
Chapter 3: Existing Conditions and Comparative Analysis and Assessment

3.0 Introduction

This chapter documents, through narrative description, photographs, and labeled maps, the existing landscape features associated with George Washington Carver National Monument. The existing conditions documentation forms the basis for a comparative analysis, which evaluates to what degree the park landscape reflects its character and composition during the periods of significance identified in the previous chapter (circa 1865–1876 and 1943–1960). Comparison of the contemporary landscape with historic conditions helps to identify features that contribute to the National Register of Historic Places significance of the park, and to an understanding of its historic integrity. These qualities are important considerations that help to structure the treatment plan featured in chapter five.

This chapter is comprised of five sections. The first section—**Park Environmental and Cultural Context and Setting**—depicts the character and configuration of the landscape surrounding the park. The second section—**Overall Park Composition**—describes the park landscape as a whole. The third section—**Documentation and Assessment by Landscape Characteristic**—depicts the current condition and historic evolution of extant landscape features. The information is organized into a series of landscape characteristics, which are the tangible and

intangible aspects of a property that collectively convey its historic character and aid in the understanding of its cultural importance.¹⁸⁵ They range from large-scale land use patterns and relationships to site details and materials. The following twelve landscape characteristics are used to document George Washington Carver National Monument:

- **Natural systems and features** are the environmental resources and qualities that have influenced the development and physical form of a landscape. They include the underlying landform and topography, soils, and water resources, as well as attendant native plant communities.
- **Responses to natural resources** are examples of cultural responses to environmental conditions and associated natural features. They include such observances as the methods and materials used to construct and site buildings and structures, land uses relating directly to available resources, and storm water management practices.
- **Patterns of spatial organization** reflect the three-dimensional organization of physical forms and visual associations in a landscape, including the articulation of ground, vertical,

185. Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Processes, and Techniques* (Washington: Department of the Interior, National Park Service, 1998), 53.

and overhead planes that define and create space.

▪ **Views** are locations that afford expansive and panoramic prospects of the landscape, and can be either naturally occurring or designed.

Vistas are deliberate directed views often meant to orient the gaze to a linear feature or particular focal point.

▪ **Topographic modifications** are human-generated alterations of a land surface. Topographic modifications are often associated with such needs as accessing potable water, grading roads and paths, siting buildings, and draining storm water.

▪ **Land uses and activities** are the principal cultural activities in a landscape that form, shape, and organize it, and are often derived from site-specific environmental conditions.

▪ **Circulation** includes the spaces, features, and applied material finishes that constitute the systems of movement in a landscape.

▪ **Cultural vegetation** includes the deciduous and evergreen trees, shrubs, vines, ground covers, and herbaceous plants that have been introduced in a landscape by cultural activities.

▪ **Buildings** are elements constructed primarily for sheltering any form of human activity in a landscape. **Structures** are elements constructed for functional purposes other than sheltering human activities.

▪ **Utilities** are the systems and features that store and channel public service elements such as electricity, fuel, telephone, cable, water, and sewer.

▪ **Small-scale features** are landscape elements providing detail and diversity for both functional needs and aesthetic concerns in a landscape.

▪ **Archeological resources** are the traces or deposited artifacts in a landscape, evidenced by the presence of either surface or subsurface features.¹⁸⁶

Over the pages that follow, the park's unique features and systems are individually identified and described in accordance with the landscape characteristics noted above. The condition of each of the features is also assessed. All features are considered to be in good condition unless otherwise noted.

The comparative analysis portion of this chapter is composed of a discussion of the origin and evolution of each inventoried feature. Changes that have been made to the feature since its initial establishment and the impact on the character of the feature is also discussed, resulting in an assessment of historic integrity. Those features determined to survive with integrity from the period of significance—that is, continue to convey their historic associations—are identified as contributing resources, while features that postdate the period of significance, or have lost historic integrity, are indicated as non-contributing resources. Features present historically that are no longer extant are also identified, and characterized as missing resources.

The fourth section of this chapter—**Assessment of Integrity**—follows from the information developed as part of the comparative analysis. It is based on a comparison of the overall landscape to each of the periods of significance to determine whether historic associations are conveyed.

186. Page, Gilbert, and Dolan, 53; and Linda Flint McClelland, J. Timothy Keller, Genevieve Keller, and Robert Z. Melnick, National Register Bulletin 30: *Guidelines for Evaluating and Documenting Rural Historic Landscapes* (Washington: Department of the Interior, 1990).

The fifth and final section of this chapter—**FMSS Data Table**—summarizes the relationship between the landscape characteristics addressed in the chapter and the park’s Facility Management Software System (FMSS).

3.1 Park Environmental and Cultural Context

See Figure 33, Context and Location Map.

George Washington Carver National Monument is located along Carver Road approximately 2-1/2 miles from the town of Diamond, Missouri, in the far southwestern corner of the state. The park falls within Marion Township, which is administered as part of Newton County. The Newton County seat is Neosho, located fourteen miles to the southwest. The nearest city is Joplin, located 13 miles to the northwest. Although the majority of the city of Joplin falls within adjacent Jasper County, approximately one-quarter of Joplin residents reside in Newton County.

Interstate 44 is the primary east-west route through Southwest Missouri, while Interstate 49 serves as the principal north-south route through the region. Both of these interstate highways come within 8 miles of the park. The park entrance is located along Carver Road. Visitors reach Carver Road from County Road V, which is accessible from exits associated with the two nearby interstates.

3.1.1 Physiography

George Washington Carver National Monument sits atop the Springfield plateau or plain at the western edge of the Ozark Mountains (Figure 34). The region is known as the Ozark Highlands

physiographic province, which is characterized by an area of uplift that extends across much of the southern half of Missouri and the northern third of Arkansas. It is expressed as low mounded dome dominated by a central ridge that extends east from the Mississippi River into Arkansas and Missouri. The dome, which exhibits greater relief and steeper slopes than the surrounding terrain, is irregularly broken by local faulting and incisions formed by watercourses as they traverse less resistant bedrock. Isolated hills, referred to as knobs or balds, frequently rise above the surrounding landscape.

The contour signature of the physiographic province includes broad, smooth valleys, and low hills with rounded summits. Slopes associated with stream valleys can sometimes be steep, and feature bedrock escarpments and outcroppings.

The Springfield plateau is an undulating plain that extends west into northeastern Oklahoma. The plateau is bounded on its north and east by the Missouri and Mississippi River valleys and on the south by the Arkansas River valley. The terrain of the Springfield plateau reflects the relative resistance of the underlying geology—composed of limestone and chert—to chemical and physical weathering.

Elevations across Newton County vary to a great degree, ranging from 1,360 feet above mean sea level (AMSL) at the Barry County line, to 830 feet AMSL along Shoal Creek as it crosses the Kansas border.¹⁸⁷ Elevational change within the park is narrower, ranging from a high point of 1,087 feet AMSL along portions of Carver Road and in the southwestern corner of the park to a low of 1,038 feet AMSL where Carver Branch exits the property along its western boundary.

187. Max W. Aldrich, *Soil Survey of Newton County, Missouri* (Washington, D.C.: U.S. Government Printing Office, September 1989), 2.

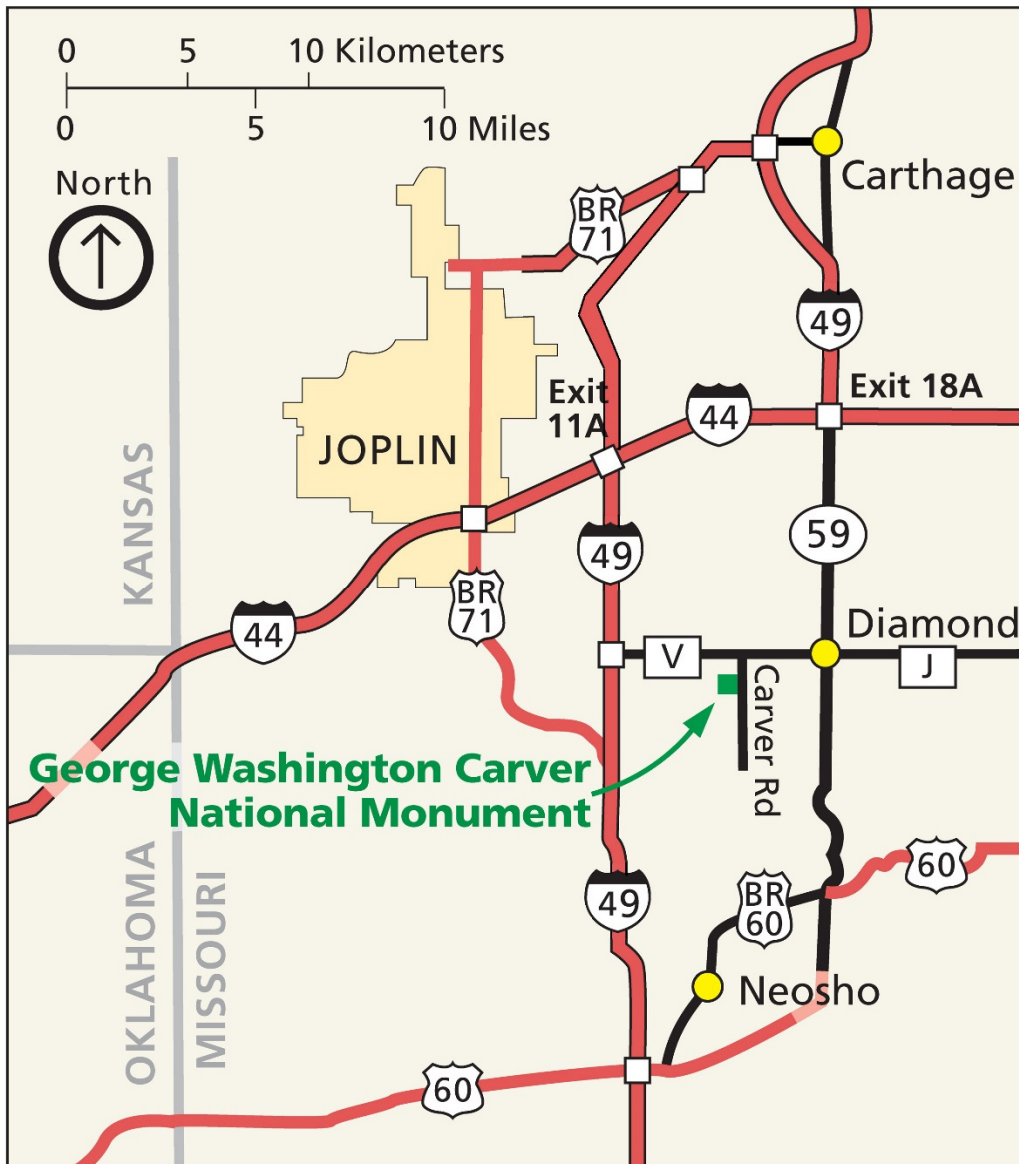


FIGURE 33. Context and Location Map.

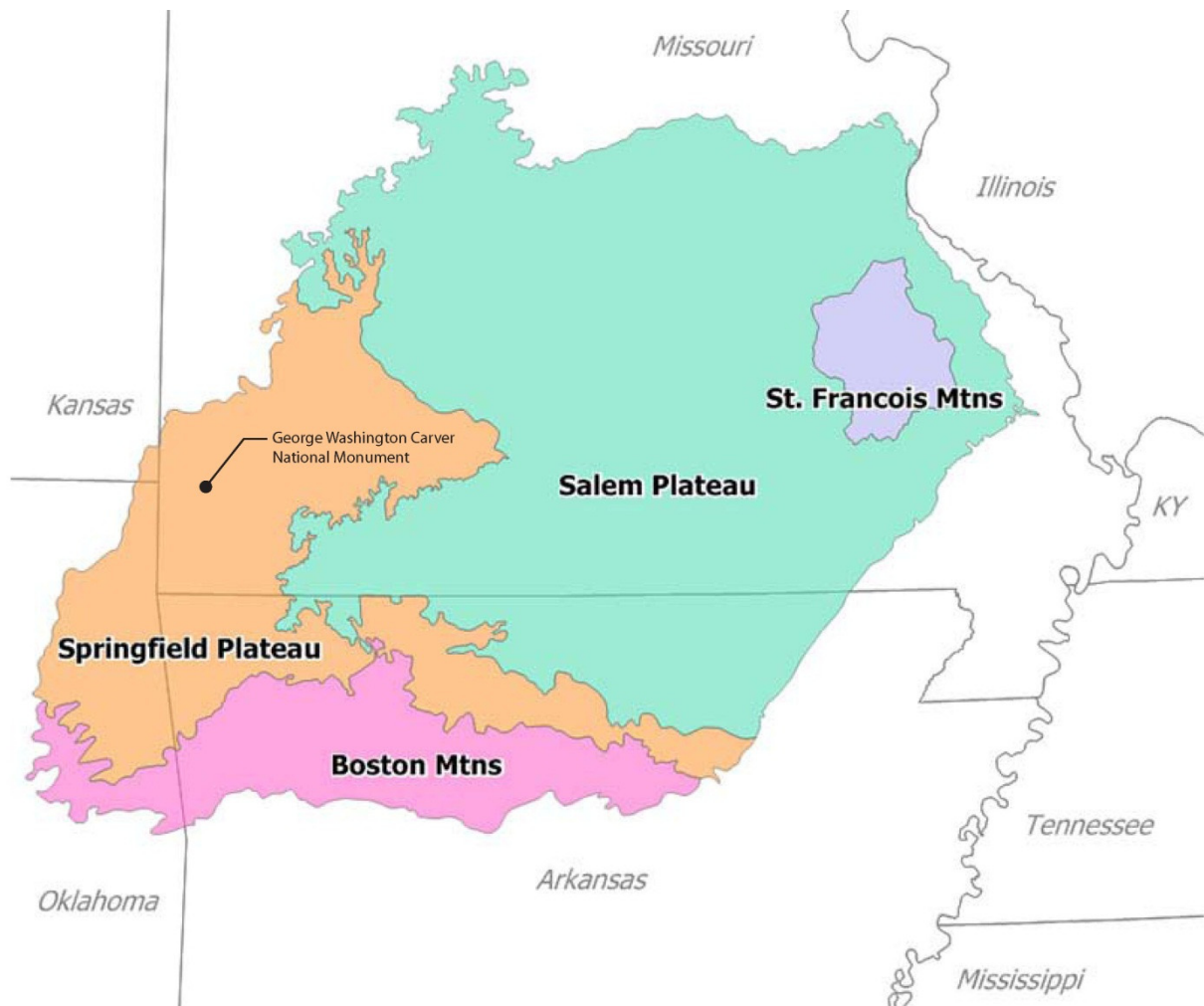


FIGURE 34. Subregions of the Ozark Highlands physiographic province. Source: Wikimedia Commons, 2006.

3.1.2 Geology and Soils

The bedrock associated with the Springfield plateau consists of sedimentary rocks ranging from Mississippian Reed Springs limestone to Pennsylvanian sandstone, and also includes dolomite and shale. The geology is composed primarily of stratified limestone interspersed with layers of boulders and chert, which is an impure form of flint. These rocks are of marine origin and belong to the Mississippian Series of the Lower Carboniferous age. The landforms associated with

the local geology—known as karst—are the result of weathering in the underlying, calcium-rich limestone, coupled with the resistance of the chert. Over millions of years, ground water that has percolated through fractures in the limestone has slowly dissolved and enlarged the fractures until the bedrock is a network of tunnels and caves. Karst features, such as springs, losing streams, sinkholes, and caves, are common features of the limestone geology of the Springfield plateau.¹⁸⁸

¹⁸⁸ A losing stream, also known as an influent stream, is one that loses water as it flows downstream due to infiltration into the ground. Infiltration occurs because the water table falls below the bottom of the stream channel. This is in contrast to the more

commonly seen “gaining” stream, which increases in water volume as it moves downstream and gains water from the local aquifer. Losing streams are common in regions of karst topography where stream water can be captured by an

The cherty limestone has had a significant impact on soil formation. Residuum, a combination of clay and chert resulting from bedrock disintegration, is often a component of local soils, particularly on the upland prairies.¹⁸⁹ Soils in the region are also composed of wind borne deposits known as loess. The depth of the loess ranges from less than 1 inches to 6 inches, depending on the extent of erosion that has occurred. The soils are typically poor and thin, except in the river valleys. The soils of the Springfield plateau are generally richer than other parts of the Ozark Highlands.

Soils within the park fall within the Hoberg-Keeno association, characterized by gentle to moderately sloping, moderately well-drained, silty and cherty soils on uplands and terraces. This association is well suited to agriculture. Soils are generally shallow with moderate to high permeability. Within Newton County, approximately one-half of the association is used for pasture, hay, or tall fescue seed. The other half is cropped. The primary crops grown include small grains, soybeans, and grain sorghum. Chert fragments on and below the surface, a restricted rooting depth, wetness in spring, and a low available water capacity serve as limitations on agricultural activities. The association is also generally suited to building site development and some kinds of on-site waste disposal. As with agriculture, the limitations of this soil for building purposes include wetness, restricted permeability in the fragipan, and chert fragments.¹⁹⁰

Within the park, soil types include Hoberg, Keeno, and Wanda silt loams, and Secesh, Cedargap, and Carytown silt loams.¹⁹¹ The Hoberg, Keeno, and Wanda soils 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. They tend to occur adjacent to each other and comprise a large percentage of the park's soil composition. They can be classified as dry-mesic to mesic, and

most likely formed under the tallgrass prairie. They are well suited to prairie restoration.

Secesh, Cedargap, and Carytown soils occur along streams or in depressions. These soils are often exposed to flooding and sit above perched water tables. While most are wooded, they are also capable of supporting grassland vegetation. The geology of the region also includes elements that have been the focus of mineral extraction activities. Southwestern Missouri is part of a tri-state zinc and lead mining district with Kansas and Oklahoma. The northwest-trending fold structures and faults, impermeable shale layers above and below the Mississippian limestones, and karst topography are thought to have funneled zinc- and lead-rich fluids into Mississippian-age chert breccias or angular broken rock fragments.¹⁹² Lead was first discovered near the location of present-day Granby, Missouri, in 1850.

Lead deposits began to be mined in Granby by 1854. During the Civil War, the contested nature of the region led to the closing of the mines. The mines were reopened after the war; the arrival of rail lines allowed for shipping of extracted minerals to markets, and led to a period of regional prosperity. A mining boom began in Joplin, Missouri, around the turn of the twentieth century and continued until 1957. At one time, the tri-state district was the world's largest zinc producer. During World War I, extraction of lead, zinc, and tripoli contributed to the American military effort.

Circa 1915, a zinc mine was developed in the southwest corner of the Moses Carver farm that operated until about 1920. Paul Miller, a journalist and former resident of Diamond, wrote that the Granby & Neosho mine later included a 250-ton mill erected in August 1929. According to Miller, the mill was owned by the Tulsa-Diamond

underground cavern and subterranean river system formed from limestone bedrock dissolution.

189. Aldrich, 71.

190. Ibid., 8.

191. Harrington et al., 50–51.

192. *Geologic Resources Inventory Scoping Summary*, 2011.

Corporation.¹⁹³ Although Thomas B. Nolan, the U.S. Geological Survey's acting director, stated that two shafts were sunk in 1935 and 1939 to depths of over 60 feet and 120 feet respectively, the mine appears to have remained idle until the early 1940s, except for some exploratory drilling, when wartime needs spurred a revitalization of the mine. The mineral rights to the land were then leased by the Liberty Mining Company of Tulsa, Oklahoma, which began mining operations probably early in 1942 but ceased operations around the end of 1943. Zinc production during this period was relatively small.¹⁹⁴ However, the company left a tailings pile said to be 40 feet high. The 30-acre parcel of the original Moses Carver farm where the mine was located was not acquired with the rest of the park in the early 1950s. The property was later integrated into the park following mitigation of the environmental hazards associated with the tailings from the defunct mine in 2006.

3.1.3 Hydrology

Much of Newton County falls within the Spring River watershed. Shoal Creek is the largest stream within the county. Shoal Creek empties into the Spring River near Riverton in Cherokee County, Kansas. The creek enters the county from the east, and traverses it in a northwesterly direction, continuing through the city of Joplin, where Shoal Creek serves as the primary water supply. One of Shoal Creek's attractions is Grand Falls, a large waterfall located south of Joplin, Missouri, that runs through Wildcat Glades Conservation and Audubon Center.

All of the water resources associated with George Washington Carver National Monument drain into Shoal Creek.

3.1.4 Vegetation

The region falls within a prairie-forest transition zone that forms the western edge of the Eastern hardwood forest, but also includes areas of savanna and prairie typical of the landscape further west. Dominant tree species of the Eastern hardwood forest, including various oaks and hickories, characterize the open woodlands of the region. Otherwise, vegetation generally varies depending on slope, available moisture, solar orientation, soil type, and past land use. Mosaics of bluestem prairie are present where cultivation has not occurred (Figure 35).

Many of the species associated with prairie-forest transition areas, such as oaks and grasses are highly adapted to fire. Trees often exhibit characteristics such as thick bark and the ability to sprout from the root crown. Fire also stimulates new growth in grasses, while killing other species that compete for light and moisture. The extent of prairie within southwest Missouri prior to European-American settlement, estimated at between 25 and 50 percent of the landcover, can be attributed, at least in part, to frequent grass fires that prevented the establishment of woody vegetation. Without the presence of fire or grazing animals, much of the grassland prairie quickly becomes filled with woody invaders.

193. Miller, "Mining," 81–82. Records also indicate that the farm owner permitted mine exploration by Kansas Exploration, Inc., in 1925, and by the Boston Commerce Drilling Company in 1928–1929. ("Lead and Zinc Mine, Potable Water Quality, Newton County National Priorities List of Hazardous Waste Sites," September 30, 2003, File L54, ACF, GWCA.)

194. Thomas B. Nolan, Acting Director, U.S. Geological Survey, to Director, National Park Service, December 8, 1945, File 035, Box 187, CCF, RG 79, NA-CPR.

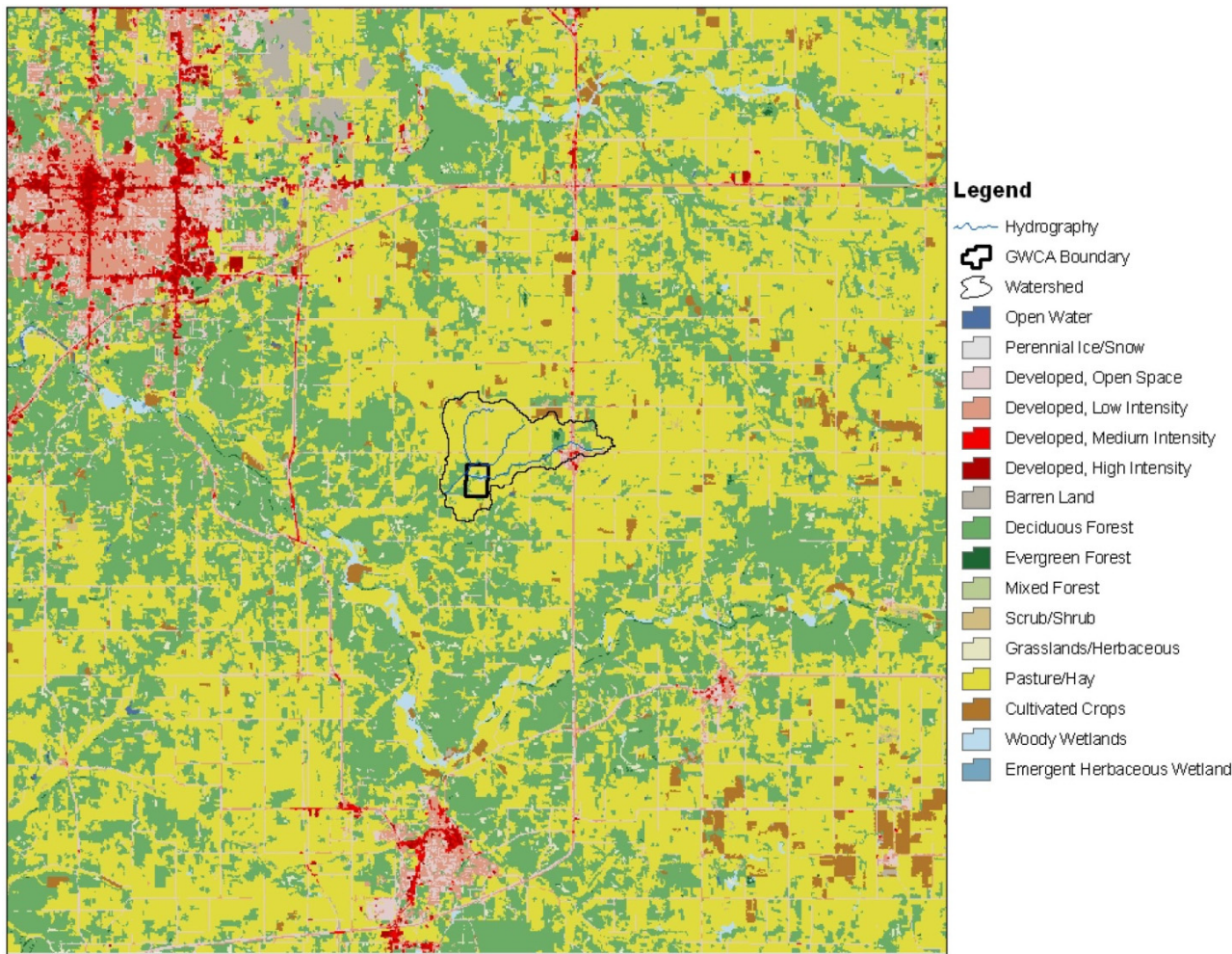


FIGURE 35. Land Cover in the vicinity of the park, circa 2011. Source: Annis et al. George Washington Carver National Monument Natural Resource Condition Assessment, 12.

1 Prior to European-American settlement, oak-
2 hickory woodlands typically followed stream
3 courses in the form of gallery forests (Figure 36),
4 or occupied drier uplands in the form of savannas,
5 composed of widely-spaced and open grown trees
6 with grassland understories. The fire that
7 contributed to these vegetation communities and
8 compositions can be attributed to natural causes,
9 such as lightning strikes, as well as anthropogenic-
10 generated fire. American Indians are thought to
11 have regularly used fire as a tool to promote the
12 development of prairie and savanna-like
13 conditions, encouraging the growth of grasses and
14 other herbaceous plants used for food and basket-
15 making material, and to attract megafauna for
16 hunting purposes. Maintenance of open expanses
17 of landscape also facilitated travel and prospects
18 important to protect against attack. The resulting
19 grasslands produced the deep, rich, soil profile—

20 well suited to crop production—that later
21 benefitted European-American settlers.

22 The two types of wooded conditions associated
23 with southwestern Missouri are savanna and
24 mixed woodlands. In both, oaks and hickories are
25 the most prevalent species, comprising as much as
26 75 percent of the basal area of mature woodlands.
27 Short-leaf pine and many deciduous species are
28 also part of the overall composition of regional
29 forests.



FIGURE 36. Image of a gallery forest at Tallgrass Prairie National Preserve, Chase County, Kansas. Source: Liz Sargent.

Today, regional plant communities differ from those present prior to European-American settlement in several ways. First, where gallery forests once edged stream corridors, floodplain communities are today characterized by young invader species and a dense understory of woody growth. Gallery forests once featured mature oaks, elms, and ashes subtended by an understory of grasses. Today, riparian forests contain a greater percentage of fire intolerant species, and a denser character than that present during the mid-nineteenth century. The extent of woodland cover also exceeds that present at the time of early settlement.

The composition of forest communities has changed due to a variety of factors that include cultivation, which depleted soil fertility and led to erosion; logging that disturbed natural woodland succession; fire suppression; the loss of important native species such as the American chestnut (*Castanea dentata*) and elm (*Ulmus americana*) to introduced pathogens; and the displacement of native species by invasive species.

Few stands of native prairie have survived cultivation. The impacts of agriculture are

exhibited in the extent of cool-season exotic grasses and invasive species.

3.1.5 Wildlife

Fauna observed at George Washington Carver National Monument is representative of that found in old fields and disturbed woodlands throughout the Ozark Highlands. Common mammals include the opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), prairie vole (*Microtus ochrogaster*), and hispid cotton rat (*Sigmodon hispidus*).¹⁹⁵ Forty-nine species of birds have been recorded as year-round residents or seasonal visitors within the park.¹⁹⁶ The most common and widely distributed species include the dickcissel (*Spiza americana*), blue jay (*Cyanocitta cristata*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), downy woodpecker (*Picoides pubescens*), and tufted titmouse (*Baeolophus bicolor*).

The park's water resources and wetland habitats are home to several species of reptiles and amphibians. Common faunal species representative of the region include the American bull frog (*Lithobates catesbeianus*), southern leopard frog (*Lithobates sphenoccephalus*), ringneck snake (*Diadophis punctatus*), and three-toed box turtle (*Terrapene carolina triunguis*).¹⁹⁷

3.1.6 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, or are associated with habitats present within the park. Three grassland obligate birds—the dickcissel, eastern meadowlark (*Sturnella magna*), and grasshopper sparrow (*Ammodramus savannar*)—have been recorded at

195. H. W. Robbins, *Inventory of distribution, composition, and relative abundance of mammals at George Washington Carver National Monument* (National Park Service Technical Report, 2005); as summarized in Annis et al., 18.

196. D. G. Peitz, "Bird monitoring at George Washington Carver National Monument, Missouri" (Fort Collins, Colorado: National Park Service, 2009); as summarized in Annis et al., 18.

197. Annis et al., 18.

the park. No forest obligate species have been recorded. The three most frequently observed species of concern and their habitats include the dickcissel (tallgrass prairie or weedy fields), Indigo bunting (*Passerina cyanea*) (brush and low trees of overgrown fields), and Carolina wren (*Thryothorus ludovicianus*) (woodland understory).¹⁹⁸

Other bird species of concern observed within the park include the northern harrier (*Circus cyaneus*),¹⁹⁹ loggerhead shrike (*Lanius ludovicianus*),²⁰⁰ and painted bunting (*Passerina ciris*).²⁰¹ Species identified by the park as important for monitoring purposes, but which are not associated with state or federal listings, include the northern bobwhite quail (*Colinus virginianus*) and Henslow's sparrow (*Ammodramus henslowii*).

One rare fish species—the Arkansas darter (*Etheostoma cragini*)—was observed within the park during a fish survey conducted in 2003.²⁰²

The wood frog (*Lithobates sylvaticus*) is the only amphibian identified as a species of concern associated with park habitats, although it has not yet been observed in the park.²⁰³

The state-endangered spotted skunk (*Spilogale putorius*) 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 (*Speyeria idalia*), has been identified within the park. It is associated with tallgrass prairies and wet grassy areas within the central United States.²⁰⁴

Plant species of concern noted within the park include the royal catchfly (*Silene regia*),²⁰⁵ observed in the park during a 2004 survey, and the American beakgrass (*Diarrhena americana*),²⁰⁶ 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 tinytim (*Geocarpon minimum*),²⁰⁷ prairie false foxglove (*Agalinis heterophylla*),²⁰⁸ earlyleaf brome (*Bromus latiglumis*),²⁰⁹ graceful sedge (*Carex gracillima*),²¹⁰ and velvety tick trefoil (*Desmodium viridiflorum*).²¹¹

3.1.7 Planning and Zoning

The park is surrounded by privately owned land that is predominantly rural and agricultural in nature. This provides an appropriate setting for the park.

In 1995, however, the park began to grow concerned about development in the region and

198. Ibid., 51–52.

199. Identified at the state level as S2E (imperiled); and at the federal level as G3G4 C (vulnerable, apparently secure, and a candidate for listing).

200. Identified at the state level as S2 (imperiled); and at the federal level as G4 (apparently secure).

201. Identified at the state level as S3 (vulnerable); and at the federal level as G5 (secure).

202. Identified at the state level as S3S4 (vulnerable to apparently secure); and at the federal level as G5 (secure).

203. Identified at the state level as S3 (vulnerable); and at the federal level as G3 (vulnerable).

204. Identified at the state level as S3 (vulnerable); and at the federal level as G3 (vulnerable).

205. Identified at the state level as S1 (critically imperiled); and at the federal level as G4G5 (apparently secure to secure).

206. Identified at the state level as S1 (critically imperiled); and at the federal level as G4G5 (apparently secure to secure).

207. Identified at the state level as E (endangered); and at the federal level as T (threatened).

208. Identified at the state level as S1 (critically imperiled); and at the federal level as G4G5 (apparently secure to secure).

209. Identified at the state level as S3 (vulnerable); and at the federal level as G5 (secure).

210. Identified at the state level as S1 (critically imperiled); and at the federal level as G5 (secure).

211. Identified at the state level as S1 (critically imperiled); and at the federal level as G5 (secure).

its potential impact on the landscape setting. The 1995 Superintendent's annual report notes:

The threat of inappropriate use of land around and adjacent to George Washington Carver National Monument is becoming more prevalent, due to the fact that land use is changing in Southwestern Missouri. Developers are buying up the land and building single family homes. More than 50 such homes have been planned for an area three miles south of George Washington Carver National Monument. Since there is no zoning ordinance in place in Newton County and land owners are not required to get a permit to develop their land, I am very concerned about how the changing land use will impact the historic scene surrounding the park.²¹²

Although it has been twenty years since this concern was raised, few residential subdivisions have been developed within view of the park. This remains a concern for the future.

3.1.8 Demographics

In 2010, the United States census recorded a population of 902 for the town of Diamond, Missouri, an increase of 11.6 percent over the 2000 census. Diamond falls within the Joplin, Missouri, Metropolitan Statistical Area. The population of Joplin at the 2010 census totaled 50,150, while the populations of Newton and Jasper counties totaled 58,114 and 117,404 respectively. The population of the city of Joplin has declined since a devastating tornado destroyed large developed areas of the city on May 22, 2011.

Based on review of employment statistics, most of Newton County residents work in the health care and social assistance realm, followed by the manufacturing and retail sectors of the economy. Each of these areas of employment provides jobs for between 10 and 18 percent of the population. Local government, accommodation and food service, construction, and farm employment each employ between 6 and 8 percent of the population.

Historically, farming and mining were more important to the local economy. Today, beef cattle, wheat, and soybeans are the chief focus of the region's remaining farms.²¹³ Agricultural land uses remain prevalent within the area that surrounds the park. Longhorn and other beef cattle are raised on farms in close proximity to the park.

3.1.9 Climate

George Washington Carver National Monument is located in a temperate climatic zone with weather conditions ranging from extreme heat and humidity in the summer months to cold, icy conditions in the winter. More than half of the region's annual 41 inches of precipitation—around 25 inches—falls between April and September, which encompasses the growing season for most crops cultivated within the county.²¹⁴

3.1.10 Regional Related Attractions

There are several local attractions that offer complementary programming to George Washington Carver National Monument. These include the Newton County Historical Museum, Newtonia Battlefield, Battle of Carthage Civil War Museum, Wildcat Glades Conservation and Audubon Center (Joplin), George A. Spiva Center for the Arts (Joplin), Joplin Museum Complex (Joplin), Cunningham Park (Joplin), Big Spring Park (Neosho), Stage Stop Campground (Neosho), Morse Park (Neosho), Fort Crowder Conservation Area (Neosho), Neosho Bicentennial Park (Neosho), Diamond Grove Prairie Conservation Area (Diamond), Walter Woods Conservation Area (Joplin), and Neosho National Fish Hatchery (Neosho). Two of these sites are particularly relevant to the programs and resources available at the park:

Wildcat Glades Conservation and Audubon Center. The Wildcat Glades Conservation and Audubon Center, located in Wildcat Park within the city of Joplin, is associated with some of the last remaining chert glades, a globally unique

212. Superintendent's Annual Report, 1995, 2.

213. Aldrich, 3.

214. Ibid., 2.

habitat found only in this area. The center is also crossed by the biologically rich Shoal Creek stream valley. It protects habitat important to migratory birds and other wildlife. The center offers hands-on environmental education programs and activities, focusing especially on children. The center uses outdoor learning stations along its trail systems, as well as indoor classrooms for its programming.

Diamond Grove Prairie Conservation Area.

Diamond Grove Prairie Conservation Area is one of the largest tracts of tallgrass prairie remaining in southwestern Missouri. Land surveyors in the 1840s described it as “rich rolling prairie;” Diamond Grove remains similar in character today. The area is dominated by native grasses such as prairie dropseed (*Sporobolus heterolepis*), big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and Indian grass (*Sorghastrum nutans*). An array of wildflowers such as Indian paintbrush (*Castilleja* sp.), blazing star (*Liatris* sp.), lead plant (*Amorpha caescens*), compass plant (*Silphium laciniatum*), and royal catchfly (*Silene regia*) are visible in the flowering season.

Grassland bird species are also prevalent. Visitors can often view the uncommon Henslow’s sparrow, short-eared owls (*Asio flammeus*), and northern harriers. Deer (*Odocoileus virginianus*), quail (*Coturnix coturnix*), and rabbit are common in the brushy fence rows and prairie draws. The conservation area is maintained through prescribed burning to stimulate native prairie plants and control woody encroachment. Mechanical thinning is used to manage a 35-acre woodland within the conservation area that approximates a natural savanna community. Recreational opportunities for visitors include hunting, hiking, bird watching, and outdoor photography.

3.1.11 Park Stakeholders and Constituents

George Washington Carver National Monument has a variety of organizations, public agencies, colleges and universities, groups, corporations, individuals, and tribes involved with activities at the

park. The Carver Birthplace Association (CBA), a key partner for the park, operates the visitor center gift shop and serves as the park’s friends group through a fund-raising agreement. The park has a very supportive Volunteer-in-Park program, with approximately 250 to 300 volunteers assisting the park and CBA each year.

3.2 Overall Park Composition

See Figure 37, Existing Conditions map.

The 240-acre park is edged to the east by Carver Road, to the south by Elder Road, and to the west and north by privately-held parcels. The surrounding landscape is generally agrarian and pastoral, composed of cultivated fields and pastures, with modest residential development occurring along road corridors. George Washington Carver National Monument encompasses the entire quarter section acquired by Moses Carver during the mid-nineteenth century for farming purposes.

The park property occupies a relatively level upland site, cut by the stream corridors of Carver, Williams, and Harkins branches. Although the landscape was once primarily in agricultural production, much of the land is managed today as restored native grassland prairie; successional woodland is present along the stream corridors and other low-lying lands.

Visitors arrive at the park via Carver Road. A park identity sign edged by brick piers, planting beds, and a gate mark the entrance. An asphalt drive leads to the park’s core visitor use area, which is composed of the entrance road, parking area, visitor center, picnic area, and a mile-long interpretive trail. Parking edges the entrance road to either side; near the visitor center, the drive forms a tear-drop-shaped loop and a drop-off area. The park entrance road is also edged to the north by a grove of mature shade trees. A picnic area is set within the grove. A second picnic area edges the road to the south near the visitor center.

Connecting to the loop is a service drive that leads to the park’s maintenance or utility area, located adjacent to and south of the visitor center.

Ornamental plantings edge the visitor center to help screen the work yard and parking lot of the adjacent maintenance area. Also screened from view of the primary visitor use area is a complex of three buildings that face Carver Road to the south of the park entrance. The complex, which features a separate entrance onto Carver Road, is currently used for storage, but was originally constructed to support park housing needs. Buildings within the complex have also served as park administrative offices. The structures were formally eliminated from the National Park Service housing inventory in 2009, and approved for demolition and removal from park land. A small storage shed and yard are located at the southern end of the complex.

Visitors generally begin their tour of the park in the visitor center, which houses a rich array of exhibits about the life of George Washington Carver, as well as park administrative functions.

After leaving the visitor center, many visitors elect to follow the park's pedestrian interpretive tour route, composed of the mile-long Carver Trail that provides access to many of the features described by Dr. Carver in his recollections of his boyhood on the farm.

Polished granite stones etched with quotations from Dr. Carver edge a walk that links the visitor center and the Carver Trail trailhead. The quote stones are set within beds of ornamental roses. Near the trailhead, located to the north of the visitor center, visitors encounter several commemorative plaques and exhibits, such as the dedication plaque, memorial plaque, and birthplace cabin exhibit. A wayside exhibit interprets the purported location of the cabin where George Washington Carver was born, referencing the wooden structure built by the park to mark the outline of the birthplace cabin.

Beyond the cabin site, the trail enters the wooded Carver Branch stream corridor. The trail traverses the sloped terrain as it falls away toward the stream corridor in a looping switchback. The trail levels out near a spring that feeds Carver Branch. George Washington Carver is known to have explored the environs of the spring as a boy and drawn water here for farm residents. To mark the

site, the Boy Carver statue, sculpted by notable artist Robert Amendola, was placed along the trail near the spring in 1960.

The trail continues on through the riparian woodland associated with Carver Branch, crossing the stream via a steel bridge before reaching Williams Pond, a constructed water feature established in the 1930s by the Shartel family that owned the property between 1913 and 1948. The Contemplative Loop Trail, a spur of the Carver Trail, circumnavigates the pond. Quote stones like those found near the visitor center edge the Contemplative Loop Trail. The two trails rejoin across the dam of Williams Pond. The Carver Trail then continues in a westerly direction to a clearing in the woods at the edge of an open field. Set within the clearing is a dwelling precinct marked by a house built by Moses Carver circa 1881 set within a grove of walnut trees and surrounded by split-rail fence. The house was relocated to this site by the Shartel family from its original location south of Carver Branch in 1916. The National Park Service interprets nineteenth century life on the farm at the cabin and a nearby demonstration kitchen garden. Views are afforded from the dwelling precinct into adjacent fields, now managed as grassland prairie.

Beyond the house, the trail continues south, crossing Williams Branch and Carver Branch in quick succession. A second steel bridge and elevated wooden boardwalk system conveys the trail across low-lying and inundated terrain. As the trail emerges from the stream valley, it enters open grasslands. Edging the trail for a short distance is a row of walnut trees planted by the National Park Service in the 1950s to recall the hedgerows planted by Moses Carver during the nineteenth century. The row of walnut trees leads to a small family cemetery enclosed within a stacked stone wall. Moses and Susan Carver, as well as other family and community members, are buried in the cemetery. The stone wall was reconstructed by the National Park Service in 1954 based on oral accounts and archeological investigations.

The trail continues through the grassland prairie, traveling in a northeasterly direction to return to the visitor center. A bust of George Washington

1 Carver, set within a small amphitheater-shaped
2 seating area, edges the trail near the visitor center.
3 An audio recording of Dr. Carver reading a poem
4 can be activated by visitors near the bust. Beyond
5 the bust, visitors return to the visitor center. From
6 the visitor center environs, long views across the
7 restored prairie are afforded to the southwest.²¹⁵

8 Much of the remainder of the park is managed as
9 restored native grassland prairie. A wooded
10 corridor edges the park's third stream—Harkins
11 Branch—in the northwestern corner of the
12 property, while the site of a former lead and zinc
13 mine, currently characterized by highly disturbed
14 woodlands and grassy fields, occupies the park's
15 southwest corner.

16 In its character and configuration, the park
17 expresses decades of work designed to
18 appropriately memorialize George Washington
19 Carver. The National Park Service determined that
20 the most suitable way to memorialize Dr. Carver
21 was to keep the memorial landscape simple, spare,
22 and dignified. Proposals to reconstruct a slave
23 cabin and to erect more elaborate statuary were
24 rejected in favor of simple and meaningful
25 gestures. Park planners have also insisted that the
26 landscape features known to have been important
27 to George Washington Carver during his youth be
28 preserved in such a way as to help convey the park
29 story. Interpretive waysides placed along the
30 Carver Trail introduce visitors to several of the
31 features of the property known to George
32 Washington Carver: native plants, the spring, the
33 woods, and the agricultural landscape. Rose
34 bushes have been planted in front of the visitor
35 center to remind visitors of George Washington
36 Carver's love of flowers, but have been kept simple
37 and minimal in size and expression. This
38 "minimalist" approach is intentional and design
39 feature of the way the park has been laid out and
40 developed. The park's ongoing challenge for
41 managing the monument is to ensure that the
42 natural landscape does not overwhelm the
43 memorial site, and that the memorial site does not
44 overwhelm elements of the natural environment
45 that had been formative for Dr. Carver as a

46 child.²¹⁶ The interpretive message conveyed
47 throughout the park draws on site features to
48 reflect Dr. Carver's religious ideas, his love of art
49 and music, and his love of plants and nature.²¹⁷

50

215. Ibid., 4-3, 4-4.

216. Krahe and Catton, 279-282.

217. Ibid.

for

George Washington Carver National Monument

Prepared by JMA, a CCRG company

Drawing No. GWCA 397 127384

PMIS No. _____

Legend

- GWCA Boundary
- 10-foot contour
- 1-foot contour
- Stream
- Spring
- Paved road
- Gravel road
- Mowed path
- Trail
- Building
- Post and board fence
- Post and wire fence
- Split-rail (worm) fence
- Woodland
- Utility line
- Gate

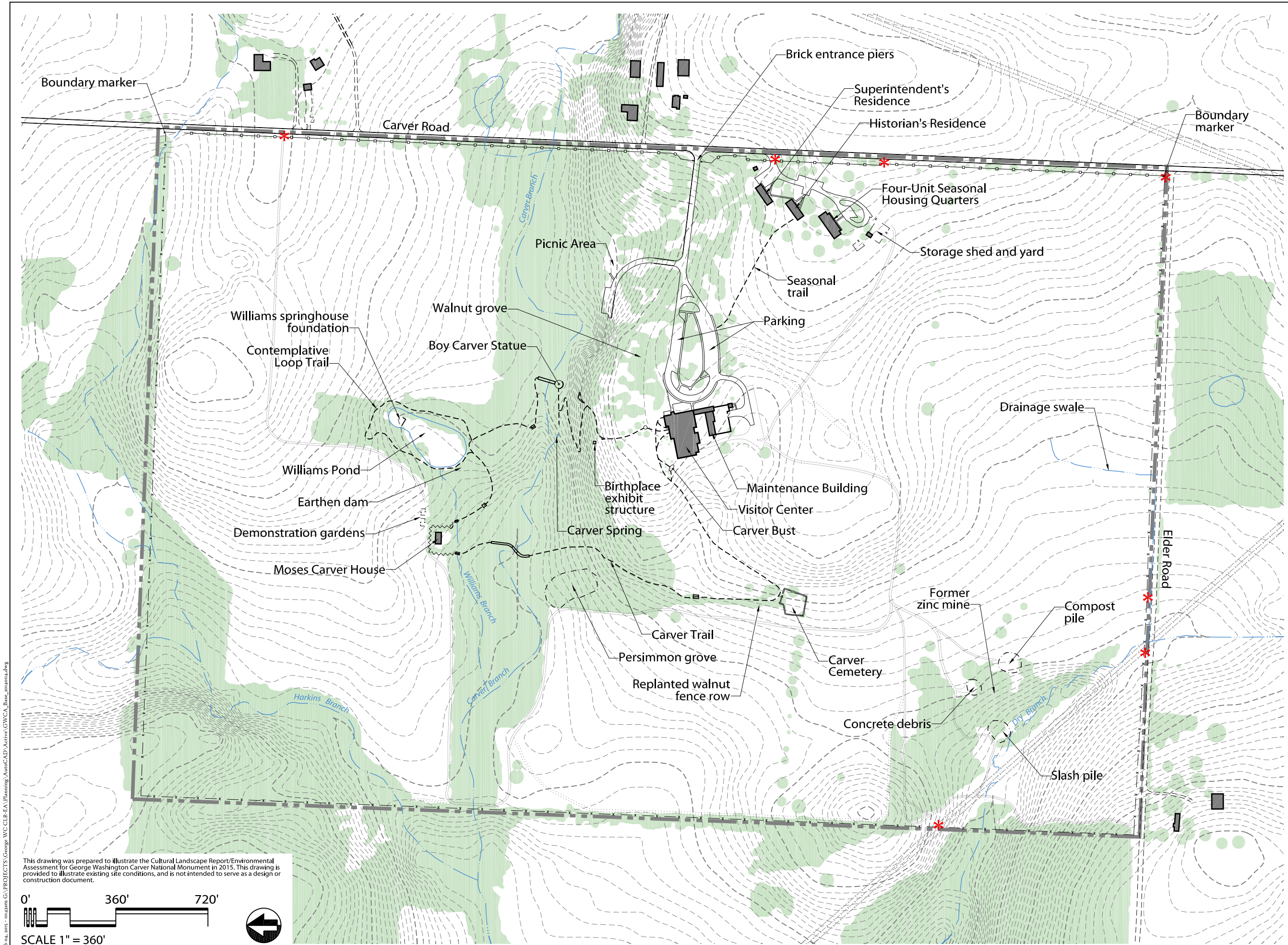
Sources:

National Park Service, Cultural Resource GIS office, CLI GIS conversion project, 2013.

Contours created from 7.5 minute digital elevation data, USGS, 1998, Newton County, MO (published Rolla, MO).

DRAFT

Figure 37. Existing Conditions



3.3 Documentation and Assessment by Landscape Characteristic

The section that follows identifies each of the discrete physical resources associated with George Washington Carver National Monument. The features are arranged by landscape characteristic. For each landscape characteristic section, an introductory paragraph describes the range of features present within the park, and identifies which of these contribute to the significance of the park landscape. The introductory paragraph is followed by a physical description of each feature, and an indication of the feature's origin and subsequent evolution. For each landscape characteristic, any features known to have been present historically that are no longer extant are also discussed. An inventory of the contributing, non-contributing, and missing features occurs at the end of each landscape characteristic section.

3.3.1 Natural Systems and Features

George Washington Carver National Monument currently contains a variety of natural systems and features, ranging from water resources to native plant communities; many of these were known to George Washington Carver. In fact, natural features and systems are one of the primary characteristics of the park landscape that link George Washington Carver's memories to his birthplace. As Carver later noted:

My home was near Neosho, Newton County, Missouri, where I remained until I was about 9 years old. My body was very feeble and it was a constant warfare between life and death to see who would gain the mastery.

From a child I had an inordinate desire for knowledge, and especially music, painting, flowers, and the sciences, algebra being one of my favorite studies.

Day after day, I spent in the woods alone in order to collect my floral beauties, and put

them in my little garden I had hidden in brush not far from the house, as it was considered foolishness in that neighborhood to waste time on flowers.

And many are the tears I have shed because I would break the roots or flowers of some of my pets while removing them from the ground, and strange to say all sorts of vegetation seemed to thrive under my touch until I was styled the plant doctor, and plants from all over the country would be brought to me for treatment. At this time, I had never heard of botany and could scarcely read. Rocks had an equal fascination for me and many are the basketful that I have been compelled to remove from the outside chimney corner of that old log house, with the injunction to throw them downhill, I obeyed but picked up the choicest ones and hid them in another place, and somehow that same chimney corner would, in a few days or weeks, be running over again to suffer the same fate. I have some of the specimens in my collection now and consider them the choicest of the lot.²¹⁸

Taken together, the natural systems and features present within the park include three perennial streams—Carver, Harkins, and Williams branches—as well as Carver and Williams springs, the intermittent Dry Branch stream corridor, riparian woodlands, and native grassland prairie. The three stream corridors, along with Carver Spring and Dry Branch, survive with integrity from the nineteenth century period of significance. Williams Spring has been inundated by a pond created during the early twentieth century, and is no longer in evidence within the landscape except when water levels in the pond are low. The native grassland prairie is a plant community that has been actively managed by the National Park Service since the 1980s to reflect pre-European-American settlement, and does not contribute to the historic park landscape. Aspects of the riparian woodland that edges Carver, Williams, and Harkins branches reflects nineteenth century conditions. With diminished integrity, these woodlands also contribute to the significance of the park landscape.

218 . George Washington Carver, as quoted in Toogood, 46–47.

Water Resources. As noted above, the water resources associated with the park include Carver, Williams, and Harkins branches, Carver and Williams springs, and Dry Branch. Carver Branch is one of the primary features of the park's interpretive landscape and the focus of the Carver Trail that affords interpretation of George Washington Carver's life on the farm. Carver Branch flows through the center of the park. Carver Spring empties into the branch north of the visitor center. As an adult, George Washington Carver recalled drawing water from the spring. The Boy Carver statue is sited in close proximity to this important feature. Williams Branch empties into Carver Branch within the park, and is also a feature of the Carver Trail. Harkins Branch is located in the northwestern corner of the park, and presently little interpreted, although it is edged by high quality woodlands. Dry Branch (Figure 38) is located in the southwestern corner of the park, and also not an important element of the visitor experience.

Carver Branch. Carver Branch traverses the park from east to west, forming a central wooded corridor. Both Williams and Harkins branches empty into Carver Branch, Williams Branch within the park, and Harkins Branch just outside the park boundary to the west. Carver Branch eventually empties into Shoal Creek northwest of the park.

The Carver Trail passes through this corridor for much of its length (Figure 39). The source of

Carver Branch is located a short distance to the east of the park. Carver Branch is classified as a losing stream by the state of Missouri. Data collected during several efforts conducted between 2003 and 2010 indicates that twenty-two fish species are present within park waters. The species present, which are typical of small headwater streams, include southern redbelly dace (*Chrosomus erythrogaster*), central stoneroller (*Campostoma anomalum*), and green sunfish (*Lepomis cyanellus*).²¹⁹ As noted above, the Arkansas darter, a species of conservation concern, has been observed in Carver Branch.²²⁰ The grass carp (*Ctenopharyngodon idella*), an introduced species potentially detrimental to native species, may be present within park waters.²²¹

The park has monitored the water quality of Carver Branch and Spring since discovery of chemical and fecal pollutants and high mercury levels in 1983, and has worked to address runoff and other source problems upstream.²²²

Although the watershed of this stream exists in a primarily agricultural landscape, the water quality and physical habitat is generally good. It is possible that there is mild impairment from threats outside of the park boundaries.²²³ Land use changes on nearby areas have the potential to impact this resource.²²⁴

219. B. G. Justus and J. C. Peterson, *The fishes of George Washington Carver National Monument, Missouri* (Reston, Virginia: U.S. Geological Survey, 2005).

220. Missouri Natural Heritage Program 2010.

221. Annis et al., 18.

222. Superintendent's Annual Report, 1983.

223. D. E. Bowles, "Aquatic invertebrate monitoring at George Washington Carver National Monument: 2005-2007" (Fort Collins, Colorado: National Park Service, 2009), in Annis et al., 18.

224. Annis et al., 89-90.

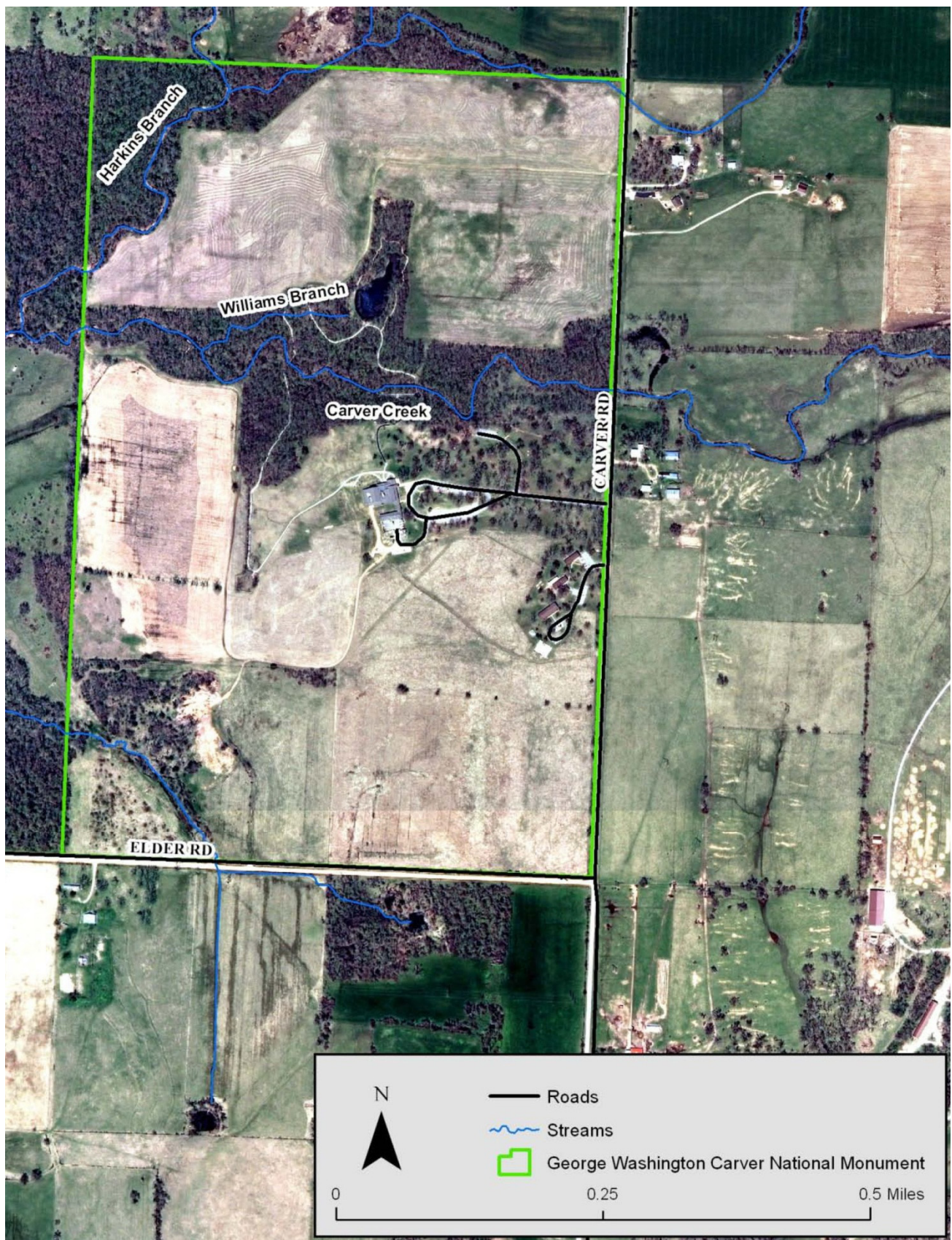


FIGURE 38. Streams within the park. Source: Annis et al. George Washington Carver National Monument Natural Resource Condition Assessment, 9.



1 **FIGURE 39.** Carver Branch and the riparian corridor.



26 **FIGURE 40.** Williams Branch feeds into Carver Branch.

2 **Harkins Branch.** Harkins Branch, located in the
 3 northwestern corner of the park, is larger than
 4 Carver Branch in terms of discharge but is a
 5 tributary. The water quality of the branch is
 6 considered to be good. The fish communities
 7 within Harkins Branch are generally diverse and
 8 healthy. As with Carver Branch, the cardinal shiner
 9 (*Luxilus cardinalis*) and the stippled darter
 10 (*Etheostoma punctulatum*) are present, and may be
 11 of special interest because they are endemic to the
 12 Ozark Plateau.²²⁵ The Arkansas darter is also
 13 known to be present in Harkins Branch.²²⁶
 14 Harkins Branch shows greater stream bank
 15 instability than the other two streams, and only a
 16 small segment is contained within the park, so
 17 impacts from off-site pollutants may be a concern.

18 **Williams Branch.** This stream flows into Carver
 19 Branch in the central part of the park, with
 20 Williams Spring serving as its origin (Figure 40).²²⁷
 21 Overall water quality is similar to Carver Branch,
 22 and similar fish species are known to inhabit the
 23 branch. Carver and Williams branches share a
 24 floodplain, and are similarly affected by
 25 surrounding agricultural activities.

27 **Dry Branch** is an intermittent stream channel
 28 located near Elder Road in the southwestern
 29 corner of the park (Figure 41). The channel is
 30 watered during the spring when groundwater
 31 levels rise in response to the rainy season, before
 32 summer heat and drought contribute to drying
 33 trends.



34 **FIGURE 41.** Dry Branch, an intermittent stream in the
 35 southwest corner of the park.

225. Justus and Peterson.

226. H. R. Dodd, D .E. Bowles, S. K. Mueller, and
 M. K. Clark, *Fish community monitoring at
 George Washington Carver: 2006-2007, 2010
 status report* (Fort Collins, Colorado: National
 Park Service, 2011).

227. Cultural Landscape Inventory, 2010.

Overland flow of storm water has formed a drainage swale in the field south of the visitor center. This swale has likely been present since Carver ownership of the farm. It is not known to what degree farming has degraded the swale by contributing to erosion.

Springs are the outflow of subterranean streams. Two springs are known to exist on the property. These include Carver and Williams springs.

Williams Spring is a naturally-occurring water source that was known to the Carvers during their ownership of the farm. The spring is currently located under and inundated by Williams Pond. The pond, a constructed water feature that was added after Carver ownership, may have affected the hydrology of the spring.

Carver Spring remains a free-flowing water source. It forms a very short spring branch that flows into Carver Branch. A third spring apparently associated with Harkins Branch based on historic accounts has not been relocated.

The water resources present within the park are known to have been important, even critical, landscape elements of the Moses Carver farm. Carver appears to have settled this land based as much on the level terrain and fertile soils as on the abundant water supply. Carver is known to have sited his farmstead in close proximity to the two springs and Carver Branch. These streams and springs were an integral part of the farm, and well known to George Washington Carver as a boy. Moses Carver also likely chose sites for cultivation that were near, but not adjacent to, these water sources, where timber suggested the ground was well watered.

George Washington Carver is thought to have been responsible for bringing water to the Carver cabin from the Carver Spring during his childhood on the farm. The spring is one of the cultural landscape features that can be connected to

George Washington Carver's direct knowledge of the farm.

Today, the stream corridors and the Carver Spring are generally more wooded than they were during the nineteenth century, and the site has also been marked with commemorative features such as the Boy Carver statue, Carver Trail and associated wayside exhibits, and landscaping. Several of these features were constructed during the park establishment period of significance.

Another important change to water resources since the nineteenth century has been the addition of Williams Pond, created through impoundment of the stream corridor with a dam. The pond was in place prior to park establishment, but was enlarged by the National Park Service in 1978–1979 when the dam required replacement. This led to the inundation of Williams Spring. In 1977, U.S. Fish and Wildlife stocked the pond with fifty rainbow trout.²²⁸ The pond is also known to have been stocked by the park, in cooperation with the Missouri State Fisheries, in 1984.²²⁹

Water quality concerns associated with the park's streams (chemical and fecal pollutants) and springs (high mercury levels) were identified by Missouri Southern State University students in 1983. In response, the National Park Service initiated a three-year water resource quality study.²³⁰ In 1984, the park's water quality was found not to meet state standards. In investigating the source of the pollution, it was determined that the city of Diamond was not maintaining adequate sewage lagoons for its treatment facilities.²³¹

The park's water resources, with the exception of Williams Pond, and the currently inundated condition of Williams Spring, survive from the nineteenth century period of significance, with diminished integrity of setting, and contribute to the significance of the park.

Plant Communities. Plant communities associated with the park fall into three broad categories: ornamental and other cultural

228. Superintendent's Annual Report, 1977.

229. Superintendent's Annual Report, 1984.

230. Superintendent's Annual Reports, 1983, 1984.

231. Superintendent's Annual Reports, 1984, 1985.

1 vegetation associated with the park's developed
2 core and addressed below under the Cultural
3 Vegetation section, riparian and upland
4 successional woodland communities, and restored
5 native grassland prairie. The prairie and woodland
6 communities are further delineated based on
7 species compositions derived from a combination
8 of soil types, available moisture, solar aspect,
9 previous land use, and stand age. As noted in the
10 park vegetation map (Figure 42) plant

11 communities can be more specifically identified as:
12 bottomland oak-hardwood forest; bottomland
13 successional deciduous sparse woodland and
14 shrubland; upland prairie and savanna (wooded);
15 upland successional deciduous sparse woodland
16 and shrubland; and upland successional and
17 disturbance grassland. There are also two wet
18 prairie areas denoted as bottomland successional
19 herbaceous vegetation.²³²

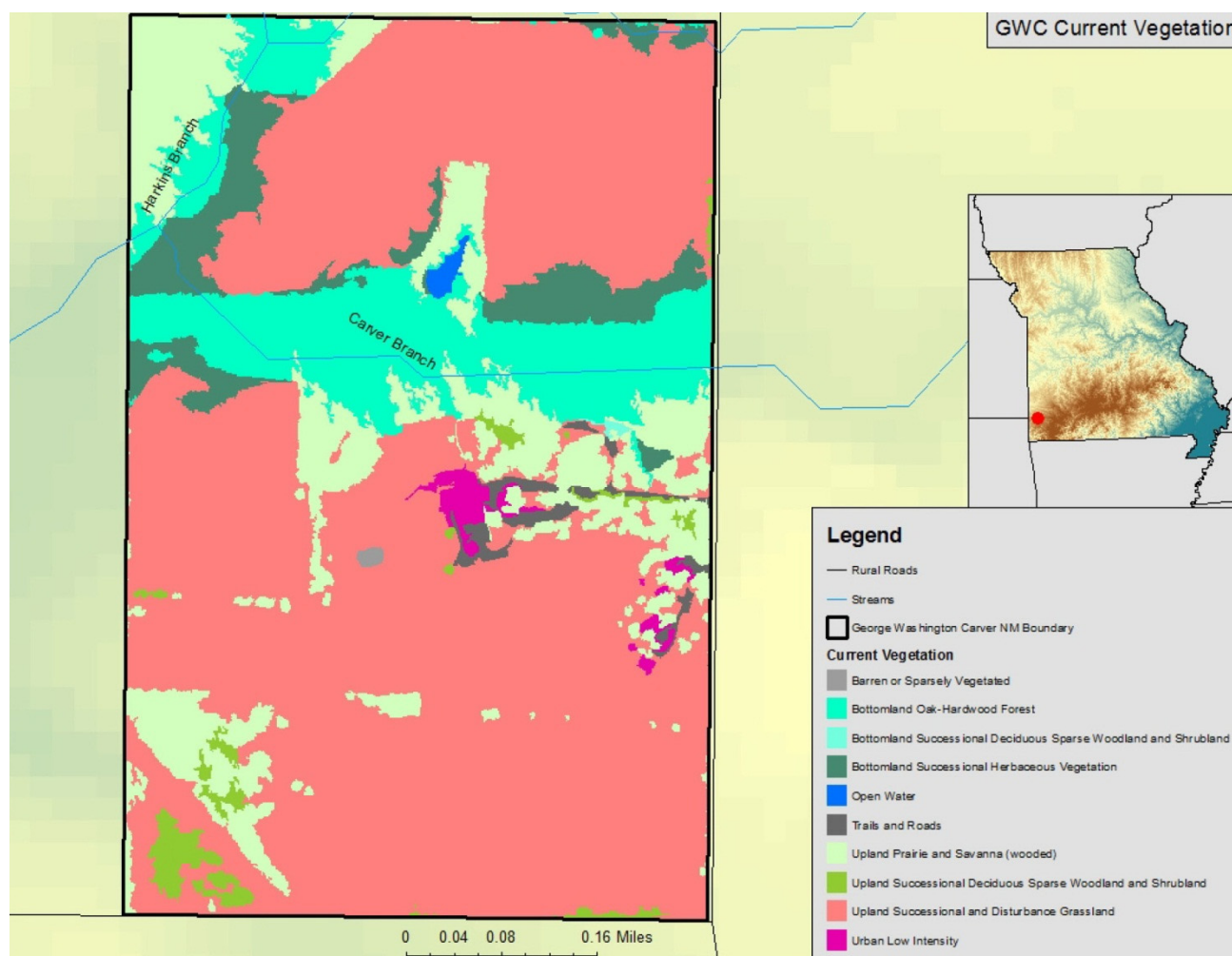


FIGURE 42. Vegetation communities within the park. Source: Annis et al. George Washington Carver National Monument Natural Resource Condition Assessment, 48.

232. Michael P. Burfield and Charles H. Nilon, *George Washington Carver National Monument: Integrated Vegetation Management Recommendations* (Columbia, Missouri: University of Missouri Department of Fisheries and Wildlife Sciences, June 2011), 9.

These communities have developed on the site of former croplands or where logging has removed woodland cover at some point in time. Although portions of the current woodlands may never have been plowed due to soil wetness or steep slopes not suited to crop production, the woods are likely to have been used to graze animals during the nineteenth century, and trees have been removed for many purposes. There are no woodlands or prairie communities that survive from Carver ownership of the farm, although in 1942 the Shartel's described the property as featuring enormous walnut and elm trees—most of which were there when Dr. Carver was born.²³³ Most of the extant woodlands have arisen through secondary succession and are less than 100 years old.

The extant plant communities at George Washington Carver National Monument generally reflect the efforts conducted by the National Park Service since the 1980s to restore native grassland prairie and to enhance the health of native woodland communities. These two landcover types experienced extensive disturbance beginning in the second quarter of the nineteenth century, due to European-American settlement and associated agricultural use of the land. Native grassland prairie extends over the majority of the former field and pastureland associated with the Carver farm. Although prairie is known to have been present when Moses Carver settled the farm, some was cultivated, while much of the remainder served as pasturage for livestock. Despite a history of crop production, the remnants of mima mounds, common on native prairies such as Diamond Prairie nearby, are still evident in grasslands across much of the park.²³⁴

Similarly, the woodlands conveyed a more open-grown appearance during the nineteenth century due to such influences as fire and grazing. Thus the plant communities present today little resemble those present during the Carver period, and have

changed to a great degree since the early park development period of significance.

Woodlands. Based on previous natural resource studies, the park's woodlands are generally characterized as mesic riverfront forest undergoing succession following widespread disturbance prior to National Park Service acquisition (Figure 43).²³⁵ The majority of the park's woodlands generally follow the Harkins and Carver branch stream valleys, but woodland is also present along portions of the park boundary and within the former lead mine site parcel. Past cultural activities, primarily farming, grazing, and timbering, as well as the introduction of invasive exotic plant and animal species, have served to degrade the quality and integrity of the park's woodland vegetation. The woodlands associated with the remediated mine tailings site are the most highly disturbed, while the woodlands in the park's northwest corner that follow Harkins Branch are in the best condition. This woodland was historically white oak/burr oak-pecan, floodplain forest (small drainages).



FIGURE 43. Woodland in the Carver Branch stream valley.

The woodlands that relate directly to the stream corridors—Harkins Woods and Carver Woods—together cover approximately 61 acres of the park. Dominant species include hackberry (*Celtis occidentalis*), American elm (*Ulmus americana*),

233 Stratton Shartel to Dewey Short, Member of Congress, 6 April 1942, Folder 373, Dewey Short Papers, SHS-MO.

234. Mima mounds are low, flattened, circular to oval, domelike, natural mounds that are composed of loose, unstratified, often gravelly sediment that is an overthickened A horizon.

235. Harrington et al.

black walnut (*Juglans nigra*), and slippery elm (*Ulmus rubra*). Sycamore (*Platanus occidentalis*) and green ash (*Fraxinus pennsylvanica*) are also important species within these plant communities. Oaks and hickories are important components of the riparian and upland forests of the region. The highest density of oaks, particularly burr oak (*Quercus macrocarpa*), is found within the western portion of Carver Branch.²³⁶

These woodland communities convey a species composition that has been described as ruderal, or in the early stages of succession, by Diamond et al., as follows:

Early successional and invasive species are characteristic of this type. Black walnut (*Juglans nigra*), common hackberry (*Celtis occidentalis*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), Osage orange (*Maclura pomifera*), and honeylocust (*Gleditsia triacanthos*) are found throughout. Coralberry (*Symphoricarpos orbiculatus*) and multiflora rose (*Rosa multiflora*) are common shrubs, while Virginia creeper (*Parthenocissu quinquefolia*) and poison ivy (*Toxicodendron radicans*) are common vines. Japanese honeysuckle (*Lonicera japonica*) formed a mat on the forest floor in some locations, and other non-native invasive species such as winter creeper (*Euonymus fortunei*), bromes (*Bromus tectorum*, *B. arvensis*), ground ivy (*Glechoma hederacea*), and tall fescue (*Schedonorus phoenix*) have established colonies characterized as the locally dominant ground flora. Communities along Carver Creek and Williams Branch in the central part of the park contain more large trees than other areas. Sycamore (*Platanus occidentalis*) forms a gallery of large trees at water's edge in some places. Succession in this area may lead to more

mature forests that fit within the National Vegetation Classification system as *Fraxinus pennsylvanica* – *Celtis* spp. – *Quercus* spp. – *Platanus occidentalis* Bottomland Forest (CEGL002410) over the next few decades. Communities in the southwest portion of the park appear more disturbed with fewer large trees and a more open canopy versus other woodlands, and Eastern red cedar (*Juniperus virginiana*) is more common.²³⁷

Additional woody growth areas are identified as ruderal shrubland by Diamond et al., and described as follows:

This shrubland is dominated by weedy and early successional species such as Osage orange, honeylocust (*Gleditsia triacanthos*), hortulan plum species (*Prunus hortulana*), and Pennsylvania blackberry (*Rubus pensilvanicus*). Non-native tall fescue (*Schedonorus phoenix*) together with annual and short-lived perennial grasses and forbs such as field brome (*Bromus arvensis*) and Canada germander (*Teucrium canadense*) are common.²³⁸

According to the 1841 General Land Office survey notes for Section 7, which includes the park, the property where Moses Carver established a farm circa 1838 was composed almost entirely of native prairie and savanna.²³⁹ Prairie was indicated as the dominant land cover, with only the extreme southwestern corner of the section in timber, including post oak, black oak, blackjack oak, and hickory.²⁴⁰ It has also been estimated that a gallery forest approximately thirty feet wide edged Carver and Harkins branches to either side prior to settlement.²⁴¹ Wetter prairie likely edged upland drainageways, while the lower lying drainageways were probably wooded.²⁴²

236. C. C. Young, S. A. Leis, and D. G. Peitz, *Vegetation Management Alternatives for George Washington Carver National Monument* (Republic, Missouri: Heartland Natural Resource Monitoring Program, 2010).

237. Diamond et al., 19–20.

238. Ibid., 26–27.

239. Walter A. Schroeder, *Presettlement Prairie of Missouri* (Jefferson City, Missouri: Department of Conservation, 1981).

240. Harrington et al., 55.

241. J. R. Jackson, *1985 Prairie Restoration Action Plan, George Washington Carver National Monument* (National Park Service, 1984).

242. T. A. Nigh and W. A. Schroeder, *Atlas of Missouri Ecoregions* (Jefferson City, Missouri: Missouri Department of Conservation, 2002).

Other published sources describe Newton County as potentially two-thirds wooded, with bands of oak/hickory and short-leaf pine edging stream corridors and topping hills. The extent of wooded area likely fluctuated in response to factors such as precipitation levels and fire frequency. Regular burning, which occurred naturally from sources such as lightning, and through the deliberate actions of American Indians, also helped to maintain a relatively clear understory within wooded areas.²⁴³

The woodlands, primarily described as savanna, were likely oak-hickory forests composed of a mosaic of associations depending on soil moisture. Species most frequently encountered in upland areas would have included black oak, black hickory, Eastern red cedar, American and slippery elm, post oak, blackjack oak, mockernut hickory, and flowering dogwood. Moist ground supported sugar maple, chinquapin oak, red oak, shumards oak, and black oak. Bottomlands featured hackberry, American elm, Ohio buckeye, bitternut, black maple, basswood, slippery elm, black walnut, red maple, green ash, sycamore, and chinquapin oak.²⁴⁴

The Carvers likely experienced a quickly changing landscape. By the time Moses arrived, fire suppression would have begun, as Euro-Americans considered fire to be a destructive force. As a result, the species composition and structure of both prairie and woodlands would have quickly changed, with woody species beginning to take hold within the prairies, and understory growth emerging in the gallery forests.²⁴⁵ The Moses Carver farm would also have an effect on the native woodlands, as the family harvested timber to build their cabins and fence rails, and girdled trees to make way for fields in the stream bottoms. Certain species would have been preferred, and thus harvested first. For examples, short leaf pine (*Pinus echinata*) would have been a preferred tree for cabin building, followed by white and burr oak. Hackberry would have been

preferred for fence rails.²⁴⁶ Foraging livestock likely influenced the unmanaged areas. Foraging swine tend to favor acorns, hickory, and walnuts, while cattle prefer grass species like big bluestem. This would have diminished the regenerative ability of oak and hickory species, and lowered the diversity of the plant communities, also favoring the emergence of species not popular with foraging livestock, such as aggressive and thorn-bearing species. Unimproved prairie land was likely used as a source of hay. Bottomland grasses and sedges were also fed to stock during winter.²⁴⁷

Today, the woodlands contain many fire intolerant species that would not have been present historically, and a much denser understory. Fire suppression and the removal of grazing animals from the landscape has affected species composition and led to a denser stand of trees and shrubs.

The successional woodland, while more extensive in land area than that present during both the Carver period and the early park establishment period, and with a composition of species that is altered due to several factors, nonetheless contributes as an example of gallery forest linked to the site's hydrology and landform and topography. These woodlands, however, have highly diminished integrity.

Native Grassland Prairie. Restored prairie covers more than 130 acres of the park. This vegetation community is classified by Diamond et al. as Restored Tallgrass Prairie, dominated by little bluestem and Indian grass. Present-day land cover management activities target a return to pre-settlement grassland conditions, rather than the agricultural stands that were present during the mid- to late-nineteenth century. The restoration areas, which contained few, if any, patches of remnant prairie at the time the program was initiated in 1982, are located on the former pasture and cropfields that supported cultivation of non-native and annual plant species

243. Harrington et al., 47.

244. J. R. Jackson, *1985 Prairie Restoration Action Plan, George Washington Carver National Monument* (National Park Service, 1984).

245. Ibid., 62.

246. Ibid.

247. Ibid.

1 during the Carver and Shartel periods of
2 ownership (Figure 44).²⁴⁸



3 **FIGURE 44.** Restored prairie in the western portion of
4 the park.

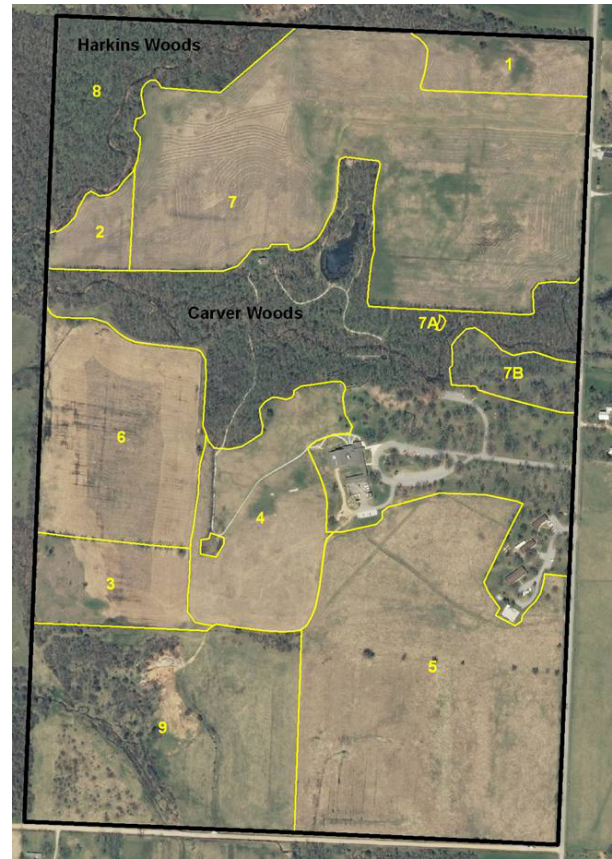
5 The present prairie community is described in
6 Diamond et al. as follows:

7 This grassland community is usually dominated
8 by native tallgrass prairie species such as big
9 bluestem (*Andropogon gerardii*), Indiangrass
10 (*Sorghastrum nutans*), and little bluestem
11 (*Schizachyrium scoparium*). Restoration efforts
12 have not been uniformly successful, and in
13 some patches, usually <500 square meters,
14 shrubs and annual grasses are among the
15 dominants. Field brome (*Bromus arvensis*) was
16 commonly important in these patches. Shrubs,
17 including Pennsylvania blackberry (*Rubus*
18 *pensilvanicus*) and sumac (*Rhus copallinum* and
19 *Rhus glabra*) are common components, and are
20 among the visual dominants in some patches
21 after one or more years of rest following
22 mowing or prescribed fire. A wide variety of
23 other herbaceous species were present,
24 including rush (*Juncus* spp.) and sedge (*Carex*
25 spp.) species, composite dropseed (*Sporobolus*
26 *compositus*), and blackeyed Susan (*Rudbeckia*
27 *hirta*). The herbaceous flora varied based on
28 soil characteristics and, apparently, on past
29 restoration history, which was not perfectly
30 documented.²⁴⁹

31 Two areas of the prairie experience wet conditions
32 throughout much of the year. Although none have

33 been classified as wetlands, two sedge-dominated
34 communities are naturally emerging over pockets
35 of Carytown soils in the west-central and
36 southeast portions of the park.²⁵⁰

37 For management purposes, the National Park
38 Service has organized the prairie restoration into
39 nine management units (Figure 45).



40 **FIGURE 45.** Prairie management units within the
41 park. Source: Young, Leis, and Peitz, "Vegetation
42 Management Alternatives for George Washington
43 Carver National Monument," 2.

44 Management Unit 9 is the location of the former
45 lead and zinc mine. The vegetation currently
46 associated with the unit is classified as Non-native
47 Ruderal Grassland by Diamond et al. as follows:

48 This mapped vegetation type was dominated
49 by tall fescue (*Schedonorus phoenix*), which was
50 often the overwhelming dominant, and other

248. J. Jackson and B. Bensing, *A Historic and Vegetational Survey of the Five Prairie Management Units at George Washington Carver National Monument* (National Park Service, 1982).

249. Ibid., 29–32.

250. Harrington et al., 117.

successional grasses and forbs. Ruderal shrubs and small trees were often present, including Pennsylvania blackberry (*Rubus pensilvanicus*), hortulan plum (*Prunus hortulana*), multiflora rose (*Rosa multiflora*), honeylocust (*Gleditsia triacanthos*), and Osage orange (*Maclura pomifera*).²⁵¹

Tracing the evolution of plant communities between pre-settlement and the present day illustrates the nature of the changes that have occurred as well as the character and composition of the communities during different periods; it can also help to describe the anticipated or targeted future condition of these communities.

Current park management is focused on restoring grassland prairies to pre-settlement conditions. The basis for understanding native vegetation and plant communities prior to European-American settlement of the area can include review of narrative accounts of travelers, General Land Office survey records (which in this area date to 1840–1841), and analysis of soil types and other environmental conditions that suggest the likelihood for certain plant associations.

There are no known first-hand accounts of the Moses Carver farm during early settlement that describe native vegetation. Scientists believe that prairies were an important land cover type in the pre-settlement landscape of Newton County, potentially covering one-third of the total land area.²⁵² Tallgrass prairie was primarily associated with the level to rolling uplands, with woodland covering drier hill tops and edging stream valleys and corridors.

American Indians, including the Osage Nation present within the area at contact, are thought to have been instrumental in maintaining the land in prairie through their use of fire.²⁵³ Another factor in vegetation composition prior to European-American settlement was the presence of large herbivores such as bison that fed on grasses and

forbs, influencing the composition and structure of the prairie, and creating non-vegetated gaps known as wallows.

The pre-settlement prairies existed as two principal types: **dry-mesic chert prairie with swale inclusions**—the same classification given to nearby Diamond Prairie—as well as **dry-chert prairie**.²⁵⁴

Dry-mesic chert prairie occurs on hills and plains on gentle to moderately steep slopes and ridges of all aspects. Several grasses, such as little bluestem, broom sedge, and Indian grass, are prevalent, although forbs are also present. This type of prairie typically was fire maintained. Today, this type of prairie is rare due to its association with prime farmland that has been converted to cropland or pasture.

Dry-chert prairie is associated with steep south and west facing side slopes of hills and plains along major prairie stream drainages. It is a mid-grass type characterized by little bluestem with mixed herbaceous flora. Due to the fact that this prairie type is fire maintained, it is now rare within the area.²⁵⁵

Based on analysis conducted in 2010 by representatives from the Missouri Resource Assessment Partnership (MoRAP), comparison of historic soil compatibility and current vegetation maps can be used to predict native vegetation based on soil types (Figure 46). From this analysis, most of the park currently managed as restored grassland prairie was designated as, in descending order: little bluestem/prairie dropseed-big bluestem, bluestem prairie; post oak/chinquapin oak-bluestem, post oak-bluestem prairie or savanna; and big bluestem/prairie cordgrass-switchgrass, mesic tallgrass prairie. Management Unit 2 is the only prairie unit that may be better suited to woodland than grassland, and should potentially be considered for conversion to white

251. Ibid., 27–29.

252. Harrington et al.; and Schroeder.

253. Harrington et al., 47.

254. Paul W. Nelson, “The Terrestrial Natural Communities of Missouri” (Jefferson City, Missouri: Missouri Department of Natural Resources, 2005).

255. Harrington et al., 55.

1 oak/burr oak-pecan, floodplain forest (small
2 drainages).

3 There are also few descriptions of the Moses
4 Carver farm that include detailed identification of
5 plant communities during George Washington
6 Carver's life there. According to *Springs of Genius*,
7 by the 1860–1870s:

8 the conversion of prairie to agricultural
9 purposes would have been nearly complete . . .
10 by the late 1870s there was probably very little
11 uncompromised prairie left on the Carver
12 farm. At least 100 acres had been developed as
13 fields. The remaining open land was probably
14 intensely grazed. . . . What prairie remained on
15 the Carver farm would most likely have been
16 restricted to fence rows, hedges and patches of
17 marginal land used for pasture and hay
18 production. These remnants would be
19 significantly different from pre-settlement
20 prairie, but because the composition of the pre-
21 settlement prairie is unknown, the full extent of
22 the changes cannot be determined.²⁵⁶

23 As noted, Moses Carver is known to have
24 improved approximately 100 acres of his farm by
25 1860 for agricultural purposes; the 140 acres of
26 unimproved land on the Moses Carver farm likely
27 remained native prairie used to grazed livestock.²⁵⁷
28 In addition to the pressure of plowing and grazing,
29 the prairie was affected by fire suppression, which
30 allowed woody growth to take hold and overtake
31 the herbaceous landcover. Thus, there was
32 probably very little high quality prairie or
33 woodland left on the farm during George
34 Washington Carver's lifetime.²⁵⁸ Nonetheless,
35 Burfield and Nilon suggest that as many as 111

36 acres of the original Moses Carver land remained
37 unplowed prairie during George Washington
38 Carver's early years on the farm.

39 Later in his life, George Washington Carver
40 recalled walking through woods and fields filled
41 with a variety of plants. Examination and
42 enjoyment of plant communities and species are
43 thought to have been a focus of George
44 Washington Carver's boyhood at the Moses
45 Carver farm. Carver specifically remembered
46 wandering through the local woods, collecting and
47 nurturing "floral beauties" as a boy. He employed
48 his knowledge in the practice of a wide array of
49 domestic stills and crafts, learning the medicinal
50 and economic uses of the wild plant resources of
51 the farm and surrounding region. Throughout his
52 life, Carver was a passionate naturalist and a
53 student of botany and geology. In his work, he
54 displayed an unending interest in the potential
55 economic and nutritional benefits of the South's
56 native vegetation.²⁵⁹ Although the vegetation
57 present today is not entirely consistent with that
58 present during Carver's lifetime, many of the
59 species known to him during his childhood remain
60 present today.

61 The land continued to evolve after George
62 Washington Carver left Diamond in 1876 or 1877.
63 Burfield and Nilon note that the park in its entirety
64 had been plowed by the early 1900s.²⁶⁰
65 Increasingly mechanized commercial farming in
66 the late nineteenth and early twentieth centuries
67 likely led to significant changes in plant
68 community composition. The prairie continued to
69 be plowed and grazed until establishment of the
70 national monument in 1943.²⁶¹

256. Harrington et al., as quoted in Annis et al., 7.

257. Jackson and Bensing.

258. Annis et al., 7.

259. Ibid., 7.

260. Burfield and Nilon, and Annis et al., 17–18.

261. Harrington et al.

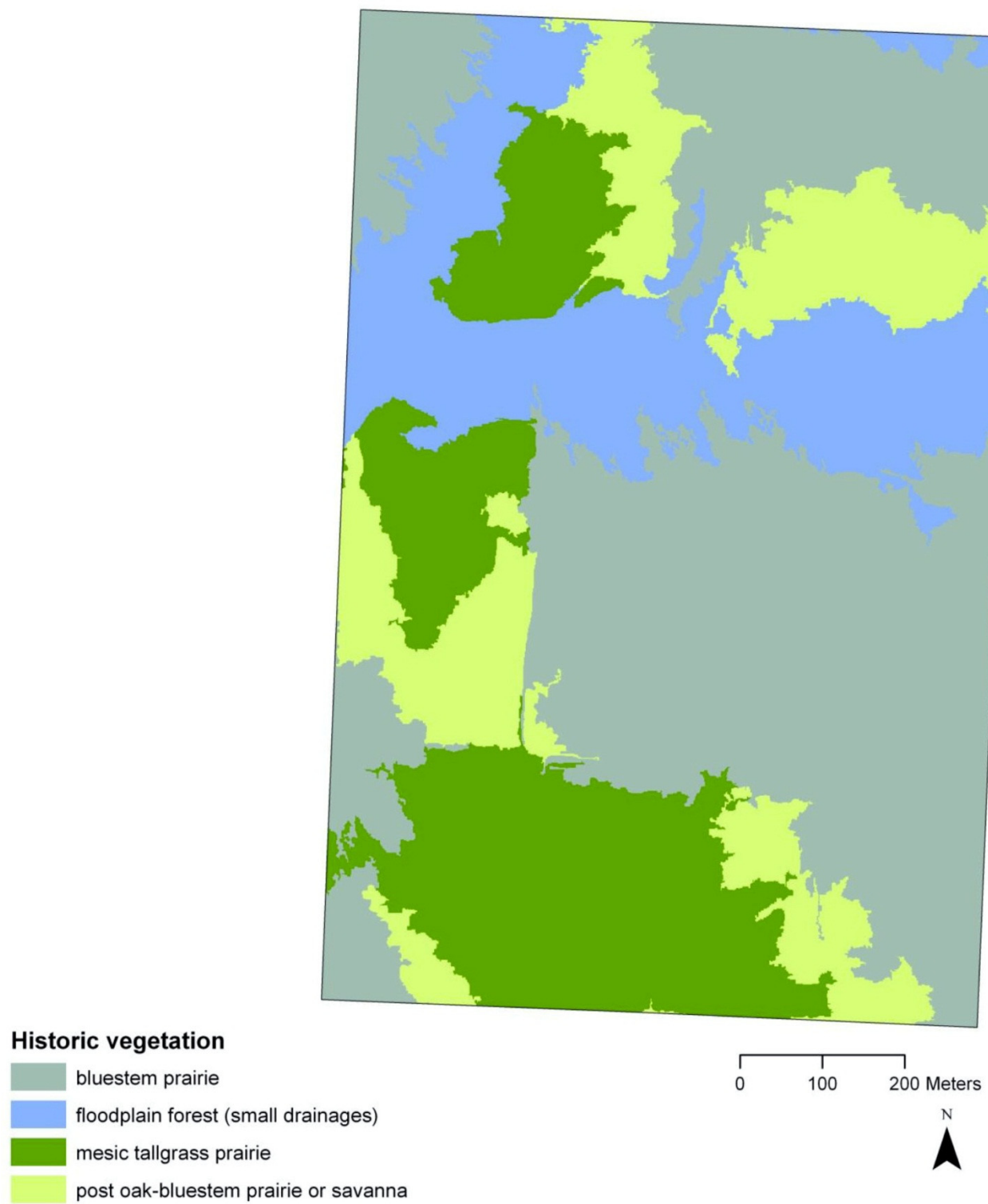


FIGURE 46. Historic soil compatibility vegetation map. Source: Annis et al. George Washington Carver National Monument Natural Resource Condition Assessment, 55.

The grasslands have been managed by the National Park Service since 1982 to reestablish native herbaceous and perennial forb species over former cropland. The goal is recreate a high quality pre-settlement prairie with high wildlife habitat value. Diamond Grove, a nearby 620-acre remnant of unplowed grassland, has been used as a model.²⁶² The National Park Service prairie restoration program began within two areas, totaling six acres, of rocky land believed to include unplowed prairie remnants. As mowing and grazing contracts with local farmers ended over the course of the 1980s, the National Park Service did not renew them, and instead began to manage the former fields for restored native grassland prairie.²⁶³

The existing grassland restoration program postdates both periods of significance and thus is neither character-defining nor contributing to the significance of the park.

Invasive Species. There are several non-native plant species that have become problematic for managing park communities in an ecologically balanced manner. Twenty-five invasive exotic species were identified as part of a vegetation survey conducted within the park in 2006. In 2013, the National Park Service published a draft of the study: *Invasive Plant Monitoring in George Washington Carver National Monument*, which will serve to update earlier efforts to document the problems associated with invasive species within the park.

Invasive species are considered to cover at least 9 percent of the total area of the park.²⁶⁴ The park's approach to managing invasive species currently focuses on reducing the numbers of species and individuals, and impeding further expansion of existing stands.

The 2013 study suggests that "Cool season grasses, especially annual brome species such as bald brome, poverty brome, and cheatgrass, smooth brome accounted for the overwhelming majority of the invasive plants found on the park."²⁶⁵ Japanese honeysuckle (*Lonicera japonica*) and other invasive species pose a threat to the health of the woodland communities. The 2013 study notes "Within the forest, Japanese honeysuckle was the most abundant invasive plant."²⁶⁶

A total of 152 exotic, or non-native, plant species have been identified within the park. Of these, 41 are considered to be of particular concern for their ability to disrupt native communities and systems. Three native species—smooth sumac (*Rhus glabra*), winged sumac (*Rhus copallina*), and Eastern redcedar (*Juniperus virginiana*), may be considered as native pest plants in prairies at the park.²⁶⁷ Non-native species of concern located within the park include tall fescue, multiflora rose (*Rosa multiflora*), Japanese honeysuckle, bald and smooth brome (*Bromus racemosa*; *B. inermis*), Johnson grass (*Sorghum halepense*), Sericea lespedeza (*Lespedeza cuneata*), crown vetch (*Securigera varia*), and privet (*Ligustrum vulgare*).

Currently, the Heartland Exotic Plant Management Team (EPMT) assists the park, primarily using chemical treatments, to control selected invasive plants. These treatments are highly targeted and designed to reduce the abundance of specific plant species. The EPMT has committed to two clearly defined projects, including: 1) the control of invasive plants - nodding plumeless thistle (*Carduus nutans*), Johnsongrass (*Sorghum halepense*), crownvetch (*Securigera varia*), sericea (*Lespedeza cuneata*), sweetclover (*Melilotus officinalis*), and common mullein (*Verbascum thapsus*) - and sumac (*Rhus* sp.) as pest plants in restored tallgrass prairie and

262. Ibid., 68.

263. Annis et al., 7.

264. J. T. Cribbs, C. C. Young, J. L. Haack, and H. J. Etheridge, *Invasive exotic plant monitoring at George Washington Carver National Monument: Year 1 (2006)* (Fort Collins, Colorado: National Park Service, 2007), Table 5-5.

265. Craig Young, Jordan Bell, and Jennifer Haack, *DRAFT Invasive Plant Monitoring in George Washington Carver National Monument* (Republic, Missouri: National Park Service, Heartland Network, 2013), vii.

266. Ibid.

267. Ibid., 10.

1 2) the control of Japanese honeysuckle (*Lonicera*
 2 *japonica*) in the ruderal woodlands of Carver
 3 Woods.²⁶⁸

4 Other abundant species that need more
 5 consideration due to their abundance in prairies
 6 include smooth brome (*Bromus inermis*), curly
 7 dock (*Rumex crispus*), and hedgeparsley (*Torilis*
 8 spp.).²⁶⁹ Based on their relatively low abundances,
 9 the park may also need to consider control of
 10 privet (*Ligustrum* spp.), Eastern redcedar
 11 (*Juniperus virginiana*), and white mulberry (*Morus*
 12 *alba*) in these forests at an apparently early stage of
 13 detection.²⁷⁰

14 While the ecological impact is only potentially
 15 high for European privet (*Ligustrum vulgare*),
 16 Amur honeysuckle (*Lonicera maackii*), and
 17 sulphur cinquefoil (*Potentilla recta*), these species
 18 should also be considered as potential targets for
 19 control due to their relatively low abundances.²⁷¹

20 **Missing Natural Features.**

21 Descriptions of a spring associated with Harkins
 22 Branch appear in historic documentation. The
 23 location of this spring is not currently known; it is
 24 possible that the spring is no longer active. As
 25 noted above, the Williams spring is currently
 26 inundated by Williams Pond and not visible today
 27 except at certain times of the year when the level
 28 of the water in the pond is low.

29 **Contributing Natural Features and** 30 **Systems.**

- 31 ▪ Carver Branch
- 32 ▪ Carver Spring
- 33 ▪ Dry Branch
- 34 ▪ Harkins Branch
- 35 ▪ Williams Branch
- 36 ▪ Drainage swale in the field south of the visitor
 37 center

- 38 ▪ Semi-natural native successional woodlands
 39 (diminished integrity)

40 **Non-Contributing Natural Features and** 41 **Systems.**

- 42 ▪ Restored prairie

43 **Missing Natural Features and Systems.**

- 44 ▪ Williams Spring
- 45 ▪ Harkins Spring
- 46

268. Ibid.

269. Ibid., 14.

270. Ibid.

271. Ibid., 15.

3.3.2 Responses to Natural Features

Several features within the park exhibit cultural responses to natural features that can be traced to either the Moses Carver farm period or the early park development period. These features include the siting of the Moses Carver farm in close proximity to fresh water resources; inclusion of the Williams Pond in the Carver Trail system; the use of bridges to cross streams; the siting of the picnic area within the deciduous grove of trees south of Carver Branch; the siting of the visitor center to overlook features of the Carver farm; and the use of swales and culverts to address storm water management along the park entrance road. These responses to natural features survive from the two periods of significance and contribute to the significance of the park landscape. There are also responses to natural features that can be tied to Shartel ownership of the property, and others that postdate the period of significance.

In fact, based on the fulfillment of a 1952 recommendation made by regional National Park Service historian Merrill J. Mattes to develop the new national monument around the natural features that inspired George Washington Carver's love of plants and the environment during his childhood on the farm, the park as a whole also constitutes a cultural response to natural features.²⁷² The National Park Service has generally treated the park landscape as a historic designed landscape rather than a historic vernacular landscape, with a goal of honoring George Washington Carver's legacy through commemoration and interpretation, while preserving those traces of the historic scene known to Carver as possible without being concerned with a need to restore historic conditions. As such, the National Park Service has accommodated contemporary needs, but worked to maintain a light-handed approach to

underscore Carver's humble origins and connection with nature.²⁷³

Responses to natural features reflecting Moses Carver's ownership of the property.

Primary among the responses to natural resources representative of the Moses Carver farm period is the connection between the siting of domestic farm features and sources of fresh water. Archeological investigations have revealed the approximate location of the original Moses Carver homestead, later used as a slave cabin. The wooden cabin on the hillside overlooking Carver Branch was sited to take advantage of access to the perennial flow of Carver Spring and Carver Branch nearby. Today a wooden outline of the cabin along the Carver Trail interprets this relationship.

As noted, Moses Carver selected a site on a plateau in close proximity to an abundant water supply when settling the farmstead in the mid-nineteenth century. The 1841 General Land Office survey notes three cabins in the area where Carver settled— Section 7, Township 26N, Range 31W. All are located near springs. Two large fields are shown, each between 20 and 30 acres in size. They are intersected by a creek. The survey notes describe the land as rolling, mostly good, high prairie soil with gravel on the surface in most places.²⁷⁴

George Washington Carver, writing later of his experiences on the farm, remembers drawing water from Carver Spring and carrying it to the farm dwellings. George Washington Carver would later reminisce fondly about the "blue flag, water cress, and calamus" that grew around the spring.²⁷⁵ Evidence of the siting of the Moses Carver homesteads in close proximity to fresh water sources survives today with diminished integrity. This response contributes to the significance of the park landscape.

272. Master Plan Development Outline, 1952.

273. Cultural Landscape Inventory, 22–24.

274. Ibid., 58.

275. Mark D. Hersey, *My Work Is That of Conservation: An Environmental Biography of George Washington Carver* (Athens: The University of Georgia Press, 2011), 13.

In addition to the siting of the house in proximity to fresh water sources, Moses Carver used the farm property to advantage of natural features in the way that he raised crops, generated other food sources, and pastured livestock. The natural resources of the farm likely fulfilled many of the needs of the family in the form of crops, forage, land cover conducive to support game, and wood for construction materials. In addition to the cultivation of farm products, wild foods, in the form of nuts and berries, among others, contributed to household consumption. Many native woodland trees produced edible nuts collected for food by the Carvers. These included hickory, chinquapin, and hazelnut. Fruiting vines, trees, and shrubs such as strawberries, sarvis berries, dew berries, blackberries, huckleberries, fox grape, pawpaws, persimmons, and raspberries grew wild in the woods and fields. Tea was made from spice bush that grew along the streams and from the bark of the sassafras tree. It is also thought that George used plants found on the farm to create dyes and paints that he used in his artwork.

Many believe that the physical environment of the farm helped to shape “the man that young George would become in profound ways.”²⁷⁶ On the farm, George Washington Carver was able to explore his interest in and curiosity about the natural world with wonder and freedom. Later in his life, George Washington Carver wrote about the influence of the natural world on his life work. According to George, this inspiration from nature formed the basis for his work with the peanut, as well as his less publicized experiments with herbal medicines, food substitutes, and paint colors from clay.²⁷⁷ In 1870, eighty acres of the farm remained forested. Carver noted while at the Tuskegee Institute that he did much of his studying in the woods: “I literally lived in the woods. I wanted to know every strange stone, flower, insect, bird, or beast.”²⁷⁸ This likely led to his scientific interest in botany.

His participation in the farming operations also influenced his later research in agricultural science. Moses Carver subscribed to nineteenth century scientific methods of farming and his farm eventually became one of the most prosperous in the area.

On his farm, Moses Carver used timber from the gallery forests along the stream valley for construction material and fuel, cleared the level areas for crops, and pastured his livestock on the land that was less well suited to cultivation due to soil wetness, slopes, or droughty conditions. These connections between Carver’s siting of cultivated fields and soil, orientation, slope, and available moisture conditions that resulted in a particular layout of farm features is no longer in evidence today. It is possible to assume that fields were most likely sited to take advantage of gently-rolling terrain, and fertile, well-watered soils. Pasturage was more likely associated with marginal soils, steep slopes, and wet areas. Livestock was allowed to range freely so farmers fenced in their crops rather than their livestock. The bluestem grasses of the native prairie were found to afford good forage for cattle; this led to a long-standing tradition of livestock raising within the region. When overgrazed, however, the native bluestem died out and was replaced with introduced bluegrass.

Moses Carver’s 240-acre farm supported a variety of agricultural activities. In 1850, as evidenced in the agricultural census, Moses Carver was raising 1,500 bushels of Indian corn, as well as 500 bushels of oats, 10 bushels of Irish potatoes, and 50 bushels of wheat. His herd of fifteen sheep provided him with 40 pounds of wool, and his six milk cows with 100 pounds of butter. He also owned twenty-one horses, two asses, eleven cattle, thirty swine, and four oxen.²⁷⁹

In 1860, Moses Carver had improved 100 acres of his 240-acre farm. He continued to sow large

276. Krahe and Catton, 14.

277. Toogood, 33.

278. Gart, *He Shall Direct Thy Paths*, 61, citing George Washington Carver, “A Brief Sketch of My Life,” circa 1922, part of the George Washington Carver Papers, Tuskegee University Archives.

279. *Ibid.*, 28.

quantities of Indian corn, oats, and hay, but had also established a large orchard. The number of livestock listed in the census indicates that Carver had approximately half as many animals as in 1850, with a commensurate drop in the amount of wool produced. He appears to have experimented with beeswax and honey production, and increased his butter output since 1850.²⁸⁰

Between 1860 and 1870, the period during which George was growing up on the farm, Moses Carver amassed a large sheep herd and continued to expand his orchards. By 1870, his wool production had more than tripled over 1860 totals, and his orchard had increased tenfold in value.²⁸¹

Between 1870 and 1880, Moses Carver appears to have taken an interest in raising horses. From the eleven horses listed in the 1870 census, Carver had expanded his holdings to twenty-four by 1880. John Harris recalled that “Mr. Carver liked horses. Neighbors brought ponies in and ran a race down a one-half-mile track. This was a neighborhood sport.” Elza Winter, the grandson of one of Carver’s neighbors, remembered, “Moses Carver got his money from raising race horses.” J. H. Melton recalled visiting Moses Carver every Sunday and selling horses for him.²⁸²

Also influencing the agricultural landscape during Moses Carver’s tenure of the farm was the growth of the railroads. Towns such as Joplin, Springfield, and Neosho grew up in response to the railroads, which also suggested a shift from subsistence to market-oriented agriculture, and enabled timbering and mining industries to become established. Mining became an important part of the Newton County economy during the nineteenth century. In 1850, J.W. Moseley discovered lead on Shoal Creek near Neosho, and later opened a mine. By 1880, Joplin had become a supply center for regional mining.

Evidence of these activities is missing within the park landscape today. Although there is no direct evidence of agriculture on the property, National Park Service management has maintained the

former fields in open vegetative land cover through restoration of grassland prairie.

Responses to natural features associated with Shartel ownership of the property.

There are also several responses to natural features that can be traced to Shartel family ownership of the property during the early- to mid-twentieth century. Principal among them is Williams Pond, an impounded water feature developed by the Shartel family in the 1930s by damming Williams Branch, fed by a free-flowing spring. The pond was intended to reduce flooding along Williams Branch and protect the relocated Moses Carver house from rainy season inundations.²⁸³ It is possible that the pond also supported the watering of the Shartel’s thoroughbred cattle.

Williams Pond is located north of Carver Branch (Figure 47). The three-quarter-acre pond was enlarged by the National Park Service in 1978. It is a focus of the park’s Carver Trail and associated Contemplative Loop Trail.



FIGURE 47. Williams Pond, formed by impounding Williams Branch and spring.

Other responses to natural features present during Shartel ownership of the property include stream crossings using small bridges and hardened fords. These features have since been replaced with the present day boardwalks and bridges.

Also missing from the Shartel period is evidence of zinc and lead mining in the southwestern corner of the property. The first evidence of zinc mining on

280. Ibid., 27–28.

281. Ibid., 28–29.

282. Ibid., 29.

283. Harrington et al., 66.

the property is a lease to mine zinc and lead in the southwestern corner of his farm dated 1915.²⁸⁴ Although little is known about mining on the property during Moses Carver's lifetime, the Granby & Neosho Mine is known to have operated on the former Moses Carver farm circa 1916–1920. The Tulsa-Diamond Corporation mine later operated a 250-ton mill there in 1929. Two exploratory shafts of 60 and 120 feet were drilled in 1935 and 1939, and the mineral rights leased to the Liberty Mining Company of Tulsa, Oklahoma, which began mining operations in 1942. This operation, characterized by a 250-foot shaft where the zinc and lead ore was brought up to the surface for extraction, continued for nearly two years. The mine was deactivated around the end of 1943; a 40-foot high tailings pile was left on the site. The tailings pile has since been removed.

Responses to natural features associated with National Park Service development of the park. Several features that represent responses to natural features are associated with National Park Service administration of the park. These include the use of the grove of mature trees to site a picnic area, locating the visitor center on a high point overlooking the Moses Carver farm and cemetery, and the use of bridges and culverts to convey roads and trails across streams and swales. These responses date to the early park establishment period and contribute to the significance of the historic landscape. As early as 1942, the National Park Service determined to continue farming using a crop rotation system, conducted by lease with the George Washington Carver National Monument Foundation. As early as 1950, the Foundation suggested using the Moses Carver property as a demonstration farm that would serve the education of African American youth. Their efforts to successfully

produce crops, however, were unsuccessful, and the leasing of the land passed to local farmers.²⁸⁵ Farm uses have since been replaced by native grassland prairie restoration efforts.

Siting of the Carver Trail. The Carver Trail was originally designed to take advantage of the property's natural resources and to interpret George Washington Carver's life on the farm. Features that were the focus of interpretation along the trail included Carver Branch, Carver Spring, Williams Branch, and the riparian woodlands. Since its original construction, the trail has been realigned in some locations and resurfaced to address erosion problems, provide stream and wet area crossings, and accommodate universal accessibility. These changes postdate the early park development period of significance, slightly diminishing the integrity of the trail corridor as a response to natural resources.

Inclusion of Williams Pond in the Carver Trail. The National Park Service incorporated Williams Pond into the original design of the Carver Trail. The National Park Service later expanded Williams Pond in 1978, obscuring evidence of Williams Spring. Today, the pond is a focus of the Contemplative Loop Trail that honors George Washington Carver, and remains integral to the design of the Carver Trail. The pond survives from the early park development period of significance, with diminished integrity due to its expansion, and contributes to the significance of the park landscape.

The use of bridges in association with park trail stream crossings. After the National Park Service acquired the Moses Carver farm property in 1953, one of the first improvements made within the park was the Carver Nature Trail (today

284. Miller, "Mining," 81–82. Records also indicate that the farm owner permitted mine exploration by Kansas Exploration, Inc., in 1925, and by the Boston Commerce Drilling Company in 1928–1929. ("Lead and Zinc Mine, Potable Water Quality, Newton County National Priorities List of Hazardous Waste Sites," September 30, 2003, File L54, ACF, GWCA.)

285. Krahe and Catton, 76.

referred to as the Carver Trail) that traced George Washington Carver's experience on the farm. To convey the trail across Carver and Williams branches, the National Park Service constructed wooden footbridges. In 2001, two of these bridges were replaced by sturdy steel bridges with wood decking. There are also two wooden footbridges that cross Williams Branch near the Moses Carver house. The trail also incorporates a boardwalk with recycled-content lumber for decking in the marshy area south of the Moses Carver house (Figure 48).



FIGURE 48. A footbridge conveys visitors over Williams Branch near the Moses Carver house.

The siting of picnic areas in the deciduous grove. Two picnic areas edge the park entrance road. Both benefit from the dappled shade afforded by a grove of mature shade trees that parallels the road (Figure 49). The peaceful, cool, and refreshing quality of the grove offers a haven for visitors during the hot and humid summer months. The picnic area to the north of the entrance drive includes an access road, parking, and both standard and universally accessible picnic tables. There are also trash and recycling receptacles, and a drinking fountain. The picnic area to the south of the entrance drive features several tables sited beneath the trees at the edge of the visitor parking area located near the visitor center.

The original siting of the picnic area to the east of the entrance road in 1953 took advantage of the tree grove present at the time of park establishment. The cool shade afforded by the trees complements the recreational needs of park visitors. This response to natural resources

survives from the early park development period and contributes to the significance of the park landscape.



FIGURE 49. The grove of mature trees along the entrance road provides an ideal location for the park's picnic area.

The siting of the visitor center to overlook Moses Carver farm features. The park's visitor center was built in 1960 and later expanded in 2007. It occupies the edge of a ridgeline that affords expansive views of the land Moses Carver is known to have farmed during the mid to late nineteenth century. The location of the visitor center takes advantage of level topography, cool breezes, and good prospect; this siting is representative of Mission 66 design principles that linked interpretive centers with the primary resources of a park (Figure 50). The visitor center has an observation deck offering views across the park landscape to the west, southwest, and northwest.

Although the integrity of the visitor center has since been diminished by changes made in 2007, the original siting of the building survives from the early park development period and contributes to the significance of the park landscape.



FIGURE 50. The visitor center overlooks the restored prairie.

Swales and culverts used along the

entrance road for drainage. The park entrance road was built in 1959 as an elevated corridor edged by drainage swales. Overland flow of storm water is conveyed through the swales to concrete culverts that pass beneath the pavement. These features were installed as part of Mission development of the visitor center in 1959–1960.

The road generally follows the earlier alignment of the Shartel farm road, but entailed elevating the roadway to avoid wet areas and afford views to the park’s visitor center. The culverts and swales established to convey storm water away from and beneath the road corridor constitute responses to natural resources that survive from the early park development period and contribute to the significance of the park landscape.

Contributing Responses to Natural Features.

- Siting of the Moses Carver farm domestic precinct in close proximity to fresh water sources
- Siting of the Carver Trail to take advantage of natural features, and inclusion of the Shartel-era Williams Pond
- Use of bridges in association with park trail stream crossings
- Siting of the picnic area in the deciduous shade tree grove

- Siting of the visitor center on a ridge overlooking the fields associated with the Moses Carver farm (diminished integrity)

- Swales and culverts used along the entrance road for drainage

Non-Contributing Responses to Natural Features.

- Culverts used along Carver Trail
 - Williams Pond constructed for flood control
- ### **Missing Responses to Natural Features.**
- Moses Carver farm organization with agricultural uses linked to soil and terrain suitability
 - Shartel-era stream crossings
 - Lead and zinc mining

3.3.3 Patterns of Spatial Organization

George Washington Carver National Monument is primarily characterized by open restored prairie vegetation that allows for expansive views across the landscape. The open prairie vegetation is broken by a broad wooded zone that follows the riparian corridor of the Carver and Williams branches. The woodland forms a band that divides the property in an east-west direction near its center. The Harkins Branch corridor located in the northwest corner of the park is also wooded. Set within this milieu is the more manicured landscape of the park's developed core, which occurs within the east-central section of the park. The developed core encompasses the area between the park entrance and the visitor center. It includes the grove of mature shade trees, the picnic areas, visitor parking, and the visitor center and maintenance yard.

These patterns of spatial organization are nearly consistent with those present during the early park development period, although the extent of woodland has expanded, and formerly mown fields have been transformed into grassland prairie.

Entrance road corridor. The linear entrance road corridor is straight, wide, and edged with groves of trees. The entrance road is oriented to the west, and leads to the visitor center. The visitor center, long and low in profile, lies perpendicular to the alignment of the entrance corridor and terminates views along the road (Figure 51). To either side of the road, views are afforded into groves of mature shade trees. Views of an adjacent park housing complex to the south are generally blocked by shrubs and tree plantings. Views into the grove follow a spur road that leads to picnic area parking.

The park entrance corridor was constructed circa 1959–1960 to provide access to the new visitor center. During Mission 66 planning efforts, park planners determined to place the visitor center in close proximity to the features interpreting Carver's boyhood, while locating the employee residences at a distance from the primary visitor

use areas to avoid visual impacts to the interpretive experience.

The entrance corridor survives from the period of significance and contributes to the significance of the park. Its integrity has been diminished by the expansion of parking along the northern side of the loop road circa 1986.



FIGURE 51. The linear park entrance corridor, looking west toward the visitor center.

Visitor center environs. The visitor center environs, comprised of the landscape to the east, north, and west of the visitor center building, is generally characterized by paved paths and plazas, open lawn, foundation plantings, and ornamental planting beds. It is edged by woodlands to the north, and the shade tree grove along the entrance road to the northeast, as well as the maintenance facilities to the south. The park maintenance facilities and yard, which are connected to the visitor center by a breezeway, are screened from view by the descending topography and carefully placed shrub and grass plantings. From the park entrance, visitors move easily around the building to the north where the trailhead for the Carver Trail is located (Figure 52).

The open knoll north of the visitor center is used by the park to orient visitors. Several circulation systems intersect here, including paths leading out of and around the visitor center, and the beginning and end points of the Carver Trail. The space contains monuments, markers, sculptural elements, and interpretive signage for visitor orientation and as a trailhead. It is contained by the grove along the entrance corridor and the wooded Carver Branch stream corridor. Although

1 the space has been used since the early park
 2 development period, aspects of its spatial
 3 character have changed since 1960, due to
 4 expansion of the visitor center, relocation of the
 5 Carver bust, and the loss of several elm trees to
 6 Dutch elm disease that once shaded this area. The
 7 visitor center environs survives from the period of
 8 significance, albeit with diminished integrity, and
 9 contributes to the significance of the park.



10 **FIGURE 52.** The visitor center environs.

11 **Picnic grove.** A large grove of mature shade
 12 trees, widely spaced and open-grown, edges the
 13 park entrance road to the north, with trees also
 14 edging the road to the south. The grove edges a
 15 band of riparian forest that follows Carver Branch.
 16 The open grown nature of the trees within the
 17 grove allows for an understory of mown turf. The
 18 park maintains a picnic area within the shade tree
 19 grove.

20 The open grown grove of mature shade trees that
 21 edges the entrance drive appears to have been
 22 established during Shartel ownership of the
 23 property. The grove was integrated into the design
 24 of the park entrance and visitor core experience as
 25 part of early park development (Figure 53). This
 26 grove survives from the period of significance and
 27 contributes to the significance of the park.



28 **FIGURE 53.** The grove of shade trees along the
 29 entrance drive during the early park development
 30 period. Source: George Washington Carver National
 31 Monument photo collection.

32 **Carver Trail corridor.** The one-mile Carver
 33 Trail corridor that begins at the visitor center
 34 traverses a generally wooded area that follows the
 35 park's stream valleys. While within the riparian
 36 woodland, the Carver Trail passes Carver Spring
 37 and the Boy Carver statue, and crosses Carver
 38 Branch; a loop trail circumnavigates Williams
 39 Pond (Figure 54). The trail briefly emerges into a
 40 more open landscape of the Moses Carver house
 41 precinct. The trail then reenters the woods,
 42 crossing both Williams and Carver branches,
 43 before passing into the open prairie below the
 44 visitor center. Here, the trail follows a row of
 45 walnut trees planted by the National Park Service
 46 in the 1950s to recall a hedgerow established by
 47 Moses Carver during the nineteenth century
 48 (Figure 55).

49 Although the corridor was somewhat wooded
 50 when the trail was established in the late 1950s, the
 51 woodland has expanded and became more dense
 52 over the ensuing 60 years. Today woodland
 53 conveys a dense tunnel-like quality to the trail
 54 corridor than was present during the early park
 55 development period. Missing are the mix of open
 56 and savanna woodland conditions that
 57 characterized the trail when it was first
 58 established. The wooded corridor thus survives,
 59 but with diminished integrity of feeling, from the
 60 early park development period.



1 **FIGURE 54.** The Carver Trail cuts a narrow corridor
2 through the woodland along Carver Branch.



3 **FIGURE 55.** A row of walnut trees that edges the trail
4 below the visitor center recalls a fence row
5 established by Moses Carver.



FIGURE 56. The Moses Carver house precinct.

6 **Walnut fence row.** A row of walnut trees edges
7 the Carver Trail between Carver Branch and the
8 Carver family cemetery. The trees afford dappled
9 shade along the trail. Additional prairie land is
10 visible through the row of walnuts to the west.

11 The trees were planted in the 1950s by the
12 National Park Service to replicate a feature
13 thought to have been planted by Moses Carver on
14 the property as a fence row. The trees contribute
15 to the overall feeling of agricultural field
16 patterning on the property. This feature survives
17 from the early park development period with
18 integrity and contributes to the significance of the
19 park landscape.

20 **Moses Carver house and yard.** The relocated
21 Moses Carver house sits at the edge of the wooded
22 stream corridor within a fenced yard edged by an
23 open grown grove of walnut trees. From the
24 fenced area, views of fields are afforded to the
25 north and west (Figure 56). The house, yard, and
26 fields are used to interpret nineteenth century
27 farm life.

28

The walnut trees and fenced yard were installed in the 1950s. Demonstration garden beds were added later and do not contribute to the historic landscape. The Moses Carver house and yard otherwise survives from the early park development period with sufficient integrity to contribute to the park landscape.

Carver family cemetery. The Carver family cemetery is a one-tenth-acre space enclosed within a stacked stone wall constructed by the National Park Service in 1954 to replicate the wall present during Moses Carver's ownership of the farm. In 1959, the National Park Service acquired thirty-six headstones and installed them in the cemetery in support of park development and interpretation of this former feature of the Moses Carver Farm.

Moses Carver established the Carver family cemetery for family as well as community members. The original cemetery was surrounded by a stone wall composed of limestone rubble collected from the fields. The original wall was later dismantled and the stone reused during the Shartel period of property ownership (Figure 57).



FIGURE 57. The original wall surrounding the cemetery was dismantled during the Shartel ownership period. It was reconstructed by the National Park Service in 1954. The date of this photograph is not currently known. Source: George Washington Carver National Monument photo collection, image 439.

The wall present today was reconstructed by the National Park Service based on oral tradition and archeological investigations. Since 1954, the entrance through the cemetery wall has been

relocated from the east side to the north side to coordinate with the Carver Trail, and many of the stones have fallen or become dislodged and subsequently restacked by park personnel. These changes diminish the integrity of the reconstructed wall. The pattern of spatial organization exhibited by the cemetery otherwise survives from the early park development period and contributes to the significance of the park landscape, although the wall has since undergone some changes that diminish its integrity of design and workmanship.

Open fields/prairie units. There are nine prairie management units totaling 130 acres within the park. These prairie units, which date to the early 1980s, generally follow the arrangement of agricultural field patterns present during the Moses Carver farm period. They are located throughout the park, with the exception of more formal areas leading from the park entrance to the visitor center environs, and woodlands that edge each stream corridor.

At a broad scale, the open character of the fields is consistent with the historic agricultural patterns of spatial organization present during the Carver period, as well as the open field patterns present during the early park development period. However, the texture and height of the prairie land cover differ from those of the former crop fields, hay fields, and pastures, diminishing the integrity of this pattern of spatial organization. Thus, while the pattern of open land cover survives from both periods of significance and contributes to the significance of the park, this feature has diminished integrity of feeling and association due to the difference in character and texture of the land cover.

Missing are examples of fields established within cleared bottomland terraces by the Carvers during their early occupation of the property. The bottomland terraces of Carver Branch were likely the first focus of cultivation by the Carvers due to the comparative ease of preparing the land for planting. However, with the unsuitability of the wet soils for agriculture and the potential for flooding, the bottomland terraces were later abandoned in favor of upland prairie land. Any

1 evidence of these fields has long since disappeared
 2 due to subsequent land use and successional
 3 woodland growth.

4 **Woodland cover.** Woodland cover generally
 5 follows the three stream corridors, forming a thick
 6 band through the center of the park, and a second
 7 grove in the park's northwestern corner. These
 8 woodlands generally follow the outline of gallery
 9 forests present at the time of European-American
 10 settlement of the region in the 1830s, as well as the
 11 concentration of forest cover likely known to
 12 George Washington Carver; the Moses Carver
 13 farm is thought to have included 80 acres of
 14 woodland circa 1870, which is consistent with
 15 current conditions. The wooded stream corridors
 16 present today may offer some consistency with the
 17 community present during George Washington
 18 Carver's life on the farm at least at a macro level.
 19 Present-day woodlands are far denser than the
 20 former gallery forests, which featured a cleared
 21 understory due to fire and grazing.²⁸⁶

22 At the time the park was established, the property
 23 was far less wooded. It is likely that portions of the
 24 woodlands were logged or cleared during the early
 25 twentieth century to support the cattle operations
 26 of the Shartel family (Figure 58). Inventory of
 27 property plant communities has suggested that all
 28 of the woodlands on the property are young,
 29 secondary successional communities less than
 30 100 years of age. As patterns in the landscape,
 31 however, the woodlands have generally occupied
 32 the same or similar locations over time. Thus the
 33 wooded stream corridors generally survive from
 34 the periods of significance, with diminished
 35 integrity of feeling, and contribute to the
 36 significance of the park landscape.



37 **FIGURE 58.** The wooded area along Carver Branch
 38 was less extensive during the early park development
 39 period as indicated by this 1959 photograph. Source:
 40 George Washington Carver National Monument
 41 photo collection, image 2647.

42 **Missing Patterns of Spatial Organization.**

43 **Moses Carver farm Features.** Missing from
 44 the nineteenth-century Carver property today are
 45 the texture of the farm and the division of the land
 46 into units associated with agricultural production.
 47 Elements of the property that are known to have
 48 existed, but are now missing, were primarily
 49 associated with the original Carver domestic
 50 farmstead located south of Carver Branch near the
 51 present-day visitor center. The features likely
 52 included a dwelling, outbuildings, a fenced kitchen
 53 garden, paths, and tree plantings. Beyond the
 54 precinct were crop fields edged by fencing, a large
 55 walnut and fruit tree orchard, and a persimmon
 56 grove. Moses Carver is said to have raced horses
 57 on his property.

58 **Contributing Patterns of Spatial** 59 **Organization.**

- 60 ▪ Entrance road corridor
- 61 ▪ Visitor center environs
- 62 ▪ Picnic grove
- 63 ▪ Carver Trail corridor

286 A gallery forest is a woodland that forms as a corridor along a river or wetland and sometimes projects into an adjacent landscape that is sparsely treed, such as savanna or prairie. Gallery forests form due to the

availability of soil moisture, fertility of the alluvial soils, and protection from some fire events associated with stream valleys.

1 ▪ Walnut fence row

2 ▪ Moses Carver house and yard

3 ▪ Carver family cemetery

4 ▪ Open fields

5 ▪ Woodland cover

6 **Non-contributing Patterns of Spatial**
7 **Organization.**

8 ▪ None identified

9 **Missing Patterns of Spatial Organization.**

10 ▪ Carver farmstead

11 ▪ Crop fields edged by fencing

12 ▪ Horse race track (speculative)

13 ▪ Walnut and fruit tree orchard

14 ▪ Persimmon grove

16 **3.3.4 Views and Vistas**

17 George Washington Carver National Monument
18 exhibits several views designed primarily for
19 visitor enjoyment and understanding of the
20 historic and commemorative landscape.
21 Predominant among them are the axial view along
22 the park entrance road corridor that focuses on
23 the visitor center; linear views that direct visitors
24 along the trail to elements of the land known to
25 George Washington Carver; and long expansive
26 views from the visitor center and interpretive trail
27 across the open restored prairie south of Carver
28 Branch and north and west of the Moses Carver
29 house. Although these views were all established
30 during the early park development period, the
31 character of the restored prairie postdates the
32 period of significance. While prairie likely
33 remained present on the farm by the 1870s, these
34 views were likely of agricultural fields and the
35 Moses Carver farmstead and not of prairie, and
36 thus possess diminished integrity of feeling and
37 association. Otherwise, all of the views survive
38 with sufficient integrity to contribute to the
39 significance of the park landscape.

40 Little is known about views that were important to
41 the Carvers in the design and layout of their
42 farmstead during the nineteenth century. There
43 are no specific views noted in historic
44 documentation of the property, and it is not
45 known to what degree views played a role in the
46 delineation, orientation, and siting of the Moses
47 Carver farm. It is possible that the Moses Carver
48 farm was visible from the adjacent public road
49 corridor, although it is believed that the Carvers
50 were private people who chose to site their
51 dwelling out of site of the road.²⁸⁷

52 It is also likely that the original house and cabin
53 sites, located on the knoll overlooking Carver
54 Branch, afforded views of the water course to the
55 north and farm fields to the south during George
56 Washington Carver's lifetime. Today, the view of
57 these water resources is blocked by woody
58 vegetation and is no longer discernible. It is also
59 likely that expansive views were afforded across
60 the rolling hills of the landscape due to the extent

287. Toogood, 30.

of prairie cover and crop fields. Today, visitors continue to enjoy views of adjacent farms, as likely occurred historically from the property's higher elevations. Otherwise, the views present on the property today all date to National Park Service development of the property as a park in the 1950s, with modifications that reflect the effort to restore native grassland prairie communities.

Views into the park along the entrance road. Visitors enter the park through a gate located along Carver Road. The entrance road that leads into the park follows a straight path before splitting to form a large loop in front of the visitor center (Figure 59). A triangular planting bed edges the eastern end of the loop, diminishing views of the visitor center. The entrance road is generally aligned with the visitor center environs and the entrance into the building, affording visitors an opportunity to understand the layout and organization of the park upon arrival. The road is framed by plantings of shade trees, which further direct the view toward the visitor center. This view was established with construction of the road and the original visitor center. Its integrity is diminished slightly due to changes made to the visitor center in 2007 and the addition of the triangular planting bed at the eastern end of the loop that interferes with direct views of the visitor center from the drive. Although it has diminished integrity of design, this view contributes to the significance of the park landscape.



FIGURE 59. The linear view along the park entrance road.

Linear views along the Carver Trail. A narrow linear view is associated with the generally wooded environs of the Carver Trail (Figure 60 and refer to Figure 54). The woodland that edges the trail directs views along the linear corridor and limits views beyond.

The Carver Trail was one of the first features established by the park. It is likely that the environs and setting of the trail were less wooded when it was first installed. The subsequent growth of woodland has led to diminished integrity for views associated with the trail. The need to clear views and vistas along the trail appears in several Superintendent's annual reports, although the locations of these activities are not noted.²⁸⁸ Portions of the trail have since been rerouted to better accommodate universal accessibility, altering the original design of the trail and associated views. The views along the Carver Trail generally survive from the period of significance, with diminished integrity, and contribute to the significance of the park landscape.



FIGURE 60. Linear views are associated with the Carver Trail.

Vista of restored prairie from the visitor center. The visitor center, built in 1960, was sited at the edge of a plateau, affording views across the descending topography to the west that supported interpretation of the Moses Carver farm (refer to Figure 50). This siting is consistent with Mission 66 principles that suggested placing visitor centers as close as possible to, and within view of, a park's primary resources. A portion of the Carver Trail passes through the open fields and restored

288. Superintendent's Annual Report, 1982.

1 grassland to the west of the visitor center,
2 affording additional views across the landscape.

3 When the visitor center was built in 1960, views
4 from the building to the west encompassed fields
5 maintained for agricultural purposes. The
6 National Park Service initially maintained the
7 fields through establishment of leases with local
8 farmers, perpetuating this historic activity and
9 associated views.

10 In 1973, the visitor center was described as
11 obstructing “the visitor’s panorama of the historic
12 scene which once included the cemetery, farm
13 buildings, log cabins, vegetable garden, orchard,
14 the fields of Indian corn, hay, oats, and the pens
15 and pastures with horses, cows, sheep, and hogs
16 feeding.”²⁸⁹

17 In the 1980s, however, the National Park Service
18 began to convert most farm fields to grassland
19 prairie. Today, the view from the visitor center is
20 entirely of restored prairie. This view is discussed
21 in park planning documents as the “visitor
22 viewshed,” designed for aesthetic appeal and to
23 introduce visitors to the importance of land
24 conservation and native plant communities to
25 meet objectives outlined in 2007 in the park’s
26 Long-Range Interpretive Plan.²⁹⁰ It postdates the
27 period of significance and does not contribute to
28 the significance of the park landscape.

29 **View across the open prairie through the**
30 **row of walnut trees.** As noted earlier, a portion
31 of the Carver Trail is edged by the row of walnut
32 trees planted by the National Park Service to recall
33 a feature of the Moses Carver farm. The space
34 between the trees allows for a series of filtered
35 views to the open grasslands to the west
36 (Figure 61).

37 These walnut trees were planted by the National
38 Park Service in the 1950s during the early park
39 development period. The resulting filtered views
40 to adjacent fields thus survive from the early park
41 development period, although their integrity is
42 diminished by the change in land cover from
43 agricultural fields to prairie. These views

44 contribute to the significance of the park
45 landscape.



46 **FIGURE 61.** Filtered views across the prairie through
47 the row of walnut trees northwest of the cemetery.

48 **Vista across prairie from the Moses Carver**
49 **house.** The Moses Carver house is set at the edge
50 of an open prairie within a fenced yard featuring a
51 grove of walnut trees. From the dwelling precinct,
52 visitors are afforded long views across the adjacent
53 prairie (refer to Figure 56).

54 This vista has been altered by the transition from
55 agricultural fields to prairie. It does not contribute
56 to the significance of the park landscape.

57 **Contributing Views and Vistas.**

- 58 ■ View into the park along the entrance road
- 59 ■ Linear views along the Carver Trail
- 60 ■ View across the prairie through the fence row
61 of walnut trees
- 62 ■ Views of surrounding farmsteads

63 **Non-contributing Views and Vistas.**

- 64 ■ Vista across the prairie below the visitor
65 center
- 66 ■ Vista across prairie from the Moses Carver
67 house

289. Toogood, 43.

290. Woolpert, 4-3, 4-4; and Burfield and Nilon, 32.

1 **Missing Views and Vistas.**

- 2 ▪ Siting of the Moses Carver house out of view
- 3 of the road
- 4 ▪ Possible view from original house and cabin
- 5 sites to Carver Branch and Spring
- 6 ▪ Views of surrounding farmsteads

8 **3.3.5 Topographic Modifications**

9 George Washington Carver National Monument
10 currently contains evidence of several topographic
11 modifications associated with Shartel ownership
12 as well as early park development of the property.
13 There are no specific topographic modifications
14 that have been identified to date within the park
15 that can be tied to the Moses Carver farm period.

16 Topographic modifications that can be tied to the
17 early park development period include grading to
18 accommodate the park entrance road and parking
19 areas, the visitor center, the Carver Trail, and park
20 housing complex. Topographic modifications that
21 precede park establishment include the original
22 Williams Pond dam, constructed during Shartel
23 ownership. All other topographic modifications
24 postdate the early park development period of
25 significance. They include rehabilitation of the
26 Williams Pond dam, rehabilitation of the
27 landscape associated with the former lead and zinc
28 mine, filling of a former park landfill, grading
29 associated with expansion of the visitor center,
30 and trail alignment changes and improvements.

31 **Topographic modifications associated with**
32 **Moses Carver ownership.** Few topographic
33 modifications have been identified in association
34 with the Moses Carver farmstead. It is likely that
35 farm activities took advantage of suitable soil
36 conditions, and that the family did not manipulate
37 the terrain to support agriculture.

38 **Topographic modifications associated with**
39 **Shartel ownership.** During Shartel ownership,
40 the primary topographic modification was
41 construction of an earthen dam to impound
42 Williams Branch. Williams Pond was established
43 to control flooding and possibly to water livestock
44 between 1930 and 1939 (Figure 62). This
45 topographic modification did not occur during
46 either period of significance, and thus does not
47 contribute to the significance of the park
48 landscape.