^					
Union Avenue bridge across Jackson Road				^					
Confederate Avenue bridge across Jackson Road				^					
Massachusetts State Monument		^			LCS007275	1903			
New Hampshire State Monument		^			LCS003778	1904			
Pennsylvania State Monument		^			LCS003833	1906			

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Ohio State Monuments		^				1906			Ohio erected 39 regimental monuments, each with a distinctive design, rather than a single state monument. Each has its own LCS number
Iowa State Memorial		^			LCS007269	1906			
Illinois State Memorial		^			LCS007276	1906			
Minnesota State Monument		^			LCS007272	1907			
Virginia State Monument		^			LCS003842	1907			
Rhode Island State Memorial		^			LCS007278	1908			
Mississippi State Memorial		^			LCS007274	1907–1912	1954; 2001		
Wisconsin State Memorial		^			LCS007268	1911			
U.S. Naval Memorial		^			LCS007282	1911			
Maryland State Monument		^			LCS003708	1914			
Michigan State Memorial		^			LCS007279	1916			
Missouri State Memorial		^			LCS007270	1917			
New York State Memorial		^			LCS007271	1917			
Louisiana State Memorial		^			LCS007273	1920	1999		
Memorial Arch		^			LCS007285	1920	1967	good	relocated from original location
Cemetery Entrance Arch		^			LCS007288	1920			
West Virginia State Memorial		^			LCS003316	1922			
North Carolina State Monument		^			LCS003779	1925			
Indiana State Memorial		^			LCS007257	1926			
South Carolina State Memorial		^			LCS003834	1935			
Alabama State Monument		^			LCS007280	1951			
Arkansas State Memorial		^			LCS007281	1954			
Florida State Monument		^			LCS003466	1954			
Texas State Monument			^		LCS007277	1961	1984		rehabilitated
Kansas State Memorial			^		LCS003694	1960			
Georgia State Memorial			^		LCS003364	1962			
Tennessee State Monument			^		Not listed	1996			
Kentucky State Monument			^		Not listed	2001			
Mississippi African American Monument			^		Not listed	2004			
Connecticut State Monument			^		Not listed	2008			located on the Grant's Canal parcel
USS Cairo tensile canopy			^		N/A	2003			repairs made to tears sustained
Interpretive landform at the Mission 66 Visitor Center					N/A	1968–1970			
Entrance kiosks (two, at Clay Street entrance, at Fort Hill Drive entrance)					N/A	1987			
Union Army Monument					LCS091209				
Confederate Army Monument					LCS091210				
Tunnel near Thayer's Approach		^			Not listed	by 1863	1930s	fair	reconstructed
Cemetery wall		^			LCS090461		2006		rehabilitated

Current Name	*Contributes-Primary POS*	*Contributes-Secondary POS*	*Non-Contributing*	*Missing*	*LCS #*	*Date of Origin*	*Modifications*	*Condition*	*Notes*
Small-scale Features									
Iron and bronze tablets and position markers		^		^	LCS091214	early 20th century	1942	good/fair	140+ were contributed to World War II metal drive needs
Monuments and other battlefield markers		^	^		Not listed	20th and 21st century		good/fair	those established by 1959 are contributing resources; those with stone components have their own LCS numbers
Statues		^	^		Not listed			good/air	those established by 1959 are contributing resources; each statue has its own LCS number
Busts and Reliefs		^	^		Not listed			good/fair	those established by 1959 are contributing resources; each bust and relief portrait has an individual LCS number
Equestrian Statues		^	^		Not listed			good/fair	those established by 1959 are contributing resources; each equestrian statue has its own LCS number
Emplaced Cannon		^	^		Not listed			fair	those established by 1959 are contributing resources
Culverts and drainage structures		^	^		Not listed			fair	those established by 1959 are contributing resources
Retaining walls		^	^		Not listed			fair	those established by 1959 are contributing resources
Shirley House gravestone		^			LCS003454	1888		good	
Park operation features and site furnishings			^		Not listed			good/fair	most post-date the period of significance
War Department boundary markers		^			Not listed	early 20th century		fair	

Appendix B: Native Warm-season Grass Restoration in Mississippi

NATIVE warm-season Grass Restoration IN MISSISSIPPI

Natural resource managers often promote establishment and management of native warm-season grasses for wildlife habitat. This is because a diverse mixture of native grasses and forbs generally provides better food and cover resources for wildlife species than nonnative grasses such as bermudagrass and tall fescue. Nonnative grasses were introduced for soil stabilization and livestock forage because they were easily established and highly productive, and because they could be grazed heavily. However, because nonnative grasses provide poor habitat for most wildlife, there has been greater interest in restoring native grasses for wildlife habitat.

Native warm-season grasses also provide excellent forage for livestock, making them more compatible for operations striving to produce livestock forage and good wildlife habitat simultaneously. With some careful planning and preparation, native warm-season grasses can be successfully established to meet your grassland habitat goals. Many assistance and cost-share opportunities are available to help you meet these goals. Thus, native warm-season grasses can be successfully managed for multiple objectives in Mississippi.

What Are Native Warm-Season Grasses?

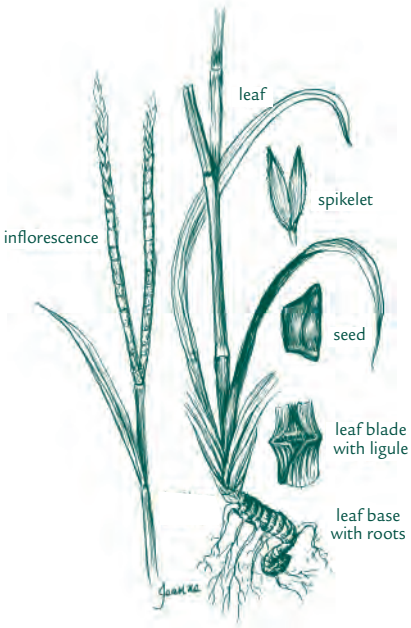
Native warm-season grasses are annual and perennial grasses that were native to Mississippi prior to the introduction of nonnative grasses. "Warm-season" means these grasses primarily grow during summer months (but also during portions of spring and fall). Typically, the native forbs (e.g., broadleaf plants like wildflowers and legumes) that historically occurred with these grasses are included when someone generically refers to native warm-season grass management or restoration. Some examples of native warm-season grass species include: big bluestem, little bluestem, broomsedge, indiangrass, switchgrass, and eastern gamagrass. Some native forbs include partridge pea, beggarweeds, and blackeyed susan.

Presently, native grassland systems are some of the most highly degraded ecosystems in Mississippi. When people think of grasslands, they often may think of pastures or open prairies. Indeed, native warm-season grasses were the dominant plant species that historically covered the Black Belt and Jackson Prairie regions of Mississippi. However, the understory (ground layer) communities of many fire-adapted forest systems (e.g., longleaf and loblolly pine) in Mississippi were also historically composed of grasses and forbs that were maintained by fire. Many of the same native warm-season grass species (little bluestem, indiangrass, etc.) that occurred in nonforested grasslands were also prevalent in the understory of pine-grasslands.

Many native warm-season grass species historically were prevalent in the understory of fire-maintained forests.

Most of the historic native prairies in Mississippi have been converted for agricultural uses. In modern agricultural landscapes, native warm-season grasses typically either exist in mixed stands with or have been completely out-competed by nonnative forage grasses. Most historically longleaf pine-dominated systems have been converted to slash or loblolly pine, and most pine-grasslands in general have been negatively affected by fire suppression and high

Some Examples of Native Warm-Season Grasses



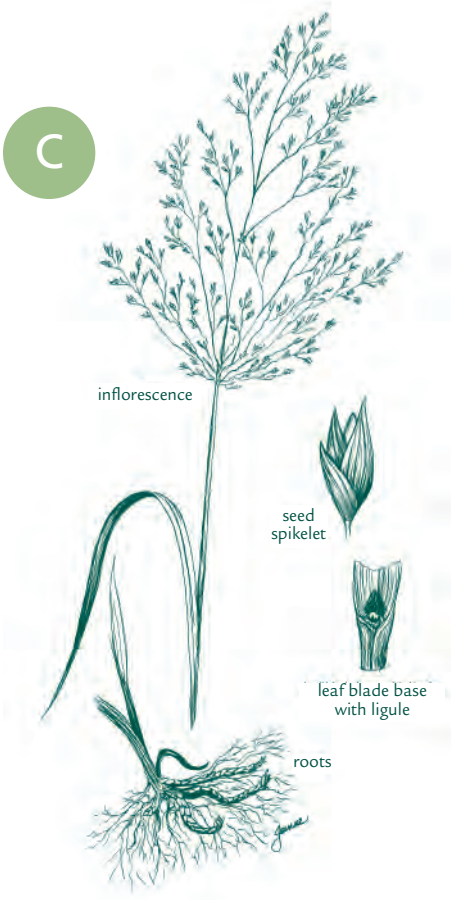
A. Big Bluestem

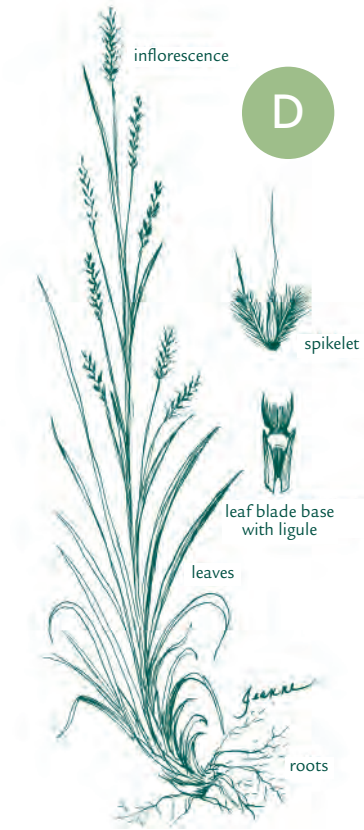
B. Eastern Gammagrass

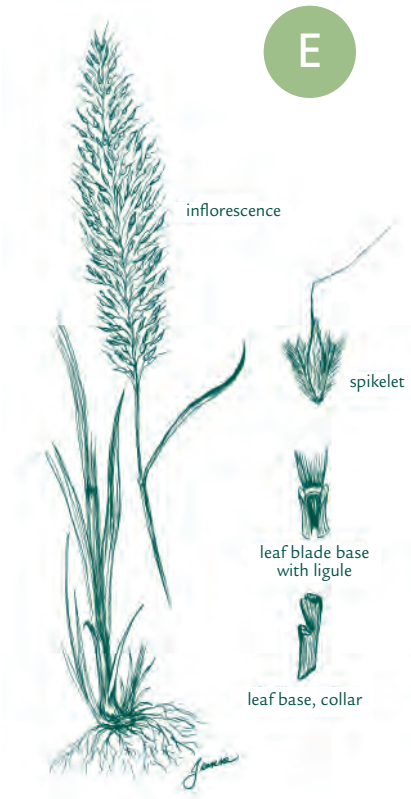
C. Switchgrass

D. Little Bluestem

E. Indiangrass







stocking densities. Pine forest communities also have been adversely affected by invasive, nonnative vegetation. Converting stands of nonnative grasses to native grasses and forbs and restoring pine-grasslands can greatly improve the quality of such stands as wildlife habitat and grassland ecosystems. Sites restored to native warm-season grasses also can be very productive hay and grazing lands with proper management. However, native warm-season grass restoration need not be limited to large acreages. Restoring only portions of agricultural fields (e.g., buffers along field edges) to native warm-season grasses can integrate grassland wildlife habitat with agricultural production.

Native warm-season grasses were the dominant plant species that historically covered the Black Belt and Jackson Prairie regions of Mississippi.

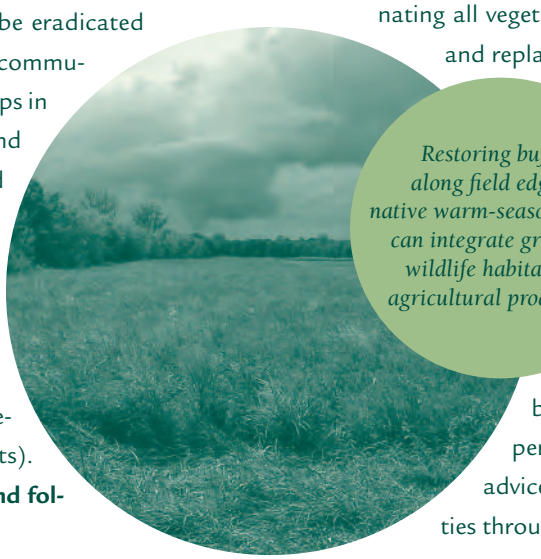
Why Restore Native Warm-Season Grasses?

Restoration of native warm-season grasses can accomplish one or more goals for landowners. Some examples of specific goals to be achieved through native warm-season grass restoration include: 1) wildlife habitat (e.g., bobwhite quail, grassland songbirds, butterflies); 2) livestock forage (native warm-season grasses provide high-quality forage during summer and produce high-quality hay); and 3) ecosystem restoration (e.g., prairie, oak woodland savannah, or pine woodland savannah restoration).

Most of the historic native prairies in Mississippi have been converted for agricultural uses.

Restoring Native Warm-Season Grasses

Where nonnative forage grasses or other undesirable vegetation is present, the undesirable vegetation must be eradicated before attempting to establish native plant communities. This is one of the most important steps in native warm-season grass restoration, and consultation with a professional experienced in native warm-season grass management prior to beginning any restoration efforts is recommended. Most often, control of undesirable vegetation is achieved through herbicide treatments (although in some cases, treatments such as disking or prescribed fire may produce the desired results). **When using herbicides, be sure to read and follow product labels.**



Restoring buffers along field edges to native warm-season grasses can integrate grassland wildlife habitat with agricultural production.

Releasing Existing or Establishing New Native Plant Communities

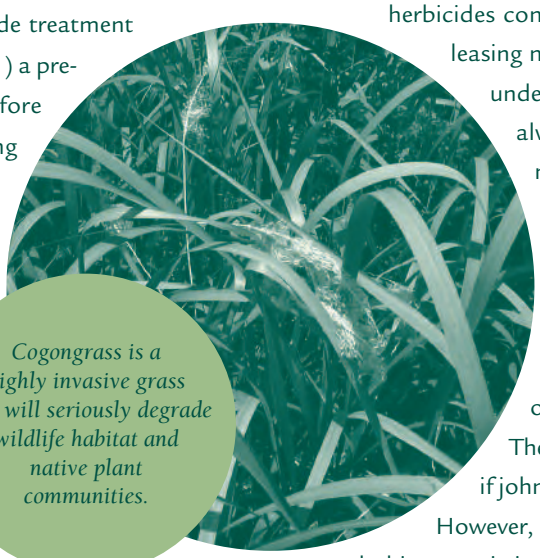
At some sites, a native warm-season grass and forb community is already present, but it is being suppressed by competition with nonnative forage grasses. In this case, an herbicide treatment to release the native plants may satisfactorily restore the native plant community. Grasses such as broomsedge and forbs such as partridge pea may potentially be released from competing nonnative grasses such as tall fescue. Once undesirable vegetation is controlled, additional plantings may enhance the existing native plant community.

A wildlife biologist or other experienced professional can provide technical advice to determine if a particular site might be restored to a good native plant community through herbicidal treatments. When attempting to release an existing stand of native grasses from nonnative grass competition, the selectivity of the herbicide and timing of application are critical. Nonnatives can be controlled and native grasses released either by using a selective herbicide to which native warm-season grasses are tolerant (i.e., imazapic) or by applying a nonselective herbicide (i.e., glyphosate) during a time when nonnative, cool-season vegetation (e.g., tall fescue) is actively growing and native warm-season grasses are dormant.

For some sites, native plants are not sufficiently abundant, or undesirable species cannot be controlled without essentially eliminating all vegetation. In these cases, herbicidal treatment and replanting with desirable vegetation may be the only alternative. If bermudagrass or cogongrass is present, native grasses will almost always have to be replanted due to the intensive herbicidal requirements to control the nonnative grasses. After undesirable vegetation is controlled, a native plant community may be replanted. A wildlife biologist or other experienced professional can provide technical advice for restoration of native plant communities through herbicidal treatments.

Controlling Nonnative Grasses

In general, herbicides are most effective when applied to actively growing plants in a manner that achieves maximum contact of the herbicide with foliage and/or soil surface (depending on whether the herbicide is foliar or soil active). For any of the following herbicide treatment options, one of the following management practices applied two to four weeks prior to herbicide treatment will usually increase herbicide effectiveness: 1) a prescribed burn during fall to early spring before herbicide application; 2) grazing; 3) haying and raking; or 4) mowing. These treatments reduce dead plant material (except mowing) and allow for new plant growth, which improves the foliar contact surface for herbicides. It should be noted that cogongrass burns at extremely high temperatures, so burning cogongrass in woodland stands may not be advisable due to potential damage to trees. Grazing will likely not be effective on cogongrass either, given that cogongrass has practically no forage value. Extreme care should be used if cogongrass must be mowed; avoid moving cut plant parts to new areas and spreading this noxious grass. After initial herbicide treatments of nonnative, invasive grasses, follow-up treatments (e.g., spot spraying) may be necessary to effectively remove residual plants. Periodic monitoring of treated sites is essential to determine whether undesirable grasses are still present; if still present, they should be further treated with herbicides to reduce future spread.



Cogongrass is a highly invasive grass that will seriously degrade wildlife habitat and native plant communities.

Tall Fescue *(Schedonorus phoenix)*

Actively growing tall fescue can be eradicated with combined fall and spring treatments of glyphosate (e.g. Roundup®) at a labeled rate. Apply one treatment of glyphosate in the fall, then another the following spring to control tall fescue that may germinate from seed. These treatments should be adequate to release existing native warm-season grasses or to prepare a site for planting native warm-season grasses if tall fescue is the only grass problem present. However, some apparently tall fescue-dominated sites may have a bermudagrass component that is not easily recognizable underneath the tall fescue canopy. If there is any presence of nonnative, warm-season grasses such as johnsongrass, bahiagrass, or bermudagrass, it is best to treat the site as recommended below for these species after the tall fescue has been controlled.

Johnsongrass *(Sorghum halepense)*

Johnsongrass may be controlled with sulfosulfuron (e.g., Outrider®) after full green-up. Imazapic (e.g., Plateau®) applied before seeds germinate is effective for controlling johnsongrass establishment from seed. Glyphosate (e.g., Roundup) applied after seedhead initiation may also be effective for controlling johnsongrass. Although herbicides containing glyphosate can be effective for releasing native warm-season grass seedlings growing underneath johnsongrass, be aware that there is always a risk of killing or injuring established native warm-season grasses if herbicides containing glyphosate are applied when native warm-season grasses are growing. Sulfosulfuron applied at appropriate label rates will not harm native warm-season grasses and thus can be applied over developing native warm-season grass seedlings. The previous treatments likely will be adequate if johnsongrass is the only grass problem present. However, if there is any presence of bermudagrass or bahiagrass, it is probably best to treat the site as recommended below.

Bahiagrass *(Paspalum notatum)*

For bahiagrass-dominated sites, apply a labeled rate of metsulfuron methyl (e.g., Escort®) in spring after full green-up. Native warm-season grasses are mostly tolerant of metsulfuron methyl, but observe applicable replanting intervals on the product label. Metsulfuron methyl can be absorbed through the roots, so be cautious of applications around desirable hardwood trees and shrubs. Closely note label indications if using near nontarget trees or shrubs. Applied at lower rates (less than 1 ounce per acre), metsulfuron methyl will probably not injure most desirable hardwood trees. However, if there is any doubt, do not apply within two times the width of the drip line of any desirable hardwood trees.

In desirable hardwood areas that cannot be treated by metsulfuron methyl or if johnsongrass is also present, apply a labeled rate of imazapic (e.g., Plateau) or imazapic plus glyphosate (e.g., Journey) after bahiagrass has reached full green-up. These treatments may be adequate to release existing native warm-season grasses or to prepare a site for planting native warm-season grasses if bahiagrass is the only grass problem present. Be aware that herbicides containing glyphosate may kill native warm-season grasses if applied when they are actively growing. Another treatment option for areas that cannot be treated by metsulfuron methyl is application of a labeled rate of glyphosate after bahiagrass seedhead initiation. However, multiple glyphosate-only applications will likely be required to control bahiagrass, and this treatment will also kill any desirable

vegetation. If there is a significant presence of bermudagrass, it is best to treat the site as recommended below; otherwise, spot-treat bermudagrass if it occurs in patches.

Bermudagrass *(Cynodon dactylon)*

Bermudagrass is very competitive and difficult to control with a single application of most herbicides. Because of its aggressive nature and warm-season growth pattern, it is absolutely essential to completely eradicate bermudagrass before planting native warm-season grasses. However, sites dominated by bermudagrass can be converted by applying labeled rates of imazapyr (e.g., Arsenal®, Chopper®). Imazapyr applications for bermudagrass control are most effective if applied during July through September.

If imazapyr is used, the application should be made a growing season prior to establishing native warm-season grasses. The residual soil activity of imazapyr will kill germinating native warm-season grasses if planted within six months (plus or minus) of application of imazapyr. Closely note label precautions if using near nontarget trees or shrubs. Imazapyr will kill hardwoods and should not be applied within two times the width of the drip line of any desirable hardwood trees. In areas that cannot be treated by imazapyr, apply a labeled rate of glyphosate (e.g., Roundup) after bermudagrass seedhead initiation. Glyphosate will not eradicate bermudagrass as effectively as imazapyr, and multiple applications of glyphosate will be required.

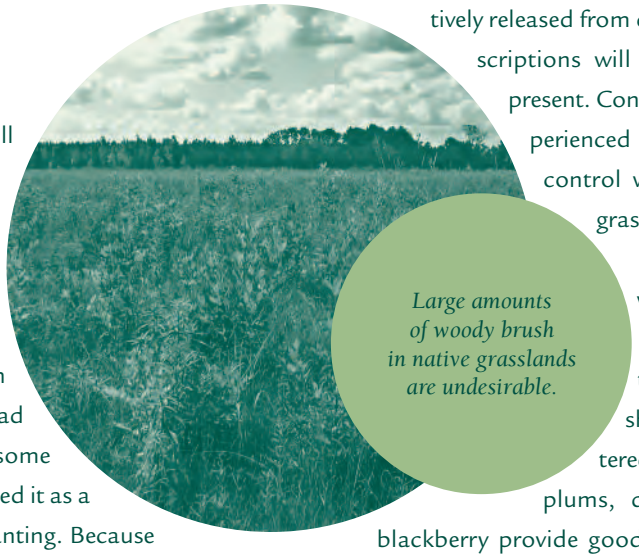
Cogongrass *(Imperata cylindrica)*

Cogongrass is a highly invasive grass that will seriously degrade wildlife habitat and native plant communities. It has no forage value to livestock or wildlife. Cogongrass spreads by wind-blown seeds and rhizomes that are transported by mowing or logging equipment that has come into contact with seeds or the plant. This grass was also spread as an ornamental and forage plant in some states until federal and state regulations listed it as a noxious weed, restricting its intentional planting. Because this grass can degrade property values, limit land use alternatives, and damage forest resources and wildlife habitat, landowners should learn to recognize it and take immediate actions to control it. Cogongrass is still sold by some nurseries under the name Japanese blood grass. Do not use this grass for ornamental plantings.

Treat cogongrass with labeled rates of imazapyr (e.g., Arsenal) plus glyphosate (e.g. Roundup) during late summer or early fall. Although imazapyr will kill desirable hardwood trees and shrubs, it may be worth sacrificing desirable plants in order to control the spread of cogongrass. The sooner this invasive pest is treated, the more effective control efforts will be. After initial herbicide treatments, treated cogongrass stands should be carefully monitored, as further herbicide treatments will likely be necessary for effective control. If you suspect you have cogongrass on your property, contact a natural resources professional to verify this and assist you with developing a cogongrass eradication plan. Fact sheet 1999-01 is available from the Mississippi Department of Agriculture and Commerce to help landowners identify cogongrass. For more information about cogongrass, contact—

- Mississippi Department of Agriculture and Commerce
  Bureau of Plant Industry, Plant Pest Programs
  Mississippi State, MS 39762-5207

  (662) 325-7765
  www.mdac.state.ms.us/index.asp



Large amounts of woody brush in native grasslands are undesirable.

Controlling Woody Brush

Due to lack of management, dense infestations of woody brush such as elm, sweetgum, eastern red cedar, and green ash degrade the value of native grassland communities. Hardwood brush shades the ground and inhibits growth of desirable grasses and forbs in grass fields and upland pine forests. Appropriate herbicidal, mechanical, or prescribed fire treatments are required to control woody brush, and in some cases a native grassland community can be effectively released from dense brush cover. Treatment prescriptions will depend on the types of brush present. Consult a wildlife biologist or other experienced professional to develop a plan to control woody brush and restore native grassland communities.

Although large amounts of woody brush in native grasslands are undesirable, creating and protecting some scattered patches of shrubby cover is desirable. Scattered thickets of native shrubs like wild plums, dogwoods, winged sumac, and blackberry provide good escape and loafing cover for a number of grassland birds. Maintaining about 10 to 20 percent of grasslands in shrubby cover will provide good cover for wildlife. Protect some existing shrub thickets from fire and herbicide treatments or plant suitable shrubs to enhance protective cover in native grass stands.

Species Selection and Planting

Native grass planting rates are expressed in terms of pounds of pure live seed (PLS) per acre. The percentage PLS reflects the amount of viable seed along with stems and other inert matter mixed in with the seed. For example, to achieve 3 pounds PLS per acre, you may actually have to plant 4 pounds of bulk seed product. However, when you purchase native warm-season grass seed, it is usually in terms of "pounds PLS per acre." So usually you will just need to know how many acres and at what rate (PLS) you are going to plant when purchasing seed. Seed vendors will usually mix several grass species for you based on percentages of grasses you want to comprise a specific PLS planting rate. Try to select cultivars or varieties of native warm-season grasses that originated close to your region, if available, as these varieties may be better adapted to your climate (see Table 1 for some suggested varieties). A seed vendor representative or other experienced professional can help you choose among available, suitable varieties.

A native warm-season grass seed drill is specially designed to handle these seeds.

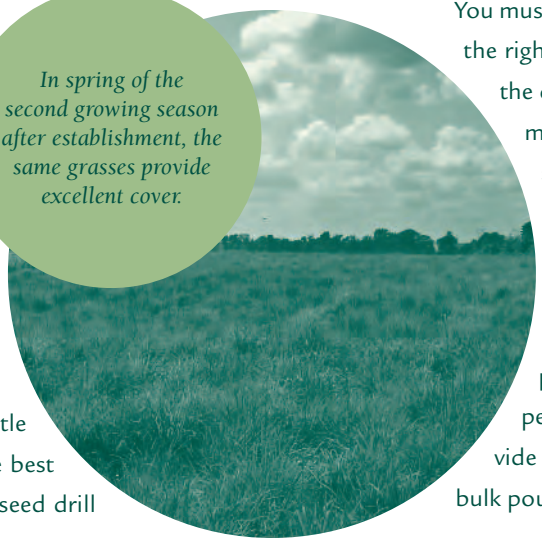
Native warm-season grasses should be planted from mid-April to early June (they also can be planted December through February during the dormant season). To reiterate, competition control is essential before planting native warm-season grasses. If substantial competing vegetation remains after initial site preparations, an application of imazapic plus glyphosate (e.g., Journey) or glyphosate (e.g., Roundup) alone may be applied just prior to or right after planting native warm-season grasses to help control competing weeds. Imazapic applied at appropriate rates prior to planting generally has few negative effects on native warm-season grasses. However, closely follow label recommendations if attempting to establish switchgrass, eastern gamagrass, or sideoats grama, as higher label rates of imazapic can have adverse effects on these species (switchgrass is especially sensitive to imazapic).

The fluffy seeds of big bluestem, little bluestem, indiangrass, and purple top are best planted with a native warm-season grass seed drill specially designed to handle these seeds. It is important not to plant these seeds too deep (no deeper than one-fourth to one-half of an inch; shallower is better). When planting these seeds with a native warm-season grass seed drill, it is acceptable if some of the seed is visible on the surface. Many of these drills are capable of planting seeds via no-till planting. However, if you must plow the site before planting (e.g., there is too much litter for no-till planting), use a roller or cultipacker to firm and smooth the seedbed before planting.

A firm seedbed is essential because you do not want the seeds to be buried too deep in a loose seedbed (this is especially important if planting with drills, which may weigh over a ton). If using a native warm-season grass drill, it is not necessary to pack the seed after planting if the drill is equipped with packing wheels. If a drill is unavailable, a less effective method of planting is broadcast seeding. Prepare a firm seedbed as previously described; broadcast seed with a carrier such as cracked corn or 0-13-13 fertilizer and pack **lightly** with a roller.

In late summer of the first growing season, these native warm-season grasses do not exhibit much above-ground vegetative growth.

Eastern gamagrass is best planted with a corn planter, whereas switchgrass, sand lovegrass, and sideoats grama can be planted with a drill or broadcast seeder (a carrier is not necessary). Eastern gamagrass should be planted about 1 inch deep, whereas switchgrass, sand lovegrass, and sideoats grama should be planted no deeper than one-fourth of an inch. Follow the instructions above if planting into a prepared seedbed is necessary.



In spring of the second growing season after establishment, the same grasses provide excellent cover.

You must calibrate planting equipment to distribute the right amount of bulk seed in order to achieve the desired PLS rate. Refer to equipment documentation or consult an experienced professional for calibration instructions. The ratio of PLS to bulk seed should be printed on a label accompanying the seed when it is purchased, or the label should at least provide purity (PP) and total germination (GP) percentages. Multiply PP by GP to find the percent PLS in 1 bulk pound of seed, then divide 1 by the percent PLS to figure how many bulk pounds of seed are equal to 1 pound PLS.

After planting, **BE PATIENT**. Do not expect a dense stand of grasses by the end of the first growing season (although it is possible under ideal conditions). Native warm-season grass seedlings spend most of the first growing season developing a root system and may not exhibit much above-ground vegetative growth. Often, a perfectly good stand of native warm-season grasses is developing although it may appear that the planting was unsuccessful. Native warm-season grasses planted at forage rates **might** develop quickly and almost completely cover a site during the first year given good growing conditions, but stands planted at lower rates for wildlife will likely contain significant bare ground areas. However, bare ground is good for wildlife habitat, and by the second growing season, these stands will likely be excellent cover.

Wildlife Habitat and Ecosystem Restoration

Generally, the total amount of all grasses planted should be in the range of 3 to 6 pounds PLS per acre for wildlife habitat. More sparse stands of grass are desirable for wildlife because dense grass growth shades out desirable forbs that produce wildlife food, and dense grass limits access for species that travel and forage along the ground. Indiangrass can become especially dense and outcompete other grasses if planted too heavily. Thus, indiangrass should comprise no more than 10 to 20 percent of native warm-season grass seed mixtures planted specifically for wildlife.

A mixture of grass species is best for wildlife because the structure and composition of mixed stands creates more diverse, usable habitats than a single species stand. See Table 2 for some suggested grass mixtures. See Table 3 for some suggested forb species.

Forb seeds can be mixed with native grass seeds for planting (drill or broadcast); alternatively, many native grass drills have separate forb boxes, but these are often hard to accurately calibrate for mixtures of large and small seeds. Forbs increase habitat diversity and provide wildlife foods in the form of seeds, nectar, and green forage. A diversity of forbs also attracts numerous insects that are important foods for other wildlife or attractive species for wildlife viewing (e.g., butterflies). Establishing or protecting scattered patches of native shrubs (e.g., wild plum, blackberry, and dogwood) and trees (e.g., oak and pine) in open landscapes (e.g., pastures) restored to native grasses will also enhance habitat value for wildlife by adding more diverse cover and food resources.

Livestock Forage

Native warm-season grasses provide excellent warm-season forage once established. Average daily weight gains for cattle grazing native warm-season grasses can be equal to or greater than gains reported for cattle grazing bermudagrass or bahiagrass. Native warm-season grasses work best as one component of a rotational grazing system that includes both cool-season and warm-season paddocks. Generally, 67 to 75 percent of the forage base should be cool-season forage, whereas 25 to 33 percent should be warm-season forage. Cool- and warm-season grasses should be planted in separate paddocks and not in mixed stands.

Eastern gamagrass, switchgrass, big bluestem, and indiangrass are good native warm-season grass species for forage production. Many cultivars of native grass species have been developed specifically for forage production. For livestock forage, plant native warm-season grasses (singularly or in combination) at a total rate of 8 to 12 pounds PLS per acre. Mixed species stands of these grasses (or different single-species paddocks) will likely be advantageous because species mature at different times (possibly increasing summer forage availability), and some species may retain better forage quality during dry weather periods. Switchgrass and eastern gamagrass can be established and used more effectively when planted as single-species stands. A good combination of native warm-season grass species for both livestock forage and wildlife habitat is 3 pounds PLS per acre big bluestem, 3 pounds PLS per acre indiangrass, and 2 pounds PLS per acre little bluestem. Big bluestem and indiangrass flower later than most other native warm-season grasses, so these two species may be good choices if both hay and wildlife are the objective. Waiting until July to cut these grasses for hay allows grassland birds to have good nesting cover through the peak of the nesting season. However, grasses like switchgrass and eastern gamagrass will be past their best quality by July. Producers should weigh their objectives accordingly when trying to manage native warm-season grasses for both forage and wildlife habitat.

Maintenance and Use of Native Warm-Season Grass Stands

Once established, native grassland communities must be maintained through periodic disturbance such as disking, prescribed fire, or grazing. To manage for grassland wildlife and ecosystem restoration, periodic disturbance is essential to maintain grassland communities by controlling invading brush and trees (scattered shrubs and trees can be beneficial in grassland communities), minimizing litter accumulation, recycling nutrients, and by stimulating new herbaceous plant growth. Disking should not be used to manage sensitive areas such as remnant native prairie or wiregrass communities because it may destroy rare or sensitive plants in these systems. Prescribed fire is a cost-effective tool for managing wildlife habitat and native prairie, controlling woody brush, and improving forage quality. However, prescribed burning should always be supervised by a certified prescribed burn manager, who will develop a written burn plan and obtain appropriate permits before burning.

Check with the Mississippi Forestry Commission for more information about prescribed burning regulations.

Use of nitrogen (N) fertilizer during the first year of establishment is not recommended, although moderate amounts of phosphorus (P) and potassium (K) fertilizer may be beneficial during the first year. For forage production, N-P-K may be applied as needed during subsequent years to enhance production. However, native warm-season grasses do not require as much supplemental fertilization as nonnative forage grasses. In most cases, native warm-season grasses will probably not be available for substantial grazing or haying during the first growing season after planting. It is important not to graze native warm-season grasses shorter than a height of 8 inches; a rotational grazing system in which several native warm-season grass paddocks are available is the most efficient way to use native warm-season grasses for livestock forage.

The best-quality hay is produced from native warm-season grasses by harvesting when seed heads first begin to show. A professional experienced in native warm-season grass management can provide prescriptions for maintenance of native warm-season grass stands tailored specifically to your objectives.

Technical Assistance

This guide is primarily an introduction to native warm-season grass establishment and management. An excellent, more detailed reference is "Native warm-season grasses: identification, establishment, and management for wildlife and forage production in the mid-South" by Harper et al. (2007) (http://www.utextension.utk.edu/publications/wildlife/default.asp). For professional assistance with native warm-season grass establishment and management, the following agencies are available to provide technical and programmatic assistance:

- Delta Wildlife, Inc.
  http://www.deltawildlife.org/
  (662) 686-3370

- Mississippi Department of Wildlife, Fisheries, and Parks
  http://www.mdwfp.com/
  (601) 432-2400

- Mississippi Forestry Commission
  http://www.mfc.state.ms.us/
  (601) 359-1386

- Mississippi State University
  Forest and Wildlife Research Center
  http://www.cfr.msstate.edu/fwrc/fwrc.htm
  (662) 325-2952

- Mississippi State University
  Wildlife and Fisheries Extension
  http://msucares.com/
  (662) 325-3174

- USDA-Farm Service Agency
  http://www.fsa.usda.gov/
  (601) 965-4300

- USDA-Natural Resources Conservation Service (NRCS)
  http://www.ms.nrcs.usda.gov/
  (601) 965-4339

- Wildlife Mississippi
  http://www.wildlifemiss.org/
  (662) 686-3375

Seed Sources

It is recommended that you first contact an experienced professional from one of the agencies listed above to facilitate selection of grasses and forbs that are appropriate for your property. In many cases, one or more of these organizations may be able to handle procurement of seed for you. However, if you prefer to purchase seed on your own, following are some seed companies (this list is not exhaustive) that can help you with selecting and purchasing native warm-season grass and/or forb seeds.

Specializing in Native Grasses and Forbs

- Bamert Seed Company
  http://www.bamertseed.com/
  (800) 262-9892
  1897 CR 1018
  Muleshoe, TX 79347

- Bohmont Ranch Warm-Season Grass Seed
  http://www.bohmontranch.com/
  (417) 278-3887
  939 Bohmont Road
  Sparta, MO 65753

- Ernst Conservation Seeds
  http://www.ernstseed.com
  (800) 873-3321
  9006 Mercer Pike
  Meadville, PA 16335-9299

- Roundstone Native Seed
  http://www.roundstoneseed.com
  (270) 531-2353
  9764 Raider Hollow Road
  Upton, KY 42784

- Sharp Brothers Seed Company
  http://www.sharpbro.com
  (800) 462-8483
  396 SW David Street
  Clinton, MO 64735

- Star Seed Company
  http://www.gostarseed.com
  (800) 782-7311
  101 Industrial Avenue
  Osborne, KS 67473

- Turner Seed Company
  http://www.turnerseed.com/
  (800) 722-8616
  211 County Road 151
  Breckenridge, TX 76424-8165

- Warner Brothers Seed Company
  http://www.wbseedco.com/
  (800) 467-7250
  P.O. Box 101
  Lawton, OK 73502

Selected Native Legumes for Wildlife Plantings

- Seeds, Inc
  (800) 238-6440
  761 Walnut Knoll Lane
  Memphis, TN 38018

- Wax Company, Inc
  (662) 256-3511
  212 North Front Street
  Amory, MS 38821

Financial Assistance

A number of conservation programs are available that may provide cost-shares or incentives for native warm-season grass establishment. The Conservation Reserve Program (CRP) is available only for land that satisfies an agricultural cropping history requirement or is marginal pastureland. Several CRP buffer practices (such as CP21 - Filter Strips and CP33 - Habitat Buffers for Upland Birds) can be established in native warm-season grasses to develop wildlife habitat and conserve soil and water quality. CRP grass stands that are established in nonnative grasses such as tall fescue or bermudagrass (such as CP10 - Existing Grasses) can be enhanced by converting to native warm-season grasses. CRP also provides cost-shares to manage (such as prescribed fire) CRP conservation covers. The Wildlife Habitat Incentives Program is available to any nonindustrial private landowners (dependent on funding) and provides cost-shares for native warm-season grass establishment and management. The Environmental Quality Incentives Program (EQIP) and Conservation Security Program (CSP) may also have practices that can be used to establish and manage native warm-season grasses for wildlife habitat, sensitive areas protection, or grazing. The Landowner Incentive Program (LIP) is practical for restoration of native warm-season grasses in order to enhance, restore, and protect imperiled habitats and benefit at-risk wildlife species on private lands.

The Farm Service Agency (FSA) administers CRP. The Natural Resources Conservation Service (NRCS) administers CSP, EQIP, and WHIP. Contact the NRCS or FSA office at your USDA Service Center, or a wildlife biologist with one of the agencies listed in the Technical Assistance section, about availability of federal assistance programs. If native warm-season grass plantings are established with financial assistance from USDA conservation programs, planting rates and practices must be consistent with NRCS practice standards. The Mississippi Department of Wildlife, Fisheries, and Parks, in cooperation with Wildlife Mississippi, administers LIP. Delta Wildlife (in the Delta region) and Wildlife Mississippi (in the prairie and longleaf pine regions) are active in native warm-season grass restoration. Contact these agencies about native grassland restoration programs they might have available.

Additional References

Missouri Department of Conservation. 1984. Native warm-season grasses for Missouri stockmen. Available online at http://www.mdc.mo.gov/ (April 2007).

Harper, Craig A., Gary E. Bates, Michael P. Hansbrough, and Mark J. Gudlin. 2005. Native warm-season grasses in the mid-South. University of Tennessee Extension PB1746 (http://www.utextension.utk.edu/publications/wildlife/default.asp), Knoxville, TN.

May, Jimmy R. and Jeffery D. Sole. Grazing and haying of native warm-season grasses for livestock and wildlife. Kentucky Department of Fish and Wildlife Resources.

USDA-Natural Resources Conservation Service, PLANTS database. Available online at http://plants.usda.gov/index.html (April 2007).

Summary

Native warm-season grasses are a vital part of natural grassland and woodland ecosystems in Mississippi. By managing competition from undesirable vegetation and following proper planting procedures, native warm-season grass stands can be successfully established. With proper management, native warm-season grasses are compatible with both wildlife habitat and livestock forage goals. Consult a natural resources professional to develop a plan for native warm-season grass management that will best fit your objectives.

Recommended Plantings for Restoring Native Plant Communities

Following are brief lists of native grasses and forbs that are generally available for purchase. In some instances, introduced forb species may be acceptable (e.g., kobe lespedeza). Always consult a natural resources professional before planting introduced species. Consult a natural resources professional or seed company representative to decide which species and cultivars or varieties of available native warm-season grass seed and forbs will best fit your objectives.

Table 1. Recommended native warm-season grasses for Mississippi.

Common Name	Scientific Name	Varieties or Cultivars	Planting Depth	Planting Method
big bluestem	*Andropogon gerardii*	**Kaw**, **Earl**, Pawnee, Rountree	0.25 inch	**drill**; broadcast
little bluestem	*Schizachyrium scoparium*	**Aldous**, Cimmaron, Camper, Blaze	0.25 inch	**drill**; broadcast
broomsedge	*Andropogon virginicus*	Limited seed availability; readily colonizes most sites in Mississippi naturally	0.25 inch	**drill**; broadcast
indiangrass	*Sorgastrum nutans*	**Lometa**, **Osage**, Americus, Cheyenne, Rumsey	0.25 inch	**drill**; broadcast
switchgrass	*Panicum virgatum*	**Alamo**, **Kanlow**, Blackwell, Pathfinder	0.25 - 0.5 inch	**drill**; **broadcast**
eastern gamagrass	*Tripsacum dactyloides*	**Highlander**, **Jackson**, Iuka, Pete	1 inch	grain planter
sideoats grama	*Bouteloua curtipendula*	Haskell, Trailway, Butte	0.25 - 0.5 inch	**drill**; **broadcast**
sand lovegrass	*Eragrostis trichodes*		0.25 inch	**drill**; **broadcast**
purple top	*Tridens flavus*		0.25 inch	**drill**; broadcast

Bold Varieties - indicate proven performance at sites in Mississippi.
Bold Planting Methods - indicate planting methods that yield the best results.

Table 2. Example native warm-season grass mixtures for different uses.

	Grass Mixtures (pounds PLS/acre)
tallgrass prairie or Delta mixture	little bluestem (1.5 lbs), big bluestem (1.5 lbs), indiangrass (0.5 lb), switchgrass (0.5 lb)
shortgrass prairie or Delta mixture	little bluestem (2 lbs), sideoats grama (1 lb), big bluestem (0.5 lb), indiangrass (0.5 lb)
average soils mixture (e.g., red clay soils)	little bluestem (2 lbs), purple top (1 lb), indiangrass (0.5 lb), switchgrass (0.5 lb)
sandy/degraded soil mixture	little bluestem (2 lbs), sand lovegrass (0.5 lb), purple top (1 lb), switchgrass (0.5 lb)
grazing mixture, heavy soils	big bluestem (4 lbs), indiangrass (4 lbs), little bluestem (2 lbs), or eastern gamagrass or switchgrass in single-species stands
grazing mixture, average soils	little bluestem (2 lbs), indiangrass (8 lbs), or eastern gamagrass in single-species stands
grazing mixture, dry soils	little bluestem (2 lbs), indiangrass (6 lbs), sand lovegrass (2 lbs), or eastern gamagrass in single-species stands

Rates may be adjusted based on desired seeding rate. If approximate bulk seed volume output rates can be obtained for the drill being used, this will help determine amount of seed to purchase. Remember that pure live seed will have to be estimated from bulk seed volume, and pure live seed rates will have to be approximated as close to the desired rate as possible based on bulk seed output by specific drill settings.

Calculating Bulk Pounds of Seed for Planting

Multiply pure seed percentage by total germination percentage. If pure seed is 70 percent and total germination is 85 percent, then 0.70 multiplied by 0.85 equals 0.595 or 59.5 percent pure live seed in 1 bulk pound of seed. Divide 1 by the percentage of pure live seed in 1 bulk pound to determine bulk pounds of seed that equal 1 pound of pure live seed.

In this example, 1 divided by 0.595 equals 1.68 bulk pounds. Thus, there is 1 pound of pure live seed in 1.68 bulk pounds. To plant at a rate of 4 pounds pure live seed per acre, plant approximately 7 bulk pounds of seed per acre (1.68 multiplied by 4). The actual rate that can be planted will depend on equipment used. For example, the lowest output setting on a native grass drill may be 5 bulk pounds, while the next output setting may be 8 bulk pounds. In this example, 5 bulk pounds would equal approximately 3 pounds of pure live seed (5 multiplied by 0.595), and 8 bulk pounds would equal approximately 5 pounds of pure live seed (8 multiplied by 0.595).

Table 3. Some native forbs recommended for wildlife habitat enhancement or ecosystem restoration in Mississippi.

Common Name	Scientific Name	Form (Varieties)	Soil Adaptation*
wild bergamont	*Monarda fistulosa*	mint, broadleaf forb	L, M, H
oxeye	*Heliopsis helianthoides*	aster, broadleaf forb	M, H
ragweed	*Ambrosia artemisiifolia*	aster, broadleaf forb	L, M, H
blazing star	*Liatris spp.*	aster, broadleaf forb	M, H
purple coneflower	*Echinacea purpurea*	aster, broadleaf forb	M, H
coneflower	*Radtibida spp.*	aster, broadleaf forb	M, H
coreopsis	*Coreopsis spp.*	aster, broadleaf forb	M, H
compass plant	*Silphium laciniatum* and other *Silphium spp.*	aster, broadleaf forb	H
maximilian sunflower**	*Helianthus maximiliani*	aster, broadleaf forb	M, H
common sunflower	*Helianthus annuus*	aster, broadleaf forb	M, H
narrow leaved sunflower	*Helianthus angustifolius*	aster, broadleaf forb	L, M
butterfly milkweed	*Asclepias tuberosa*	aster, broadleaf forb	M, H
blackeyed Susan	*Rudbekia hirta*	aster, broadleaf forb	L, M, H
Illinois bundleflower	*Desmanthus illinoensis*	legume	H
Florida beggarweed	*Desmodium tortuosum*	legume	L, M, H
smooth ticktrefoil	*Desmodium laevigatum*	legume	L, M, H
stiff ticktrefoil	*Desmodium obtusum*	legume	L, M, H
partridge pea	*Chamaecrista fasciculata*	legume (Lark)	L, M, H
roundhead lespedeza	*Lespedeza capitata*	legume	L, M, H
slender lespedeza	*Lespedeza virginica*	legume	L, M, H
white prairie clover	*Dalea candida*	legume	H
purple prairie clover	*Dalea purpurea*	legume	H
white indigo	*Baptisia alba*	legume	L, M

* **L** = light soils (drier, sandy, and silty soils; may not be suitable for extremely droughty soils);
M = medium soils (well-drained loam and clay soils);
H = heavy soils (moderately drained, heavier clay soils such as prairie or Delta soils)

** Not native to Mississippi, but native to western United States; not known to be invasive in Mississippi.

Consult a natural resources professional for more information about appropriate plant materials for your site.

All species may not be commercially available.

Photos

Bobby Watkins
Rick Hamrick
Wes Burger
Bryan Watkins
Sam Riffell

Illustrations

Jeanne Jones

This project was funded in part by the Mississippi Department of Wildlife, Fisheries, and Parks, and the Natural Resource Enterprises program.

The information given here is for educational purposes only. References to commercial products, trade names, or suppliers are made with the understanding that no endorsement is implied and that no discrimination against other products or suppliers is intended.

By **Rick Hamrick**, Research Associate II, Forest and Wildlife Research Center; **L. Wes Burger**, Professor, Forest and Wildlife Research Center; **Jeanne Jones**, Associate Professor, Forest and Wildlife Research Center; and **Bronson Strickland**, Assistant Extension Professor, Forest and Wildlife Research Center

Publication 2435

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. VANCE H. WATSON, Interim Director (2500-08-07)

Appendix C: Species Lists of Native Trees and Jackson Prairie

Native Trees Species List

Common Name	Technical Name	Abundance	Native/Exotic	Habitat
Box Elder	*Acer negundo L.*	Common	Native	forested area on the edge of an open field
Red Maple	*Acer rubrum L.*	Scattered	Native	disturbed; open
Southern Sugar Maple	*Acer barbatum Michx.*	Common	Native	disturbed; roadside
Smooth Sumac	*Rhus glabra L.*	Common	Native	disturbed; roadside
Pawpaw	*Asimina triloba (L.) Dunal*	Common	Native	Mesic forest along small stream
American Holly	*Ilex opaca Aiton.*	Scattered	Native	disturbed; open
Deciduous Holly	*Ilex decidua Walt.*	Common	Native	mesic wooded area
Ironwood or Blue Beech	*Carpinus caroliniana Walt.*	Common	Native	disturbed; roadside; forested mesic north slope
Black Haw	*Viburnum prunifolium L.*	Scattered	Native	mesic forested north slope
Elderberry	*Sambucus canadensis L.*	Common	Native	disturbed; roadside; east facing slope;
Rusty Black Haw	*Viburnum rufidulum Raf.*	Scattered	Native	on east slope; along small stream; in forest.
Flowering Dogwood	*Cornus florida L.*	Common	Native	disturbed; open
Rough-leaved Dogwood	*Cornus drummondii Meyer*	Common	Native	disturbed; mesic
Eastern Red Cedar	*Juniperus virginiana L.*	Scattered	Native	disturbed; open
Persimmon	*Diospyros virginiana L.*	Common	Native	disturbed; roadside; forested mesic north slope
Black Locust	*Robinia pseudo-acacia L.*	Common	Native	disturbed; roadside
Honey Locust	*Gleditsia triacanthos L.*	Scattered	Native	disturbed; roadside
Redbud	*Cercis canadensis L.*	Common	Native	mesic forested north slope
Beech	*Fagus grandifolia Ehrh.*	Rare	Native	mesic north slope; on stream
Black Oak	*Quercus velutina Lam.*	Common	Native	disturbed; roadside; mesic north slope
Cherrybark Oak	*Quercus pagoda Raf.*	Scattered	Native	disturbed; open
Chinkapin Oak	*Quercus muehlenbergii Engelm.*	Common	Native	on edge of mesic woods
Northern Red Oak	*Quercus rubra L.*	Common	Native	north slope; mesic drainage; in forested area
Shumard's Oak	*Quercus shumardii Buckl.*	Scattered	Native	disturbed; open
Southern Red Oak	*Quercus falcata Michx.*	Common	Native	forested area on the edge of an open field
Water Oak	*Quercus nigra L.*	Common	Native	mesic wooded area
White Oak	*Quercus alba L.*	Common	Native	disturbed; open
Sweetgum	*Liquidambar styraciflua L.*	Common	Native	disturbed; open
Witch-hazel	*Hamamelis virginiana L.*	Scattered	Native	mesic forested north slope
American Hydrangea	*Hydrangea arborescens L.*	Common	Native	very mesic north slope
Oak-leaved Hydrangae	*Hydrangea quercifolia Bartram*	Common	Native	mesic forested north slope
Bitternut Hickory	*Carya cordiformis (Wang.) K.Koch*	Scattered	Native	mesic wooded area
Black Walnut	*Juglans nigra L.*	Scattered	Native	mesic wooded area
Pecan	*Carya illinoinensis (Wangenh.) K. Koch*	Scattered	Native	disturbed; open
Sassafras	*Sassafras albidum (Nutt.) Nees.*	Common	Native	disturbed; forest edge/drainage
Spice-bush	*Lindera benzoin (L.) Blume*	Scattered	Native	in mesic forested northwest slope
Southern Magnolia	*Magnolia grandiflora L.*	Scattered	Native	mesic wooded area
Tulip Tree or Yellow Poplar	*Liriodendron tulipifera L.*	Scattered	Native	disturbed; open
Red Mulberry	*Morus rubra L.*	Common	Native	mesic wooded area
White Ash	*Fraxinus cf. americana L.*	Rare	Native	disturbed; open
Loblolly Pine	*Pinus taeda L.*	Scattered	Native	disturbed; roadside
Sycamore	*Platanus occidentalis L.*	Scattered	Native	disturbed; roadside
Carolina Buckthorn	*Frangula caroliniana Walt.*	Common	Native	mesic wooded area
Carolina Laurel Cherry	*Prunus caroliniana Aiton*	Common	Native	Mesic forest along small stream

Common Name	Technical Name	Abundance	Native/Exotic	Habitat
Chickasaw Plum	*Prunus angustifolia Marsh.*	Scattered	Native	disturbed; roadside
Wild Black Cherry	*Prunus serotina Ehrh.*	Common	Native	disturbed; mesic
Black Willow	*Salix nigra Marsh.*	Scattered	Native	Mesic forest along small stream
Eastern Cottonwood	*Populus deltoides Marsh.*	Scattered	Native	disturbed; roadside
Southern Buckthorn	*Bumelia lycioides (L.) Gaertn.*	Scattered	Native	disturbed; roadside
Bald Cypress	*Taxodium distichum (L.) Rich.*	Scattered	Native	disturbed; open
Basswood	*Tilia americana L.*	Common	Native	north slope; mesic drainage; in forested area
American Elm	*Ulmus americana L.*	Scattered	Native	disturbed; open
Slippery Elm or Red Elm	*Ulmus rubra Muhl.*	Scattered	Native	disturbed; roadside; forested mesic north slope
Southern Hackberry	*Celtis laevigata Willd.*	Common	Native	disturbed; mesic
Winged Elm	*Ulmus alata Michx.*	Common	Native	disturbed; roadside

Jackson Prairie Species List

Species	Common Name	Family
Agalinis oligophylla Pennell	ridgestem false foxglove	Scrophulariaceae
Agalinis purpurea (L.) Pennell	purple false foxglove	Scrophulariaceae
Allium canadense L. var. mobilense (Regel) Ownbey	meadow garlic	Liliaceae
Amorpha fruticosa L.	desert indigobush	Fabaceae
Andropogon gerardii Vitman	big bluestem	Poaceae
Andropogon glomeratus (Walt.) B.S.P.	bushy bluestem	Poaceae
Andropogon virginicus L.	broomsedge bluestem	Poaceae
Antennaria plantaginifolia (L.) Richards.	woman's tobacco	Asteraceae
Apocynum cannabinum L.	Indianhemp	Apocynaceae
Aristida oligantha Michx.	prairie threeawn	Poaceae
Aristida purpurascens Poir.	arrowfeather threeawn	Poaceae
Asclepias hirtella (Pennell) Woods.	green milkweed	Asclepiadaceae
Asclepias tuberosa L.	butterfly milkweed	Asclepiadaceae
Asclepias verticillata L.	whorled milkweed	Asclepiadaceae
Asclepias viridiflora Raf.	green milkweed	Asclepiadaceae
Asclepias viridis Walt.	green antelopehorn	Asclepiadaceae
Blephilia ciliata (L.) Benth.	downy pagodaplant	Lamiaceae
Bouteloua curtipendula (Michx.) Torr.	sideoats grama	Poaceae
Brickellia eupatorioides (L.) Shinners	false boneset	Asteraceae
Buchnera americana L.	American bluehearts	Scrophulariaceae
Carex cherokeensis Schwein.	Cherokee sedge	Cyperaceae
Carex leavenworthii Dewey	Leavenworth's sedge	Cyperaceae
Ceanothus americanus L.	New Jersey tea	Rhamnaceae
Centrosema virginianum (L.) Benth.	spurred butterfly pea	Fabaceae
Cercis canadensis L.	eastern redbud	Fabaceae
Chamaecrista fasciculata (Michx.) Greene	partridge pea	Fabaceae
Chamaesyce maculata (L.) Small	spotted sandmat	Euphorbiaceae
Chasmanthium latifolium (Michx.) Yates	Indian woodoats	Poaceae
Chasmanthium sessiliflorum (Poir.) Yates	longleaf woodoats	Poaceae
Cirsium horridulum Michx.	yellow thistle	Asteraceae
Clematis virginiana L.	devil's darning needles	Ranunculaceae
Clitoria mariana L.	Atlantic pigeonwings	Fabaceae
Cocculus carolinus (L.) DC.	Carolina coralbead	Menispermaceae
Conoclinium coelestinum (L.) DC.	blue mistflower	Asteraceae
Coreopsis lanceolata L.	lanceleaf tickseed	Asteraceae
Cornus drummondii C.A. Mey.	roughleaf dogwood	Cornaceae
Crotalaria purshii DC.	Pursh's rattlebox	Fabaceae
Croton capitatus Michx.	hogwort	Euphorbiaceae
Croton monanthogynus Michx.	prairie tea	Euphorbiaceae
Cyperus pseudovegetus Steud.	marsh flatsedge	Cyperaceae
Dalea candida Michx. ex Willd.	slender white prairieclover	Fabaceae
Dalea purpurea Vent.	purple prairieclover	Fabaceae
Daucus pusillus Michx.	American wild carrot	Apiaceae
Desmanthus illinoensis (Michx.) MacM. ex B.L. Robins. & Fern.	prairie bundleflower	Fabaceae
Desmodium ciliare (Muhl. ex Willd.) DC.	hairy small-leaf ticktrefo	Fabaceae
Desmodium marilandicum (L.) DC.	smooth ticktrefoil	Fabaceae
Desmodium paniculatum (L.) DC.	panicledleaf ticktrefoil	Fabaceae
Dichanthelium aciculare (Desv. ex Poir.) Gould & C.A. Clark	needleleaf rosette grass	Poaceae

Species	Common Name	Family
Echinacea purpurea (L.) Moench	Echinacea purpurea (L.) Moench	Asteraceae
Elymus virginicus L.	riverbank wildrye	Poaceae
Eragrostis spectabilis (Pursh) Steud.	purple lovegrass	Poaceae
Erigeron philadelphicus L.	Philadelphia fleabane	Asteraceae
Erigeron strigosus Muhl. ex Willd.	prairie fleabane	Asteraceae
Eryngium yuccifolium Michx.	button eryngo	Apiaceae
Erythrina herbacea L.	redcardinal	Fabaceae
Eupatorium altissimum L.	tall thoroughwort	Asteraceae
Eupatorium serotinum Michx.	lateflowering thoroughwort	Asteraceae
Euphorbia corollata L.	flowering spurge	Euphorbiaceae
Eurybia hemispherica (Alexander) Nesom	southern prairie aster	Asteraceae
Fimbristylis puberula (Michx.) Vahl var. puberula (Michx.) Vahl	hairy fimbry	Cyperaceae
Galactia volubilis (L.) Britt.	downy milkpea	Fabaceae
Gaura angustifolia Michx.	southern beeblossom	Onagraceae
Gaura biennis L.	biennial beeblossom	Onagraceae
Geranium carolinianum L. var. carolinianum L.	Carolina geranium	Geraniaceae
Hedyotis nigricans (Lam.) Fosberg	diamondflowers	Rubiaceae
Helenium autumnale L.	common sneezeweed	Asteraceae
Helenium flexuosum Raf.	purplehead sneezeweed	Asteraceae
Helianthus angustifolius L.	swamp sunflower	Asteraceae
Helianthus atrorubens L.	purpledisk sunflower	Asteraceae
Helianthus divaricatus L.	woodland sunflower	Asteraceae
Houstonia purpurea L.	Venus' pride	Rubiaceae
Hypericum punctatum Lam.	spotted St. Johnswort	Clusiaceae
Hypericum sphaerocarpum Michx.	roundseed St. Johnswort	Clusiaceae
Iva annua L.	annual marshelder	Asteraceae
Iva frutescens L.	bigleaf sumpweed	Asteraceae
Liatris aspera Michx.	tall gayfeather	Asteraceae
Liatris spicata (L.) Willd.	dense gayfeather	Asteraceae
Liatris squarrosa (L.) Michx.	scaly gayfeather	Asteraceae
Liatris squarrulosa Michx.	Appalachian gayfeather	Asteraceae
Linum medium (Planch.) Britt.	stiff yellow flax	Linaceae
Linum sulcatum Riddell	grooved flax	Linaceae
Lobelia spicata Lam. var. leptostachys (A. DC.) Mackenzie & Bush	palespike lobelia	Campanulaceae
Lythrum alatum Pursh var. lanceolatum (Ell.) Torr. & Gray ex Rothrock	winged lythrum	Lythraceae
Manfreda virginica (L.) Salisb. ex Rose	false aloe	Agavaceae
Matelea gonocarpos (Walt.) Shinners	angularfruit milkvine	Asclepiadaceae
Melilotus alba Desr.	white sweetclover	Fabaceae
Monarda fistulosa L.	wildbergamot beebalm	Lamiaceae
Monarda citriodora Cerv. ex Lag.	lemon beebalm	Lamiaceae
Neptunia lutea (Leavenworth) Benth.	yellow puff	Fabaceae
Onosmodium bejariense DC. ex A. DC. var. hispidissimum (Mackenzie) B.L. Turner	softhair marbleseed	Boraginaceae
Panicum anceps Michx.	beaked panicum	Poaceae
Panicum virgatum L.	switchgrass	Poaceae
Paspalum laeve Michx.	field paspalum	Poaceae
Passiflora incarnata L.	purple passionflower	Passifloraceae
Penstemon laxiflorus Pennell	nodding beardtongue	Scrophulariaceae
Polygala boykinii Nutt.	Boykin's milkwort	Polygalaceae
Polygala grandiflora Walt.	showy milkwort	Polygalaceae

Species	Common Name	Family
Polypremum procumbens L.	juniper leaf	Buddlejaceae
Polytaenia nuttallii DC.	Nuttall's prairie parsley	Apiaceae
Prunus americana Marsh.	American plum	Rosaceae
Prunus angustifolia Marsh.	Chickasaw plum	Rosaceae
Prunus mexicana S. Wats.	Mexican plum	Rosaceae
Pycnanthemum tenuifolium Schrad.	narrowleaf mountainmint	Lamiaceae
Pyrrhopappus carolinianus (Walt.) DC.	Carolina desertchicory	Asteraceae
Ratibida pinnata (Vent.) Barnh.	pinnate prairie coneflower	Asteraceae
Rhus copallinum L.	flameleaf sumac	Anacardiaceae
Rhus glabra L.	smooth sumac	Anacardiaceae
Rhynchosia tomentosa (L.) Hook. & Arn.	twining snoutbean	Fabaceae
Rhynchospora compressa Carey ex Chapman	flatfruit beaksedge	Cyperaceae
Rosa carolina L.	Carolina rose	Rosaceae
Rudbeckia fulgida Ait.	orange coneflower	Asteraceae
Rudbeckia hirta L.	blackeyed Susan	Asteraceae
Ruellia strepens L.	limestone wild petunia	Acanthaceae
Sabatia angularis (L.) Pursh	rosepink	Gentianaceae
Salvia azurea Michx. ex Lam.	azure blue sage	Lamiaceae
Salvia lyrata L.	lyreleaf sage	Lamiaceae
Schizachyrium scoparium (Michx.) Nash	little bluestem	Poaceae
Scleria oligantha Michx.	littlehead nutrush	Cyperaceae
Scutellaria integrifolia L.	helmet flower	Lamiaceae
Setaria parviflora (Poir.) Kergu,len	yellow bristlegrass	Poaceae
Silphium asteriscus L.	starry rosinweed	Asteraceae
Silphium integrifolium Michx.	wholeleaf rosinweed	Asteraceae
Silphium laciniatum L.	compassplant	Asteraceae
Silphium trifoliatum L. var. latifolium Gray	whorled rosinweed	Asteraceae
Sisyrinchium angustifolium P. Mill	narrowleaf blueeyed grass	Iridaceae
Solidago canadensis L.	Canada goldenrod	Asteraceae
Solidago nemoralis Ait.	Dyersweed goldenrod	Asteraceae
Sorghastrum nutans (L.) Nash	yellow Indiangrass	Poaceae
Spiranthes lacera (Raf.) Raf. var. gracilis (Bigelow) Luer	northern slender ladiestresses	Orchidaceae
Strophostyles umbellata (Muhl. ex Willd.) Britt.	pink fuzzybean	Fabaceae
Symphyotrichum novae-angliae (L.) Nesom	New England aster	Asteraceae
Symphyotrichum concolor (L.) Nesom	eastern silver aster	Asteraceae
Symphyotrichum dumosum (L.) Nesom	rice button aster	Asteraceae
Symphyotrichum patens (Ait.) Nesom	late purple aster	Asteraceae
Symphyotrichum pilosum (Willd.) Nesom	hairy white oldfield aster	Asteraceae
Symphyotrichum praealtum (Poir.) Nesom	willowleaf aster	Asteraceae
Tridens flavus (L.) A.S. Hitchc.	purpletop tridens	Poaceae
Tridens strictus (Nutt.) Nash	longspike tridens	Poaceae
Triodanis perfoliata (L.) Nieuwl. var. biflora (Ruiz & Pavȼn) Bradley	clasping Venus' lookingglass	Campanulaceae
Ulmus crassifolia Nutt.	cedar elm	Ulmaceae
Verbena simplex Lehm.	narrowleaf vervain	Verbenaceae
Vernonia gigantea (Walt.) Trel.	giant ironweed	Asteraceae

Appendix D: National Register Nomination

Form No. 10-306 (Rev. 10-74)

PH0355623

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR FEDERAL PROPERTIES

FOR NPS USE ONLY
RECEIVED FEB 5 1976
DATE ENTERED Approved 12/9/77

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC **

VICKSBURG NATIONAL MILITARY PARK

AND/OR COMMON

2 LOCATION

STREET & NUMBER N and E of Vicksburg
Vicksburg National Military Park — NOT FOR PUBLICATION

CITY, TOWN
Vicksburg — VICINITY OF

CONGRESSIONAL DISTRICT
4

STATE	CODE	COUNTY	CODE
Mississippi	28	Warren	149

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
X DISTRICT	X PUBLIC	__OCCUPIED	__AGRICULTURE	__MUSEUM
__BUILDING(S)	__PRIVATE	X UNOCCUPIED	__COMMERCIAL	X PARK
__STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	__PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	X YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	__YES: UNRESTRICTED	__INDUSTRIAL	__TRANSPORTATION
		__NO	__MILITARY	__OTHER:

4 AGENCY

REGIONAL HEADQUARTERS: *(If applicable)*
Southeast Regional Office
STREET & NUMBER
1895 Phoenix Boulevard
CITY, TOWN
Atlanta — VICINITY OF
STATE
Georgia

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
Warren County Courthouse
STREET & NUMBER
1009 Cherry Street
CITY, TOWN
Vicksburg
STATE
Mississippi

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

DATE
__FEDERAL __STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS

CITY, TOWN
STATE

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
__EXCELLENT	__DETERIORATED	__UNALTERED	X ORIGINAL SITE
X GOOD	__RUINS	X ALTERED	__MOVED DATE_____
X FAIR	__UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

See continuation sheets for Item 7, page 1-18

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION	
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE	
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	X SCULPTURE	
__1600-1699	__ARCHITECTURE	__EDUCATION	X MILITARY	__SOCIAL/HUMANITARIAN	
__1700-1799	__ART	__ENGINEERING	__MUSIC	__THEATER	
X 1800-1899	__COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	__TRANSPORTATION	
__1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)	
		__INVENTION			

SPECIFIC DATES 1863 BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

Vicksburg was the key to control of the Mississippi River. At the time of the Civil War the Mississippi was a vital artery of transportation. To protect this lifeline, the Confederacy had erected a series of fortifications at readily defensible locations along the river from which the Union advance could be checked. Pushing southward from Illinois by land and water, and northward from the Gulf of Mexico by river, Union army and naval units attacked the Confederate strong points. They captured strategic forts and cities until by June of 1862, Vicksburg alone barred complete Union possession of the Mississippi River.

When Union forces marched victoriously into the city on July 4, 1863, after a 47-day siege, it was one of the turning points of the Civil War. Tactically and strategically the results of the campaign were decisive. The Mississippi River was again open to Northern commerce. The vast resources of the trans-Mississippi were denied to the Confederates, as the Confederacy was cut in two. Victory brought to Grant and the Union army a major conquest of the war in the west. Abraham Lincoln, his cabinet and people in the North were enheartened after long months of defeat and discouragement. Coupled with the defeat of Lee at Gettysburg on July 3, 1863, the Confederacy suffered a blow from which it would never recover.

The monuments in the park are impressive in number, size, cost and architectural design. A feel for the action that took place here can be achieved by studying the monuments and markers. The monuments have an historic significance all their own for they represent an attempt to immortalize the deeds of the men who participated here. Beginning in 1903 with the Massachusetts Monument through 1963 when the Texas Monument was erected, the desire to perpetuate the memory and sacrifice of the men who fought and died here is evident. Contributions for the monuments came from individuals, large corporations and appropriations from the state and federal governments.

The sculpture in Vicksburg National Military Park is one of the most significant collections of such monuments in the country. Theo Alice Ruggles Kitson, who created over 50 public monuments in various parts of the U. S., is well represented here with 69 relief portraits or busts. Her husband, Henry Hudson Kitson, did two of the statues here and other busts and relief portraits. He has many works throughout the country, including the "Minute Man" at Lexington, Massachusetts. Other well known sculptors such as F. C. Hibbard and Adolph Weinman are represented here.

(Continued)

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Richard Meyers, "The Vicksburg National Cemetery" March 31, 1968, Nat. Park Service
John J. Hollister, "Vicksburg On Your Own," May 1971, Battlefield Guide.
Stephen D. Ambrose and Editors of Civil War Times, "Struggle for Vicksburg," 1967, Historical Times, Inc.
F. F. Wilshin, "The Shirley House," Vicksburg, MS., Oct. 28, 1939.
National Park Service Manuscripts, Historian's File, Vicksburg National Military Park.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1,869

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	15	704150	3583350
B	15	703850	3579500
C	15	697400	3572020
D	15	700575	3583250

VERBAL BOUNDARY DESCRIPTION

Vicksburg National Military Park borders the city of Vicksburg on the northern and eastern sides, approximately two-thirds of the way around the corporate limits, paralleling Confederate and Union Avenues in an irregular manner.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE

Nancy Aiken Miller, Interpretive Specialist

ORGANIZATION

Vicksburg National Military Park

STREET & NUMBER

P. O. Box 349

CITY OR TOWN

Vicksburg

DATE

9-1-76

TELEPHONE

601 - 636-0583

STATE

Mississippi 39180

12 CERTIFICATION OF NOMINATION

STATE HISTORIC PRESERVATION OFFICER RECOMMENDATION

YES____ NO____ NONE____

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Historic Preservation Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The evaluated level of significance is ✓ National ____State ____Local.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE Deputy Assistant Secretary

DATE DEC 17 1976

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

DATE 12/9/77

ATTEST:

KEEPER OF THE NATIONAL REGISTER

DATE 12.5.77

Form No. 10-300a
(Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

When General Grant's Union troops approached Vicksburg from the east on May 18, 1863, they met the Confederate forces strongly entrenched on a commanding ridge behind the naturally defensible city.

The geographic position of Vicksburg determined its importance to both sides. Located on steep, high bluffs 200 feet above the Mississippi River, the Confederate guns there controlled the river approaches, making the city practically impregnable to successful attack from that quarter.

The Confederate defense line began at the Mississippi River about two miles north of Vicksburg and extended in an arc along the crest of a ridge nine miles to a point on the river to the south of the city. Anticipating the Union attack, General Pemberton, commander of the Army of Vicksburg, had constructed a strong defense line consisting of a number of forts and artillery emplacements to cover the roads and railroad leading into the city. These forts were connected by trenches manned by infantry. In front of the defense line were deep ravines through which Union troops would have to pass to reach the Confederates.

The Union siege lines paralleled the Confederate defense line at an average distance of about 500 yards at the beginning of the battle, but this distance was gradually reduced as the siege wore on. The Union siege line consisted of artillery protected by earthworks and rifle pits manned by infantry.

Vicksburg National Military Park, established in 1899, includes 1,860 acres. The park, bordering the city of Vicksburg and its suburbs on the northern and eastern sides, includes the Confederate defense line and Union siege line. Three detached areas, Navy Circle, Louisiana Circle, and South Fort, approximately one acre each, are also part of the park. These areas are located on the bluffs overlooking the Mississippi River just north of the bridge.

Present park land was once largely utilized for farming and pasturage. A number of houses and farm structures dotted the area. Of these structures, only the Shirley House is extant. Built in the 1830's, the house fortunately escaped destruction during the siege.

Badly damaged, it was abandoned and soon fell into ruin. In 1902 the house was restored to its 1863 appearance as a war memorial.

The general topography of the park is extremely rolling and hilly with steep bluffs. Before the war, ridge tops and slopes were generally clear while hollows were choked with trees and vegetation. The Confederate soldiers leveled trees near their lines to permit a clear line of fire. Presently a substantial part of the area lying between the Union and Confederate lines, both ridge and ravine, is overgrown.

The tour route through the battlefield parallels the Union siege line and Confederate defense line at a short distance. Of the 1,860 acres in the park, 700 are mowed to provide a setting for the 1400 monuments, markers and iron tablets that interpret the struggle that took place here.

Eighteen statues, comprising one of the most significant collections of such monuments in the country, were erected at various locations on the battlefield in the early 1900's. Thirteen statues honor men from the northern states and five honor Southerners. Fourteen major state memorials were constructed, ranging from the magnificent Illinois State Monument, modeled after the Pantheon in Rome, to the Rhode Island Memorial, the simple bronze figure of a soldier carrying forward the fallen colors.

Regimental monuments (approximately 270) are located in the general area where each unit was positioned. They vary greatly in size and design, but each generally gives details as to unit name, commanders, casualties, and a brief summary of that units' history in the campaign. Regimental markers (approximately 230) give the precise location for a specific unit at a certain time during the siege. These are small granite stones or in some cases bronze tablets. All of the regimental monuments and markers and the state memorials were constructed by the respective states.

Nine-three relief portraits and sixty-two busts honor various commanders on both sides. Approximately 750 iron tablets, blue for Union and red for Confederate, indicate trench lines and battery and

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

infantry positions; more detailed tablets summarize combat activity in a particular locale.

Napoleons, 3-inch rifles, and 12-pounder howitzers are the most common type of cannon found in the park. The cannon (128) are positioned at actual battery sites. However, only one of the cannon, the Widow Blakely, can positively be identified as having been in the siege. The others are authentic Civil War tubes mounted on iron carriages constructed in 1905-1908 period. In addition, partially reconstructed forts, earthworks, trenches, approaches, and battery positions throughout the battlefield help one to visualize the siege operations that took place here.

Statuary:

HS 31 Maj. General U. S. Grant

Bronze equestrian statue of General Grant on a granite pedestal, struck in a characteristic pose.

Commanded Union forces during struggle for Vicksburg.

Good Condition

Significance: 2nd order

Erected: 1918

Sculptor: F. C. Hibbard

HS 2 Jefferson Davis Statue

Standing bronze figure, left arm around the Confederate flag. Heroic size. Mounted on a granite pedestal

President of the Confederacy

Good Condition

Significance: 2nd order

Erected: 1926

Sculptor: Henry H. Kitson

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

HS-3 Lt. General John C. Pemberton Statue

Bronze life-size figure mounted on a gray and black granite base
Commanded the Confederate forces defending Vicksburg
Good Condition
Significance: 2nd Order
Erected: 1917 Sculptor: Edmond T. Quinn

HS-4 Oliver P. Morton Statue

A large heroic size bronze statue of the war time govenor of the state of Indiana

Good Condition
Significance: 2nd Order
Dedicated: 1926
Sculptor: George T. Brewster

HS-5 Major General John A. McClernand Statue

Bronze equestrian statue on a gray granite pedestal
Commanded the Union 13th Corps in the siege of Vicksburg
Good Condition
Significance: 3rd Order
Erected: 1918
Sculptor: E. C. Potter

HS-6 General Stephen D. Lee Statue

Bronze life-size standing figure of Lee, sword in hand
Mounted on a pedestal of unpolished pink granite

Commanded General Pemberton's artillery at Vicksburg. The youngest Lieutenant General of the Confederacy.

Good Condition
Significance: 3rd Order
Erected: 1909. A gift of his son and friends in twenty seven states.
Sculptor: H. H. Kitson

HS-7 Brigadier General Lloyd Tilghman Statue

Heroic size equestrian statue mounted on a granite pedestal. The dismounted figure of Tilhgman is struck in a dramatic pose. A broken gun carriage

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

(cont.)

lies under his horse's forefeet. Commanding the 1st Brigade of Major General William Loring's Division, he was killed May 16, 1863, near the close of the battle of Champion's Hill.

Good Condition
Significance: 3rd Order
Erected: 1926 Sculptor: F. W. Sievers

HS-8 Major General John H. Forney Statue

Over life-size bronze statue mounted on a gray granite base. Forney directed a division of General Pemberton's Army.

Good Condition
Significance: 3rd Order
Erected: 1951
Sculptor: Steffen Thomas

HS-9 Captain Anderw Hickenlopper Statue

Bronze statue mounted on a gray granite pedestal. Sword in one hand, binoculars in the other.

Major General McPherson's 17th Corps Chief Engineer, in charge of Vicksburg siege operations. He was Judge Advocate for the Army of the Tennessee and later Chief of Artillery for the Dept. and Army of the Tennessee.

Good Condition
Significance: 3rd Order
Erected: 1219 Sculptor: William Couper

HS-10 Major General John A. Logan Statue

Life-size bronze figure struck in a characteristic pose. Granite pedestal has benches of same material adjoining each side.

Commander of the 3rd Division of the 17th Corps
Good Condition
Significance: 3rd Order
Erected: 1919 Sculptor: Leonard Crunelle

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

HS-11 General Edward O. C. Ord Statue

Heroic size bronze statue. Holding hat in one hand, other rests on the hilt of his sword.

Mounted on polished pink and black granite pedestal.

Replaces McClernand as Commander of the XIII Corps during the siege of Vicksburg.

Good Condition
Significance: 3rd Order
Erected: 1916 Sculptor: Anton Schaaf

HS-12 Major General Frederick Steele Statue

Heroic size bronze figure. Drawn sword in one hand, hat in the other, Pedestal made of Milford Pink Granite with a rubbed finish.

Commanded a division of Sherman's forces in the attack on Chickasaw Bluffs. During the siege he directed a division of the XV Corps.

Good Condition
Significance: 3rd Order
Erected: 1212 Sculptor: Frank Elwell

HS-13 Lt. Col. W. F. Vilas Statue

Striking bronze figure on a granite pedestal. Memorial is approached by a flight of granite steps flanked by a bronze cannon on each side. Vilas commanded the 23rd Wisconsin Infantry during the later part of the siege of Vicksburg.

Good Condition
Significance: 3rd Order
Erected: 1212
Granite work by A. J. Martin
Sculptor: Adolph A. Weinman

HS-14 Major General C. C. Washburn

Life-size bronze figure on a small granite base.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

(cont.)

Commanded the 16th Corps. He commanded the Yazoo Pass expedition during Grant's initial attempts to take Vicksburg on the land side.

Good Condition
Significance: 3rd Order
Erected: 1919
Sculptor: George T. Brewster State Monuments

HS-15 Wisconsin State Memorial (1911)

The monument is constructed of light gray Winnsboro granite. On the inside of the four and one-half foot high walls that enclose three sides of the platform are bronze plaques enumerating the name, rank, company, and regiment of the 9,075 officers and men from Wisconsin who participated in the Vicksburg campaign. On either side of the monument stands a bronze figure of heroic size, a cavalryman and his horse on one side, an infantryman on the other. Rising from the center the platform is a shaft of gramite 57' 6" height. It is formed like a slender column. Perched on top of the column is a 6' bronze reproduction of "Old Abe" the war eagle mascot of the 8th Wisconsin Infantry. The sculptor was Julius C. Loester.

Good Condition
Significance: 2nd Order

HS-16 Iowa State Memorial (1906)

A Greek-Doric semiellipsed structure. Tells the story of the Iowa Troops in the Vicksburg campaign. Inset in the walls of the memorial are six bas-reliefs and one dedicatory tablet. The center foreground holds a mounted standard bearer symbolic of America. The battle tablets depict all branched of the service except the cavalry. Both Federal and Confederate soldiers are shown in the bas-reliefs.

Architect: Guy Lowell
Sculptor: H. H. Kitson
Good Condition
Significance: 2nd Order

HS-17 The Missouri Memorial (1914)

The monument consists of a pylon about 42 feet in height flanked on either side by an exedra wall about 15 feet high. At the base of the pylon and exedra wall, there is a continuous seat, above which are placed motifs

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

(cont.)

of shields and torches. The whole monument is place upon a platform with three steps. On the front of each of the exedra walls is placed a large bronze panel; the one on the left representing the Union army in attack, the one on the right the Confederate army in defense. Between these reliefs in the front of the pylon is a Roman galley surmounted by a bronze statue symbolic of the Spirit of the Republic. The pylon bears, on the front near the top, the carved coat of arms of the State of Missouri, and above this is inscribed the word "Missouri". This is the only monument in the park which is dedicated to the troops on both sides. The material is Missouri Red Granite from Graniteville, Missouri. A. J. Martin set the bronze figure. Hellmuth and Hellmuth were the architects.

Good Condition
Significance: 2nd Order

HS-18 New York State Memorial (1908)

This structure is in the form of an obelisk. The stone used for it is Mt. Airy (North Carolina) granite. The monument is 43' in height and has two bronze inscription tablets measuring 5' 7" x 2' 4". Plans for monument were prepared by A. J. Zarbriskie.

Good Condition
Significance: 2 Order

HS-19 Minnesota State Memorial (1907)

Granite obelisk of rough stone standing 90 feet high. In front of the monument is a bronze statue of Peace holding the symbols of offense, defense, and peace. Bronze work by William Couper.

Good Condition
Significance: 2nd Order

HS-20 Louisiana State Memorial (1920)

The monument is a large Corinthain column topped by a brazier, all of granite.

Constructed by Albert Weiban Marble and Granite Co.
Good Condition
Significance: 2nd Order

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

(cont.)

HS-21 Mississippi State Memorial (1909)

Constructed of Mount Airy granite; 76 feet high. The enclosure balustrade is 4 feet 6 inches high and 40 feet in length. On each of the four sides, teher is a walkway 7 feet wide between the balustrade and the monument. On the front of the monument is a heroic figure of Clio, the Muse of history, recording Mississippi's sons on a honor roll. On three sides of the monument beneath the figure of Clio are bronze bas-reliefs, "vividly depicting the struggles of the noble defenders, battlefield scenes commenorative of the conditions existing at the time and emblematic of the courage, valor, and sacrifice of the defenders." On the front of the monument, below the bas-reliefs and located in the center is the coat of arms of the state of Mississippi.

Sculptor: F. E. Triebel
Poor Condition: (Bronze work vandalized)
Significance: 2nd Order

(continued)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

HS-22 Massachusetts State Monument (1903)

The monument is a bronze figure of an American volunteer soldier mounted on a granite boulder. The large granite boulder on which the monument is erected was hauled from the railroad siding to the site by ten yoke of oxen. It is the oldest state memorial in the park.

Sculptor: Theo Alice Ruggles Kitson

Good Condition

Significance: 2nd Order

HS-23 Illinois Memorial (1906)

Modeled after the Pantheon in Rome. Circular in form on the exterior and dodeconal on the interior. It is of the Roman-Doric order of architecture. The base and long flight of steps are of Stone Mountain Georgia granite, the entire exterior above the base is of white Georgia marble. The approach steps are 24 feet wide and 47 in number; they lead to the portico, which is 32 feet wide and projects 15 feet from the building proper. Six monolith columns 2 feet 6" in diameter by 20 feet in height support the pediment and entablature of this portico. Upon the pediment of this portico is a group of three female figures in white marble. The central figure represents history recording the deeds of the reclining figures, representing the North and South, reunited in peace. Above these, upon the apex, with wings outspread is a solid bronze eagle, guilded with gold leaf. This eagle is 5 feet high. Around the exterior of this temple runs a frieze band bearing the inscription in large sunken letters of "with charity for all and with malice toward none," and "let us have peace." The entrance is 11 feet high and 7 feet wide and is closed by bronze gates. Above this doorway are three large marble panels containing bas-relief busts of Lincoln, Grant, and Yates, the War Governor of Illinois. The interior of the structure is 50 feet, 6 inches in diameter. From the floor to the eye of the dome is 55 feet in height. The floor is a mosaic of imported marble, the center forming the great seal of the State of Illinois, 6 feet in diameter. Around ten of the twelve sides of the wall are set 60 bronze tablets bearing in bronze letters the names of the Illinois soldiers who participated in the campaign and seige of Vicksburg. Architects were W. L. B. Jenney (who had been Gen. Sherman's

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

chief engineer during the camgaign and siege) and W. B. Mundie. Sculptors involved were Charles J. Mulligan (female figures, medallion busts) and Fred C. Hibbard (bronze eagle).

Good Condition

Significance: 2nd Order

HS-24 Texas State Monument (1961)

Eleven steps leading to the monument honor the sister states of the Confederacy. The bronze statuary, symbolizing all who served here, is designed to capture the spirit of the sealing of the breach. Three panels, separated by two columns on either side of the center panel, bear inscriptions. The left panel deals with the sealing of the breach, the center contains a tribute to those who fought here, and the right panel enumerates the Texas units engaged in the Vicksburg campaign. Made of Texas red granite. Lundgren and Mauer, architects.

Sculptor: Herring Coe

Good Condition

Significance: 2nd Order

HS-25 Rhode Island State Memorial (1908)

The figure on the monument represents a soldier who has just picked up the fallen colors and is carrying it forward. He is holding the tattered flag high in his right hand, his rifle on the other. Bronze statue mounted on a pedestal.

Sculptor: F. Edwin Elwell

Good Condition

Significance: 2nd Order

HS-26 Michigan State Memorial (1916)

The monument is an obelisk of white granite over 37 feet in height. Standing in front of the obelisk is the symbolic figure of Michigan, eight

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

feet high, bringing laurels to her sons. The figure and the obelisk rest upon a base bearing an inscription: "Michigan's tribute of Honor to Her Soldiers who served in the Campaign and Siege of Vicksburg". Made of White Bethel Granite. Sculptor was Herbert Adams.

Good Condition

Significance: 2nd Order

HS-27 Alabama State Memorial (1951)

Made of bronze, it depicts "the death stand of Alabama troops". It shows the heroic men from Alabama being inspired by a woman who represents the state itself. Base of Stone Mountain granite.

Sculptor: Steffen Thomas

Good Condition

Significance: 2nd Order

HS-28 Arkansas State Memorial (1954)

Twin granite pylons represent North and South. Between the pylons is a sword, mounted like a cross, which symbolizes the sword of war and the cross of faith in a restored Union. Depicted in bas-relief on the left are Arkansas soldiers repelling a Union assault; on the right, the Confederate ram Arkansas. Erected by McNeel Company, Marietta, Georgia.

Good Condition

Significance: 2nd Order

Miscellaneous

HS-29 Union Navy Memorial (1917)

A 202 foot shaft, 20' x 20', modeled after the Washington Monument; in the form of a granite obelisk. Eight foot bronze statues of the four fleet commanders surround the base. Admiral Farragut was done by Henry H. Kitson, Flag Officer Foote by William Couper, F. Edwin Elwell did Flag Officer Davis' statue, Lorado Taft sculpted Commander David Dixon Porter.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

Good Condition

Significance: 2nd Order

HS-30 The U. S. S. Cairo

Type and class: Ironclad river gunboat, city class.

Length: 175 ft.; breadth: 51 ft. 2"; Tonnage: 512

Armament: 3 4-pounder Army rifles, 3 64-pounder Navy smoothbores, 6 32-pounder Navy smoothbores, and 1 30-pounder Parrott. Paint colors: black exterior, whitewashed interior, colored bands for identification on chimneys. Thickness of plate armor: 2½ inches. Commissioned January 16, 1862.

Role in Civil War: Cairo fired a few shells at the riverbank at Eastport, took her share of guard duty at Fort Pillow, and played a rather inconspicuous part in the battle at Plum Point and later that at Memphis. In December 1862, the Cairo became the first warship in history to be sunk by an electrically detonated mine. One of ironclad gunboats built by James B. Eads. The Cairo was raised in 1964, suffering extensive damage in the process; cables being used to lift the vessel cut deeply into the wooden hull. It was finally decided to cut the Cairo into three sections after all hope of raising the ship intact was lost.

Present location: Ingalls Shipbuilding Corporation Shipyards, Pascagoula, Mississippi, pending appropriation of funds needed to restore the gunboat and move it to a permanent display area at the base of the hill near the Union Navy Monument--see photograph #45.

Present condition: Poor, a decaying pile of timbers. Deterioration occurred while the wreakage awaited temporary stabilization.

Significance: 1st Order

HS-1 Shirley, James House (Built in late 1830's)

Only surviving ante-bellum structure in Vicksburg National Military Park. Built after the southern fashion, 40 x 60 feet, a story and a half in height, a wide hall in the center, large rooms on each side, ceiling high, upper and lower porch in front and veranda in rear. Caught between the cross-fire of the Union Army advancing from the east and the

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

Confederates firmly entrenched in the third Louisiana Redan, the house suffered extensive damage during the siege. Loyal to the Union and determined to remain, Mrs. Shirley and her 15 year old son occupied the house for three days after the fighting began. Later the house was used by Union Officers as an observation point, served as headquarters for the 45th Illinois, served at one time as General Logan's headquarters, and was a temporary field hospital. The Shirleys did not return to the house after the siege ended and the house soon fell into partial ruin. The house was again the scene of violence during a Reconstruction riot in Vicksburg in December, 1864, when seven negroes taking refuge in the house were killed. Following this episode the house sank into a period of further dilapidation and ruin. It was purchased by the Federal Government in 1900 and the Secretary of War authorized its restoration as a war memorial in 1902. In 1931, however, with numerous alterations it became the Superintendent's residence and briefly served as park headquarters. Much of the original character of the house has been lost as a result of these alterations. The outside of the house was restored to its original condition in 1966. The inside is presently in poor condition.

Significance: 1st Order

HS-32 Memorial Arch (1920)

Imposing structure made of Stone Mountain (Ga.) granite. Made in large block form with a doric column on each side of the entrance. Inscribed on one side of the top is "Vicksburg National Military Park," on the other is "Memorial to the National reunion of Union and Confederate Veterans of the Civil War Oct. 16-19, 1917". The arch serves as an entrance to the park, originally located on city property (Clay St. and Confederate Ave.) it was moved to its present position in the park in 1966. The arch was built with the unexpended balance of reunion appropriations.

Architect: Charles L. Lawhon - Albert Wieblen Marble and Granite Co.

Good Condition

Significance: 2nd Order

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 29 1976
DATE ENTERED

Earthworks

The Confederate defenses of Vicksburg in 1863 consisted of nine earthworks along the roads entering the city, connected by nine miles of rifle pits and trenches. The earthworks were dirt and log parapets with firing steps for infantry and embrasures for cannon. Ditches and other man-made obstructions in front of the lines were designed to impede the enemy's advance.

HS-33 The Railroad Redoubt

Constructed to prevent the Union advance along the Southern Railroad of Mississippi, the Railroad Redoubt is a fish hook shaped earthwork lying south of the railroad. The shank of the hook points east while the open side lies to the south. Traverses for artillery are still visible, and the location of the only Union breakthrough at Vicksburg is clearly marked. Generally a reconstruction.

Significance: 3rd Order

HS-34 The Great Redoubt

This was the largest earthwork in the Confederate defenses. It lies west of Confederate Avenue a short distance south of the Jackson Road, which it was intended to defend. The exterior slope of the parapet is clearly defined, and the rear of the earthwork is completely open. Generally a reconstruction, precise details are lacking.

Significance: 2nd Order

HS-35 Fort Hill

This earthwork was the northern anchor of the Confederate defense lines. As a Confederate fort, it was open to the rear, but after Union occupation, the earthwork was enclosed. The earthwork is square in shape, and the line of the parapet is easily determined. At the center of the fort was an excavation, probably a bombproof or a magazine. The depression left by the collapse of this excavation is still visible. Generally a reconstruction, precise details are lacking.

Significance: 2nd Order

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

HS-41 Fort Garrott

Square in shape. Unlike the other earthworks which were constructed along the roads entering the city, Fort Garrott was constructed to fill a gap in the defenses. It was built about half-way between the Railroad Redoubt and the salient works on Hall's Ferry Road. Manned by soldiers of the 20th Alabama Infantry, it was named after Colonel Isham Garrott of that regiment who was killed in the Fort.

Condition: Fair; extensive reconstruction has taken place. The parapet and ditch are clearly visible and well-defined.

Significance: 2nd Order

The National Cemetery

The National Cemetery was established at Vicksburg in 1866. It is comprised of 117 acres and contains the historic structures described below.

HS-36 Cemetery

Situated on a high bluff, the Cemetery overlooks the Yazoo Canal which follows the former channel of the Mississippi River. Due to the rugged nature of the terrain, extensive landscaping was necessary to prepare the grave sites; terraces were constructed, and a great variety of trees planted. The Cemetery was closed for future burials except for outstanding grave site reservations in 1961. At that time the Civil War interments totaled 17,077, of which 12,909 were unknown. An additional 1,280 graves were occupied by soldiers who had participated in the Indian and Spanish American Wars, World War I, II, and the Korean Conflict. A government headstone marks every grave, the known having the number of the grave, name of the soldier, and the state from which he came inscribed. The unknown have simply the grave number.

Significance: 1st Order

HS-37 Cemetery Arch (old main gate entrance) (Built in 1880)

Built of Alatawa (fossiliferous) limestone at a cost of $7,000. 36 feet 6 inches height. Two solid stone columns 17 feet in height, 2 feet 8 inches in diameter on each side of the arch. Inscription: "Here Rest

In Peace 16,600 Citizens Who Died For Their Country In the Years 1861 - 1865".

Good Condition

Significance: 1st Order

HS-38 Gardener's Cottage (1883)

Originally a simple red brick cottage containing ~~two~~ rooms, with a fireplace in the sleeping room and a stove pipe flue in the living room. The interior walls were plastered. The exterior included a plain front porch with steps. Described in 1889 as being 18 feet 4 inches by 35 feet 5 inches with tool and forage rooms, stables, cart and wood sheds attached. Improvements in 1931 include the reconstruction of the second floor and front porch, and the installation of plumbing and electricity. The second floor, which had been constructed as one large room, was divided into two separate bedrooms with a bathroom between. Remodeling in recent years include paneling and floor tile.

Good Condition

Cottage is presently serving as park housing quarters

Significance: 3rd Order

HS-39 Lodge (originally called Superintendent's Lodge) (1928)

Two story house of frame construction. Seven rooms, full size basement, front porch. Inside remodeled in recent years. Serves as park quarters.

Good Condition

Significance: 3rd Order

HS-40 Brick Rest Pavillion (1931)

Also called the cupola. Open square structure of red brick standing atop a high earth mound (erroneously called an Indian Mound) in the cemetery. Two opposite sides have rounded arches serving as entryway. Other two sides each have two arched windows. Concrete benches under each set of windows. Concrete floor. Shingled roof comes to a point; has a pointed wooden ornament on top.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY
RECEIVED DEC 2 9 1976
DATE ENTERED

Good Condition

Significance: 3rd Order

HS-42 Pemberton - Grant Surrender Interview Site Monument (1863-1864)

Erected by the Union soldiers occupying Vicksburg, Granite obelisk approximately ten feet in height surmounted by a sphere which rests on a pedestal design: in relief, an American eagle, one claw holding a laurel, the other a shield, beak holds a pennant. This monument originally marked the site of the interview between Generals Grant and Pemberton. It was moved into the cemetery in 1868 and returned to its original location in 1940.

Poor Condition: weathered, chipped by vandals

Significance: 1st Order

Statement of Significance (Continued)

Present park boundaries include the major combat areas of the siege. Approximately the southern one third of the Confederate defense line, which experienced only minor activity during the siege, is now outside the park boundary. In 1966 this area which was originally part of the park, was involved in land trades with the city. The exchange was made to geographically fill in the park boundary and provide a more logical tour route for park visitors. Presently some monuments and markers owned and maintained by Vicksburg National Military Park are located on city property.