Chapter 4: Affected Environment

4.0 Introduction

This chapter specifically discusses the resources that could be potentially impacted by the proposed action alternatives/treatment recommendations. These resources were identified and described as impact topics in Chapter 1. Identification was based on the issues raised by agencies and the public during scoping; site conditions; federal laws, regulations, and Executive Orders; NPS *Management Policies 2006* and topics specified in Director's Order 12 and Handbook (NPS 2001); and park specific resource information.

Natural resources examined in detail at George Washington Carver National Monument include soils; water quality; vegetation; wildlife and wildlife habitat; rare, threatened, and endangered species; wetlands; and floodplains. Cultural resource types evaluated include cultural landscapes, historic structures, and archeological resources. The remaining topics examined in detail are visual resources, visitor use and experience, and park operations.

4.1 Natural Resources

4.1.1 Soils

The soils at George Washington Carver National Monument are shallow with moderate to high permeability and tend to develop from bedrock of chert. Many of these soils (Hoberg, Keeno, and Wanda) are silt loams formed in cherty limestone residuum and occur on gently to moderately sloping lands on uplands and terraces. They are moderately well to well drained, and have moderate fertility and a low or acidic pH. The Keeno silt loams have a low available water capacity and a root zone often restricted by fragipan to a depth of 18 to 27 inches. In contrast, the Wanda silt loam series has highly available water capacity. These soils tend to occur adjacent to each other and comprise a large percentage of the site's soils (Figure 207). These moderately to well drained soils on gently sloping lands can be classified as dry-mesic to mesic. They most likely formed under the tallgrass prairie and are suitable for prairie restorations.

The Secesh, Cedargap, and Carytown silt loams each occur on soils along streams or in depressions. The Cedargap series is frequently flooded but extends outward from the streams and has rapid permeability, whereas the Secesh soils tend to hug the lower stream terraces in locations were flooding is relatively rare and have moderate permeability. The Carytown soils typically occur in depressed planes in uplands and have slow runoff and poor permeability. They often sit above perched water tables. At George Washington Carver National Monument, Carytown soils occur in small pockets away from the lower stream terraces and are currently supporting wetland vegetation. The Secesh soils support the largest areas of woodlands on the site, but they are also capable of supporting grassland vegetation.[515]

515. Harrington et al., 50–51.

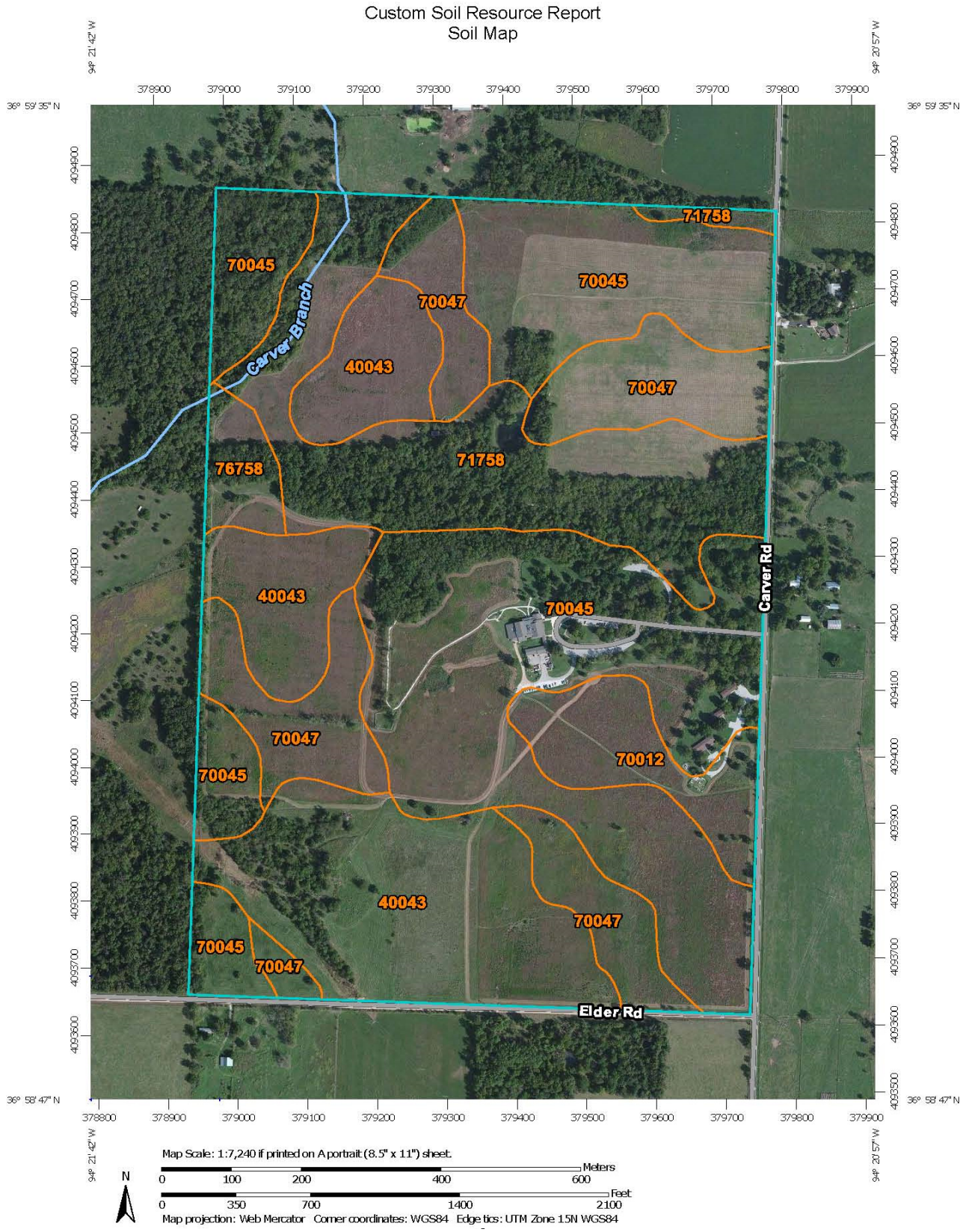

FIGURE 207. Soils map of George Washington Carver National Monument. Source: C*ustom Soil Resource Report for Newton County, Missouri, George Washington Carver National Monument.*

Soils Map Unit Legend

Newton County, Missouri (MO145)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
40043	Carytown silt loam, 0-2 percent slopes	52.3	21.8%
70012	Hoberg silt loam, 2 t0 5 percent	11.8	4.9%
70045	Keeno gravelly silt loam, 3 to 8 percent slopes	94.6	39.4%
70047	Wanda silt loam, 2-5 percent slopes	36.6	15.2%
71758	Secesh-Cedargap complex, 1 to 3 percent slopes, frequently flooded	40.3	16.8%
76758	Secesh-Cedargap complex, 0 to 2 percent slopes, frequently flooded	4.8	2.0%
Totals for Area of Interest		**240.3**	**100.0%**

4.1.2 Vegetation

The park manages grassland, forest, and the intensively manicured developed area for visitor use (manicured lawns, picnic grounds, tree groves, buildings, and paved areas). The park currently manages 130 acres as restored grassland prairie. The restored prairie falls within the former agricultural fields of the Moses Carver and Shartel farmsteads. It has been based on more than 35 years of work conducted by the NPS in conjunction with several partnering organizations.

Forested areas occur primarily along streams, but extend into the uplands. The picnic area, visitor center, and former housing complex are intensively managed and manicured, with some proportion of those areas planted in non-native trees and shrubs and manicured lawn. (Figure 208).[516]

FIGURE 208. Ornamental non-native plantings around the visitor center.

The park's prairie units are in a highly disturbed state due to previous intensive land uses, such as cultivation or grazing. The restored prairies which contained few if any patches of remnant prairie, resulted from restoration efforts initiated in 1981 on the former pastures and cropland (Figure 209). Prior to the restoration, these areas supported high numbers of non-native and annual plant species. The prairies at the park reflect the

516. National Park Service, Environmental Assessment, Assessment of Effect, Fire Management Plan, George Washington Carver National Monument, Missouri, 2004, 21–22.

prominence of prairies in the pre-settlement landscape of Newton County, Missouri. Following increasingly mechanized commercial farming in the late nineteenth and early twentieth century, the prairie on the site was plowed and grazed until 1943. During the nearly 70 years of NPS stewardship, management of the restored prairies has shifted from farming and pasture management to restoration of native prairies.

FIGURE 209. Prairie restoration units occur throughout the monument site.

The woodlands of the monument are considered part of the oak-hickory forest association that is characteristic of most forests in southwestern Missouri. The park woodlands are small in area and no section is more than approximately 20 acres. They show a variation of this mix, with proportionally small amounts of oak and very little hickory. A high occurrence of American elm *(Ulmus americana)*, hackberry *(Celtis occidentalis)*, and Osage orange *(Maclura pomifera)* is indicative of some form of disturbance, most likely grazing and/or plowing. Other species found within the woodlands include black cherry *(Prunus serotina)*, black walnut *(Juglans nigra)*, hawthorn *(Crataegus* spp.*)*, burr oak *(Quercus macrocarpa)*, red cedar *(Juniperius virginiana)*, and ash *(Fraxinus pennsylvania)*. These are indicative of a lowland early succession community of an oak-hickory forest.[517]

While prairie vegetation has been established, exotic plant species have also become established and may impede successful prairie restoration. The invasive Japanese honeysuckle (*Lonicera japonica*) and tartarian honeysuckle (*L. tartarica*) are abundant in the woodlands; while Johnson grass (*Sorghum halepense*), crown vetch (*Securigera varia*), and lespedza (*Lespedeza cuneata*) have colonized prairies at George Washington Carver National Monument. The high abundance of thistle (*Cirsium* spp.) on adjacent lands is also a potential problem. Extensive grazing on surrounding farms invites exotic species establishment and growth. Encroaching native woody plants include sumac (*Rhus* spp.), blackberries (*Rubus* spp.), woody briars (*Smilax* spp.), and grape vine (*Vitus* spp.), which are also invading restored prairies. Osage orange (*Maclura pomifera*) is a common invasive tree, particularly in the woodlands on the northwest side of the park. Multiflora rose (*Rosa multiflora*) is common in both woodland and grassland habitats in the park.[518]

An area of special concern is the section referred to as Harkins woods, located in the northwest corner of the site (Figure 210).[519] As shown in tree survey work, the makeup of the forest is markedly different from the rest of the national monument. In addition, several plant species have only been recorded from this area. Examples include white ash (*Fraxinus americana*), mad dog skullcap (*Scuttelaria lateriflora*), small passionflower (*Passiflora lutea*), monkeyflower (*Mimulus alatus*), ground ivy (*Glechoma hederacea*), and Palmer hawthorn (*Crataegus palmeri*).[520]

517. Ibid.
518. Gust M. Annis et al., 20–21, 53.
519. Barry A. Jones, *Vascular Plant Inventory, George Washington Carver National Monument* (Republic, Missouri: Heartland Network, Inventory and Monitoring Program, National Park Service, December 2004), 7–8.
520. Jones, 7–8.

FIGURE 210. Harkins woodlands northwest of the Moses Carver house and demonstration gardens.

4.1.3 Water Quality

There are three streams that flow through George Washington Carver National Monument and two spring branches that are completely contained within the park. Carver Branch, Harkins Branch, and Williams Branch are all tributaries of Shoal Creek. Williams Spring is currently inundated by Williams Pond. Carver Spring consists of a very short spring branch that flows into Carver Branch. Stream condition within the monument is generally good, though there may be mild impairment from threats outside of the park boundaries (Figure 211 and Figure 212).[521]

Water quality is best summarized in the results of the *Aquatic Invertebrate Monitoring at George Washington Carver National Monument* by David E. Bowles, dated June 2013. This report states:

> . . . data accumulated for the streams at George Washington Carver National Monument largely fall within acceptable ranges for water quality in southwestern Missouri. The relatively high pH values recorded for Carver Branch and Williams Branch in 2007 are likely due to probe error and not unacceptable readings.[522]

Aquatic habitats are an important part of the natural and cultural interpretive programs at the park. The water resources are home to several species of reptiles and amphibians. Plant and animal life within these waters are of great interest to visitors and are excellent educational tools for park interpreters. Park waters are influenced by adjacent land use such as agriculture and pasture. Because of the role water plays in the life cycle of many reptiles and amphibians, these species are good indicators of water quality. Amphibians are of particular interest due to their sensitivity to pollutants.[523] Protection of surface water and ground water is a management priority at the park and currently water quality meets or exceeds all applicable water quality standards. NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater.

FIGURE 211. Stream branch on the site of George Washington Carver National Monument.

521. D. E. Bowles, "Aquatic Invertebrate Monitoring at George Washington Carver National Monument: 2005–2007" (Fort Collins, Colorado: National Park Service, 2009).

522. D. E. Bowles, "Aquatic Invertebrate Monitoring at George Washington Carver National Monument 2005–2010 Status Report" (NPS Heartland I&M Network, Republic, Missouri), 7.

523. Annis et al., 18–22.

FIGURE 212. Interpretation of Carver Spring.

4.1.4 Wildlife and Wildlife Habitat

Fauna of George Washington Carver National Monument are typical of old fields and disturbed woodlands in the Ozark Highlands. Birds are a major visitor attraction, and are the most intensively studied of the park's vertebrates. Forty-nine species of birds were recorded during site visits in May 2008.[524] The most common and widely distributed species was the Dickcissel (*Spiza americana*). The blue jay (*Cyanocitta cristata*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Minus polyglottos*), American robin (*Turdusmig ratorius*), American crow (*Corvus brachyrhynchos*), downy woodpecker (*Picoides pubescens*), and tufted titmouse (*Baeolophus bicolor*) are seen in the forest, developed areas, and forest edges. Common mammals include the opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), prairie vole (*Microtuso chrogaster*), and hisipid cotton rat (*Sigmodon hispidus*).[525] The herpeto fauna community is typical for disturbed prairies with some common deciduous forest species. Common species include the American bull frog (*Ranacates beiana*), southern leopard frog (*Ranaspheno cephala*), ringneck snake (*Diadophis punctatus*), and three-toed box turtle (*Terrapene carolina triunguis)*.

Pooled data from 2003, 2006, 2007, and 2010 document twenty-two fish species known to the park. These species generally were typical of small headwater streams, including southern redbelly dace (*Phoxinus erythrogaster*), central stoneroller (*Campostoma anomalum*), and green sunfish (*Lepomis cyanellus*).[526]

4.1.5 Rare, Threatened, and Endangered Species

There are no federally endangered or threatened species known to occur within the park, although several state-listed species of special concern have been documented within the park, or are associated with habitats present within the park. Three grasslands obligate birds—the Dickcissel, Eastern meadowlark, and grasshopper sparrow—have been recorded at the park. No forest obligate species have been recorded. The three most frequent species of concern and their habitats include the Dickcissel (tallgrass prairie or weedy fields), Indigo bunting (brush and low trees of overgrown fields), and Carolina wren (woodland understory).[527]

Other bird species identified by the park of concern include the northern harrier,[528] loggerhead shrike,[529] and painted bunting.[530] Species identified by the park as important for monitoring purposes, but which are not associated

524. Peitz (2009).
525. Robbins (2005).
526. Justus and Peterson (2005a).
527. D. G. Peitz, ""Bird monitoring at George Washington Carver National Monument, Missouri" (Fort Collins, Colorado: National Park Service, 2009); as summarized in Gust M. Annis, Michael DeBacker, David D. Diamond, Lee F. Elliott, Aaron J. Garringer, Phillip A. Hanberry, Kevin M. James, Ronnie D. Lee, Sherry A. Leis, Michael E. Morey, Dyanna L. Pursell, and Craig C. Young, "George Washington Carver National Monument Natural Resource Condition Assessment" (Fort Collins, Colorado: National Park Service, July 2011), 18.
528. Identified at the state level as S2E or imperiled; and at the federal level as G3G4 C or vulnerable, apparently secure, and a candidate for listing.
529. Identified at the state level as S2 or imperiled; and at the federal level as G4 or apparently secure.
530. Identified at the state level as S3 or vulnerable; and at the federal level as G5 or secure.

with state or federal listing, include the northern bobwhite quail and Henslow's sparrow.

One rare fish species—the Arkansas darter—was observed within the park during a 2003 fish survey.[531] "The Arkansas darter has been a candidate for federal listing as a threatened or endangered species and is considered a species of conservation concern by the State of Missouri."[532] The wood frog[533] is the only amphibian identified as a species of concern associated with park habitats, although it has not yet been observed in the park.

The state-endangered spotted skunk is another species that has not been observed within the park, although suitable habitat exists to support it. One insect of concern, the regal fritillary,[534] has been identified within the park. It is associated with tallgrass prairies and wet grassy areas within the central United States.

Plant species of concern noted within the park include royal catchfly,[535] observed in the park during a 2004 survey, and the American beakgrain,[536] observed in previous surveys but not during the 2004 survey. There are also five additional species of concern associated with park habitats that have not as yet been observed during survey efforts. They include *Geocarpon minimum*,[537] prairie false foxglove,[538] *Bromus latiglumis*,[539] graceful sedge,[540] and velvety tick trefoil.[541]

4.1.6 Wetlands

Several areas of the park experience wet conditions throughout much of the year. For example, the south-central, west-central, and east-central portions (just east of Williams Pond) often have standing water in them during the winter and spring. Some of the water results from runoff, while much of it results from ground water seepage. Plant communities in these areas, notably different from drier areas of the park, reflect the wet conditions. No attempt has been made to determine wetland classification for any of the park's wet areas or to map and inventory them.[542] No wetlands on the site except Williams Pond appear on the National Wetlands Inventory (NWI) mapping conducted by the U.S. Fish and Wildlife Service. The inventory is based primarily on a review of aerial photographs, soil surveys, and hydrological data. While the NWI is useful as a preliminary planning tool, it should be noted that the inventory is a product of very limited field verification.

Studies developed since the late 1990s have shown that several areas of the national monument deserve attention and protection. Of particular interest are wet prairie areas and Williams Pond (Figure 213). Wet prairie areas located in the southwest and in the south-central areas of the

531. Identified at the state level as S3S4 or vulnerable to apparently secure; and at the federal level as G5 or secure.
532. B. G. Justus and James C. Peterson, "The Fishes of George Washington Carver National Monument, Missouri, 2003," 12.
533. Identified at the state level as S3 or vulnerable; and at the federal level as G3 or vulnerable.
534. Identified at the state level as S3 or vulnerable; and at the federal level as G3 or vulnerable.
535. Identified at the state level as S1 or critically imperiled; and at the federal level as G4G5 or apparently secure to secure.
536. Identified at the state level as S1 or critically imperiled; and at the federal level as G4G5 or apparently secure to secure,
537. Identified at the state level as E or endangered; and at the federal level as T or threatened.
538. Identified at the state level as S1 or critically imperiled; and at the federal level as G4G5 or apparently secure to secure.
539. Identified at the state level as S3 or vulnerable; and at the federal level as G5 or secure.
540. Identified at the state level as S1 or critically imperiled; and at the federal level as G5 or secure.
541. Identified at the state level as S1 or critically imperiled; and at the federal level as G5 or secure.
542. *Resources Management Plan* 1999, 9.

park are particularly notable due to the diversity of plants that are only found in damp areas. Typically, these areas remain either with standing water or with wet soil for most of the year (with a normal drying during the summer drought season). Many species of sedges (*Carex* spp., *Cyperus* spp.) and grasses, as well as forbs are found only in these areas.[543]

Williams Pond, although an artificially created impoundment, is a site that has become the "repository" for some of the most unique plants within the national monument. These include thirteen species found exclusively at the pond: water starwort (*Callichtriche heterophylla*), coontail (*Ceratophyllum demersum*), fall witchgrass (*Digitaria cognata*), several species of spikerush (*Eleocharis acidularis, E. erythropoda* [calva], *E. obtusa*), autumn fimbristylis (*Fimbristylis autumnalis*), rush (*Juncus diffusissimus*), naiad (*Najas guadalupensis*), fog fruit (*Phyla lanceolata*), pondweed (*Potamogeton crispus*), marsh water cress (*Rorippa palustris*), and horned pondweed (*Zanichelli apalustris*).Other typical plants found at the pond are: mud water starwort (*Callichtriche terrestris*), barnyard grass (*Echinochloa crus-galli*), eclipta (*Eclipta prostrata*), spikerush (*Eleocharis verrucosa*), duckweek(*Lemma minor*), chapman bluegrass (*Poa chapmannia*), smartweed (*Polygonum punctatum*), and water cress (*Rorippa nasturtium-aquaticum*).[544]

FIGURE 213. Williams Pond with contemplative loop trail.

4.1.7 Floodplains

Floodplains are fluvial lands adjacent to freshwater streams and rivers that receive floodwaters once the water has over topped the bank of the main channel. This is typically the result of a higher than normal influx of upstream water supplies, with water moving from higher elevations to lower elevations. Floodplains are important resources in the storage and filtering of these floodwaters.

The topography of the national monument landscape consists of gently rolling uplands dissected by stream channels that carry water from natural springs and excess water during rainy periods. The stream valleys have a stepped appearance and bedrock outcrops are infrequent except along deeper streams and rivers. There are floodplains associated with the three stream branches that occur within the park (Figure 214).[545]

There is a great potential for flooding along Carver Branch, with the extensive agricultural use within its 3-mile drainage area and the 100-foot elevation drop between its source and the park entrance. Current laws and policies require that the following conditions be achieved in the park: minimize destruction, loss, or degradation of wetlands and floodplains, and preserve their natural and beneficial values.

FIGURE 214. Floodplains occur along all three stream branches at George Washington Carver National Monument.

543. Jones, 6–11.
544. Ibid. 6–7.
545. Fire Management Plan, 25.

4.2 Cultural Resources

4.2.1 Cultural Landscapes

A cultural landscape is defined in NPS Director's Order 28 as a geographic area, including both cultural and natural resources and the wildlife and domestic animals therein, associated with a historic event, activity, or person, or exhibiting other cultural or aesthetic values.[546]

George Washington Carver National Monument is the birthplace of George Washington Carver, and his place of residence until he was approximately eleven years old. The entire 240 acres of the former Moses Carver farm has been listed in the National Register of Historic Places.[547] The park contains cultural landscape resources such as natural systems and features, the Carver family cemetery and perimeter wall, the walnut tree row planting, and views across the fields and prairies (Figure 215 and Figure 216).

The future of the park as a cultural landscape is a key issue of the CLR/EA. Changes to the cultural landscape that could result from implementing one or more of the alternatives would be of concern to visitors, the general public, the SHPO, interested tribes, local community scholars, and NPS managers.

FIGURE 215. The spatial organization of the landscape of George Washington Carver National Monument is seen in the contrast of open space prairie grassland edged by woodland.

FIGURE 216. The open landscape currently in grassland prairie restoration.

4.2.2 Historic Structures

According to both federal law and NPS Management Policies, all historic structures in which the NPS has a legal interest are to be managed as cultural resources. Regardless of type, level of significance, or current function, every structure is to receive full consideration for its historical values whenever a decision is made that might affect its integrity. Historic structures that are central to the legislated purposes of parks, especially those that are to be interpreted, may be subjects of additional specialized efforts appropriate to their functions and significance. [548]

546. NPS, Director's Order 28
547. United States Department of the Interior: National Park Service. *George Washington Carver National Monument." National Register of Historic Places Inventory – Nomination Form*, October 15, 1966.
548. Ibid. 19.

There are six buildings, and fifteen structures located within the park. The only building to survive from the Carver period is the circa 1881 Moses Carver house (Figure 217). The other five buildings were constructed by the National Park Service in 1960 to accommodate visitor uses and park operations. The visitor center was substantially altered and expanded in 2007 to better accommodate interpretive exhibits and provide improved museum collections storage. One structure—the rebuilt stone wall enclosing the historic Carver family cemetery—was installed as part of the early park development period in support of the commemorative and interpretive programming devised for the park (Figure 218).

Changes to historic buildings or structures at George Washington Carver National Monument that could result from implementing one or more of the alternatives would be of concern to visitors, the general public, the Missouri SHPO, interested tribes and THPOs, and NPS managers.

FIGURE 217. Moses Carver house and site.

FIGURE 218. Stone wall around the Carver family cemetery.

4.2.3 Archeological Resources

Archeological resources are significant due to their identity, age, location, and context in conjunction with their capacity to reveal information through the investigatory research designs, methods, and techniques used by archeologists.

Various archeological inventories have been conducted within the monument from 1953 to 2014 and present ongoing investigations. (Refer to Chapter 2 and Chapter 3 for a complete summary and description of findings) A recent summary of archeological resources at the park is found in a response to an inquiry to the park from the THPO of the Caddo Nation in March 2014. MWAC archeologist Ann Bauermeister provided the following response in an email dated March 27, 2014:

> The entire park has been inventoried for archeological resources, though at different levels of intensity. The parkwide inventory completed by David Benn in 1981 utilized the following survey methods: pedestrian survey of the entire monument, reconnaissance to determine geomorphic aspects of the landscape, and shovel testing of areas covered by vegetation. Benn did not record any sites near those confluences, but additional, more intensive subsurface excavations, or geophysical survey, might yield different results. The park has recently been engaged in undertaking additional archeological inventories in compliance with Section 110. The goal of these inventories is to supplement what was previously documented about the park's archeological resources. The

investigations, more of which are planned for 2014, are utilizing non-invasive geophysical survey methods to look for the presence of subsurface resources that may not have been detected through traditional archeological methods. Limited, targeted excavations to identify potential buried resources could then be undertaken.

Additional investigations at the lithic scatter sites would be very useful in determining site significance and providing additional information about the long history of use and occupation. The sites are visited on a regular basis to assess their condition and document whether they are being subjected to any threats or disturbances. They are all currently listed in "good" condition and are in a good state of preservation.[549]

4.3 Visual Resources

George Washington Carver National Monument exhibits several views designed primarily for visitor enjoyment and understanding of the landscape. Predominant among them are the axial view along the park entrance road toward the visitor center environs, linear views that direct visitors through the historic core to elements of the land that George Washington Carver knew, and long expansive views from the visitor center and Carver Trail across the open restored prairie located south of Carver Branch, and north and west of the relocated Moses Carver house. These views were all established as part of the early development of the park. Specifically, these views include views into the park along the entrance; linear views along the Carver Trail; views from the visitor center and trail of restored prairie; the view across the prairie through the hedgerow of walnut trees; and the view across the fields from the Moses Carver house area (Figure 219 and Figure 220).

FIGURE 219. View to prairie through the walnut row along Carver Trail.

FIGURE 220. View to prairie unit from Moses Carver house interpretive area.

4.4 Visitor Use and Experience

George Washington Carver National Monument, a unit of the National Park System, was established in 1943 to preserve and protect the birth site and commemorate the life of one of the nation's most important scientists. The park is open to visitors daily from 9:00 a.m. to 5:00 p.m. The only days the park is closed are New Year's Day, Thanksgiving Day, and Christmas Day. Guided tours are offered daily at 10:00 a.m. and 2:00 p.m. An array of curriculum-based programs and events are offered for students, and a variety of interpretive programs and special events are offered for visitors. Many of the activities offered at the park are related to George Washington Carver's work and interests.

549. Ann Bauermeister, email correspondence March 27, 2014, to Lana Henry, forwarded to THPO of the Caddo nation.

Teachers are given the opportunity to participate in curriculum based education programs and planned field trips to use the park as a classroom. Visitor services, such as ranger contact, restroom facilities, and drinking fountains, are afforded in the visitor center, while picnic tables are available in the picnic area near the parking lot. The park is also used by visitors for recreational walking/hiking along the Carver Trail and the contemplative loop trail that surrounds Williams Pond (Figure 221).

FIGURE 221. Visitors to the park experience the Carver Trail as part of the interpretive experience and for recreational walking.

Tour groups of 200 visitors (usually students) are frequent. Special days such as Carver Day, National Parks Week, and Prairie Day attract school groups and the general public from as far away as St. Louis, Missouri; Tulsa, Oklahoma; and locations in northwest Arkansas. The annual visitation has increased markedly since the visitor center opened in 1960.

Visitors arrive at the park via Carver Road (Figure 222). The entrance drive leads to the core visitor use area composed of the visitor center, picnic area, and one-mile-long Carver Trail. Parking edges the entrance drive to either side; the entrance drive forms a loop in front of the visitor center that visitors use to return to Carver Road. The main park entrance road is edged to the north by a grove of mature shade trees and a large picnic area is set within the grove (Figure 223). Figure 224 through Figure 228 illustrate features of the visitor experience and interpretation at the park.

FIGURE 222. The entrance drive leads visitors to the core visitor use area.

FIGURE 223. The picnic area for visitors is set in a grove of large deciduous trees.

FIGURE 224. The visitor experience begins at the visitor center and the trailhead for the Carver Trail north of the visitor center.

FIGURE 225. Major node for visitor use is the location of the sculpture of Carver as a boy.

FIGURE 226. Interpretive wayside at the Moses Carver house.

FIGURE 227. Ranger on the porch of the Moses Carver house.

FIGURE 228. Ranger interpretation is part of the visitor experience at George Washington Carver National Monument.

4.5 Park Operations

Park administration has been a component of park operations since early park development. Park administrative offices are currently housed in the visitor center. Park maintenance activities are clustered in a building and grounds complex located south of the visitor center. The maintenance facility was established with the visitor center in 1960 (Figure 229 and Figure 230). Maintenance activities have been a component of the park operations since its early establishment. Also from the time of establishment, utilities have been an essential component of park operations, including water and sewer, telephone, internet and electrical services.

FIGURE 229. Maintenance facility and staff at George Washington Carver National Monument.

FIGURE 230. Parking area for maintenance vehicles.

Presently, the national monument has thirteen full-time park employees; this includes the Superintendent, Administrative Officer, Park Ranger-Management Assistant, Supervisory Park Ranger, Supervisory Facility Operations Specialist, Administrative Support Specialist, Park Ranger (Interpretation 1), Park Ranger (Interpretation 2), Park Guide, Maintenance Worker 1, Maintenance Worker 2, Maintenance Mechanic, and Laborer. There is one permanent part-time employee, the Office Automation Clerk, and there are a number of vacant positions for seasonal/temporary employees. The park staff relies on temporary staff and volunteers to supplement full-time educational and interpretive staff.

The park managed approximately 380 Volunteers In Parks (VIPs) during Fiscal Year 2013, a number substantially higher than in previous years due to the involvement of groups including Gateway School, Wal-Mart Leadership Team, and MSSU EDUC 470 class, as well as others. Without park volunteers, there would be a reduction in the number of programs the park could offer. The VIPs are ambassadors for the park and are successful at recruiting others to volunteer. They support primarily the park's interpretive division by providing daily staffing of the greeter desk (currently eight greeters), providing education programs for school groups (currently seven educators), staffing exhibits and demonstrations during special events (estimated at twenty for the Holiday Open House, thirty for Art in the Park, fifty for Carver Day, and seventy-five to 100 for Prairie Day), and representing the park offsite. Many of the same VIPs work at each event. The VIPs also work with the maintenance division to maintain manicured and landscaped areas. Two to four VIPs conduct the annual breeding bird survey.