



Vegetation Community Monitoring at Moore's Creek National Battlefield

2014 Data Summary

Natural Resource Data Series NPS/SECN/NRDS—2017/1093





ON THIS PAGE

Tubular flowers and new buds of Eastern false dragonhead (*Physostegia purpurea*) in the longleaf pine savanna restoration area at Moores Creek National Battlefield. Photograph courtesy of Sarah Corbett, Southeast Coast Network.

ON THE COVER

Flared bell-shaped blossom of swamp leatherflower (*Clematis crispa*) in the longleaf pine savanna restoration area at Moores Creek National Battlefield. Photograph courtesy of Sarah Corbett, Southeast Coast Network.

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March 2017

U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science
Fort Collins, Colorado

The National Park Service, Natural Resource Stewardship and Science office in Fort Collins, Colorado, publishes a range of reports that address natural resource topics. These reports are of interest and applicability to a broad audience in the National Park Service and others in natural resource management, including scientists, conservation and environmental constituencies, and the public.

The Natural Resource Data Series is intended for the timely release of basic data sets and data summaries. Care has been taken to assure accuracy of raw data values, but a thorough analysis and interpretation of the data has not been completed. Consequently, the initial analyses of data in this report are provisional and subject to change.

All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

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Please cite this publication as:

Corbett, S. , and M. W. Byrne. 2017. Vegetation community monitoring at Moores Creek National Battlefield: 2014 data summary. Natural Resource Data Series NPS/SECN/NRDS—2017/1093. National Park Service, Fort Collins, Colorado.

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Executive Summary

In 2009, the Southeast Coast Network (SECN) of the National Park Service (NPS) Inventory and Monitoring Program began collecting vegetation community data as part of the NPS Vital Signs Monitoring Program. Information collected under this vital sign will be used to help managers make better-informed decisions by understanding trends and variability related to plant species, frequency of occurrence, percent cover, diversity, and distribution in the groundcover, shrub, and canopy strata.

Within each stratum, vegetation communities were sampled using hybrid methods following the North Carolina Vegetation Survey nested-subplot design (Peet et al. 1998) within a circular plot similar to the Forest Inventory and Analysis protocol (Bechtold and Patterson 2005). This report summarizes vegetation community data collected at Moores Creek National Battlefield in 2014.

- Data were collected at 30 sampling locations at the battlefield from 29 June 2014 through 2 July 2014.
- Monitoring efforts resulted in the addition of nine species, subspecies, or varieties to the battlefield species list.
- Absolute canopy cover across the battlefield was approximately 67.0%.
- Sweetgum (*Liquidambar styraciflua*) had the highest relative cover in the shrub stratum.
- Sweetgum also had the highest absolute cover in the shrub stratum.
- Sweetgum was the most frequently occurring species in the shrub stratum.
- Roundleaf greenbriar (*Smilax rotundifolia*) had the highest relative cover, while yellow jessamine (*Gelsemium sempervirens*) had the second highest relative cover in the groundcover stratum.
- Roundleaf greenbriar had the highest absolute cover, while yellow jessamine had the second highest absolute cover in the groundcover stratum.
- Leaf litter was the most frequently occurring ground condition at the battlefield and also had the highest relative and absolute cover of any ground condition.

- Yellow jessamine and roundleaf greenbriar were the most frequently occurring species in the groundcover stratum, respectively.
- Loblolly pine (*Pinus taeda*) was the most frequently occurring live tree species.
- Loblolly pine had the largest average diameter at breast height (DBH) of any canopy species at the battlefield where more than two individuals were measured.
- Loblolly pine was the most frequently occurring dead snag species.
- Loblolly pine was the largest dead snag species detected where more than one individual was measured.
- Hemleaf (*Lyonia lucida*) had the highest estimated seedling density at the battlefield.

The full dataset, and associated metadata, can be acquired from the data store at <http://irma.nps.gov>.



Pendulous clustered fruits of southern waxy sedge (*Carex glaucescens*) at Moores Creek National Battlefield. Photo courtesy of Sarah Corbett, Southeast Coast Network.

List of Terms

Absolute cover: The total amount of ground surface that is covered by each species or group. This metric describes the amount of cover that each species or group represents in a stratum and is expressed as a percentage that can exceed 100% due to overlap. This metric is calculated as the total cover of each species or group divided by the total possible cover for a plot.

Canopy species: Woody species known to occur in the midstory or overstory of the canopy, or shrub species that grow greater than or equal to four centimeters DBH and are measureable at breast height (1.4 meters [4.6 feet (ft)]).

Canopy stratum: The structural zone above 1.1 meters (3.6 ft; i.e., elbow height of a typical observer per densiometer instructions), which consists of all live and dead plant material that affects the amount of light penetrating to the ground. This includes individual elements whose cover is also potentially measured and accounted for in the shrub- or groundcover-stratum measurements but exceeds 1.1 meters (3.6 ft) in height, is detected by the densiometer, and contributes to canopy cover. This stratum can also be referred to as the midstory, overstory, or sub-canopy.

Cover: The vertical projection of the outermost extent of a species, or the extent of the shadow cast by the species if the sun was directly overhead. Cover is also known as foliar cover.

DBH: Diameter at breast height, or 1.4 meters (4.6 ft) above the ground surface.

Frequency: The number of times a species or group is detected in a plot, expressed as a percentage. This provides information on the regularity with which a species or group is encountered.

Groundcover stratum: The structural zone that consists of all non-woody species (i.e., forbs and graminoids) and all woody species (i.e., shrubs and trees) with a DBH of less than four centimeters (1.5 inches [in]) and seedlings 30 centimeters (11.8 in) or less in height.

Relative cover: The cover of each species or group as a function of all other plant species that occurred in a plot. This metric describes the percentage of cover that each species represents out of the total vegetative cover in a stratum, is expressed as a percentage, and always sums to

100%. Relative cover is calculated as the total cover of each species or group divided by the sum of the cover of all other species that occur in a plot.

Seedlings: Woody dicotyledonous plants less than 30 centimeters (11.8 in) in height.

Shrub stratum: All woody species greater than 30 centimeters (11.8 in) in height with a DBH of less than 4 centimeters (1.5 in).

Stratum: A structural size category of vegetation at a site. These are the canopy, shrub, and groundcover layers.



Aerial view of the button-like flower head of orange milkwort (*Polygala lutea*) in the longleaf pine savanna restoration area at Moores Creek National Battlefield. Photo courtesy of Sarah Corbett, Southeast Coast Network.

Introduction

Overview

Vegetation communities are the primary drivers of a range of ecological processes and are integral to the proper function of park ecosystems. Moreover, vegetation communities integrate the biological and physical environment. They serve as the foundation for food webs, provide wildlife habitat for many species, function as a carbon sink, produce oxygen, and cycle nutrients and energy through an ecosystem. Additionally, plants influence the local climate, improve water quality, and moderate flooding and erosion. Determining trends in vegetation communities is vital to understanding the ecological processes occurring at a site and identifying stressors and their impacts.

Vegetation communities are dynamic with constant changes in composition, cover, distribution, and structure in response to natural or anthropogenic stressors. Disturbance is the primary stressor and regulating mechanism of Southeast Coast Network (SECN) vegetation communities. The timing, type, and extent of a disturbance generally evoke a distinguishable response in the species composition, diversity, and structure of the landscape (Foster et al. 1998; Turner et al. 1990). The primary natural disturbance processes in SECN park units are fire and weather (e.g., hurricanes and drought). Anthropogenic influences include fire suppression, landscape fragmentation, altered hydrology, and non-native species introduction.

The SECN park units host a diverse assemblage of vegetation communities. Approximately 180 vegetation associations (i.e., fine-resolution floristic descriptions), as defined by the National Vegetation and Classification System (FGDC 2008), occur in the network. These include sparsely vegetated primary dune communities, late successional old-growth bottomland hardwood forest communities, and highly diverse herbaceous-dominated mesic pine savanna communities.

Given the widespread anthropogenic influences in SECN park units and the importance of vegetation communities, quantifying trends in vegetation cover, frequency, diversity, and distribution is a high priority (DeVivo et al. 2008). An evaluation of trends in these metrics provides a measure for assessing ecological integrity and sustainability in southeastern systems and identifying the need for specific management activities on our park lands. The NPS Omnibus Management Act of 1998, and other reinforcing policies and regulations, require park managers “to establish baseline

information and to provide information on the long-term trends in the condition of National Park System resources” (Title II, Sec. 204). The vegetation community monitoring data summarized herein is a tool to assist park managers in fulfilling this mandate.

This report summarizes vegetation community vital signs monitoring data collected at Moores Creek National Battlefield (MOCR) in June and July 2014.

Monitoring Objectives

To characterize the effects of landscape and local ecosystem drivers on vegetation communities, the Southeast Coast Network monitors several components of community structure, function, and composition. Each component illustrates community change dynamics, and data from the following five monitoring objectives are presented:

- Determine trends in plant species richness and diversity in the groundcover, shrub, and canopy strata.
- Determine trends in the percent cover of vegetation in the groundcover, shrub, and canopy strata.
- Determine trends in the frequency of species in the groundcover stratum.
- Determine trends in the diameter at breast height (DBH) of species in the canopy stratum.
- Determine trends in woody species seedling counts in the groundcover stratum.

Methods

Study Area

Moore's Creek National Battlefield (MOCR) is located in southern-coastal North Carolina approximately 32 kilometers (20 miles [mi]) northwest of Wilmington, North Carolina (Figure 1). The battlefield's primary purpose is to interpret the pivotal Revolutionary War battle that occurred on the site; however, Moore's Creek hosts a variety of natural resources as well. The western part of the 36-hectare (88-ac [ac]) battlefield contains a small portion of Moore's Creek, just north of the confluence of Moore's Creek with the Black River. Moore's Creek is a tidally influenced blackwater stream with an approximate width of 8 meters (26 ft). Vegetation communities of the battlefield include riparian areas, dry pine forests, and wet pine savannas. The riparian areas are generally dominated by bald cypress (*Taxodium distichum*), while the uplands are a mix of loblolly pine (*Pinus taeda*) and sweetgum (*Liquidambar styraciflua*). A large area in the center of the battlefield is in a restoration process to return it to its historic condition of wet savanna. Despite its small size, the battlefield hosts several state-listed plant species, including flowering goldenrod (*Solidago verna*) (species of special concern), Carolina bogmint (*Macbridea caroliniana*) (state endangered), and Carolina grass of Parnassus (*Parnassia caroliniana*) (state threatened). The most significant exotic plants that affect the plant communities at Moore's Creek are Chinese privet (*Ligustrum sinense*), Chinese wisteria (*Wisteria sinensis*), and kudzu (*Pueraria lobata*).

A variety of previous land uses has affected the landscape and flora of Moore's Creek. Formerly, a highway cut through the battlefield, and this area has been slow to re-vegetate. Additionally, previous landowners cut many straight ditches and drains in attempt to alter the hydrology over much of the battlefield. Moore's Creek also has a history of timber production, which has dramatically altered the landscape by converting previous stands of longleaf pine (*Pinus palustris*) to loblolly pine. Although this area once contained forested swamps, the United States War Department burned many of them in the early part of the 20th century. No major forest diseases, pests, or introduced macrofauna are known to affect the battlefield. The area adjacent to the battlefield consists of agricultural lands and forests managed for pulpwood production; no impact on Moore's Creek resources from these land use activities has been established.

Moore's Creek National Battlefield has 674 known vascular-plant species, subspecies, or varieties (NPSpecies 2016), including 9 species, subspecies, or varieties added to NPSpecies based on these monitoring efforts and 2009 monitoring efforts (Appendix A, Table 2).

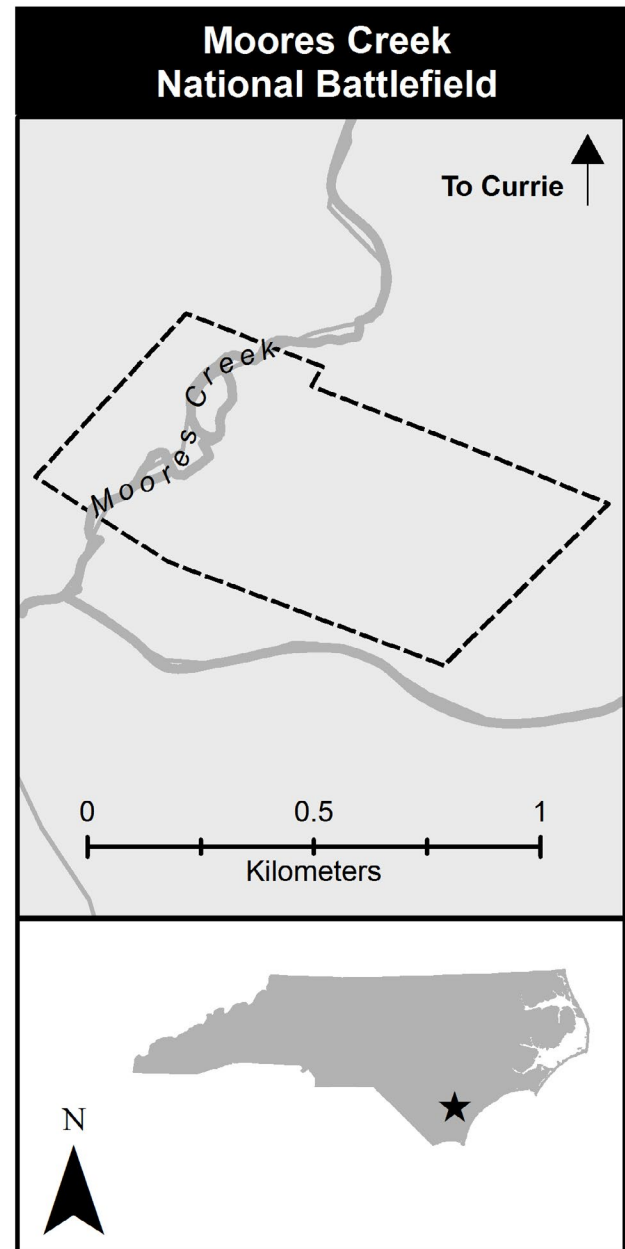


Figure 1. Location of Moore's Creek National Battlefield in North Carolina.

Sampling Design

To allow for park-wide inference, the park's administrative boundary was used as the sampling frame, in which 30 permanent spatially balanced random sampling locations were selected for monitoring vegetation, landbird, and vocal anuran communities. Sampling locations were selected using the Reversed Randomized Quadrant-Recursive Raster

(RRQRR) algorithm (Figure 2; Theobald et al. 2007 as presented in Byrne et al. 2009). All sampling locations occur within naturally vegetated areas suitable for co-located vital signs monitoring efforts (Byrne et al. 2013).

Vegetation communities were monitored at Moores Creek from 29 June 2014 through 2 July 2014.

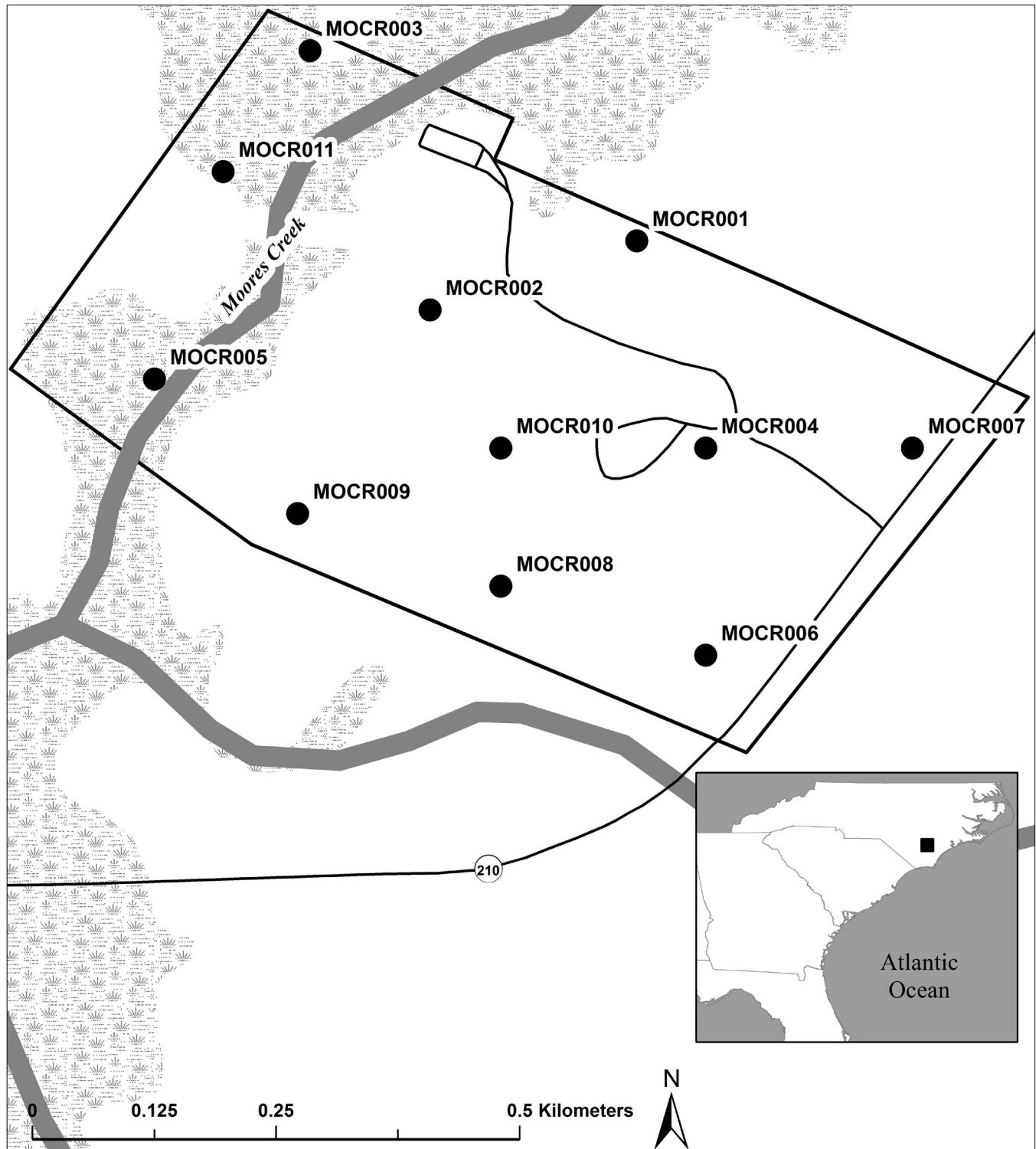


Figure 2. Spatially balanced random sampling locations at Moores Creek National Battlefield in 2014.

Sampling Methodology

Vegetation community measures were divided into three strata based on height, canopy, shrub, and groundcover. Within each stratum, vegetation communities were sampled using hybrid methods following the North Carolina Vegetation Survey nested-subplot design (Peet et al. 1998) within a circular plot similar to the Forest Inventory and Analysis protocol (Bechtold and Patterson 2005).

The plot layout consisted of a circular plot with a radius of 15 meters (49.2 ft) within each 0.5-hectare (1.2-ac) sampling location. Subplots were systematically placed along six transects that radiated out from the center point at azimuths of 0°/360°, 60°, 120°, 180°, 240°, and 300° (Figure 3). To avoid overlap, subplots originated 4 meters from the plot array (i.e., 0.5-hectare [1.2-ac] grid) center point and extended away from the center point. Canopy cover, shrub cover, DBH, canopy species seedling frequency, and herbaceous cover data were collected in the nested subplots within each plot. Canopy cover was measured from the center point of the 0.5-hectare (1.2-ac) sampling location. Shrub coverage was measured in two 2- by 4-meter (6.6- by 13.1-ft) shrub plots along each transect. Shrub plots were further subdivided into 2- by 2-meter (6.6- by 6.6-ft) subplots to improve cover estimation accuracy and precision (solid gray shading; Figure 3). Shrub and herbaceous cover was estimated in one of eight coverage classes (Table 1). Groundcover coverage, groundcover nested frequency, and seedling frequency were measured in two 1- by 1-meter (3.3- by 3.3-ft) groundcover plots (solid black shading; Figure 3) along each transect. Canopy species DBH was measured in three sections, each representing one-third of the total circular plot (hashed gray shading; Figure 3). A comprehensive species list was also compiled for all species occurring in the 0.5-hectare (1.2-ac) sampling location. See Byrne and Corbett 2012; Byrne et al. 2013; Corbett and Byrne 2012a; Corbett and Byrne 2012b; and Corbett 2013 for detailed field methods.

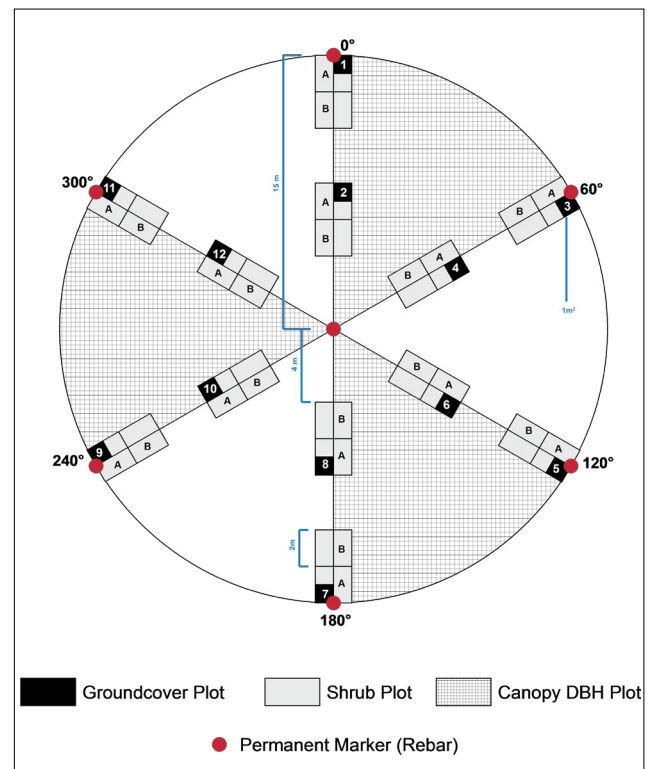


Figure 3. Southeast Coast Network vegetation community monitoring plot and subplot layout identifying the association of canopy cover, canopy diameter, shrub, and groundcover plots within a circular array. Although not depicted, the above array is positioned at the center point of each 0.5-hectare (1.2-ac) sampling location.

Table 1. Cover estimation coverage class, percent cover range, and value used for analyses.

Coverage Class	Percent Cover Range	Value Used for Analyses
0	0%	0
1	Trace (<1%)	0.5
2	1–5%	2.5
3	5–25%	15
4	25–50%	37.5
5	50–75%	62.5
6	75–95%	85
7	95–100%	97.5

Results

We detected 167 taxa during this monitoring effort (Appendix A, B), including nine species, subspecies, or varieties not previously known to occur at the battlefield (Table 2). We detected 36 occurrences with uncertain taxonomic affinity (Appendix B) that were identified only to genus, family, or a higher taxonomic level.

Highlights by monitoring objective include:

Plant species richness and diversity in the groundcover, shrub, and canopy strata.

- Nine species, subspecies, or varieties new to the battlefield species list were detected (Table 2).

Percent cover of vegetation in the groundcover, shrub, and canopy strata.

- Absolute canopy cover showed little variability across all sampling locations (mean = 67.0%, standard deviation [sd] = 24.0; Table 3).
- Sweetgum (*Liquidambar styraciflua*) was the most frequently occurring shrub species (relative frequency [f_i] = 90.9; Table 4 and 5), followed by wax myrtle (*Morella cerifera*; f_i = 81.8), red maple (*Acer rubrum*; f_i = 63.6), American holly (*Ilex opaca*; f_i = 63.6), and water oak (*Quercus nigra*; f_i = 63.6).
- Sweetgum had the highest relative cover of all shrub species (mean = 14.6%, sd = 22.6; Table 4), followed by wax myrtle (mean = 9.9%, SD = 16.7).
- Sweetgum had the highest absolute cover in the shrub stratum (mean = 5.1%, sd = 7.6; Table 5). Loblolly pine (*Pinus taeda*) had the second highest absolute cover (mean = 4.6%, sd = 13.3) in the shrub stratum (Table 5).
- Roundleaf greenbriar (*Smilax rotundifolia*) had the highest relative cover in the groundcover stratum (mean = 20.2%, sd = 24.0), followed by yellow jessamine (*Gelsemium sempervirens*); (mean = 11.4%, sd = 10.5; Table 6).
- Roundleaf greenbriar had the highest absolute cover in the groundcover stratum (mean = 6.8%, sd = 8.9), followed by yellow jessamine (mean = 4.8%, sd = 3.7; Table 7).

- Leaf litter was the most common ground condition, with a relative cover of 76.3% (sd = 24.1; Table 8) and an absolute cover of 75.5% (sd = 23.9; Table 9).

Frequency of species in the groundcover stratum.

- Yellow jessamine (f_i = 90.9), roundleaf greenbriar (f_i = 81.8), and sweetgum (f_i = 63.6) were the most frequently occurring species in the groundcover stratum, respectively (Tables 6, 7).
- Leaf litter was the most frequently occurring ground condition at the battlefield (f_i = 100; Tables 8, 9).

DBH of canopy species.

- Loblolly pine was the most frequently occurring live tree species (f_i = 72.7), followed by sweetgum (f_i = 63.6).
- The largest tree species detected on average where more than one individual was measured was pond cypress (*Taxodium ascendens*; mean = 35.8 cm, sd = 22.5; Table 10).
- Loblolly pine was the most frequently occurring dead snag species (f_i = 27.3).
- The largest dead snag species detected on average where more than one individual was measured was pond cypress (mean = 24.3 cm, sd = 21.0; Table 11).

Woody species seedling counts in the groundcover stratum.

- Hemleaf (*Lyonia lucida*) had the highest estimated seedling density at the battlefield (10.3/m², sd=14.4; Table 12) where more than one individual was measured.

Table 2. New vascular plant species, subspecies, or varieties found at Moores Creek National Battlefield in 2014.

Order	Family	Scientific Name	Common Names	Nativity	Pest Status
Alismatales	Araceae	<i>Lemna</i> sp.	duckweed	Native	Non-Pest
Campanulales	Campanulaceae	<i>Wahlenbergia marginata</i>	Southern rockbell	Non-Native	Non-Pest
Cucurbitales	Cucurbitaceae	<i>Melothria pendula</i>	creeping cucumber	Native	Non-Pest
Ericales	Ericaceae	<i>Befaria racemosa</i>	tarflower, flyweed	Native	Non-Pest
Ericales	Primulaceae	<i>Samolus</i> sp.	brookweed, waterpimpernel	Native	Non-Pest
Fagales	Fagaceae	<i>Quercus phellos</i>	willow oak	Native	Non-Pest
Magnoliales	Annonaceae	<i>Asimina triloba</i>	paw paw	Native	Non-Pest
Pinales	Pinaceae	<i>Pinus elliotii</i>	slash pine	Native	Non-Pest
Poales	Poaceae	<i>Andropogon virginicus</i> var. <i>glauca</i>	chalky bluestem, chalky broomsedge	Native	Non-Pest

Table 3. Average canopy cover for vegetation monitoring macroplots at Moores Creek National Battlefield in 2014. Average canopy cover is based on data averaged across observers at each sampling location.

Sampling Location	Mean	Standard Deviation
MOCR001	79.8	0.4
MOCR002	75.6	4.4
MOCR003	88.0	2.5
MOCR004	41.9	1.9
MOCR005	90.4	1.2
MOCR006	55.6	2.7
MOCR007	85.8	2.5
MOCR008	46.0	2.1
MOCR009	71.9	2.3
MOCR010	12.6	1.6
MOCR011	89.6	1.6
Park Average	67.0	24.0

Table 4. Percentage of vegetation cover (relative cover) and relative frequency of occurrence of shrub species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Relative cover is averaged across shrub plots at each sampling location, and park-wide calculations are averaged across all sampling locations [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	<i>f_i</i>	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acer rubrum</i>	63.6	3.3	3.6	2.7	4.2	6.6	9.2	8.8	--	--	--	0.4	--	4.6
<i>Amorpha herbacea</i>	9.1	0.3	0.9	--	--	--	--	--	--	--	--	3.0	--	--
<i>Befaria racemosa</i>	9.1	< 0.1	0.1	--	--	--	--	--	0.2	--	--	--	--	--
<i>Carpinus caroliniana</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.3	--
<i>Catalpa speciosa</i>	9.1	0.2	0.7	--	--	--	--	--	--	2.4	--	--	--	--
<i>Cephalanthus occidentalis</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	--	0.4
<i>Clethra alnifolia</i>	27.3	1.0	2.2	5.9	--	--	--	--	--	--	4.9	0.4	--	--
<i>Cornus florida</i>	9.1	0.2	0.5	1.8	--	--	--	--	--	--	--	--	--	--
<i>Crataegus</i> sp.	9.1	< 0.1	0.2	--	--	0.5	--	--	--	--	--	--	--	--
<i>Cyrilla racemiflora</i>	45.5	4.0	7.7	--	--	10.4	--	7.0	--	--	1.1	--	0.6	24.5
<i>Diospyros virginiana</i>	27.3	0.9	2.2	--	0.3	--	1.5	--	--	--	--	7.5	--	--
<i>Fraxinus pennsylvanica</i>	18.2	7.5	16.8	--	--	36.1	--	46.2	--	--	--	--	--	--
<i>Fraxinus</i> sp.	9.1	5.8	19.4	--	--	--	--	--	--	--	--	--	--	64.3
<i>Gaylussacia frondosa</i>	27.3	1.3	2.7	--	4.5	--	--	--	1.1	--	--	8.3	--	--
<i>Hypericum hypericoides</i>	9.1	0.4	1.2	--	--	--	--	4.1	--	--	--	--	--	--
<i>Ilex ambigua</i>	9.1	1.2	3.9	--	--	13.1	--	--	--	--	--	--	--	--
<i>Ilex coriacea</i>	9.1	0.1	0.3	1.1	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	36.4	3.3	8.4	3.8	2.1	--	--	--	28.3	--	--	--	2.5	--
<i>Ilex opaca</i>	63.6	3.8	4.7	8.8	14.6	7.1	--	3.5	--	--	1.1	3.3	3.9	--
<i>Itea virginica</i>	9.1	0.5	1.6	--	--	--	--	5.3	--	--	--	--	--	--
<i>Liquidambar styraciflua</i>	90.9	14.6	22.6	13.3	27.4	4.4	18.4	--	6.4	6.3	5.4	0.8	77.9	0.5
<i>Lyonia lucida</i>	27.3	2.0	5.8	1.8	--	--	--	--	19.5	--	--	0.4	--	--
<i>Magnolia grandiflora</i>	18.2	0.5	1.1	--	2.2	--	--	--	--	3.3	--	--	--	--
<i>Magnolia virginiana</i>	9.1	0.4	1.2	--	--	--	--	--	3.9	--	--	--	--	--
<i>Morella cerifera</i>	81.8	9.9	16.7	9.2	2.1	--	43.3	--	4.2	43.5	2.4	--	1.9	2.3
<i>Nyssa biflora</i>	36.4	0.4	0.8	--	--	--	--	0.6	--	--	1.1	--	0.3	2.7
<i>Nyssa sylvatica</i>	27.3	2.0	5.5	1.2	2.1	--	18.4	--	--	--	--	--	--	--
<i>Persea borbonia</i>	54.5	1.5	2.6	8.6	0.7	--	--	--	3.1	--	1.1	2.9	0.3	--
<i>Photinia pyrifolia</i>	27.3	1.8	4.5	2.0	2.4	--	--	--	15.1	--	--	--	--	--
<i>Pinus taeda</i>	27.3	8.7	23.7	7.3	--	--	9.2	--	--	--	79.3	--	--	--

Table 4 (continued). Percentage of vegetation cover (relative cover) and relative frequency of occurrence of shrub species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Relative cover is averaged across shrub plots at each sampling location, and park-wide calculations are averaged across all sampling locations [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns indicate sampling location.

Taxon	<i>f_i</i>	mean	<i>sd</i>	1	2	3	4	5	6	7	8	9	10	11
<i>Prunus serotina</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.3	--
<i>Quercus laurifolia</i>	45.5	3.1	5.6	17.2	2.4	9.8	--	3.5	--	--	--	0.8	--	--
<i>Quercus lyrata</i>	9.1	0.6	2.1	--	--	--	--	7.0	--	--	--	--	--	--
<i>Quercus nigra</i>	63.6	3.1	3.9	5.0	12.5	--	--	--	4.2	1.1	1.1	3.4	6.9	--
<i>Quercus stellata</i>	27.3	2.3	6.2	0.9	--	--	--	--	--	--	--	20.8	3.8	--
<i>Rhus copallinum</i>	18.2	0.3	0.7	--	2.4	--	--	--	--	--	--	--	0.6	--
<i>Sassafras albidum</i>	27.3	1.5	3.8	0.2	4.2	--	--	--	--	--	--	12.5	--	--
<i>Symplocos tinctoria</i>	36.4	3.6	7.5	0.9	2.4	--	--	--	13.8	--	--	22.5	--	--
<i>Taxodium ascendens</i>	18.2	0.4	1.1	--	--	1.1	--	3.5	--	--	--	--	--	--
<i>Vaccinium arboreum</i>	36.4	1.8	4.0	0.9	5.2	--	--	--	--	--	--	12.9	0.3	--
<i>Vaccinium corymbosum</i>	45.5	1.7	3.0	6.4	8.3	3.8	--	--	0.2	--	--	--	0.3	--
<i>Vaccinium elliotii</i>	36.4	1.9	3.6	--	--	7.1	--	10.5	--	--	2.4	--	--	0.8
<i>Vaccinium pallidum</i>	9.1	0.1	0.3	1.1	--	--	--	--	--	--	--	--	--	--

Table 5. Percentage of area covered (absolute cover) and frequency of occurrence of shrub species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across shrub plots at each sampling location, and park-wide calculations are averaged across all sampling locations [f_i —relative frequency; sd—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acer rubrum</i>	63.6	0.7	0.7	1.9	1.3	1.3	0.6	1.6	--	--	--	0.1	--	1.3
<i>Amorpha herbacea</i>	9.1	0.1	0.2	--	--	--	--	--	--	--	--	0.8	--	--
<i>Befaria racemosa</i>	9.1	< 0.1	< 0.1	--	--	--	--	--	0.1	--	--	--	--	--
<i>Carpinus caroliniana</i>	9.1	< 0.1	< 0.1	--	--	--	--	--	--	--	--	--	0.1	--
<i>Catalpa speciosa</i>	9.1	0.1	0.5	--	--	--	--	--	--	1.6	--	--	--	--
<i>Cephalanthus occidentalis</i>	9.1	< 0.1	< 0.1	--	--	--	--	--	--	--	--	--	--	0.1
<i>Clethra alnifolia</i>	27.3	0.6	1.4	4.1	--	--	--	--	--	--	2.7	0.1	--	--
<i>Cornus florida</i>	9.1	0.1	0.4	1.3	--	--	--	--	--	--	--	--	--	--
<i>Crataegus</i> sp.	9.1	< 0.1	< 0.1	--	--	0.1	--	--	--	--	--	--	--	--
<i>Cyrilla racemiflora</i>	45.5	1.0	2.0	--	--	2.0	--	1.3	--	--	0.6	--	0.2	6.7
<i>Diospyros virginiana</i>	27.3	0.2	0.6	--	0.1	--	0.1	--	--	--	--	1.9	--	--
<i>Fraxinus pennsylvanica</i>	18.2	1.4	3.1	--	--	6.9	--	8.2	--	--	--	--	--	--
<i>Fraxinus</i> sp.	9.1	1.6	5.3	--	--	--	--	--	--	--	--	--	--	17.5
<i>Gaylussacia frondosa</i>	27.3	0.4	0.7	--	1.4	--	--	--	0.5	--	--	2.1	--	--
<i>Hypericum hypericoides</i>	9.1	0.1	0.2	--	--	--	--	0.7	--	--	--	--	--	--
<i>Ilex ambigua</i>	9.1	0.2	0.8	--	--	2.5	--	--	--	--	--	--	--	--
<i>Ilex coriacea</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	36.4	1.6	4.0	2.6	0.6	--	--	--	13.4	--	--	--	0.8	--
<i>Ilex opaca</i>	63.6	1.4	2.0	6.0	4.4	1.4	--	0.6	--	--	0.6	0.8	1.3	--
<i>Itea virginica</i>	9.1	0.1	0.3	--	--	--	--	0.9	--	--	--	--	--	--
<i>Liquidambar styraciflua</i>	90.9	5.1	7.6	9.2	8.2	0.8	1.3	--	3.0	4.2	3.0	0.2	25.9	0.1
<i>Lyonia lucida</i>	27.3	1.0	2.8	1.3	--	--	--	--	9.3	--	--	0.1	--	--
<i>Magnolia grandiflora</i>	18.2	0.3	0.7	--	0.7	--	--	--	--	2.2	--	--	--	--
<i>Magnolia virginiana</i>	9.1	0.2	0.6	--	--	--	--	--	1.9	--	--	--	--	--
<i>Morella cerifera</i>	81.8	2.6	4.3	6.4	0.6	--	2.9	--	2.0	14.4	1.4	--	0.6	0.6
<i>Nyssa biflora</i>	36.4	0.1	0.3	--	--	--	--	0.1	--	--	0.6	--	0.1	0.7
<i>Nyssa sylvatica</i>	27.3	0.2	0.4	0.8	0.6	--	1.3	--	--	--	--	--	--	--
<i>Persea borbonia</i>	54.5	0.8	1.8	5.9	0.2	--	--	--	1.5	--	0.6	0.7	0.1	--
<i>Photinia pyrifolia</i>	27.3	0.8	2.1	1.4	0.7	--	--	--	7.2	--	--	--	--	--
<i>Pinus taeda</i>	27.3	4.6	13.3	5.0	--	--	0.6	--	--	--	44.5	--	--	--

Table 5 (continued). Percentage of area covered (absolute cover) and frequency of occurrence of shrub species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across shrub plots at each sampling location, and park-wide calculations are averaged across all sampling locations [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns indicate sampling location.

Taxon	<i>f_i</i>	mean	<i>sd</i>	1	2	3	4	5	6	7	8	9	10	11
<i>Prunus serotina</i>	9.1	< 0.1	< 0.1	--	--	--	--	--	--	--	--	--	0.1	--
<i>Quercus laurifolia</i>	45.5	1.4	3.5	11.9	0.7	1.9	--	0.6	--	--	--	0.2	--	--
<i>Quercus lyrata</i>	9.1	0.1	0.4	--	--	--	--	1.3	--	--	--	--	--	--
<i>Quercus nigra</i>	63.6	1.2	1.4	3.4	3.8	--	--	--	2.0	0.7	0.6	0.9	2.3	--
<i>Quercus stellata</i>	27.3	0.6	1.6	0.6	--	--	--	--	--	--	--	5.2	1.3	--
<i>Rhus copallinum</i>	18.2	0.1	0.2	--	0.7	--	--	--	--	--	--	--	0.2	--
<i>Sassafras albidum</i>	27.3	0.4	1.0	0.1	1.3	--	--	--	--	--	--	3.1	--	--
<i>Symplocos tinctoria</i>	36.4	1.2	2.4	0.6	0.7	--	--	--	6.6	--	--	5.6	--	--
<i>Taxodium ascendens</i>	18.2	0.1	0.2	--	--	0.2	--	0.6	--	--	--	--	--	--
<i>Vaccinium arboreum</i>	36.4	0.5	1.0	0.6	1.6	--	--	--	--	--	--	3.2	0.1	--
<i>Vaccinium corymbosum</i>	45.5	0.7	1.4	4.4	2.5	0.7	--	--	0.1	--	--	--	0.1	--
<i>Vaccinium elliotii</i>	36.4	0.4	0.7	--	--	1.4	--	1.9	--	--	1.4	--	--	0.2
<i>Vaccinium pallidum</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--

Table 6. Percentage of vegetation cover (relative cover) and frequency of occurrence of groundcover species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [f_i —relative frequency; sd —standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acalypha gracilens</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Acer rubrum</i>	36.4	0.2	0.3	0.7	--	--	--	0.7	--	0.1	--	0.5	--	--
<i>Agalinis</i> sp.	9.1	0.5	1.5	--	--	--	--	--	--	--	--	--	5.0	--
<i>Ambrosia artemisiifolia</i>	9.1	0.0	0.1	--	--	--	--	--	--	0.5	--	--	--	--
<i>Andropogon virginicus</i>	27.3	0.6	1.2	0.7	--	--	2.6	--	--	--	--	3.2	--	--
<i>Aristida stricta</i>	27.3	0.9	2.1	--	--	--	0.1	--	--	--	--	2.7	6.8	--
<i>Aronia arbutifolia</i>	18.2	2.6	8.4	--	--	--	--	--	28.1	--	--	--	1.0	--
<i>Arundinaria gigantea</i>	45.5	4.1	10.6	--	0.7	--	--	4.1	2.8	--	35.8	--	1.4	--
<i>Asplenium platyneuron</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	0.5	--	--	--	--
Asteraceae	18.2	0.7	1.8	1.4	--	--	--	--	--	--	--	--	6.0	--
<i>Baptisia</i> sp.	9.1	0.2	0.7	--	--	--	--	--	2.4	--	--	--	--	--
<i>Befaria racemosa</i>	9.1	0.2	0.7	--	--	--	--	--	2.4	--	--	--	--	--
<i>Bignonia capreolata</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Campsis radicans</i>	36.4	0.4	0.8	--	--	--	--	0.7	--	0.5	--	2.7	0.2	--
<i>Carex</i> sp.	18.2	0.9	2.6	--	--	--	0.9	8.8	--	--	--	--	--	--
<i>Carya alba</i>	9.1	0.2	0.8	--	--	--	--	--	--	--	--	2.7	--	--
<i>Cephalanthus occidentalis</i>	9.1	0.4	1.2	--	--	--	--	4.1	--	--	--	--	--	--
<i>Chamaecrista</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Chamaesyce maculata</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Clethra alnifolia</i>	18.2	1.9	4.3	9.3	--	--	--	--	--	--	11.7	--	--	--
<i>Conyza canadensis</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
Cyperaceae	18.2	0.1	0.4	--	--	--	0.4	--	--	--	--	--	1.2	--
<i>Cyrilla racemiflora</i>	36.4	1.8	3.3	--	--	1.4	--	4.7	--	--	3.2	--	--	10.4
<i>Desmodium</i> sp.	9.1	0.3	1.1	--	--	--	--	--	--	--	--	--	3.6	--
<i>Dichanthelium</i> sp.	27.3	0.8	1.7	4.9	--	--	3.1	--	--	--	--	0.5	--	--
<i>Diodia teres</i>	18.2	0.2	0.4	0.7	--	--	1.3	--	--	--	--	--	--	--
<i>Diospyros virginiana</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	0.5	--	--
<i>Elephantopus nudatus</i>	9.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--	--
<i>Elephantopus tomentosus</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Erechtites hieraciifolia</i>	9.1	< 0.1	< 0.1	--	--	--	0.1	--	--	--	--	--	--	--

Table 6 (continued). Percentage of vegetation cover (relative cover) and frequency of occurrence of groundcover species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [f_i —relative frequency; sd —standard deviation]. Numbered columns indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Eremochloa ophiuroides</i>	27.3	4.7	13.4	4.2	2.8	--	45.0	--	--	--	--	--	--	--
<i>Eupatorium capillifolium</i>	9.1	0.3	0.9	--	--	--	3.1	--	--	--	--	--	--	--
<i>Eupatorium</i> sp.	9.1	0.2	0.7	--	--	--	--	--	--	--	--	--	2.4	--
<i>Euphorbiaceae</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	0.5	--	--
Fabaceae	27.3	0.6	1.6	--	--	--	0.9	--	--	--	--	0.5	5.2	--
<i>Fraxinus pennsylvanica</i>	9.1	0.6	2.1	--	--	--	--	7.1	--	--	--	--	--	--
<i>Fraxinus</i> sp.	18.2	0.4	0.9	--	--	2.8	--	--	--	--	--	--	--	1.3
<i>Galium</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.4	--
<i>Gaylussacia frondosa</i>	27.3	2.3	5.1	--	0.7	--	--	--	8.8	--	--	15.3	--	--
<i>Gelsemium sempervirens</i>	90.9	11.4	10.5	10.0	33.9	1.4	3.1	17.6	10.4	13.6	6.9	24.8	3.8	--
<i>Gnaphalium</i> sp.	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Hexastylis arifolia</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--
<i>Ilex coriacea</i>	9.1	0.4	1.3	4.2	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	36.4	1.6	4.0	0.7	0.7	--	--	--	13.3	--	--	--	2.4	--
<i>Ilex opaca</i>	27.3	0.3	0.6	--	1.4	--	--	--	--	--	0.3	--	1.4	--
<i>Itea virginica</i>	9.1	0.4	1.2	--	--	--	--	4.1	--	--	--	--	--	--
<i>Juncus</i> sp.	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Lemna</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	0.5	--	--	--	--
<i>Lespedeza cuneata</i>	18.2	0.1	0.2	0.7	--	--	--	--	--	--	--	--	0.2	--
<i>Liquidambar styraciflua</i>	63.6	1.0	1.5	4.2	0.7	--	0.4	0.7	0.4	--	0.6	--	3.8	--
<i>Lobelia</i> sp.	9.1	0.1	0.4	--	--	--	--	--	--	--	--	--	1.2	--
<i>Lonicera japonica</i>	18.2	0.5	1.5	4.9	--	--	--	--	--	0.5	--	--	--	--
<i>Ludwigia</i> sp.	9.1	0.2	0.7	--	--	--	--	--	--	--	--	--	2.4	--
<i>Lyonia lucida</i>	18.2	2.4	7.8	0.7	--	--	--	--	26.1	--	--	--	--	--
<i>Magnoliopsida</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Malaxis unifolia</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--
<i>Medicago lupulina</i>	9.1	0.3	1.1	--	--	--	3.5	--	--	--	--	--	--	--
<i>Mitchella repens</i>	27.3	1.0	2.5	1.4	8.5	--	--	--	--	--	--	--	1.4	--
<i>Morella cerifera</i>	18.2	0.6	1.3	--	--	--	2.6	--	--	3.6	--	--	--	--

Table 6 (continued). Percentage of vegetation cover (relative cover) and frequency of occurrence of groundcover species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [f_i —relative frequency; sd—standard deviation]. Numbered columns indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Nyssa biflora</i>	18.2	3.3	8.0	--	--	25.1	--	11.5	--	--	--	--	--	--
<i>Nyssa sylvatica</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--
<i>Onoclea sensibilis</i>	9.1	0.4	1.2	--	--	--	--	4.1	--	--	--	--	--	--
<i>Osmunda regalis</i>	18.2	2.9	6.5	--	--	16.8	--	--	--	--	--	--	--	15.6
<i>Oxalis stricta</i>	9.1	0.1	0.2	--	--	--	0.6	--	--	--	--	--	--	--
<i>Parthenocissus quinquefolia</i>	36.4	1.7	2.9	0.1	--	--	5.7	--	--	6.5	--	--	6.8	--
<i>Paspalum notatum</i>	9.1	0.3	0.9	--	--	--	3.1	--	--	--	--	--	--	--
<i>Paspalum</i> sp.	18.2	0.6	1.6	--	--	--	5.2	--	--	--	--	--	1.4	--
<i>Persea borbonia</i>	9.1	0.4	1.5	4.9	--	--	--	--	--	--	--	--	--	--
<i>Pinus palustris</i>	18.2	0.6	1.6	--	--	--	5.2	--	--	--	1.6	--	--	--
<i>Pinus taeda</i>	45.5	0.8	1.5	4.2	--	--	1.0	--	--	2.9	0.1	--	0.0	--
Poaceae	27.3	1.8	4.3	2.1	--	--	--	--	--	--	3.5	--	14.4	--
<i>Polypremum procumbens</i>	9.1	0.1	0.2	0.7	--	--	--	--	--	--	--	--	--	--
<i>Potentilla</i> sp.	9.1	0.2	0.8	--	--	--	2.6	--	--	--	--	--	--	--
<i>Pteridium aquilinum</i>	9.1	1.5	5.0	--	--	--	--	--	--	--	--	16.7	--	--
<i>Quercus nigra</i>	54.5	1.5	1.7	4.2	1.4	--	--	--	--	2.7	3.7	3.6	0.6	--
<i>Quercus stellata</i>	18.2	0.5	1.6	--	--	--	--	--	--	--	--	5.4	0.2	--
<i>Rhexia mariana</i>	9.1	0.1	0.4	--	--	--	--	--	--	--	--	--	1.2	--
<i>Rhus copallinum</i>	9.1	0.3	0.8	--	--	--	--	--	--	--	--	--	2.8	--
<i>Richardia brasiliensis</i>	9.1	0.2	0.8	--	--	--	2.6	--	--	--	--	--	--	--
<i>Rubus argutus</i>	9.1	< 0.1	0.1	--	--	--	0.4	--	--	--	--	--	--	--
<i>Rubus cuneifolius</i>	18.2	0.4	1.1	--	--	--	--	--	--	--	0.3	--	3.6	--
<i>Salvia lyrata</i>	9.1	0.5	1.8	--	--	--	--	--	--	--	--	--	6.0	--
<i>Sassafras albidum</i>	9.1	0.2	0.5	--	--	--	--	--	--	--	--	1.8	--	--
<i>Scleria triglomerata</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Sisyrinchium atlanticum</i>	9.1	< 0.1	< 0.1	--	--	--	0.1	--	--	--	--	--	--	--
<i>Smilax bona-nox</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Smilax glauca</i>	9.1	< 0.1	0.1	--	--	--	--	--	0.4	--	--	--	--	--
<i>Smilax laurifolia</i>	9.1	0.8	2.7	--	--	--	--	8.8	--	--	--	--	--	--

Table 6 (continued). Percentage of vegetation cover (relative cover) and frequency of occurrence of groundcover species in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [*fi*—relative frequency; *sd*—standard deviation]. Numbered columns indicate sampling location.

[illegible]

Table 7. Percentage of area covered (absolute cover) and frequency of occurrence of groundcover species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	<i>f_i</i>	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acalypha gracilens</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Acer rubrum</i>	36.4	0.1	0.1	0.2	--	--	--	0.2	--	< 0.1	--	0.2	--	--
<i>Agalinis</i> sp.	9.1	0.5	1.6	--	--	--	--	--	--	--	--	--	5.2	--
<i>Ambrosia artemisiifolia</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	0.2	--	--	--	--
<i>Andropogon virginicus</i>	27.3	0.3	0.5	0.2	--	--	1.3	--	--	--	--	1.5	--	--
<i>Aristida stricta</i>	27.3	0.8	2.1	--	--	--	< 0.1	--	--	--	--	1.3	7.1	--
<i>Arundinaria gigantea</i>	45.5	3.0	8.4	--	0.2	--	--	1.3	1.5	--	28.1	--	1.5	--
<i>Asplenium platyneuron</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	0.2	--	--	--	--
Asteraceae	18.2	0.6	1.9	0.4	--	--	--	--	--	--	--	--	6.3	--
<i>Baptisia</i> sp.	9.1	0.1	0.4	--	--	--	--	--	1.3	--	--	--	--	--
<i>Befaria racemosa</i>	9.1	0.1	0.4	--	--	--	--	--	1.3	--	--	--	--	--
<i>Bignonia capreolata</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Campsis radicans</i>	36.4	0.2	0.4	--	--	--	--	0.2	--	0.2	--	1.3	0.2	--
<i>Carex</i> sp.	18.2	0.3	0.8	--	--	--	0.4	2.7	--	--	--	--	--	--
<i>Carya alba</i>	9.1	0.1	0.4	--	--	--	--	--	--	--	--	1.3	--	--
<i>Cephalanthus occidentalis</i>	9.1	0.1	0.4	--	--	--	--	1.3	--	--	--	--	--	--
<i>Chamaecrista</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.3	--
<i>Chamaesyce maculata</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Clethra alnifolia</i>	18.2	1.1	2.8	2.8	--	--	--	--	--	--	9.2	--	--	--
<i>Conyza canadensis</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
Cyperaceae	18.2	0.1	0.4	--	--	--	0.2	--	--	--	--	--	1.3	--
<i>Cyrilla racemiflora</i>	36.4	0.5	0.9	--	--	0.2	--	1.5	--	--	2.5	--	--	1.7
<i>Desmodium</i> sp.	9.1	0.3	1.1	--	--	--	--	--	--	--	--	--	3.8	--
<i>Dichanthelium</i> sp.	27.3	0.3	0.6	1.5	--	--	1.5	--	--	--	--	0.2	--	--
<i>Diodia teres</i>	18.2	0.1	0.2	0.2	--	--	0.6	--	--	--	--	--	--	--
<i>Diospyros virginiana</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	0.2	--	--
<i>Elephantopus nudatus</i>	9.1	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--
<i>Elephantopus tomentosus</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Erechtites hieraciifolia</i>	9.1	< 0.1	< 0.1	--	--	--	< 0.1	--	--	--	--	--	--	--

Table 7 (continued). Percentage of area covered (absolute cover) and frequency of occurrence of groundcover species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns indicate sampling location.

Taxon	<i>f_i</i>	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Eremochloa ophiuroides</i>	27.3	2.1	6.4	1.3	0.8	--	21.5	--	--	--	--	--	--	--
<i>Eupatorium capillifolium</i>	9.1	0.1	0.4	--	--	--	1.5	--	--	--	--	--	--	--
<i>Eupatorium</i> sp.	9.1	0.2	0.8	--	--	--	--	--	--	--	--	--	2.5	--
Euphorbiaceae	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	0.2	--	--
Fabaceae	27.3	0.5	1.6	--	--	--	0.4	--	--	--	--	0.2	5.4	--
<i>Fraxinus pennsylvanica</i>	9.1	0.2	0.7	--	--	--	--	2.2	--	--	--	--	--	--
<i>Fraxinus</i> sp.	18.2	0.1	0.1	--	--	0.4	--	--	--	--	--	--	--	0.2
<i>Galium</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.4	--
<i>Gaylussacia frondosa</i>	27.3	1.1	2.4	--	0.2	--	--	--	4.6	--	--	7.1	--	--
<i>Gelsemium sempervirens</i>	90.9	4.8	3.7	3.0	10.0	0.2	1.5	5.4	5.4	6.3	5.4	11.5	4.0	--
<i>Gnaphalium</i> sp.	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Hexastylis arifolia</i>	9.1	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--
<i>Ilex coriacea</i>	9.1	0.1	0.4	1.3	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	36.4	0.9	2.1	0.2	0.2	--	--	--	6.9	--	--	--	2.5	--
<i>Ilex opaca</i>	27.3	0.2	0.4	--	0.4	--	--	--	--	--	0.2	--	1.5	--
<i>Itea virginica</i>	9.1	0.1	0.4	--	--	--	--	1.3	--	--	--	--	--	--
<i>Juncus</i> sp.	9.1	< 0.1	< 0.1	--	--	--	0.1	--	--	--	--	--	--	--
<i>Lemna</i> sp.	9.1	< 0.1	0.1	--	--	--	--	--	--	0.2	--	--	--	--
<i>Lespedeza cuneata</i>	18.2	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	0.2	--
<i>Liquidambar styraciflua</i>	63.6	0.6	1.2	1.3	0.2	--	0.2	0.2	0.2	--	0.5	--	4.0	--
<i>Lobelia</i> sp.	9.1	0.1	0.4	--	--	--	--	--	--	--	--	--	1.3	--
<i>Lonicera japonica</i>	18.2	0.2	0.4	1.5	--	--	--	--	--	0.2	--	--	--	--
<i>Ludwigia</i> sp.	9.1	0.2	0.8	--	--	--	--	--	--	--	--	--	2.5	--
<i>Lyonia lucida</i>	18.2	1.3	4.1	0.2	--	--	--	--	13.5	--	--	--	--	--
Magnoliopsida	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Malaxis unifolia</i>	9.1	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--
<i>Medicago lupulina</i>	9.1	0.2	0.5	--	--	--	1.7	--	--	--	--	--	--	--
<i>Mitchella repens</i>	27.3	0.4	0.8	0.4	2.5	--	--	--	--	--	--	--	1.5	--
<i>Morella cerifera</i>	18.2	0.3	0.6	--	--	--	1.3	--	--	1.7	--	--	--	--
<i>Nyssa biflora</i>	18.2	0.7	1.5	--	--	3.8	--	3.5	--	--	--	--	--	--

Table 7 (continued). Percentage of area covered (absolute cover) and frequency of occurrence of groundcover species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [f_i —relative frequency; sd —standard deviation]. Numbered columns indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Nyssa sylvatica</i>	9.1	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--
<i>Onoclea sensibilis</i>	9.1	0.1	0.4	--	--	--	--	1.3	--	--	--	--	--	--
<i>Osmunda regalis</i>	18.2	0.5	1.0	--	--	2.5	--	--	--	--	--	--	--	2.5
<i>Oxalis stricta</i>	9.1	< 0.1	0.1	--	--	--	0.3	--	--	--	--	--	--	--
<i>Parthenocissus quinquefolia</i>	36.4	1.2	2.3	< 0.1	--	--	2.7	--	--	3.0	--	--	7.1	--
<i>Paspalum notatum</i>	9.1	0.1	0.4	--	--	--	1.5	--	--	--	--	--	--	--
<i>Paspalum</i> sp.	18.2	0.4	0.8	--	--	--	2.5	--	--	--	--	--	1.5	--
<i>Persea borbonia</i>	9.1	0.1	0.4	1.5	--	--	--	--	--	--	--	--	--	--
<i>Photinia pyrifolia</i>	18.2	1.4	4.4	--	--	--	--	--	14.6	--	--	--	1.0	--
<i>Pinus palustris</i>	18.2	0.3	0.8	--	--	--	2.5	--	--	--	1.3	--	--	--
<i>Pinus taeda</i>	45.5	0.3	0.5	1.3	--	--	0.5	--	--	1.3	< 0.1	--	< 0.1	--
Poaceae	27.3	1.7	4.5	0.6	--	--	--	--	--	--	2.7	--	15.0	--
<i>Polypremum procumbens</i>	9.1	< 0.1	0.1	0.2	--	--	--	--	--	--	--	--	--	--
<i>Potentilla</i> sp.	9.1	0.1	0.4	--	--	--	1.3	--	--	--	--	--	--	--
<i>Pteridium aquilinum</i>	9.1	0.7	2.3	--	--	--	--	--	--	--	--	7.7	--	--
<i>Quercus nigra</i>	54.5	0.7	0.9	1.3	0.4	--	--	--	--	1.3	2.9	1.7	0.7	--
<i>Quercus stellata</i>	18.2	0.2	0.8	--	--	--	--	--	--	--	--	2.5	0.2	--
<i>Rhexia mariana</i>	9.1	0.1	0.4	--	--	--	--	--	--	--	--	--	1.3	--
<i>Rhus copallinum</i>	9.1	0.3	0.9	--	--	--	--	--	--	--	--	--	2.9	--
<i>Richardia brasiliensis</i>	9.1	0.1	0.4	--	--	--	1.3	--	--	--	--	--	--	--
<i>Rubus argutus</i>	9.1	< 0.1	0.1	--	--	--	0.2	--	--	--	--	--	--	--
<i>Rubus cuneifolius</i>	18.2	0.4	1.1	--	--	--	--	--	--	--	0.3	--	3.8	--
<i>Salvia lyrata</i>	9.1	0.6	1.9	--	--	--	--	--	--	--	--	--	6.3	--
<i>Sassafras albidum</i>	9.1	0.1	0.3	--	--	--	--	--	--	--	--	0.8	--	--
<i>Scleria triglomerata</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Sisyrinchium atlanticum</i>	9.1	< 0.1	< 0.1	--	--	--	< 0.1	--	--	--	--	--	--	--
<i>Smilax bona-nox</i>	9.1	< 0.1	0.1	--	--	--	--	--	--	--	--	--	0.2	--
<i>Smilax glauca</i>	9.1	< 0.1	0.1	--	--	--	--	--	0.2	--	--	--	--	--
<i>Smilax laurifolia</i>	9.1	0.2	0.8	--	--	--	--	2.7	--	--	--	--	--	--
<i>Smilax rotundifolia</i>	81.8	6.8	8.9	2.5	4.6	4.9	1.3	2.7	--	23.3	23.5	--	0.2	11.7

Table 7 (continued). Percentage of area covered (absolute cover) and frequency of occurrence of groundcover species sampled in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [*fi*—relative frequency; *sd*—standard deviation]. Numbered columns indicate sampling location.

[illegible]

Table 8. Percentage of ground condition types (relative cover) and frequency of occurrence of ground condition types in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Relative cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations [f_i —relative frequency; sd—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Ground Condition	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
Aquatic/Obligate Non-Vascular	27.3	1.7	3.1	--	--	8.6	--	6.5	--	--	--	--	--	3.1
Bare Ground	63.6	6.4	9.1	8.3	20.5	1.4	18.5	--	--	--	0.2	0.2	21.0	--
Exposed Humus	27.3	12.7	23.9	--	--	35.1	--	32.5	--	--	--	--	--	72.1
Leaf Litter/Duff	100.0	76.3	24.1	84.3	79.3	50.0	73.1	61.0	100.0	90.4	99.8	99.8	79.0	22.3
Open Water	27.3	1.2	2.6	--	--	3.5	--	--	--	8.3	--	--	--	1.2
Tree Base	45.5	1.4	2.2	4.3	--	1.4	6.9	--	--	1.3	--	--	--	1.2
Upland Non-Vascular/Lichen	27.3	0.4	1.0	3.0	0.2	--	1.4	--	--	--	--	--	--	--

Table 9. Percentage of ground condition types (absolute cover) and frequency of occurrence of ground condition types in vegetation monitoring sampling locations at Moores Creek National Battlefield in 2014. Absolute cover is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Ground Condition	<i>f_i</i>	mean	sd	1	2	3	4	5	6	7	8	9	10	11
Aquatic/Obligate Non-Vascular	27.3	1.6	2.9	--	--	7.7	--	6.5	--	--	--	--	--	3.1
Bare Ground	63.6	6.5	9.3	8.5	20.6	1.3	19.0	--	--	--	0.2	0.2	21.7	--
Exposed Humus	27.3	12.5	23.9	--	--	31.5	--	32.3	--	--	--	--	--	73.3
Leaf Litter/Duff	100.0	75.5	23.9	86.5	79.6	44.8	74.8	60.6	97.5	88.3	96.5	97.5	81.7	22.7
Open Water	27.3	1.1	2.5	--	--	3.1	--	--	--	8.1	--	--	--	1.3
Tree Base	45.5	1.4	2.3	4.4	--	1.3	7.1	--	--	1.3	--	--	--	1.3
Upland Non-Vascular/Lichen	27.3	0.4	1.0	3.1	0.2	--	1.5	--	--	--	--	--	--	--

Table 10. Average canopy species size, measured as diameter (cm) at breast height (DBH) for species sampled in vegetation monitoring macroplots at Moores Creek National Battlefield in 2014. Numbers in parentheses indicate the number of individual trees measured within each plot. DBH measurements are averaged across DBH plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [f_i —relative frequency; sd—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	f_i	mean	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acer rubrum</i>	36.4	12.9	9.9	10.1 (9)	--	15.2 (6)	--	11.3 (42)	--	--	--	--	--	11.5 (14)
<i>Carya alba</i>	9.1	12.7	5.7	11.5 (3)	--	--	--	--	--	--	--	--	--	--
<i>Cornus florida</i>	9.1	6.1	2.4	6.1 (6)	--	--	--	--	--	--	--	--	--	--
<i>Cyrilla racemiflora</i>	27.3	8.0	5.4	--	--	7.2 (25)	--	5.0 (4)	--	--	--	--	--	9.6 (21)
<i>Fraxinus pennsylvanica</i>	18.2	16.0	13.1	--	--	6.3 (5)	--	5.8 (8)	--	--	--	--	--	--
<i>Fraxinus</i> sp.	18.2	5.4	1.5	--	--	5.9 (15)	--	--	--	--	--	--	--	5.0 (19)
<i>Ilex myrtifolia</i>	9.1	4.4	0.6	--	--	4.7 (2)	--	--	--	--	--	--	--	--
<i>Ilex opaca</i>	45.5	8.6	4.8	6.9 (8)	8.6 (4)	12.0 (4)	--	8.1 (6)	--	--	--	17.0 (2)	--	--
<i>Liquidambar styraciflua</i>	63.6	19.0	17.4	12.9 (9)	11.8 (12)	7.5 (7)	28.6 (1)	36.7 (2)	--	13.7 (23)	--	--	--	10.0 (1)
<i>Morella cerifera</i>	36.4	5.8	2.0	4.5 (2)	5.4 (5)	--	4.9 (8)	--	--	8.6 (12)	--	--	--	--
<i>Nyssa biflora</i>	27.3	17.8	11.0	--	--	34.6 (7)	--	16.9 (26)	--	--	--	--	--	16.4 (52)
<i>Nyssa sylvatica</i>	9.1	6.3	--	--	6.3 (1)	--	--	--	--	--	--	--	--	--
<i>Parthenocissus quinquefolia</i>	9.1	5.0	1.2	--	--	--	4.6 (1)	--	--	--	--	--	--	--
<i>Persea borbonia</i>	18.2	7.2	3.6	4.4 (2)	--	--	--	--	--	--	8.5 (1)	--	--	--
<i>Pinus elliotii</i>	9.1	15.3	10.3	--	--	--	--	--	32.4 (10)	--	--	--	--	--
<i>Pinus palustris</i>	18.2	12.1	7.3	--	--	--	--	--	--	--	--	7.4 (1)	4.1 (1)	--
<i>Pinus taeda</i>	72.7	25.2	19.6	41.7 (5)	18.2 (26)	70.7 (1)	29.1 (4)	28.3 (2)	--	59.3 (6)	8.6 (15)	30.1 (17)	--	--
<i>Quercus alba</i>	9.1	25.8	9.1	--	--	--	--	--	--	--	--	19.4 (1)	--	--
<i>Quercus laurifolia</i>	27.3	11.4	10.0	5.9 (10)	--	8.8 (10)	--	13.1 (4)	--	--	--	--	--	--
<i>Quercus nigra</i>	36.4	17.6	20.1	19.2 (2)	--	--	--	38.1 (4)	--	14.6 (1)	--	--	60.1 (1)	--
<i>Quercus stellata</i>	18.2	18.4	11.9	4.7 (1)	--	--	--	--	--	--	--	25.3 (2)	--	--
<i>Taxodium ascendens</i>	27.3	35.8	22.5	--	--	50.3 (2)	--	33.9 (22)	--	--	--	--	--	25.1 (22)

Table 11. Average dead snag (standing dead trees) size, measured as diameter (cm) at breast height (DBH) for species sampled in vegetation monitoring macroplots at Moores Creek National Battlefield in 2014. Numbers in parentheses indicate the number of individual snags measured within each plot. DBH measurements are averaged across DBH plots at each sampling location, and park-wide calculations are averaged across all sampling locations [*f_i*—relative frequency; *sd*—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	<i>f_i</i>	mean	sd	43	45	46	47	48	49	51	52	53	54	55
<i>Acer rubrum</i>	18.2	11.4	12.4	--	--	--	--	--	--	12.2 (2)	--	--	--	4.8 (2)
<i>Ilex opaca</i>	9.1	6.7	3.7	4.0 (1)	--	--	--	--	--	--	--	--	--	--
<i>Liquidambar styraciflua</i>	9.1	7.1	4.3	--	--	--	--	--	4.0 (1)	--	--	--	--	--
<i>Morella cerifera</i>	9.1	8.6	4.7	--	--	--	--	--	--	13.0 (2)	--	--	--	--
<i>Nyssa biflora</i>	9.1	13.8	10.3	--	--	--	--	4.2 (2)	--	--	--	--	--	--
<i>Persea borbonia</i>	9.1	10.6	5.6	--	--	--	--	--	4.0 (1)	--	--	--	--	--
<i>Pinus taeda</i>	27.3	12.1	11.0	13.7 (3)	6.1 (1)	--	--	--	--	--	4.7 (2)	--	--	--
<i>Quercus nigra</i>	9.1	4.6	0.7	--	--	--	--	--	4.6 (2)	--	--	--	--	--
<i>Taxodium ascendens</i>	18.2	24.3	21.0	--	--	--	--	47.9 (2)	--	--	--	--	--	8.6 (1)

Table 12. Seedling frequency for canopy and shrub species in vegetation monitoring macroplots at Moores Creek National Battlefield in 2014. Seedling frequency is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [m—meters; sd—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	Total Seedlings	Seedlings/m ²	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Acer rubrum</i>	8	0.2	0.1	0.1	--	--	--	0.3	--	0.2	--	0.1	--	--
<i>Aronia arbutifolia</i>	179	7.5	9.1	--	--	--	--	--	13.9	--	--	--	1.0	--
<i>Befaria racemosa</i>	3	0.3	--	--	--	--	--	--	0.3	--	--	--	--	--
<i>Carya alba</i>	1	0.1	--	--	--	--	--	--	--	--	--	0.1	--	--
<i>Cephalanthus occidentalis</i>	6	0.5	--	--	--	--	--	0.5	--	--	--	--	--	--
<i>Clethra alnifolia</i>	176	7.3	7.8	1.8	--	--	--	--	--	--	12.8	--	--	--
<i>Cyrilla racemiflora</i>	39	0.8	0.6	--	--	0.1	--	0.8	--	--	1.4	--	--	0.9
<i>Diospyros virginiana</i>	1	0.1	--	--	--	--	--	--	--	--	--	0.1	--	--
<i>Fraxinus pennsylvanica</i>	15	1.3	--	--	--	--	--	1.3	--	--	--	--	--	--
<i>Fraxinus</i> sp.	6	0.3	0.2	--	--	0.4	--	--	--	--	--	--	--	0.1
<i>Gaylussacia dumosa</i>	184	5.1	6.1	--	0.3	--	--	--	3.2	--	--	11.9	--	--
<i>Ilex coriacea</i>	6	0.5	--	0.5	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	110	2.3	3.3	0.1	0.3	--	--	--	7.1	--	--	--	1.8	--
<i>Ilex opaca</i>	9	0.3	0.2	--	0.2	--	--	--	--	--	0.1	--	0.5	--
<i>Itea virginica</i>	6	0.5	--	--	--	--	--	0.5	--	--	--	--	--	--
<i>Liquidambar styraciflua</i>	31	0.4	0.4	0.1	0.3	--	0.1	0.3	0.1	--	0.7	--	1.2	--
<i>Lyonia lucida</i>	246	10.3	14.4	0.1	--	--	--	--	20.4	--	--	--	--	--
<i>Morella cerifera</i>	21	0.9	0.1	--	--	--	0.9	--	--	0.8	--	--	--	--
<i>Nyssa biflora</i>	102	4.3	1.5	--	--	5.3	--	3.2	--	--	--	--	--	--
<i>Nyssa sylvatica</i>	1	0.1	--	0.1	--	--	--	--	--	--	--	--	--	--
<i>Persea borbonia</i>	3	0.3	--	0.3	--	--	--	--	--	--	--	--	--	--
<i>Pinus palustris</i>	3	0.1	0.1	--	--	--	0.2	--	--	--	0.1	--	--	--
<i>Pinus taeda</i>	16	0.3	0.3	0.1	--	--	0.4	--	--	0.7	0.1	--	0.1	--
<i>Quercus nigra</i>	24	0.4	0.2	--	0.3	--	--	--	--	0.2	0.7	0.4	0.5	--
<i>Quercus stellata</i>	4	0.2	0.1	--	--	--	--	--	--	--	--	0.3	0.1	--
<i>Rhus copallinum</i>	7	0.6	--	--	--	--	--	--	--	--	--	--	0.6	--
<i>Sassafras albidum</i>	5	0.4	--	--	--	--	--	--	--	--	--	0.4	--	--
<i>Symplocos tinctoria</i>	9	0.4	0.2	0.5	--	--	--	--	0.3	--	--	--	--	--
<i>Taxodium ascendens</i>	2	0.2	--	--	--	0.2	--	--	--	--	--	--	--	--
<i>Vaccinium arboreum</i>	77	2.1	3.4	--	0.3	--	--	--	--	--	--	6.1	0.1	--
<i>Vaccinium corymbosum</i>	6	0.3	0.1	0.3	--	--	--	--	--	--	--	--	0.2	--
<i>Vaccinium elliotii</i>	2	0.2	--	--	--	--	--	--	--	--	0.2	--	--	--

Table 12 (continued). Seedling frequency for canopy and shrub species in vegetation monitoring macroplots at Moores Creek National Battlefield in 2014. Seedling frequency is averaged across groundcover plots at each sampling location, and park-wide calculations are averaged across all sampling locations. [m—meters; sd—standard deviation]. Numbered columns to the right of standard deviation column indicate sampling location.

Taxon	Total Seedlings	Seedlings/m ²	sd	1	2	3	4	5	6	7	8	9	10	11
<i>Vaccinium myrsinites</i>	179	5.0	2.8	--	--	--	--	--	7.5	--	--	5.4	2.0	--
<i>Vaccinium pallidum</i>	4	0.3	--	0.3	--	--	--	--	--	--	--	--	--	--

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Appendix A. Plant Species Known to Occur at Moores Creek

Table A-1. Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Alismatales	Alismataceae	<i>Sagittaria graminea</i>	grass-leaf arrowhead, grassy arrowhead	X	--	--
Alismatales	Alismataceae	<i>Sagittaria subulata</i>	awl-leaf arrowhead	X	--	--
Alismatales	Araceae	<i>Lemna</i> sp.	duckweed	--	--	X
Alismatales	Araceae	<i>Orontium aquaticum</i>	goldenclub	X	--	--
Alismatales	Tofieldiaceae	<i>Tofieldia racemosa</i>	coastal false asphodel	X	--	--
Apiales	Apiaceae	<i>Centella asiatica</i>	spadeleaf	X	--	--
Apiales	Apiaceae	<i>Centella erecta</i>	erect centella	X	--	--
Apiales	Apiaceae	<i>Eryngium integrifolium</i>	blueflower eryngo, simpleleaf eryngo	X	--	--
Apiales	Apiaceae	<i>Hydrocotyle umbellata</i>	manyflower marsh pennywort	--	X	--
Apiales	Apiaceae	<i>Hydrocotyle verticillata</i> var. <i>verticillata</i>	whorled marsh pennywort, whorled marshpennywort	X	--	--
Apiales	Apiaceae	<i>Oxypolis rigidior</i>	stiff cowbane	X	--	--
Apiales	Apiaceae	<i>Ptilimnium capillaceum</i>	herbwilliam, threadleaf mockbishopweed	X	--	--
Apiales	Apiaceae	<i>Spermolepis divaricata</i>	forked scaleseed, roughfruit scaleseed	X	--	--
Apiales	Araliaceae	<i>Aralia spinosa</i>	devil's walking stick	--	X	--
Aquifoliales	Aquifoliaceae	<i>Ilex amelanchier</i>	sarvis holly	X	--	--
Aquifoliales	Aquifoliaceae	<i>Ilex coriacea</i>	large gallberry	X	--	X
Aquifoliales	Aquifoliaceae	<i>Ilex glabra</i>	inkberry	X	--	X
Aquifoliales	Aquifoliaceae	<i>Ilex myrtifolia</i>	myrtle dahoon	X	--	--
Aquifoliales	Aquifoliaceae	<i>Ilex opaca</i>	American holly	X	--	X
Aquifoliales	Aquifoliaceae	<i>Ilex verticillata</i>	common winterberry	X	--	--
Arecales	Arecaceae	<i>Sabal minor</i>	dwarf palmetto	X	--	--
Asparagales	Amaryllidaceae	<i>Allium vineale</i>	wild garlic	X	--	--
Asparagales	Amaryllidaceae	<i>Hymenocallis floridana</i>	Florida spiderlily	X	--	--
Asparagales	Amaryllidaceae	<i>Narcissus tazetta</i> X <i>poeticus</i>	daffodil 'primrose-peerless'	X	--	--
Asparagales	Asparagaceae	<i>Yucca filamentosa</i>	Adam's needle	X	--	--
Asparagales	Hypoxidaceae	<i>Hypoxis hirsuta</i> var. <i>leptocarpa</i>	common goldstar, common star-grass	X	--	--
Asparagales	Hypoxidaceae	<i>Hypoxis wrightii</i>	Wright's star-grass	X	--	--
Asparagales	Iridaceae	<i>Gladiolus</i> X <i>gandavensis</i>	gladiolus	X	--	--
Asparagales	Iridaceae	<i>Iris verna</i>	dwarf violet iris	X	--	--
Asparagales	Iridaceae	<i>Iris verna</i> var. <i>verna</i>	dwarf violet iris	X	--	--
Asparagales	Iridaceae	<i>Iris virginica</i>	Virginia iris	X	--	--
Asparagales	Iridaceae	<i>Sisyrinchium atlanticum</i>	eastern blue-eyed grass	X	--	X
Asparagales	Iridaceae	<i>Sisyrinchium fuscatum</i>	coastal plain blueeyed grass, coastal plain blue-eyed grass	X	--	--
Asparagales	Iridaceae	<i>Sisyrinchium rosulatum</i>	annual blueeyed grass, annual blue-eyed grass	X	--	--
Asparagales	Orchidaceae	<i>Calopogon pulchellus</i>	tuberous grass pink	X	--	--
Asparagales	Orchidaceae	<i>Cleistes divaricata</i>	rosebud orchid	X	--	--
Asparagales	Orchidaceae	<i>Habenaria blephariglottis</i>	white-fringed bog orchid	X	--	--
Asparagales	Orchidaceae	<i>Malaxis unifolia</i>	green addersmouth orchid, green adder's-mouth orchid	X	--	X
Asparagales	Orchidaceae	<i>Platanthera ciliaris</i>	yellow fringed orchid	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Asparagales	Orchidaceae	<i>Spiranthes cernua</i>	common ladies' tresses, nodding ladiestresses, nodding ladies'-tresses, nodding lady's tresses, white nodding ladies'-tresses	X	--	--
Asparagales	Orchidaceae	<i>Spiranthes gracilis</i>	slender ladies'-tresses	X	--	--
Asparagales	Orchidaceae	<i>Spiranthes praecox</i>	greenvein ladiestresses, greenvein ladies'-tresses, greenvein lady's tresses	X	--	--
Asparagales	Orchidaceae	<i>Tipularia discolor</i>	crippled crane fly	X	--	--
Asparagales	Xanthorrhoeaceae	<i>Heemerocallis fulva</i>	orange daylily, tawny daylily	X	--	--
Asterales	Asteraceae	<i>Achillea millefolium</i>	bloodwort, carpenter's weed, common yarrow, hierba de las cortaduras, milenrama, milfoil, plumajillo, western yarrow, yarrow	X	--	--
Asterales	Asteraceae	<i>Ambrosia artemisiifolia</i>	annual ragweed, common ragweed, low ragweed, ragweed, Roman wormwood, short ragweed, small ragweed	X	--	X
Asterales	Asteraceae	<i>Anthemis arvensis</i>	corn chamomile, mayweed, scentless chamomile	X	--	--
Asterales	Asteraceae	<i>Aster dumosus</i>	rice button aster	X	--	--
Asterales	Asteraceae	<i>Aster lateriflorus</i>	calico aster	X	--	--
Asterales	Asteraceae	<i>Aster novi-belgii</i>	New Belgium aster	X	--	--
Asterales	Asteraceae	<i>Aster pilosus</i>	white heath aster, white oldfield aster	X	--	--
Asterales	Asteraceae	<i>Aster pilosus</i> var. <i>pilosus</i>	white oldfield aster	X	--	--
Asterales	Asteraceae	<i>Aster simplex</i>	white panicle aster	X	--	--
Asterales	Asteraceae	<i>Baccharis halimifolia</i>	groundseltree, sea-myrtle, consumptionweed, Eastern baccharis	X	--	--
Asterales	Asteraceae	<i>Bidens aristosa</i>	bearded beggarticks, long-bracted beggar-ticks, tickseed sunflower	X	--	--
Asterales	Asteraceae	<i>Bidens bipinnata</i>	Spanish needles, spanish-needles	X	--	--
Asterales	Asteraceae	<i>Bidens frondosa</i>	bur marigold, devil's beggartick, devil's beggarticks, devil's bootjack, devil's-pitchfork, pitchfork weed, sticktight, sticktight, tickseed sunflower	X	--	--
Asterales	Asteraceae	<i>Bigelovia nudata</i>	pineland rayless goldenrod	X	--	--
Asterales	Asteraceae	<i>Carduus spinosissimus</i>	spiniest thistle	X	--	--
Asterales	Asteraceae	<i>Carphephorus bellidifolius</i>	sandywoods chaffhead	X	--	--
Asterales	Asteraceae	<i>Carphephorus paniculatus</i>	hairy chaffhead	X	--	--
Asterales	Asteraceae	<i>Carphephorus tomentosus</i>	woolly chaffhead	X	--	--
Asterales	Asteraceae	<i>Chaptalia tomentosa</i>	woolly sunbonnets	X	--	--
Asterales	Asteraceae	<i>Chrysopsis gossypina</i> ssp. <i>gossypina</i>	cottony goldenaster	X	--	--
Asterales	Asteraceae	<i>Chrysopsis mariana</i>	Maryland goldenaster	X	--	--
Asterales	Asteraceae	<i>Cirsium horridulum</i>	yellow thistle	X	--	--
Asterales	Asteraceae	<i>Cirsium repandum</i>	sandhill thistle	X	--	--
Asterales	Asteraceae	<i>Cirsium virginianum</i>	Virginia thistle	X	--	--
Asterales	Asteraceae	<i>Conoclinium coelestinum</i>	blue mistflower	X	--	--
Asterales	Asteraceae	<i>Conyza canadensis</i>	horseweed, mare's tail	--	X	X
Asterales	Asteraceae	<i>Coreopsis falcata</i>	sickle tickseed	X	--	--
Asterales	Asteraceae	<i>Coreopsis gladiata</i>	coastal plain tickseed, coastalplain tickseed, Florida tickseed, sickle tickseed, Texas tickseed	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Asterales	Asteraceae	<i>Coreopsis lanceolata</i>	lance coreopsis, lanceleaf tickseed	X	--	--
Asterales	Asteraceae	<i>Coreopsis leavenworthii</i>	Leavenworth's tickseed	X	--	--
Asterales	Asteraceae	<i>Coreopsis linifolia</i>	Texas tickseed	X	--	--
Asterales	Asteraceae	<i>Croptilon divaricatum</i>	goldenweed, slender scratchdaisy	X	--	--
Asterales	Asteraceae	<i>Eclipta prostrata</i>	eclipta, false daisy, yerba de tajo, yerba de tajo	X	--	--
Asterales	Asteraceae	<i>Elephantopus nudatus</i>	naked elephantfoot, smooth elephantsfoot	X	--	X
Asterales	Asteraceae	<i>Elephantopus tomentosus</i>	devil's grandmother, hairy elephantfoot	X	--	X
Asterales	Asteraceae	<i>Erechtites hieracifolia</i>	burnweed	X	--	X
Asterales	Asteraceae	<i>Erigeron canadensis</i> var. <i>canadensis</i>	horseweed, mare's tail	X	--	--
Asterales	Asteraceae	<i>Erigeron quercifolius</i>	oakleaf fleabane	X	--	--
Asterales	Asteraceae	<i>Erigeron strigosus</i>	daisy fleabane, prairie fleabane, rough fleabane	X	--	--
Asterales	Asteraceae	<i>Erigeron vernus</i>	early whitetop fleabane	X	--	--
Asterales	Asteraceae	<i>Eupatorium anomalum</i>	Florida thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eupatorium aromaticum</i>	lesser snakeroot, white snakeroot	X	--	--
Asterales	Asteraceae	<i>Eupatorium capillifolium</i>	dogfennel	X	--	X
Asterales	Asteraceae	<i>Eupatorium capillifolium</i> var. <i>capillifolium</i>	common dogfennel	X	--	--
Asterales	Asteraceae	<i>Eupatorium compositifolium</i>	dogfennel eupatorium, yankeeweed	X	--	--
Asterales	Asteraceae	<i>Eupatorium dubium</i>	coastalplain joepyeweed	X	--	--
Asterales	Asteraceae	<i>Eupatorium hyssopifolium</i>	hyssopleaf thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eupatorium leucolepis</i>	justiceweed	X	--	--
Asterales	Asteraceae	<i>Eupatorium mohrii</i>	Mohr's thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eupatorium pilosum</i>	rough boneset	X	--	--
Asterales	Asteraceae	<i>Eupatorium rotundifolium</i>	roundleaf eupatorium, roundleaf thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eupatorium rotundifolium</i> var. <i>rotundifolium</i>	roundleaf thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eupatorium semiserratum</i>	smallflower eupatorium, smallflower thoroughwort	X	--	--
Asterales	Asteraceae	<i>Eurybia paludosa</i>	southern swamp aster	X	--	--
Asterales	Asteraceae	<i>Euthamia tenuifolia</i>	slender goldentop	X	--	--
Asterales	Asteraceae	<i>Gamochaeta purpurea</i>	spoonleaf purple everlasting, spoon-leaf purple everlasting	X	--	--
Asterales	Asteraceae	<i>Gnaphalium purpureum</i> var. <i>purpureum</i>	purple cudweed	X	--	--
Asterales	Asteraceae	<i>Helenium amarum</i>	bitter sneezeweed, yellowdicks	X	--	--
Asterales	Asteraceae	<i>Helenium flexuosum</i>	purplehead sneezeweed	X	--	--
Asterales	Asteraceae	<i>Helianthus angustifolius</i>	swamp sneezeweed, swamp sunflower	X	--	--
Asterales	Asteraceae	<i>Helianthus atrorubens</i>	purpledisk sunflower	X	--	--
Asterales	Asteraceae	<i>Heterotheca subaxillaris</i>	camphorweed, golden aster	X	--	--
Asterales	Asteraceae	<i>Hieracium gronovii</i>	Gronovis hawkweed, queendevil	X	--	--
Asterales	Asteraceae	<i>Hypochaeris radicata</i>	common cat's-ear, false dandelion, frogbit, gosmore, hairy cat's ear, hairy catsear, spotted catsear	X	--	--
Asterales	Asteraceae	<i>Ionactis linariifolius</i>	flaxleaf whitetop aster, savoryleaf aster	X	--	--
Asterales	Asteraceae	<i>Krigia caespitosa</i>	weedy dwarfdandelion	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Asterales	Asteraceae	<i>Krigia virginica</i>	Virginia dwarf dandelion	X	--	X
Asterales	Asteraceae	<i>Lactuca canadensis</i>	Canada lettuce, Florida blue lettuce, wild lettuce	X	--	--
Asterales	Asteraceae	<i>Lactuca graminifolia</i>	grassleaf lettuce, grass-leaf lettuce	X	--	--
Asterales	Asteraceae	<i>Liatris graminifolia</i>	grass-leaf blazing star	X	--	--
Asterales	Asteraceae	<i>Marshallia graminifolia</i>	grassleaf Barbara's buttons	X	--	--
Asterales	Asteraceae	<i>Mikania scandens</i>	climbing hempvine, climbing hempweed	X	--	X
Asterales	Asteraceae	<i>Packera anonyma</i>	Small's ragwort	X	--	--
Asterales	Asteraceae	<i>Packera tomentosa</i>	woolly ragwort	X	--	--
Asterales	Asteraceae	<i>Pityopsis graminifolia</i> var. <i>latifolia</i>	narrowleaf silkgrass	X	--	--
Asterales	Asteraceae	<i>Pluchea camphorata</i>	camphor pluchea, camphor weed	X	--	--
Asterales	Asteraceae	<i>Pluchea carolinensis</i>	cure for all	X	--	--
Asterales	Asteraceae	<i>Pluchea foetida</i>	stinking camphorweed	X	--	--
Asterales	Asteraceae	<i>Prenanthes autumnalis</i>	slender rattlesnakeroot	X	--	--
Asterales	Asteraceae	<i>Pterocaulon virgatum</i>	wand blackroot	X	--	--
Asterales	Asteraceae	<i>Pyrrhopappus carolinianus</i>	Carolina desert chicory, Carolina desert-chicory, Carolina false dandelion, Carolina false-dandelion	X	--	--
Asterales	Asteraceae	<i>Sericocarpus asteroides</i>	toothed whitetop aster	X	--	--
Asterales	Asteraceae	<i>Sericocarpus tortifolius</i>	Dixie whitetop aster	X	--	--
Asterales	Asteraceae	<i>Silphium compositum</i> var. <i>compositum</i>	kidneyleaf rosinweed	X	--	--
Asterales	Asteraceae	<i>Solidago altissima</i>	Canada goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago arguta</i>	Atlantic goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago fistulosa</i>	pine barren goldenrod, pinebarren goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago gracillima</i>	Virginia goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago odora</i>	anise-scented goldenrod, fragrant goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago patula</i> var. <i>strictula</i>	roundleaf goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago petiolaris</i>	downy goldenrod, downy ragged goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago rugosa</i> ssp. <i>aspera</i>	wrinkled goldenrod, wrinkleleaf goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago rugosa</i> var. <i>rugosa</i>	wrinkleleaf goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago stricta</i>	wand goldenrod	X	--	--
Asterales	Asteraceae	<i>Solidago verna</i>	springflowering goldenrod	X	--	X
Asterales	Asteraceae	<i>Sonchus asper</i>	perennial sowthistle, prickly sow thistle, prickly sowthistle, spiny sowthistle, spiny-leaf sow-thistle	X	--	--
Asterales	Asteraceae	<i>Symphyotrichum dumosum</i> var. <i>dumosum</i>	rice button aster	X	--	--
Asterales	Asteraceae	<i>Symphyotrichum pilosum</i> var. <i>pilosum</i>	hairy white oldfield aster	X	--	--
Asterales	Asteraceae	<i>Symphyotrichum racemosum</i>	smooth white oldfield aster	X	--	--
Asterales	Asteraceae	<i>Symphyotrichum walteri</i>	Walter's aster	X	--	--
Asterales	Asteraceae	<i>Taraxacum officinale</i>	blowball, common dandelion, dandelion, faceclock	X	--	--
Asterales	Asteraceae	<i>Xanthium strumarium</i> var. <i>glabratum</i>	cocklebur, common cocklebur, rough cocklebur, rough cocklebur	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Asterales	Campanulaceae	<i>Lobelia elongata</i>	longleaf lobelia	X	--	--
Asterales	Campanulaceae	<i>Lobelia glandulosa</i>	glade lobelia	X	--	--
Asterales	Campanulaceae	<i>Lobelia nuttallii</i>	Nuttall's lobelia	X	--	--
Asterales	Campanulaceae	<i>Triodanis perfoliata</i>	clasping Venus's looking-glass	X	--	--
Brassicales	Brassicaceae	<i>Arabidopsis thaliana</i>	mouseear cress, mouse-ear cress	X	--	--
Brassicales	Brassicaceae	<i>Brassica juncea</i>	Chinese mustard, India mustard, Indian mustard	X	--	--
Brassicales	Brassicaceae	<i>Cardamine hirsuta</i>	hairy bittercress	X	--	--
Brassicales	Brassicaceae	<i>Descurainia pinnata</i>	green tansymustard, pinnate tansy mustard, pinnate tansymustard, tansymustard, western tansymustard	X	--	--
Brassicales	Brassicaceae	<i>Lepidium virginicum</i>	peppergrass, poorman pepperweed, poorman's pepper, poorman's pepperwort, Virginia pepperweed, Virginian peppergrass	X	--	--
Brassicales	Brassicaceae	<i>Rorippa nasturtium-aquaticum</i>	watercress	X	--	--
Campanulales	Campanulaceae	<i>Wahlenbergia marginata</i>	Southern rockbell	--	--	X
Caryophyllales	Amaranthaceae	<i>Chenopodium ambrosioides</i>	Mexican tea, Mexican-tea	X	--	--
Caryophyllales	Cactaceae	<i>Opuntia ficus-indica</i>	Indian-fig, tuna cactus	X	--	--
Caryophyllales	Caryophyllaceae	<i>Cerastium glomeratum</i>	sticky chickweed	X	--	--
Caryophyllales	Caryophyllaceae	<i>Cerastium holosteoides</i> var. <i>vulgare</i>	common mouse-ear chickweed	X	--	--
Caryophyllales	Caryophyllaceae	<i>Paronychia baldwinii</i> ssp. <i>riparia</i>	Baldwin's nailwort	X	--	--
Caryophyllales	Caryophyllaceae	<i>Silene antirrhina</i>	catchfly, sleepy campion, sleepy catchfly, sleepy silene	X	--	--
Caryophyllales	Caryophyllaceae	<i>Stellaria media</i>	chickweed, common chickweed, nodding chickweed	X	--	X
Caryophyllales	Caryophyllaceae	<i>Stipulicida setacea</i>	pineland scalypink	X	--	--
Caryophyllales	Droseraceae	<i>Dionaea muscipula</i>	Venus fly trap, Venus flytrap	X	--	--
Caryophyllales	Droseraceae	<i>Drosera brevifolia</i>	dwarf sundew	X	--	--
Caryophyllales	Droseraceae	<i>Drosera capillaris</i>	pink sundew	X	--	--
Caryophyllales	Droseraceae	<i>Drosera intermedia</i>	spoonleaf sundew	X	--	--
Caryophyllales	Molluginaceae	<i>Mollugo verticillata</i>	carpetweed, carpet-weed, green carpetweed, green carpet-weed, Indian chickweed	X	--	--
Caryophyllales	Phytolaccaceae	<i>Phytolacca americana</i>	American pokeweed, common pokeweed, inkberry, pigeonberry, poke, pokeberry, pokeweed	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum hydropiper</i>	annual smartweed, marshpepper knotweed, mild water-pepper	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum hydropiperoides</i>	swamp smartweed	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum hydropiperoides</i> var. <i>hydropiperoides</i>	swamp smartweed	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum hydropiperoides</i> var. <i>opelousanum</i>	swamp smartweed	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum pensylvanicum</i>	Pennsylvania knotweed, Pennsylvania smartweed, pinkweed, pinweed	X	--	--
Caryophyllales	Polygonaceae	<i>Polygonum sagittatum</i>	arrowleaf knotweed, arrowleaf tearthumb, arrow-leaf tearthumb, arrowvine	X	--	--
Caryophyllales	Polygonaceae	<i>Rumex acetosella</i>	common sheep sorrel, field sorrel, red sorrel, sheep sorrel	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Caryophyllales	Polygonaceae	<i>Rumex crispus</i>	curly dock, narrowleaf dock, sour dock, yellow dock	X	--	--
Caryophyllales	Polygonaceae	<i>Rumex hastatulus</i>	heartwing dock, heartwing sorrel	X	--	--
Caryophyllales	Portulacaceae	<i>Portulaca pilosa</i>	chisme, kiss me quick, kiss-me-quick	X	--	--
Celastrales	Aquifoliaceae	<i>Ilex ambigua</i>	Carolina holly	--	X	X
Celastrales	Aquifoliaceae	<i>Ilex vomitoria</i>	yaupon, yaupon holly	--	X	--
Celastrales	Celastraceae	<i>Parnassia caroliniana</i>	Carolina grass of Parnassus, Carolina grass-of-parnassus	X	--	--
Commelinales	Commelinaceae	<i>Callisia graminea</i>	morning grace spiderwort	X	--	--
Commelinales	Commelinaceae	<i>Commelina communis</i>	Asiatic dayflower, common dayflower	X	--	--
Commelinales	Commelinaceae	<i>Commelina diffusa</i>	climbing dayflower, spreading dayflower	X	--	--
Commelinales	Commelinaceae	<i>Commelina erecta</i>	erect dayflower, whitemouth dayflower	X	--	--
Commelinales	Commelinaceae	<i>Murdannia keisak</i>	Asian spiderwort, marsh dewflower, wart-removing herb	X	--	--
Commelinales	Commelinaceae	<i>Tradescantia ohiensis</i>	bluejacket, Ohio spiderwort	X	--	--
Commelinales	Haemodoraceae	<i>Lachnanthes carolina</i>	redroot	X	--	--
Commelinales	Pontederiaceae	<i>Pontederia cordata</i>	pickerelweed	X	--	--
Cornales	Cornaceae	<i>Cornus florida</i>	flowering dogwood	X	--	X
Cornales	Cornaceae	<i>Cornus foemina</i>	swamp dogwood	X	--	X
Cornales	Hydrangeaceae	<i>Decumaria barbara</i>	woodvamp	X	--	--
Cornales	Nyssaceae	<i>Nyssa biflora</i>	swamp tupelo	X	--	X
Cornales	Nyssaceae	<i>Nyssa sylvatica</i>	black gum, black tupelo, blackgum	X	--	X
Cornales	Nyssaceae	<i>Nyssa sylvatica</i> var. <i>biflora</i>	swamp tupelo	X	--	--
Cornales	Nyssaceae	<i>Nyssa sylvatica</i> var. <i>sylvatica</i>	black tupelo	X	--	--
Cucurbitales	Cucurbitaceae	<i>Citrullus vulgaris</i>	Watermelon	X	--	--
Cucurbitales	Cucurbitaceae	<i>Melothria pendula</i>	creeping cucumber	--	--	X
Dioscoreales	Dioscoreaceae	<i>Dioscorea villosa</i>	wild yam	X	--	--
Dioscoreales	Nartheciaceae	<i>Aletris farinosa</i>	white colicroot	X	--	--
Dipsacales	Adoxaceae	<i>Sambucus canadensis</i>	American elder	X	--	--
Dipsacales	Adoxaceae	<i>Viburnum dentatum</i> var. <i>lucidum</i>	southern arrowwood	X	--	--
Dipsacales	Adoxaceae	<i>Viburnum nudum</i>	possumhaw, possumhaw viburnum	X	--	--
Dipsacales	Adoxaceae	<i>Viburnum rufidulum</i>	rusty blackhaw, rusty viburnum	X	--	--
Dipsacales	Caprifoliaceae	<i>Lonicera japonica</i>	Chinese honeysuckle, Japanese honeysuckle	X	--	X
Dipsacales	Caprifoliaceae	<i>Lonicera sempervirens</i>	trumpet honeysuckle	X	--	--
Dipsacales	Valerianaceae	<i>Valerianella radiata</i>	beaked cornsalad	X	--	--
Ericales	Clethraceae	<i>Clethra alnifolia</i>	coastal sweet pepperbush, coastal sweetpepperbush, summersweet, summersweet clethra	X	--	X
Ericales	Cyrtaceae	<i>Cyrtilla racemiflora</i>	swamp cyrtilla, swamp titi	X	--	X
Ericales	Ebenaceae	<i>Diospyros virginiana</i>	common persimmon, eastern persimmon	X	--	X
Ericales	Ericaceae	<i>Befaria racemosa</i>	tarflower	--	--	X
Ericales	Ericaceae	<i>Chimaphila maculata</i>	striped prince's pine	X	--	X
Ericales	Ericaceae	<i>Gaylussacia frondosa</i> var. <i>frondosa</i>	blue huckleberry	X	--	X
Ericales	Ericaceae	<i>Kalmia angustifolia</i> var. <i>carolina</i>	sheep laurel	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Ericales	Ericaceae	<i>Leucothoe racemosa</i>	swamp doghobble	X	--	--
Ericales	Ericaceae	<i>Lyonia ligustrina</i>	he-huckleberry, maleberry, seedy-buckberry	X	--	--
Ericales	Ericaceae	<i>Lyonia lucida</i>	fetterbush, fetterbush lyonia, hurrahbush, staggerbush	X	--	X
Ericales	Ericaceae	<i>Lyonia mariana</i>	Maryland staggerbush, Piedmont staggerbush, staggerbush	X	--	--
Ericales	Ericaceae	<i>Rhododendron atlanticum</i>	dwarf azalea	X	--	--
Ericales	Ericaceae	<i>Rhododendron periclymenoides</i>	pink azalea, pinxterbloom azalea	X	--	--
Ericales	Ericaceae	<i>Vaccinium arboreum</i>	farkleberry, sparkleberry, tree sparkleberry, tree-huckleberry	X	--	X
Ericales	Ericaceae	<i>Vaccinium corymbosum</i>	highbush blueberry, New Jersey blueberry, smallflower blueberry, Southern blueberry	X	--	X
Ericales	Ericaceae	<i>Vaccinium crassifolium</i>	creeping blueberry	X	--	--
Ericales	Ericaceae	<i>Vaccinium elliotii</i>	Elliott's blueberry	X	--	X
Ericales	Ericaceae	<i>Vaccinium fuscatum</i>	black highbush blueberry	X	--	--
Ericales	Ericaceae	<i>Vaccinium pallidum</i>	Blue Ridge blueberry, hillside blueberry	X	--	X
Ericales	Ericaceae	<i>Vaccinium stamineum</i>	deerberry	X	--	--
Ericales	Ericaceae	<i>Vaccinium tenellum</i>	small black blueberry, southern blueberry	X	--	X
Ericales	Polemoniaceae	<i>Phlox nivalis</i>	trailing phlox	X	--	--
Ericales	Primulaceae	<i>Samolus</i> sp.	brookweed, waterpimpernel	--	--	X
Ericales	Sarraceniaceae	<i>Sarracenia flava</i>	yellow pitcherplant	X	--	--
Ericales	Sarraceniaceae	<i>Sarracenia purpurea</i>	frog's-bitches, huntsman's-horns, pitcherplant, purple pitcherplant, sidesaddle-flower	X	--	--
Ericales	Symplocaceae	<i>Symplocos tinctoria</i>	common sweetleaf, sweetleaf	X	--	X
Ericales	Theaceae	<i>Gordonia lasianthus</i>	loblolly bay, loblollybay gordonia	X	--	--
Fabales	Fabaceae	<i>Albizia julibrissin</i>	mimosa, powderpuff tree, silk tree, silktree	X	--	--
Fabales	Fabaceae	<i>Amorpha herbacea</i>	clusterspike false indigo	X	--	X
Fabales	Fabaceae	<i>Baptisia tinctoria</i>	horseflyweed, yellow wild indigo	X	--	--
Fabales	Fabaceae	<i>Centrosema virginianum</i>	butterflypea, spurred butterfly pea	X	--	--
Fabales	Fabaceae	<i>Chamaecrista fasciculata</i>	partridge pea, showy partridgepea, sleepingplant	X	--	--
Fabales	Fabaceae	<i>Chamaecrista nictitans</i>	partridge pea, sensitive partridge pea	X	--	--
Fabales	Fabaceae	<i>Clitoria mariana</i>	Atlantic pigeonwings, butterfly-pea, pigeonwings	X	--	--
Fabales	Fabaceae	<i>Crotalaria rotundifolia</i>	rabbitbells	X	--	--
Fabales	Fabaceae	<i>Crotalaria spectabilis</i>	rattlebox, showy crotalaria, showy rattlebox	X	--	--
Fabales	Fabaceae	<i>Desmodium marilandicum</i>	Maryland tickclover, smooth small-leaf ticktrefoil	X	--	--
Fabales	Fabaceae	<i>Desmodium paniculatum</i>	narrow-leaf tick-trefoil, panicled tickclover, panicledleaf ticktrefoil	X	--	--
Fabales	Fabaceae	<i>Desmodium perplexum</i>	perplexed ticktrefoil	X	--	--
Fabales	Fabaceae	<i>Galactia elliotii</i>	Elliott's milkpea	--	X	--
Fabales	Fabaceae	<i>Galactia regularis</i>	eastern milkpea	X	--	--
Fabales	Fabaceae	<i>Galactia volubilis</i>	downy milkpea	X	--	--
Fabales	Fabaceae	<i>Indigofera caroliniana</i>	Carolina indigo	X	--	--
Fabales	Fabaceae	<i>Kummerowia striata</i>	Japanese clover	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Fabales	Fabaceae	<i>Lathyrus latifolius</i>	everlasting peavine, everlasting-pea, perennial pea, perennial peavine, perennial sweetpea	X	--	--
Fabales	Fabaceae	<i>Lespedeza angustifolia</i>	narrowleaf lespedeza	X	--	--
Fabales	Fabaceae	<i>Lespedeza capitata</i>	roundhead lespedeza	X	--	--
Fabales	Fabaceae	<i>Lespedeza cuneata</i>	Chinese lespedeza, sericea lespedeza	X	--	X
Fabales	Fabaceae	<i>Lespedeza stuevei</i>	Stueve's lespedeza, tall lespedeza	X	--	--
Fabales	Fabaceae	<i>Lespedeza virginica</i>	slender lespedeza	X	--	--
Fabales	Fabaceae	<i>Lupinus perennis</i>	sundial lupine	X	--	--
Fabales	Fabaceae	<i>Lupinus villosus</i>	lady lupine	X	--	--
Fabales	Fabaceae	<i>Medicago lupulina</i>	black medic, black medic clover, black medick, hop clover, hop medic, nonesuch, yellow trefoil	X	--	X
Fabales	Fabaceae	<i>Melilotus alba</i>	white sweetclover	X	--	--
Fabales	Fabaceae	<i>Psoralea psoraloides</i>	Sampson's snakeroot	X	--	--
Fabales	Fabaceae	<i>Robinia nana</i>	dwarf bristly locust	X	--	--
Fabales	Fabaceae	<i>Senna obtusifolia</i>	Java-bean, sicklepod	X	--	--
Fabales	Fabaceae	<i>Stylosanthes biflora</i>	endbeak pencilflower, sidebeak pencilflower	X	--	--
Fabales	Fabaceae	<i>Tephrosia hispida</i>	sprawling hoarypea	X	--	--
Fabales	Fabaceae	<i>Tephrosia spicata</i>	spiked hoarypea	X	--	--
Fabales	Fabaceae	<i>Trifolium arvense</i>	hairy clover, hare's foot clover, oldfield clover, rabbitfoot clover, rabbit-foot clover, stone clover	X	--	--
Fabales	Fabaceae	<i>Trifolium campestre</i>	big hop clover, field clover, large hop clover, lesser hop clover, low hop clover	X	--	--
Fabales	Fabaceae	<i>Trifolium dubium</i>	hop clover, smallhop clover, suckling clover	X	--	--
Fabales	Fabaceae	<i>Trifolium repens</i>	Dutch clover, ladino clover, white clover, white Dutch clover	X	--	--
Fabales	Fabaceae	<i>Vicia angustifolia</i>	garden vetch	X	--	X
Fabales	Fabaceae	<i>Wisteria frutescens</i>	American wisteria	X	--	--
Fabales	Fabaceae	<i>Wisteria sinensis</i>	Chinese wisteria	X	--	X
Fabales	Fabaceae	<i>Zornia bracteata</i>	viperina	X	--	--
Fabales	Polygalaceae	<i>Polygala cruciata</i>	drumheads	X	--	--
Fabales	Polygalaceae	<i>Polygala lutea</i>	orange milkwort	X	--	--
Fagales	Betulaceae	<i>Alnus serrulata</i>	brook-side alder, hazel alder	X	--	--
Fagales	Betulaceae	<i>Betula nigra</i>	river birch	X	--	--
Fagales	Betulaceae	<i>Carpinus caroliniana</i>	American hornbeam	X	--	X
Fagales	Fagaceae	<i>Quercus alba</i>	white oak	X	--	X
Fagales	Fagaceae	<i>Quercus coccinea</i>	scarlet oak	X	--	--
Fagales	Fagaceae	<i>Quercus falcata</i>	southern red oak	X	--	X
Fagales	Fagaceae	<i>Quercus falcata</i> var. <i>falcata</i>	southern red oak	X	--	--
Fagales	Fagaceae	<i>Quercus incana</i>	bluejack oak	X	--	--
Fagales	Fagaceae	<i>Quercus laevis</i>	turkey oak	X	--	--
Fagales	Fagaceae	<i>Quercus laurifolia</i>	laurel oak	X	--	X
Fagales	Fagaceae	<i>Quercus lyrata</i>	overcup oak	X	--	X
Fagales	Fagaceae	<i>Quercus margarettiae</i>	runner oak, sand post oak	X	--	--
Fagales	Fagaceae	<i>Quercus marilandica</i>	blackjack oak	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Fagales	Fagaceae	<i>Quercus michauxii</i>	swamp chestnut oak	X	--	--
Fagales	Fagaceae	<i>Quercus nigra</i>	water oak	X	--	X
Fagales	Fagaceae	<i>Quercus pagoda</i>	cherrybark oak	X	--	--
Fagales	Fagaceae	<i>Quercus phellos</i>	willow oak	--	--	X
Fagales	Fagaceae	<i>Quercus stellata</i>	post oak	X	--	X
Fagales	Juglandaceae	<i>Carya alba</i>	mockernut hickory	X	--	X
Fagales	Myricaceae	<i>Morella carolinensis</i>	evergreen bayberry, southern bayberry	X	--	--
Fagales	Myricaceae	<i>Morella cerifera</i>	wax myrtle, waxmyrtle	X	--	X
Gentianales	Apocynaceae	<i>Asclepias amplexicaulis</i>	bluntleaf milkweed, blunt-leaved milkweed, clasping milkweed, sand milkweed	X	--	--
Gentianales	Apocynaceae	<i>Asclepias rubra</i>	red milkweed	X	--	--
Gentianales	Apocynaceae	<i>Asclepias tuberosa</i>	butterfly milkweed, butterflyweed	X	--	--
Gentianales	Apocynaceae	<i>Vinca minor</i>	common periwinkle, lesser periwinkle, myrtle	X	--	--
Gentianales	Gelsemiaceae	<i>Gelsemium rankinii</i>	Rankin's trumpetflower	X	--	--
Gentianales	Gelsemiaceae	<i>Gelsemium sempervirens</i>	Carolina jessamine, evening trumpetflower	X	--	--
Gentianales	Gentianaceae	<i>Bartonia virginica</i>	yellow screwstem	X	--	--
Gentianales	Gentianaceae	<i>Gentiana autumnalis</i>	pine barren gentian	X	--	--
Gentianales	Gentianaceae	<i>Gentiana catesbaei</i>	Elliott's gentian	X	--	--
Gentianales	Gentianaceae	<i>Sabatia brachiata</i>	narrowleaf rose gentian, narrowleaf rosegentian	X	--	--
Gentianales	Gentianaceae	<i>Sabatia difformis</i>	lanceleaf rose gentian	X	--	--
Gentianales	Loganiaceae	<i>Mitreola sessilifolia</i>	swamp hornpod	X	--	--
Gentianales	Rubiaceae	<i>Cephalanthus occidentalis</i>	buttonbush, common buttonbush	X	--	X
Gentianales	Rubiaceae	<i>Diodia teres</i>	poor joe, poorjoe, rough buttonweed	X	--	X
Gentianales	Rubiaceae	<i>Diodia virginiana</i>	Virginia buttonweed	X	--	X
Gentianales	Rubiaceae	<i>Galium obtusum</i>	bluntleaf bedstraw, bristly bedstraw	X	--	--
Gentianales	Rubiaceae	<i>Galium obtusum</i> ssp. <i>filifolium</i>	bluntleaf bedstraw	X	--	--
Gentianales	Rubiaceae	<i>Galium pilosum</i>	hairy bedstraw	X	--	--
Gentianales	Rubiaceae	<i>Galium tinctorium</i>	dye bedstraw, stiff marsh bedstraw	X	--	--
Gentianales	Rubiaceae	<i>Houstonia pusilla</i>	tiny bluet	X	--	--
Gentianales	Rubiaceae	<i>Mitchella repens</i>	partridgeberry	X	--	X
Gentianales	Rubiaceae	<i>Oldenlandia uniflora</i>	clustered mille grains, oneflower oldenlandia	X	--	--
Gentianales	Rubiaceae	<i>Richardia brasiliensis</i>	tropical Mexican clover	X	--	X
Geraniales	Geraniaceae	<i>Geranium carolinianum</i>	Carolina crane's-bill, Carolina geranium	X	--	--
Geraniales	Oxalidaceae	<i>Oxalis corniculata</i>	creeping woodsorrel	--	X	--
Lamiales	Acanthaceae	<i>Justicia ovata</i>	looseflower waterwillow, looseflower water-willow	X	--	--
Lamiales	Bignoniaceae	<i>Bignonia capreolata</i>	cross vine, crossvine	X	--	X
Lamiales	Bignoniaceae	<i>Campsis radicans</i>	common trumpetcreeper, cow-itch, trumpet creeper	X	--	X
Lamiales	Bignoniaceae	<i>Catalpa speciosa</i>	northern catalpa	X	--	--
Lamiales	Lamiaceae	<i>Callicarpa americana</i>	American beautyberry	X	--	X
Lamiales	Lamiaceae	<i>Glechoma hederacea</i>	creeping charlie, gill-over-the-ground, ground ivy, groundivy, haymaids	X	--	--
Lamiales	Lamiaceae	<i>Hyptis alata</i>	clustered bushmint	X	--	X

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Lamiales	Lamiaceae	<i>Lamium amplexicaule</i>	common henbit, giraffehead, henbit, henbit deadnettle	X	--	--
Lamiales	Lamiaceae	<i>Lycopus rubellus</i>	taperleaf bugleweed, taperleaf water horehound	X	--	--
Lamiales	Lamiaceae	<i>Lycopus virginicus</i>	Virginia bugleweed, Virginia water horehound	X	--	--
Lamiales	Lamiaceae	<i>Macbridea caroliniana</i>	Carolina birds-in-a-nest	X	--	X
Lamiales	Lamiaceae	<i>Physostegia purpurea</i>	eastern false dragonhead	X	--	X
Lamiales	Lamiaceae	<i>Physostegia virginiana</i> ssp. <i>virginiana</i>	obedient plant	X	--	--
Lamiales	Lamiaceae	<i>Prunella vulgaris</i>	common selfheal, heal all, healall, selfheal	X	--	--
Lamiales	Lamiaceae	<i>Pycnanthemum tenuifolium</i>	narrowleaf mountainmint	X	--	--
Lamiales	Lamiaceae	<i>Salvia lyrata</i>	lyreleaf sage	X	--	X
Lamiales	Lamiaceae	<i>Scutellaria integrifolia</i>	helmet flower, helmet skullcap	X	--	--
Lamiales	Lamiaceae	<i>Trichostema dichotomum</i>	blue curls, forked bluecurls	X	--	--
Lamiales	Lentibulariaceae	<i>Utricularia subulata</i>	zigzag bladderwort	X	--	--
Lamiales	Oleaceae	<i>Chionanthus virginicus</i>	fringetree, white fringetree	X	--	--
Lamiales	Oleaceae	<i>Fraxinus caroliniana</i>	Carolina ash	X	--	X
Lamiales	Oleaceae	<i>Ligustrum japonicum</i>	Japanese privet	X	--	--
Lamiales	Oleaceae	<i>Ligustrum sinense</i>	Chinese privet, common Chinese privet	X	--	X
Lamiales	Oleaceae	<i>Osmanthus americanus</i>	devilwood	X	--	--
Lamiales	Orobanchaceae	<i>Agalinis fasciculata</i>	beach false foxglove	X	--	--
Lamiales	Orobanchaceae	<i>Agalinis obtusifolia</i>	tenlobe false foxglove	X	--	--
Lamiales	Orobanchaceae	<i>Agalinis purpurea</i>	purple false foxglove	X	--	--
Lamiales	Orobanchaceae	<i>Agalinis setacea</i>	threadleaf false foxglove	X	--	--
Lamiales	Orobanchaceae	<i>Seymeria cassioides</i>	yaupon blacksenna	X	--	--
Lamiales	Plantaginaceae	<i>Bacopa caroliniana</i>	blue waterhyssop	X	--	--
Lamiales	Plantaginaceae	<i>Chelone glabra</i>	white turtlehead	X	--	--
Lamiales	Plantaginaceae	<i>Gratiola aurea</i>	golden hedgehyssop, golden hedge-hyssop	X	--	--
Lamiales	Plantaginaceae	<i>Gratiola pilosa</i>	shaggy hedgehyssop	X	--	--
Lamiales	Plantaginaceae	<i>Gratiola virginiana</i>	roundfruit hedgehyssop, Virginia hedgehyssop	X	--	--
Lamiales	Plantaginaceae	<i>Mecardonia acuminata</i>	axilflower	X	--	--
Lamiales	Plantaginaceae	<i>Nuttallanthus canadensis</i>	Canada toadflax, oldfield toadflax, oldfield-toadflax	X	--	--
Lamiales	Plantaginaceae	<i>Penstemon australis</i>	Eustis Lake beardtongue	X	--	--
Lamiales	Plantaginaceae	<i>Plantago aristata</i>	bottlebrush Indianwheat, largebracted plantain	X	--	X
Lamiales	Plantaginaceae	<i>Plantago lanceolata</i>	buckhorn plantain, English plantain, lanceleaf Indianwheat, lanceleaf plantain, narrowleaf plantain, ribgrass, ribwort	X	--	--
Lamiales	Plantaginaceae	<i>Plantago rugelii</i>	blackseed plantain, black-seed plantain, Rugel's plantain	X	--	--
Lamiales	Plantaginaceae	<i>Plantago virginica</i>	paleseed Indianwheat, Virginia plantain	X	--	--
Lamiales	Plantaginaceae	<i>Veronica arvensis</i>	common speedwell, corn speedwell, rock speedwell, wall speedwell	X	--	--
Lamiales	Plantaginaceae	<i>Veronica peregrina</i>	neckweed, purslane speedwell	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Lamiales	Scrophulariaceae	<i>Verbascum thapsus</i>	big taper, common mullein, flannel mullein, flannel plant, great mullein, mullein, velvet dock, velvet plant, woolly mullein	X	--	--
Lamiales	Tetrachondraceae	<i>Polypremum procumbens</i>	juniper-leaf	X	--	X
Lamiales	Verbenaceae	<i>Phyla nodiflora</i>	frog fruit, sawtooth fogfruit, turkey tangle, turkey tangle fogfruit, turkey tangle frogfruit	X	--	--
Lamiales	Verbenaceae	<i>Verbena brasiliensis</i>	Brazilian vervain	X	--	--
Laurales	Calycanthaceae	<i>Calycanthus floridus</i> var. <i>floridus</i>	eastern sweetshrub	X	--	--
Laurales	Lauraceae	<i>Persea borbonia</i>	red bay	--	X	X
Laurales	Lauraceae	<i>Persea palustris</i>	swamp bay	X	--	X
Laurales	Lauraceae	<i>Sassafras albidum</i>	sassafras	X	--	X
Liliales	Liliaceae	<i>Lilium catesbaei</i>	pine lily	X	--	--
Liliales	Liliaceae	<i>Ornithogalum umbellatum</i>	Pyrenees Star of Bethlehem, sleepyduck, Star-of-Bethlehem	X	--	--
Liliales	Melanthiaceae	<i>Melanthium virginicum</i>	Virginia bunchflower	X	--	--
Liliales	Smilacaceae	<i>Smilax bona-nox</i>	saw greenbrier	X	--	X
Liliales	Smilacaceae	<i>Smilax glauca</i>	cat greenbrier, sawbrier, wild sarsaparilla	X	--	X
Liliales	Smilacaceae	<i>Smilax herbacea</i>	herbaceous greenbrier, Jacob's ladder, smooth carrionflower	X	--	--
Liliales	Smilacaceae	<i>Smilax laurifolia</i>	laurel greenbrier	X	--	X
Liliales	Smilacaceae	<i>Smilax rotundifolia</i>	bullbrier, common catbrier, common greenbrier, greenbrier, horsebrier, roundleaf greenbrier, roundleaf greenbrier	X	--	X
Liliales	Smilacaceae	<i>Smilax tamnoides</i>	bristly greenbrier	X	--	--
Liliales	Smilacaceae	<i>Smilax walteri</i>	coral greenbrier	X	--	--
Lycopodiales	Lycopodiaceae	<i>Huperzia selago</i>	fir clubmoss	X	--	--
Lycopodiales	Lycopodiaceae	<i>Lycopodiella alopecuroides</i>	foxtail clubmoss	X	--	--
Lycopodiales	Lycopodiaceae	<i>Lycopodiella carolinianum</i>	slender clubmoss	X	--	--
Magnoliales	Annonaceae	<i>Asimina triloba</i>	paw paw	--	--	X
Magnoliales	Magnoliaceae	<i>Liriodendron tulipifera</i>	bois-jaune, tulip poplar, tulip-poplar, tuliptree, yellow poplar, yellow-poplar	X	--	--
Magnoliales	Magnoliaceae	<i>Magnolia grandiflora</i>	bull-bay, laurier tulipier, southern magnolia	X	--	X
Magnoliales	Magnoliaceae	<i>Magnolia virginiana</i>	laurier doux, swamp-bay, sweetbay	X	--	X
Malpighiales	Euphorbiaceae	<i>Acalypha gracilens</i>	slender copperleaf, slender threeseed mercury	X	--	X
Malpighiales	Euphorbiaceae	<i>Acalypha rhomboidea</i>	common threeseed mercury, Virginia threeseed mercury	X	--	--
Malpighiales	Euphorbiaceae	<i>Chamaesyce maculata</i>	large spurge, spotted sandmat, spotted spurge	X	--	X
Malpighiales	Euphorbiaceae	<i>Cnidoscolus stimulosus</i>	finger rot	X	--	--
Malpighiales	Euphorbiaceae	<i>Croton glandulosus</i>	sand croton, tooth-leaved croton, tropic croton, vente conmigo	X	--	--
Malpighiales	Euphorbiaceae	<i>Euphorbia corollata</i>	flowering spurge, floweringspurge euphorbia	X	--	--
Malpighiales	Euphorbiaceae	<i>Euphorbia curtisii</i>	Curtis' spurge	X	--	--
Malpighiales	Euphorbiaceae	<i>Euphorbia ipecacuanhae</i>	American ipecac	X	--	--
Malpighiales	Euphorbiaceae	<i>Stillingia sylvatica</i>	queen's-delight	X	--	--
Malpighiales	Hypericaceae	<i>Hypericum cistifolium</i>	roundpod St. Johnswort	X	--	--
Malpighiales	Hypericaceae	<i>Hypericum crux-andreae</i>	Atlantic St. Peter's-wort, St. Peterswort	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Malpighiales	Hypericaceae	<i>Hypericum galioides</i>	bedstraw St. Johnswort	X	--	--
Malpighiales	Hypericaceae	<i>Hypericum gentianoides</i>	orangegrass, pinweed St. Johnswort	X	--	--
Malpighiales	Hypericaceae	<i>Hypericum hypericoides</i>	St. Andrew's cross	X	--	X
Malpighiales	Hypericaceae	<i>Hypericum mutilum</i>	dwarf St. Johnswort	X	--	--
Malpighiales	Hypericaceae	<i>Hypericum setosum</i>	hairy St. Johnswort	X	--	--
Malpighiales	Hypericaceae	<i>Triadenum walteri</i>	greater marsh St. Johnswort	X	--	--
Malpighiales	Linaceae	<i>Linum medium</i> var. <i>medium</i>	stiff yellow flax	X	--	--
Malpighiales	Linaceae	<i>Linum striatum</i>	ridged yellow flax, rigid flax	X	--	--
Malpighiales	Linaceae	<i>Linum virginianum</i>	woodland flax	X	--	--
Malpighiales	Passifloraceae	<i>Passiflora incarnata</i>	purple passionflower	X	--	--
Malpighiales	Salicaceae	<i>Populus nigra</i>	black cottonwood, black poplar, Lombardy's poplar	X	--	--
Malpighiales	Salicaceae	<i>Salix caroliniana</i>	coastal plain willow	X	--	X
Malpighiales	Salicaceae	<i>Salix nigra</i>	black willow	X	--	--
Malpighiales	Violaceae	<i>Viola affinis</i>	Arizona bog violet, lecontes violet, sand violet	X	--	--
Malpighiales	Violaceae	<i>Viola brittoniana</i>	northern coastal violet	X	--	--
Malpighiales	Violaceae	<i>Viola brittoniana</i> var. <i>brittoniana</i>	northern coastal violet	X	--	--
Malpighiales	Violaceae	<i>Viola lanceolata</i>	bog white violet, lanceleaf violet	X	--	--
Malpighiales	Violaceae	<i>Viola palmata</i>	early blue violet, three-lobed violet, trilobed violet, wood violet	X	--	--
Malpighiales	Violaceae	<i>Viola primulifolia</i>	bog white violet, primrose-leaved violet	X	--	--
Malpighiales	Violaceae	<i>Viola sororia</i>	common blue violet, hooded blue violet	X	--	--
Malpighiales	Violaceae	<i>Viola villosa</i>	Carolina violet, violet	X	--	--
Malvales	Cistaceae	<i>Helianthemum canadense</i>	Canada frostweed, longbranch frostweed	X	--	--
Malvales	Cistaceae	<i>Helianthemum carolinianum</i>	Carolina frostweed	X	--	--
Malvales	Cistaceae	<i>Lechea mucronata</i>	hairy pinweed	X	--	--
Malvales	Cistaceae	<i>Lechea pulchella</i>	Leggett's pinweed	X	--	--
Malvales	Cistaceae	<i>Lechea pulchella</i> var. <i>pulchella</i>	Leggett's pinweed	X	--	--
Malvales	Malvaceae	<i>Sida rhombifolia</i>	arrowleaf sida, Cuban jute, Cuban-jute	X	--	--
Myrtales	Lythraceae	<i>Cuphea carthagenensis</i>	Colombian waxweed	X	--	--
Myrtales	Lythraceae	<i>Lagerstroemia indica</i>	crapemyrtle	X	--	X
Myrtales	Melastomataceae	<i>Rhexia alifanus</i>	savannah meadowbeauty	X	--	--
Myrtales	Melastomataceae	<i>Rhexia mariana</i>	Maryland meadowbeauty	X	--	X
Myrtales	Melastomataceae	<i>Rhexia petiolata</i>	fringed meadowbeauty	X	--	--
Myrtales	Melastomataceae	<i>Rhexia virginica</i>	Virginia meadow beauty, handsome Harry	--	X	--
Myrtales	Onagraceae	<i>Ludwigia alternifolia</i>	bushy seedbox, seedbox	X	--	--
Myrtales	Onagraceae	<i>Ludwigia decurrens</i>	wingleaf primrose-willow, wingleaf waterprimrose	X	--	--
Myrtales	Onagraceae	<i>Ludwigia glandulosa</i>	creeping seedbox, cylindricfruit primrose-willow	X	--	--
Myrtales	Onagraceae	<i>Ludwigia maritima</i>	seaside primrose-willow	X	--	--
Myrtales	Onagraceae	<i>Ludwigia palustris</i>	marsh primrose-willow, marsh seedbox	X	--	--
Myrtales	Onagraceae	<i>Ludwigia virgata</i>	savannah primrose-willow	X	--	--
Myrtales	Onagraceae	<i>Oenothera fruticosa</i>	narrowleaf evening primrose, narrowleaf evening-primrose	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Myrtales	Onagraceae	<i>Oenothera fruticosa</i> ssp. <i>glauca</i>	narrowleaf evening-primrose, narrowleaf evening primrose, shrubby sundrops	X	--	--
Myrtales	Onagraceae	<i>Oenothera laciniata</i>	cutleaf evening primrose, cutleaf eveningprimrose, cut-leaf evening-primrose, cutleaf evening-primrose, cut-leaved evening primrose	X	--	--
Myrtales	Onagraceae	<i>Oenothera laciniata</i> ssp. <i>laciniata</i>	cut-leaved evening-primrose, ragged evening-primrose	X	--	--
Nymphaeales	Nymphaeaceae	<i>Nuphar lutea</i> ssp. <i>sagittifolia</i>	yellow pond-lily	X	--	--
Osmundales	Osmundaceae	<i>Osmunda cinnamomea</i>	cinnamon fern	X	--	X
Osmundales	Osmundaceae	<i>Osmunda regalis</i>	royal fern	X	--	X
Osmundales	Osmundaceae	<i>Osmunda regalis</i> var. <i>spectabilis</i>	royal fern	X	--	--
Oxalidales	Oxalidaceae	<i>Oxalis rubra</i>	Pink Wood-Sorrel	X	--	--
Oxalidales	Oxalidaceae	<i>Oxalis stricta</i>	common yellow oxalis, erect woodsorrel, sheep sorrel, sourgrass, toad sorrel, upright yellow woodsorrel, upright yellow wood-sorrel, yellow woodsorrel	X	--	X
Pinales	Cupressaceae	<i>Chamaecyparis thyoides</i>	Atlantic white cedar, Atlantic white-cedar, southern white cedar, southern white-cedar	X	--	--
Pinales	Cupressaceae	<i>Juniperus virginiana</i>	eastern redcedar, eastern red-cedar, red cedar juniper	X	--	X
Pinales	Cupressaceae	<i>Taxodium ascendens</i>	pond cypress, pondcypress	X	--	X
Pinales	Cupressaceae	<i>Taxodium distichum</i>	bald cypress, baldcypress	X	--	--
Pinales	Pinaceae	<i>Pinus elliotii</i>	slash pine	--	--	X
Pinales	Pinaceae	<i>Pinus palustris</i>	longleaf pine	X	--	X
Pinales	Pinaceae	<i>Pinus serotina</i>	marsh pine, pocosin pine, pond pine	X	--	--
Pinales	Pinaceae	<i>Pinus taeda</i>	loblolly pine	X	--	X
Piperales	Aristolochiaceae	<i>Hexastylis arifolia</i>	littlebrownjug	X	--	X
Piperales	Saururaceae	<i>Saururus cernuus</i>	lizard's tail	X	--	X
Poales	Bromeliaceae	<i>Tillandsia usneoides</i>	Spanish moss	X	--	--
Poales	Cyperaceae	<i>Carex albolutescens</i>	greenwhite sedge	X	--	--
Poales	Cyperaceae	<i>Carex atlantica</i> ssp. <i>capillacea</i>	prickly bog sedge	X	--	--
Poales	Cyperaceae	<i>Carex bullata</i>	button sedge	X	--	--
Poales	Cyperaceae	<i>Carex caroliniana</i>	Carolina sedge	X	--	--
Poales	Cyperaceae	<i>Carex complanata</i>	blue sedge, hirsute sedge	X	--	--
Poales	Cyperaceae	<i>Carex debilis</i>	white edge sedge	X	--	--
Poales	Cyperaceae	<i>Carex debilis</i> var. <i>pubera</i>	white edge sedge	X	--	--
Poales	Cyperaceae	<i>Carex folliculata</i>	long sedge, northern long sedge	X	--	--
Poales	Cyperaceae	<i>Carex glaucescens</i>	clustered sedge, southern waxy sedge	X	--	X
Poales	Cyperaceae	<i>Carex intumescens</i>	greater bladder sedge	X	--	--
Poales	Cyperaceae	<i>Carex lonchocarpa</i>	southern long sedge	X	--	--
Poales	Cyperaceae	<i>Carex lonchocarpa</i>	southern long sedge	X	--	--
Poales	Cyperaceae	<i>Carex lurida</i>	shallow sedge	X	--	--
Poales	Cyperaceae	<i>Carex nigromarginata</i>	black edge sedge	X	--	--
Poales	Cyperaceae	<i>Carex seorsa</i>	weak stellate sedge	X	--	--
Poales	Cyperaceae	<i>Carex venusta</i>	darkgreen sedge	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Poales	Cyperaceae	<i>Cladium mariscus</i> ssp. <i>jamaicense</i>	Jamaica sawgrass, Jamaica swamp sawgrass	X	--	--
Poales	Cyperaceae	<i>Cyperus compressus</i>	poorland flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus croceus</i>	Baldwin's flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus haspan</i>	haspan flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus iria</i>	ricefield flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus plukenetii</i>	Plukenet's flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus polystachyos</i> var. <i>texensis</i>	Texan flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus retrorsus</i> var. <i>retrorsus</i>	pine barren flatsedge	X	--	--
Poales	Cyperaceae	<i>Cyperus strigosus</i>	stawcolored flatsedge, strawcolor flatsedge, strawcolor nutgrass, strawcolored flatsedge, strawcolored nutgrass	X	--	--
Poales	Cyperaceae	<i>Dulichium arundinaceum</i>	threeway sedge	X	--	--
Poales	Cyperaceae	<i>Eleocharis acicularis</i>	needle spikerush, needle spikesedge	X	--	--
Poales	Cyperaceae	<i>Eleocharis microcarpa</i>	smallfruit spikerush	X	--	--
Poales	Cyperaceae	<i>Eleocharis obtusa</i>	blunt spikerush, blunt spikesedge	X	--	--
Poales	Cyperaceae	<i>Eleocharis tuberculosa</i>	cone-cup spikerush	X	--	--
Poales	Cyperaceae	<i>Fuirena pumila</i>	dwarf umbrellasedge, dwarf umbrella-sedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora berteroi</i>	little beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora caduca</i>	anglestem beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora chalarocephala</i>	loosehead beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora chapmanii</i>	Chapman's beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora ciliaris</i>	fringed beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora corniculata</i>	shortbristle horned beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora debilis</i>	savannah beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora fascicularis</i>	fascicled beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora globularis</i> var. <i>globularis</i>	globe beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora gracilentia</i>	slender beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora inexpansa</i>	nodding beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora nitens</i>	shortbeak beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora rariflora</i>	fewflower beaksedge	X	--	--
Poales	Cyperaceae	<i>Rhynchospora stenophylla</i>	coastal plain beaksedge, coastalplain beaksedge	X	--	--
Poales	Cyperaceae	<i>Scirpus cyperinus</i>	bulrush, woolgrass	X	--	--
Poales	Cyperaceae	<i>Scleria muehlenbergii</i>	Muehlenberg's nutrush	X	--	--
Poales	Cyperaceae	<i>Scleria pauciflora</i> var. <i>caroliniana</i>	Carolina nutrush	X	--	--
Poales	Cyperaceae	<i>Scleria triglomerata</i>	whip nutrush	X	--	X
Poales	Eriocaulaceae	<i>Lachnocaulon anceps</i>	whitehead bogbutton	X	--	X
Poales	Juncaceae	<i>Juncus acuminatus</i>	sharp-fruit rush, tapertip rush	X	--	--
Poales	Juncaceae	<i>Juncus biflorus</i>	bog rush	X	--	--
Poales	Juncaceae	<i>Juncus canadensis</i>	Canadian rush	X	--	--
Poales	Juncaceae	<i>Juncus coriaceous</i>	leathery rush	X	--	--
Poales	Juncaceae	<i>Juncus dichotomus</i>	forked rush	X	--	--
Poales	Juncaceae	<i>Juncus diffusissimus</i>	slimpod rush	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Poales	Juncaceae	<i>Juncus effusus</i>	common rush, lamp rush	X	--	--
Poales	Juncaceae	<i>Juncus elliotii</i>	Elliott's rush	X	--	--
Poales	Juncaceae	<i>Juncus polycephalus</i>	flatleaf rush, manyhead rush	X	--	--
Poales	Juncaceae	<i>Juncus scirpoides</i>	needlepod rush	X	--	--
Poales	Juncaceae	<i>Juncus tenuis</i>	field rush, path rush, poverty rush, slender rush, slender yard rush, wiregrass	X	--	--
Poales	Juncaceae	<i>Juncus trigonocarpus</i>	redpod rush	X	--	--
Poales	Poaceae	<i>Agrostis hyemalis</i>	winter bentgrass	X	--	--
Poales	Poaceae	<i>Andropogon ternarius</i>	splitbeard bluestem	X	--	--
Poales	Poaceae	<i>Andropogon virginicus</i>	broomsedge, broomsedge bluestem, yellow bluestem	X	--	X
Poales	Poaceae	<i>Andropogon virginicus</i> var. <i>glauca</i>	chalky bluestem, chalky broomsedge	--	--	X
Poales	Poaceae	<i>Anthoxanthum odoratum</i>	sweet vernalgrass	X	--	--
Poales	Poaceae	<i>Aristida purpurescens</i> var. <i>virgata</i>	arrowfeather threeawn	X	--	--
Poales	Poaceae	<i>Aristida stricta</i>	pineland threeawn	X	--	X
Poales	Poaceae	<i>Arundinaria gigantea</i>	giant cane	X	--	X
Poales	Poaceae	<i>Arundinaria tecta</i>	switchcane	X	--	--
Poales	Poaceae	<i>Axonopus fissifolius</i>	carpetgrass, common carpetgrass, Louisiana grass, mat grass, narrowleaved carpetgrass	X	--	--
Poales	Poaceae	<i>Axonopus furcatus</i>	big carpetgrass	X	--	--
Poales	Poaceae	<i>Cenchrus tribuloides</i>	sanddune sandbur	X	--	--
Poales	Poaceae	<i>Chasmanthium laxum</i>	slender woodoats, spike uniola	X	--	X
Poales	Poaceae	<i>Coleataenia longifolia</i> ssp. <i>rigidula</i>	red-topped panicgrass	X	--	--
Poales	Poaceae	<i>Ctenium aromaticum</i>	toothache grass, toothachegrass	X	--	--
Poales	Poaceae	<i>Cynodon dactylon</i>	Bermudagrass, chiendent pied-de-poule, common bermudagrass, devilgrass, grama-seda, manienie, motie molulu	X	--	--
Poales	Poaceae	<i>Dactylis glomerata</i>	cocksfoot, orchard grass, orchardgrass	X	--	--
Poales	Poaceae	<i>Danthonia sericea</i>	downy danthonia	X	--	--
Poales	Poaceae	<i>Danthonia sericea</i> var. <i>sericea</i>	wild oat grass, wild oatgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium acuminatum</i> var. <i>lindheimeri</i>	Lindheimer panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium commutatum</i>	variable panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium dichotomum</i> var. <i>dichotomum</i>	cypress panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium ensifolium</i>	cypress panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium ensifolium</i> var. <i>ensifolium</i>	cypress panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium erectifolium</i>	erectleaf panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium laxiflorum</i>	openflower rosette grass	X	--	--
Poales	Poaceae	<i>Dichanthelium sphaerocarpon</i>	roundseed panicgrass, roundseed panicum	X	--	--
Poales	Poaceae	<i>Dichanthelium strigosum</i> var. <i>strigosum</i>	roughhair rosette grass	X	--	--
Poales	Poaceae	<i>Dichanthelium villosissimum</i>	whitehair rosette grass, white-hair rosette grass	X	--	--
Poales	Poaceae	<i>Digitaria sanguinalis</i>	crabgrass, hairy crab grass, hairy crabgrass, large crabgrass, purple crabgrass, redhair crabgrass	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Poales	Poaceae	<i>Echinochloa crus-galli</i>	barnyard grass, barnyardgrass, cockspur, Japanese millet, large barnyard grass, watergrass	X	--	--
Poales	Poaceae	<i>Elymus virginicus</i>	Virginia wild rye, Virginia wildrye	X	--	--
Poales	Poaceae	<i>Eragrostis capillaris</i>	lace grass, lacegrass	X	--	--
Poales	Poaceae	<i>Eragrostis refracta</i>	coastal lovegrass	X	--	--
Poales	Poaceae	<i>Eragrostis spectabilis</i>	petticoat-climber, purple lovegrass	X	--	--
Poales	Poaceae	<i>Eremochloa ophiuroides</i>	centipede grass	X	--	X
Poales	Poaceae	<i>Hordeum pusillum</i>	little barley, little wildbarley	X	--	--
Poales	Poaceae	<i>Leersia oryzoides</i>	rice cut grass, rice cutgrass	X	--	--
Poales	Poaceae	<i>Lolium pratense</i>	meadow fescue, meadow ryegrass	X	--	--
Poales	Poaceae	<i>Panicum anceps</i>	beaked panicgrass, beaked panicum	X	--	--
Poales	Poaceae	<i>Panicum rigidulum</i> var. <i>pubescens</i>	redtop panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium dichotomum</i> var. <i>unciphyllum</i>	cypress panicgrass	X	--	--
Poales	Poaceae	<i>Panicum verrucosum</i>	warty panicgrass	X	--	--
Poales	Poaceae	<i>Dichanthelium acuminatum</i> var. <i>acuminatum</i>	tapered rosette grass	X	--	--
Poales	Poaceae	<i>Paspalum dilatatum</i>	dallas grass, dallis grass, dallisgrass, herbe de miel, herbe sirop, hiku nua, palpalum dilate, water grass	X	--	--
Poales	Poaceae	<i>Paspalum distichum</i>	knotgrass, knotroot paspalum	X	--	--
Poales	Poaceae	<i>Paspalum floridanum</i>	Florida paspalum	X	--	--
Poales	Poaceae	<i>Paspalum laeve</i>	field paspalum	X	--	--
Poales	Poaceae	<i>Paspalum notatum</i>	bahiagrass	X	--	X
Poales	Poaceae	<i>Paspalum notatum</i> var. <i>saurae</i>	bahiagrass	X	--	--
Poales	Poaceae	<i>Paspalum setaceum</i>	fringeleaf paspalum, sand paspalum, slender crown grass, thin paspalum	X	--	X
Poales	Poaceae	<i>Paspalum urvillei</i>	Vasey grass, vaseygrass, Vasey's grass	X	--	--
Poales	Poaceae	<i>Poa annua</i>	annual blue grass, annual bluegrass, walkgrass	X	--	--
Poales	Poaceae	<i>Poa pratensis</i>	Kentucky bluegrass	X	--	--
Poales	Poaceae	<i>Saccharum baldwinii</i>	narrow plumegrass	X	--	--
Poales	Poaceae	<i>Saccharum brevibarbe</i>	shortbeard plumegrass	X	--	--
Poales	Poaceae	<i>Saccharum brevibarbe</i> var. <i>brevibarbe</i>	shortbeard plumegrass	X	--	--
Poales	Poaceae	<i>Saccharum brevibarbe</i> var. <i>contortum</i>	shortbeard plumegrass, bentawn plumegrass	X	--	--
Poales	Poaceae	<i>Schedonorus arundinaceus</i>	tall fescue	X	--	--
Poales	Poaceae	<i>Schizachyrium scoparium</i>	little bluestem	X	--	--
Poales	Poaceae	<i>Schizachyrium tenerum</i>	slender bluestem, slender little bluestem	X	--	--
Poales	Poaceae	<i>Setaria parviflora</i>	knotroot bristlegrass, marsh bristle grass, marsh bristlegrass, yellow bristlegrass	X	--	--
Poales	Poaceae	<i>Sphenopholis obtusata</i>	prairie wedgegrass, prairie wedgescale	X	--	--
Poales	Poaceae	<i>Sporobolus junceus</i>	pineywoods dropseed	X	--	--
Poales	Poaceae	<i>Tridens flavus</i> var. <i>flavus</i>	purpletop tridens	X	--	--
Poales	Poaceae	<i>Vulpia myuros</i>	foxtail fescue, rattail fescue, rat-tail fescue, rat-tailed fescue	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Poales	Poaceae	<i>Vulpia octoflora</i>	pullout grass, sixweeks grass, sixweeks fescue, eight-flower sixweeks grass	X	--	--
Poales	Poaceae	<i>Vulpia sciurea</i>	squirreltail fescue	X	--	--
Poales	Typhaceae	<i>Sparganium americanum</i>	American burreed, American bur-reed	X	--	--
Poales	Typhaceae	<i>Typha latifolia</i>	broadleaf cattail, cattail, common cattail	X	--	--
Poales	Xyridaceae	<i>Xyris ambigua</i>	coastal plain yelloweyed grass, coastalplain yelloweyed grass	X	--	--
Poales	Xyridaceae	<i>Xyris caroliniana</i>	Carolina yelloweyed grass	X	--	--
Poales	Xyridaceae	<i>Xyris difformis</i>	bog yelloweyed grass, southern yelloweyed grass	X	--	--
Poales	Xyridaceae	<i>Xyris jupicai</i>	Richard's yelloweyed grass	X	--	--
Polypodiales	Aspleniaceae	<i>Asplenium platyneuron</i>	ebony spleenwort	X	--	X
Polypodiales	Blechnaceae	<i>Woodwardia areolata</i>	chainfern, netted chainfern	X	--	X
Polypodiales	Blechnaceae	<i>Woodwardia virginica</i>	Virginia chainfern	X	--	X
Polypodiales	Dennstaedtiaceae	<i>Pteridium aquilinum</i>	bracken, bracken fern, brackenfern, northern bracken fern, western brackenfern	X	--	X
Polypodiales	Onocleaceae	<i>Onoclea sensibilis</i>	sensitive fern	X	--	X
Polypodiales	Polypodiaceae	<i>Pleopeltis polypodioides</i>	resurrection fern	X	--	X
Polypodiales	Woodsiaceae	<i>Athyrium filix-femina</i> var. <i>asplenioides</i>	common ladyfern, ladyfern	X	--	--
Proteales	Platanaceae	<i>Platanus occidentalis</i>	American sycamore, sycamore	X	--	--
Ranunculales	Ranunculaceae	<i>Clematis crispa</i>	curly virginsbower, swamp leather flower	X	--	X
Ranunculales	Ranunculaceae	<i>Ranunculus bulbosus</i>	blister flower, bulbous buttercup, bulbous crowfoot, gowan, St. Anthony's turnip, yellow weed	X	--	--
Ranunculales	Ranunculaceae	<i>Thalictrum macrostylum</i>	piedmont meadow-rue	X	--	--
Ranunculales	Ranunculaceae	<i>Xanthorhiza simplicissima</i>	yellowroot	X	--	--
Rosales	Elaeagnaceae	<i>Elaeagnus pungens</i>	thorny elaeagnus, thorny olive	X	--	--
Rosales	Rosaceae	<i>Amelanchier canadensis</i> var. <i>obovalis</i>	coastal serviceberry	X	--	--
Rosales	Rosaceae	<i>Amelanchier spicata</i>	running serviceberry, thicket shadbush	X	--	--
Rosales	Rosaceae	<i>Crataegus aestivalis</i>	may hawthorn	X	--	--
Rosales	Rosaceae	<i>Crataegus flava</i>	yellow hawthorn, yellowleaf hawthorn	X	--	--
Rosales	Rosaceae	<i>Duchesnea indica</i>	India mockstrawberry, Indian strawberry	X	--	--
Rosales	Rosaceae	<i>Fragaria X ananassa</i>	hybrid strawberry	X	--	--
Rosales	Rosaceae	<i>Photinia pyrifolia</i>	red chokeberry	X	--	X
Rosales	Rosaceae	<i>Potentilla canadensis</i>	dwarf cinquefoil	X	--	X
Rosales	Rosaceae	<i>Potentilla simplex</i>	common cinquefoil, oldfield cinquefoil, oldfield fivefingers, spreading cinquefoil	X	--	--
Rosales	Rosaceae	<i>Prunus angustifolia</i>	Chickasaw plum	X	--	--
Rosales	Rosaceae	<i>Prunus serotina</i>	black cherry	X	--	X
Rosales	Rosaceae	<i>Prunus serotina</i> var. <i>serotina</i>	black cherry	X	--	--
Rosales	Rosaceae	<i>Pyrus communis</i>	common pear, pear	X	--	--
Rosales	Rosaceae	<i>Rosa multiflora</i>	multiflora rose	X	--	--
Rosales	Rosaceae	<i>Rosa palustris</i>	swamp rose	X	--	--
Rosales	Rosaceae	<i>Rosa X noisettiana</i>	hybrid noisette rose	X	--	--

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Rosales	Rosaceae	<i>Rubus argutus</i>	sawtooth blackberry	--	X	X
Rosales	Rosaceae	<i>Rubus cuneifolius</i>	sand blackberry	X	--	--
Rosales	Rosaceae	<i>Rubus hispidus</i>	bristly dewberry	X	--	--
Rosales	Rosaceae	<i>Rubus pubescens</i> var. <i>pubescens</i>	dwarf red blackberry, dwarf red raspberry	X	--	--
Rosales	Rosaceae	<i>Rubus trivialis</i>	southern dewberry	X	--	--
Rosales	Rosaceae	<i>Spiraea thunbergii</i>	Thunberg's meadowsweet	X	--	--
Rosales	Urticaceae	<i>Boehmeria cylindrica</i>	smallspike false nettle, small-spike false nettle	X	--	--
Rubiales	Rubiaceae	<i>Galium aparine</i>	sticky willy	--	X	--
Santalales	Santalaceae	<i>Phoradendron leucarpum</i>	oak mistletoe	X	--	--
Sapindales	Anacardiaceae	<i>Rhus copallinum</i>	flameleaf sumac, shining sumac, winged sumac	X	--	X
Sapindales	Anacardiaceae	<i>Toxicodendron pubescens</i>	Atlantic poison oak, poison oak	X	--	X
Sapindales	Anacardiaceae	<i>Toxicodendron radicans</i>	eastern poison ivy, poison ivy	X	--	X
Sapindales	Meliaceae	<i>Melia azedarach</i>	chinaberry, Chinaberry tree, Indian lilac, lelah, paraíso, pride of India, white cedar	X	--	--
Sapindales	Sapindaceae	<i>Acer rubrum</i>	red maple	X	--	X
Sapindales	Sapindaceae	<i>Acer saccharum</i> ssp. <i>floridanum</i>	Southern Sugar Maple	X	--	--
Saxifragales	Altingiaceae	<i>Liquidambar styraciflua</i>	sweetgum	X	--	X
Saxifragales	Haloragaceae	<i>Proserpinaca palustris</i>	marsh mermaidweed, marsh mermaid-weed	X	--	--
Saxifragales	Hamamelidaceae	<i>Hamamelis virginiana</i>	American witchhazel, witchhazel, witch-hazel	X	--	--
Saxifragales	Iteaceae	<i>Itea virginica</i>	Virginia sweetspire	X	--	X
Scrophulariales	Oleaceae	<i>Fraxinus pennsylvanica</i>	green ash	--	X	X
Selaginellales	Selaginellaceae	<i>Selaginella apoda</i>	meadow spikemoss	X	--	--
Solanales	Convolvulaceae	<i>Cuscuta compacta</i>	compact dodder	X	--	--
Solanales	Convolvulaceae	<i>Dichondra carolinensis</i>	Carolina ponysfoot, grass ponysfoot	X	--	X
Solanales	Convolvulaceae	<i>Ipomoea coccinea</i>	Mexican morningglory, red morningglory, redstar, scarlet morningglory, starglory, woolly tidestromia	X	--	--
Solanales	Convolvulaceae	<i>Ipomoea hederacea</i>	entireleaf morningglory, ivyleaf morningglory, ivyleaf morning-glory, Mexican morningglory	X	--	--
Solanales	Convolvulaceae	<i>Ipomoea lacunosa</i>	pitted morningglory, white morningglory, whitestar	X	--	--
Solanales	Convolvulaceae	<i>Ipomoea pandurata</i>	bigroot morningglory, man of the earth, man-of-the-earth	X	--	--
Solanales	Convolvulaceae	<i>Ipomoea purpurea</i>	common morningglory, common morning-glory, tall morningglory, tall morning-glory	X	--	--
Solanales	Convolvulaceae	<i>Ipomoea trichocarpa</i>	tievine	X	--	--
Solanales	Convolvulaceae	<i>Jacquemontia tamnifolia</i>	clustervine, hairy clustervine	X	--	--
Solanales	Convolvulaceae	<i>Stylisma humistrata</i>	southern dawnflower	X	--	X
Solanales	Solanaceae	<i>Physalis angulata</i>	cutleaf groundcherry, cut-leaf ground-cherry, lanceleaf groundcherry	X	--	--
Solanales	Solanaceae	<i>Solanum americanum</i>	American black nightshade, common purple nightshade, smallflower nightshade	X	--	--
Solanales	Solanaceae	<i>Solanum carolinense</i>	apple of Sodom, bull nettle, Carolina horsenettle, devil's tomato, horsenettle, sand briar	X	--	X

Table A-1 (continued). Vascular plant species known to occur at Moores Creek National Battlefield (NPSpecies 2016) and species detected during 2014 monitoring efforts [1—listed in NPSpecies; 2—new in previous study; 3—new in this study].

Order	Family	Scientific Name	Common Names	1	2	3
Vitales	Vitaceae	<i>Parthenocissus quinquefolia</i>	American ivy, fiveleaved ivy, Virginia creeper, woodbine	X	--	X
Vitales	Vitaceae	<i>Vitis cinerea</i> var. <i>floridana</i>	Florida grape	X	--	--
Vitales	Vitaceae	<i>Vitis rotundifolia</i>	muscadine, muscadine grape	X	--	X

Appendix B. Plant Species Detected in Sampling Locations

Table B-1 Vascular plant taxa detected at each sampling location across all strata at Moores Creek National Battlefield in 2014. Numbers to the right of taxon column indicate sampling location.

Taxon	1	2	3	4	5	6	7	8	9	10	11
<i>Acalypha gracilens</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Acer rubrum</i>	X	X	X	X	X	--	X	--	X	--	X
<i>Agalinis</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Ambrosia artemisiifolia</i>	--	--	--	--	--	--	X	--	--	X	--
<i>Amorpha herbacea</i>	--	--	--	--	--	--	--	--	X	--	--
<i>Andropogon virginicus</i>	X	--	--	X	--	--	--	--	X	--	--
<i>Andropogon virginicus</i> var. <i>glaucus</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Aristida stricta</i>	--	--	--	X	--	--	--	--	X	X	--
<i>Arundinaria gigantea</i>	X	X	--	--	X	X	--	X	--	X	X
<i>Asimina triloba</i>	--	--	--	--	--	--	--	X	--	--	--
<i>Asplenium platyneuron</i>	--	--	--	--	--	--	X	--	--	--	--
Asteraceae	X	--	--	--	--	--	--	--	--	X	--
<i>Baccharis halimifolia</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Baptisia</i> sp.	--	--	--	--	--	--	--	--	--	--	--
<i>Befaria racemosa</i>	--	--	--	--	--	X	--	--	--	--	--
<i>Bignonia capreolata</i>	--	--	--	X	--	--	--	X	--	--	--
<i>Callicarpa americana</i>	--	--	--	--	--	--	X	--	--	--	--
<i>Campsis radicans</i>	--	X	--	--	X	--	X	X	X	X	--
<i>Carex glaucescens</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Carex</i> sp.	--	--	X	X	X	--	--	--	--	--	--
<i>Carphephorus</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Carpinus caroliniana</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Carya alba</i>	X	X	--	--	--	--	--	--	X	--	--
<i>Catalpa speciosa</i>	--	--	--	--	--	--	X	--	--	--	--
<i>Cephalanthus occidentalis</i>	--	--	--	--	X	--	--	--	--	--	X
<i>Chamaecrista</i> sp.	--	--	--	X	--	--	--	--	--	X	--
<i>Chamaesyce maculata</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Chasmanthium laxum</i>	--	X	--	--	--	--	--	--	--	--	--
<i>Chimaphila maculata</i>	X	--	--	--	--	--	--	--	--	--	--

[illegible]

Table B-1 (continued). Vascular plant taxa detected at each sampling location across all strata at Moores Creek National Battlefield in 2014. Numbers to the right of taxon column indicate sampling location.

Taxon	1	2	3	4	5	6	7	8	9	10	11
<i>Hymenocallis</i> sp.	--	--	X	--	X	--	--	--	--	--	--
<i>Hypericum hypericoides</i>	X	--	--	X	X	--	--	--	--	X	--
<i>Hyptis alata</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Ilex ambigua</i>	--	--	X	--	--	--	--	--	--	--	--
<i>Ilex coriacea</i>	X	--	--	--	--	--	--	--	--	--	--
<i>Ilex glabra</i>	X	X	--	--	--	X	--	--	--	X	--
<i>Ilex myrtifolia</i>	--	--	X	--	--	--	--	--	--	--	--
<i>Ilex opaca</i>	X	X	X	--	X	--	--	X	X	X	--
<i>Ipomoea</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Itea virginica</i>	--	--	--	--	X	--	--	--	--	--	--
<i>Juncus</i> sp.	--	--	--	X	--	--	--	--	--	X	--
<i>Juniperus virginiana</i>	--	--	--	--	--	--	X	--	--	--	--
<i>Krigia virginica</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Lachnocaulon anceps</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Lactuca graminifolia</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Lagerstroemia indica</i>	X	--	--	--	--	--	--	--	--	--	--
<i>Lemna</i> sp.	--	--	--	--	--	--	X	--	--	--	--
<i>Lespedeza cuneata</i>	X	--	--	--	--	--	--	X	--	X	--
<i>Ligustrum sinense</i>	--	--	--	--	--	--	X	--	--	--	--
<i>Liquidambar styraciflua</i>	X	X	X	X	X	X	X	X	X	X	X
<i>Lobelia</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Lonicera japonica</i>	X	--	--	--	--	--	--	X	--	--	--
<i>Ludwigia</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Lyonia lucida</i>	X	--	--	--	--	X	--	--	X	--	X
<i>Macbridea caroliniana</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Magnolia grandiflora</i>	X	X	--	--	--	--	X	--	--	--	--
<i>Magnolia virginiana</i>	--	--	--	--	--	X	--	X	--	X	--
<i>Magnoliopsida</i>	--	--	X	--	X	--	--	--	--	--	X
<i>Malaxis unifolia</i>	X	--	--	--	--	--	--	--	--	--	--
<i>Medicago lupulina</i>	--	--	--	X	--	--	--	--	--	--	--

Table B-1 (continued). Vascular plant taxa detected at each sampling location across all strata at Moores Creek National Battlefield in 2014. Numbers to the right of taxon column indicate sampling location.

[illegible]

Table B-1 (continued). Vascular plant taxa detected at each sampling location across all strata at Moores Creek National Battlefield in 2014. Numbers to the right of taxon column indicate sampling location.

Taxon	1	2	3	4	5	6	7	8	9	10	11
<i>Quercus alba</i>	--	--	--	--	--	--	--	--	X	--	--
<i>Quercus falcata</i>	X	--	--	--	--	--	--	--	--	--	--
<i>Quercus laurifolia</i>	X	X	X	--	X	--	--	--	X	--	--
<i>Quercus lyrata</i>	--	--	--	--	X	--	--	--	--	--	--
<i>Quercus nigra</i>	X	X	--	X	X	X	X	X	X	X	X
<i>Quercus phellos</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Quercus stellata</i>	X	--	--	--	--	--	--	X	X	X	--
<i>Rhexia mariana</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Rhexia</i> sp.	--	--	--	--	--	--	--	X	--	--	--
<i>Rhus copallinum</i>	X	X	--	X	--	--	--	--	--	X	--
<i>Rhynchospora</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Richardia brasiliensis</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Rubus argutus</i>	--	--	--	X	--	--	X	X	--	X	--
<i>Sabatia</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Salix caroliniana</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Salvia lyrata</i>	--	--	--	X	--	--	--	--	--	X	--
<i>Samolus</i> sp.	--	--	--	--	--	--	--	--	--	X	--
<i>Sassafras albidum</i>	X	X	--	--	--	X	--	--	X	X	--
<i>Saururus cernuus</i>	--	--	--	--	X	--	--	--	--	--	--
<i>Scleria triglomerata</i>	X	--	--	--	--	--	--	--	--	X	--
<i>Scutellaria integrifolia</i>	--	--	--	--	--	--	--	X	--	--	--
<i>Sisyrinchium atlanticum</i>	--	--	--	X	--	--	--	--	--	--	--
<i>Smilax bona-nox</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Smilax glauca</i>	--	--	--	--	--	X	--	--	--	--	--
<i>Smilax laurifolia</i>	--	--	X	--	X	--	--	--	--	--	--
<i>Smilax rotundifolia</i>	X	X	X	X	X	--	X	X	--	X	X
<i>Smilax</i> sp.	--	--	--	--	X	--	--	--	X	--	--
<i>Solanum carolinense</i>	X	--	--	--	--	--	--	--	--	--	--
<i>Solidago verna</i>	--	--	--	--	--	--	--	--	--	X	--
<i>Stellaria media</i>	--	--	--	X	--	--	--	--	--	--	--

Table B-1 (continued). Vascular plant taxa detected at each sampling location across all strata at Moores Creek National Battlefield in 2014. Numbers to the right of taxon column indicate sampling location.

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