



Research and Documentation of the Agricultural Landscape and
Agricultural Economy:
Cedar Creek and Belle Grove National Historical Park

By:

Brian Katen

Dr. McIntai Kim

Christine Calorusso

Landscape Architecture Program

Virginia Tech

with

The Virginia Tech Center for Geospatial Information Technology

January 2020

Table of Contents

List of Figures.....	5
Introduction:	
Thematic Narratives.....	17
PART 1:	
The Agricultural Landscape: Supporting Infrastructures	
Chapter 1:	
The Agricultural Landscape: Environmental Context.....	26
Chapter 2	
The Agricultural Landscape: Transportation Infrastructure – Roads.....	57
Chapter 3	
The Agricultural Landscape: Transportation Infrastructure – Rivers, Canals, and Railroads...	83
Chapter 4	
The Agricultural Landscape: Economic Infrastructure.....	104
Chapter 5	
The Agricultural Landscape: Agricultural Infrastructure: Milling.....	122
Chapter 6	
The Agricultural Landscape: Commercial Infrastructure: Merchant Networks.....	156
PART 2:	
The Agricultural Landscape: Contributing Components	
Chapter 7	
The Agricultural Landscape: Crops and Agriculture.....	194
Chapter 8	
The Agricultural Landscape: Livestock.....	213
Chapter 9	
The Agricultural Landscape: Progressive Farming and Agricultural Reform Movement Practices.....	232

Chapter 10

The Agricultural Landscape: Virginia Agricultural Societies and Agricultural Publications.....255

Chapter 11

The Agricultural Landscape: Slavery.....274

PART 3:

The Agricultural Landscape: Understandings and Opportunities

Chapter 12

The Agricultural Landscape: The Agricultural Landscape and the Battle of Cedar Creek.....306

Chapter 13

The Agricultural Landscape: Typical Period Farms.....338

Chapter 14

The Agricultural Landscape: Interpretation Today.....374

Comprehensive Bibliography.....392

Appendices:

Armatures for On-Going Documentation and Expanding the Knowledge Base

Appendix A

Hite Merchant Network

Appendix B

Vineyard Site Evaluation Report: Cedar Creek and Belle Grove National Historical Park

Appendix C

GIS User Guide Introduction

List of Figures

Chapter 1:

- Figure 1.1 Exposed rock outcroppings in upland fields along the Valley Pike south of Middletown. From the Biscoe Collection.
- Figure 1.2 Exposed rock outcropping along Cedar Creek, upstream of the Stickley Mill site.
- Figure 1.3 Exposed bedrock in the race at Bowman's Mill. Today the race is the main channel of Cedar Creek.
- Figure 1.4 Exposed bedrock in the unnamed stream south of Thoburn's Run.
- Figure 1.5 Bowman Patent Lands. The Patent lands lay astride Cedar Creek, the Great Road and the shale/limestone/shale interface. From the *Whitham Farmstead Cultural Landscape Inventory*, 2007
- Figure 1.6 The limestone/shale interface north of Cedar Creek. From Mitchell, 1997
- Figure 1.7 The boundary of the Cedar Creek and Belle Grove National Historical Park superimposed over the limestone/shale interface. From the *Vineyard Site Evaluation Report*, 2019
- Figure 1.8 The red line traces Cedar Creek's large catchment basin. From Katen et al. 2012
- Figure 1.9 Bottomlands with accumulated sediment at the Bowman-Hite Farm
- Figure 1.10 Mill seats on Meadowbrook Run and Buffalo Marsh
- Figure 1.10.1 Mill sites on Cedar Creek and its tributaries near the present-day the Cedar Creek and Belle Grove National Historical Park
- Figure 1.11 (Top) Bowman's Mill pre-1832 without the mill race across the oxbow on Cedar Creek. From John Woods's 1820 map. (Bottom) Bowman's Mill in 1832 with the newly-dug mill race. From Herron's 1832 *Shenandoah River Survey*
- Figure 1.12 Woodlands on the steeper slopes at the Bowman-Hite farm
- Figure 1.13 Areas of deposition along Cedar Creek in the bottomlands below the Bowman-Hite house
- Figure 1.14 Ford locations along Cedar Creek in 1873. From Katen et al. 2012.
- Figure 1.15 Transect along the Fairfax Survey line showing boundary or "witness" marker trees by species. From, Mitchell, 1977
- Figure 1.16 1895 map of the Battle of Cedar Creek by Jedediah Hotchkiss showing the spatial pattern of open treeless bottom lands, upland slopes with agricultural fields and pastures, and steeper, wooded slopes that is characteristic of the agricultural Lands along Cedar Creek.
- Figure 1.17 1873 Map of the Battle Fields of Fisher's Hill and Cedar Creek by G. L. Gillespie showing the spatial pattern of open treeless bottomlands, upland slopes with agricultural fields and pastures, and steeper, wooded slopes that is characteristic of the agricultural Lands along Cedar Creek.
- Figure 1.18 Site Elevation Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is shown outlined in red. Generated by the *Vineyard Site Evaluation* software, 2019

- Figure 1.19 Site Slope Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is shown outlined in red. Generated by the *Vineyard Site Evaluation* software 2019
- Figure 1.20 Site Aspect Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is shown outlined in red. Generated by the *Vineyard Site Evaluation* software 2019
- Figure 1.21 Site Lithology Map, Cedar Creek and Belle Grove National Historical Park Showing the Shale/Limestone Interface. Generated by the *Vineyard Site Evaluation* software 2019
- Figure 1.22 Site Land Surface Forms Map, Cedar Creek and Belle Grove National Historical Park, generated by the *Vineyard Site Evaluation* software 2019
- Figure 1.23 Topographic Moisture Potential Map, Cedar Creek and Belle Grove National Historical Park, generated by the *Vineyard Site Evaluation* software 2019
- Figure 1.24 The Opequon Neighborhood north of Cedar creek, c. 1730's. Here, as along Cedar Creek, property boundaries had been drawn to capture a variety of resources, including water, bottomland meadows or marshes, and upland forests.
- Figure 1.25 *The road network in the Cedar Creek Neighborhood. The roads linked the local farmsteads to mills and markets.*

Chapter 2:

- Figure 2.1 The road system in the Cedar Creek Neighborhood. Roads here, as described by Warren Hofstra, "led from farmstead to farmstead, literally from door to door, in a pattern that interconnected members of all ethnic groups to rural economic centers at mills and ordinaries."
- Figure 2.2 Fort Bowman, built c. 1753. Here, the road passed "squarely in front of the house," a typical period orientation.
- Figure 2.3 Ford locations along Cedar Creek in 1873. From Katen, et al. 2012.
- Figure 2.4 Road trace to the ford just east of Fort Bowman: Widow Bowman's Ford
- Figure 2.5 A map of the lower Shenandoah Valley map showing the major gaps through the Blue Ridge. Ashby's Gap is located east of Winchester. Mitchell 1977
- Figure 2.6 The Philadelphia Wagon Road linking Philadelphia with the lower Shenandoah Valley. From Rouse, 1973
- Figure 2.7 Map of Maryland's early roads linking Baltimore with the lower Shenandoah Valley
- Figure 2.8 Fry and Jefferson Map of Falmouth and the Shenandoah, 1751, showing the gaps and roads leading east from Winchester and the lower Shenandoah Valley. From Malone 1935.
- Figure 2.9 Lower Shenandoah Valley trade connections by road, c. 1760. From Mitchell, 1977.
- Figure 2.10 Virginia ports and trade routes from Vestal's, William's, and Ashby's Gaps, 1775. From Preisser 1977.

- Figure 2.11 (Top) Trade routes east from the lower Shenandoah Valley in 1786. (Bottom) Valley trade routes east in 1800. From Mitchell 1977.
- Figure 2.12 Virginia Turnpikes opened before 1817 linking the Shenandoah Valley. From Newlon 1987.
- Figure 2.13 Combined timeline: turnpike companies, canals, and railroads linking the lower Shenandoah Valley.
- Figure 2.14 The Little River Turnpike to the Port of Alexandria.
- Figure 2.15 The Valley Turnpike with the Macadamized surface c. 1880's. *From the Mollus Collection*

Chapter 3

- Figure 3.1 (Top) Virginia's Potomac River ports and trade routes, 1775. (Bottom) The Port of Alexandria, c. 1775. From Preisser 1981.
- Figure 3.2 The Potomack Canal at the Great Falls of the Potomac River
- Figure 3.3 The Potomack Canal locks
- Figure 3.4 Transportation Improvement structures on the Shenandoah River. From Trout 1997.
- Figure 3.5 Shenandoah River sluice navigation plan. From Greiner 1990
- Figure 3.6 The Shenandoah River gundalow. From Bruggeman 2000
- Figure 3.7 Cedar Creek's confluence with the North Fork of the Shenandoah River. Bowman's Mill was located on Cedar Creek only a short distance upstream from the creek's confluence. From Trout 1997
- Figure 3.8 The Chesapeake and Ohio (C&O) Canal
- Figure 3.9 The Alexandria Canal Aqueduct Bridge - looking south across the Potomac River. The C&O Canal is in the foreground. The Aqueduct Bridge provided a direct connection from the C&O Canal to the Alexandria Canal and the Port of Alexandria.
- Figure 3.10 (Top) The Alexandria Canal. (Bottom) The Alexandria Canal Basin
- Figure 3.11 The Timeline of water and rail transportation improvements between the eastern ports and the Lower Shenandoah Valley
- Figure 3.12 The Baltimore and Ohio Railroad reached Harper's Ferry in 1834.
- Figure 3.13 The thirty-two-mile Winchester and Potomac Railroad was completed in 1836 providing direct rail connection from Harper's Ferry to Winchester, Virginia and the Valley Pike
- Figure 3.14 In 1853 the Manassas Gap Railroad linked Alexandria with the town of "Front Royal on the North Fork of the Shenandoah River and the town of Strasburg in the Lower Shenandoah County just west of Cedar Creek

Chapter 4:

- Figure 4.1 Virginia ports and trade routes from Vestal's, William's, and Ashby's Gaps to the eastern ports of Alexandria, Colchester, Dumfries, Falmouth, and Fredericksburg, 1775. From Preisser 1977
- Figure 4.2 The Philadelphia Wagon Road linking Philadelphia with the lower Shenandoah Valley. From Rouse 1973
- Figure 4.3 Philip Nicklin and Company, Philadelphia, Advertisement, 1796
- Figure 4.4 Pasquier and Company, Philadelphia, advertisement, 1797

Chapter 5:

- Figure 5.1 Jost Hite's Grist Mill at the Opequon Neighborhood. From Wayland 1937
- Figure 5.2 Mills in close proximity sited in the shale lands along Adams and Redbud Creeks north of Cedar Creek. From Hofstra and Geier, 2000
- Figure 5.3 Kline's Mill, a period oil mill east of Middletown. From Millpictures.com
- Figure 5.4 U. S. Government sawmill near Chattanooga, 1864. Mollus Collection
- Figure 5.5 U.S. Government sawmill near Chattanooga, 1864. Sawmill upper level. Mollus Collection.
- Figure 5.6 Mills along lower Cedar Creek and tributaries.
- Figure 5.7 Detail of the Varle Map, 1809 showing mills along lower Cedar Creek and its tributaries.
- Figure 5.8 Detail, John Wood's 1820 map, showing 17 mills along lower Cedar Creek and its tributaries.
- Figure 5.9 Detail, Boye-Buchholtz 1859, map of the state of Virginia, showing mills along lower Cedar Creek and its tributaries.
- Figure 5.10 A sketch from *James Herron's c. 1830's Shenandoah River Survey Sketchbook*, locates Senesey's Mill on Meadow Marsh Run near Middletown.
- Figure 5.11 Confederate topographical engineer, Jedidiah Hotchkiss' 1862 *Map of the Shenandoah Valley*, locates six mills along lower Cedar Creek and its tributaries.
- Figure 5.12 The Hotchkiss map of the Battle of Belle Grove and Cedar Creek on Wednesday October 19th 1864, shows the location of Bowman's Mill and five unnamed mills.
- Figure 5.13 Confederate topographical engineer, Jedidiah Hotchkiss' Sketch No. 29 of the Battle of Belle Grove and Cedar Creek also shows the location of Bowman's Mill and five unnamed mills.
- Figure 5.14 The Meiggs 1864 map of the Shenandoah and upper Potomac, locates six named mills
- Figure 5.15 The Gillespie 1864 *Map of the Battle Fields of Fisher's Hill of Cedar Creek* shows the location of ten mills.
- Figure 5.16 Detail of the 1864 Army Corps Map of Central Virginia, which locates eleven mills in the area of Cedar Creek.

- Figure 5.17 This unattributed Frederick County map from the 1860's in the Library of Congress locates eleven mills in the area of Cedar Creek, including seven named mills.
- Figure 5.18 Lake's 1885 Atlas of Shenandoah and Page Counties (the Davis Magisterial District, Shenandoah County) shows four mills in the vicinity of Cedar Creek.
- Figure 5.19 The Gillespie 1866 *Map of the Battlefield at Cedar Creek, Virginia and the Cavalry Fight of Tom's Brook* locates six named mills.
- Figure 5.20 The Stickley Mill from James E. Taylor's Sketchbook. The mill was built on the seat of the original Bowman's Mill on Cedar Creek. From the Western Reserve Historical Society.
- Figure 5.21 Ruins of the Stickley Mill on Cedar Creek, May 2011. Photo by authors.
- Figure 5.22 Bowman's Mill, sale advertisement, November 5, 1879.
- Figure 5.23 Bowman's Mill, (c. 1793) located along the lower reaches of Cedar Creek downstream from the original Bowman Mill. The only known sketch attributed to the mill.
- Figure 5.24 The location of Hite's sawmill, on Meadow Brook upstream from his grist mill is shown on this map from James Herron's c. 1832 *Shenandoah River Survey* sketchbook.

Chapter 6:

- Figure 6.1 Northern Virginia ports and inland trade routes, 1775. From Presser 1977.
- Figure 6.2 The port of Colchester on the Occoquan River, 1862. From, Sprouse, 1992.
- Figure 6.3 The deep water port of Alexandria on the Potomac River, c. 1775.
- Figure 6.4 Shenandoah Valley trade connections to the eastern Virginia ports, 1760. From Mitchell 1977.
- Figure 6.5 Trade Roads from the lower Shenandoah Valley to the northern Virginia Ports, 1786. From Hart 1942.
- Figure 6.6 Shenandoah Valley trade connections to the Virginia ports, 1800. From Mitchell 1977.
- Figure 6.7 The Hite's business network and trade connections for the period as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society.
- Figure 6.8 Korn and Weismiller's retail store in Alexandria, Virginia. From the Historic American Building Survey.
- Figure 6.9 Advertisement for Philadelphia merchant Pasquier and Company, 1797.
- Figure 6.10 Advertisement for Philadelphia merchant Philip Nicklin and Company.
- Figure 6.11 Daniel and Vincent Thuun, Philadelphia merchants, noted in Port of Philadelphia advertisement, 1800.
- Figure 6.12 The Hite General Store at Belle Grove. The store traded as Isaac Hite and Son in the 1790's
- Figure 6.13 The Hite General Store at Belle Grove, aerial photo. The store was located just west of the Bell Grove house as this aerial photo shows. Google Earth image 2019. add Image

Chapter 7:

- Figure 7.1 Bernard McMahon's broadsheet titled "A Catalogue of Garden, Grass, Herb, Flower, Tree, & Shrub-Seeds, Flower-Roots, etc." McMahon's broadsheet is considered the first "seed catalogue to be published in America.
- Figure 7.2 Hemp Production areas of Virginia and the lower Shenandoah Valley, 1776. From Mitchell 1977.
- Figure 7.3 Lower Shenandoah County boundary changes 1776-1836. From Mitchell, 1977 Tobacco was a prominent crop east in the lands of lower Shenandoah Counties that lay east of Winchester and the Blue Ridge.
- Figure 7.4 Export of tobacco, wheat, and flour 1750-1768 from the South Potomac Customs District. The changing demand for wheat and flour production in the late 1760's that this graft illustrates, was a harbinger of the fact that the "long term future of the regional economy lay in wheat." From Preisser. 1981
- Figure 7.5 Southern regional economies map outlining the cattle and grain economy of the Shenandoah Valley, from Mitchell, 1998.
- Figure 7.6 This chart created by historian Robert D Mitchell, shows the amount of production for the militia for various lower Shenandoah Valley crops and livestock products for the period 1779-1783.
- Figure 7.7 By the 1850's, corn, commonly used to feed livestock, had become the lower Shenandoah Valley's principal secondary crop. (Top) battle reconnaissance in a Shenandoah Valley cornfield, from James E. Taylor's sketchbook. From the Western Reserve Historical Society. (Bottom) Cornfield above Bowman's Mill Ford, c. 1880's, from the Mollus Collection.
- Figure 7.8 The 12-year crop rotation schedule for a lower Shenandoah Valley farm located near New Market, Virginia, The rotation, published in the agricultural-periodical, *The Cultivator*, in August of 1849, shows that wheat, corn and the lower Valley's typical field crops were all included in the rotation schedule.
- Figure 7.9 Virginia Agricultural Census Schedule for 1850. From the National Archives and Records Administration.
- Figure 7.10 Virginia Agricultural Census Schedule for 1860. From the National Archives and Records Administration.

Chapter 8:

- Figure 8.1 The route for driving cattle north along the Philadelphia Wagon Road to the cattle market in Philadelphia. From Rouse, 1973.
- Figure 8.2 The route for cattle driven to the market in Baltimore. From Hart, 1942.
- Figure 8.3 Agricultural production by lower Shenandoah County Counties for the militia, 1779-1783. From Mitchell, 1973.
- Figure 8.4 Virginia Agricultural Census Schedule for 1850. From the National Archives and Records Administration.

- Figure 8.5 Virginia Agricultural Census Schedule for 1860. From the National Archives and Records Administration.
- Figure 8.6 Mid-nineteenth century horse-drawn seed drills. From McClelland, 1997.
- Figure 8.7 The horse-drawn McCormick Reaper. From: Mary Evans Picture Library.
- Figure 8.8. (top) Horse-powered treadmill threshing machine. (bottom) A dog-powered treadmill churn. From McClelland, 1997.
- Figure 8.9 A typical freight wagon of the type built and utilized in the lower Shenandoah Valley. From Rouse, 1973.
- Figure 8.10 “Eastman’s Patent” horse-powered corn fodder machine used to cut corn into fodder. From: *The Cultivator* August, 1849.

Chapter 9:

- Figure 9.1 The American grain cradle, c. 1839. Used during the harvest. From McClelland 1997.
- Figure 9.2 The 12-year crop rotation schedule for a lower Shenandoah Valley farm located near New Market, Virginia, The rotation, published in the agricultural-periodical, *The Cultivator*, in August of 1849, shows Red Clover in the crop rotation.
- Figure 9.3 Iron plows, developed in the period between 1790 and 1820, had replaced the traditional wooden plows by the end of the 1820’s. (Bottom) B - The McCormick plow. From McClelland 1997.
- Figure 9.4 Jonathan Eastman’s improved straw cutter could cut “every kind of forage.” From: *The Cultivator* August, 1849.
- Figure 9.5 The McCormick Reaper, was introduced by Cyrus McCormick in 1834. From: Mary Evans Picture Library 2019.
- Figure 9.6 (Top) Bennett's broadcast hand drill, c. 1816. (Middle) Hatch's sowing machine, c. 1845. (Bottom) Palmer's wheat drill, c. 1849. All from McClelland 1997. Bennet’s seed drill, provided superior sowing capabilities compared to hand broadcasting seed.
- Figure 9.7 Early American harrows. (Top and Middle) c. 1816-1818. (Bottom) Improved American Geddes harrow, c. 1845. From McClelland 1997.
- Figure 9.8 (Top) A - 19th century improved wheat fan, c. 1820. From: McClelland 1997.
- Figure 9.9 (Top) A - 19th century horse-powered stationary threshing machine with treadmill. From. McClelland 1997.

Chapter 10:

- Figure 10.1 The *Farmer’s Register*, Vol. 1, 1833, Cover. The *Farmer’s Register* was founded by Virginia planter Edmond Ruffin in 1832 or 1833.
- Figure 10.2 *The American farmer* Vol. 1, Page 1. *The American Farmer* began publication in 1819 from Baltimore under the guidance of its founding editor, John S. Skinner, a former Baltimore postmaster.
- Figure 10.3: *The Practical Farmer*, William Buckminster, 1840

- Figure 10.4 *The Cultivator*, an agricultural periodical published in Albany New York, but read by many Virginia farmers and planters.
- Figure 10.5 The twelve year cycle for the “proper rotation of crops” employed at The Plains, a farm three miles from New Market, Virginia in the Shenandoah Valley, published in *The Cultivator* in 1849.
- Figure 10.6 The Southern Planter, Vol. 3, 1843. *The Southern Planter*, published in Richmond, Virginia was founded by Virginia farmer and lawyer Charles Tyler Botts, in 1841.
- Figure 10.7 The Scotch Plough. From the *Southern Planter*, 1841.

Chapter 11:

- Figure 11.1 Anne T. Hite, 1840 Slave Schedule.
- Figure 11.2 Anne T. Hite, 1850 Slave Schedule.
- Figure 11.3 Advertisement for Isaac Hite’s, Belle Grove slave sale in 1824. From: Laise, 20177
- Figure 11.4 List of enslaved persons recorded in the *Hite Family Commonplace Book*, Virginia Historical Society
- Figure 11.5 Inventory of slave ownership in the lower Shenandoah Valley compiled by historian Robert D. Mitchell included in “Shenandoah Valley Inventories, horses, plows, and slaves, 1780-1800.”
- Figure 11.6 In 1851, Slave ownership recorded for Charles J. Hite showed he owned five enslaved persons. The 1860 Slave Schedule shows Charles owned nine enslaved persons.

Chapter 12

- Figures 12.1-12.3 Battlefield maps drawn by Hotchkiss after the battle, show the battlefield’s topography; the battlefield’s natural features, including Cedar Creek; forested areas and cleared, open lands; and both Union and Confederate troop dispositions.
- Figure 12.4: Among the most detailed maps of the battlefield are those drawn by Lt. Colonel G. L. Gillespie, Major of Engineers, USA. Gillespie’s maps, also drawn after the war, show details in addition to those shown on the Hotchkiss maps, including fence lines and field layouts.
- Figure 12.5: Among the most detailed maps of the battlefield are those drawn by Lt, Colonel G. L. Gillespie, Major of Engineers, USA. Gillespie’s maps, also drawn after the war, show details in addition to those shown on the Hotchkiss maps, including fence lines and field layouts.
- Figure 12.6 Open fields on both sides of the Valley Pike served as Union Army encampment just prior to the Battle of Cedar Creek. They were encampment sites again for the Sheridan Reunion of 1883, as this map by Fuller and Whitney shows.
- Figure 12.7 Battle Reconnaissance in a Shenandoah Valley corn field from James E. Taylor’s Sketchbook. Corn fields are not identified on any of the after action maps of the Battle of Cedar Creek.

- Figure 12.8 Steep slopes on the C. J. Hite farm (the present-day Bowman-Hite farm) above Cedar Creek and the Harmony Hall Ford. Battlefield maps by Hotchkiss and Gillespie show that the slopes here were wooded.
- Figure 12.9 The cleared bottom lands below the C. J. Hite farmhouse remain open fields today. Photo by authors.
- Figure 12.10 Detail map from *Sheridan in the Shenandoah* showing the location of Thoburn's artillery. The gun positions were overrun by Confederate infantry at the start of the battle, from Stackpole 1961.
- Figure 12.11 The wooded ravine "Death Trap" north of Thoburn's position at Cedar Creek. From Mahr 1992.
- Figure 12.12 Two contemporary views of the "Death Trap." The wooded ravine that separated Thoburn from Hayes' position on the cleared knoll to Thoburn's rear remains wooded today. Photo by authors.
- Figure 12.13: The view north from the Belle Grove attic window in 1890. In the distance is the ravine along Meadow Brook north of the Belle Grove House. This wooded ravine was noted in the battle accounts and crossed by Union troops during their initial retreat from the Confederate attack.
- Figure 12.14 The steep, wooded bluffs along Cedar Creek west of Belle Grove remain wooded today. Photo by authors.
- Figure 12.14.1 At the time of the battle there was a heavy growth of thickets and underbrush just north of Kershaw's position shown on the map above that slowed the Confederate advance. Today, the slopes in that area remain heavy thickets
- Figure 12.15 (Top) The thick woods at the crest of Cemetery Hill near Middletown described by Mahr remain today, photo by authors. (Middle) The woods above the Stickley farm also remain, photo by authors. (Bottom) The woods at the crest of Cemetery Hill near Middletown can be seen in this photograph by the Biscoe Brothers c. 1880's.
- Figure 12.16 Open fields on the battlefield. (Top) The fields between Belle Grove and the Valley Pike today. Photo by authors. (Middle) Open fields southeast of Middletown, from James E. Taylor's sketchbook. (Bottom) Another Taylor sketch showing open fields along the Valley Pike.
- Figure 12.17 Period stone wall "fence" along the Valley Pike in the 1880's. From the Biscoe Collection. Similar walls are noted along the Valley Pike west of the Daniel Stickley farm in battle accounts.
- Figure 12.18 The "string of stone walls" north of Middletown near Miller's Mill are shown in this sketch by James E. Taylor.
- Figure 12.19 Rail fences on the Cedar Creek battlefield in the 1880's. from the Biscoe Collection.
- Figure 12.20 (Top) Agricultural fields above Bowman's Mill Ford in 2011 (photo by authors). (Bottom) The same fields in the decades after the battle, from the Mollus Collection.
- Figure 12.21 Scattered wooded areas at the time of the battle as shown on the battle maps, from Katen et. al. 2012

- Figure 12.22 Along the Valley Pike between Belle Grove and the Stickley farm in the 1880's. From the photos of Thomas and Walter Biscoe, photo collage assembled by the authors
- Figure 12.23. View of Massanutten Mountain looking south across Cedar Creek, the Stickley house, and the Cedar Creek battlefield in the 1880's, from the Biscoe Collection.

Chapter 13:

- Figure 13.1. Bottomland at Long Meadow, photo by authors.
- Figure 13.2. Bottomland at Bowman's Mill, photo by authors.
- Figure 13.3. Bottomland on the Bowman Hite Farm.
- Figure 13.4. Upland above the Bowman Hite House.
- Figure 13.5. Rolling upland at the Heater House.
- Figure 13.6 Upland Pasture at the Bowman Hite Farm.
- Figure 13.7 Upland fields at Belle Grove.
- Figure 13.8 Corn in the bottomland above Bowman's Mill Ford with upland pasture above. From the Mollus Collection.
- Figure 13.9 Wooded slopes at the Bowman-Hite Farm.
- Figure 13.10 Woodland at the crest of the hill above the Middletown Cemetery
- Figure 13.11 Cedar Creek below the Bowman-Hite Farm.
- Figure 13.12 Heater House spring house ruins.
- Figure 13.13 Detail from Gillespie's 1873 map of the battlefields of Fisher's Hill and Cedar Creek showing the Heater Farm's orchard.
- Figure 13.14 Detail from Gillespie's 1873 map of the battlefields of Fisher's Hill and Cedar Creek showing the Jennings Farm orchard.
- Figure 13.15 The present-day orchard at Belle Grove.
- Figure 13.16 The remnant orchard at the Bowman Hite Farm in 2012.
- Figure 13.16.1 Shenandoah Valley Farm subdivided by fences and gates, From James E. Taylor's Sketchbook.
- Figure 13.17 Stone "fences" along the Valley Pike in the 1880's, from the Biscoe Collection.
- Figure 13.18 Rail fences on the Battlefield in the 1880's, from the Biscoe Collection.
- Figure 13.19 Rail fences enclosing upland pastures c. 1880's. From the Mollus Collection.
- Figure 13.20 Board fences enclosing the agricultural fields above Bowman's Mill Ford, c. 1880's, from the Mollus Collection.
- Figure 13.21 Gillespie's 1873 map of the Battlefields of Fisher's Hill and Cedar Creek showing fences and property lines.
- Figure 13.22 The twelve year cycle for the "proper rotation of crops" employed at The Plains, a farm three miles from New Market, Virginia in the Shenandoah Valley. Published in *The Cultivator* in 1849.
- Figure 13.23 (Top) McCormick's improved plow. (Middle) A horse-powered threshing machine. (Bottom) A dog-powered treadmill churn. From McClelland, 1997
- Figure 13.24 (Top) McCormick's Reaper, c. 1850. From Mary Evans Picture Library, 2019 (Bottom) Palmer's Wheat Drill. From McClelland, 1997.
- Figure 13.25 Farm complex along the Valley Pike, from the Biscoe Collection.

- Figure 13.26 Jedediah Hotchkiss' *Sketch of the Battle of Belle Grove and Cedar Creek*, 1895.
- Figure 13.27 Lt. Col. G. L. Gillespie's map of the Battlefields of Fisher's Hill and Cedar Creek, 1873.
- Figure 13.28 The open uplands east of the Valley Pike looking northeast across Cedar Creek in the 1880's. From the Biscoe Collection
- Figure 13.29 Panorama looking northwest along the Valley Pike between Belle Grove and the Stickley farm in the 1880's. Collage assembled by the authors from the photos of Thomas and Walter Biscoe,
- Figure 13.30 (Top) Agricultural fields above Bowman's Mill Ford in 2011 (photo by authors). (Bottom) The same fields in the decades after the battle, from the Mollus Collection.

Chapter 14:

- Fig. 14.1 The Virginia Worm, or Snake, Rail Fence on the Cedar Creek Battlefield c. 1880's. From the Biscoe Collection
- Fig. 14.2. Post and Rail Fence. From the Biscoe Collection
- Fig. 14.2.1 Stone Wall "Fences" along the Valley Pike near Middletown. From the Biscoe Collection
- Fig. 14.3 The mosaic of open fields, pasture and woodland along Cedar Creek. From the Biscoe Collection
- Fig. 14.4 The mosaic of open fields, pasture and woodland along Cedar Creek. From the Biscoe Collection
- Fig. 14.5 Area Woodland Vegetation, 1864, Interpolated from the maps of the Battle of Cedar Creek. From Katen et al. 2012
- Fig. 14.5.1 Land Use History Plan: 1864 Period Plan, Cedar Creek and Belle Grove National Historical Park showing Forest, Fields, and Orchard locations. From *Land Use History of the Cedar Creek and Belle Grove National Historical Park*, Olmsted Center for Landscape Preservation, 2007
- Fig. 14.6 Area Woodland Vegetation, 1873. Interpolated from the maps of the Battle of Cedar Creek and period maps. From Katen et al. 2012
- Fig. 14.7 Area Woodland Vegetation, 1895. Interpolated from the maps of the Battle of Cedar Creek and period maps. From Katen et al. 2012
- Fig. 14.8 Bowman-Hite House Woodland Vegetation Composite, 1937-1967. From Katen et al. 2012
- Fig. 14.9 Bowman-Hite House Vegetation Matrix of Woodlands, Agricultural Fields and Orchards, 2007. From Katen et al. 2012
- Fig. 14.10 Cedar Creek and Belle Grove National Historical Park Land Use Map, 2002 Showing the existing vegetation matrix of "Forest/Woodland," "Field/Grassland," and Orchards. From *Land Use History of the Cedar Creek and Belle Grove National Historical Park*, Olmsted Center for Landscape Preservation, 2007

Introduction:

Thematic Narratives

This project was conceived to address gaps in the documentation and knowledge of the evolution of the agricultural landscape of the Cedar Creek and Belle Grove National Historical Park and within its immediate and regional contexts. The lens through which each of the thematic narratives developed in this study has been approached has been the agricultural history of the lower Shenandoah Valley and when possible place the Hite's, Bowmans, and the farmers who settled along Cedar Creek and the lands of the Cedar Creek and Belle Grove National Historical Park within those varied but inter-related narratives. From the project's inception, it was recognized that, if drawn broadly, the multiple contexts of the lower Shenandoah Valley's agricultural history offered a powerful, informative lens and critical framework through which all aspects of the lower Valley's evolution and land use, from the time of settlement to the end of the Civil War, could be framed, understood, and, importantly, presented to the general public and park visitors. Thus, the narratives developed through the study and documentation of the evolution of the lower Valley's agricultural landscape, and the evolution of the agricultural landscape within the Cedar Creek and Belle Grove National Historical Park in particular, could serve Park managers, planners, interpreters, cultural resource specialists, and the interested public as a critical reference point for understanding and interpreting the region's complex, layered history and could harness the potential for the Park's present-day landscape to convey that historical narrative to the general public and park visitors.

The multiple contexts of the lower Shenandoah Valley's agricultural history also provided an opportunity to address the evolution and of the lower Valley landscape across several scales. First, the site scale of smaller farms in the lower Valley, exemplified by the Bowman-Hite Farm. Second, the site scale of larger, agricultural enterprises exemplified by the Belle Grove Plantation. Lastly, the regional scale and context of the lower Shenandoah Valley. The multiple agricultural contexts developed in the study also provided an opportunity to understand the evolution of the varied economic and commercial networks that both supported lower Valley agricultural production and connected the farms of the lower Valley with local, regional, and international markets for lower Valley goods and produce. In addition, the documentation of the varied networks and associated commercial markets engaged by lower Valley farmers provided critical understandings of how the farms in the lower Valley and lower Valley agricultural production were intimately connected to and directly influenced by a complex set of physical, economic, technological, and political forces. The echoes of our complex, present-day global economy resonate strongly with the varied networks linking the lower Valley with the world at large and provide a rich opportunity for interpretation that can link the past at Cedar Creek and Belle Grove National Historical Park directly with contemporary issues familiar to present-day park visitors.

The study was also undertaken to provide the necessary historical contexts for evaluating the landscape's significance in relation to the settlement, early land use, and agricultural history of the lower Shenandoah Valley. The research undertaken as part of this study was understood to be an opportunity to provide an historical foundation for understanding how the park's landscapes have changed over time, understanding what events and activities have contributed to that change, and the potential for the present-day landscape to convey that historical narrative to the general public and park visitors. To that end, the study recognized that it was to be written for a "broad, popular audience" as well as for the Park management team.

The research undertaken in this study also provides documentation to assist in the future with updating the National Register documentation, National Register Boundary delineation, and cultural resource inventories for the Park; to enhance resource preservation within the Park; to guide future decisions to protect the Park landscape's character-defining features from alteration or loss; to provide guidance for enhanced interpretation of the park's landscape history to the general public; and to provide park management with the knowledge needed to make informed decisions about future changes to the park landscapes. Understanding the evolution of the Park's agricultural landscapes will assist in identifying and evaluating the park's existing cultural resources within the historic agricultural contexts and identify and evaluate the current integrity, authenticity, associative values, and significance of the park's resources associated with agricultural land use and early settlement resources

The project study area encompasses all of the Cedar Creek and Belle Grove National Historical Park including Belle Grove and the Bowman-Hite Farm, as well as the Hite family's land holdings in the lower Shenandoah Valley, and the relevant associated extended agricultural landscape near the Park boundary as determined by the research.

A Note on Sources

The project team was tasked with reviewing all of the relevant existing literature and any new sources deemed appropriate by the team, compiling the existing data, and analyzing the existing park landscapes within the multiple contexts of the lower Shenandoah Valley's agricultural history and evolution. The documentation of the varied agricultural landscapes within the Lower Shenandoah Valley and the Park holdings has built upon the numerous thematic works accomplished to date, in particular those earlier thematic works that focused upon the resources within the Cedar Creek and Belle Grove National Historical Park. The documentation has sought to draw out from these earlier thematic works any and all aspects of the agricultural landscape embedded in those earlier studies.

What quickly became apparent in reviewing the earlier thematic studies, studies conducted by professionals from a wide spectrum of disciplines, was the fragmentary nature of the available evidence that specifically referenced the agricultural landscape of the lower Shenandoah Valley and the Park. While the evidence was fragmentary, it was engaged, described, and presented through a rich and varied set of disciplinary lenses. The work of historians, archaeologists, ecologists, ethnographers, historical landscape architects and architects all contributed to the

assembled body of knowledge this report draws upon. While their research and study rarely, if ever, focused specifically upon the lower Valley's agricultural landscape, their varied disciplinary perspectives proved important in developing a clear understanding the complex interconnected fabric of agriculture in the lower Shenandoah Valley of Virginia.

Importantly, the Park's earlier thematic studies drew upon a substantial body of cross-disciplinary literature that provided an initial list of both primary and secondary sources. The varied disciplinary perspectives represented in the previous studies would prove critical to the development of a contextual grounding for the varied agricultural landscapes within the Lower Shenandoah Valley. Many of the earlier thematic studies focused upon specialized areas of historical interest and documented important contexts and events that, directly and indirectly influenced the evolution of the agricultural landscape of the lower Shenandoah Valley. Among those specialized areas of study and research drawn upon was research focused upon western expansion and settlement; period conflicts, including the French and Indian War, the Revolutionary War, the War of 1812; and the Civil War; period transportation and trading networks; early American agriculture and period agricultural economics; milling and agricultural related industry; the nineteenth-century Progressive Farming Movement and advances in period agricultural technology; the influence of nineteenth-Century Virginia horticultural societies; the establishment of an Agricultural Press in the United States; the early and developing regional infrastructures that supported agriculture in the lower Shenandoah Valley; and the influence of slavery on the evolution of the lower Valley's agricultural landscape. Each area of research proved to be critical to developing a full understanding of the evolution of the agricultural landscape of the Lower Shenandoah Valley and its context in the Commonwealth at large.

The agricultural focus of this study required that many of the primary sources noted in the various thematic studies and other secondary source be revisited and studied anew for additional information that could inform understandings about the evolution of the lower Valley's agricultural landscape and those specific agricultural landscapes now located within the Cedar Creek and Belle Grove National Historical Park. Among the primary sources accessed and reviewed were land patent descriptions, period census records including agricultural, industrial, and slave censuses, period maps and photographs, period newspapers and periodicals, period survey books, period travel descriptions, period merchant account books and ledgers, the records of the Post Civil War Southern Claims Commission, the first-hand accounts and after-action accounts by participants in the Battle of Cedar Creek, and the family papers of the Hite, Bowman, and Stickley families. All provided some measure of additional detailed knowledge of the lower Valley's agricultural landscape.

Review of Previous Studies and Reports

The National Park Service on cooperation with the Shenandoah Valley Battlefield Foundation has undertaken numerous previous investigations focused upon properties in the Cedar Creek and Belle Grove National Historical Park. The project team reviewed an extensive list of completed studies, investigations, and reports provided by the National Park Service including:

An Archaeological assessment of Cultural Resources South of the Confluence of Meadow Brook and Cedar Creek in Frederick County, Virginia, by Dr. Clarence R. Geier and Dr. Joseph Whitehorne, Undated.

Archaeological Investigations at the Heater House, Middletown, Virginia, by Laurie J. Paonessa, completed in 1996;

Final Report African-American Historic Context Clarke County, VA., by Maral S. Kallian and Leila O. W. Boyer, completed in 2002

Notes on the Archaeological Assessment of A Small Complex of Structural Features on the Western Margin of Belle Grove Plantation, Frederick County, Virginia, by Clarence R. Geier and Stephen Lotts, completed in 2004

An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek--Belle Grove National Historical Park. Vol. 2: Cultural Resources, Part 1: Archaeological Sites and Cultural Features, by Clarence R. Geier, and Phoebe Harding. Completed in 2006;

An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Vol. 1: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation, by Clarence R. Geier and Kimberly Tinkham. Completed in 2006.

An Overview and Assessment of Cultural Resources and Landscapes within the Legislated Cedar Creek—Belle Grove National Historical Park. Vol. 3: Cultural and Natural Viewscapes, by Joseph W. A. Whitehorne, and Kimberly Tinkham. Completed in 2006;

Whitham Farmstead: Cultural Landscapes Inventory. Completed in 2007;

National Park Service Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007;

Land Use History for Cedar Creek and Belle Grove National Historical Park, by Michael Commisso and Eliot Foulds. Completed in 2007.

Ethnographic Overview and Assessment: Cedar Creek and Belle Grove National Historical Park, by Kathleen Bragdon. Completed in 2009;

Bowman-Hite Property, Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography, by Margaret T. Peters and Marla S. Kalbian. Completed in 2010;

Historic Resource Study: Cedar Creek and Belle Grove National Historical Park. National Park Service, by Kenneth E. Koons and Jonathan Noyalas. Completed in 2010;

Final General Management Plan and Environmental Impact Statement for Cedar Creek and Belle Grove National Historical Park. Completed in 2010.

Interim Management Summary Archaeological Testing at the Historic Barn, Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia. by Joe B. Jones and Jerrell Blake, Jr., Completed in 2011.

Cedar Creek and Belle Grove National Historical Park, "From Back Country to Breadbasket, to Battlefield and Beyond," Interim Interpretive Plan, by Faye Goolrick. Completed in 2011.

An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia, by Moore, William H. Moore, Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, William and Mary Center for Archaeological Research, completed in 2012;

Bowman-Hite Farm, Cedar Creek and Belle Grove National Historical Park, National Park Service Cultural Landscape Analysis, *Vols. 1 and 2*, by Brian Katen, Dr. Mintai Kim, and Dr. Patrick Miller. Completed in 2012;

Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia, by Maral S. Kalbian, Dennis J. Pogue and Margaret T. Peters, Completed in 2014;

Summary of Archaeological Investigations at the Belle Grove Plantation and Surrounding Properties, Frederick County, Virginia, by Matthew C. Greer. Completed in 2014;

Cedar Creek and Belle Grove National Historical Park Maps. By Dr. Mintai Kim, Virginia Tech. Completed in 2014.

Greer, Mathew C., *Archaeological Investigations of Two Possible 19th Century Quarters Sites at Belle Grove Plantation, Frederick County, Virginia: 44FK520 and 44FK521*, by Mathew Greer. Completed in 2016;

Description of Belle Grove Slave Quarter Archaeological Artifacts on Display, Author not identified. Completed in 2017

Additional Sources, Methodology, and Approach

The completed studies, investigations and reports, foundational documents, provided by the National Park Service and the Park staff served as a starting point for this investigation. Each document was reviewed in detail with particular attention directed towards understanding the pre-settlement landscape and its particular environmental circumstances and assets that made the area favorable for agriculture and evidence of the evolution of the agricultural landscape in the lower Shenandoah Valley in general and the lands of the Hite and Bowman families along lower Cedar Creek in particular. Also sought out were period descriptions of agricultural and farming practices and understandings of the evolution of the physical and economic infrastructures that supported agriculture in the lower Shenandoah Valley. The team also developed a comprehensive list of primary and secondary sources referenced in the foundational documents. These sources were reviewed for additional evidence and understandings of the evolution of the agricultural landscape in general and the lands of the Hite and Bowman families along lower Cedar Creek in particular.

The review of the foundational documents provided by the National Park Service also served to identify the mapping history and photographic record of the lower Shenandoah Valley and the lands along lower Cedar Creek and the various archives with holdings identified for additional review. The team was particularly interested in reviewing first-hand primary sources that were used to support the findings noted in the secondary sources and the foundational documents. Among the primary sources the team reviewed were the Hite Family papers housed at the Stewart Bell Archives at the Handley Library in Winchester, Virginia, and at the Virginia Historical Society Collection in the library at the Virginia Museum of History and Culture in Richmond, Virginia. Additional research was conducted at the Library of Virginia in Richmond, Special Collections at the SWEM Library at William and Mary University in Williamsburg, Virginia, the Albert and Shirley Small Special Collections Library in Alderman Library at the University of Virginia in Charlottesville, Virginia, Special Collections in Newman Library at Virginia Tech in Blacksburg, Virginia, and at the on-site library at the headquarters of the Cedar

Creek and Belle Grove National Historical Park in Middletown, Virginia. On-line archives accessed included the Library of Congress, The David Rumsey Historical Map Collection, Period Agriculture and Industrial Census Schedules, and Fold3 Southern Claims Commission Records. Period photographs and sketches of the Cedar Creek battlefield were accessed at the on-line archives of the Thomas Dwight Biscoe Collection at Marietta College, the Mollus Civil War Photograph Collection, US Army Military History Institute at the U S Army Heritage and Education Center, Carlisle Barracks, Pennsylvania, and the James E. Taylor Sketchbook Collection at the Western Reserve Historical Society.

This archival research was augmented by site visits to the Cedar Creek and Belle Grove National Historical Park. All of the research conducted by the team was focused upon the evidence and documentation that spoke both directly and indirectly to the evolution of the agricultural landscape in the lower Shenandoah Valley. What became quickly and consistently apparent in conducting that research was the scattered and fragmentary nature of the evidence. No single study has focused its approach on a developed inquiry through the lens of agriculture as developed and practiced in the lower Valley or explored to determine if those agricultural practices were exemplified by work of the Hite and Bowman and other families on the lands now encompassed within the Cedar Creek and Belle Grove National Historical Park boundary. Collectively, the assembled sources were approached and studied within the framework of several overarching questions. First, what was the larger context within which agricultural practices were carried out in the lower Shenandoah Valley from the time of settlement to the Civil War. Second, what evidence existed concerning the agricultural practices of the Hite and Bowman families on the lands now encompassed within the Cedar Creek and Belle Grove National Historical Park. Third, what would such evidence, if aggregated, reveal about the families' agricultural practices over time, and their interactions with evolving agricultural infrastructures including merchant, manufacturing, and transportation networks, and the progressive farming movement. Ever-present would be the question of slavery's role in the evolution of the agricultural landscape of the lower Valley. Finally, was there evidence that could inform an expanded Park narrative of the kind described by archaeologist Barbara Heath, a narrative that would situate the "total interdependent entity of fields, meadows, woods, outbuildings, dependencies, and dwellings" – the agricultural landscape - within the larger context of "social, economic, and ecological systems." (Heath 1999, p.55)

Given the fragmentary nature of the evidence, specific documentation of small scale agricultural related features within the Park's lands and documentation of the specific uses of fields and woodlands over time have remained elusive. One additional opportunity thus emerged as the fragmentary nature of site-specific evidence became apparent. Might this report also provide an armature for aggregating any additional evidence that would be discovered through future archival and on-site archaeological research. In response to that opportunity the report includes a "Cedar Creek Agricultural GIS Data Base" that locates significant features and characteristics of the agricultural landscape within the present-day Park boundary and along the lower reaches of Cedar Creek. Included in the GIS data-base are the period roads and fords, period and current woodland and field locations located within the present-day Park boundary, Civil War period fence lines, located within the present-day Park

boundary, and those mills and fords that were located along the lower reaches of Cedar Creek and its nearby tributaries. Also included in this report is a geo-referenced “Site Evaluation Report” for the agricultural lands within the present-day Park boundary prepared by Virginia Tech’s Center for Geospatial Information. That report utilizes the Center’s GeoVine program, a newly developed site assessment and management tool originally developed by the Center for Virginia’s wine industry. The site assessment information provided by GeoVine includes soil data, elevation data, aspect data, climate data, lithology, land cover data, land surface forms, and topographic moisture potential. The assessment data has been provided for the entire park. This will allow for the future assessment of specific agricultural fields up to 200 acres in size anywhere within the Park. While this report has not been able to identify and locate particular crops in specific agricultural fields, we believe the agricultural focus of the GeoVine data-base will offer a unique opportunity to more deeply understand the settling generation’s skill in reading the land and can add to a contextual understanding of the suitability of agricultural uses for specific fields over time.

Data and Mapping Compilation

The Cedar Creek Agricultural Landscape GIS data-base compiles data from documentary written sources, historical maps and aerial photographs, and contemporary maps and photographs to create a visual, geographic depiction of the evolution of Cedar Creek’s agricultural landscape. Several historical maps of the Park region have been rectified to overlay contemporary USGS base maps and aerial photographs using the Georeferencing tool in ArcGIS Pro. Feature classes (e.g., fence lines, pastures) created by tracing over these georeferenced historical maps allow for detailed study of the evolution of the Park’s landscape. However, because the historical maps were drawn with varying degrees of precision, the georeferencing process is imperfect and the locations, sizes, etc., of the derived feature classes should be understood as approximate.

Period maps, scattered and incomplete family records, period and post-Civil War descriptions of the Park’s landscape at the time of the Battle of Cedar Creek, the emergence of progressive farming practices in the mid-Atlantic region, and nineteenth-century period census records, including the records pertaining to selected nearby nineteenth-century farms, have all contributed to the contextual understandings this study sets forth. Equally important was the development of contextual understandings of the economic forces and the evolving physical infrastructure that both propelled and responded to the Lower Valley’s developing agricultural economy from the period of settlement to the Civil War

What has emerged from the study is a clear understanding of how interwoven the varied and complex period contexts were that gave form to the landscape along Cedar Creek. The available records and correspondence of the families and businesses along Cedar Creek and official government records, while incomplete, provide additional and consistent evidence of the

aspirations and typical period practices that defined the evolving Agricultural landscape of the lower Shenandoah Valley in the eighteenth and early nineteenth centuries. The story that the analysis of the extant evidence reveals provides a rich narrative about the evolution of an agricultural landscape and a progressive agricultural community deeply connected to local, regional and international markets for the produce and materials they produced.

The Report's Narrative Structure

The research findings suggested a three part narrative structure for this study. Part one of the narrative presents six supporting infrastructures for the developing agricultural landscape of the lower Shenandoah Valley and the Cedar Creek Neighborhood: the region's environmental context, the region's road transportation infrastructure, the region's water and rail transportation infrastructure, the agricultural landscape's economic infrastructure, the agricultural infrastructure of milling, and a commercial infrastructure of merchant networks developed by lower Valley planters and farmers. Part two of the narrative presents five contributing components of the agricultural landscape including crops and agriculture, livestock, the nineteenth century Progressive Farming and Agricultural Reform Movement, Virginia's numerous agricultural societies and agricultural publications, and slavery. Part three of the narrative identifies the significant understandings and opportunities developed by the study. Each chapter is a self-contained interpretive narrative that includes a bibliography and supporting figures (charts, maps, photographs and period sketches as appropriate). Three appendices provide armatures for on-going and additional documentation to be added to what will be expected to be an ever-expanding knowledge base for the agricultural landscape as new discoveries and understandings are unearthed in the future.

Introduction: Bibliography

Heath, Barbara J., "Nineteenth-Century Small Farms and Plantations," in *The Archaeology of 19th-Century Virginia, Special Publication No. 36 of the Archeological Society of Virginia*, John H. Sprinkle, Jr. and Theodore R. Reinhart Editors, , Richmond: Spectrum Press, 1999

Katen, Brian, Dr. Mintai Kim and Dr. Patrick Miller, *Bowman-Hite Farm, Cedar Creek and Belle Grove National Historical Park Cultural Landscape Analysis, Vols. 1 and 2*, Landscape Architecture Program, Virginia Tech, 2012

PART 1:

The Agricultural Landscape: Supporting Infrastructures

Chapter 1:

The Agricultural Landscape: Environmental Context

Critical to developing an understanding of the evolution of the agricultural landscape of the Cedar Creek and Belle Grove National Historical Park is the review and analysis of the cultural and environmental forces that shaped the agricultural context and the early settlement economy of the Lower Shenandoah Valley. Understanding the area's environmental context at the time of settlement provides an important foundation for understanding the early settlement along the lower reaches of Cedar Creek and the eventual success of farming and agricultural operations that developed there. The area's geology, soils, water resources, and existing vegetation all influenced the development of the agricultural landscape that emerged along Cedar Creek. The agricultural landscape's spatial character and its mix of land uses; the evolution of the area's early road system; and the siting of early settlers' houses, mills, and other structures that served as part of the area's agricultural infrastructure were all influenced by the environmental favorable environmental conditions recognized by the area's early settlers.

The environmental conditions the settlers discovered along the lower reaches of Cedar Creek were thus influential determinates in the eventual success of the area's farmers, and in particular the success of the Bowmans, Hites, and other families who settled along Cedar Creek. Their success was in no small measure a result of the ability the earliest settlers demonstrated to "read" the land and select prime sites to establish their agricultural enterprises. The selection of land along Cedar Creek reflected the settlers' deep understanding of the importance of geology, landform and topography, soils, and water resources as critical determinants of favored sites. The settlers understood as well the importance and potential of Cedar Creek. The Creek's "dynamic presence and potential as a power source would influence nearly every aspect of life along its course." (Katen et al. 2012, 21)

Environmental Context: Geology And Soils

Underlying geology of the Shenandoah Valley's karst topography is "generally characterized by thick carbonates (limestone) up to 3.5km deep (Katen et al. 2012, 31). Generally, "the soils found within the Valley are considered fertile and productive for agricultural purposes, being weathered from parent limestone, dolomites, sandstones, siltstones, and acidic shales. (National Park Service 2007, 36 and Katen et al. 2012, 32). Farms sited along the limestone/shale interface, which passes through the present-day Cedar Creek and Belle Grove National Historical Park would have included a "range of soil types well suited for a full range of period agricultural practices including growing crops, raising livestock, and maintaining woodlots." (Katen et al. 2012, 37) In 1793, Harry Toulmin described the fertile bottomlands of the Shenandoah River to

be “remarkably fine” noting that “they are exceeded by none on the eastern waters.” Toulman recognized as well the “abundance of admirable mill seats” found along the “great variety of streams” that fed the Shenandoah River (Tinling and Davies 1948, p. 49) Five years later, the renowned naturalist, John Bartram, traveled through the Valley and noted that “the low grounds” along the Shenandoah River were “very rich and fertile.” (Mitchell, Hofstra, and Conner 2001, 172 and Katen et al. 2012, 37 and 41).

The bottomlands with their rich agricultural soils were an important factor in the agricultural success that would characterize farming in the lower Shenandoah Valley and along Cedar Creek, But perhaps even more important was the limestone/shale interface that ran northward through the lower Valley. The limestone lands along the interface were characterized by a rolling landscape of upland of upland knolls low, discontinuous ridges, and gently sloping broad shallow valleys enclosing wide, well-terraced bottomlands.” The soils of the limestone lands were recognized as “highly productive for corn, wheat, and pasture grasses.” (Hofstra and Geier 2000, 50 and Katen et al. 2012, 41). In contrast, “shale land was deeply dissected by steep, V-shaped valleys” with soils that “tended to be shallow, poorly developed,” and, according to historians Warren Hofstra and Clarence R. Geier, “unproductive for most forms of agriculture.” Harry Toumlin, an English emigrant and young Unitarian minister who travelled through the lower Shenandoah Valley in 1793 to assess the suitability of land for settlement by other would-be emigrants, described the shale soils as “accompanied with a light clay, with which the slate is intimately intermixed. It is not a rich soil, but better parts of it are well adapted to wheat grass and red clover, and the grass is not so liable to be parched as upon the limestone land.” (Tinling and Davies 1948, 48) Toumlin describes succinctly the advantage farmers enjoyed by having a farm with both limestone and slate soils providing “a diversity of landscape, soils, and resources characteristic of shale and limestone lands, including fertile limestone soils and the adequate topography found on shale lands for developing water-powered mills.” (Hofstra 2004, 32 and Katen et al. 2012, 41).

In the lower valley’s uplands, bedrock could be located close to the surface, a ready supply of building material for the early settlers. There are numerous areas with close-to-the-surface bedrock within the lands of the Cedar Creek and Belle Grove Historical Park and along Cedar Creek and its tributaries. (Fig. 1.1) “A significant exposed limestone outcropping” is located along Cedar Creek just upstream of the Stickley mill site. (Fig. 1.2) “This outcropping may have been among the features including ‘veins, mines, and quarries as well discovered” referenced in King George’s original 1734 Bowman Patent” (Patent to Bowman and Katen et al. 2012, 4) Bedrock beneath the barn on the Bowman-Hite farm is located only 0.20 meters below the surface and bedrock has been exposed at the site of the scoured mill race cut at the Bowman Mill site (Fig.

1.3) and along a small unnamed creek just south of Thoburn's Run [Katen et al. 2012, 31] (Fig. 1.4)

Most importantly, the original Bowman Patent lands (Fig. 1.5) and the Cedar Creek and Belle Grove National Historical Park are both located along the interface of the region's shale and limestone geology. (Fig. 1.6 and Fig. 1.7) The geological zone defined by that interface was recognized by the early settlers as offering a particularly "rich combination of natural resources" that would support successful farming activities." [Katen et al. 2012, 27] The interface was easily recognizable to the early settlers who had a practiced skill at reading the land and "understood that access to fertile soils and an adequate water supply were critical determinants in early farm site selection." (Katen et al. 2012, 37) The more fertile soils were identified by the early settlers primarily by the forests that they supported. Hardwood forests were recognized by travelers and settlers alike as a "sign of fertile land," (Katen 2012 et al. 37 and Hofstra and Geier 2000, 50) and the hardwood forests were commonly identified with "limestone-floored valley bottomlands, while pines and scrubby hardwoods were found on shale lands and bordering mountain slopes." (Hofstra and Conner 2001, 172 and Katen et al. 2012, 43) The general fertility of the land in the lower Valley was also noted by Harry Toulmin, who recognized the superiority of the limestone land and its suitability for the mixed grain and livestock farming that the lower Shenandoah Valley farmers had adopted:

"Under the north mountain, there is through the extent of two counties a stiff, clay soil abounding with movable stones, both of the flint and limestone species, It is rather broken but well-watered and naturally disposed to grass. It is likewise well adapted to wheat, but not so well for Indian corn or oats. From thence to the waters of the Opequon Creek is a body of rich limestone land, a light grey color soil, not subject to be exhausted." (Katen et al. 2012, 37 and Tinling and Davies 1948. 48)

Near the end of the eighteenth century, Thomas Chapman, an "English gentleman of fortune," traveled north along the Great Wagon Road "to look at the country," reportedly to determine a good place to settle and live in the Valley. Chapman crossed Cedar Creek on January 18th 1796 and recorded his observations of the fertility of the land north of the creek in his journal, noting that "after crossing Cedar Creek wch [sic] 12 miles from Woodstock, the Country resumed a very fertile aspect and continued so all the way to Winchester," (Chapman 1869, 367)

The importance of the lower Valley's soils cannot be overstated. "The pattern of soils developed above the limestone, shale, and alluvial geologies" that lie beneath the present-day Cedar Creek and Belle Grove Historical Park have been identified by Clarence Geier and

Kimberly Tinkham as having a “direct bearing on the taking up of land for settlement and subsequent variation in agricultural development.” When the land was “improved” for farming by the settlers and the generations of farmers who followed, the result would be a landscape of agricultural fields “that supported wheat and corn agriculture and rich pastures which combined to nurture a highly successful and profitable complex of family farms and slave operated plantations.” (Geier and Tinkham, 2006, 22)

Environmental Context: Hydrology

Cedar Creek, which flows through the original Bowman Patent and the Cedar Creek and Belle Grove Historical Park, was an important contributing factor in the evolution of the agricultural landscape that developed along its lower reaches. A significant feature of Cedar Creek is its “particularly large contributing watershed, with a catchment basin of 155 square miles.” (Fig. 1.8) That large watershed is generally bounded for much of its reach by two roughly parallel ridges, natural features typical in Virginia’s Ridge and Valley Province. North and west of the Cedar Creek and Belle Grove Historical Park, Cedar Creek cuts deeply through Pangletown Ridge, the eastern-most of the parallel ridges. The Creek’s deep cut through Pangletown Ridge is an example of a water gap, where over time an active stream has carved through one of the Ridge and Valley Province’s distinctive parallel ridges. Two distinct valley profiles are found along Cedar Creek’s downstream reaches. “The valley’s formed by Cedar Creek’s northwest-southeast running downstream reaches are...steep V-shaped valleys with shallow soil development...the valleys formed by the northeast-southwest running reaches...are, by contrast, generally U-shaped with accumulated sediments.” (National Park Service 2007, 36 and Katen 2012, 26) One such U-shaped valley along Cedar Creek with areas of accumulated sediments is found within the Cedar Creek and Belle Grove Historical Park - in the bottomland below the Bowman-Hite house (Fig. 1.9)

Another characteristic of streams in the ridge and valley province is found within the Cedar Creek and Belle Grove Historical Park. In the ridge and valley province, drainage lines generally follow the trend of the landforms, with trunk streams flowing along the Valley floors, forming parallel or sub-parallel patterns...” (Katen et al. 2012, 31) An example of that parallel, lattice-like pattern is found in the series of three tributaries that feed into Cedar Creek from the east: Meadow Brook Run and Middle Marsh Run, both of which flow through the Park lands and Buffalo Marsh Run just to the north of the Park.

The profile of Cedar Creek downstream of its cut through Pangletown Ridge was quickly recognized by the settlers as “generally steep enough to have provided the necessary elevation

drop...for water-powered mills” and, over time, numerous mills would be built along the course of Cedar Creek and its tributaries east and south of the water gap. (Marsh 2010, 44 and Katen et al. 2012, 27) Study of the mapping history of the lands along Cedar Creek suggests that as many as 26 mills were built between the water gap and the confluence of Cedar Creek and the North Branch of the Shenandoah River, part of the southern boundary of the Cedar Creek and Belle Grove National Historical Park. Nine mill seats were located on Meadow Brook Run and three mill seats were located on Buffalo Marsh Run. (Fig. 1.10) Collectively, the mills, located on Cedar Creek and its tributaries downstream of the water gap through Pangletown Ridge, were an integral part of the area’s agricultural infrastructure processing agricultural crops, timber and soil amendments. (Fig. 1.10.1)

On shale lands, which are less prone to erosion than limestone land, streams can form meanders, a winding stream configuration. One example of a meander is the “oxbow found along Cedar Creek’s original course just west of the Bowman-Hite farm” at the south end of the Park. This oxbow offered a unique opportunity recognized by the Bowman family. Across the narrow neck of the Oxbow there is a 20 foot drop in elevation, an ideal, compressed topography on which to locate a mill race for a new mill seat. Across the narrow neck of this oxbow, the Bowman’s dug a millrace sometime between 1820 and 1832 to serve the second Bowman’s Mill. (Fig. 1.11) Today, that millrace has become Cedar Creek’s main channel.

Although the topography along Cedar Creek was advantageous for siting mills, Cedar Creek’s large watershed “and the stream’s narrow stream morphology can generate severe flooding” along the stream’s course as it passes through the original “Bowman Patent lands and the Cedar Creek and Belle Grove National Historical Park. (Katen et al. 2012, 27) Over time, the risk of floods in these areas was increased as a result of the extensive cutting of the upstream forests within the large Cedar Creek watershed. Those forests were cut to create “improved” lands primarily for the growing of crops and the pasturing of livestock. The transformation of the forest to “improved” agricultural lands happened quickly and by the 1730’s extensive areas of forested land had been cleared by the early settlers for pasture and agricultural use.” (Katen et al. 2012, 44)) Forest clearing was accomplished by a variety of means including girdling, burning, and clear cutting. Historians Robert D. Mitchell, Warren R. Hofstra and Edward F. Conner estimate that within 2 generations as much as one third of the Valley floor had been stripped of its forest. (Mitchell et al. 2001, 177].

The timber harvested to clear “improved” agricultural land along Cedar Creek was processed in local saw mills to be made into construction materials, fence posts and rails, and later into lumber for the construction of Shenandoah River Gundalows, boats used to ship Valley produce to

market and wagons to take lower Valley produce to markets in the east. Additional timber harvesting supplied wood for the Valley's numerous industrial operations including furnaces, which needed wood for fuel, and tanneries, which utilized harvested bark from the regions forests in the tanning process. On many Valley farms, forest fragments located on steep terrain or on land too rocky to farm were retained as wood lots to provide fuel and materials for use on the farm. (Fig. 1.12)

The records show that flooding has been a frequent event along both the Shenandoah River and Cedar Creek. During the years encompassed by this study, extensive flooding occurred along the River and Cedar Creek in 1771 and again in 1830. The flood of 1830 may very well have been responsible for beginning the process of scouring out the Bowman Mill millrace, exposing the "the shale floor of the new creek bed." and ultimately changing the course of Cedar Creek. (Katen et al. 2012, 27) But, "the same periodic flooding that scoured out the Bowman Mill race and changed the course of Cedar Creek also served to replenish the rich bottomlands along lower Valley streams. The bottomlands along Cedar Creek below the Bowman-Hite farm are typical in that regard. The Bowman-Hite bottomlands today are the "product...of long erosion and sedimentation processes typical along the Lower Valleys' streams." (Fig. 1.13) (Katen et al. 2012, 32)

The frequent flooding along Cedar Creek and the Lower Valleys many streams and rivers occurred even though the lower Valley sits within a rain shadow cast by the high relief of the Appalachian and Blue Ridge Mountains. Within the lower Valley's rain shadow, only 38 inches of rain fall each year, one of the lowest rainfall amounts along the east coast of the United States, and far lower than other Virginia locales, which can average up to 60 inches of rain a year. (Hayden and Michaels 2019) The low rain amounts typical within the lower Valley's rain shadow did not, however, negatively impact the agricultural development of the lower Valley. While the average amount of rain is low, that "precipitation is distributed fairly evenly over the 12 months of the year, with monthly precipitation ranging from a low of 2.3 inches in January to a high of 3.6 inches in June. Effectively there is no dry season" in the lower Valley. (US Station 2019) The lack of a dry season, along with a constant supply of water from Cedar Creek, and "the area's relatively mild climate," with prevailing winds from the northwest and from the west, were conditions that proved "conducive to successful farming along Cedar Creek" and on the lands of the present-day Cedar Creek and Belle Grove National Historical Park. (Katen et al. 2012, 55)

In short, Cedar Creek was a dynamic presence that would influence nearly every aspect of life along its course, including the layout of the Bowman Patent and the various subdivisions of the Patent lands; the siting of houses; the "improvement" of agricultural bottomlands; the siting of

mills along the Cedar Creek and its tributaries; and the layout of the local road system that took advantage of the Creek's numerous potential ford locations. (Fig. 1.14) Finally, the strategic importance of Cedar Creek would influence Civil War military strategy that would eventually bring the Union and Confederate Armies together at the Battle of Cedar Creek in 1864.

Environmental Context: Vegetation

The trees in the predominantly oak forest that Toulmin and the settlers associated with the fertile lands included "black and red oak which is a mark of superior soil, white oak, hickory, walnut and locust." (Katen et al. 2012, 43 and Tinling and Davies 1948, 49) Other tree species found in the oak forests included poplars, maples, sycamores, linden and box elder. The predominance of oaks was noted by Swiss merchant, Louis Michel who described the Valley as a "good land where the great forest of trees of oak, and where much game abounds." (Hofstra, 2004, 1 and Katen et al. 2012, 56) To the settlers, the presence of pines and chestnut oaks were a clear demonstration of inferior shale lands, as noted by naturalist John Bartram, who described "ye woods consisting at first of oaks, hicores [sic], poplars, walnut &c...mark ...much better land than what bears pines." (Katen et al 2012, 37 and Hofstra 2004, 32) The quality of the land as indicated by the forest cover was still a measure for travelers in the 1770's when Nicholas Cresswell passed through the Shenandoah Valley and found in the "extensive deciduous woods...certain indications that the land is rich." (Rice 2009, 244) More recent scholarship continues to register the quality of the land through the forest it supports as demonstrated by historian Warren Hofstra, who describes a "band of thin, infertile soil in the center of the Valley" along the shale lands that supported a "poorer forest of chestnut oak, and various pines." (Hofstra 2004, 22)

The proportional breakdown of tree species that comprised the forest at the time of settlement can be roughly approximated from the results of studies that have documented the species of those trees identified as "witness markers...to designate property corners." The use of trees as "witness markers" was a wide-spread regional practice. (Fig. 1.15) Historians Robert D., Mitchell, Warren R. Hofstra and Edward F. Conner assert that between 1830 and 1855, over 90 percent of all witness survey markers in the Valley were trees. "The most commonly marked tree species was white oak (*Quercus alba*), followed by pine, (probably *Pinus virginiana*), Hickory (*carya* sp.), northern red oak (*Quercus rubra*), and chestnut oak (*Quercus prinus*). (Mitchell et al. 2001, 179 and Katen et al. 2012, 44) In aggregate, the studies of Valley boundary surveys project that the lower Shenandoah Valley forest would have likely been comprised of "71 percent oak, 14 percent hickory, 6 percent pine, 3 percent walnut, and 6% other species." (Mitchell et al. 2001, 172 and Katen et al. 2012, 43) The mix of tree species noted in the boundary surveys reflects those same

species identified in the boundary description for the Patent from King George II to George Bowman. The Patent's boundary description notes 4 white oaks (one near a group of pines), 1 red oak, 1 walnut, 1 "Hicory" [sic], and 1 sycamore. (Patent to Bowman) The forest composition also is suggested by the description of the standing timber lost during the Civil War at the Heater Farm, now located within the boundary of the Cedar Creek and Belle Grove National Historical Park. Caroline Heater testified in her post-Civil War application for damage claims that her farm lost "75-80 acres of good standing timber, of which 60 acres were in 1 strip that had never been cut." The 60 acres of timber noted by Heater was identified in the testimony of John H. Crisman, Joseph W. Hausell, and G. W. Allen as "heavily timbered... white-oak of first quality." (Belle Grove Collection 890 THL Box 13)

The land the earliest settlers found was not entirely wooded, however. There were open meadows and occasional open lands along streams and lands described as "old fields." Historians have believed that the "old fields" were fields used by the lower Valley's earlier Indian inhabitants for growing crops near their villages. By the eighteenth century, those Villages had been abandoned (Katen et al. 2012, 43) after conflicts over trade and territory between the Iroquois and their counterparts living throughout the upper-Ohio [and] upper-Potomac region...had led to [the Indians'] abandonment of the Shenandoah Valley." (Hofstra 2004, 18 and Katen et al, 2012, 59) In addition to "woods" the Bowman Patent references several other landscape typologies including meadows, low grounds, swamps, marshes, and "underwoods." [Patent to Bowman] Those more-open landscape typologies were noted by "seventeenth-century explorer John Lederer who described the Valley's "large plains, or as the inhabitants call them, glades, quite bare of timber, & covered with Shrubs, Ground-Oak, Hazels, &c." (Katen et al. 2012, 43 and Hofstra 2004, 22] Descriptions of similar shrub thickets in steep ravines on the Cedar Creek Battlefield, land that had never been "improved" for agricultural use, appear in many of the battle's after actions reports. When looked at in aggregate, the lands in the Valley were recognized as a "mosaic forest and open land" with extensive edge habitat." (Katen et al. 2012, 43 and Hofstra 2004, 22] Robert D. Mitchell has described the "complex pattern" of the Shenandoah Valley floor at the time of settlement as "covered with a complex forest-grassland mosaic." Mitchell disagrees however with the standard belief that many of the open fields were of Indian origin, finding that:

"Areas of open or lightly wooded grassland were caused primarily by natural processes along river and stream floodplains, not by frequent Indian burning...there is little direct evidence of land disturbed by native-induced burning or crop clearances." (Michell 1998, 22]

The “extensive edge habitat” of the mosaic of forest and open land was characteristic of those landscapes where “one type of forest on shale gave way to another on limestone” and that featured environmental variation and species diversity. Thus, for the early settlers, the shale-limestone interface provided land that was rich, varied, able to support a variety of crops, and provided the settlers with varied resources, including plentiful timber and game. The early settlers also benefitted from the varied topography of the shale-limestone interface a topography that favored the establishment of mills along Cedar Creek and its tributaries. As first generation farms and plantations were subdivided through inheritance, the subdivisions were drawn to insure that each farm had “adequate resources for subsequent generations,” including the necessary range of soil types well suited for growing crops, raising livestock and maintaining varied woodlands. The shale-limestone interface, which passes through the lands of the present-day Cedar Creek and Belle Grove National Historical Park, would provide the generations of farmers who have farmed the lands along Cedar Creek a “balanced, sustainable mix of...bottomlands for crops, uplands for growing wheat and for use as pasture, and with steeper uplands used for maintaining woodlots.” (Katen et al. 2012, 41) Post-Civil War maps of the Battle of Cedar Creek, particularly those of Jedediah Hotchkiss and G. L. Gillespie, (Fig. 1.16 and Fig. 1.17) demonstrate a continued spatial pattern of open treeless bottom lands, upland slopes with agricultural fields and pastures, and steeper, wooded slopes that is characteristic of this agricultural mix, (Katen et al. 2012, 44]

Environmental Context: The Lands Within The Cedar Creek And Belle Grove National Historical Park

The study of the regional agricultural landscape that developed along Cedar Creek gives us a general understanding of the agricultural landscape within the Cedar Creek and Belle Grove National Historical Park. A detailed environmental analysis of all the lands within the Park, focused upon those lands’ agricultural capacities, is beyond the scope of this study. However, new technology is emerging that can quickly and comprehensively analyze lands within in the entire park and provide a database that can both augment historical research and provide a baseline against which the findings of future research might be measured and ultimately aggregated. One new tool with this potential is the *Vineyard Site Evaluation* software developed by the Virginia Tech’s Center for Geospatial Technology to analyze the agricultural potential of tracts of land selected for growing grapes. However, the software can be used to quickly identify a specific selected site’s environmental qualities and those qualities could then, in turn, inform an understanding of a site’s potential suitability for other crops. In essence, the software can also be used to project the anticipated sustainability and vitality of a specified crop that might

have been grown in the past on a particular site or agricultural field. It can help answer the question “would this have been a good field in which to plant a particular crop.”

Importantly then, the Vineyard program can be used to provide a wide range of environmental data for a selected site or agricultural field, including: the site’s elevation, slopes, aspect, lithology, land surface forms, and topographic moisture potential, environment conditions would influence a specific agricultural regime carried out on that site over time. In effect, the Vineyard Site Evaluation software can be used to look back in time to establish the expected past agricultural performance of specific crops on a specific site within the historical, improved agricultural lands found within the Cedar Creek and Belle Grove National Historical Park

A Vineyard analysis of the lands currently within the Cedar Creek and Belle Grove National Historical Park has provided the following environmental information for the park as a whole:

Site Elevation: The average site elevation is 633.27 feet with a minimum site elevation of 306.18 feet and a maximum Elevation of 794.36 feet (Fig. 1.18)

Site Slope: 8.77% of the site is flat (0-2% slopes); 23.71% of the site has 2% to 5% slopes; 46.56% of the site has 5%-15% slopes; and 20.85% of the site has slopes of greater than 15% (Fig. 1.19)

Aspect: 54.28 % of the site is eastern and southern facing (Fig. 1.20)

Lithology: the Park lands lay astride the shale/limestone interface (Fig. 1.21)

Land Surface Forms: 59.16% of the site is categorized as plains while 20.25% is classified as hill and foothills (Fig. 1.22)

Topographic Moisture Potential: 21.81% of the land is mesic; 74.49% of the land is dry upland; 3.54% of the land is potential wetland and only .16% of the site is very dry upland (Fig. 1.23)

Similar information can be generated for specific historical, improved agricultural lands anywhere within the Cedar Creek and Belle Grove National Historical Park.

Environmental Context: Settlement

The first recognized settler of note in the Lower Shenandoah Valley was Jost Hite, who, in 1731-2 led a “group of fellow German immigrants” to establish a settlement along Opequon Creek. Located north of the Cedar Creek in present-day Frederick County, Hite’s settlement exemplified a local example of a particular “settlement system,” that historians came to identify as an “open country neighborhood.” A settlement system, according to historians Robert D. Mitchell and Warren R. Hofstra, includes:”

“the totality of sites, structures and routes of human activity organized across territory and shaped by environmental, social, and economic processes and, in colonial contexts, also by political and ideological imperatives.” (Mitchell and Hofstra 1995, 124)

Study of the open country neighborhood that developed in the Lower Shenandoah Valley has led Warren Hofstra, together with historian Clarence R. Geier, to assert the critical role the environment played in the development and organization of a settlement system, noting that “a settlement system...is bounded by the material extent of their functional interrelationships across environmental space.” (Hofstra and Geier 2000, 51)

The role streams played as a critical structuring element of the “environmental space of the Shenandoah Valley’s open country neighborhood’s organization has been identified by historian Robert Mitchell. For Mitchell:

“Early settlement landscapes were commonly organized this way: adjacent and nearby farms or plantations, located along streams and connected by roads and paths, were assembled into linked rural neighborhoods of two to three miles in extent.” (Mitchell 2000, 34)

Hofstra and Geier, looking closely at the Opequon neighborhood to the north of Cedar Creek, have determined that “access to water may have constituted the greatest single factor in governing the process of population dispersal,” Their study revealed that twelve of thirteen tracks studied in the Opequon settlement were located on a “bottomland terrace or [on a] rise with good access to either stream or spring water.” In addition, they found property boundaries had been “cast so as to capture a variety of resources in addition to water, including bottomland meadows or marshes and upland forests. (Hofstra and Geier 2000, 52-53.) (Fig. 1. 24)

The second generation of Hite’s and Bowman’s in the lower Valley were prominent in the establishment of an open country neighborhood along Cedar Creek that included the subdivision of the original Bowman Patent lands. The open country neighborhood that developed along Cedar Creek was similar in structure and pattern to the open country neighborhood along Opequon Creek. Both open country neighborhoods “captured the mix of resources,” including: “soil fertility, slope, water... a mosaic of forest and open land” and each developed a local road system “reflecting the need for local exchanges of goods and services” that “constituted a “competency” – whereby the resources of each were judged sufficient to allow the neighborhood

a “regional self-sufficiency” and a measure of “economic independence” that would be achieved by “mixed grain-livestock farming.” (Hofstra and Geier 2000, 50-51 and Katen et al. 2012, 60]

Over time, the region’s developing agricultural economics would connect Valley farmers with regional and later international markets for their produce. In response, the settlement system in the lower Shenandoah Valley would expand to include a “web of farms, mills, storage warehouses, towns, and transportation routes” to ever-expanding markets. As a result:

“The layout of farmsteads and landholdings, the design of fields and fences, the traces of roads over uplands and lowlands, the placement of artisan shops or water-powered mills, and the location of towns and villages – all these were responses to agricultural developments traceable to the initial settlement of the lower Shenandoah Valley in the 1730’s and the subsequent penetration of grain markets into the region west of the Blue Ridge beginning in the 1760’s. By 1800, the landscape had become a complex product of socioeconomic arrangements, arrayed in such a way to facilitate production, meet the social and political needs of production and consumers... (Hofstra and Geier, 2000, 48 and Katen et al. 2012, 65]

One measure of the lower Valley’s evolution can be characterized as the result of market development for the Valley’s produce and manufactured goods. For historian Warren Hofstra, however, the story of the lower Valley’s evolution is embodied in three distinct phases of landscape “transformation.” For Hofstra, the first phase was the establishment of the rural kinship communities, the open country neighborhoods, in the 1730’s. The second phase saw the development of more regional settlement systems featuring “dense road networks linking farmsteads to mill and market” in the 1750’s. (Fig. 1. 25) The final, third phase according to Hofstra occurred in the second quarter of the nineteenth century when transportation and trade advancements gave rise to new, distant markets and private trading. (Hofstra, 1995, 212 and Katen et al. 2012, 65 and 68]

The dispersal of the early settlers within the open country neighborhoods at Opequon and later along Cedar Creek directly responded to the imperative of insuring that the settlers benefitted from the mixed resources found along the limestone shale interface. But as Warren Hofstra has asserted in the lower Shenandoah Valley in the 18th century “dispersal did not mean isolation.” What linked the open country neighborhoods together were the roads that quickly emerged - roads “that led from farmstead to farmstead, literally from door to door, in a pattern that interconnected members of all ethnic groups to rural economic centers at mills and ordinaries.” (Hofstra 1997, 64)

Chapter 1: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Belle Grove Collection 890 THL Box 13

Chapman, Thomas, "Journal of a Journey Through the United States, 1795-6," in *The Historical Magazine and Notes and Queries Concerning the Antiquities, History and Biography of America*, Morrisania, NY: Henry B. Dawson, 1869, Series II, Vol. 5p. 357-368

Geier, Clarence R. and Kimberly Tinkham, An Overview and Assessment of Archaeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove NHP. Vols. I-III. National Park Service

Gilham, William, "The Soils of the Valley of Virginia," in *The Southern Planter*, Volume 16, 1856, Richmond: P.D. Bernard, pp. 20-28
<https://archive.org/details/historicalmagazi1869morr/page/356> accessed 07.31.19

Hayden, Bruce P., and Patrick J. Michaels, "Virginia's Climate, accessed at:
<http://climate.virginia.edu/description.htm> July 5, 2019

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800" in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Katen, Brian, Mintai Kim and Patrick Miller, *Bowman-Hite Farm, Cedar Creek and Belle Grove National Historical Park Cultural Landscape Analysis, Vols. 1 and 2*, Landscape Architecture Program, Virginia Tech, 2012

Lewis, Thomas A., *West from Shenandoah: A Scotch-Irish Family Fights for America 1729-1781: A Journal of Discovery*, Hoboken, New Jersey: John Wiley & Sons, 2004

Marsh, William, *Landscape Planning, 5th Edition*, Hoboken, New Jersey: John Wiley & Sons, 2010

Mitchell, Robert D., "The Settlement Fabric of the Shenandoah Valley, 1790-1860: Pattern, Process, and Structure," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Mitchell, Robert D., "The Southern Backcountry: A Geographical House Divided," in *The Southern Colonial Backcountry: Interdisciplinary Perspectives on Frontier Communities*, David Colin Crass, Steven D. Smith, Martha A. Zierden, and Richard D. Brooks, eds., Knoxville: The University of Tennessee Press, 1998

Mitchell, Robert D. and Warren R. Hofstra, "How Do Settlement Systems Evolve? The Virginia Backcountry During the Eighteenth Century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995, pp. 123-147

Mitchell, Robert D., Warren R. Hofstra, and Edward Conner, "Reconstructing the Colonial Environment of the Upper Chesapeake Watershed," in *Discovering the Chesapeake: The History of an Ecosystem*, edited by Philip D. Curtin, Grace S. Brush, and George W. Fisher, Baltimore: The John Hopkins University Press, 2001

National Park Service, *Cultural Landscape Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park*, 2007

Puglisi, Michael J., *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, Knoxville: The University of Tennessee Press, 1997

Rice, James D. *Nature & History in the Potomac Country: From Hunter-Gatherers to the age of Jefferson*, Baltimore: The Johns Hopkins University Press, 2009

Tinling, Marion and Godfrey Davies, eds., *The Western Country in 1793: Reports on Kentucky and Virginia By Harry Toulmin*, San Marino, Ca.: The Henry E. Huntington Library and Art Gallery, 1948.

US Station Daily Date: Access by State, <http://www.esrl.noaa.gov/psd/data/usstation>
Accessed July 5, 2019

"Vineyard Site Evaluation Report: Cedar Creek and Belle Grove National Historical Park,"
Virginia Tech Center for Geospatial Technology, June 6. 2019

Map Sources

1873 Map of the Battle Fields of Fisher's Hill and Cedar Creek by G. L. Gillespie . Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].

Hotchkiss, Jedediah. 1895/1864a. *Battle Fields of Fisher's Hill and Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, No. 29. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].

Chapter 1:

Figures



Figure 1.1 Exposed rock outcropping in upland fields along the Valley Pike south of Middletown. From the Biscoe Collection.



Figure 1.2 Exposed rock outcropping along Cedar Creek, upstream of the Stickley Mill Site.



Figure 1.3 Exposed bedrock in the race at Bowman's Mill. Today the race is the main channel of Cedar Creek.



Figure 1.4 Exposed bedrock in the unnamed stream south of Thoburn's Run.



Figure 1.5 Bowman Patent lands. The Patent lands lay astride Cedar Creek, the Great Road and the shale/limestone/shale interface. From *Whitham Farmstead Cultural Landscape Inventory* 2007.

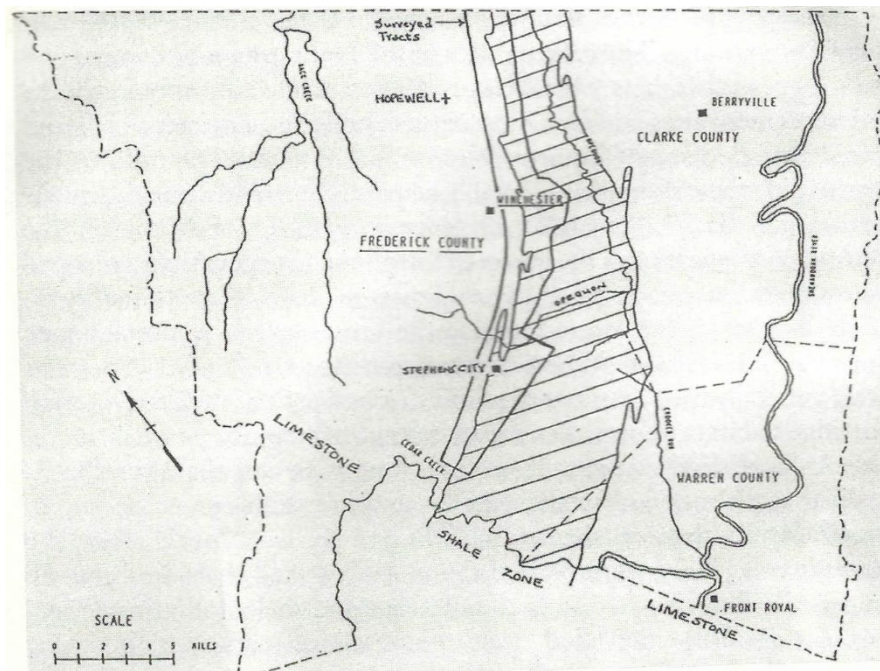


Figure 1.6 Limestone/shale interface north of Cedar Creek. From Mitchell 1997.

Lithology

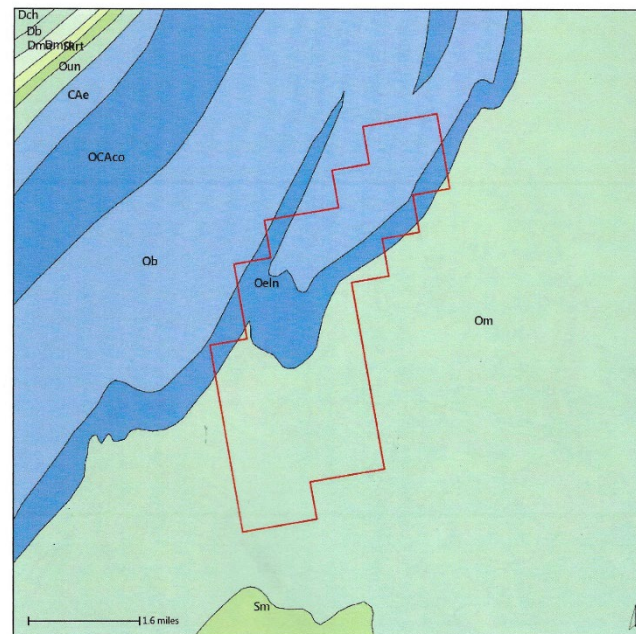


Figure 34. USGS Division of Geology and Mineral Resources, Lithology



Figure 1.7 The boundary of the Cedar Creek and Belle Grove National Historical Park superimposed over the limestone/shale interface. From the *Vineyard Site Evaluation Report* 2019.

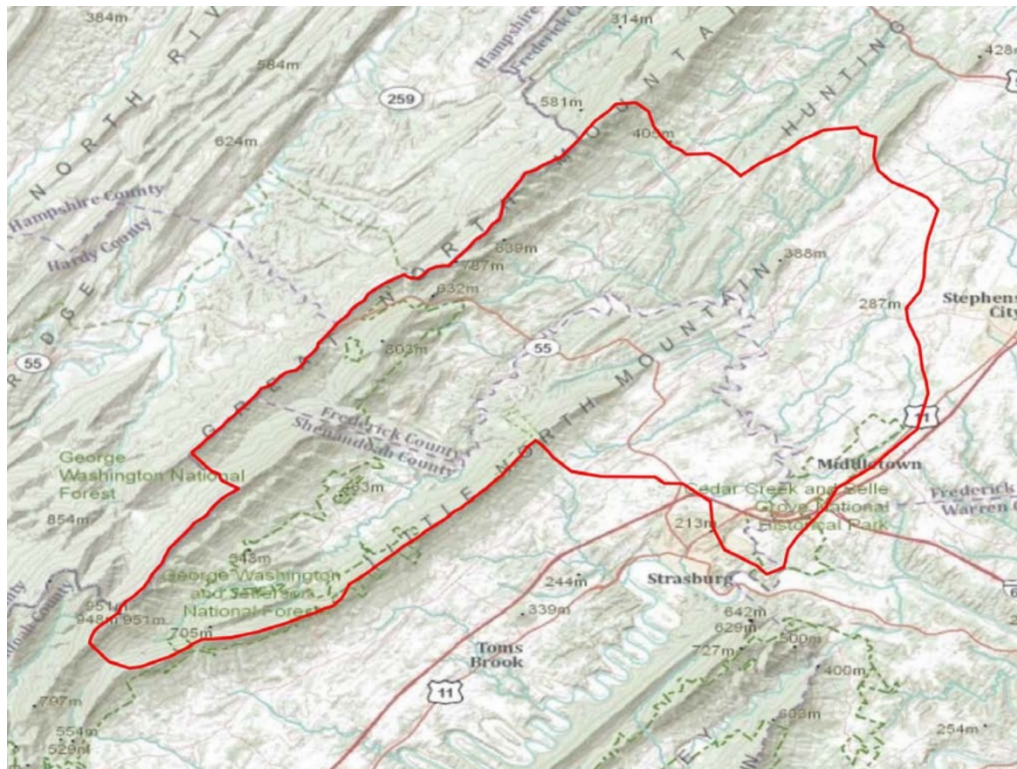


Figure 1.8 The red line traces Cedar Creek's large catchment basin. From Katen et al. 2012.



Figure 1.9 Bottomlands with accumulated sediment at the Bowman-Hite Farm, c. 1937.

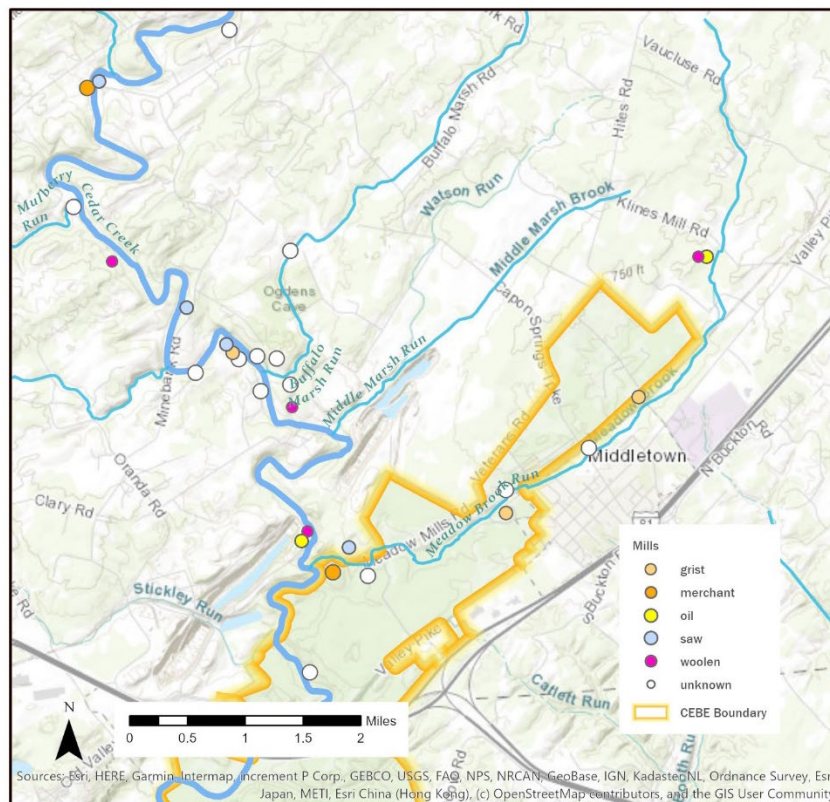


Figure 1.10 Mill seats on Meadowbrook Run and Buffalo Marsh.

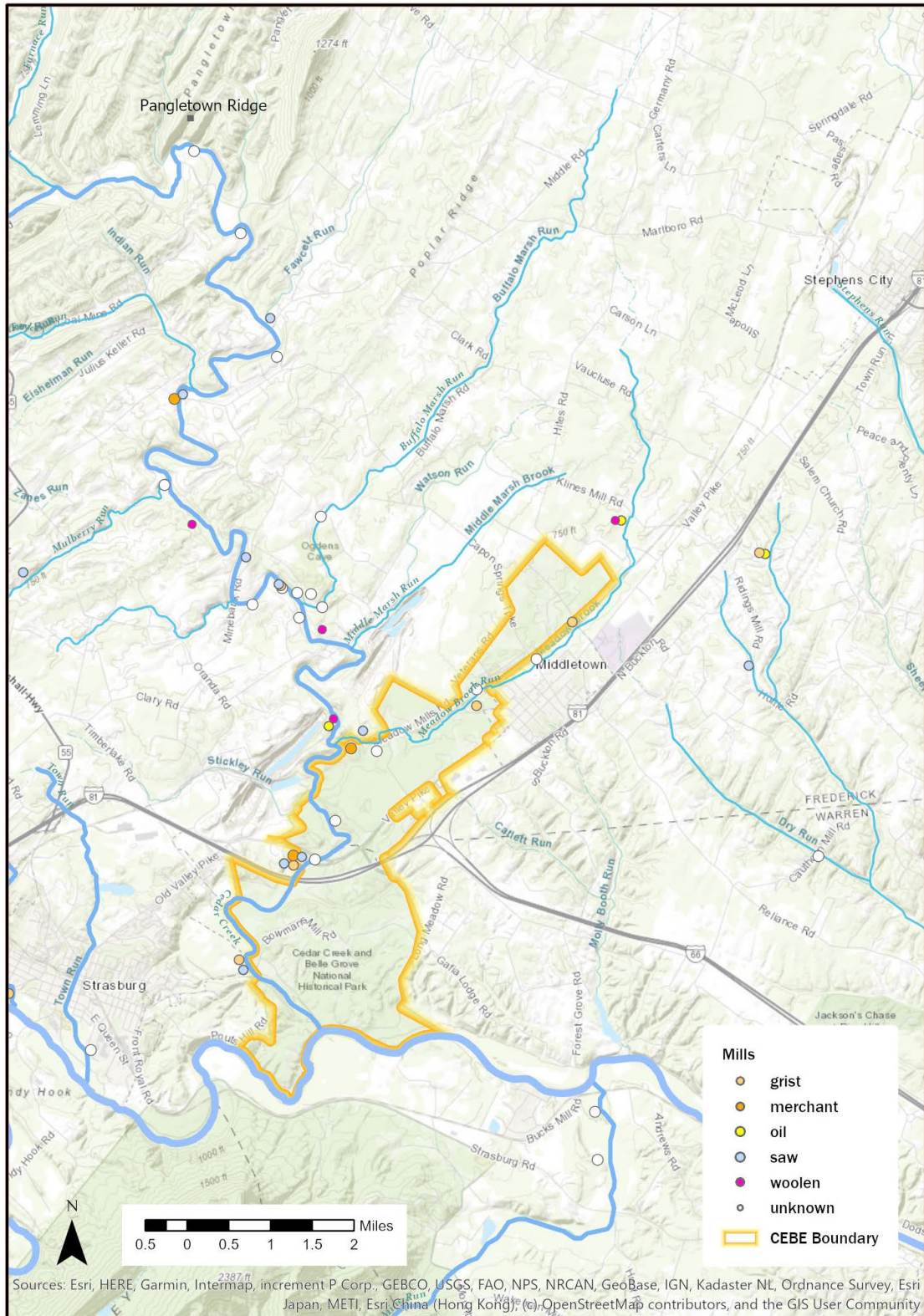


Figure 1.10.1 Mill sites on Cedar Creek and its tributaries near the present-day the Cedar Creek and Belle Grove National Historical Park.

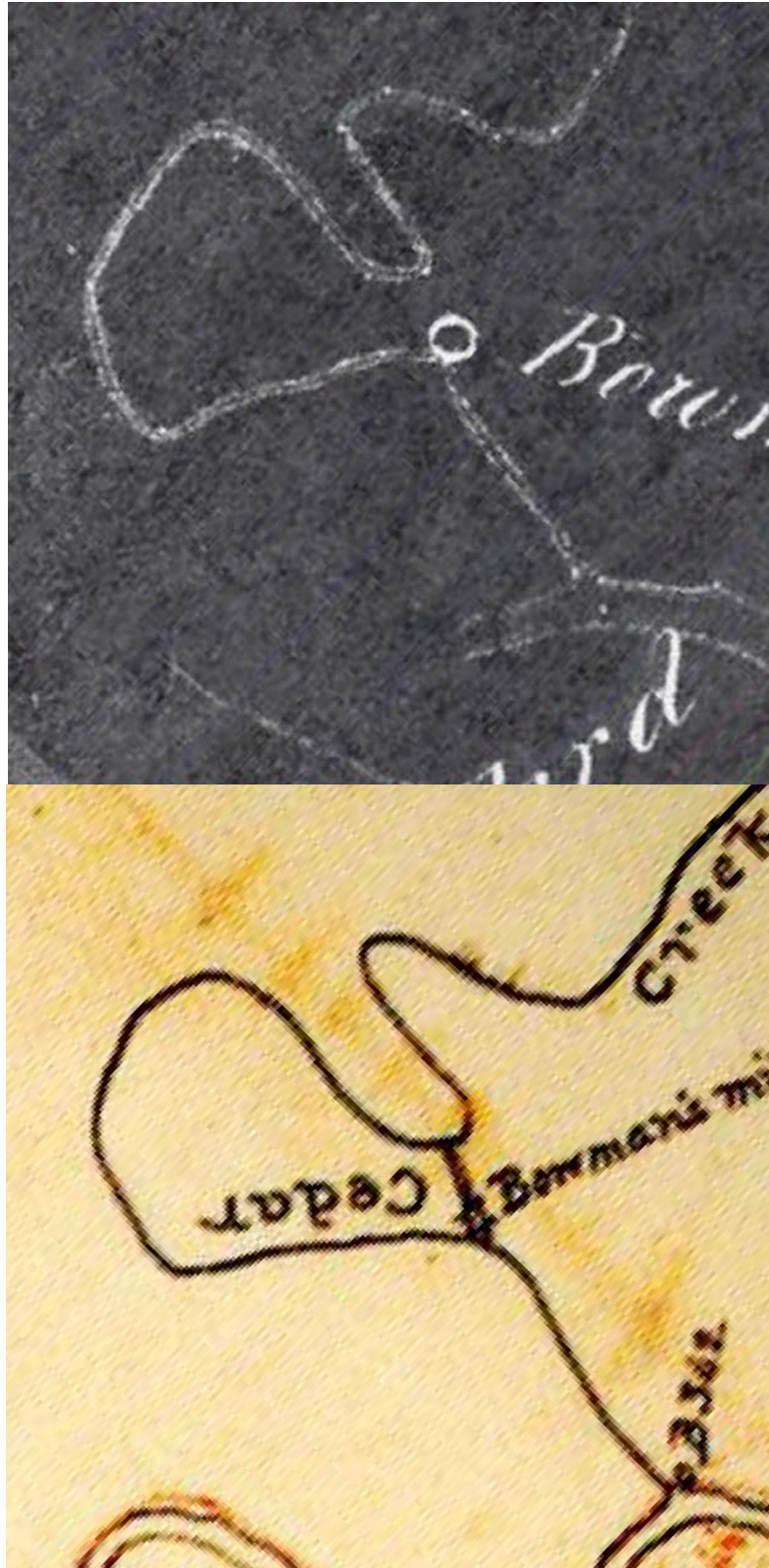


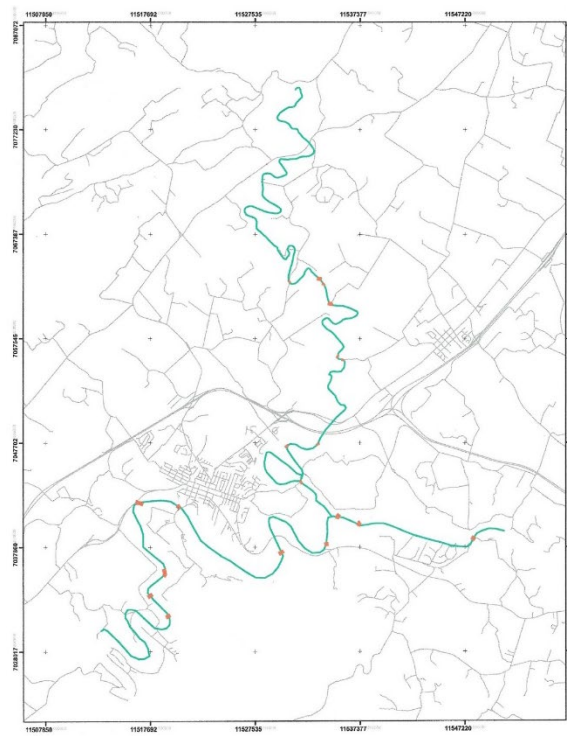
Figure 1.11 (Top) Bowman's Mill pre-1832 without the mill race across the oxbow on Cedar Creek. From John Woods's 1820 map. (Bottom) Bowman's Mill in 1832 with the newly-dug mill race. From Herron's 1832 map.



Figure 1.12 Woodlands on the steeper slopes at the Bowman-Hite farm.



Figure 1.13 Areas of deposition along Cedar Creek in the bottomlands below the Bowman-Hite house.



Legend

- Fords_1873
- Hydrology_1873
- Existing Road

1:60,000
0.25 0.5 1 1.5 2 Miles



Figure 1.14 Ford locations along Cedar Creek in 1873.
From Katen et al. 2012.

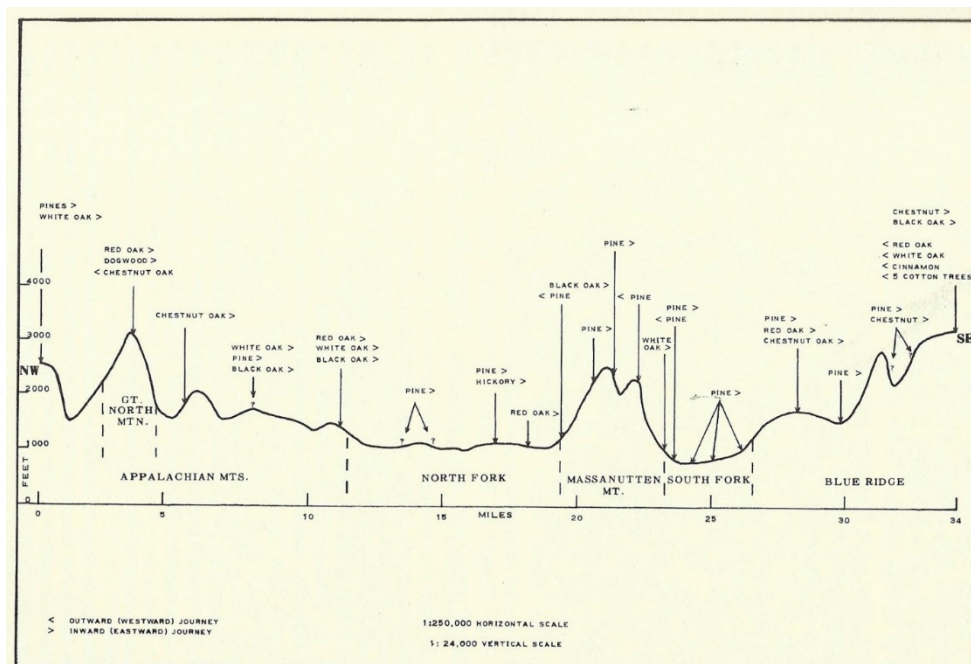


Figure 1.15 Transect along the Fairfax Survey line showing boundary or "witness" marker trees by species. From Mitchell 1977.

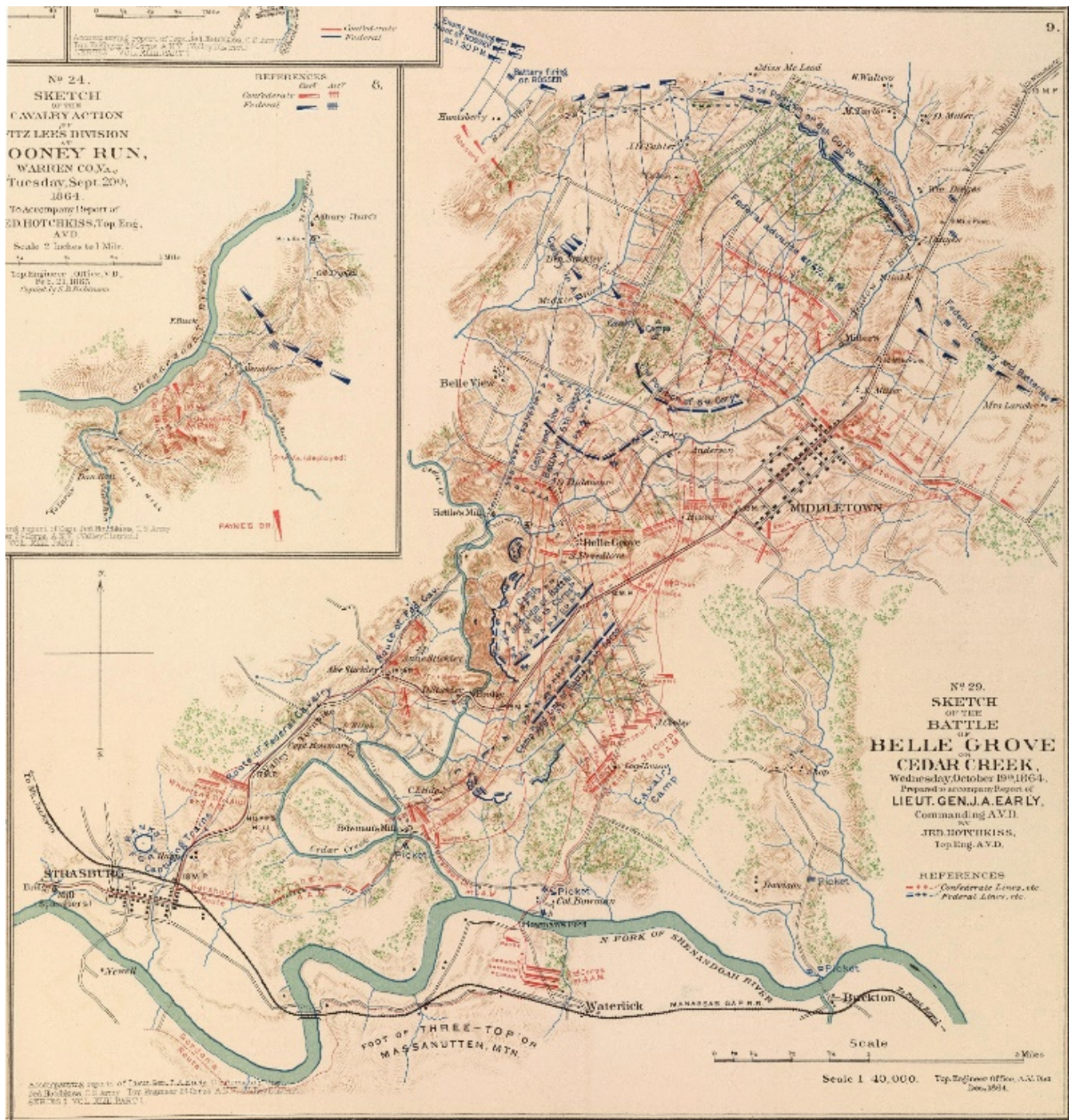


Figure 1.16 1895 map of the Battle of Cedar Creek by Jedediah Hotchkiss showing the spatial pattern of open treeless bottomlands, upload slopes with agricultural fields and pastures, and steeper, wooded slopes that is characteristic of the agricultural lands along Cedar Creek.

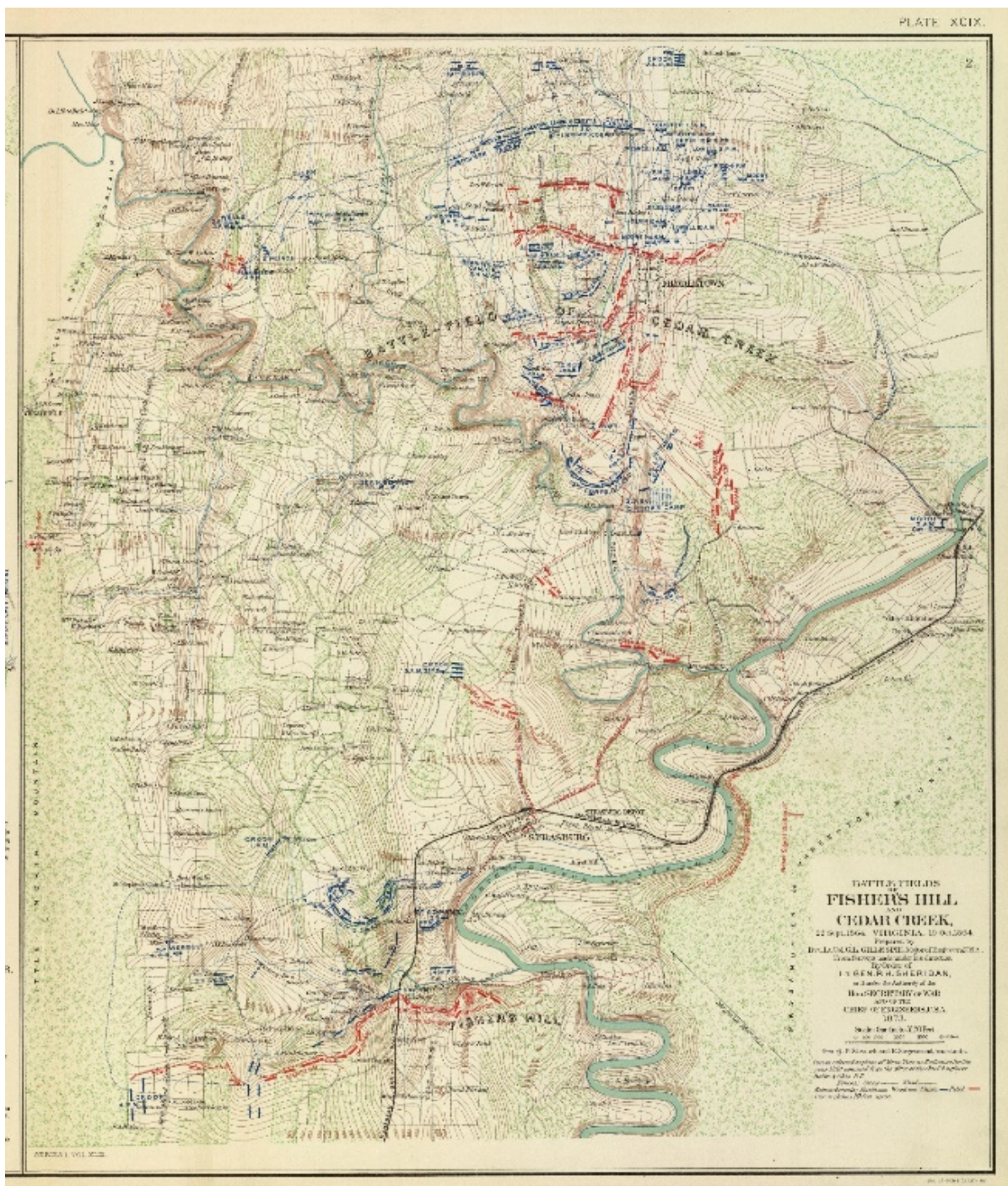


Figure 1.17 1873 Map of the Battle Fields of Fisher's Hill and Cedar Creek by G. L. Gillespie showing the spatial pattern of open treeless bottomlands, upland slopes with agricultural fields and pastures, and steeper, wooded slopes that is characteristic of the agricultural Lands along Cedar Creek.

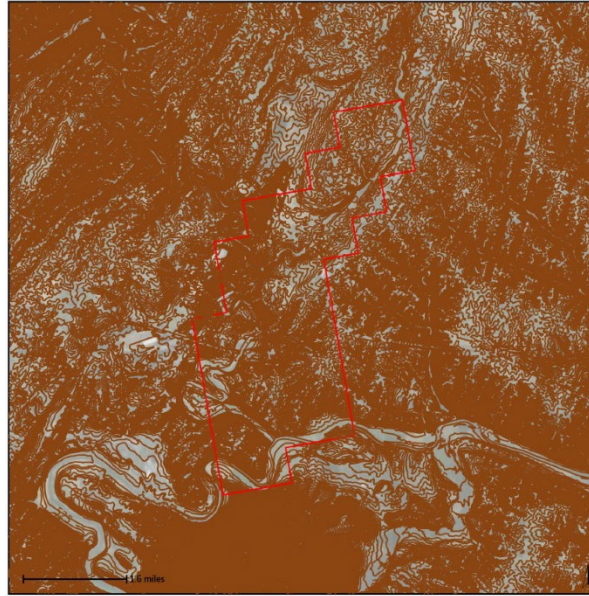


Figure 26: USGS National Elevation Dataset: Elevation Contours, VBMP Orthoimagery (Mosaic/Orthoimagery)

Average Site Elevation: 633.27 ft Minimum Site Elevation: 306.18 ft Maximum Site Elevation: 794.36 ft

The contour map shown above is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The contours are generated dynamically at a 10 foot interval.

Figure 1.18 Site Elevation Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

The slope map shown in figure 27 is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The slope values are calculated using GDAL, an open source geospatial python library.

Average Site Slope: 11.43 °
Minimum Site Slope: 0.0 °
Maximum Site Slope: 308.2 °

The classification method for the slope map in figure 28 was established by CGIT during the Eastern U.S. Grape & Wine Quality initiative.

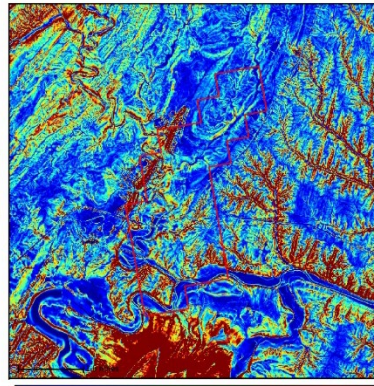


Figure 27: USGS National Elevation Dataset: Slope (calculated)

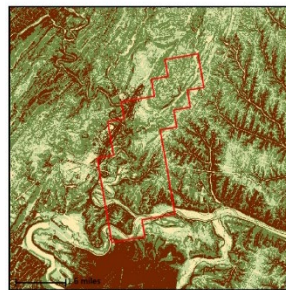


Figure 28: USGS National Elevation Dataset: Classified Slope (calculated)

	Classification Range	Percent of Site
Flat Land	0% - 2%	8.77%
Suitable	2% - 5%	23.71%
Highly Suitable	5% - 15%	46.56%
Unsuitable	> 15%	20.85%

Figure 1.19 Site Slope Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

The aspect map shown in figure 29 is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The aspect values are calculated using GDAL, an open source geospatial python library.

Average Site Aspect: 187.65 °
Minimum Site Aspect: -1.0 °
Maximum Site Aspect: 360.0 °

The classification method in figure 30 represents the downslope orientation as the appropriate cardinal direction.

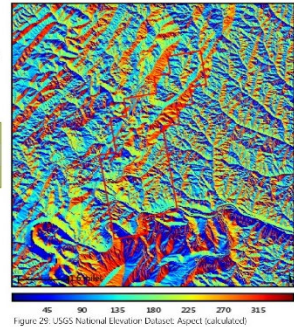


Figure 29: USGS National Elevation Dataset, Aspect (calculated)

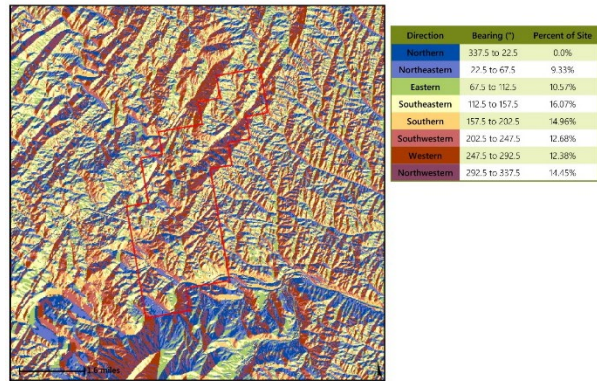


Figure 30: USGS National Elevation Dataset, Classified Aspect (calculated)

Figure 1.20 Site Aspect Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

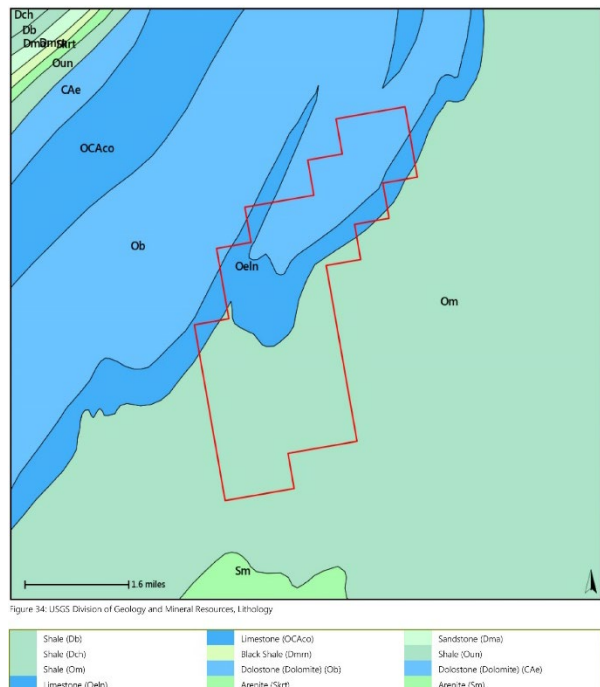


Figure 34: USGS Division of Geology and Mineral Resources, Lithology

Figure 1.21 Site Lithology Map, Cedar Creek and Belle Grove National Historical Park, showing the Limestone/shale interface. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

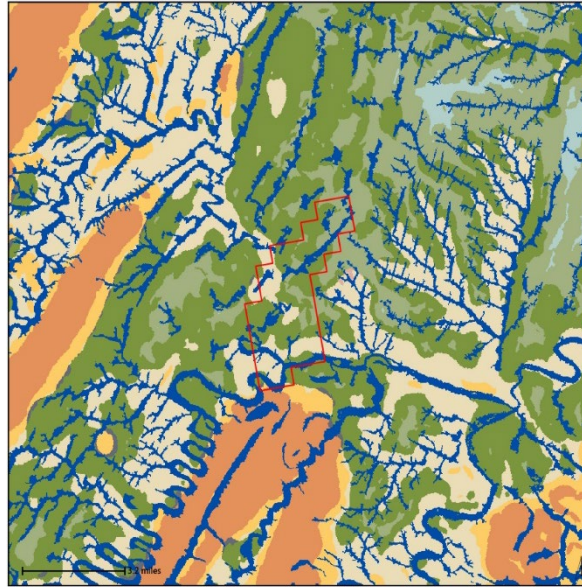


Figure 23: USGS Land Surface Form Dataset

0.0%	Flat Plains	44.3%	Irregular Plains	0.0%	Low Hills	0.56%	Breaks/Foothills	2.50%	Low Mountains
14.08%	Smooth Plains	0.00%	Escarpments	19.92%	Hill	0.00%	Drainage Channels	0.00%	High Mountains/ Deep Canyons

"As part of an effort to map terrestrial ecosystems, the U.S. Geological Survey has generated land surface form classes to be used in creating maps depicting standardized, terrestrial ecosystem models for the conterminous United States, using an ecosystems classification developed by NatureServe." (Cress, Sayre, Comer, and Warner)

Figure 1.22 Site Land Surface Forms Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

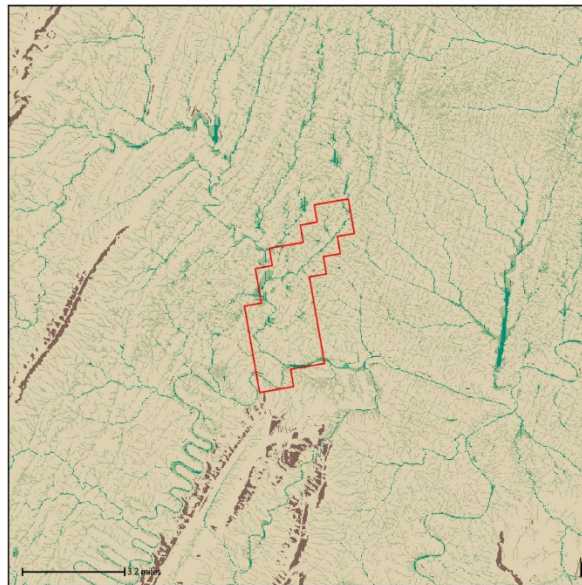


Figure 37: USGS Topographic Moisture Potential

25.81%	Mesic Uplands	74.49%	Dry Uplands	0.00%	Very Dry Uplands
0.00%	Potential Wetlands (Periodically Saturated or Flooded Land)				

This dataset was derived from the Compound Topographic Index (CTI) dataset, which was itself a derivative product of the National Elevation Dataset (NED), created by the Elevation Derivatives for National Applications (EDNA) project.

Figure 1.23 Site Topographic Moisture Potential Map, Cedar Creek and Belle Grove National Historical Park. The Park boundary is outlined in red. Generated by the *Vineyard Site Evaluation* software in 2019.

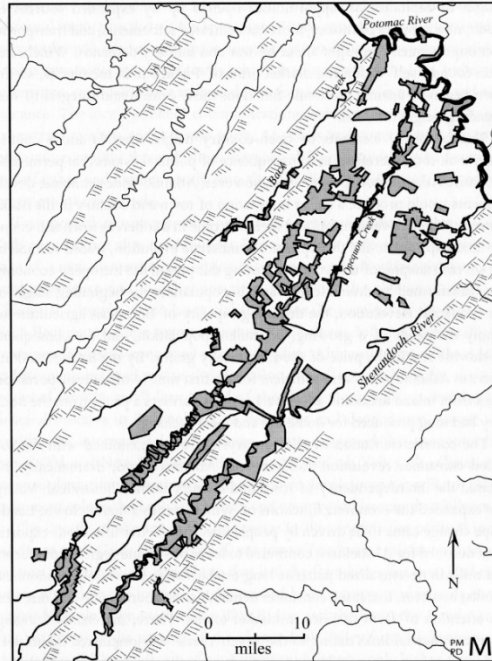


Figure 1.24 The Opequon Neighborhood north of Cedar Creek, 1730's. Here, as along Cedar Creek, property boundaries had been drawn to capture a variety of resources, including water, bottomland meadows or marshes, and upland forests.

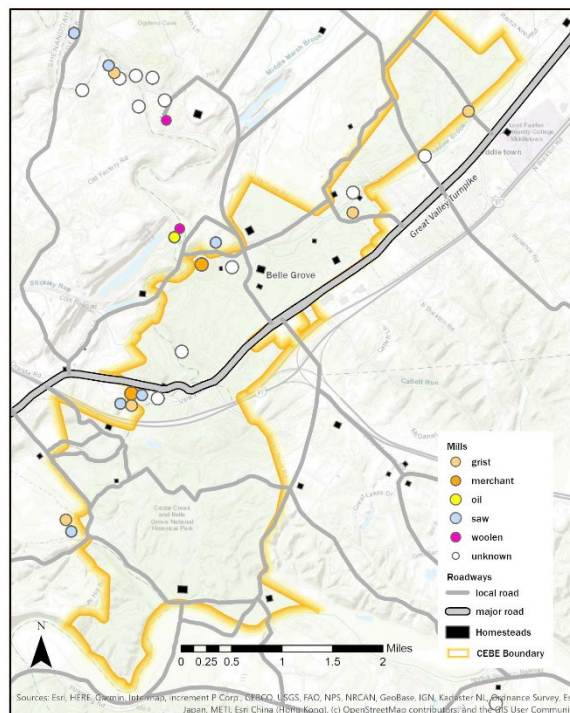


Figure 1.25 The road network in the Cedar Creek Neighborhood. The roads linked the local farmsteads to mills and markets.

Chapter 2:

The Agricultural Landscape: Transportation Infrastructure - Roads

As Colonial settlement progressed westward in the early part of Eighteenth century, the “wagon road” that pushed west from Philadelphia linking Lancaster, York, Gettysburg, Chambersburg, [and] Greencastle in Pennsylvania served as the primary travel route west for the early settlers. A branch of the wagon road was soon extended south into Maryland, first to Frederick, and not long after to Hagerstown. By the 1730’s this major offshoot of the wagon road had pushed southward across the Potomac River and into the Shenandoah Valley of Virginia following an “old native trail coined the ‘Great Warrior Path’ (The Valley Turnpike Company 2019). In Virginia, the Wagon Road would serve as an armature for the development of the fine grain local road system linking the lower Shenandoah Valley’s open country neighborhoods.

It was this southern extension of the wagon road into Virginia that brought Jost Hite and the early settlers who accompanied him to the lands in the lower Shenandoah Valley in 1732. (Hofstra and Geier 2000, 51) As the open country neighborhoods were established along Opequon and Cedar Creeks, a fine-grained” local “road system” developed that Historian Warren Hofstra has identified as a “truly vernacular component of the cultural landscape.” (Hofstra 1995, 214) This local road system is now recognized as a defining feature of the lower Valley’s distinctive “settlement system” along with farms, mills, and markets. (Hofstra and Geier 2000, 59) These local “country” roads were “neither random nor arbitrary.” As Hofstra discovered, the country lanes “all led somewhere.” They were “ordered with great precision by natural terrain and community consensus” to connect “the farmer to the ordered world of the public market.” (Hofstra 1995, 216-217) For Hofstra the local road system also demonstrated that “dispersal did not mean isolation, and roads quickly emerged that led from farmstead to farmstead, literally from door to door, in a pattern that interconnected members of all ethnic groups to rural economic centers at mills and ordinaries.” (Fig. 2.1) (Hofstra 1997, 64) While Hofstra identified that the “informal pattern of roads and paths emerged according to needs and circumstances,” he also understood the deeper implications of this pattern of roads in the landscape of the Lower Valley and how the road system that developed supported the agricultural economy of the lower Shenandoah Valley. For Hofstra, the landscape of roads in the lower Valley gave physical expression to “the needs of its inhabitants to connect with one another. The early road network made possible “the exchange of goods and information everyone needed for survival and economic competence, and it occurred in the public space of the mill the doorway, or the road.” (Hofstra 2004, 157)

Hofstra clearly establishes the importance of the roads as a spatial and orienting determinant within the lower Valley, noting that:

“the essential relation determining house siting was not direction, view, aspect, or slope...but orientation to the road. Farmsteads, furthermore, were laid out in relation to the road, not according to the perpendicularity or linearity of roof lines.

Rural families regularly selected road intersections as sites for their houses, barns, and yards. Because farmsteads were often located centrally within farm tracts, these roads traversed private properties instead of conforming to property boundaries [At Opequon, the houses were]....sited in a consistent pattern with roads passing squarely in front of houses and often between houses and barns." (Hofstra 1995, 217 and 218).

A good example of a house with a road passing "squarely in front of it" is Fort Bowman located along Cedar Creek within the Cedar Creek and Belle Grove National Historical Park (Fig. 2.2). Hofstra further identifies that houses sited so closely to the road "were intended to be viewed from the road. The architecture of the houses interiors, often featured "eight to ten-foot-wide central passages" which "not only matched the average width of a roadway but literally and symbolically extended the road into the house." (Hofstra 1995, 219)

As the early, "rudimentary road system" developed, primarily as Hofstra and Geier demonstrate, to "facilitate local exchanges" among Valley settlers, the pattern of the road system in the Lower Valley assumed what has been called a "trellis effect." That road pattern developed in part to connect the scattered early farms to the numerous mills that developed along the lower Valley's many streams. The earliest roads that developed and would begin to give structure to the local road system branched from "the north-south trace of the Philadelphia Wagon Road," to connect to the settlement along Opequon Creek. But the road system quickly was expanded to extend "the public function and public space of markets across the countryside," including the open country neighborhood that developed along Cedar Creek. (Hofstra and Geier 2000, 53 and 57). The early road network's trellis structure and "the routes and ways of the initial road network persisted" because, as Hofstra and Geier have identified, "local trade, flour milling, and grain exporting remained decentralized in patterns deeply rooted in the household economies of open-country neighborhoods." Moreover, as agricultural production in the lower Valley increased, "the greater frequency of trips to market" intensified the trellis effect of a net of routes [that were] organized about the Philadelphia Wagon Road." Eventually that network of routes would grow and spread out across the "rural space" of the lower Valley and connect to those roads that led to the eastern ports and regional and international markets for the lower Valley's agricultural produce. (Hofstra and Geier 2000, 56)

Efficient local roads and the transportation of agricultural goods by road would, however, depend on having well maintained roads. Maintenance of Virginia's early roads was derived from English precedents outlined in the "Common Law and the basic road law of 1555 which had placed the responsibility for the construction and maintenance of roads upon the parish, the smallest English administrative unit." (Pawlett 2003, 3) A provision in the 1555 road law "required six days labor a year from each parishioner to help maintain the roads." (Pawlett 2003, 3) and by 1657 Virginia had adopted a variation of the maintenance provision included in the 1555 road law by requiring "all titheables, males above the age of 16 whether free or slave...to work on the roads under their supervision when so ordered by

the parish vestry.” The “gentlemen justices of the county courts” were then responsible for appointing “individual overseers of roads [or “surveyors of highways”] to handle specific roads or portions thereof” (Pawlett 2003, 4) One early settler who was appointed a “surveyor of the road,” was George Bowman, Jost Hite’s son-in-law, who ,along with two other men, was appointed Overseer of a road constructed in 1743/44 from “John Ffunks Mill cross [sic] Cedar Run Creek, with the responsibility for clearing the road according to law.” Apparently, the overseers, did not always perform their assigned duties in a timely fashion, since in 1745, the names of the overseers, including George Bowman, were presented to the Grand Jury for failing to complete their work satisfactorily. “We present George Bowman, Surveyor of the Road from Cedar Creek to West Run for not clearing the said Road According to law within six months last past...” (Pawlett 2003, 7) The resolution of George Bowman’s failure in not clear but in 1758, Bowman was again assigned responsibility for laying off a road, this time from “Peter Stoufer’s to George Bowman’s Mill” on Cedar Creek. (Kalbian, Pogue, and Peters 2014, 10-14) This road maintenance system adopted by Virginia would remain in effect throughout the colonial period. It would not be until the coming of the Turnpike Era in the early nineteenth century that a more efficient and reliable system of road maintenance would be initiated. Until the Turnpike Era maintenance improvements were in place, road maintenance and its impact on commerce would be a constant subject of concern of Virginia merchants and farmers throughout the Commonwealth.

Virginians’ concerns were well justified. As the local road system expanded, farm households were linked “not only to each other but also to nearby mills, hamlets, and villages, as well as to Winchester.” As Warren Hofstra has observed, the economic impact of the expanding road system was significant: “It was by road and wagon, of course, that farmers took the first step in transforming their wheat crops into flour profits.” The flour was produced in local mills that “were dispersed in the landscape by their necessary dependence on water power.” (Hofstra, 2004, 190) But the layout of the road network also was also shaped in part by the need to access the numerous fords that provided crossing points on creeks throughout the Shenandoah Valley. Among the fords that crossed Cedar Creek within the present-day Cedar Creek and Belle Grove National Historical Park are the Harmony Hall Ford, Bowman’s Mill Ford, and the Widow Bowman’s Ford, all located on Cedar Creek. (Fig. 2.3 and Fig. 2.4)

At the same time that the local road network was growing to connect “any one farmstead to virtually every other farm or mill in the community,” (Hofstra 1995, 213) lower Valley farmers were beginning to lobby the state legislature for the creation of better road connections to the eastern ports and to expanded markets for their agricultural production, particularly flour. Road historian Nathaniel Mason Pawlett has emphasized that creating more efficient means of getting goods to market was an important priority for Valley farmers (Pawlett 2003, 3) The lower Valley farmers recognized that the shortest route to eastern ports wasn’t north by road to Philadelphia or Baltimore but rather east through the mountain gaps of the Blue Ridge to the developing Virginia ports on the Potomac river. The farmers understood that improved, direct road connections to the Potomac River ports

would serve to lessen the time to market and thus reduce the costs for shipping agricultural goods to eastern merchants. Soon, advocates for eastern trade began lobbying for improved roads, and in 1736 lower Valley farmers petitioned the general assembly:

“complaining that they had no road to take trade to eastern Virginia and wished one to be built over the Blue Ridge from the forks of the Shenandoah through Chester Gap. Response to the settler’s petition came slowly but construction of a road east through Chester Gap was begun in 1737. During this same period, the county court in Orange supported the construction of a road through Ashby’s Gap to the future site of Winchester.” (Hunter 1957, 238)

By 1748 Valley advocates for increasing trade with Eastern Virginia and its port towns had secured a levy on tithables to clear a road from Pignut Mountain (in present-day Fauquier County) through the Blue Ridge at Ashby’s Gap. (Fig. 2.5) “Almost immediately the legislature followed this with an act...to improve the crossing of the Blue Ridge farther south at Swift Run Gap (route 33 in Greene County) and at Wood’s Gap (now usually called Jarman’s) where the Three Notch’d Road passed from Albemarle County into the Valley.” Support for improving the roads through Chester and Ashby’s gaps recognized that the topography encountered in the lower Valley was generally less severe than that found farther south. But establishing improved road connects east through the mountain passes would not be easy. The necessity for better roads leading east to ports of trade would be tempered by the harsh realities of “the more complicated engineering problems and the greater financial resources required to cope with the crossings of the Blue Ridge and the Allegheny Mountains...[throughout] the late eighteenth and early nineteenth centuries.” (Pawlett 2003, 4-7) Despite the recognized difficulties, the long sought after goals of road improvements and additional roads east from the Shenandoah Valley, was supported jointly by both Valley farmers and merchants at Virginia’s Potomac River ports. Their combined support did result in some improvements and by the late 1740’s, wagon transportation between Winchester, founded in 1744, and the trading ports of eastern Virginia became a reality. (Mitchell 1977, 154)

Despite the improved passage east through Chester and Ashby’s gaps, The “difficulties” encountered in upgrading and, importantly, maintaining the roads that traversed the Blue Ridge and the Allegheny Mountains kept much of the early trade orientation for Valley settlers and farmers focused on Philadelphia, via the Great Road. (Fig. 2.6) As a result, the transportation of goods, including agricultural goods and livestock, by road would not change dramatically during the decade of the 1740’s. A common sight along the Great Road during the mid-eighteenth century were herds of cattle from the frontier being driven along the Great Road on their way to the Philadelphia market. The Valley’s early, continued trade orientation to the northeast is noted by historians Kenneth E Koons and Jonathan Noyalas:

“Because the Blue Ridge served as a barrier inhibiting east-west trade flows, and since the Shenandoah Valley served as a natural corridor of travel from northeast to

southwest, the commercial orientation of the Valley remained largely toward the northeast and Pennsylvania, rather than directly east.” (Koons and Noyalas 2010, 26)

The Valley’s northern orientation continued in the early 1750’s, strengthened by the development of “an important ford of the Potomac at the mouth of the Monocacy River.” The Potomac ford provided Valley farmers with a more direct and efficient overland connection to Baltimore. The city, founded in 1729, was, in turn, “greatly boosted by this western overland connection.” (Colonial Transportation 2019) In turn, the merchants of Baltimore gained “direct access to the tremendous volume and variety of backcountry products, access that was essential for the port of Baltimore’s success.” (Fig. 2.7) The overland trade to Baltimore passed through the town of Winchester and the importance of the increased commerce with Baltimore has been recognized by historian Christopher E. Hendricks, who has asserted that “without towns like Winchester along the trade route, there could not have been a Baltimore (Hendricks 2006, 118) .

As a result, by the 1750’s the Valley’s early “trade pattern,” which had been primarily aligned with Philadelphia, had evolved into a trade network with Valley farmers shipping goods not just to Philadelphia merchants but to merchants in Baltimore via the “carriage of goods from Virginia through the ‘Mouth of the Monocacy’ and to merchants in several ports on the Potomac River, including Alexandria. The east-west road orientation that lead to expanded trade with Virginia’s overseas ports would continue to strengthen “throughout the eighteenth century.” (Pawlett 2003, 4)

Valley trade with the eastern port cities increased significantly with the onset of the French and Indian War in 1754. That conflict would have a significant impact on the lower Valley and its larger agricultural context and foreshadow a sequence of world events that would impact Valley agriculture for the next 100 years. The war’s impact on regional transportation was almost immediate. As a result of the logistical demands of the war, “by 1755, Winchester was the most important route center linking western with eastern Virginia and the markets of Alexandria, Dumfries, Falmouth, and Fredericksburg.” By that same year, three roads from eastern Virginia, via Ashby’s, Snicker’s and Gregory’s gaps were directed upon the town of Winchester. (Fig. 2.5 and Fig. 2.8) But even with these newly improved roads in place, the Lower Valley’s “wheat and flour exports from larger farms and mills did not pass through Winchester, but rather were dispatched by road directly to markets in Alexandria.” (Hofstra and Mitchell 1993, 619-646.)

Alexandria’s rise as a primary port for the lower Shenandoah Valley’s external trade, a position it would retain throughout the eighteenth century was secured in 1755 when English General Braddock assembled an army in Alexandria and marched that army overland through Vestal’s Gap to the lower Shenandoah town of Winchester. The march was as the first leg of Braddock’s ill-fated expedition to capture Fort Duquesne located at the site of present-day Pittsburg. Braddock’s march, and Winchester’s role as the frontier logistical center for Braddock’s western campaign against the French and their Indian allies, gave new impetus to the ongoing efforts to establish better and more direct land routes

from the Shenandoah Valley to Virginia's eastern ports. Winchester had been founded only a decade earlier in 1744 by James Wood and Braddock's expedition "did much to help open the roads passing through the Blue Ridge at Ashby's Gap and Snicker's Gap." (Pawlett 2003, 7) Historian Thomas M. Preisser has described the much improved roads through the gaps as "excellent wagon roads" but noted that the threat of ice limited travel along the roads in the winter months. (Preisser 1977, 56 and 75)

Overall, the French and Indian War had amplified the need for more efficient transportation to the western frontier and "at the cessation of hostilities in 1763" there were renewed petitions to the General Assembly for "improvements on the roads leading from Fredericksburg and Alexandria to the Blue Ridge" as well as petitions for the "improvement of navigation on the Potomac River." (Pawlett 2003, 8) While Preisser asserts that immediately following the French and Indian War, the "the routes leading from the Shenandoah Valley to Alexandria, Colchester, Falmouth, and Fredericksburg were generally open to wagon traffic," (Fig. 2.9) his research also reveals that maintenance of the roads east of the gaps in the Blue Ridge was again proving problematic. The problem was severe enough that by 1772 the Virginia General Assembly had acknowledged "that the roads from the piedmont to Alexandria and Colchester were "rendered almost impassible...by means of the great number of wagons [sic]' using them;" wagons hauling agricultural produce from the lower Shenandoah Valley to the Potomac ports. In response, the General Assembly authorized an annual levy to raise money to "repair the roads leading from both Vestals and Williams Gaps to the east. (Preisser 1977, 137) (Fig. 2.10) Upgrading the roads leading east from the Valley would complement the road enhancements underway in Frederick County where, numerous local roads had be added between the mid-1760s to the mid-1770s. Many of Frederick County's new roads led to new mills that had been built in the county. Other new roads provided connections from the county's older open country neighborhoods to upgraded roads that led east and north to distant markets.

"Thus, increasingly, in Frederick county, and throughout the lower Valley, roads connected farms to grist mills and other rural-based manufacturing establishments such as distilleries, tanneries, saw mills, woolen mills, where crops or raw materials were processed into goods or commodities consumable at home or saleable in distant, even extra-regional, markets. Over time, as agriculture became increasingly commercialized in the lower Valley and a manufacturing sector of significant size arose, roads which had "previously extended an irregular web across rural space, increasingly took on a new pattern linking rural communities to market towns as spokes of a wheel to the hub. (Koons and Noyalas 2010, 24)

In the lower Valley, that pattern, with the market town at the center of extending spokes/roads, would be reinforced after the railroad reached Winchester in 1836.

Virginians' petitions to the General Assembly for road and river transportation improvements statewide were a clear demonstration that the citizens of the Commonwealth understood that transportation improvements were a critical component

of economically successful agriculture in the Commonwealth. That understanding would deepen throughout the rest of the eighteenth century and well into the first half of the nineteenth century. So important were transportation improvements, that Historian Robert Fleming Hunter has observed that by the mid-nineteenth mid-century “it appears that most people believed that transportation improvements had to precede any general improvement in agricultural methods.” (Hunter, 1957, 244) In the lower Valley, improved transportation would continue to be a focus, propelled by an general understanding that faster, more efficient means of transportation meant a prospering agricultural economy.

One additional measure initiated by the general Assembly to address the inadequacy of roads and road maintenance in the Commonwealth overall, and east of the Blue Ridge in particular, was the establishment of turnpikes funded by tolls collected from travelers. The move towards turnpikes began in 1785 when the Virginia General Assembly “appointed commissioners to set up turnpikes on the roads from Alexandria to Vestals’ and Snicker’s Gaps to keep them in repair. (Fig. 5) The road from Ashby’s Gap to the Snicker’s Gap road was made a turnpike in 1787...” Turnpike companies, established to construct and improve the roads to the eastern market ports including Alexandria, Fredericksburg, and Washington, D. C. depended upon the use of slaves for their success. In particular the use of hired slaves was an integral part of the business model employed by the turnpike companies to reduce the costs of turnpike infrastructure construction and maintenance. Historian John Zaborney has documented that the complete spectrum of early nineteenth century transportation construction projects including turnpikes, river improvements, canals, and railroads were spurred in no small measure by increased lower Shenandoah Valley agricultural production and all depended in part on hired slaves to complete their work force. Zaborney identifies that the seasonal nature of road maintenance lent itself well to slave hiring. Slaves could be hired as needed and for short periods of time without the long term commitment that slave ownership entailed. (Zaborney, 124-5)

Clearly in the emerging turnpike era, better roads, and improved transportation in general, were perceived to be a public good. Road historian Nathaniel Mason Pawlett has described the companies that were charged with developing the new turnpikes during this time period as “more or less public turnpike companies.” (Pawlett 2003, 15] Despite these initiatives, overall, improvements to the Virginia roads remained slow in coming. As a result, “Virginians watched while the commerce of the western part of the state was siphoned off by Baltimore and Philadelphia,” both cities were accessible by better roads at the beginning of the nineteenth century (Fig. 2.11) than the roads that brought wagons from the lower Valley to the Virginia ports on the Potomac. (Pawlett 2003, 16) The importance of roads for successful commerce at the turn of the century is concisely articulated by Daniel B. Klein who has observed that:

“for Americans looking for better connections to markets, the poor state of the road system was a major problem. In 1790, a viable steamboat had not yet been built, canal construction was hard to finance and limited in scope, and the first, American

railroad would not be completed for another forty years. Better transportation meant, above all, better highways.” (Klein 2004, 37)

Klein’s focus upon the year 1790 has special resonance in Virginia. In that year Northern Virginia merchants presented four new petitions to the Virginia Assembly requesting financial aid to assist with the repair of the roads from the Blue Ridge mountain passes to Alexandria. The repairs were needed, according to the merchants, because the roads east from the mountain passes were “in such poor condition that [Virginia] farmers cross the river and go to Baltimore rather than travel them.” (Williams 2000, 42). The alternative, a wagon trip over the Blue Ridge mountain passes according to historian John. W. Wayland, could take “an excruciating two weeks.” (Wayland 1976, 318) Historian Maxine Williams has identified an additional advantage Baltimore over Alexandria and the Virginia ports on the Potomac. According to Williams, Baltimore “had a much more diverse economy than did Alexandria.” in part because “Baltimore, unlike Alexandria, had established a thriving re-export business, supplying the colonies with European imports.” (Williams 2000, 45 and 48).

A thriving re-export business insured that when wagons left Baltimore on their return trip to the lower Valley, they returned loaded with goods for Valley merchants and farmers. According to Robert Fleming Hunter, “Improved roads” enabled farmers to reach markets and sources of agricultural supplies. Hunter also recognized that, importantly, improved roads “also enabled farmers to carry greater loads” to market. (Hunter 1957, 236) Hunter recounts a story published in the Richmond Enquirer which described a “publicity stunt designed to demonstrate the advantages of turnpikes in making greater loads possible” the published story described “the extraordinary sight of six horses drawing through the streets [of Winchester] on their way to Alexandria, a wagon load of flour, consisting of 45 barrels...this feat...proves...the importance of turnpiking the roads to Snickers and Berry’s Ferry, so to unite the turnpikes leading from those places...” The demonstration the paper described may have been a bit over-reaching, however, since Hunter also notes that, in reality, “A load of eighteen barrels of flour (3600 lbs) was about the maximum that could be carried across the Blue Ridge on a good turnpike.” (Hunter 1957, 238)

Hunter paints a compelling picture of the trials of shipping flour by wagon to the eastern ports. We know very little, however, about the men, both black and white who drove those wagons over the mountains to the Potomac ports and to the port of Baltimore. We also know little of the wagon makers, wheel makers, and other craftsmen whose essential work supported the wagon trade. We do know the name of at least one wagon driver, James, apparently one of Isaac Hite’s slaves, who was trusted to make the trip to Alexandria. A receipt, dated June 6, 1796, from the baking firm of Korn and Wisemiller in Alexandria notes: “Received by a Negro James, eleven barrels of super fine flour.” (Laise 2017, 2) We know too that one of the owners of transport wagons was Anthony Spengler, whose wagons made a weekly trip to Alexandria. Among the cargo sent east on Spengler’s wagons were slaves sold by lower Valley slave holders to slave traders in Alexandria. (Stewart undated, 7)

By 1795, a number of private turnpike companies had been enfranchised by the Virginia legislature. The first of these was for the Little River Turnpike, which extended west from Alexandria to Little River in Fairfax County. The turnpike had first been chartered by the legislature 1785. making the Little River Turnpike, according to historian Howard Newlon, Jr., “apparently the first toll road authorized in the United States” (Newlon 1987, 4). But the project was delayed and the turnpike was re-chartered by the legislature in 1795. The Little River Turnpike would not prove financially viable, however, until it was chartered by the Virginia Legislature for the third time in 1802. (Pawlett 2003, 15) “In response to repeated requests from the residents of the region,” by 1811 the Little River Turnpike, had been extended 34 miles west from Alexandria and the new road featured a 20-foot-wide roadway. (Crothers 2005, 72) The charter for the Little River Turnpike was, according to Pawlett one of eighteen charters granted to turnpike companies by the state legislature prior to the War of 1812. “Many of these were in “the heavily travelled Winchester-Alexandria-Fredericksburg area of Northern Virginia” (Pawlett 2003, 15) The Little River Turnpike’s extension west anticipated by four years the beginning date of the first phase of the “turnpike era” in Virginia which Nathaniel Pawlett dates to 1815. (Fig. 2.12 and fig. 2.13)

Virginia was not the only state that turned to turnpikes as a means of financing new roads and road improvements. There had been turnpike charters granted in other states. For example, historians Daniel B. Klein and John Majewski, note that a private turnpike had been chartered by Pennsylvania as early as 1792” (Klein 2004, 3). Maryland had introduced turnpike legislation even earlier, authorizing “a toll road from Baltimore to Frederick” in 1787. In 1807 the Baltimore and Frederick Town Turnpike was incorporated as the part of the National Road, the new Republic’s first national highway project. (Fig. 2.7) (Maryland Manual 2019) Farmers and merchants in the Lower Shenandoah Valley would benefit from the improved road transportation in Virginia, Maryland, and Pennsylvania and the ongoing competition provided by the new turnpikes.

As the Turnpike Era gained momentum, the Virginia General Assembly, responding to the concerns of petitioners about proposed standards for the new turnpikes and delays in their construction, passed an act in February 1817 that “prescribed the regulations for the incorporation of turnpike companies.” (Pawlett 2003, 22) The Virginia turnpike companies that formed following the passage of the Act were business corporations, “born out of necessity,” “that built and maintained a road for the right to collect fees from travelers.” (Klein 2004, 2). The act also required newly formed Turnpike companies to begin construction within two years and completion of the turnpike within ten years. “Failure in either of these particulars was to result in the forfeiture of the company’s charter. The Act also established toll rates to be charged on the turnpikes and “each company was directed to file a report with the: Board of Public Works at the end of the first year, and every three years thereafter, for the purpose of toll regulation.” (Pawlett 2003, 23)

The Turnpike Act also provided standards for the improved construction of the roads:

“specifying that all water courses crossing the road should be bridged where necessary, that the road should be sixty feet wide at least, that eighteen feet of this should be covered with gravel and stone and kept free from mudholes and ruts so as to be usable for carriages and heavily laden wagons, and that on either side of this part of the road a “summer road eighteen feet wide should be kept in good repair for the use of wagons and other carriages in dry weather, between the first day of May and the 31st day of October. . . . Wheel sizes were specified, as well as maximum weights of loads. Toll gates were to be erected, but if the road were out of repair, tolls ceased until such time roads were completed. (Pawlett 2003, 22-3)

The new turnpikes were typically financed by the sale of turnpike stock. The funds raised through the stock sale was “generally regarded...as a fund from which to build the facility, which would then earn enough in toll receipts to cover operating expenses.” Investors, however, understood that:

“Turnpikes promised little in the way of direct dividends and profits. However, a turnpike “offered potentially large indirect benefits...to nearby merchants, farmers, land owners, and ordinary residents...interested in commerce” The investors exhibited a “Civic minded culture that encouraged investment for long-term community gain.” (Klein 2004, 4-5)

Among the Virginians who recognized the benefits of improved roads and who purchased stock in a turnpike company was Isaac Hite, Jr., who’s 1837 Estate Inventory included 5 shares of Ashby’s Gap Turnpike Stock and 6 ¼ shares of unspecified “turnpike stock.” Interestingly, Isaac’s belief in the future of transportation in the lower Valley may be revealed more clearly by the 100 shares of Winchester and Potomac Railroad stock also listed in his Estate Inventory. (Issac Hite, Jr. Estate Inventory, 1837,) Another Hite, known to have purchased turnpike stock was Charles J. Hite who held a certificate for six shares of the Strasburg and Capon Turnpike Company in 1849. The co-president of the Strasburg and Capon Turnpike Company was identified as Daniel Stickley, whose mill was located on Cedar Creek, near the crossing point of the Valley Pike. (VHS 1306)

“By 1819 “turnpikes had been built from Alexandria to Aldie [the Little River Turnpike] (Fig. 2.14], from there to the west side of the Blue Ridge, [the Snickers Gap Turnpike], and another branched off from Aldie to cross the Blue Ridge at a more southerly gap [Ashby’s Gap Turnpike].” (Hunter 1957, 237] By 1828, the annual report of the Virginia Board of Public Works reported that over the road through Ashby’s gap “a great portion of the produce of the counties of Shenandoah, Frederick, and the upper parts of Fauquier and Loudoun, is carried to market, and finds sale in the D. of C., [Washington, D. C.] particularly in the town of Alexandria. The increase of tolls depends on the success of agriculture in the upper country.” (Hunter 1957, 233)

Improved roads enabled goods from lower Shenandoah Valley farmers to reach markets more quickly and the improvements also allowed for heavier wagon loads. Farmers were

always mindful of the costs of transporting goods to market and most importantly road improvements resulted in lower transportation costs. In addition, not every farmer had their own wagons or had wagons that they could spare for the length of time a round trip to market could take. The less time wagons were on the road transporting goods to market was thus an important secondary benefit for many farmers. Road improvements also meant more accurate estimates for the cost of shipping good to market. Unexpected delays due to poorly maintained roads could make it difficult to make accurate estimates for shipping costs. Historian Freeman W. Gilpin records the impact of uncertain transportation on shipping goods to market:

“In some cases, the shipper was totally dependent upon the neighboring farmers for the use of their wagons....the wagoner charged a fee for every barrel of flour or bushel of grain carried, a fee of which was by no means standardized. The distances to be covered, the condition of the roads, the season of the year, as well as many other factors helped to set the amount of this fee. Twelve cents a barrel was asked in 1807 for the cartage of flour from Shenandoah to Alexandria, while in 1808, ten shillings a barrel was charged for flour carried from Front Royal. The winter an early spring were trying times for all... Much of the fluctuation that took place in prices in Alexandria may be explained by these factors.” (Gilpin 1927, 406-7]

The impact of road improvements on costs could be significant. Robert Hunter offers the example of the Little River Turnpike in 1833, when a macadamized surface was laid over most of its length, and its steep grades reduced” As a result, “the cost of carrying a barrel of flour from Aldie to Alexandria was cut from 74¢ to 60¢’ thus producing a saving of \$2.70 on a load of 18 barrels.” (Hunter 1957, 239) The improved roads also offered another important advantage to Valley farmers. They provided quicker and cheaper connections to the sources of agricultural supplies and household goods that were shipped to the lower Valley from merchants at the eastern ports, often on the same wagons used to bring lower Valley produce and manufactured goods to the eastern ports.

While the improved turnpikes east from Winchester were lowering travel time and costs for shipping goods by wagon, the condition of the Great Road became a concern for Valley merchants and farmers. The Great Road’s unimproved surface was not consistent throughout the varied seasons. In the winter it could freeze hard and become icy. In the summer, dust and loose stone were problems. Rains and spring thaws could transform the road surface into muddy ruts. “The winter and early spring were trying times for all... Much of the fluctuation that took place in prices in Alexandria may be explained by these factors.” [Gilpin 1927, 406-7] In November 1825, His Highness, Bernhard, Duke of Saxe Weimar, traveled south up the Valley from Harpers Ferry to Natural Bridge.” The Duke described traveling by “uncomfortable” stagecoach and complained about the condition of the road. “We went a considerable distance on rocks: on the road, a great many loose stones were lying, and I was surprised that the miserable vehicle was not broken into pieces.” (Valley Turnpike Company 2019, 2) Another traveler, Philadelphia Lawyer Henry D. Gilpin, described his travel on the road in 1826 as “ the most horrible you can conceive, you pass

over naked ridges of limestone rock, through ravines which is astonishing any one every [sic] thought of using for a path, up and down hills perpendicular” (Valley Turnpike Company 2019, 2)

Responding to the deteriorating road conditions, in March of 1834, the Virginia legislature:

“authorized the Valley Turnpike Company to create a 68 mile macadamized turnpike between Winchester and Harrisonburg. For the most part, the turnpike followed the Warrior’s Path, but improvements were made, roadbeds were smoothed, sharp curved were straightened, and bridges were built.” Conceived “to connect the Shenandoah Valley’s economy with seaports north of the Potomac...the road would be the artery of commerce of the Valley towns...the shipment of commercial products...was so central to the early pike developers that they chose as their emblem a sheaf of wheat surrounded by the words ‘The Valley Turnpike Company.’” (The Valley Turnpike Company 2019, 1)

The road improvements were funded by shares of stock. Each share cost the purchaser Twenty-five dollars. The State board of Public Works purchased forty percent of the turnpike stock on behalf of the Commonwealth. The remaining sixty percent of the stock was sold publicly. In 1837, a second charter was issued for improving 25 additional miles of roadway between Harrisonburg and Staunton. This second charter was issued to a separate corporation which later merged with the Valley Turnpike Company. Most of the shares sold under the second charter, and made available to the public, were purchased by residents of four Shenandoah Valley counties: Frederick, Shenandoah, Rockingham and Augusta, “but a substantial number of purchasers purchased were from Baltimore,” a city that was a staunch competitor with Alexandria for the Valley trade. (The Valley Turnpike Company, 2019, 1) Construction of the new macadamized Valley Pike was approaching completion in 1840 when “a resident of the upper valley noted that ‘they have got the Macadamized road nearly completed from Staunton to Winchester.’ But road improvements still took time to execute and it would be two years before the same Valley resident reported that, ‘Our Mcadamised [sic] road is beginning to be of some service to the Valley.’” (Koons 2000, 6).

With road improvements completed on the Valley Pike, both the Little River Turnpike and the upgraded Valley Pike were now macadamized. The Macadamized system had been developed by Scottish engineer John Louden McAdam in the early 1800's. The Macadamized system:

“consisted of creating 3 layers of stones laid on a sloped subgrade with side ditches for drainage. The first two layers consisted of angular hand broken aggregate, maximum size three inches, to a total depth of about eight inches. The third layer was approximately two inches thick with a maximum aggregate size of about one inch. The layers would be compacted by a heavy roller, causing the angular stones to lock together. Roads constructed in this manner were described as "macadamized." (The Valley Turnpike Company 2019) (Fig. 2.15)

The design standards for the macadamized Valley Turnpike called for the turnpike to be 22 feet wide with 18 feet of that width was to be paved with not less than 12 inches of stone. the grade of the turnpike was not to exceed 3 degrees. The stone for the roadway, primarily limestone, was quarried along the route, thus "altering the landscape through which the road passed." (The Valley Turnpike Company 2019) Local limestone was used to line drainage ditches and culverts along the road. In addition to grading and macadamizing, it was necessary to construct bridges and culverts over streams. As bridge sites were located, deviations were often made from the alignment of the original Wagon Road, which typically sought the best place to ford a stream or creek. The macadamized Valley Pike was engineered, and its alignment would be changed for numerous practical reasons, For example the alignment might be changed to locate bridges in places that would not be submerged by heavy rains. Throughout the planning and layout process, political, agricultural, and economic interests often argued for very different road configurations and alignments:

"State engineer Claudius Crozet wanted a road that curve around the many hillocks in the Valley or ascend or descend the terrain gradually. Valley farmers wanted straight roads that cut through elevations rather than going around them. Cultivators also wanted straight roads because the straight fencing built along them was less expensive and less likely to harbor weeds. Merchants and farmers wanted straight, shortest distance roads because they could get their goods to market faster over them...A shallower grade was easier on the horses and allowed for heavier loads to be carried...Yet, company shareholders wanted a steep road." (The Valley Turnpike Company 2019, 1)

Compromises would be made in the face of local conditions and rising costs, Yet, while the resultant macadamized roadway was certainly an improvement for wagon travel but the stone surface proved hard on the hooves of cattle. Many farmers who had previously driven cattle along the unimproved Great Road, would now drive their cattle on unsurfaced roads that paralleled the Valley Pike. One popular road for the cattle, which ran to the west of the Valley Pike, was the Middle Road. Soon, the Middle Road would be known simply as the "Ox Road." (The Valley Turnpike Company 2019, 1)

McAdam's system soon became the standard for improved roads in the mid-Atlantic region. Wagons delivering loads of flour and other farm produce bound for market traveled the newly macadamized turnpikes to Baltimore, Philadelphia, Fredericksburg, Alexandria, Georgetown, and smaller ports. On the return trip to the Shenandoah Valley the wagons were loaded imported and domestic household goods farming implements and supplies. The Turnpike was a true economic generator fueled primarily by the agricultural trade of the lower Shenandoah Valley. But, the agricultural-related trade extended far beyond the numerous farmers shipping flour to the eastern ports:

“There were numerous Valley iron furnaces, forges, harness shops, carriage workshops, inns, distilleries, cattle yards, and merchants whose livelihood depended upon the pike for customers, but most important to it in the days before the railroad were the hundreds of mills that operated in the turnpike hinterland. Millers calculated the cost of capital and labor. Determined the volume and width of milled four, provided credit accepted country produce or hauling services when cash was scarce, and clearly understood the impact of transportation costs on profits.” (The Valley Turnpike Company 2019, 1)

Chapter 2: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Benedetta, J., "Colonial and Early National Transportation, 1700-1800"
<https://www.roads.maryland.gov/OPPEN/II-Colon.pdf>. Accessed Nov. 19, 2018

"Colonial and Early National Transportation, 1700-1800" at
<https://www.roads.maryland.gov/OPPEN/II-Colon.pdf>

Crothers, A. Glenn, "Quaker Merchants and Slavery in Early National Alexandria, Virginia, in: *Journal of the Early Republic*, 25, (Spring 2005)

Daniel Stickley Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006.

Gilpin, W. Freeman, The Grain Trade of Alexandria, Virginia, 1801 – 1815, in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History, pp. 404 – 427

Hendricks, Christopher E, *The Backcountry Towns of Colonial Virginia*, Knoxville; University of Tennessee Press, 2006

Hite, Issac, Jr. Isaac Hite Will: Frederick County Clerk's Office. Will Book 19, pages 354-357
In his 3rd codicil, Hite Notes "my turnpike and railroad stock"

"The History of Baltimore" in: *The City of Baltimore Comprehensive Master Plan (final Draft)*, at:
<https://planning.baltimorecity.gov/sites/default/files/History%20of%20Baltimore.pdf>,
Accessed July 16, 2018

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800," in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Hofstra, Warren R. and Robert D. Mitchell, "Town and Country in Backcountry Virginia: Winchester and the Shenandoah Valley, 1730-1800," in *The Journal of Southern History*, Vol. 59, No. 4, November, 1993, pp. 619-646.

Hofstra, Warren R., and Karl Raitz, eds., *The Great Valley Road of Virginia: Shenandoah Landscapes from Prehistory to the Present*, Charlottesville: The University of Virginia Press, 2010

Hunter, Robert Fleming, "The Turnpike Movement in Virginia, 1816-1860, PhD dissertation, Columbia University 1957.

"Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16&17 January 1837 by the executors and George Brinker, David Stickley, and George Bragg appraisers

Kalbman, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbman, LLC, September 2014

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Klein, Daniel B., and John Majewski, "Turnpikes and Toll Roads in Nineteenth-Century America,"
<http://eh.net/encyclopedia/turnpikes-and-toll-roads-in-nineteenth-century-america/>
Accessed August 12 2004.

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great*

Valley of Virginia 1800-1900, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Laise, Kristen, "Were the Hites 'Nice' or 'Kind' to the people they Enslaved," a training document dated Feb. 25, 2017, Cedar Creek and Belle Grove National Historical Park Archives

Maryland Manual On-Line "Historical Chronology of Frederick County, Maryland," accessed at:
<https://msa.maryland.gov/msa/mdmanual/36loc/fr/chron/html/frchron.html>. Accessed August 9, 2019

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Newlon, Howard Jr., "Private Sector Involvement in Virginia's Nineteenth-Century Transportation Improvement Program" Howard Newlon, Jr. *Transportation Research Record* 1107, 1987
<http://onlinepubs.trb.org/Onlinepubs/trr/1987/1107/1107-001a.pdf> Accessed July 11, 2019

Pawlett, Nathaniel Mason, *A Brief History of the Roads of Virginia 1607-1840, (revised)* Charlottesville: Virginia Highway & Transportation Research Council, 2003

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Preisser, Thomas, M., "Alexandria and the Evolution of the Northern Virginia Economy, 1749-1776," in *The Virginia Magazine of History and Biography*, v. 89, July 1981, no. 3 p. 282-293

Preisser, Thomas M., *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776* College of William and Mary, 1977

Stewart, Nancy B., "How Did Shenandoah County Get Into the Slavery Business?" Undated Manuscript

Swem, Earl G., *Bulletin Virginia State Library, vol. 10, Nos. 1-4: A Bibliography of Virginia, Part II*
Richmond: Library of Virginia, 1917

<https://books.google.com/books?id=5JliAQAAAMAAJ&printsec=frontcover&dq=Bulletin+virginia+state+library+Vol+10+1917&hl=en&sa=X&ved=0ahUKEwj9ptaZoOLjAhWBylkKHYHIClwQ6AEIKDAA#v=onepage&q=turnpike%20companies&f=false> Accessed July 11, 2019

"The Valley Turnpike Company," Accessed at:

<https://www.nps.gov/cebe/learn/historyculture/the-valley-turnpike-company.htm>
accessed February 18, 2019

VHS 1306: Certificate for 6 shares of stock for the Strasburg & Capon Turnpike Co. owned by Charles I. Hite. Dated June 12 1849. (The 4 is only partially legible)

Wayland, John W., *Twenty-Five Chapters on the Shenandoah Valley: To Which is Appended a Concise History of the Civil War in the Valley*, Second Edition, Harrisonburg, Va.: C. J. Carrier Company. 1976

Williams, Maxine S., *Myth and Reality: Alexandria, Virginia, 1745-1820*, Thesis and Dissertations. Paper 638, Lehigh University, 2000 Accessed at:
<https://preserve.lehigh.edu/cgi/viewcontent.cgi?article=1638&context=etd>, July 11, 2019

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 2:

Figures

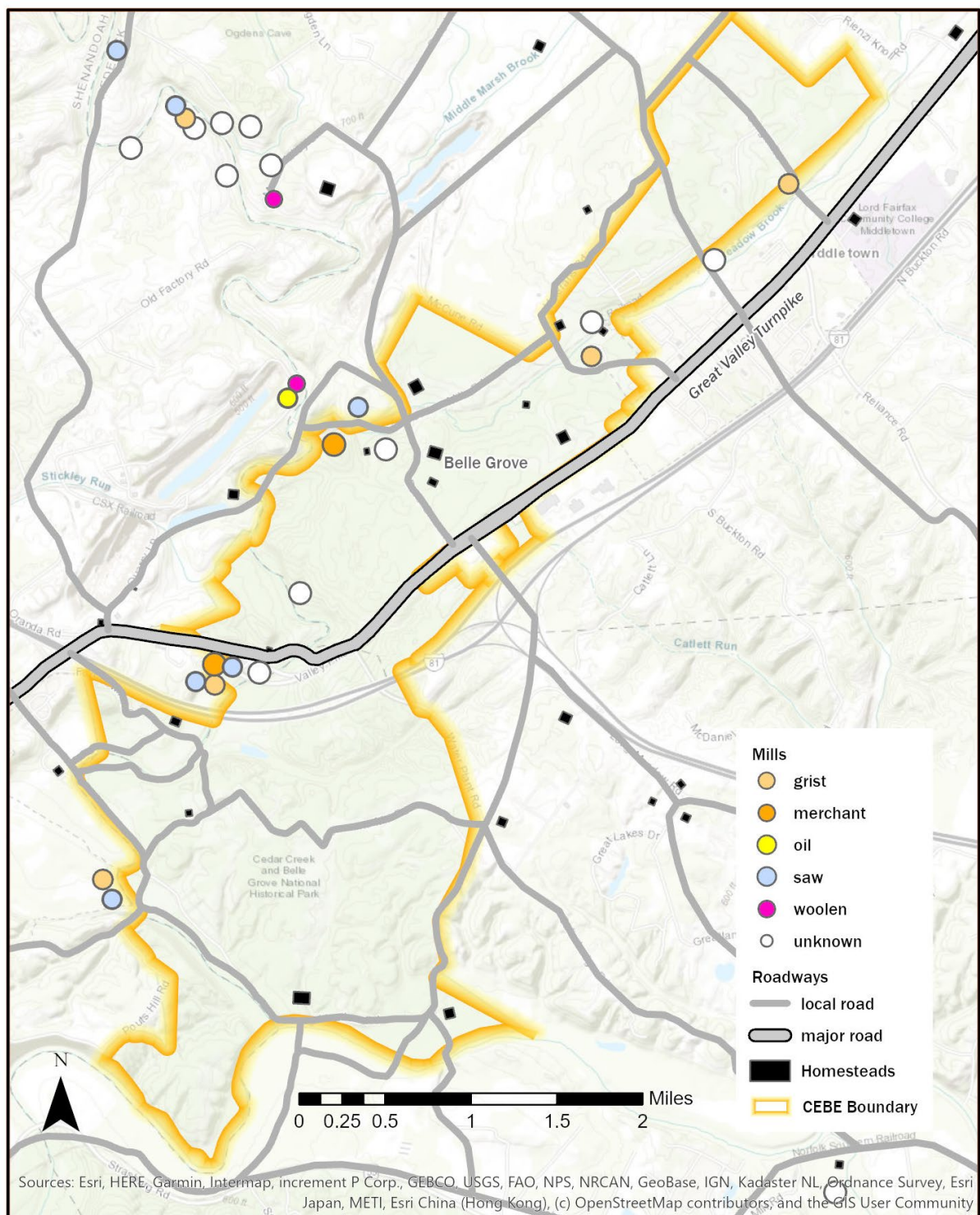


Figure 2.1 The road system in the Cedar Creek Neighborhood. Roads here, as described by Warren Hofstra, “led from farmstead to farmstead, literally from door to door, in a pattern that interconnected members of all ethnic groups to rural economic centers at mills and ordinaries.”



Figure 2.2 Fort Bowman, built c. 1753. Here, the road passed “squarely in front of the house,” a typical period orientation.

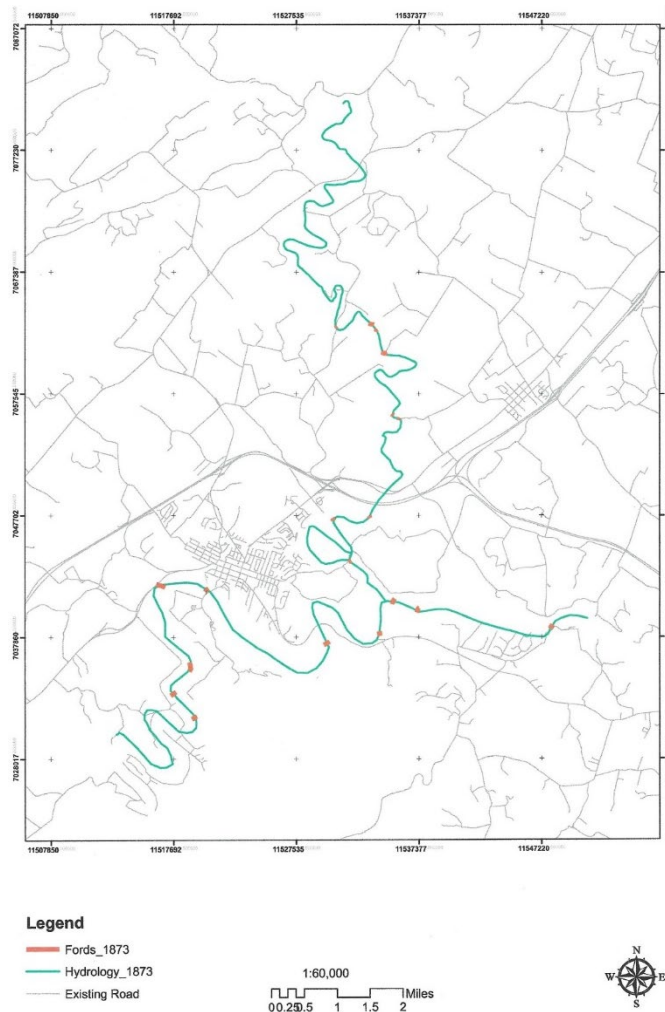


Figure 2.3 Ford locations along Cedar Creek in 1873. From Katen et al. 2012.



Figure 2.4 Road trace to the ford just east of Fort Bowman: Widow Bowman's Ford.

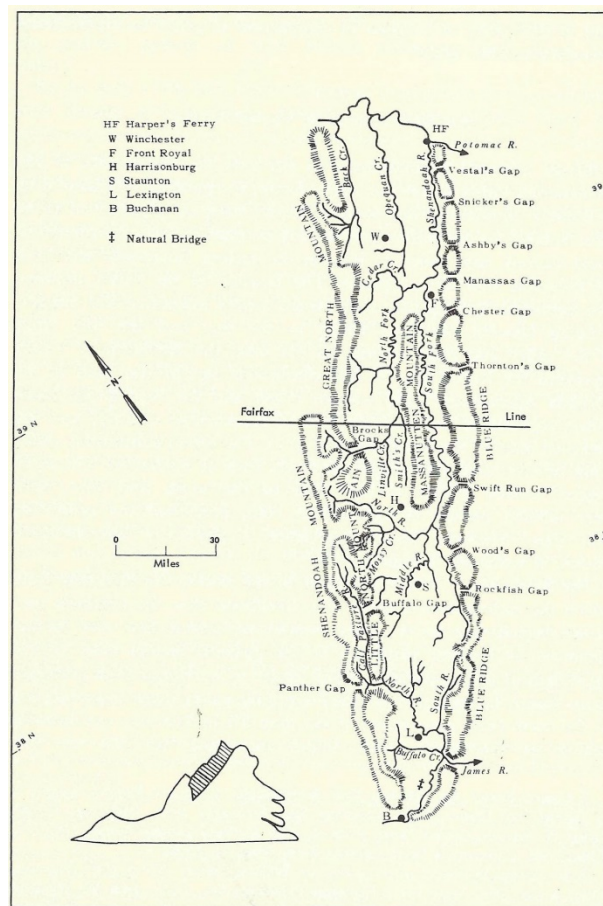


Figure 2.5 A map of the lower Shenandoah Valley map showing the major gaps through the Blue Ridge. Ashby's Gap is located east of Winchester. From Mitchell 1977.

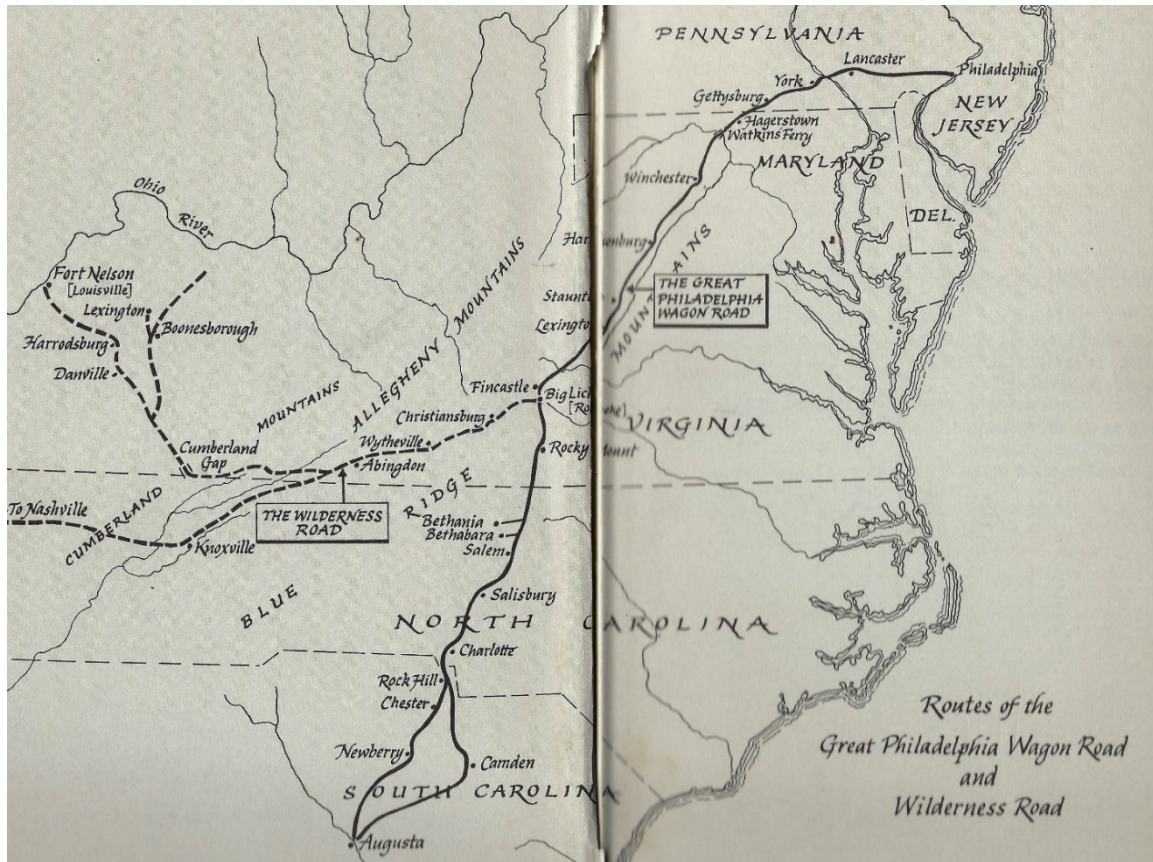


Figure 2.6 The Philadelphia Wagon Road linking Philadelphia with the lower Shenandoah Valley. From Rouse 1973.

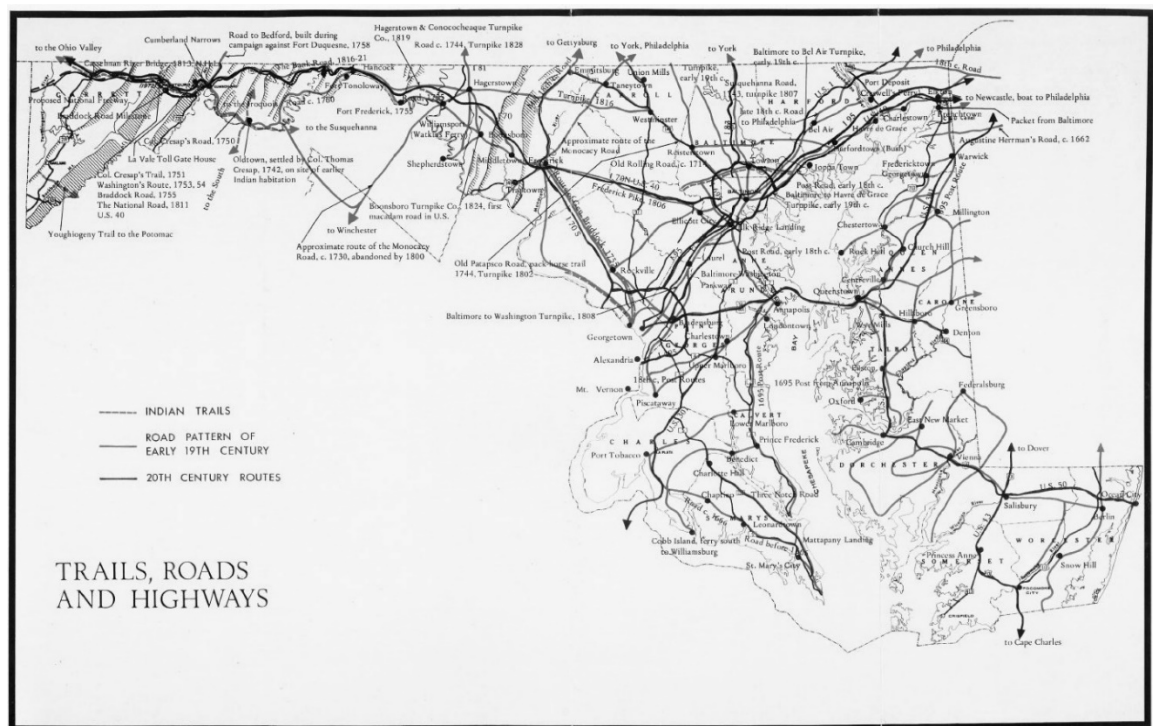


Figure 2.7 Map of Maryland's early roads linking Baltimore with the lower Shenandoah Valley.

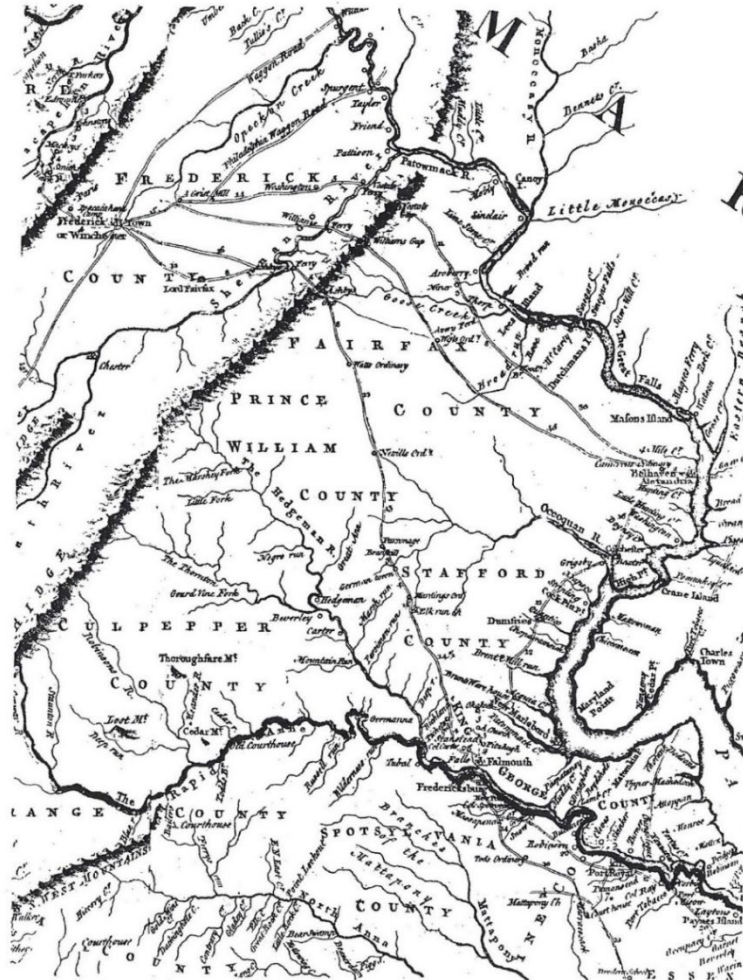


Figure 2.8 Fry and Jefferson Map of Falmouth and the Shenandoah, 1751, showing the gaps and roads leading east from Winchester and the lower Shenandoah Valley. From Malone 1935.

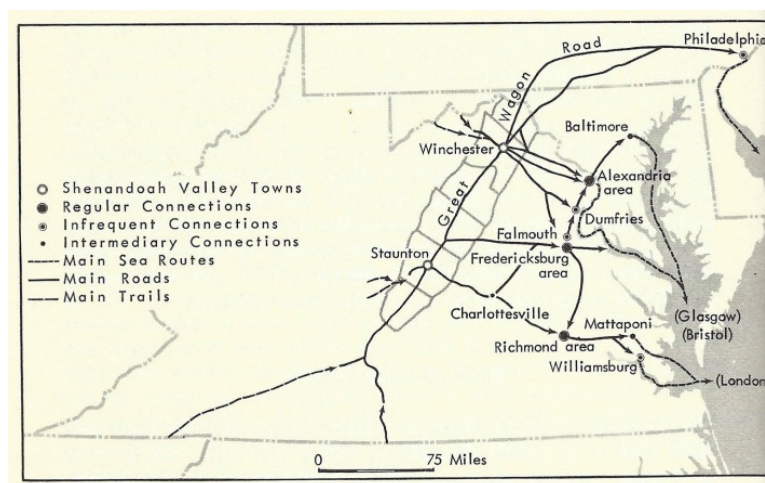


Figure 2.9 Lower Shenandoah valley trade connections by road, c. 1760. From Mitchell 1977.

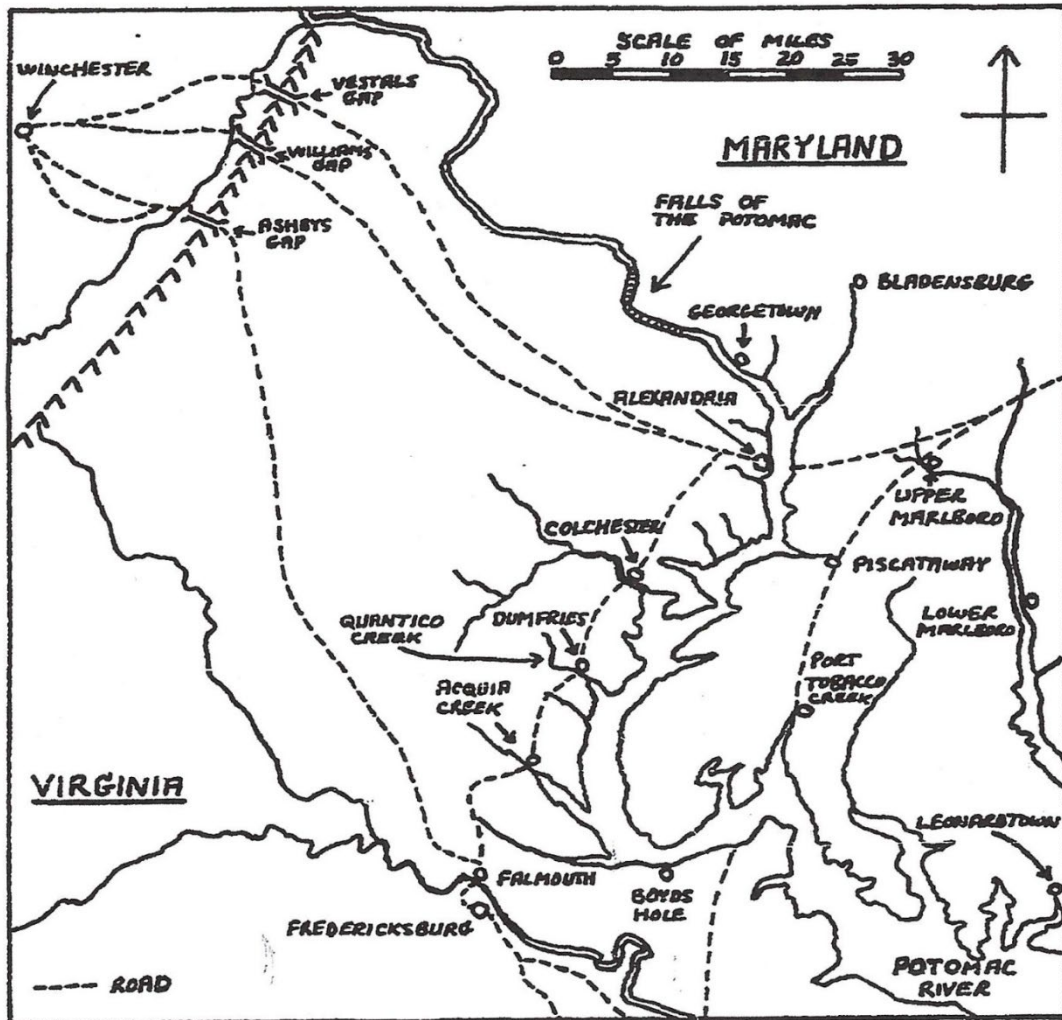


Figure 2.10 Virginia ports and trade routes from Vestal's, William's, and Ashby's Gaps, 1775. From Preisser 1977.

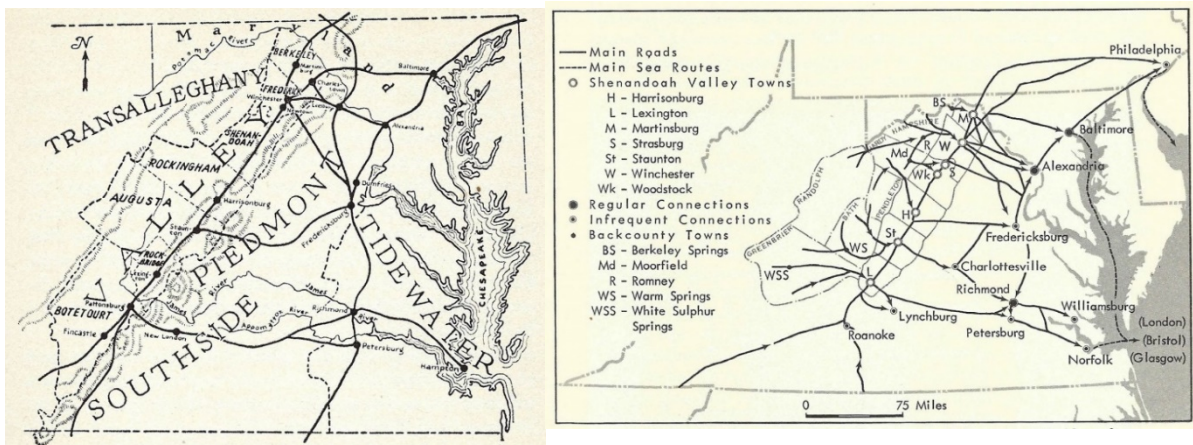


Figure 2.11 (Left) Trade routes east from the lower Shenandoah Valley in 1786. From Hart 1942. (Right) Valley trade routes east in 1800. From Mitchell 1977.

TURNPIKES SUCCESSFULLY OPENED BEFORE 1817

Name	Date Chartered	Date Opened	Length (mi)	Authorized Capitalization (\$)	State's Proportion of Total Subscription (\$)	Income, Repair Costs, and Dividends Through 1848			
						Average Tolls per Mile per Year (\$)	Average Repair Costs per Mile per Year (\$)	Dividends	
								Years Paid	Average Yield (%)
Little River	1802 ^a	1806	33¾	150,000	8	425	180	27	2.02
Fauquier and Alexandria	1808	1819 ^b	28½	100,000	30	66	59	None	
Ashby's Gap	1809	1827	20½	133,050	11	217	147	17	1.23
Leesburg	1809	1820	14	84,000	40	129	77	6	0.314
Snicker's Gap	1810	1823	33¾	85,275	23	41	22	None	
Swift Run Gap	1810	1813	36½	119,800	39	100	42	23	1.24
Fairfax	1813	— ^b	3	13,750	40	— ^c	— ^d	None	
Falls Bridge	1813	1823	13	80,521	40	20	57	None	
Shepherdstown and Smithfield, W.Va.	1816	1826	13¾	46,687	40	40	10	None	
Manchester and Petersburg	1816	1824	20	75,900	11	154	79	None	

^aChartered but unsuccessful in 1785 and 1795.

^bData not certain.

^cReceipts given to toll collector (apparently to cover his costs).

^dUnknown.

Figure 2.12 Virginia Turnpikes opened before 1817 linking the Shenandoah Valley. From Newlon 1987.

Turnpike Companies, Canals and Railroads Combined Timeline

1816	Strasburg and Front Royal Turnpike Co.
1817	Little River Turnpike Co. Winchester and Berryville Turnpike Co. Winchester and Northwestern Turnpike Co.
1818	Shenandoah Co. (River Improvements to the Shenandoah River) Leesburg Turnpike Co.
1823	Snicker's Gap Turnpike Co.
1824	Fauquier and Alexandria Turnpike Co.
1825	Erie Canal opens The New Shenandoah Company hires Charles and Wright Gatewood to build dams and chutes along the Shenandoah's north branch up from 'its mouth up to the entrance to tumbling run . . .' (south of Strasburg)
1827	Ashby's Gap Turnpike Co. (Isaac Hite, Jr. held 5 shares at time of death) Baltimore and Ohio RR
1828	Valley Turnpike Co.
1829	Opequan Navigation Co.
1831	Winchester and Potomac RR Co. Winchester and Berryville Turnpike Co.
1832	Leesburg and Snicker's Gap Turnpike Co.
1833	Warrenton and Occoquan Turnpike Co.
1834	Winchester and Potomac Railroad Co. Valley Turnpike Co. B&O arrives at Harpers Ferry
1836	Winchester and Potomac Railroad Co. (Isaac Hite held 100 shares at time of death)
1837	Chesapeake and Ohio Canal Co. Valley and Shenandoah Turnpike Co. Issac Hite, Jr. held "6 ½ shares in unidentified "turnpike stock"
1838	Baltimore and Ohio RR Co.
1839	Valley Turnpike Co.
1841	Baltimore and Ohio Railroad Co.
1847	Alexandria Canal Co.
1847	Manassas Gap Turnpike Co.
1850	Winchester and Berry's Ferry Turnpike Co.
1850	Virginia Central Railroad Co. Manassas Gap Railroad organized
1851	Manassas Gap Railroad Co.
1852	Cedar Creek and Opequan Turnpike Co.
1853	Manassas Gap Railroad
1854	Manassas Gap Railroad arrives first at Front Royal and then Strasburg
1855	Alexandria, Loudoun and Hampshire Railroad Co.
1857	Strasburg and Capon Turnpike Co.

Figure 2.13 Combined timeline: turnpike companies, canals, and railroads linking the lower Shenandoah Valley.



Figure 2.14 The Little River Turnpike to the Port of Alexandria.



Figure 2.15 The Valley Turnpike with the Macadamized surface c. 1880's. From the Mollus Collection.

Chapter 3:

The Agricultural Landscape: Transportation Infrastructure – Rivers, Canals, and Railroads

The calls for road improvements by farmers and merchants in the last two decades of the eighteenth century were representative of a larger movement to develop improved transportation alternatives to connect the eastern port towns and cities to the western frontier. The ongoing efforts to improve roads leading to the eastern ports were accompanied by widespread interest in developing a waterborne transportation network to bring the produce of the upper and lower Shenandoah Valley to Virginia's eastern ports. There was particular interest in improved water-borne transportation to the Potomac port of Alexandria. The development of Alexandria's port had been spurred in the 1750's by the logistic demands of the French and Indian War, which helped transform Alexandria from "a small but thriving port town when the war began" "into a major port." (Preisner 1977, 52 and 68) By 1769, Alexandria, had become a major exporter of grain, its ascent to that status "aided by disastrous wheat harvests in the Mediterranean during the mid-1760's." Alexandria's success in becoming a primary, deep-water seaport was also propelled by its advantageous location "on a particularly favorable small cove situated a dozen miles below the falls of the river." The flow of the river at Alexandria prevented the most serious problem faced by those Virginia ports located at the head of navigation on inlets or tributaries, "rapid sedimentation" which could within fifty years turn a "thriving open-water port...into a mud flat." (Preisner 1977, 37-8) Its location and its deep water port gave Alexandria a distinct advantage over those nearby ports located on tributaries of the Potomac, including Dumfries and Colchester. (Fig. 3.1) The citizens and merchants of Alexandria recognized the advantages the town had over other nearby ports and they actively promoted "improved navigation of the Potomac" and improved trade with farmers in the lower Shenandoah Valley. They understood that navigation improvements could provide "Alexandria's exporters with 'potentially enormous' amounts of flour, whiskey, tobacco, and iron that could come from the hinterlands down the Potomac to Alexandria rather than overland to Baltimore." (Williams 2000, 36)

One strong supporter of navigation improvements to the Potomac was George Washington, who firmly believed that "better transportation and trade would draw lands west of the Allegheny Mountains into the United States and...bind those people to us by a chain which never can be broken." (The Potowmack Canal 2019) To achieve that goal, Washington put forth a plan to make the Potomac River navigable to its western reaches, which he believed would open a trade route from the east to the headwaters of the Ohio River and the fertile lands of the Ohio River Valley and the western frontier. Washington recognized that, if navigable, the Potomac River offered the shortest route between the western frontier and the tidewater ports of Virginia and trans-Atlantic trade. With that goal in mind, in 1785 Washington helped organize the Patowmack Company to provide those sought after

improvements to the river's navigation. Washington was also selected the newly formed company's first president.

Washington's project was not without its challenges. "To make the river navigable by even shallow draft boats, the Patowmack Company had to dredge portions of the riverbed and skirt five areas of falls." (Fig 3.2 and Fig. 3.3) (The Potowmack Canal 2019) The Great Falls, a few miles upstream from the Port of Georgetown, posed the biggest challenge. There, a canal and lock system would be necessary to bypass the falls with their nearly 80 feet of fall in less than a mile. But navigation improvements would not solve all of the problems associated with shipping Valley produce and trade goods on the Potomac. Once the river was open to navigation, the river's seasonal hazards would posed real concerns. Spring floods, summer droughts, and winter ice, could make the flow of goods on the river uncertain and could potentially limit the use of the canals to "only a month or two each year." (The Potowmack Canal 2019 and Gilpin 1927, 407). Undaunted by the challenges, the Potowmack Company began construction in 1785. It would take seventeen years, however, to complete the necessary improvements to navigation. In March of 1802 the first boats loaded with western flour docked at Alexandria, having passed the locks at Great and Little Falls." With the improvements to navigation in place, "the Potomac, to lesser extent the Shenandoah, and various smaller streams gave a ready and cheap way to bring grain and flour to market." (Gilpin 1927, 407), Boatman were soon advertising the boating of flour down the Potomac to Georgetown from the mouth of Opequon Creek on the Shenandoah River and from Harpers Ferry at the confluence of the Shenandoah and Potomac Rivers. By 1809, boatman were regularly transporting flour on the Potomac to Georgetown, Washington, D. C. and Alexandria. (Greiner and Keller, 23) Their trips from the Shenandoah Valley via the rivers was considerably faster than transport by wagon, which could take up to two weeks.

"Thousands of boats locked through at Great Falls, carrying flour, whiskey, tobacco, and iron downstream" on "vessels that varied from crudely constructed rafts to the long narrow 'sharper,' a keelboat that could carry up to 20 tons of cargo. The trip down stream took 3-5 days" from "Cumberland, Maryland to Georgetown and 10 to 12 days poling against the current back to Cumberland." (The Potowmack Canal 2019)

At the end of the Eighteenth Century, with navigation improvements nearing completion on the Potomac, attention turned to providing navigation improvements to selected smaller rivers and streams in the Potomac river watershed, including the Shenandoah River. The work force for implementing navigation improvements included slaves hired by the navigation improvement companies from Virginia slave holders. (Zaborney 2012, 124-5) In 1798, the Shenandoah Company was chartered with the mission of "opening, improving, and extending...navigation...to the highest point of the north and south branches that navigation can be extended." However, by 1802, and with navigation improvements on the Potomac completed, little progress had been made on Shenandoah River improvements. As a result, in that year the Shenandoah Company was absorbed by the Patowmack Company.

(Greiner 1990, 43 and Trout 1997, 2) By 1807, sufficient navigation improvements on the Shenandoah River, including “channels dug through rapids, or blasted out of bedrock, or formed by funnel shaped wing dams made of stone...long wooden chutes” had been constructed on the Shenandoah to allow passage around the “dozens of mill dams” built on the river. (Fig. 3.4 and Fig. 3.5) Also completed by 1807 was the construction of seven canal locks on the Shenandoah River, the ‘Little Falls Locks, in the “lower seven miles of navigation, above Harpers Ferry.” The locks allowed passage from the head of navigation at Port Republic on the Shenandoah River’s South Fork all the way to the Potomac River at Harpers Ferry (Trout 1997, 3). Goods from the Shenandoah Valley, including barrels of flour, iron, lumber, and farm products, were transported down river in flat-bottomed wooden ‘gundalows” whose rough-cut planks were caulked with Shenandoah Valley-grown flax” The typical gundalow was 76-90 feet long with a width of 9 ½ feet, and a depth 4 feet. (Fig. 3.6) The wood of choice for hull and floor boards was likely locally grown pine. Unlike oak, pine was not slippery when wet and when wet it would swell eliminating the need for extensive caulking. Historian Seth Bruggeman notes the “abundance of pine high atop...Massunten [sic] mountain,” as a potential local source for the wood in the vicinity of Cedar Creek. (Bruggeman 2000, 25)

With a draft of only 12 inches, the gundalows were designed to traverse the shallow “sluice navigation” improvements implemented by the Patowmack Company. (Greiner 1990, 44). Despite their shallow draft, they were capable of carrying significant loads, “8-10 tons of iron, 8-12,000 feet of lumber, and 100-110 barrels of flour.” A gundalow, with its crew of 4-6 men, could make the trip from Port Republic to Harpers Ferry in 4 1/2 days. (Greiner 1990, 44) In the spring, when waters ran high enough, convoys of gundalows made their way to Harpers Ferry and the Potomac River. “The boats were usually sold at the point of destination for the value of the lumber they contained.” (Wayland 1927, 267) Gundalow planks used for building construction can still be seen in houses in Potomac River’s early port towns and cities, including Harpers Ferry.

By 1815 Valley farmers and merchants along the North Fork of the Shenandoah River had succeeded in lobbying the legislature for navigation improvements to their fork of the river. The improvements were to be undertaken by the newly-formed New Shenandoah Company chartered in 1815. Shipping via the North Fork of the Shenandoah River to Alexandria quickly followed. Historian Kenneth Keller has identified that flour destined for Alexandria was being shipped by boat on the North Fork of the Shenandoah as early at 1816-19. (Keller 2000, 24) “In 1825, Additional improvements to navigation on the North Fork including “dams and chutes” were implemented as far up stream as the mouth Tumbling Run just south of Strasburg. (Bruggeman 2000, 14) Those improvements would have brought gundalows up the North Fork of the Shenandoah to the mouth of Cedar Creek, only a short distance from Bowman’s Mill. (Fig. 3.7)

Today the remains of two wing dams from this period are located near the point where Cedar Creek meets the North Fork of the Shenandoah River. The first wing dam is located just upstream from Cedar Creek. The second is located at McInturff’s Ford immediately

downstream from Cedar Creek (Fig. 3.7). W. E. Trout has identified that wing dams in both locations are shown on James Herron's Shenandoah Survey compiled in 1832. The remnants of a third wing dam are located farther downstream at the location of Bowman's Ford (Trout 1997, 26) Although flour is known to have been shipped by gundalow from various mills on the Shenandoah River, no evidence has been uncovered that gundalows were loaded at Bowman's Mill on Cedar Creek. There is also no record in the archives of the Hite, Bowman or Stickley families of their shipping flour by water to Alexandria or any other Potomac port. Rather the records indicate that the Hites" and Bowman's continued to ship goods from the lower Valley by wagon.

As Kenneth Koons and Jonathan Noyalas have noted,

"...proximity to both the Valley Turnpike and the Shenandoah River—two major transportation arteries of the eighteenth and nineteenth centuries—gave farmers and millers of the lands encompassing Cedar Creek and Belle Grove National Historical Park and its surrounding environs ready access to markets for wheat and wheaten flour." Koons and Noyalas 2010, 15)

With river improvements in place on the Potomac River and both forks of the Shenandoah River, competition between river and road transportation to ship the lower Shenandoah Valley's produce and trade goods to the eastern ports quickly escalated. Transporting goods by water had several perceived advantages. First and foremost was "a persistent tendency throughout the ante-bellum period to regard river transportation as the least expensive means of transporting goods." (Hunter 1957, 245) Second, shipping by water was a faster means of transport than shipping by wagon. And lastly, the seasonal uncertainties of river transport on the Potomac were alleviated by the completion, in 1850, of the Chesapeake and Ohio Canal (C&O Canal) all the way from Georgetown, just upstream of Alexandria, to Cumberland Maryland. The canal's first segment from Little Falls to Seneca had been opened much earlier, in 1831, and the following year the canal's eastern terminus had been extended to Georgetown. By 1834 the canal was open to Harper's Ferry, providing for the first time direct, reliable water borne shipping from the Shenandoah Valley to Georgetown. (Fig. 3.8) Most importantly, the opening of the C&O Canal to Harpers Ferry had significantly reduced shipping costs between Harper's Ferry and Georgetown leading to increased competition between the canal and the various turnpikes that were used to ship goods by wagon from the lower Valley directly to Georgetown and Alexandria. (Keller 2000, 4) soon after the canal reached Harper's Ferry in 1834, "officials of the Ashby's Gap Turnpike" complained that "as a result of competition from the Shenandoah River in the flour traffic of the Valley" smaller tolls were being collected. Competition between the turnpikes and river transportation continued to escalate and in 1836 "Phineas Janney, whose Little River Turnpike depended partly upon Ashby's Gap Turnpike to keep it supplied with traffic from the Valley, commented...that 'many thousand barrels of flour are now brought to the district on the C&O Canal that would have come on our road had not the improvement been made.'" (Hunter 1957, 247)

There were other advantages realized by shipping by the expanding river and canal network. As we have seen, goods shipped by water to Georgetown and Alexandria reached their destination more quickly than those shipped by wagon. Shipping by water allowed farmers the use of their wagons for critical work on the farms throughout the planting season. Finally, the Shenandoah River gundalow's were sold at their destination eliminating a laborious return trip by polling up river (Peterson 1932, 109). There was, however, one important advantage offered by wagon transportation via the turnpikes. Wagons returning to the lower Valley could be used to transport needed merchant and agricultural goods from eastern ports to the farms and merchant stores in the lower Shenandoah Valley. The larger port cities of Baltimore and Philadelphia brought in more imported goods and the merchants there offered a wider selection of imported goods than could be found in Alexandria. Continued transportation advancements would spur competition and expand the varied shipping network available to lower Valley farmers and merchants until the onset of the Civil War. Both road and river transportation would face expanded competition with the coming of the railroad to Harper's Ferry in 1834. Beginning in 1834, goods and produce could be shipped from the Lower Shenandoah Valley to Harpers Ferry and then transported by rail to Baltimore or by road to Philadelphia.

One final mid-nineteenth century construction project would offer improved navigation for the boats from the Shenandoah Valley destined for the port of Alexandria. In December of 1843, the completion of the Alexandria Canal, and the construction of the Potomac Aqueduct Bridge across the Potomac to connect the Alexandria Canal to the C&O Canal at Georgetown allowed, for the first time, directly shipping by canal all the way to the port of Alexandria. (Fig. 3.9 and Fig. 3.10)

By the 1840's, however, both the canals and the turnpikes were facing increasing competition from the railroads. (See figure 3.11, the combined transportation time line.) Construction of the Baltimore and Ohio Railroad (B&O Railroad) began in 1828 with the goal of linking Baltimore, and its deep-water port, to the Ohio River Valley and the western frontier. As has been identified, transportation costs from the Lower Valley to the eastern markets decreased with the opening of the Chesapeake and Ohio Canal from Georgetown to Harper's Ferry. But, as Kenneth Keller has identified, "shipping costs dropped even more dramatically with the arrival of the Baltimore and Ohio Railroad at Harper's Ferry in 1834." (Fig. 3.12) Rail service to Harper's ferry would also have a profound transformative impact on the economic structure of the agricultural landscape in the lower Shenandoah Valley. Before the arrival of the B&O, "Valley farmers shipped their produce directly to market without relying on warehouses or merchants." (Bruggeman 2010, 3) Direct shipping from the farm and mills to eastern markets by road or water was the foundation of the networked economic structure that developed early on in the lower Valley. With the coming of the Railroad, a shift occurred that saw the development, for the first time, of warehouses and depots where goods from various farmers and merchants were assembled before they were shipped by rail to distant markets. The success of that economic structure was dependent in part of the institution of slavery and the fact that "hired slaves built, and maintained, turnpikes, canals, river improvements, and [later] railroads that linked Virginia

whites economically.” (Zaborney, 2012, 165). Railroad construction, maintenance, and general operations all were dependent in part of the work slaves hired by the railroads from Virginia slave holders and, as historian John J. Zaborney has identified, the reduced shipping costs and prosperity that railroad transportation brought to Virginia farmers was in no small measure due to the varied work performed by hired slaves (Zaborney 2012, 124-5 and 144-5)

An important addition to the developing transportation network in the lower valley was the construction of the Winchester and Potomac Railroad, “a thirty-two-mile line from Harper’s Ferry to Winchester” which was “completed and opened for business in 1836.” (Keller 2000, 24) (Fig. 3.13) One stockholder in the railroad was Isaac Hite, Jr., whose 1837 Estate inventory includes 100 shares of Winchester and Potomac Railroad stock. Following the completion of the Winchester and Potomac Railroad, Winchester would develop as an important assembly point for goods to be shipped to Baltimore by rail. The completed rail link to Winchester offered shippers a faster, direct link to the B&O Railroad at Harper’s Ferry and initiated a period of increased competition between Baltimore and Alexandria as market destinations for lower Valley agricultural products. The competition between the two cities and the lowered rail transportation costs for Valley farmers and merchants would soon lead to a reduction of Alexandria’s market area as acknowledged by historian Arthur G. Peterson who has identified that “by 1838, the Baltimore an Ohio Railway was becoming an important factor in carrying the inland produce from Maryland and the lower Shenandoah Valley and diverting these products from Alexandria to Baltimore.” (Peterson 1932, 109)

The coming of the railroads with their lower transport fees also would alter the role of turnpikes and have a significant impact on the transport of goods by wagon from the lower Valley. By 1833 “the Baltimore and Ohio Railroad had demonstrated the superiority of railroads to turnpikes for long distance hauling.” (Hunter 1957, 260) Although Kenneth Keller argues that “for places close to railroads, the expensive wagon transport of wheat and flour ended by the 1840’s with the advent of cheaper means of transportation.” (Keller 2000, 24) Other historians have pointed out that what really had changed was the growing realization on the part of lower Valley farmers and merchants that with the coming of the railroad, turnpikes, and by extension the wagon trade, “were valuable adjuncts for carrying goods short distances to railroad depots.” (Hunter 1957, 260) So while turnpike officials, including officials from the Snicker’s and Ashby’s Gap turnpike companies, regularly complained about the “adverse effects of railroad competition,” in the lower Valley, after the coming of the railroad, goods continued to be shipped by wagon. (Hunter 1957, 256) But, in many cases, they were now being transported to depots in Winchester, Strasburg, Harpers Ferry, and to other depots along the railroads for loading and shipping by rail. Trade goods purchased from merchants in Baltimore and shipped to the Valley by rail were, in turn, unloaded at the railroad depots, and then delivered by wagon directly to Valley merchants and farmers.

The increased competition from the railroads, along with the completion of the Alexandria Canal and the Potomac Aqueduct Bridge in 1843 also resulted in lowered transportation costs for goods shipped from the Valley to Alexandria via the C&O Canal. The reduced costs of shipping to Alexandria, along with increased demand for Valley wheat flour and grain as a result of a famine in Ireland, continued to support a flourishing flour market for Alexandria's merchants well into the decade of the 1840's. Historian Arthur Peterson recounts in particular that the strength of that flour market in 1846, a period "long referred to by the [Alexandria] merchants as 'a glorious epoch.'" (Peterson 1932, 111)

Alexandria's fortunes would be boosted again 1853 with the completion of the Manassas Gap Railroad linking Alexandria with the towns of "Front Royal in Warren County and Strasburg in Shenandoah County." (Keller 2000, 24-25) (Fig. 3.14) With the Manassas Gap Railroad in operation, the lower Shenandoah Valley was served by three rail lines, the B&O, the Winchester and Potomac, and the Manassas Gap Railroads, giving Valley farmers and merchants additional competitive alternatives for the shipment of goods to eastern ports. Historian Arthur Peterson has identified that "by 1857, considerable quantities of flour and other produce were shipped to Alexandria over the Manassas Gap Railroad." (Peterson 1932, 111)

Chapter 3: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast Region Ethnography Program National Park Service, 2009

Bruggeman, S.C. "The Shenandoah River Gundalow," *Virginia Magazine of History and Biography*, 2010, 118 (no.4), 315-349.

Bruggeman, Seth C. "The Shenandoah River Gundalow and the Politics of Material Reuse," The College of William and Mary, Master's Thesis, 2000.

Crothers, A. Glenn, "Quaker Merchants and Slavery in Early National Alexandria, Virginia, in: *Journal of the early Republic*, 25, (Spring 2005)

Daniel Stickley Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Gilpin, W. Freeman, The Grain Trade of Alexandria, Virginia, 1801 – 1815, in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History, pp. 404 – 427

Greiner, Anthony, "Navigation and Commerce on the Shenandoah River of Virginia," in *Log of the Mystic Seaport*, Mystic, Conn.: Mystic Seaport Museum, Summer, 1990 p. 42-46

Herron, James, "Shenandoah River Survey Field Notes, 1831-1832," in *New Shenandoah Company Records, 1831-1849*, Archive and Manuscript Room, BPW 103 30030, Library of Virginia

"The History of Baltimore" in *The City of Baltimore Comprehensive Master Plan (final Draft)* on-line at:
<https://planning.baltimorecity.gov/sites/default/files/History%20of%20Baltimore.pdf>,
Accessed July 16, 2018

Hunter, Robert Fleming, *The Turnpike Movement in Virginia, 1816-1860*, PhD dissertation, Columbia University 1957

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977.

Newlon, Howard Jr., "Private Sector Involvement in Virginia's Nineteenth-Century Transportation Improvement Program," in *Transportation Research Record* 1107, 1987 <http://onlinepubs.trb.org/Onlinepubs/trr/1987/1107/1107-001a.pdf> Accessed July 11, 2019

Nigro, Robert, review of *The Potomac Canal: George Washington and the Waterway West*. By Robert Kapsch, in *West Virginia History: a Journal of Regional Studies*, New Series Vol. 2, no.2, Fall 2008 pp. 111-112

Peterson, Arthur G., "The Alexandria Market Prior to the Civil War," *William and Mary Quarterly*, Vol. 12 – Series 2, 1932, pp. 104-114.

Preisser, Thomas M., *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776*, College of William and Mary, 1977

"The Potowmack Canal" at <https://www.nps.gov/grfa/learn/historyculture/canal.htm> accessed August 9, 2019

"Record of Dividends to Shareholders of the New Shenandoah Company," in the Daniel Stickley Papers, 1829-1912, (Mss. 39.2 St5) (msu an2), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Stickley, Daniel, Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Swem, Earl G., *Bulletin Virginia State Library*, vol. 10, Nos. 1-4: *A Bibliography of Virginia, Part II*, Richmond: Library of Virginia, 1917
<https://books.google.com/books?id=5JliAQAAAMAJ&printsec=frontcover&dq=Bulletin+virginia+state+library+Vol+10+1917&hl=en&sa=X&ved=0ahUKEwj9ptaZoOLjAhWBylkKHYHIClwQ6AEIKDAA#v=onepage&q=turnpike%20companies&f=false>

Trout, W. E., *The Shenandoah River Atlas*, Friends of the Shenandoah River: Front Royal, Va., 1997

Wayland, John W., *A History of Shenandoah County Virginia*, Strasburg: Shenandoah Publishing House, 1927

Wayland, John W., *Twenty-Five Chapters on the Shenandoah Valley: To Which is Appended a Concise History of the Civil War in the Valley, Second Edition*, Harrisonburg, Va.: C. J. Carrier Company, 1976

Williams, Maxine S., *Myth and Reality: Alexandria, Virginia, 1745-1820* (2000), thesis and Dissertations. Paper 638, Lehigh University
<https://preserve.lehigh.edu/cgi/viewcontent.cgi?article=1638&context=etd> accessed April 13, 2019

“Winchester and Potomac Railroad,”
https://en.wikipedia.org/wiki/Winchester_and_Potomac_Railroad, accessed September 5, 2019

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 3:

Figures

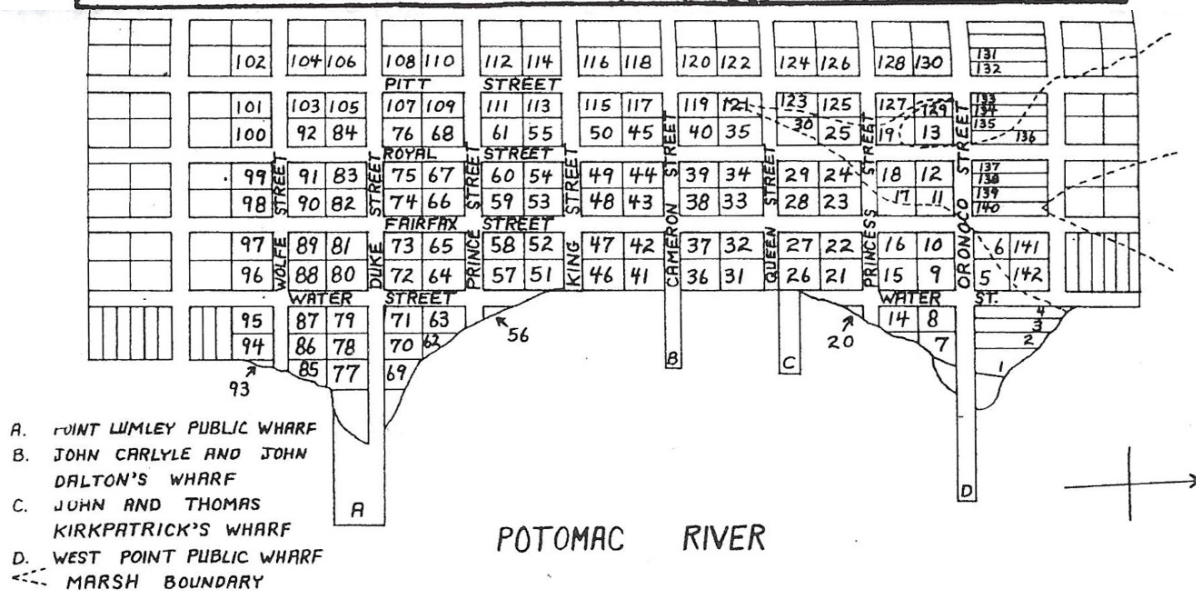
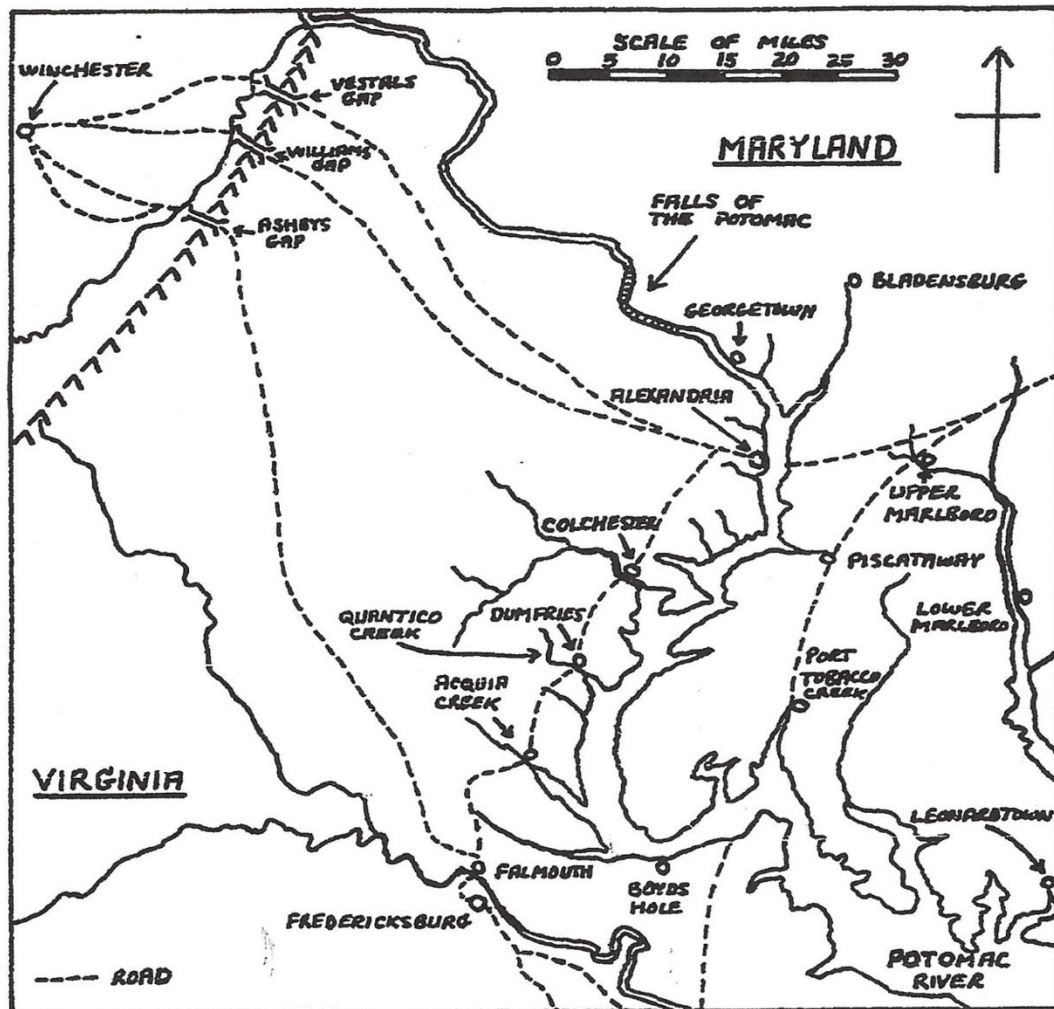
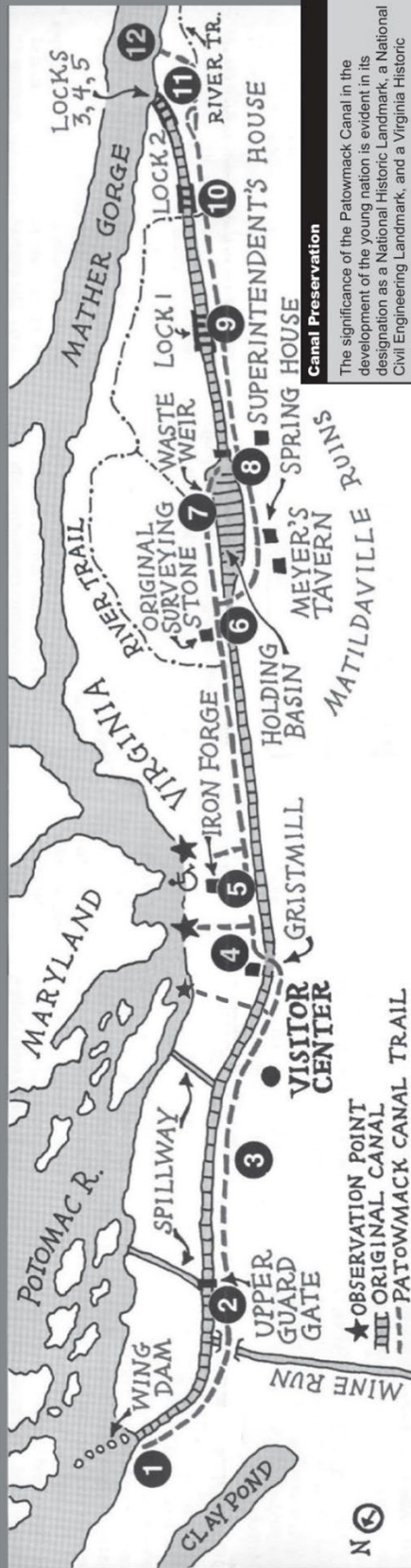


Figure 3.1 (Top) Virginia's Potomac River ports and trade routes, c. 1775. (Bottom) The Port of Alexandria, c. 1775. From Preisser 1981.

Trail Guide



The trail, marked by numbered posts, begins near the river north of the visitor center and continues downstream for a mile to a spectacular view of the river gorge. To return, follow the same route or take the more challenging River Trail, which starts between Locks 2 and 3 and requires some scrambling over rocks.

HELP PROTECT THIS NATIONAL HISTORIC LANDMARK BY STAYING ON MARKED TRAILS AND OFF THE CANAL WALLS AND OTHER HISTORIC RUINS.



1 Wing Dam - To provide a sufficient level of water, the wing dam diverted river water into the canal. It was built of wooden cribs filled with rocks and extended 1200 feet into the river. During periods of low water, the outline of the dam is visible.

2 Upper Guard Gate - Walking downstream, you will cross a small bridge over Mine Run, which also brought water into the canal. Just beyond are the massive stones of the upper guard gate walls. During floods, wooden gates were closed across the canal, diverting high water through the spillway back to the river. Thick walls were needed to withstand the powerful Potomac.

3 Dry-Laid Walls - Continuing downstream, note the stone wall on the other side of the canal prism (a term for the shape of the canal.) These walls were 20 feet thick and 10 feet high. They provided protection for canal bed. The Civilian Conservation Corps rebuilt the small dam and spillway at the end of the wall in the 1930's.

4 Gristmill - Near the visitor center lie several foundation walls of the Samuel Briggs gristmill. Water from the canal powered the waterwheel to grind corn and grain for Matildaville and Georgetown.

5 Iron Forge - Past the path to Overlook 2, another small bridge leads to the remains of the Potts-Wilson iron forge. A large building here once housed four hearths where raw ore was reduced to pig iron and wrought into utensils, nails, and other hardware.

As you follow the trail into the woods beyond the picnic area, note a gray stone outcrop, which was used as a mark by the original surveyors for the area. The bowl-shaped area beyond was the holding basin.

6 Holding Basin and Matildaville - Here boats waited their turn to lock through the canal. They moored along the walls of the basin while crews visited Matildaville, once a bustling commercial center for the canal trade. Only the tumbled ruins of Meyer's Tavern, a springhouse, and the canal superintendent's house remain.

7 Waste Weir - Across the holding basin from Matildaville, you will see a wooden bridge. The waste weir next to it regulated the water level and permitted draining the canal for cleaning and repair. Archeologists suggest that a sawmill may have existed in this area.

8 Lower Guard Gate - Here masons used hand-cut red sandstone blocks quarried at Seneca, Maryland, the first example of Seneca sandstone used in the canal construction. The gate controlled the flow of water to the locks, and, in the event of flooding, protected the locks below. You can see Lock 1 through the gate opening.

9 Lock 1 - This lock is 14 feet wide and 100 feet long, and is faced with Seneca sandstone. Lock 1 is the largest lock, and raised and lowered boats a total of 10 feet. National Park Service preservation work restored the walls of the lock in the 1980's. The downstream gates and sill are on display in the visitor center.

10 Lock 2 - Both Seneca sandstone and local rock made up this lock.

Stonecutters' marks, signatures of completed work, were cut into the blocks. This lock has been filled with earth to stabilize and protect the canal walls.

11 Locks 3, 4, and 5 - As you look down this sheer man-made cut, visualize a series of connected locks sharing common gates. The bend in Lock 3 allowed boats to turn 18 degrees.

Canal Preservation

The significance of the Patowmack Canal in the development of the young nation is evident in its designation as a National Historic Landmark, a National Civil Engineering Landmark, and a Virginia Historic Landmark.

In 1930 Congress authorized this place of human history and natural beauty as a park. The National Park Service took on responsibility for its management in 1966.

The preservation of the Patowmack Canal, dictated by Congress, is part of the Park Service's continuing efforts to manage special resources of the park. The Patowmack Canal and Matildaville ruins are protected by the Archeological Resources Protection Act of 1979. This law prohibits excavation, removal, or defacement of archeological resources.

Locks 4 and 5 were blasted out of solid rock with black powder, an engineering achievement far ahead of its time. Drill marks are still visible in the cliffside. These two locks accomplished half of the total lift needed to skirt Great Falls, lowering boats a distance of 38 feet. Notice iron rings and bolts used to hold ropes to maneuver boats through the locks.

12 Mather Gorge - A river overlook awaits up the hill and across a small wooden walkway. You have walked the way of the canal boats that helped the young United States grow and prosper. Pause a moment to reflect on the canal that met the river's challenges and the ongoing efforts to preserve what remains.

Figure 3.2 The Potowmack Canal at the Great Falls of the Potomac River.



Figure 3.3 Potowmack Canal locks.

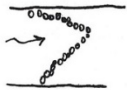
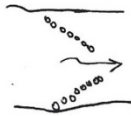


TYPES OF STRUCTURES ON THE SHENANDOAH		
INDIAN FISH DAMS	Indian fish dams are made of long narrow piles of river rocks and are frequently V-shaped, closed at the downstream end, designed to hold fish so they can be speared, or caught in a wicker basket. See "Dams" by G.C. Holland in the June 1983 QUARTERLY BULLETIN of the Archeological Society of Virginia, pp.80-107.	
GUNDALOW WING DAMS	Navigation wing dams are long piles of river rock at an angle to the shore, like a wing. They are commonly in pairs, forming a V open at the downstream end. The object was to funnel the river into a single, deep channel (called a sluice), especially at low water. There were probably wing dams in every shallow spot wherever the gundalows wanted to go.	
CUTS THROUGH LEDGES	Some of the ledges blocking the river were cut through with pick-axes and wedges, or blasted out with black powder, to make a channel for gundalow navigation.	
MILL DAMS AND CHUTES	The old mill dams on the Shenandoah were crib dams, made of logs spiked together like log cabins, filled with loose stone, and planked watertight. Each dam was required to have an opening for the gundalows, or a long sloping chute made of wood.	

Figure 3.4 Transportation improvement structures on the Shenandoah River. From Trout 1997.

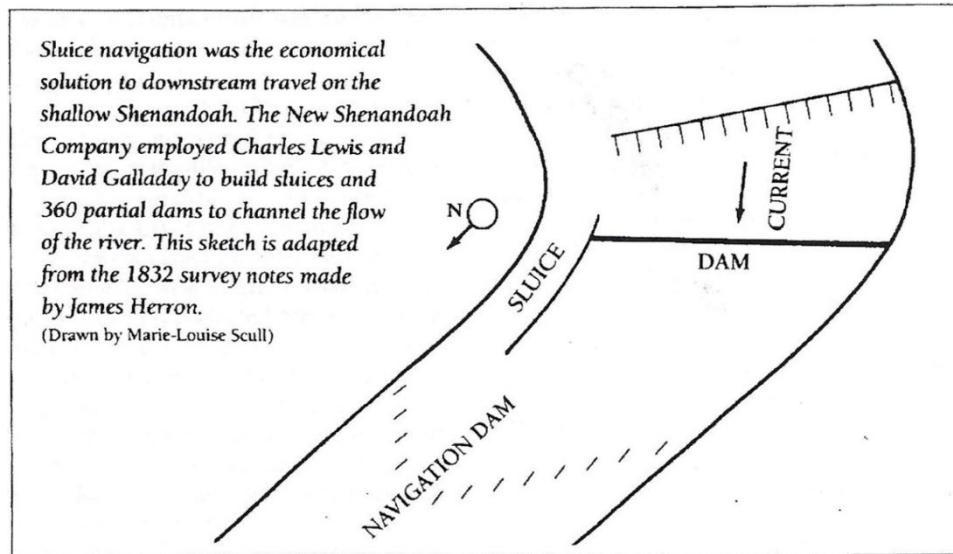


Figure 3.5 Shenandoah River sluice navigation plan. From Greiner 1990.

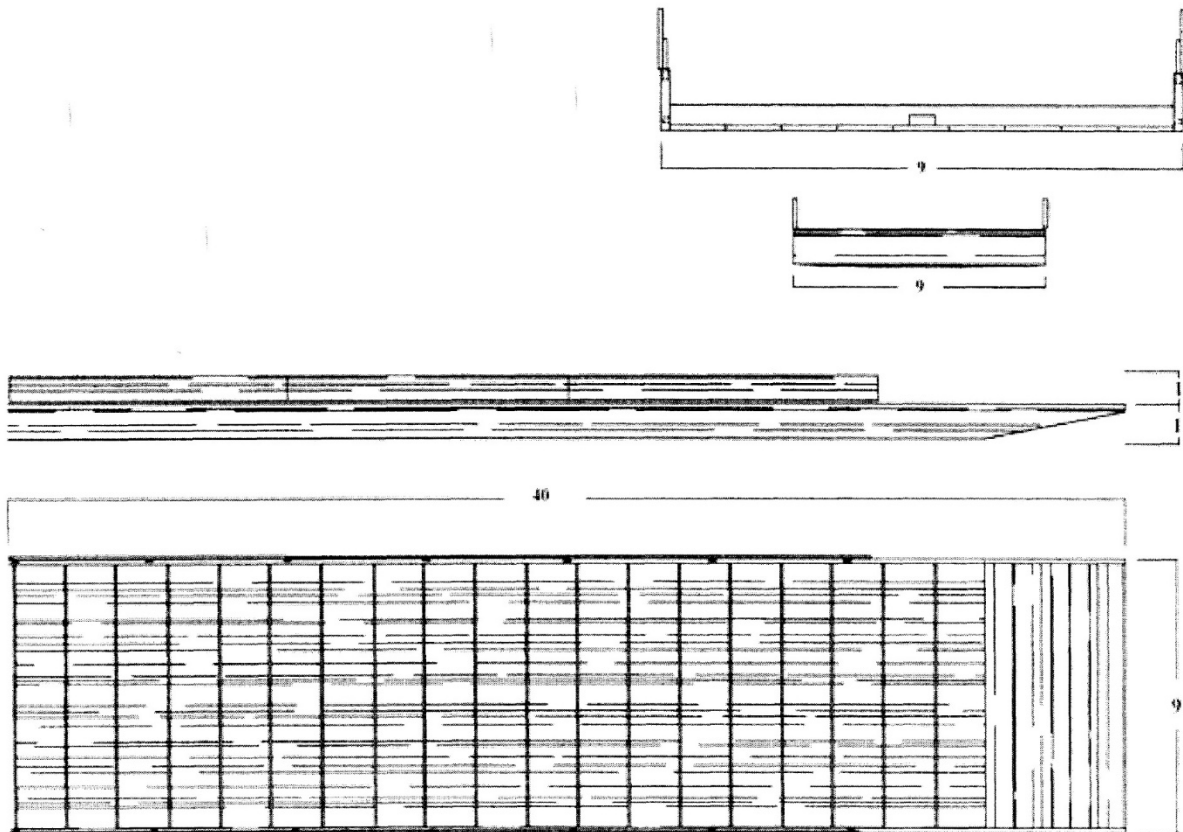


Figure 3.6 The Shenandoah River gundalow. From Bruggeman 2000.

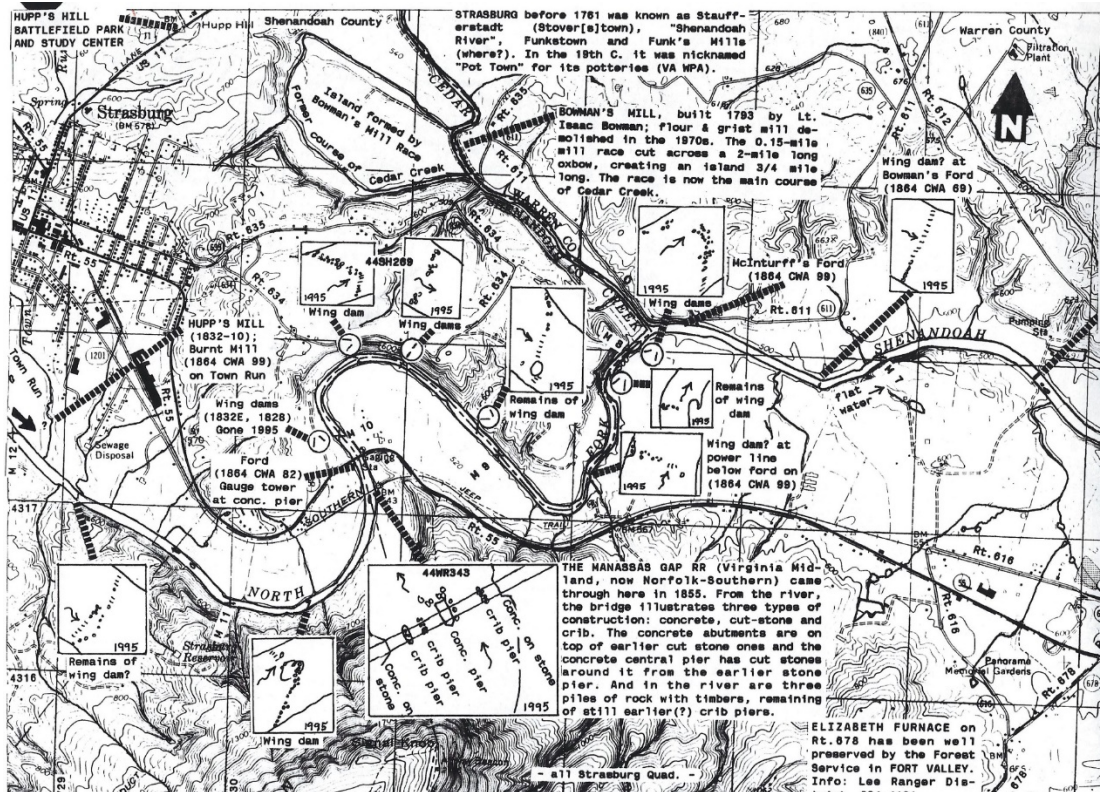


Figure 3.7 Cedar Creek's confluence with the North Fork of the Shenandoah River. Bowman's Mill was located on Cedar Creek only a short distance upstream from the creek's confluence. From Trout 1997.

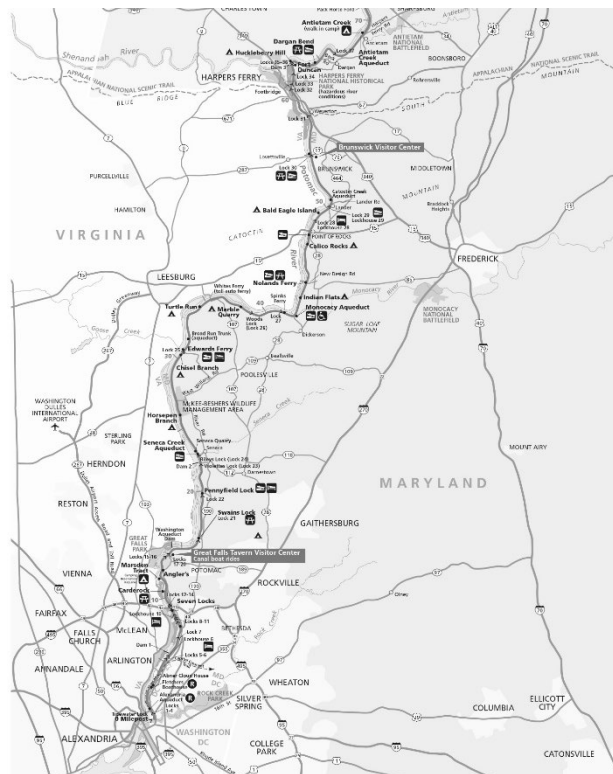


Figure 3.8 The Chesapeake and Ohio (C. & O.) Canal.

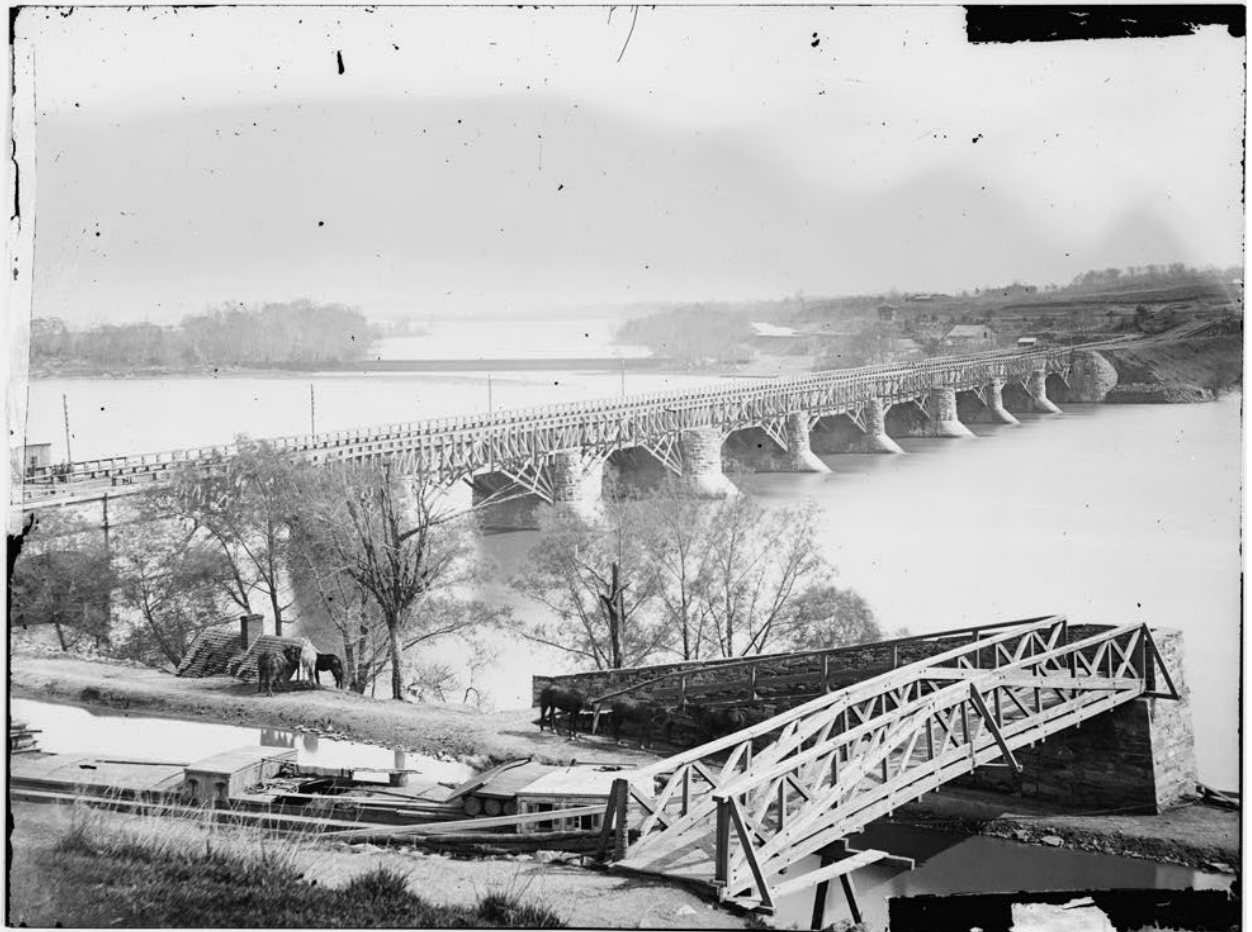


Figure 3.9 The Alexandria Canal Aqueduct Bridge - looking south across the Potomac River. The C. & O. Canal is in the foreground. The Aqueduct Bridge provided a direct connection from the C. & O. Canal to the Alexandria Canal and the Port of Alexandria.



Figure 3.10 (Top) The Alexandria Canal. (Bottom) The Alexandria Canal Basin.

Turnpike Companies, Canals and Railroads Combined Timeline

- 1816 Strasburg and Front Royal Turnpike Co.
- 1817 Little River Turnpike Co.
Winchester and Berryville Turnpike Co.
Winchester and Northwestern Turnpike Co.
- 1818 Shenandoah Co. (River Improvements to the Shenandoah River)
Leesburg Turnpike Co.
- 1823 Snicker's Gap Turnpike Co.
- 1824 Fauquier and Alexandria Turnpike Co.
- 1825 Erie Canal opens
The New Shenandoah Company hires Charles and Wright Gatewood to build dams and chutes along the Shenandoah's north branch up from 'its mouth up to the entrance to tumbling run . . .'
(south of Strasburg)
- 1827 Ashby's Gap Turnpike Co. (Isaac Hite, Jr. held 5 shares at time of death)
Baltimore and Ohio RR
- 1828 Valley Turnpike Co.
- 1829 Opequan Navigation Co.
- 1831 Winchester and Potomac RR Co.
Winchester and Berryville Turnpike Co.
- 1832 Leesburg and Snicker's Gap Turnpike Co.
- 1833 Warrenton and Occoquan Turnpike Co.
- 1834 Winchester and Potomac Railroad Co.
Valley Turnpike Co.
B&O arrives at Harpers Ferry
- 1836 Winchester and Potomac Railroad Co. (Isaac Hite held 100 shares at time of death)
- 1837 Chesapeake and Ohio Canal Co.
- 1837 Valley and Shenandoah Turnpike Co.
Issac Hite, Jr. held "6 ½ shares in unidentified "turnpike stock"
- 1838 Baltimore and Ohio RR Co.
- 1839 Valley Turnpike Co.
- 1841 Baltimore and Ohio Railroad Co.
- 1847 Alexandria Canal Co.
- 1847 Manassas Gap Turnpike Co.
- 1850 Winchester and Berry's Ferry Turnpike Co.
- 1850 Virginia Central Railroad Co.
Manassas Gap Railroad organized
- 1851 Manassas Gap Railroad Co.
- 1852 Cedar Creek and Opequan Turnpike Co.
- 1853 Manassas Gap Railroad
- 1854 Manassas Gap Railroad arrives first at Front Royal and then Strasburg
- 1855 Alexandria, Loudoun and Hampshire Railroad Co.
- 1857 Strasburg and Capon Turnpike Co.

Figure 3.11 The timeline of water and rail transportation improvements between the eastern ports and the lower Shenandoah Valley.

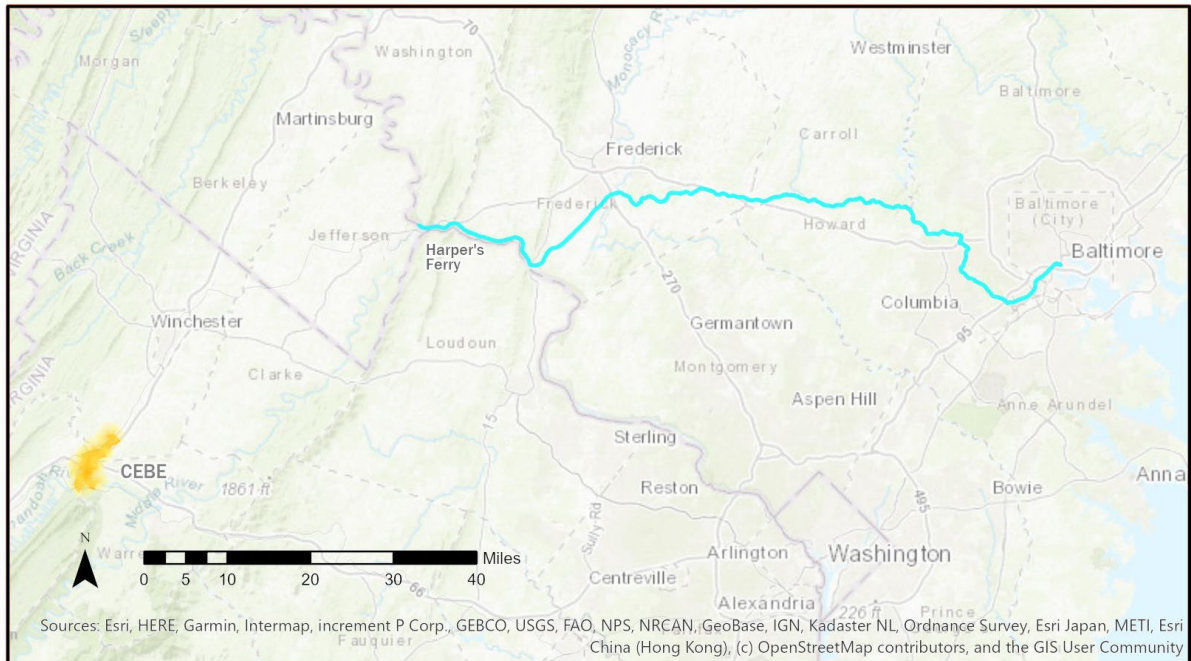


Figure 3.12 The Baltimore and Ohio Railroad reached Harper's Ferry in 1834.

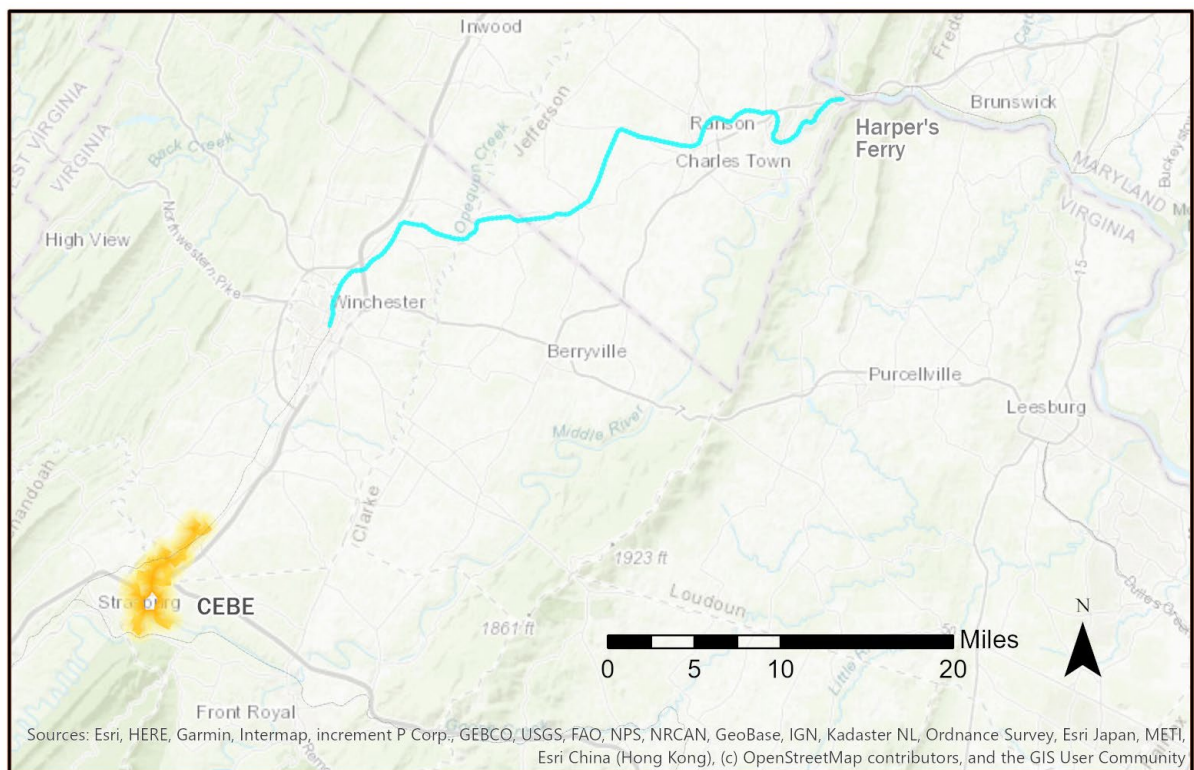


Figure 3.13 The thirty-two-mile Winchester and Potomac Railroad was completed in 1836 providing direct rail connection from Harper's Ferry to Winchester, Virginia and the Valley Pike.

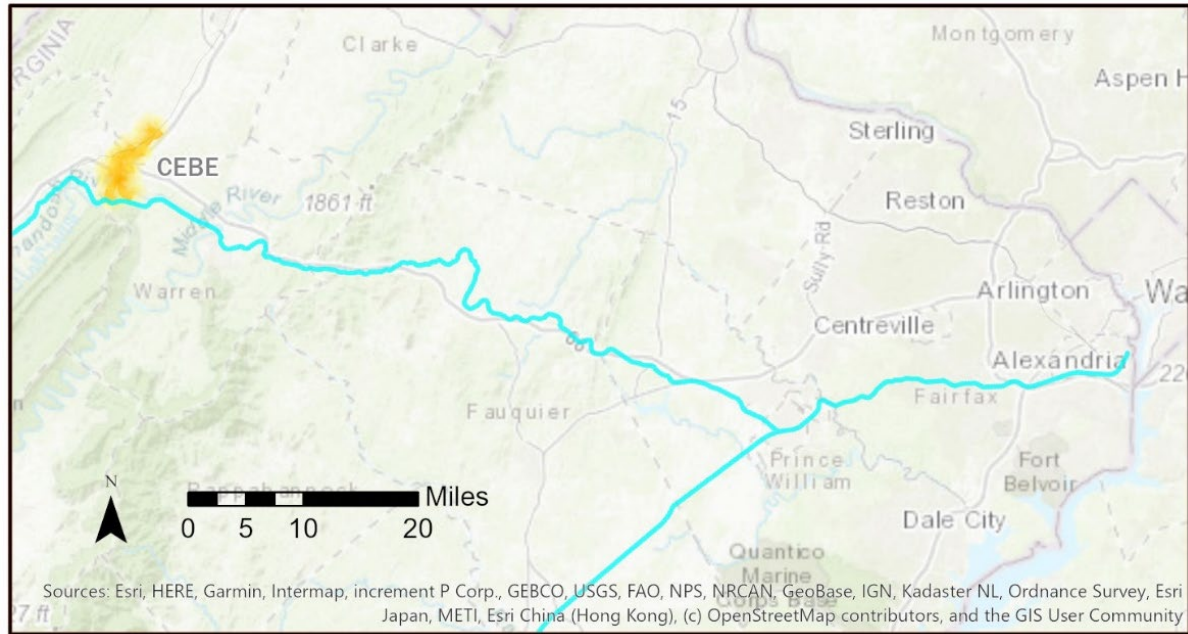


Figure 3.14 In 1853 the Manassas Gap Railroad linked Alexandria with the town of Front Royal on the North Fork of the Shenandoah River and the town of Strasburg in the Lower Shenandoah County just west of Cedar Creek.

Chapter 4:

The Agricultural Landscape: Economic Infrastructure

The evolution of agriculture in the lower Shenandoah Valley responded to many contexts and circumstances. Site specific conditions including soils, topography, aspect, hydrology and existing vegetation were important physical contexts that guided the Valley settlers as they selected land and began clearing land for agriculture. The exchange economy that quickly developed in the lower Valley reflected the particularities of the land and was influential in the organization, spatial character, and development of the infrastructures that supported lower Valley agriculture in the eighteenth century. There were, however, larger, less site specific contexts and external economic forces that played key roles in the evolution of the lower Valley's agricultural landscape.

Importantly, while the lower Valley's eighteenth century exchange economy demonstrated the settling generation's collective energy and self-sufficiency, it also was reflective of the interdependency of agriculture and commerce. The lower Valley and the open-country neighborhood along Cedar Creek were never isolated from national and world events and the evolution of the lower Valley's agriculture landscape would consistently reflect the impact of economic forces at the scale of region, at the scale of the open country neighborhood along Cedar Creek, and at the scale of individual farms and plantations. In turn, the evolving agriculture in the lower Valley would itself influence important regional contexts including regional transportation and merchant networks as well as the gradual shift from the early exchange economy to commercial production.

Historians have identified two related but different structures for the various stages of development that transformed the agricultural landscape of the lower Shenandoah Valley and Virginia's eighteenth century "back country" in general. Historian Robert D. Mitchell divides the evolution of economic development into four stages. The first stage, according to Mitchell, saw the lower Valley settlers "transform wilderness into property and achieve self-sufficiency collectively in the local exchange of goods and services." Mitchell's second phase saw the emergence of towns in the lower valley, but as Mitchell recognized, at this stage the towns remained "poorly integrated into rural economies." In the third phase of development, Mitchell identifies that markets for agricultural commodities emerge and the rise of wheat and, more importantly, wheat flour as agricultural commodities that were shipped from the lower Valley to distant markets, exemplifies Mitchell's third phase. The fourth and final phase of development identified by Mitchell was characterized by the integration of the lower valley's towns into the agricultural economy as they began to "perform significant market functions." A good example of this fourth phase is Winchester's integration into the lower Valley's agricultural economy following the completion of the Winchester and Potomac Railroad in 1836. With the completion of the Winchester and Potomac Railroad, Winchester quickly became an important assembly point for goods shipped into and out of the lower Valley by rail. [Mitchell, 1997, 54-55]

Historian Warren Hofstra has outlined a more compressed, three-phase structure for the Lower Valley's spatial transformation. For Hofstra, the first phase of the lower valley's economic development was the establishment of "dispersed, rural, kinship communities" in the 1730's exemplified by the open country neighborhoods that developed along Opequon and Cedar Creeks. The second phase, saw the integration of the lower Valley's early "autonomous communities" into more "complex regional settlement systems" in which "dense road networks linked individual farmsteads to commodity markets at mills and towns." Hofstra dates emergence of this more complex settlement system to roughly 1750. The commodity markets that Hofstra identifies, were developing in response to "the trans-Atlantic rise in grain prices after 1750. The third and final phase identified by Hofstra occurs in the second quarter of the 19th Century when the "public nature of the market gives way to private trading." (Hofstra 1995, 212)

The two transformational models identified by Mitchell and Hofstra share significant understandings. Both models identify the early self-sufficient or "autonomous" community agricultural economic structure that was grounded in the local exchange of goods and services. Both also recognize the critical role the development of commodity markets played in the evolution of the lower Valley's agricultural economy. Lastly, each historian presents a development sequence that provides an entrée to expanded understandings of the larger contexts and specific events that influenced the evolution of the lower Valley's agricultural economy. Both development sequence models reveal that the demands of the larger agricultural economy influenced the selection of crops to be grown in the lower Valley and thus both impacted the spatial character of lower Valley farms and plantations and modulated the agricultural labor force as the market shifted from more to less-labor-intensive agricultural crops. The commodity markets noted in each model also encouraged and propelled the lower Valley farmers' interest and participation in the early nineteenth century progressive farming movement. Each model thus offers an important vantage point from which to understand the varied nuances of the evolving agricultural economy of the lower Valley and recognize the physical traces of that economy that remain legible in today's landscape.

The overarching catalyst for the lower Valley's continued transformation in the first half of the nineteenth century was the region's evolving wheat economy. Ethnographer Kathleen Bragdon has identified that:

"From an economic point of view, the most important development for the Valley in the antebellum period was the expansion of the commercial wheat economy. By 1840, Valley farms were providing one fifth of the entire wheat crop for Virginia, increasing to 22 percent at mid-century. The production of wheat was not limited to the Valley's largest farms. Instead, nearly every farmer produced the grain."
(Bragdon 2009, 101]

The development of the lower Valley's commercial wheat economy was the culmination of a long transitional economic period that began in the last decades of the eighteenth

century. In the decades that followed, national and world events, along with technological and agricultural advances, would continue to transform the lower Valley's early exchange economy that had served the region's "dispersed subsistence farms" by shifting that economy "toward [the] commercial production" [of wheat]. (Bragdon 2009, 96-7) Historian Warren Hofstra has described this long transitional period as a "settlement continuum from open country neighborhoods to market centers such as Winchester." (Hofstra 2004, 188)

For Hofstra, the keys to understanding the lower Valley's landscape, and to unraveling the meaning of its varied interrelated elements, were three crucial economic engines that fueled the exchange economy, farms, mills, and shops. That exchange economy, Hofstra understood, had "rendered the settlement of the Shenandoah Valley by Europeans viable since the 1730's." He recognized as well that it "still underlay the landscape, allowing it to function as a complex machine for production, distribution, and consumption." (Hofstra 2004, 188) Collectively, the mix of farm activities one could observe in the lower Shenandoah Valley at the end of the eighteenth century had changed very little. "wheat, rye, oats, barley corn, flax, hemp, and tobacco could all be seen grown on Shenandoah Valley farms" and "horses, cattle, sheep, and pigs" continued to range the land. What had changed, as Hofstra has identified, was the economic emphasis, which by 1800 "clearly lay on wheat." The suitability of the lower Valley for wheat was noted by the Irish writer and traveler Isaac Weld who observed that the wheat crop produced in the Shenandoah Valley was "as plentiful...as in any part of the United States." French traveler, duc de La Rochefoucauld-Liancourt, who passed through the Shenandoah Valley in the mid-1790's estimated that fifteen to twenty bushels of wheat per acre was not uncommon. (Hofstra 2004, 188]

While wheat had been grown by Lower Valley farmers since the time of settlement, "before the mid-1750's local agriculture was diversified, unspecialized and largely subsistent." (Mitchell and Hofstra 1995, 138) But as historian John J. Zaborney has identified, by the late 1730's a shift brought about by international events was underway. The War of the Austrian Succession, which began in 1739, had "made it difficult for Chesapeake producers to export tobacco to England..." in the war's first two years, "Spanish privateers and warships seized numerous cargoes of Virginia tobacco in Chesapeake coastal waters. By 1741, after the French allied with Spain in the conflict, Chesapeake tobacco planters began to lose dozens of tobacco shipments." The losses combined with higher insurance rates, eventually "pushed Virginia Planters away from tobacco and toward wheat." Grain, a less tempting target for privateers than tobacco, "brought better returns than tobacco," and the war brought "significant international demand for American grain. As a result, the price of flour rose from three to four dollars per barrel in Virginia port towns by the middle of the eighteenth century, and it remained at the level through the Revolution." (Zaborney 2012, 10)

In the 1760's and 1770's, following the French and Indian War, there was an "increasing demand for wheat and flour" which "saw farmers and millers respond with rising levels of commercial imports." Warren Hofstra and Robert D. Mitchell point out that the records of "Scottish factor and Falmouth merchant," William Allason reveal an important economic

detail, that after 1765, flour rather than wheat was being exported by Frederick County farmers. (Mitchell and Hofstra 1995, 138) Allason's records also demonstrate that "...the Rappahannock port of Falmouth and the counties of the Lower Shenandoah Valley were bound together by commercial ties "The trade of the Allason firm was duplicated...by other houses in Falmouth, Fredericksburg, and Alexandria; doubtless Colchester and Dumfries also enjoyed some of the business" as well. (Miles 1935, 694) (Fig.4.1)

Increased in flour production in the lower Valley had begun during the French and Indian War, when Winchester was the headquarters of the Virginia Regiment, led by George Washington. The need to feed Washington's regiment stimulated the demand for lower Valley flour. Robert Mitchell and Warren Hofstra assert that the Valley farmers "apparently supported both the food demands of the town and the provisioning of Washington's troops" by producing surpluses of wheat. Growing that surplus meant shifts in planting regimes and, potentially, an increase in the acreage of land put into agricultural production. The provisioning of the colonial troops also affected the cattle and livestock trade. "Cattle droving to Philadelphia," which had been a common sight in the Valley since the early 1740's," had developed into a "small, loosely organized beef-cattle trade during the early 1750s particularly in Berkeley and Frederick Counties," with surplus cattle being driven to Philadelphia." (Mitchell 1973, 120) The strong connection to Philadelphia wasn't only due to the good road connections to that city. (Fig. 4.2) As historian Christopher E. Hendricks, points out, the "social, linguistic, and religious ties of the settlers from Pennsylvania directed a lot of the area's products to Philadelphia." (Hendricks 2006, 13) But with the coming of war, the cattle trade had gained a new local and regional currency, with Winchester serving as an important regional cattle market as the war progressed. During the French and Indian War, the growing importance of the Winchester market was further reflected by the actions of Philadelphia merchants, who were "seeking markets in the northern valley and extending credit to Winchester retailers." (all from Mitchell and Hofstra 1995, 136) The war also was responsible for transforming the "small but thriving" Potomac River port town of Alexandria into "a major port. (Preisner 1977, 52 and 68) All of these events would be important contributing factors in the development of the merchant networks that lower Valley farmers would cultivate in the decades that followed.

After the French and Indian War, demand for flour continued to increase in response to expanding flour markets in both Europe and the West Indies. To meet the growing demand for flour, lower Valley farmers continued to increase their production of wheat. As the demand for flour on world markets rose, by the late 1760s the prices offered for flour became high enough "to offset the costs of its transportation to east-coast markets such as Alexandria, Baltimore, and Philadelphia." (Koons and Noyalas 2010, 41) As a result, Valley farmers prospered during the final quarter of the eighteenth century as they allocated increasing proportions of their resources to wheat production and shipped the processed flour to eastern port towns and cities for delivery overseas.

In addition to wheat and flour, other agricultural crops saw increased production after the French and Indian War. The demand for hemp, which had seen a rise in production in

response to the wartime demands of the military, “declined and virtually disappeared” after the war according to Historians Kenneth E. Koons and Jonathan Noyalas. But in 1764, a year after the war ended, a hemp bounty was initiated and that bounty “encouraged some farmers to produce the crop for export to eastern markets.” Within three years, a ropewalk was established in Winchester and rope and cordage became “regular products of the Winchester trade.” [Mitchell, and Hofstra, 1995, 138] The lower Valley cattle trade with Philadelphia also was revived after the war and Winchester, which had become a center of the wartime cattle trade, “consolidated its role as a collection point for backcountry cattle [now] intended for northern markets” and the trade in “salted butter, cheese, tallow, and hides developed as offshoots of the livestock trade.” (Mitchell, and Hofstra 1995, 138) Other agricultural items exported from the Valley during the post-war period included horses, whiskey, cider, shoe thread, twine, and shoe leather. (Mitchell 1973, 156-7)

Generally then, the lower Valley’s pre-French and Indian War palette of agricultural crops would continue to be planted by Valley farmers in the decade before the Revolutionary War. But while cattle, hemp, and tobacco had been the “leading export commodities produced in the valley” in the colonial period, (Preisser 1977, 128] in the decade before the Revolutionary War, the lower Valley’s emphasis on agricultural production for export was clearly focused upon wheat and flour. As a result, the production of wheat “became the main engine of economic growth and development in the region, the crop never became a monoculture, however. Farmers produced burgeoning amounts of wheat but they did so within the diversity of enterprise that general mixed farming entailed.” [Koons and Noyalas 2010, 41] That “diversity of enterprise” included the continued production of livestock and livestock products, which had been “the backbone of the early mixed farming patterns of the valley” and livestock products, particularly butter would continue “to be important items in both local and export trade.” (Mitchell 1977, 183)

While the Agricultural economy of the lower Valley prospered following the French and Indian war, the region’s “agrarian structure retained its mixed-farming base” and “by 1775 all the agricultural components which were to undergo changes in acreage, distribution, output, and relative importance during the Revolution were...well integrated into local farming systems.” (Mitchell 1973, 121) “The items most immediately stimulated by the outbreak of hostilities” according to historian Robert D. Mitchell, were “livestock products, grains, and hemp.” (Mitchell 1973, 121] Wheat became the primary crop of the lower Valley during the Revolutionary War as wheat and livestock production were increased to help feed General Washington’s army. Hemp production in the Valley also was increased in response for the military’s need for additional cordage (Bragdon 2009, 97] Spurred by the increased production of wheat to support the war effort, “an economic infrastructure for the milling and marketing of wheat and wheaten flour evolved during the final quarter of the eighteenth century; [and] by century’s end, the Shenandoah Valley had become ‘the most important wheat and flour-producing region of the entire South’ (Koons 2000, 3) Even with the increased production of wheat and flour, grain exporting at the end of the century “remained “highly diffuse and decentralized, originating directly from larger farms, or more regularly from mills, and moving to markets in Alexandria.” (Mitchell and Hofstra

1995, 138) a pattern “deeply rooted in the household economies of open country neighborhoods.” (Hofstra and Geier 2000, 56) That continued decentralization meant that wheat and flour exports during this period did not pass through Winchester. That town’s role as a collection and shipping point for Valley wheat and flour would not emerge until the coming of the railroad in the 1830’s. Farmers and millers along Cedar Creek had ready access to the Alexandria market by road and they would soon have access to Alexandria by water transportation as improvements were made to navigation on the Potomac and Shenandoah Rivers at the end of the nineteenth century.

The period’s increased emphasis on flour production gave added resonance to the essential role of grist mills in the lower Shenandoah Valley’s agricultural economic infrastructure. During the development of the lower valley’s early exchange economy:

“Millers conducted most of their trade in cash, but at mills, as elsewhere in an exchange economy cash served primarily to balance debits and credits in book accounts. The commerce of wheat thus organized economic relationships in complex patterns over large stretches of the landscape in a manner familiar to practically every resident of the Shenandoah Valley.” (Hofstra 2004, 293)

The production of wheat and flour was supported by a wide range of skilled artisans in addition to millers including “millwrights, joiners, masons, wheelwrights, wagon makers, blacksmiths, harness makers, wagoners, and coopers.” (Hofstra 2004, 307) The increased production of flour in the lower Valley was a critical step to begin the transition from an exchange economy to a commercial economy. Increased profits derived from the trade in wheat and flour in turn “generated demand in the countryside for the more refined goods marketed merchants or manufactured by tailors, silversmiths, furniture makers, coach makers, of other specialists.” These artisans were often located in towns because the area commanded by their services was larger and people were willing to travel greater distances to their stores and shops.” (Hofstra 2004, 307) In Frederick County, four towns would become the “nuclei for the sale of goods and services associated with the sale of wheat:” Winchester, Kernstown, Stephensburg, and Middletown. (Koons and Noyalas 2010, 23-24)

Wheat grown in the lower Valley and along Cedar Creek became a marketable commodity after it was ground and processed into flour in the region’s grist mills and then transported to eastern port towns and cities such as Alexandria, Fredericksburg, Georgetown, Philadelphia, or Baltimore. Competition between the ports for Valley flour and produce was intense, particularly between Alexandria and Baltimore, and trade with the competing port cities fluctuated in response to on-going transportation improvements, including enhanced navigation on the Potomac and Shenandoah Rivers, improvements to the early roads east of the Blue Ridge during the turnpike era, and finally, the coming of the railroad to Harper’s Ferry and Winchester in the 1830’s and, later in the 1850’s, to Strasburg. With the arrival of the railroad, “towns near Cedar Creek and Belle Grove National Historical Park would emerge “as central places of great significance in the marketing and transportation of wheaten flour produced in the Shenandoah Valley.” (Koons and Noyalas 2010, 63-64).

The production of flour as a commodity thus supported and defined the lower Valley farmers' trade on the intercolonial and international markets. Historian Thomas M. Preisser has identified four markets for Virginia grain before the Revolutionary War. Southern Europe, the Wine Islands, the West Indies, and, after a crop failure in 1774, England. (Preisser 1977, 131) Preisser's research on Alexandria confirms that "The Potomac community...gradually emerged as a major center for the collection, processing, and shipping of grain and flour," and identifies the town's role as the "focal point for the external trade of the lower Shenandoah Valley, a position it retained throughout the eighteenth century." (Preisser 1981, 283) Preisser also records that the town's merchants had well established trade with Barbados, London, Scotland and Madeira as well as intercolonial trade with Philadelphia and Rhode Island. (Preisser 1977, 141) Alexandria's connection to the Lower Shenandoah Valley was solidified during the French and Indian War when the town served as a base and transportation hub for General Braddock's western expedition to Fort Duquesne in 1755. In support of Braddock's expedition the roads that led from Alexandria through the Blue Ridge Mountains to Winchester were greatly improved and wagon travel from the Lower Valley to the growing port of Alexandria on the now "excellent wagon roads" (Preisser 1977, 56) significantly improved as well. (Pawlett 2003, 7) With better roads and improved commercial transportation from the lower Valley (Fig. 4.1), as "the American Revolution approached...wheat and other grains, along with flour, became the dominant trading products" shipped from Alexandria. In addition, the town "became a major port of entry for finished products destined for use throughout northern Virginia and the Potomac River Valley..." (Preisser 1977, 59) Other Potomac ports including Falmouth, Fredericksburg, Dumfries, and Colchester also took advantage of the improved roads and increased their trade with lower Valley farmers as well. "After 1765, Falmouth merchant William Allison "regularly received flour sent by wagon from Frederick and Berkley Counties. (Mitchell 1977, 172) Allison also stocked his Falmouth store with goods from Glasgow, London, Bristol, and Whitehaven. These imported goods were "sold to customers in both the eastern and valley sections of the colony." (Malone 1935, 695) However, a review of the Allison's Winchester store account books failed to identify any transactions with the Hite or Bowman families or other farmers in the immediate area of the present-day Cedar Creek and Belle Grove National Historical Park

The French and Indian War and the Revolutionary War both influenced agricultural production in the Shenandoah Valley. Alexandria's growth as a seaport was "aided by disastrous wheat harvests in the Mediterranean during the mid-1760's, enabling Alexandria to become a major exporter of grain by 1769. (Williams 2000, 45) Now, with the production of flour as a commodity and the resultant increase in international trade, the agricultural economy of the lower Valley and crop production there were directly linked with national and world events. Changing market conditions in Europe and the West Indies in particular, were closely followed by farmers and their merchant contacts at the eastern ports and in Winchester and other Valley towns. "Out of necessity," the merchants were "international thinkers and actors who viewed the world as a connected series of markets that they could integrate and improve." (Hart and Matson 2017, 663) During this period, newspaper

advertisements placed by merchants such as John Conrad of Winchester and merchants in Alexandria, Baltimore and Philadelphia gave evidence of the “increasing links to the Atlantic commodities trade.” (Bragdon 2009, 96-7) (Fig. 4.3 and 4.4)

International trade was spurred by a harvest failure in England in 1799, but three years later in 1802 the Treaty of Amiens, which temporarily ended hostilities between France and England and “a rather favorable British harvest in 1802 kept the market low...Heavy exports...were made during these years to the West Indies...and “the renewal of war in 1803 opened a prosperous decade for Alexandria” with large shipments sent to the Iberian Peninsula in 1812. (Gilpin 1927, 411-12) But it was during the Napoleonic War Period (1803-1815) that Alexandria’s “flourishing grain trade is identified by Arthur G. Peterson, as having “reached its height” (Peterson 1935, 104) When peace returned to Europe in 1815 at the end of the Napoleonic War, “the American farmer and merchant gradually lost his markets abroad.” (Gilpin 1927, 423) However, Alexandria’s international trade would again flourish in the mid-1840’s “with the increased demand for flour and grain resulting from the famine in Ireland” so strong was the market for flour in the mid-1840’s, that 1846 was long referred to by the merchants of Alexandria as ‘a glorious epoch.’ (Peterson 1932, 111)

National events also could impact agriculture in the lower Shenandoah Valley. Historians Robert Mitchell and Warren Hofstra have identified that after 1820, “the emergence of the middle west,” with its rich farmlands, would challenge “the foundations of western Virginia’s regional economy in both grain and livestock. (Mitchell and Hofstra 1995, 141) In 1825, the Erie canal opened linking the Midwest to eastern ports and becoming “by far the most efficient and affordable way to transport goods including flour from the Midwest to the Atlantic Ocean.” One impact of the canal’s opening, with its lower transportation costs for midwestern wheat and flour, was lower profits on wheat grown by Valley farmers. In 1844, Baltimore merchant C. D. Hinks described the canal as “flooding the market for flour “and “wrecking the market.” (Hinks to Hite and Burgess 1844) In response to the competition from the new Canal, Baltimore merchant Philip Evans Thomas formed a group that financed the construction of the Baltimore and Ohio Railroad (B&O), which reached Harper’s Ferry on the Potomac River in 1834. (“The History of Baltimore” 2018, 30] The coming of the railroad to the Shenandoah Valley would, by mid-century, revolutionize “the transport of flour to market.” (Koons and Noyalas 2010, 77)

With the lower Shenandoah Valley recognized as the center of wheat production in Virginia in the early nineteenth century, and wheat’s continued importance as a commercial crop, Historian Warren Hofstra has identified that the commercial production of wheat and flour created a “rising material prosperity” in the lower Valley “based on the profits of wheat.” In turn, that prosperity “created a rural middle class capable of higher levels of material consumption.” To meet the expectations of this new middle class “merchants of Valley towns traveled to one or more of [the eastern port] cities once or twice annually to buy goods for stocking their own retail stores. In this way, Valley residents were able to consume goods manufactured outside the region.” (Hofstra 1986, 32-33)

The prosperity would not last, however. The 1850s proved challenging for wheat growers, “drought, rust, unprecedented infestation by insects...and the opening of cheaper mid-western wheat lands discouraged local wheat producers.” The challenges to growers were compounded by a financial depression in 1857 with recovery only in 1860. As a result, in the 1850’s some of the “leading farmers of the Lower Shenandoah Valley began to sell their farms; newspapers in the 1850s were filled with announcements of farm sales.” (Keller 2000, 29) Lower Valley farmers were aided by a financial recovery in 1860. But the prosperity it brought would be short-lived. Within a year the Civil War would begin and the Shenandoah Valley would become a landscape of continuous conflict. The resultant impact on agriculture in the valley and the agricultural landscape of the lower Valley would prove to be profound.

The lower Valley’s long connection to merchants in Baltimore would serve them well in the years following the end of Civil War. Historian Kenneth E. Koons recounts that “Farmers in the valley were assisted during the immediate postwar period by an organization called the Baltimore Agricultural Aid Society.” The Aid Society had been formed soon after the Civil War had ended assist specifically to offer assistance to farmers in the “neighboring state of Virginia. Included in the Society’s mission was the task of supplying at cost “stock, agricultural implements and seed to enable [Virginia farmers] to resume their farming operations and provide bread to their families.” (Koons 2019) Among the seed and implements the Society gave to Virginia farmers were seed wheat and the essential implements for its cultivation. Re-establishing the prosperity of the lower Valley farmers was recognized by the Society as having benefits for the merchants of Baltimore. To that end, the Society’s corresponding secretary noted that the Society’s activities “cannot but have its reflective influence on the future trade of the City [of Baltimore].” As a result, “in the immediate postwar period, as they had for generations, Shenandoah Valley farmers continued to rely on wheat as the mainstay of the regional economy.” One measure of their success can be seen in the twenty percent increase in improved acres of Valley farmland between 1870 and 1880. [Koons, 2019] However, no evidence has been found that farmers in the immediate vicinity of Cedar Creek were the beneficiaries of any aid from the Baltimore Agricultural Aid Society.

Chapter 4: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Allason Shenandoah Store Account Books, Ledger B October 1762- September 1763, Library of Virginia

Bentley, J. P., "The Harvest," in *The Valley Farmer*, Vol. 2, p. 10-11. Nd, Special Collections Call Number S1.V3, University of Virginia Library,

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast Region Ethnography Program National Park Service, 2009

Bruggeman, S.C. "The Shenandoah River Gundalow," *Virginia Magazine of History and Biography*, 118(4), 315-349.

C. D. Hinks to Issac Hite and Burgess, Jan 1844 , Hite Family Papers, Folder 8 Dec, 1843-March 1844, Handley Regional Library, Stewart Bell Jr. Archives Room

Geier, Clarence R. and Poebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Gilpin, W. Freeman, "The Grain Trade of Alexandria, Virginia, 1801 – 1815," in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History, pp. 404 – 427

Greiner, Anthony, "Navigation and Commerce on the Shenandoah River of Virginia," in *Log of the Mystic Seaport*, Mystic, Conn.: Mystic Seaport Museum, Summer, 1990 p. 42-46

Hendricks, Christopher E, *The Backcountry Towns of Colonial Virginia*, Knoxville; University of Tennessee Press, 2006

"The History of Baltimore" in *The City of Baltimore Comprehensive Master Plan (final Draft)*
on-line at:
<https://planning.baltimorecity.gov/sites/default/files/History%20of%20Baltimore.pdf>,
Accessed July 16, 2018

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley
Regional Library Special Collections, Winchester, Virginia Including:
Folders, 1, 2, 3, 4, 5, 6, 7, 8, 9

HFP, v. 1, doc 10
HFP, v. 1, doc. 25
HFP, v. 1, doc. 61
HFP, v. 4, doc. 8, ed. intro
HFP, v. 4, doc 9
HFP, v. 4, doc. 11
HFP, v. 4, doc. 37
HFP, v. 4, doc. 43
HFP Korn and Wisemiller *flour receipts. (14-30, 31-36)*
HFP, v. 4, doc. 49
HFP, v. 4, doc. 89 (editor's note)
HFP, v. 4, doc. 100 (Letter to Isaac Hite from Baltimore businessman Samuel F. Merritt)
HFP, v. 3, doc. 5
HFP, v. 3, doc. 6]
HFP, v. 3, doc. 7
HFP, v. 3, doc. 8]
HFP, v. 4, doc. 8, (editor's introduction)
HFP, v. 4, doc. 37
HFP, v. 4, doc 9
HFP, v. 4, doc. 11
HFP, v. 4, doc. 12
HFP, v. 4 docs. 84-87
HFP, v. 4, doc. 89

Hofstra, Warren R., "A Separate Place: The formation of Clarke County, Virginia," White
Post, Virginia: Clarke County Sesquicentennial Committee, 1986,

Hofstra, Warren "Land Policy and Settlement in the Northern Shenandoah Valley," in
Appalachian Frontiers: Settlement, Society, & Development in the Pre-industrial Era, Robert
D. Mitchell , ed. Lexington: The University Press of Kentucky, 1991.

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural
Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in
Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins,
Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800," in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R. and Robert D. Mitchell, "Town and Country in Backcountry Virginia: Winchester and the Shenandoah Valley, 1730-1800," in *The Journal of Southern History*, Vol. 59, No. 4, November, 1993, pp. 619-646.

Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16&17 January 1837 by the executors and George Brinker, David Stickley, and George Bragg appraisers

Isaac Hite Will: Frederick County Clerk's Office. Will Book 19, pages 354-357

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Kalbman, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbman, LLC, September, 2014

Keller, Kenneth W. "Our once beautiful but now desolated Valley,"
<http://www.shenandoahatwar.org/our-once-beautiful-but-now-desolated-valley/>
Accessed August 9, 2019

Keller, Kenneth W., "Rhinelanders on the Virginia Frontier," in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E. "'Our once beautiful but now desolated Valley,'" [<http://www.shenandoahatwar.org/our-once-beautiful-but-now-desolated-valley/>] accessed August 12, 2019

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Laise, Kristen, "Were the Hites 'Nice' or 'Kind' to the people they Enslaved," training document dated Feb. 25, 2017 in *Cedar Creek and Belle Grove National Historical Park Archives*

Malone, Miles, "Falmouth and the Shenandoah: Trade before the Revolution," in: *The American Historical Review*, vol. 40, no. 4 (July, 1935), p. 693-703.
<http://www.jstor.org/stable/1842420>
Accessed: November 25, 2018

Mitchell, Robert D., "Agricultural Change and the American Revolution: A Virginia Case Study," in *Agricultural History*, vol. 47, no. 2 (April 1973), pp. 119-132.
<http://www.jstor.org/stable/3742028>, accessed: 27-11-2017

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Mitchell, Robert D. "From the Ground Up: Space Place and Diversity in Frontier Studies," in., *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, Michael J. Puglisi, ed. Knoxville: The University of Tennessee Press, 1997

Mitchell, Robert D. and Warren R. Hofstra, "How do Settlement Systems Evolve? The Virginia backcountry during the eighteenth century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995, pp. 123-147

Mitchell, Robert D., "The Southern Backcountry: A Geographical House Divided," in *The Southern Colonial Backcountry: Interdisciplinary Perspectives on Frontier Communities*, David Colin Crass, Steven D. Smith, Martha A. Zierden, and Richard D. Brooks, eds., Knoxville: The University of Tennessee Press, 1998.

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012.

Noyalas, Jonathan A. , *Two Peoples, One Community: The African American Experience in Newtown (Stephens City), Virginia, 1850-1875*, 2004

Pawlett, Nathaniel Mason, "A Brief History of the Roads of Virginia 1607-1840, (revised)" Charlottesville: Virginia Highway & Transportation Research Council, 2003
Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Peterson, Arthur G., "The Alexandria Market Prior to the Civil War," *William and Mary Quarterly*, Vol. 12 – Series 2, 1932, pp. 104-114.

Peterson, Arthur G., "Flour and Grist Milling in Virginia," in *The Virginia Magazine of History and Biography*, Vol. XLIII, no. 2, April, 1935. p 97-108.

Preisser, Thomas M., *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776* College of William and Mary, 1977

Preisser, Thomas, M., "Alexandria and the Evolution of the Northern Virginia Economy, 1749-1776," in *The Virginia Magazine of History and Biography*, vol. 89, July 1981, no. 3 p. 282-293

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009.

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the Old South*, Eugene L. Schwaab, ed. Lexington: Univ. of Kentucky Press, 1973.

Stewart, Nancy B., "How did Shenandoah County get into the slavery Business?"

Tinling, Marion and Godfrey Davies, eds., *The Western Country in 1793: Reports on Kentucky and Virginia By Harry Toulmin*, San Marinno, Ca.: The Henry E. Huntington Library and Art Gallery, 1948.

Virginia Historical Society Collection, Virginia Museum of History and Culture, Richmond
Virginia, Hite Family Papers:

VHS 1306

VHS 1304

VHS 1305

VHS 1296

VHS 1295

VHS 1298

Wayland, John W., *A History of Shenandoah County Virginia*, Strasburg, Va.: Shenandoah Publishing House, 1927

Wayland, John W., *Twenty-Five Chapters on the Shenandoah Valley: To Which is Appended a Concise History of the Civil War in the Valley*, Second Edition, Harrisonburg, Va.: C. J. Carrier Company, 1976

Whitmire, Mildred Edwards, "A Man and His Land: The Story of Jacob and Francis Madison Hite and the Cherokees," In the *Magazine of Jefferson County Historical Society* Vol. XLIV, Dec. 1978, p. 37-58

Williams, Maxine S., *Myth and Reality: Alexandria, Virginia, 1745-1820*, (2000), thesis and Dissertations. Paper 638, Lehigh University
<https://preserve.lehigh.edu/cgi/viewcontent.cgi?article=1638&context=etd> accessed 04.13.19

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 4:

Figures

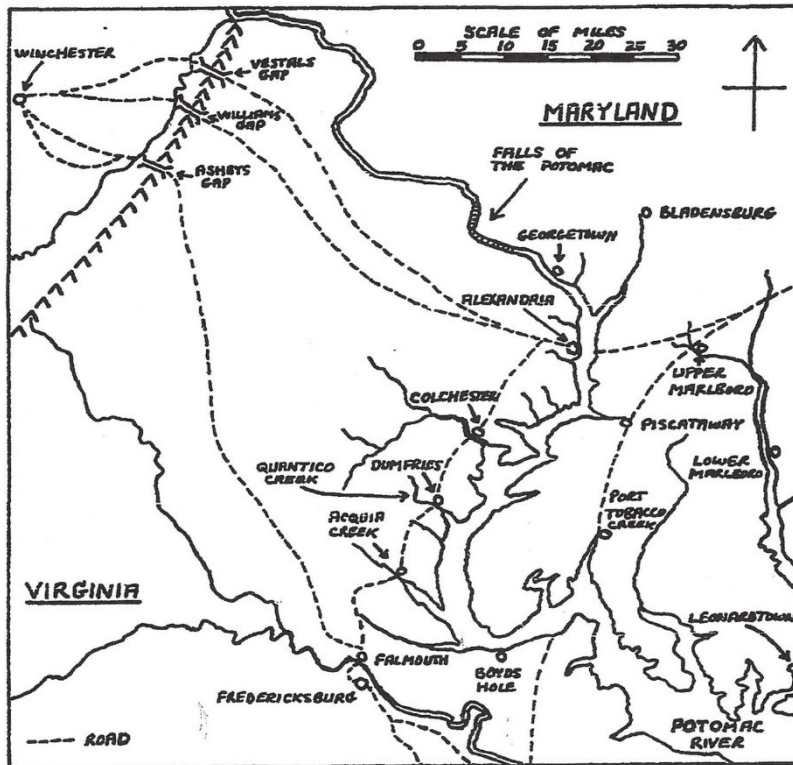


Figure 4.1 Virginia ports and trade routes from Vestal's, William's, and Ashby's Gaps to the eastern ports of Alexandria, Colchester, Dumfries, Falmouth, and Fredericksburg, c. 1775. From Preisser 1977.

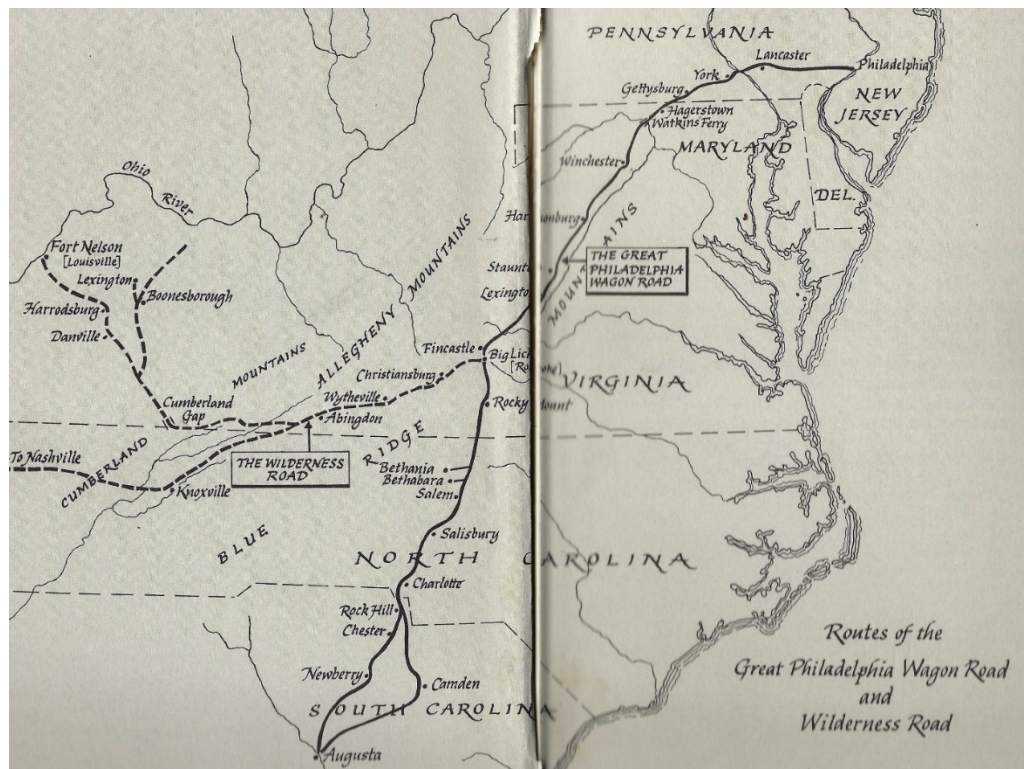


Figure 4.2 The Philadelphia Wagon Road linking Philadelphia with the lower Shenandoah Valley. From Rouse 1973.

CHINA GOODS.

THE Ship ATLANTIC, *Silas Savaine*, Commander,
from Canton, will commence the discharge of her
cargo to-morrow morning at Walnut-street wharf

Consisting of

Yellow and white Nankeens of excellent quality
Persian Taffeties, black and coloured
Lustrings, do. do.
Sattins black of various qualities
Sewing silks in assorted colours
Vermilion in boxes
Cassia in chests
Quicksilver in jars

BOHEA, SOUCHONG, HYSON SKIN, YOUNG HYSON, BEST HYSON, IMPERIAL, CHINA WARE, ornamental, with Table and Tea Sets generally assorted. WHITE SUGARS, and a quantity of First quality Bengal SALT PETRE.	}	Fresh Teas.
---	---	-------------

For Sale by
Philip Nicklin & Co.

April 3. t.th&s

Figure 4.3 Phillip Nicklin & Company, Philadelphia, advertisement, c. 1796.

Cheap French China.

THE subscribers finding it impossible to supply their
store with any more China from France, the prices
being too immoderate in the manufactories, give no-
tice that they will sell at prime cost the remaining
stock on hand, consisting of

Dessert Setts,
Tea-Table Setts
Separate Cups and Saucers
Groupes and Figures
Alabaster Vases
Looking Glasses, in gilt frames,
Besides India Japan'd Toilet Desks, Chairs, Tables
and Quadrille Boxes.

PASQUIER & Co.
No. 91, South Second-street.

December 2th. tt

Figure 4.4 Pasquier and Company, Philadelphia, advertisement, c. 1797.

Chapter 5:

The Agricultural Landscape: Agricultural Infrastructure: Milling

Milling, particularly flour milling, would play an important role in the evolution of the agricultural landscape of the Lower Shenandoah Valley from the time of first settlement through the Antebellum period. The profile of Cedar Creek downstream of its cut through Pangletown Ridge was quickly recognized by the settlers as “generally steep enough to have provided the necessary elevation drop...for water-powered mills” and over time numerous mills would be built along the course of Cedar Creek and its tributaries east and south of the water gap. (Marsh 2010, 44 and Katen et al. 2012, 27) One of the earliest mills along Cedar Creek was the mill of George Bowman. His mill was noted by Moravians traveling up the Valley from Pennsylvania on their way to North Carolina in 1753. The Moravian’s diary recorded that:

“We went five miles further and came to Baumann’s [sic] mill, where we bought several bushels of oats, but we had to wait several hours while it was thrashed...” (Kalbian et al 2010, 2-3)

Five miles south of Baumann’s (Bowman’s) was Funk’s mill, also noted by the Moravian’s. The mill “stood on a tributary of the North Fork of the Shenandoah in what would become Strasburg.” The importance of grain milling and the location of the region’s early mills was a key factor in the development of the Lower Valley’s system of wagon roads that led from farm to mill and from mill to mill, including the road connecting Funk’s mill to the mill of Jost Hite. (Geier and Tinkham 2006, 139) Historians Warren R. Hofstra and Clarence R. Geier have identified that at Jost Hite’s settlement on shale lands at nearby Opequon, “milling more than farming, constituted the initial response to commercial agriculture on the shale lands and accounts for their earliest effective occupation.” They identify as well that mills along with farms, roads and markets, were the critical elements that formed the fabric” of the settlement system” that developed at the Opequon community and other lower Valley communities including the community that the Bowman’s and Hites established along Cedar Creek. (Hofstra and Geier 2000, 57 and 59) Ethnographer Kathleen Bragdon has identified, the many water powered mills that were found throughout the Lower Valley must also be understood as an “important nuclei of community life” (Bragdon, 2009, 99).

The earliest mills in the lower Valley, those established before 1750, would have functioned primarily as custom mills typically identified as “grist mills.” (Fig. 5.1) The grist mills processed harvested crops and raw materials brought to the mill by nearby farmers. The milled materials would have been primarily for the farmer’s use and some of the finished milled materials were likely used to pay for the miller’s services. The miller at the early custom grist mills was very likely the mill owner. As demand for processed flour grew, however, “merchant mills” began to be established. The merchant mills were commercial mills that processed the varied agricultural materials that the miller purchased from the

farmers. Flour, processed at the merchant mills and sold to local, regional, and/or external markets, became one of the lower Valley's first commodities. (Hazen, 2019)

The region's geology played an important role not only in the siting of the early mills in well-watered shale areas but also in the development of the mills' attendant landscapes of mill ponds and races, features that provided the water power that drove the milling equipment. For the miller or mill owner, selecting a good site for his mill on a stream with adequate fall was a critical decision. As Warren Hofstra has identified, "A mill required at least four or five feet of falling water for a breast-shot wheel, and a large overshot wheel needed as much as twenty feet of fall. Depending on stream gradient, either requirement could necessitate mill races as long as a mile or more." As a result, there was a direct relationship between the slope of the land along lower Valley creeks and the proximity of mills. As Warren Hofstra notes, if the slope of the land were too "gentle" it could necessitate spacing mills up to "about one and one-half miles apart." (Hofstra 2004, 292) "Hofstra and Geier note that eventually, "milling...was not confined to shale areas" and those mills located outside the shale areas were fed by races extending along creeks "sometimes more than a mile and requiring impoundments that flooded significant areas of bottomland." (Hofstra and Geier 2000, 59) The mill constructed on Cedar Creek by Isaac Bowman in 1793 was sited to occupy a "location of unusual natural advantage." Bowman sited the mill at the narrow neck of a two-mile plus oxbow on Cedar Creek just northwest of present-day Bowman's Mill Ford. By cutting his mill race across the narrowest part of the oxbow, Bowman gained all the fall he needed to power the mill and realized a significant reduction in labor costs. (Wayland 1943, 134-5)

In contrast, "on shale lands...where surface runoff was swift and streams dropped steeply, mills could be stacked practically one after another along a waterway." (Hofstra 2004, 292) A good example of the close proximity of the mills located on the steeper shale lands identified by Hofstra and Geier were the mills developed by the Carter and Wood families that were closely sited along Redbud Run in the Opequon neighborhood northeast of Cedar Creek. Those mills "relied upon piggy-backed mill races, which fed from the tail race of one mill into the head race of the next downstream. The system required no impoundments, as the stream flow simply was diverted to races to power an array of mill wheels." The close proximity of the mills located on the steeper shale lands could result in the development of milling complexes with a set of closely sited mills. (Fig. 5.2) By 1808, the Carter and Wood mill complex included "saw, grist, tilt hammer, flax, and paper mills" all built along a half mile stretch of the creek. (Hofstra and Geier 2000, 58-59)

Wheat production in the Shenandoah Valley grew in economic importance during the late eighteenth century. Historian Robert D. Mitchell has identified that, by the last decade of the century, the Valley was "one of the most important wheat and flour producing regions in the entire South." The number of grist mills increased in response to the growing demand for flour and processed grains and, according to Mitchell, by 1800 in the lower Valley alone there were about 400 grist mills. (Mitchell 1977, 175) By 1809, Frederick County alone had 75 merchant or grist mills and "as many saw mills in addition to oil, paper,

fulling, and tilthammer mills.” (Geier and Tinkham 2006, 127) Oil mills typically were mills that pressed flax seed and collected linseed oil from the pressed seeds. Fulling was a step in the production of woolen cloth, and tilthammer mills processed feed for livestock and crushed soft minerals such as gypsum and limestone creating soil amendments that were spread on lower Valley agricultural fields and pastures.

The large number of gristmills, located close to the farms where wheat and other grains were grown, were necessary to convert the lower Valley's main cash crop, wheat, into flour, the lower Valley's most important market commodity. (Koons and Noyalas 2010, 56-7) The harvested wheat was first threshed and then taken to the local miller, who processed the wheat into flour. In some cases, farmers and plantation owners, including Isaac Hite, Sr. and his son, grew the wheat which was then processed into flour in their own mills. Once processed, the flour was typically shipped directly from the mill to those fall-line cities and towns that promised connection to coastal, extra-regional, and international markets. Until the coming of the railroads in the mid-nineteenth century, “...backcountry towns in Virginia rarely served as collection centers for the export of agricultural surpluses. Flour and livestock departed the backcountry directly from mills and farms in patterns that were deeply rooted in the decentralized character of household economies.” (Hofstra and Mitchell 1993, 621)

Over time, "a web of farms, mills, storage warehouses, towns, and transportation routes arose to connect wheat farmers along the Potomac and Atlantic coastal cities." (Keller 2000, 22) Philadelphia, Baltimore, Fredericksburg, Georgetown, Colchester, and Dumfries all received flour shipments delivered by wagon from lower Valley millers and mill owners. In the early years of the developing market, the most popular destination for lower Valley flour was the Potomac river port of Alexandria, Virginia, particularly after road improvements in Virginia undertaken during the French and Indian War and the construction of stone-paved turnpikes built through the Blue Ridge Mountains in the late eighteenth and early nineteenth centuries, improved road transport from the lower Valley to the Port of Alexandria. (Koons and Noyalas 2010, 63-64 and Mitchell and Hofstra 1995, 138) The Lower Valley's early, successful, decentralized market that featured flour shipped directly from individual mills, at first by wagon and later by wagon and river gondolas, would remain in place until the advent of rail transportation in the antebellum period. Once the railroad reached Harpers Ferry and Winchester in the 1830's, mills began to ship their processed flour to warehouses located at the rail heads. From there, the collected, processed flour would be sent on to an eastern port. At first, the only port of choice for rail shipments of flour was Baltimore, but after the opening of the Manassas Gap Railroad in 1853, Alexandria became a port of choice for lower Valley flour shipped by rail. Over time, the lower Valley's dispersed milling operations and flour merchants began to relocate closer to the efficient, rail shipping points in the more urban context of established towns such as Winchester or they began to concentrate in smaller, newly-established towns and villages along the extended rail lines, a process that increased after the Civil War. Historians Kenneth E. and Jonathan Noyalas have identified that:

“In or near Cedar Creek and Belle Grove National Historical Park, were three such towns or villages with firms involved in the business of shipping wheat or flour on the railroad: Strasburg, with two firms, Middletown with one, and, within the bounds of the Park, Cedar Creek (Meadow Mills), with four” (Koons and Noyalas 2010, 69-70)

The gristmills in the Lower Valley were thus an integral part of an economic system that was fueled by an marketable commodity, flour, processed from the region’s main agricultural crop, wheat, allowing Valley farmers to translate a cash crop, wheat, into a market commodity, flour, and in the process create wealth. The mills were also instrumental in the region’s establishment of a “balanced mix of agriculture and manufacturing.” As Koons and Noyalas have noted:

“The linkage between farming and manufacturing was direct: farmers brought their crops, fiber, or soil amendments to a local mill for processing. In some cases, enterprising farmers built or bought a grist mill, which then served as an extension of their agricultural entrepreneurship. Many mill proprietors were men of substance in their communities capable of drawing together a large array of productive resources and enterprises that included grist mills. The term “agrarian capitalism” characterizes this form and scale of economic activity. Agrarian capitalists in the Shenandoah Valley, particularly the proprietors of the larger grist mills, were critical to the formation of commercial networks connecting rural economic activity in the region to broader, external markets. Through their entrepreneurial efforts, the Shenandoah Valley emerged as an important source of flour for international trade.” (Koons and Noyalas 2010, 60)

The milling operations had far-reaching economic effects on not only the millers, their employees and local farmers but also on the wider business infrastructure that served the milling operations including:

“the coopers who made the barrels into which flour was packaged for shipment, the wagon makers who built the wagons in which the wheat and flour was hauled, as well as the wheelwrights and blacksmiths who furnished wagon components to them, the leather workers who fabricated the harnesses for pulling the wagons, and so on. In turn, the wages earned by workers in these and other manufacturing operations could be spent in the consumption of goods.” (Koons and Noyalas 2010, 62)

The merchant mills also became what Warren Hofstra has termed “sites of varied enterprise.” John Koontz and Richard Ober at Millsgrove...along the Opequon...kept ten wagons plying back and forth to Alexandria while employing several coopers [and] advertised a ‘large assortment of European, East and West India Goods’ available at their mill store.” (Hofstra 2004, 292-3). Historians Kenneth E. Koons and Jonathan Noyalas give further amplification to the varied enterprises that could be found at merchant mills in the

Valley. Importantly they note that the “Grist mills were multi-faceted businesses where a host of economic activities necessary for the welfare and material comfort of the local community were performed.” Warren Hofstra notes that while “millers conducted most of their trade in cash... at mills, as elsewhere in an exchange economy, cash served primarily to balance debits and credits in book accounts.” (Hofstra 2004, 293) It was at the mill that:

“corn as well as small cereal grains other than wheat were ground into meal for human and animal consumption as well as for use as mash in distilleries; apples were ground for the production of cider; logs were sawn to produce lumber for the construction and building trades as well as for various types of artisans who manufactured wooden items; lime and plaster were pulverized to serve as soil amendments for the improvement of soil fertility; wool was carded for the production of woolen textiles; and flaxseed was pressed for linseed oil. Some grist mills integrated the distillation of whiskey into their operations. In the case of one Rockingham County miller, a portion of every load of corn brought to his mill was set aside for conversion to whiskey. Grist mills (as well as distilleries) often incorporated hog-raising into their enterprises. In these mills, hogs were kept nearby and fed the screenings and other byproducts of grain milling. These millers and distillers sold large quantities of bacon or pork and, in some cases, census enumerators recorded the profits of hog-raising in their listings of the annual profits of these businesses. (Koons and Noyalas 2010, 58-59)

In addition, historian Robert D. Mitchel has identified that Hemp processing was “usually done...at mill sites.” (Mitchell 1973, 25-126 and 128, see Footnote 18) Horses, used for drawing logs, were a common presence at saw mills and integral to the work there. Thus, aside from their role in establishing and reinforcing economic and cultural connections to cities and regions that lay outside the valley, grist mills provided a wide range of services to local residents. (Koons and Noyalas 2010, 59)

While grist milling was the primary industrial operation throughout the agricultural landscape of the Valley, other important industries also flourished and contributed to the mixed economy of the lower Valley. Carding and fulling mills processed wool from Valley sheep, oil mills extracted linseed oil from flax seed, (Fig. 5.3) and saw mills (Fig. 5.4 and Fig. 5.5) cut finished lumber for fences, building construction, and the construction of the wagons and Shenandoah River gundalows that carried Valley trade goods to market. “Iron furnaces multiplied after the revolution” and “by the 1840’s over 75 furnaces were in operation in the Shenandoah Valley.” (Rice 2009, 249-50 and Bragdon 2009, 102) The furnaces, saw mills and the numerous Valley tanneries that required tree bark for tanning hides all contributed to the deforestation of large areas of the Valley. Historian James D. Rice has observed that so much of the forest in the Potomac River Basin had been cut by the end of the nineteenth century that “there were only a few stands of mature trees left anywhere in the Potomac country.” One of the consequences of the large scale deforestation in the Valley was increased runoff, erosion, sedimentation, and flooding that would plague Valley farmers downstream. (Rice 2009, 249-50) Evidence of this

sedimentation on Cedar Creek can be seen today in the floodplain below the Bowman Hite Farm.

We are fortunate that period maps often note the location of the many of the mills, furnaces and tanneries in the Lower Valley. The information they include regarding the type of mill and miller's name often varies but cross referencing the available data has allowed a more complete, geo-referenced map of the mills located in the vicinity of lower Cedar Creek to be assembled. (Fig. 5.6) Among the early period maps used to create the geo-referenced map are The Varle Map of 1809 (Fig. 5.7) which locates sixteen mills; John Wood's 1820 map (Fig. 5.8) which locates ten mills including four unnamed mills, seven named mills, and Zanes' Old Furnace; Boye's 1825 Map (Fig. 5.9) which locates twelve mills along Cedar Creek and its tributaries; and James Herron's c. 1830's Shenandoah River survey sketchbook, a sketch map from Herron's sketchbook locates Senesey's Mill (Fig. 5.10). Civil War period and after action maps that show mill locations include: the 1862 Hotchkiss' map (Fig. 5.11) of the Shenandoah Valley, which locates one named mill and five unnamed mills; The Hotchkiss map of the Battle of Belle Grove and Cedar Creek on Wednesday October 19th 1864, (Fig. 5.12) and Hotchkiss Sketch no. 29 of the Battle of Belle Grove and Cedar Creek, Wednesday October 19th 1864, (Fig. 5.13) which both show the location of Bowman's Mill and five unnamed mills; The Meiggs 1864 map of the Shenandoah and upper Potomac, (Fig. 5.14) which shows six named mills; The Gillespie 1864 Map of the Battle Fields of Fisher's Hill of Cedar Creek (Fig. 5.15) which shows ten mills; the 1864 Army Corps Map of Central Virginia, (Fig. 5.16) which locates eleven mills; an unnamed Frederick County map from the 1860's (Fig. 5.17) in the Library of Congress locates eleven mills including seven named mills; the Lake 1885 Atlas of Shenandoah and Page Counties [the Davis Magisterial District, Shenandoah County] (Fig. 5.18), which shows four mills; and the 1895 Map of the Battle of Cedar Creek (Fig. 5.19) which locates six named mills.

Plotting the exact location of an individual mill from these varied sources is, at best, an imprecise exercise since there is so much variation in the accuracy of the early maps. But, the relative locations of the mills are as accurate as can be established without archaeological field confirmations. Precise dating of the mills remains difficult, however. Some mills, including Bowman's Mill, are noted in period correspondence and travel accounts, which can narrow the possible dates of construction. Period maps, along with the available 1850 Industrial and Manufacturers Census Schedules can provide a known date of a mill's existence. But in many cases, the date of construction for a particular mill remains unknown.

What the literature and mapping reveal is the fabric of milling in the agricultural landscape along Cedar Creek and near the lands farmed by the Hite and Bowman families. The family's milling operations serve an exemplar of the history and evolution in the Lower Shenandoah Valley. The milling tradition in the Hite family included the construction of two mills by Isaac Hite's father, Jost Hite. Hite's first mill was built on Zacharias creek in Montgomery Co, Pa. sometime before Hite moved to the Shenandoah Valley. (Kalbian et al 2014, 14) After settling in the lower Valley, Jost Hite constructed a grist mill on Opequon Creek in the

Opequon neighborhood. Among the earliest mills built on Cedar Creek after the Hite and Bowman families settled in the Lower Shenandoah Valley was a mill built by George Bowman sometime between 1740 and 1753. Bowman's Mill, a gristmill and saw mill operation, was located "approximately one half mile northeast of the home site," Fort Bowman, on the west bank of Cedar Creek near the crossing point of the Great Road. Various documents refer to the mill and confirm its existence. The earliest Frederick County Order Books, which cover the period 1743-to 1758, include a 1758 entry referring to George Bowman's service as road overseer for the road from Peter Stauffer's to George Bowman's Mill." (Kalbian et al. 2014, 14) The mill is mentioned again in the 1769 will of George Bowman, Jr. which noted that George Jr.'s portion of his late father's estate, including the mill was to be sold and the proceeds of that sale were to be divided among his brothers. The financial success of Bowman's mill is alluded to by Historians Maral S. Kalbian, Dennis J. Pogue and Margaret T. Peters, who note George Bowman's "lucrative milling operations, confirmed by the large amount of cash bequests to his children." They also identify the mill as an integral part of the highly successful farming operations on his property." (Kalbian et al. 2014, 17)

Bowman's mill would survive until 1812 when it was "reportedly" destroyed by fire. (Geier and Harding 2006, 89) The mill was not rebuilt and the mill seat remained empty until it was purchased sometime between 1812 and 1815. by Daniel Stickley, who used the mill seat as the site for the construction of a new mill. (Fig. 5.20 and Fig. 5.21) The Stickley Mill appears on a map for the first time with the publication in 1820 of John Wood's Map (Bragdon 2009, 109) (fig. 5.8) Correspondence in the Stickley Family Papers includes an 1815 Agreement between Isaac Hite Jr. and David Stickley, who paid Hite \$25 for the:

"rights and privileges of damming the water in Cedar Creek by a dam which said Stickley intends erecting on his own lands and flowing the same on the lands of the said Isaac Hite so as not to injure in any degree the grist and saw mill which said Hite has on said creek or its tributary streams (HFP, v. 3, doc. 31 and VHS 1293)

Hite's grist and saw mill was located at the confluence of Cedar Creek and Meadow Brook and it is presumed that Stickley's proposed dam would divert water from Cedar Creek to the mill race of a new mill to be built at the seat of Bowman's burned mill. The agreement between Hite and Stickley also notes that the stone for Stickley's dam was to come from Hite's lands along the banks of Cedar Creek. (VHS 1293) In an 1835 codicil to his early will, Isaac Hite, Jr. again mentions his grist and saw mill locating it "on Long Meadow Run and Cedar Creek". (HFP, v. 3, doc. 39) At some point following the death of Isaac Hite, Jr. and before the start of the Civil War, the land supporting his two milling operations and his distillery on Meadow Brook was sold to the Hottle family (Geier and Harding 2006, 174)

A second mill was built along the lower reaches of Cedar Creek in 1793 when Lt. Isaac Bowman built a grist mill (Fig. 5.22 and Fig. 5.23) downstream from the original Bowman Mill (Kalbian et al. 2014, and Wayland 1927, 695) The seat for this mill, as previously noted, "occupied a location of unusual natural advantage" at the narrow neck of a two-mile plus

oxbow on Cedar Creek. A mill, and later a mill complex, at this location appear on numerous nineteenth century maps including the 1809 Varle Map (Fig. 5.7) which shows a single mill symbol identified in the legend as a grist or merchant mill and John Wood's 1820 map (Fig. 5.8), which was the first map to note the mill by name - "Bowman's Mill." Lake's 1885 Atlas (Fig. 5.18) is the first map to show two mills at this location - a gristmill and a sawmill. However, detailed evidence about this later mill complex remains elusive.

The third set of family mills constructed along Cedar Creek at the confluence of Cedar Creek and Meadow Brook has been described by Clarence R. Geier and Phoebe Harding as a "network of mills and a distillery...constructed and operated by Isaac Hite, Jr. during his residence at the site" of the Belle Grove Plantation. (Geier and Harding 2006, 154). There is some uncertainty, however, about the exact date the first of Isaac Hite Jr.'s mills was constructed, however. Geier and Harding note that Isaac Hite Jr. inherited the land of the mill seat from his father in 1796, "by which time a new merchant mill had been built." But they also assert that "There is no description of any pre-existing mill structures in the area belonging to the Hite family prior to 1796. (Geier and Harding 2006, 173). Isaac Hite, Sr.'s 1794 will notes a "new merchant mill...built in partnership with my said son [Isaac, Jr.]. That merchant mill was built on 4 $\frac{3}{4}$ acres of land deeded to Isaac Hite Sr. on 9 September 1788. A codicil to Hite's will also notes "my 2 stills" near the mill.

Geier and Harding offer support for a presumed 1793 construction date referencing "historical documents confirming that, in 1793, Isaac Hite "contacted James Rumsey and his son Edward to purchase the patent rights to construct steam-powered water wheels for his saw and grist mills. Rumsey was regarded as a great inventor and innovator, and his reply to Hite, dated 27 April 1793, is provided by Geier and Harding:

"For particular considerations I do hereby agree that Isaac Hite and Son shall have and enjoy patents for 2 water wheels for their mill, entitled the "improvement of Dr. Barker's mill" upon the payment of one hundred dollars." (Geier and Harding 2006, 214-15 and HFP v. 3, doc, 14-15)

Dr. Barker's Mill was a reaction turbine-driven mill that featured a centrifugal wheel invented by Dr. Robert Barker in the 17th Century. "It remained a laboratory curiosity for the next 100 years." (Johnson 1994, 3) The mill that Rumsey's wheel was proposed to be used in was likely the "new merchant mill...built in partnership with my said son" noted in the will of Isaac Hite Sr. Hite's interest in an "improved" mill suggests that Hite "may have been interested in incorporating the newest modes of technology into his mills" (Lively 1992) and offers additional supporting evidence of Hite's commitment to progressive farming practices at Belle Grove.

Mathew Greer also identifies that a grist mill was established by Isaac Hite, Jr. at the confluence of Meadow Brook and Cedar Creek. Greer, however, dates the mill to some point in or before the early 1790's noting that "it appears to have been joined by a second

mill somewhere on Isaac Hite, Jr's landholdings by the early 1790's as Hite commissioned the construction of two water wheels from a Maryland Craftsman in 1793." (Greer 2016, 5)

The second mill that Greer notes, a sawmill, was located on Meadow Brook upstream from Hite's grist mill. (Fig. 5.24) The will of Isaac Hite Jr. filed in 1827 mentions the two mills several times:

"Fourthly: I give and bequeath to my son Hugh and his Heirs forever, that part of my Belle Grove tract of Land situate on the northwest side of the road leading from my Mills on Cedar Creek to the late Senseney's Tan yard & Mill, together with my merchant & saw mills & to include thirty four acres of Land situate on both sides of said road bordering upon the said Creek..." "Fifthly: I give and devise to my son Cornelius and his heirs forever all that part of my Belle Grove farm situate on the South East side of the road mentioned in the fourth clause of this will, including my merchant mill & distillery on Long Meadow Run..." (Hite family papers, Document 16, p. 2) and (Geier and Harding 2006, 73-4)

The Hite and Bowman mills were integral to the agricultural operations undertaken by the families. The total scale of agriculture and related commercial endeavors along lower Cedar Creek and its tributaries is revealed by the number of mills that were eventually constructed along those waterways. For the period beginning with the construction of Bowman's mill in the mid-eighteenth century and ending with the publication of Lake's 1885 Atlas, 31 mills have been identified along Cedar Creek between Pangletown Ridge to the west of the Cedar Creek and Belle Grove Historical Park and the confluence of Cedar Creek and the North Fork of the Shenandoah River. An additional seven mills have been identified along Meadow Brook and two mills have been identified on Buffalo Marsh. The amount of flour produced by the grist mills of Frederick County was recognized by the Colonial Army's Commissary General's Office in the port town of Alexandria, Virginia in 1781. In that year, the office reported that "the mills of the Valley, notably in Frederick County, provided enough flour to feed the entire Virginia militia." (National Register 2019, 8)

Along with the Hite grist mill on Meadow Brook, a distillery apparently associated with the grist mill was built on the Belle Grove Plantation. The distilling operation was an important and consistent part of the agricultural and manufacturing operations for the Hites. Several references to whiskey made at the family distillery appear in the Family papers at the Handley Library in Winchester. Hite, Sr's 1794 will and testament notes "2 stills with all vessels and utensils" (HFP, v. 3, doc. 16])n April of 1799, Isaac Hite Jr. bought 3 adjoining tracts in Frederick Co. from Josiah Watson of Alexandria, in Frederick Co. That may have been previously owned by Isaac Zane. Included as part of the payment for the land was 100 pounds worth of Belle Grove whisky "delivered at the distillery of said Isaac Hite in Frederick County at 3 shillings and six pence per gallon." (HFP, v. 3, doc. 18) In 1810 Isaac Hite Jr. payed a small portion of his lawyer fees (for the Hite-Fairfax trial) in barrels of brandy and whiskey. (HFP, vol. 1, doc. 45). In June of 1821 Hite's distilling operation, and how it was tied to both mixed farming and milling at Belle Grove, were noted in an article published in

The American Farmer. The article revealed that at that time the price of wheat and rye were so low that:

“both these crops were ground, and either fed to fattening cattle, or distilled. One third of corn, and 2/3 of rye, yield under the process followed by major H. eleven quarts of spirits to the bushel, while *old* wheat gives 3 gallons to the bushel—but *new* wheat will “overwork” itself, and throws up little more than two gallons.” (“Virginia Husbandry” 1821)

Correspondence in the Hite family papers gives some sense of the inclusion of distilling in Hite’s merchant transactions. In 1822, Isaac Hite, Jr. wrote to a cousin in Fredericksburg asking his cousin to ask unnamed local Fredericksburg merchants if they “do not want to purchase some prime whiskey.” (HFP, vol. 2, doc. 6). The family papers don’t reveal whether Hite was successful in opening up the Fredericksburg market for Belle Grove Whiskey. However, Geier and Harding note that Isaac Hite Jr.’s distillery sold “large quantities” of a “valued whiskey” to both Long’s Tavern in Winchester and “to the firm of C & J. Ross & Co. in Alexandria.” (Geier and Harding 2006, 222) Documents in the Hite Family papers show that Colin and James Ross purchased about 870 gallons of Hite whiskey in 1801 and another 638 gallons in 1802. The documents indicate that the Ross brothers were located in Alexandria, although C & J. Ross & Co.’s main base of operation was located not in Alexandria, but in Fredericksburg, Virginia. (HFP, v.4, doc. 90) It seems likely then that goods were shipped to the Ross brothers in Fredericksburg via Alexandria.

The multiple roles of farmer, miller, and distiller, that Valley farmers often undertook as they practiced mixed farming and exemplified by Isaac Hite, Jr., has been noted by Historians Koons Kenneth E. and Janathan Noyalas, who observed that “the manuscript population schedules of the nineteenth century pertaining to any county of the Shenandoah Valley include numerous individuals with joint occupational designations, e.g., farmer and miller, farmer and distiller, or farmer and cooper.” (Koons and Noyalas 2010, 160, Footnote 8)

Although the Hite’s had their own merchant and saw mills, the family did do business with other mills in the region. In 1791 Jeremiah Langley agreed to mill Hite flour at his mill to clear a debt owed to the Hite Store. At some point following the death of Isaac Hite, Jr. and before the start of the Civil War, the Hite’s interest in milling and distilling apparently waned and the land supporting the two mills and the distillery (the building, if not also the business) on Meadow Brook were sold to the Hottle family. Documentation in the family papers shows that, after the sale of the family’s merchant and saw mills, the Hites transacted business with numerous mills. In 1839 the family did business with the sawmill owned by G. J. Mahony. In 1846 the Hites sold wheat, “to be delivered to mill,” to William B. Walter. (HFP, Folder 3, 1.01.34) In 1852 the Hites sold 48 bushels of wheat to Joseph Mahoney at the Cedar Grove Mill (HFP Folder 3, 1.01.41) and in 1863 the family sold 17+ bushels of wheat to the Mill Brook Mill (HFP, Folder 3). In addition, records, from the period 1846-1863, reveal that the Hites were selling their wheat to other local and regional

millers at the following mills including: Cedar Creek Mill, Star Mill, and the Union Mill in Winchester. With the exception of Union Mill, the locations of most of these mills remains undetermined.

In addition to their family mills, the Hites also operated a general store, which traded as Hite and Son. The store was located in the Overseer's Office on the Hite Road immediately west of the Belle Grove house. The store is believed to have opened as early as 1786 but a 1789 bond by John Cockrall for money owed to the store (HFP, v. 3, doc. 5) and a 1790 bill from the store (HFP, v. 3 doc 6) are the earliest extant documentation found thus far. A March 5th 1791 entry in the diary of Jonathan Clark mentions "Major Hite's store" (HFP, vol. 1, doc. 61) and the editor of the Hite family papers notes that the store was typically stocked "with goods from Philadelphia merchants." The Hite family papers also include documentation of numerous transactions with merchants in Alexandria, Philadelphia, and Kingston, Jamaica, transactions that brought a wide range of goods to the store including sugar, coffee, crackers, clothing and in 1790, a tombstone. Purchases for the Hite General Store by William Wister in Philadelphia, on May 10, 1795 Included household goods including forks, knives, and clothe [sic] (HFP, v. 4, doc. 37)

By January 1797, Isaac Hite Jr. has sold the Hite and Son General Store. The sale came after the death of Isaac Hite Sr. Isaac Hite Jr. described the sale thus: "In consequence of an absolute want of money and a favorable opportunity occurring I disposed of all my store to **Isaac and Jack Williams** from whom I bought their grantee claim in part payment for the goods." (HFP, vol. 1, doc 10) The location of the Williams' store is unknown.

Chapter 5: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast region Ethnography Program National Park Service, 2009.

Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised, National Park Service, 2007

Daniel Stickley Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, The Cultural Resources: Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006.

Gilpin, W. Freeman, "The Grain Trade of Alexandria, Virginia, 1801 – 1815," in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History, pp. 404 – 427

Hazen, Theodore, R., "The History of Flour Milling in America," <http://www.angelfire.com/journal/millrestoration/history.html> Accessed 072119

Herron, James, "Shenandoah River Survey Field Notes 1831-1832," *New Shenandoah Company Records 1831-1849*, Archive and Manuscript Room, BPW 103 30030, Library of Virginia

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:
HFP, vol. 1, doc 10,
HFP, vol. 1, doc. 45,
HFP, vol. 1, doc. 61[editor's introduction]

HFP, vol. 2, doc. 6
 HFP, v. 3, doc. 5
 HFP, v. 3, doc. 6
 HFP, v. 3, doc. 7
 HFP, v. 3, doc. 8
 HFP, v. 3, doc 14
 HFP, v. 3, doc 15
 HFP, v. 3, doc. 16
 HFP, v. 3, doc. 18
 HFP, v. 3, doc. 19
 HFP, v. 3, doc. 31
 HFP, v. 3, doc. 39
 HFP, v. 3, doc. 33
 HFP, v. 3, doc. 39 Last Will and Testament of Isaac Hite, Jr
 HFP, v. 4, doc. 8, ed. Intro
 HFP, v. 4, doc. 37
 HFP, vol. 4, doc. 93
 HFP, v.4, doc. 90
 HFP, Folder 3, 1.01.34
 HFP Folder 3, 1.01.41
 Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections
 Box 5 , Folder 4: Will of James Hoge, July 1795
 Land Sale to Isaac Hite, 1794
 Folder 8: Testimony by Caroline Heater and John H. Crisman, Oct. 24, 1871
 Box 4 Folder 6
 Box 18, Folder 1, Folder 4, Folder 5

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Hofstra, Warren R. and Robert D. Mitchell, "Town and Country in Backcountry Virginia: Winchester and the Shenandoah Valley, 1730-1800," in *The Journal of Southern History*, Vol. 59, No. 4, November, 1993

Johnson, Robert L., "The Hydraulic Turbine: 01.01, The Barker's or Scotch Water Wheel at Hacienda Buena Vista," pp. 1-5. in *Barker's Hydraulic Turbine 1851*, Dedication Brochure, Ponce, Puerto Rico, July 16, 1994, American Society of Mechanical Engineers and the Conservation Trust of Puerto Rico, 1994.
<https://www.asme.org/wwwasmeorg/media/resourcefiles/aboutasme/who%20we%20are/engineering%20history/landmarks/177-barker-turbine-hacienda-buena-vista-1853.pdf>
Accessed July 30, 2019

Kalbiam, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbiam, LLC, September 2014

Katen, Brian, Mintai Kim and Patrick Miller, *Bowman-Hite Farm, Cedar Creek and Belle Grove National Historical Park Cultural Landscape Analysis, Vols. 1 and 2*, Landscape Architecture Program, Virginia Tech, 2012

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.]

Kline's Mill, Frederick County, USA
<https://millpictures.com/mills.php?millid=2533&mill=Kline>, accessed 073019

Koons, Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Marsh, William, *Landscape Planning, 5th Edition*, Hoboken, New Jersey: John Wiley & Sons, 2010

Mitchell, Robert D. 1973. "Agricultural Change and the American Revolution: A Virginia Case Study." *Agricultural History* 47 (2), 110-132.

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Mitchell, Robert D. and Warren R. Hofstra, "How Do Settlement Systems Evolve? The Virginia backcountry during the eighteenth century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995.

National Park Service Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007

National Register of Historic Places Nomination for Opequon Historic District, Frederick County, Virginia p. 8]. https://www.dhr.virginia.gov/VLR_to_transfer/PDFNoms/034-5037_Opequon_Historic_District_2002_Final_Nomination.pdf accessed July 30, 2019

Olmsted Collection (National Trust) Handley Library, Winchester, Virginia

Paonessa, Laurie J., *Archeological Investigations at the Heater House, Middletown, Virginia.* Submitted to the Cedar Creek Battlefield Foundation Inc. Middletown, VA., 1996

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Peterson, Arthur G., "Flour and Grist Milling in Virginia," in *The Virginia Magazine of History and Biography*, Vol. XLIII, no. 2, April, 1935

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009

Virginia Historical Society Collection, Virginia Museum of History and Culture, Richmond Virginia : VHS 1293

"Virginia Husbandry," in *The American Farmer*, June 29, 1821

Wayland, John W., *A History of Shenandoah County Virginia*, Strasburg: Shenandoah Publishing House, 1927

Wayland, John W., *The Bowmans: A Pioneering Family in Virginia, Kentucky and the Northwest Territory*, Staunton, Va.: The Press of the McClure Company, Inc., 1943

Wayland, John W., *Twenty-Five Chapters on the Shenandoah Valley: To Which is Appended a Concise History of the Civil War in the Valley*, Second Edition, Harrisonburg, Va.: C. J. Carrier Company. 1976

Map Sources

Boye, Herman, L. V. Buchholtz, and Benjamin Tanner. 1859/1825. *A Map of the State of Virginia, Constructed in Conformity to Law from the Late Surveys Authorized by the Legislature and Other Original and Authentic Documents [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439988/>.

Gillespie, G. L. 1864. *Battle Fields of Fisher's Hill 22 Sept. 1864 and Cedar Creek 19 Oct. 1864, Virginia [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439175/>.

Gillespie, G. L. 1866 Map of the Battlefield at Cedar Creek, Virginia and the Cavalry Fight of Tom's Brook Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com>

Hotchkiss, Jedediah. 1862. *Map of the Shenandoah Valley* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/99446754/>.

Hotchkiss, Jedediah. 1864a. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [1-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625101/>.

Hotchkiss, Jedediah. 1864b. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [3/8-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625102/>.

Lake, D. J. 1885. *Frederick County, Virginia* [atlas]. Philadelphia: D. J. Lake & Company (reprinted in 1997 by G. P. Hammond Publishing, Strasburg, VA).

Varle, Charles, and Benjamin Jones. 1809. *Map of Frederick, Berkeley, & Jefferson Counties in the State of Virginia* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2008621756/>.

Wood, John. 1820. *Frederick County* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2012589212/>.

Meigs, John Rodgers. 1864. *Map of the Shenandoah & Upper Potomac Including Portions of Virginia and Maryland* [map]. Cumberland, MD: Office of Chief Engineer. Retrieved from the Library of Congress at <https://www.loc.gov/item/99448348/>.

Chapter 5:

Figures



Figure 5.1 Jost Hite's Grist Mill at the Opequon Neighborhood. From Wayland 1937.

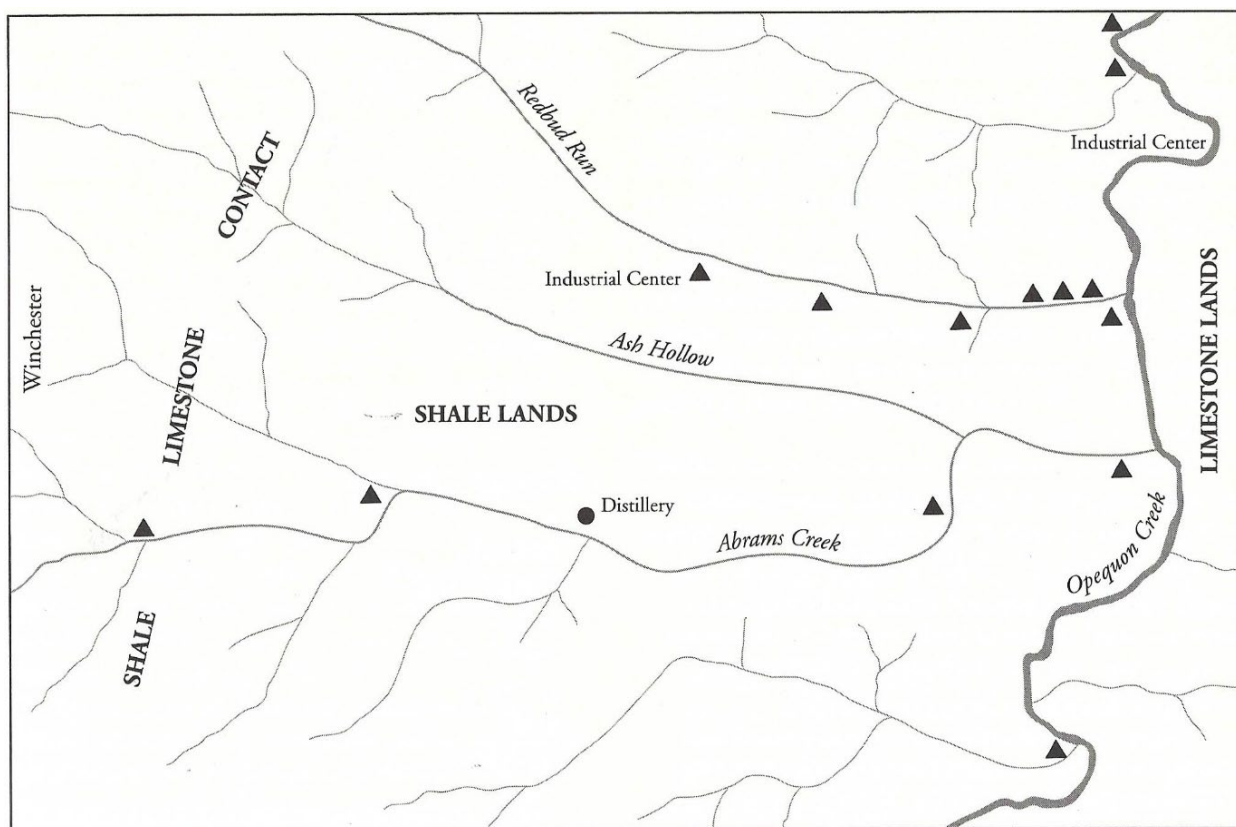


Figure 5.2 Mills in close proximity sited in the shale lands along Adams and Redbud Creeks north of Cedar Creek. From Hofstra and Geier 2000.



Figure 5.3 Kline's Mill, a period oil mill east of Middletown. From Millpictures.com.



Figure 5.4 U. S. Government sawmill near Chattanooga, 1864. From the Mollus Collection.



Figure 5.5 U. S. Government sawmill near Chattanooga, 1864. Sawmill upper level. From the Mollus Collection.



Figure 5.7 Detail of the Varle Map, 1809 showing mills along lower Cedar Creek and its tributaries.

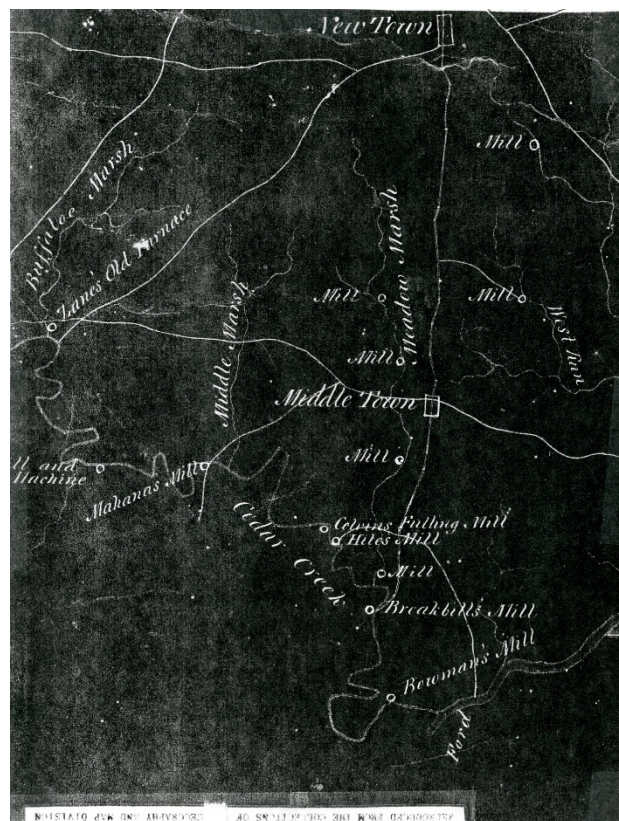


Figure 5.8 Detail, John Wood's 1820 map, showing seventeen mills along lower Cedar Creek and its tributaries.



Figure 5.9 Detail, Boye-Buchholtz, 1859, map of the state of Virginia, showing mills along lower Cedar Creek and its tributaries.

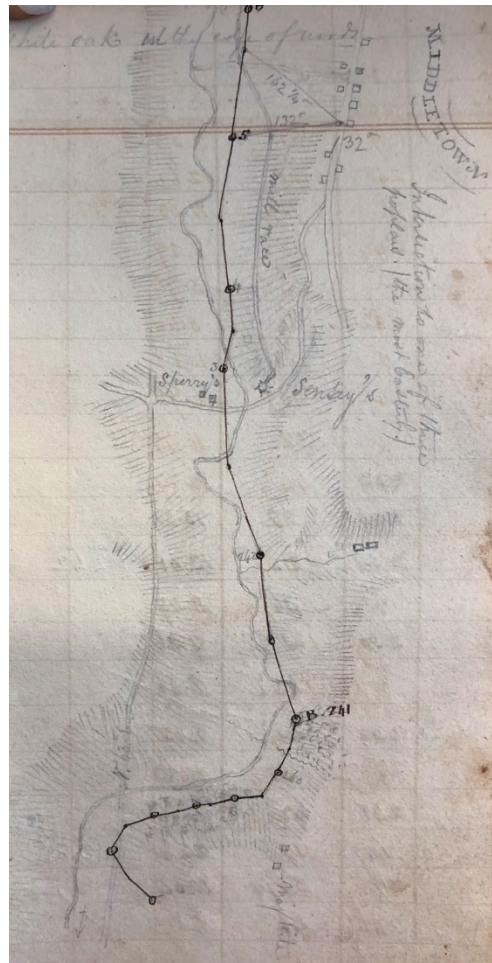


Figure 5.10 A sketch from James Herron's c. 1830's *Shenandoah River Survey Sketchbook*, locates Senesey's Mill on Meadow Marsh Run near Middletown.



Figure 5.11 Confederate topographical engineer, Jedidiah Hotchkiss' 1862 Map of the Shenandoah Valley, locates six mills along lower Cedar Creek and its tributaries.

a



Figure 5.12 Detail, Confederate topographical engineer, Jedidiah Hotchkiss' map of the Battle of Belle Grove and Cedar Creek on Wednesday October 19th, 1864, shows the location of Bowman's Mill and five unnamed mills.

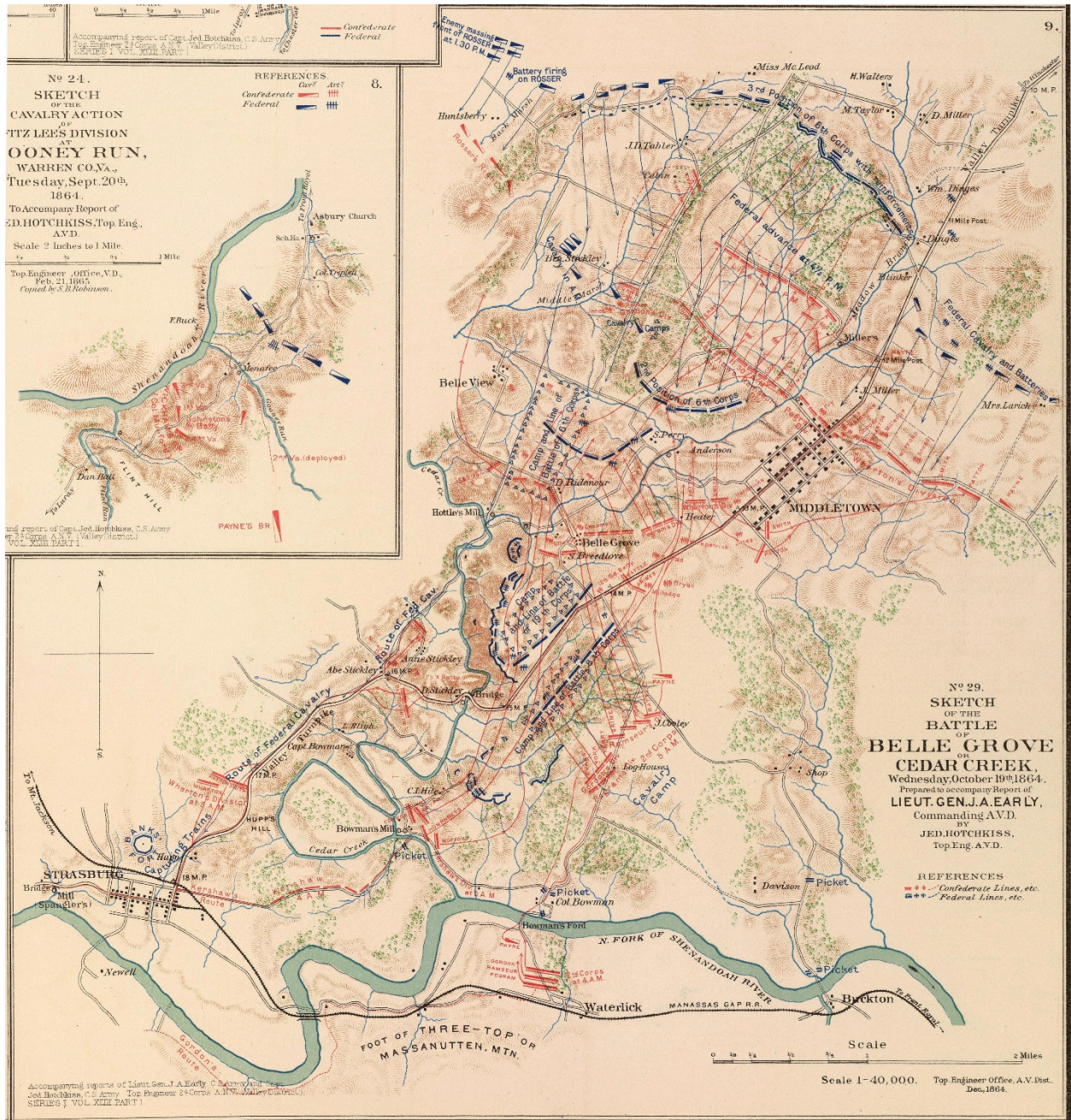


Figure 5.13 Confederate topographical engineer, Jedidiah Hotchkiss' Sketch No. 29 of the Battle of Belle Grove and Cedar Creek, October 19th, 1864 also shows the location of Bowman's Mill and five unnamed mills.



Figure 5.14 Meiggs 1864 map of the Shenandoah and upper Potomac, locates six named mills.



Figure 5.15 The Gillespie 1864 *Map of the Battle Fields of Fisher's Hill of Cedar Creek* shows the location of ten mills.

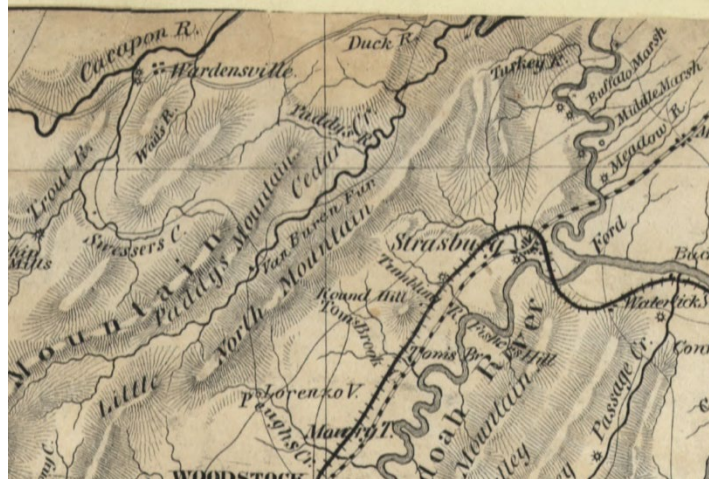


Figure 5.16 Detail of the 1864 Army Corps Map of Central Virginia, which locates eleven mills in the area of Cedar Creek.

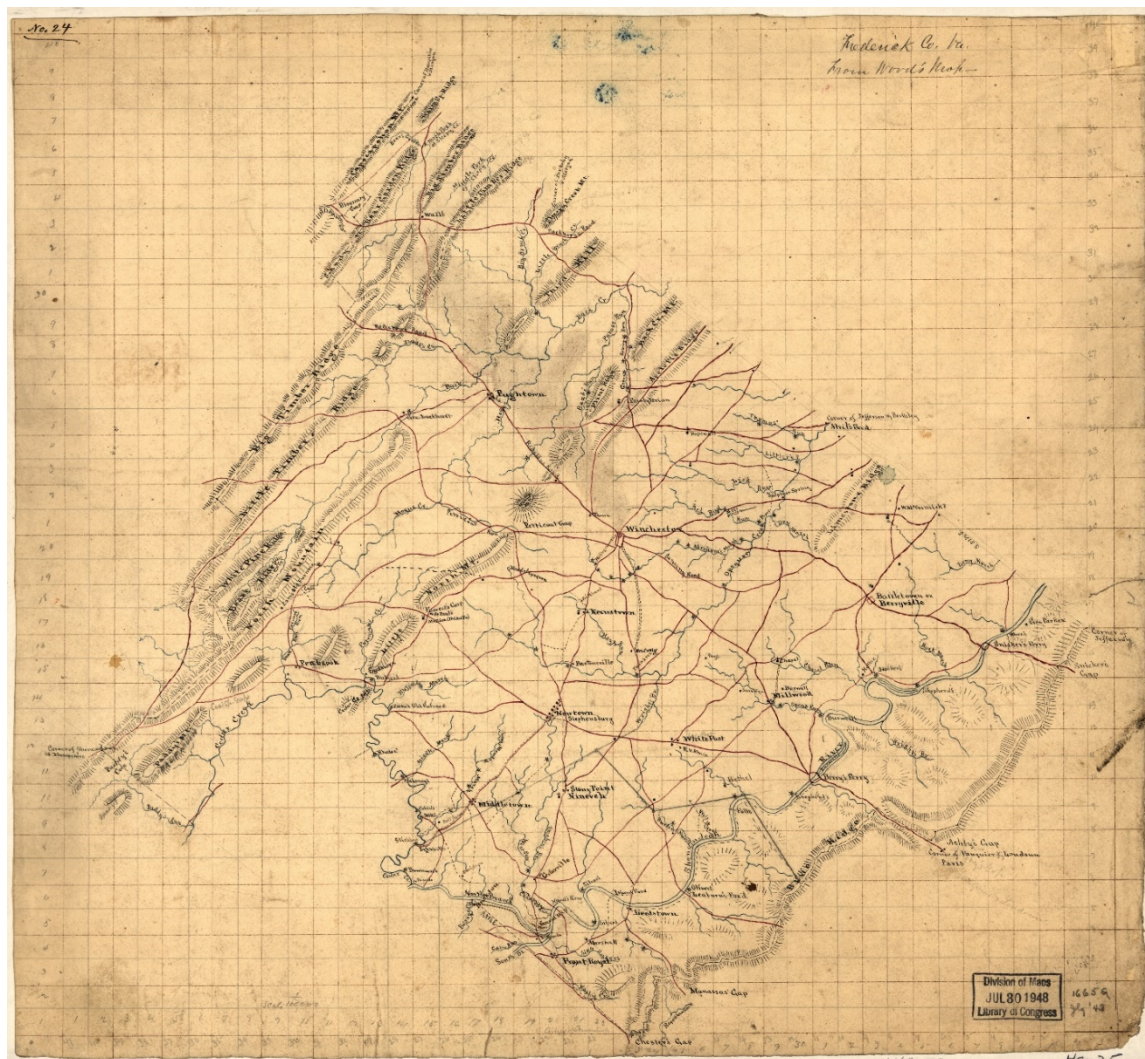


Figure 5.17 This unattributed Frederick County, Virginia map from the 1860's in the Library of Congress locates eleven mills in the area of Cedar Creek, including seven named mills.

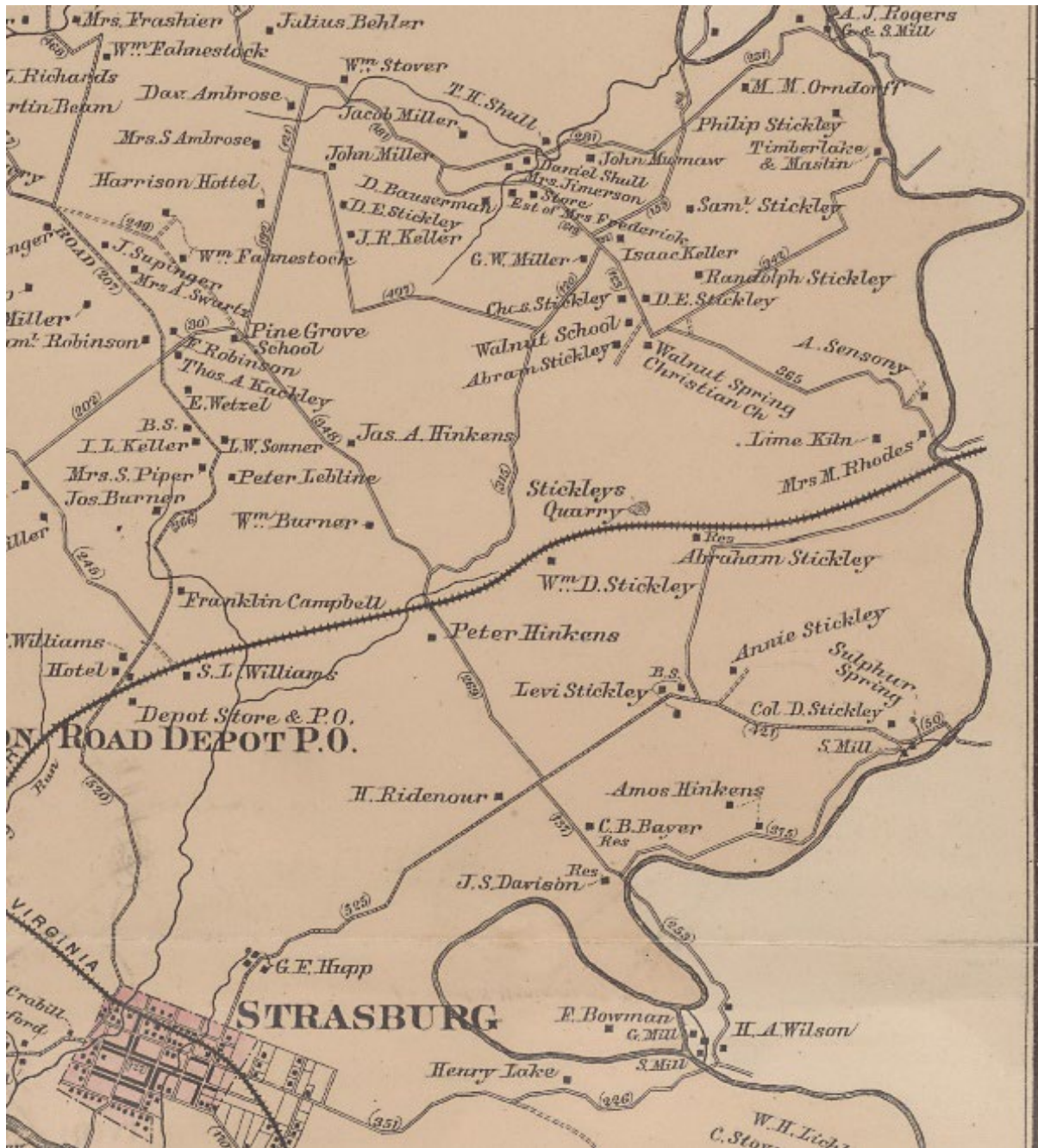


Figure 5.18 Detail from Lake's 1885 *Atlas of Shenandoah and Page Counties* (the Davis Magisterial District, Shenandoah County) shows four mills in the vicinity of Cedar Creek.

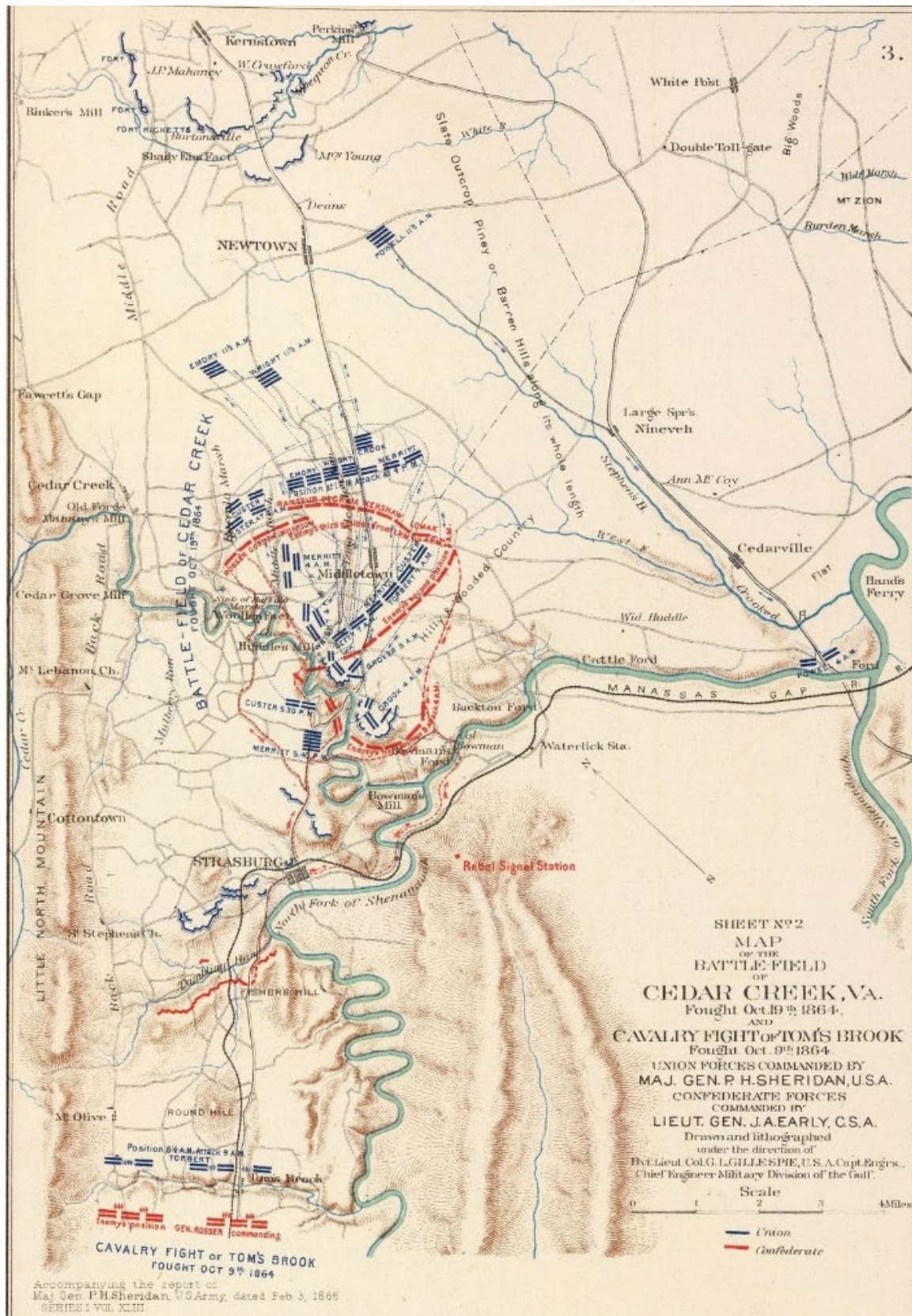


Figure 5.19 The Gillespie 1866 Map of the Battlefield at Cedar Creek, Virginia and the Cavalry Fight of Tom's Brook locates six named mills.



Figure 5.20 The Stickley Mill, from James E. Taylor's Sketchbook. The mill was built on the site of the original Bowman's mill on Cedar Creek. From the Western Reserve Historical Society.



Figure 5.21 Ruins of Stickley's Mill on Cedar Creek, May 2011. Photo by authors.

SPECIAL COMMISSIONERS' SALE OF
GOOD MERCHANT MILL PROPERTY
In Warren Co. N. E. of Strasburg, Va.

Pursuant to a decree of the Circuit Court of
Shenandoah county, rendered at the August Term
1879 in the chancery suit of *Balthis Exor. &c.*
Compta. vs. Bowman's Admrs. &c. the under-
signed special comrs. will on

MONDAY. DECEMBER 1th 1879.
on the premises proceed to re-sell, at public auc-
tion to the highest bidder, property known as the
Bowman Mill property, consisting of a good

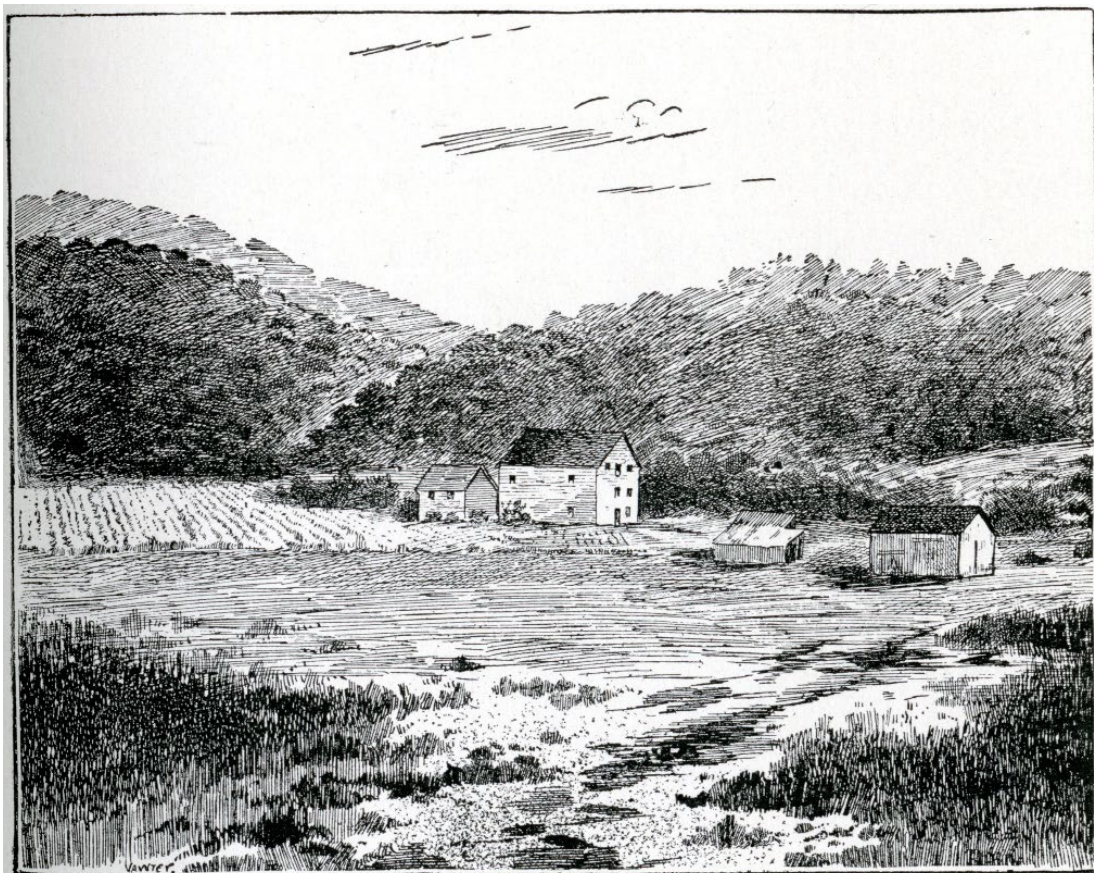
MERCHANT AND SAW MILL
with excellent water power and a good custom,
dwelling house with four rooms, garden, yard
and mill yard comprising nearly two acres situated
on the Warren side of Cedar Creek, about 1 1/2
mile north East of Strasburg and now occupied
by Daniel Overstone, and upon the whole is a
very desirable property.

TERMS OF SALE:
On fourth cash on day of sale, and the residue
in three equal installments of nine, eighteen and
twenty-four months bearing interest from day of
sale for which the purchaser shall give his bonds
with approved personal security and the deed to
be retained as additional security until all the
purchase money is paid. Sale to begin at 11
o'clock A. M.

E. E. STICKLEY.
S. S. TURNER.
Special Comrs.

Oct 29 -td.

Figure 5.22 Bowman's Mill sale
advertisement, Nov. 5, 1879.



BOWMAN'S MILL.

Figure 5.23 Bowman's Mill, (c. 1793) located along the lower reaches of Cedar Creek downstream from the original Bowman Mill. The only known sketch attributed to the mill.

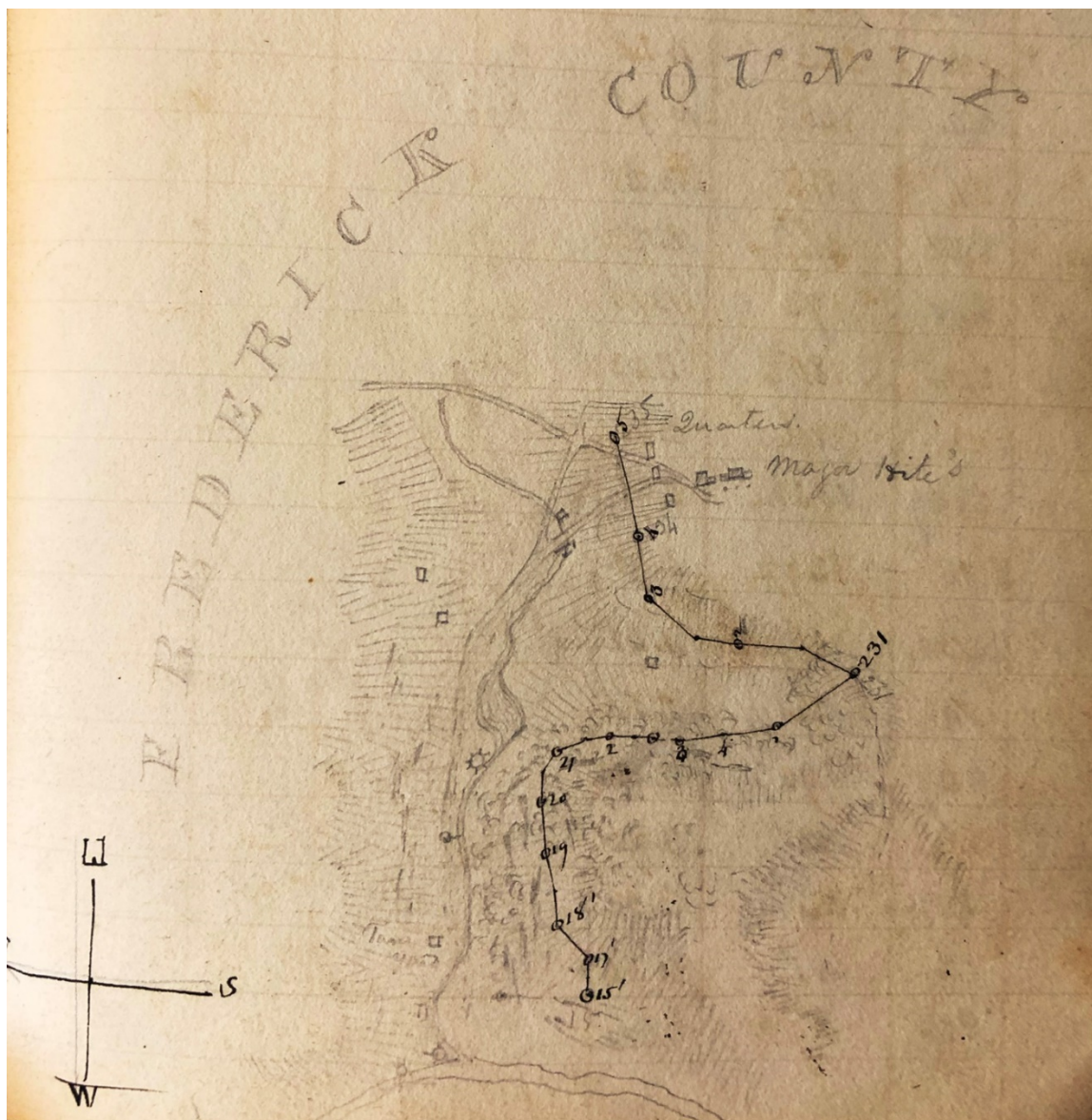


Figure 5.24 The location of Hite's sawmill, on Meadow Brook upstream from his grist mill is shown on this map from James Herron's c. 1830's Shenandoah River Survey Sketchbook.

Chapter 6:

The Agricultural Landscape: Commercial Infrastructure: Merchant Networks

From the time of its earliest settlement, settlers in the Lower Shenandoah Valley were involved in a “back country trade” conducted with local merchants who were part of larger regional, national, and international merchant networks. As Nathaniel Pawlett has identified. Early on, “the backcountry trade in the Shenandoah Valley was dominated by the frontier merchant and the country storekeeper.” Often, a single merchant often served in both roles simultaneously. The country store, according to Nathaniel Pawlett, performed three main functions for the settlers who traded there. “It was generally the source of goods from the outside world; it operated as a market for local farm surplus, which was used to pay for accounts within a trading system... and it functioned as the most reliable source of credit, generally on a long-term basis.” (Pawlett 2003, 154-155)

The first commercial agricultural crop of significance in the lower Valley, was tobacco. Cultivation of tobacco had been introduced early on by planters with lands located east of present-day Winchester and by 1750 production of tobacco in the lower Valley, while not large, had fostered trade with merchants located in port towns near the fall lines of several Virginia rivers including the Potomac and the Rappahannock. The tobacco trade was thus instrumental in bringing together lower Valley farmers with merchants in eastern port towns, who historians Emma Hart, Cathy Matson and David Hancock have recognized, were “out of necessity...international thinkers and actors who viewed the world as a connected series of markets that they could integrate and improve.” (Hart and Matson 2017, 663). Historian Thomas Preisser has identified that. “in eighteenth century usage, a merchant was a person who traded overseas, or risked his capital abroad.” The “merchants” could, according to Preisser, be divided into two categories. They were generally “either factors [resident agents] of British firms or secondary traders...active in the wholesale and retail trades, and who perhaps ordered goods from overseas [but] did not actually trade overseas or venture their capital abroad.” (Preisser 1977, 63-4)

The port towns where the merchants were located would quickly become places of expanded export and trade that connected the planters and farmers of the lower Shenandoah Valley with international markets for their agricultural production. Early on, the lower Valley planters’ trade in tobacco was conducted primarily through stores owned by John Glassford in three port towns: Alexandria, on the Potomac River, Colchester, located on the Occoquan River, a tributary of the Potomac River, and Dumfries, located on Quantico Creek, another Potomac tributary. (Fig 6.1) (Mitchell and Hofstra 1995, 138) Historian Edith Moore Sprouse has identified a list of trade items that passed through Colchester merchant houses c. 1770 and was published in an unnamed Philadelphia Newspaper. Among the items listed as shipped from the Colchester docks were: tobacco Indian corn, wheat, flour, pork, hemp, masts, staves, boards, walnut planks, iron ore, and furs. Among the “imported commodities identified as arriving at the Colchester docks on “vessels from Europe” were:

“Broadcloths, kersies, duffelds, cottons, crapes, rugs, blankets, Norwich stuffs, linens, furniture, wearing apparel, calicos, Persians, Taffaties, and other East India silks, Holland sheeting, wines, spices, coffee, tea, sugars, tropic fruits, axes, locks, hinges, nails, carpenters’ joiners, and smiths’ tools, fire arms, anchors, and all other supplies needed for a new and thriving settlement.” (Sprouse 1992, 54)

The newspaper account noted as well that, upon arrival in Colchester, these imported commodities were “sent coastwise in scallops and other small sailing craft...and a large trade in all kinds of provisions is kept with remote posts on the frontiers and over the mountains by two great wagon roads to Williams and Vestals gaps on the Shenandoah.” (Sprouse 1992, p. 54)

Farmers in the lower Valley also traded with merchants in the port towns of Falmouth and Fredericksburg, both located on the Rappahannock River. However, most lower Valley trade would soon be concentrated in Alexandria, which became the primary Potomac River port for lower Valley farmers after the ports at Colchester located on the Occoquan River (Fig. 6.2) and Dumfries located on Quantico Creek proved to be susceptible to siltation. Sprouse notes that “...the towns on tributaries of the Potomac could not overcome the effects of siltation in addition to the competition from the deep-water port of Alexandria,” (Sprouse 1992, 94) (Fig. 6.3)

Merchants in other eastern ports were soon competing for lower Valley trade including merchants in Georgetown, located just north of Alexandria on the Maryland side of the Potomac River. But, the stiffest competition for Alexandria would come from the merchants in the larger port cities of Philadelphia and Baltimore.

Marketing the agricultural production of the lower Shenandoah Valley in the Late Eighteenth and early nineteenth centuries developed following the trading patterns established first by the Virginia tobacco plantations. Historian Robert D. Mitchell has identified that in the 18th century it was widespread that the:

“Virginia planters consigned their tobacco to British merchants” and shipped the tobacco directly to the merchant for sale. The merchant supplied the ship, supervised the unloading. Paid duties and arranged for storage and sale of the tobacco. All for a fee of 8-10% of the net proceeds. The merchant then procured and shipped “household goods, and other personal items back to America and the planter – there was no middleman.” (Mitchell 1977, 24-25)

However, the consignment system that Mitchell describes “functioned erratically” and became, by the second half of the 18th century, “a cumbersome, expensive, and increasingly outdated anachronism...that was strained to the breaking point.” As a result, “the direct purchase method became increasingly widespread in Virginia.” In this system, “resident agents,” who lived near tobacco inspections stations established by the state near the fall-line ports, “would buy the leaf, collect it for shipment, and send it in quantity to their

employers in Britain.” (Preisser 1977, 28) Once the tobacco has been sold to the planter’s agents, the system of trade was structured to allow the Virginia planters to then buy household goods and agricultural supplies from the same agent who had purchased their crop. The Scottish merchants, or “factors,” in particular, excelled in this direct purchase system, buying and “assembling for shipment tobacco and other commodities for export.” (Mitchell 1977, 33) Typically the factor shipped the assembled goods overseas in “vessels chartered by [their] employers...advised his employers of the proper types and amounts of goods” purchased by the Valley farmers for shipment to Virginia, and provided their employers with “current information on the state of...trade” and the collection of “debts due the firm.” (Preisser 1977, 72) the factors also “sold a wide range of imported goods” while “extending credit for small planters of the back country.” (Mitchell, 1977, 33)

Tobacco inspection stations and warehouses were typically sited on the river just below the fall line.

Port towns that would serve as the ports of embarkation for Virginia’s goods soon grew up around the fall line tobacco inspection stations. As Alexander Rose has identified, Virginians quickly recognized that “we can expect to have great towns at the falls of the rivers, only where the commodities of the back country must be brought for exportation.” (Preisser 1977, 24) Robert Mitchell has identified that “by the late 1740s” a concentration of merchants who were “external contacts” for the exportation of goods from the lower Shenandoah Valley was in place in Alexandria and a similar concentration of merchants was in place Fredericksburg to serve the upper Valley. Falmouth, located on the Rappahannock River near Fredericksburg, would develop into “an important rival for the Valley’s trade during the 1750’s and early 1760’s.” (Mitchell 1977, 160) (Fig. 6.4)

The increasing demand for wheat and flour during the 1760s and 1770s saw farmers and millers respond with a rising level of commercial imports. (Mitchell and Hofstra 1995, 138) “Around the middle of the 1760s a shift of the first magnitude began in Alexandria’s export trade. Over the space of a few years wheat, flour, and Indian corn were clearly the most important items being shipped from the town by the mid-1770s.” (Preisser 1977, 114)

As Alexandria’s merchants traded more and more with farmers in the lower Valley, the town and its deep water port grew in importance. At the same time, however, there was a rapid expansion of the wheat and grain farming in the interior of the Pennsylvania colony. That expansion saw an accompanying expansion of Philadelphia’s export trade. That expansion would result in eighteenth-century Philadelphia becoming a colonial center for the export of wheat, flour, and bread to dozens of ports including many within the Britain’s empire.

Despite Philadelphia’s trade expansion, the shorter distance from the Shenandoah Valley to Alexandria led many lower Valley farmers, including the Hites, to ship their wheat crop to Alexandria for export overseas. Alexandria, along with Falmouth, and Fredericksburg “in that order” have been identified by Robert D. Mitchell as “the focal points” of commercial trade activity in Northern Virginia with Alexandria serving as “probably the most frequently

used market center for lower Valley trade during the pioneer period.” (Mitchell 1977, 158) (Fig. 6.5) Alexandria’s rise to prominence was propelled when a commercial flour inspection station was established in the city by the state of Virginia in 1787. After Alexandria, the closest inspection stations to the lower Valley were located in Fredericksburg, Richmond, and Lynchburg. (Mitchell 1977, 176) (Fig. 6.6) The increase in flour trade with Alexandria during the second half of the Eighteenth Century and the constant competition during the same period for Lower Valley trade goods that emerged between Alexandria and other eastern ports including Philadelphia, Baltimore, and Falmouth exemplifies what Warren Hofstra has identified as a second phase of transformation for the Shenandoah Valley. A transformation brought on by a rise in trans-Atlantic grain prices after 1750. It was a period when "complex regional settlement systems" developed – systems “in which dense roads networks linked individual farmsteads to commodity markets at mills and towns.” (Hofstra 1995, 212)

Partial records exist for several merchants who were trading with lower Valley farmers during the eighteenth century including John Glassford, who had stores in Alexandria, Dumfries, and Colchester and William Allason, a Scottish factor, who had a store in Falmouth on the Rappahannock River around 1757. In 1761, Allason’s brother, David Allason, set up a second store near Winchester in the lower Shenandoah Valley. Miles Malone notes that the Winchester store “only lasted three years”. (Malone 1935, 694) Robert D. Mitchell identifies the Winchester store having a much shorter lifespan, noting that “the venture failed after eleven months because of less than anticipated sales and unreliable payments” But many of the stores clients, including Isaac Zane, Jr., who by 1768 was the owner of Marlboro Iron Works on Cedar Creek, continued to trade with the Allasons’ store in Falmouth.” (Mitchell 1997, 158)

The Allasons’ Falmouth store stocked goods from Glasgow as well as the English cities of London, Bristol, and Whitehaven. The goods were “sold to customers in both the eastern and valley sections of the colony while “raw materials collected from customers...were sent to foreign correspondents.” (Malone 1935, 695) “As early as 1761, merchants in eastern Virginia ports used the Lower Shenandoah Valley both as a market and a source for raw materials.” (Malone 1935, 693) For historian Miles Malone, the commercial exchanges between Allason and customers in the lower Valley demonstrates how “...the Rappahannock port of Falmouth and the counties of the lower Shenandoah Valley were bound together by commercial ties.” (Malone 1935, 694) Malone recognizes as well that “The trade of the Allason firm was duplicated...by other houses in Falmouth, Fredericksburg, and Alexandria; doubtless Colchester and Dumfries also enjoyed some of the business.” (Malone 1935, 694)

Trade with the Allasons’ was sometimes conducted with exchanges of cash but “most of the Shenandoah customers were either unable, or unwilling, to make large cash payments, while many of them could make no cash payments whatsoever.” Allason wanted to conduct business with the Valley farmers and as a substitute for cash he accepted Shenandoah produce in trade. “Flour, tobacco, hemp, and various less important commodities were

received at the Falmouth store.” (Malone 1935, 698) Among the Valley farmers and merchants that traded with the Falmouth store were Isaac Zane, and Joseph Baker, who lived near Isaac Hite’s plantation in what is now Shenandoah County. Baker bought a large number of things from the Allasons, including broadcloth, Irish linen, hand woven linen, and a ‘Leghorn hat.’ He made payment on this account by sending his crop of tobacco. (Malone 1935, 699) Tobacco, either purchased or in payment for purchases, appears frequently in the Allasons’ ledgers. So much so that Historian Miles Malone notes that the Allason ledgers “indicate that the staple crop of Virginia was extensively cultivated in the lower Shenandoah. (Malone 1935, 699) As Malone demonstrates, Allason’s records give important insights into the merchant networks that were established with the lower Shenandoah Valley. The records also confirm that Allason traded with farmers in Frederick County. But a review of the *Allason Shenandoah Store Account Books, Ledger B October 1762- September 1763*, offered no evidence that either Isaac Hite, Sr., Isaac Bowman or other related family planters along Cedar Creek traded with the Allasons during that period. Nor were any receipts or correspondence from Allasons’ store’s found in the Hite Papers at the Handley Library in Winchester or in the holdings of the Virginia Historical Society in Richmond.

Historians have generally identified that the “expansion of wheat cultivation beyond general subsistence requirements” occurred during the French and Indian War to satisfy militia demands for flour and bread.” (Mitchell, and Hofstra 1995, 138) But as historian John J. Zaborney has identified, the increase in wheat cultivation in Virginia began a decade-and-a-half earlier with the outbreak of the War of the Austrian Succession, in 1739. That war the war spurred “significant international demand for American grain.” Quickly. According to Zaborney, the war also “made it difficult for Chesapeake producers to export tobacco to England” and the loss of Virginia tobacco shipments to Spanish and French naval forces in Chesapeake coastal waters combined with higher insurance rates, eventually “pushed Virginia Planters away from tobacco and toward wheat,” a less tempting commodity for England’s enemies. As a result, grain shipments soon brought “better returns than tobacco” and “the price of flour rose from three to four dollars per barrel in Virginia port towns by the middle of the eighteenth century.” The market price of flour would remain at that level until the end of the American Revolution.” (Zaborney 2012,10)

By 1765, Allason’s records “document the regular export of flour (rather than wheat) by Frederick county farmers.” (Mitchell and Hofstra 1995, 138) Allason’s records also reveal that he regularly received flour shipments sent by wagon from Berkley County as well. (Mitchell 1977, 172) Allason’s business dealings document the expansion of wheat cultivation in the Valley and Allason’s name and a description of his business appears on Robert Carter’s 1775 list of Alexandria, Virginia merchants and factors. Carter’s list identifies Allason as being a “wheat purchaser.” (Preisser 1977, Appendix C)

Wagons were the main means of shipping goods to Falmouth during this period and “It is likely that the wagoners used the main road to the lower Shenandoah Valley, which went through the Blue Ridge Mountains at Ashby’s Gap.” (Malone 1935, 701) Seasonal weather

was an important consideration in scheduling shipping to and from all of the Colonial ports. Alexandria's busiest shipping period occurred between July and November. That shipping schedule avoided the potential threat posed by winter ice and recognized that the early roads leading from the Lower Valley were more passible after the spring rains gave way to dryer summer weather.

By the second half of the eighteenth century, and the outbreak of the French and Indian War, lower Valley agricultural practices and agricultural economics were being strongly and regularly influenced by world events. As Kenneth Koons and Jonathan Noyalas have identified:

"The need to feed troops fighting in the French and Indian War stimulated demand for flour, and Valley farmers responded by producing larger surpluses of wheat. Demand for flour continued to rise because of changing market conditions in Europe and the West Indies, with the consequence that farmers continued to increase their production of wheat. During the era of the American Revolution, markets for hemp and tobacco declined and virtually disappeared. Meanwhile, however, demand for flour on world markets had continued to rise so that by the late 1760s prices for flour were high enough to offset the costs of its transportation to east-coast markets such as Alexandria, Baltimore, and Philadelphia. Valley farmers prospered during the final quarter of the eighteenth century as they allocated increasing proportions of their resources to wheat production. Although wheat had become the dominant cash crop of Shenandoah Valley farmers, and its production became the main engine of economic growth and development in the region, the crop never became a monoculture. Farmers produced burgeoning amounts of wheat but they did so within the diversity of enterprise that general mixed farming entailed." (Koons and Noyalas 2010, 41)

The influence of international events continued to impact Shenandoah Valley farmers and lower Valley agriculture well into the Nineteenth Century. The period between 1793 and 1815 was a particularly turbulent time with overlapping conflicts between England and France and other European nations including the Napoleonic Wars, the Peninsular War, and the War of 1812. By the end of the eighteenth Century, the "Merchants of Alexandria were well known both in America and Europe" and "during the French Revolution and the Napoleonic era...all seemed prosperous and hopeful." (Gilpin 1927, 404) The fortunes of American merchants had been buoyed by a harvest failure in England in 1799, while Virginia had experienced unusually good harvests in 1800, 1801, and 1802, and favorable crop conditions in the Commonwealth continued through 1803.

The Peace of Amiens in 1802 provided a temporary respite during the War between Britain and France which had begun in 1793 and that and a "rather favorable British harvest in 1802 kept the market low. In response to this lull, "Heavy exports...were made during these years to the West Indies." Jamaica, St. Thomas, Antigua, Bermuda, Cuba, Guadaloupe, and other islands of the West India group received...large supplies from Alexandria" during this

period. "A little more than one-third of the Indian corn which left Alexandria was shipped to the West Indies. In contrast, very little wheat was sent to these islands...peas, beans and corn meal were shipped in relatively large amounts as well as scattered quantities of rye-flour and oats." (Gilpin 1927, 409) Historian Freeman Gilpin has identified that during the early years of the 19th Century the:

"greater share of [Alexandria's] exports left for Spain and Portugal... this trade...was increased by reason of the British occupation of the Peninsula during part of the Napoleonic period [1801-1815] ...together these two markets received about one-half of the total amount of flour exported." Alexandria also exported flour ,wheat, and Indian corn with "smattering shipments of rye, corn-meal, and beans." directly to England - primarily to "Liverpool and London." (Gilpin 1927, 409)

Gilpin notes that smaller amounts of these trade goods were exported to Scotland and Ireland. Other destinations lower Valley flour included Malta, Hamburg, Gottenburg, Sweden, Canada, Mexico, and "certain northern ports of South America." (Gilpin 1927, 409)

Thus "the renewal of war in 1803 opened a prosperous decade for Alexandria," a decade that saw "large shipments...made to the Peninsula in 1812." (Gilpin 1927, 420) This period of the city's prosperity would last until the end of the Napoleonic Wars in 1815 when, "with the return of peace, the American farmer and merchant gradually lost his markets abroad." Other mid-nineteenth century factors, "such as soil exhaustion, the stimulus given to cotton cultivation, and the opening of new grain fields in Ohio and the Mississippi Valleys" have been identified as national events that "tended to bring an end to the history of Alexandria as a grain port of any prominence." (Gilpin 1927, 408-412, and 423)

The period of Alexandria's commercial growth at the beginning of the Nineteenth-Century was accompanied by detailed record-keeping. W. Freeman Gilpin has identified that "a large number" of Alexandria's citizens "were employed in the marketing and selling of corn, grain, meal, and flour," (Gilpin 1927, 404) and the surviving records and correspondence offer a particularly rich opportunity to identify those Alexandria merchants who traded with farmers and merchants in the Lower Shenandoah Valley. Additional information on many of the Alexandria Merchants is provided by Michael T. Miller's *Artisans and Merchants of Alexandria, Virginia 1780-1820*. The available records of the Hite family, in particular the papers of Isaac Hite Jr., note numerous merchants with whom the family traded. Several of the Alexandria-based factors and merchants who traded with the Hites appear in the historical records of the period and research into their backgrounds has provided several valuable insights into the Hite's late eighteenth and early nineteenth century business networks. Figure 6.7 provides a spread sheet outlining the relationship between the Hites and these and other merchants. Among the Alexandria merchants with whom the Hites traded (with the years of known trade and the goods traded indicated) were:

Josiah Watson and Company, 1790

Robinson Sanderson and Company, 1790
Col. George Gilpin, 1792 and 1796 (and possibly 1791)
William Hodgson (Hogson), 1796, [nails for the construction of Belle Grove]
Shreve and Lawrason, 1796 [salt, sugar, coffee chocolate, and household goods],
Ricketts and Newton, 1796, [factors or middlemen who then shipped Hite flour to
Korn and Weismiller],
Korn and Wisemiller, 1796, [Malaga wine and flour],
Tanney and Irish, 1797, [sugar]
Colin and James Ross, 1801-2
Robert Young, 1802, [flour]
Claggett and Sage, 1841

Some biographical information on the Alexandria merchants Hite traded with offers a fascinating glimpse into the economic and cultural connections established by the Hites and presumably by other farmers in the lower Valley who shipped their agricultural production to Alexandria merchants.

Josiah Watson was an Englishman who settled in Alexandria, Virginia, about 1773 and established Josiah Watson & Company, Tobacco Agents. Watson would expand his company's focus and Josiah Watson & Company, Merchants, is identified as active in Alexandria, and in association with Watson's Wharf on the Alexandria waterfront, between 1786 and 1787. (Miller 1992, 236) Robert Carter's list of merchants and Factors resident in Alexandria, Mar. 1775 notes that Watson "Imports goods for Philadelphia and buys tobacco and wheat" (Preisser 1977, Appendix C) He was also a Fairfax County justice of the peace from 1783 to 1784. (Watson, Josiah 2008) The Hite family papers note that in 1790 Watson served as a middleman in a transaction between Isaac Hite and Son, the Hite general store, and Philadelphia merchants, Clow and Company. (HFP, vol. 4, document 9) The Hite papers also include documentation that Isaac Hite, Jr bought 595 acres in Frederick County from Josiah Watson in 1797. The land was apparently near Belle Grove. Hite's payments for the land included cash, bonds, and whiskey. (HFP, V. 4, docs. 84-87)

The Hite family papers also show that in 1790 Isaac Hite and Son purchased a headstone from Alexandria merchants Robertson, Sanderson & Company, a merchant firm historian Michael Miller has identified as active between 1789 and 1793.

Col. George Gilpin, was a Revolutionary War soldier and officer who Michael T. Miller identifies as active in Alexandria between 1775 and 1814. Miller identifies Gilpin as a flour and tobacco inspector in 1775. In 1776 he is listed as a merchant with a warehouse at the corner of Prince and Union Streets in Alexandria. (Miller 1991, 161-2) Thomas M. Preisser, also notes Gilpin as a wheat Purchaser (Preisser, 1977). The Hite family papers note that during the period 1791-1792 Gilpin served as a middleman for Hite flour sales to Taylor, Ballantine, and Laville, a mercantile firm in Kingston, Jamaica. The records also show that Gilpin also served as a factor purchasing goods from the Hites in 1796. From early in 1809 until December, 1813, Gilpin was Alexandria's postmaster. He was also a member of

Alexandria Masonic Lodge number 39. By appointment of the Lodge, he would serve as one of George Washington's pall-bearers. (Alexandria Lodge no. 39 2019)

William Hodgson is listed by Miller as a merchant located at 2017 Prince Street in Alexandria and active between 1793 to 1820. Miller notes as well that Hodgson collected debts of Robinson, Sanderson & Co., another Alexandria merchant firm, in 1793. (Miller 1992, 84) The records also show that unspecified goods were shipped by the Hites to William Hodgson (or Hogson) in Alexandria. Hodgson was "a native of White Haven, England... who emigrated to America, and settled in Alexandria, about the year 1785... In 1790 he bought the house now known as 207 Prince Street" which served first as a dry goods store and later a combined store and dwelling. (Alexandria Lodge no. 39 2019) Hite purchase nails from Hodgson in 1796 that were used in the construction of Belle Grove.

Shreve & Lawrason, merchants at the SW corner of Prince and Union Streets, are noted by Miller as active between 1796 and 1799. (Miller 1992, 118) The Hite family papers show Isaac Hite's purchased from Shreve & Lawrason various household goods for Belle Grove in 1796 including: rock salt, loose salt, sugar, coffee, sole leather, needles, and a box of chocolates. (HFP, v.1, doc. 9)

Merchants Ricketts and Newton, whose store was located at the SE corner of Prince and Fairfax Streets in Alexandria, are shown by Miller as active from 1792 -1820 with a mention of Ricketts Wharf on the Alexandria waterfront. The Hite family papers reveal that in 1796 Ricketts and Newton stored 24 barrels of "hands" flour sent to Alexandria from Isaac Hite, Jr. The flour was then sold to Alexandria bakers, Korn and Weismuller (also spelled Weismiller), a firm that the Hite's dealt with directly on a frequent basis. (HFP, v. 1, doc 9.)

Korn and Wisemiller, bakers, were one of the most interesting Alexandria establishments that the Hites dealt with. They are referenced by Miller as active between 1791 and 1815 with a warehouse at the SE corner of Prince and St. Asaph Streets. (Miller 1991, 256-257 and 1992, 266) (Fig. 6.8) The partners, John Korn and Jacob Wisemiller, had what was described as a "substantial" bakery In 1790, they were described as "biscuit bakers." The record of their dealings with the Hites is incomplete but, in 1796, Isaac Hite and Son, shipped over 170 barrels of flour to Korn and Weismiller between the beginning of May and the end of June alone. (Hite Family Papers, vol. 4) While we do not have a full accounting of the flour sold by Hite, the figures for those two months in 1796 gives some indication of the amount of flour sent by Hite to Alexandria and supports the assertions of historians Clarence R. Geier and Phoebe Harding who note that "Isaac Hite Jr.'s merchant mills...produced vast quantities of flour most of which found its way to the Alexandria market place. (Geier and Harding 2006, 222-223) By 1805 Korn and Wisemiller had "evidently shifted from retail to a wholesale operation. Today, the Korn and Wisemiller Building is listed on the National Register. The Historic American Buildings Survey describes the building as a "late eighteenth century merchant's house built for business and residential needs this four-square structure invites comparison with Alexandria's best." The

building's front room was "accoutered as a retail store by Korn and Wisemiller." (Korn and Wisemiller 1975)

The Hite's are known to have purchased sugar from Alexandria Merchants Tanney and Irish in 1797, and the Hite family papers show that in 1802 Isaac Hite, Jr. purchased unspecified goods from Colin and James Ross, identified in the Hite Family correspondence as Alexandria merchants. However, the Ross brothers do not appear in Miller's *Artisans and Merchants of Alexandria, Virginia 1780-1820*, but the brothers were well known for their "numerous investments and mercantile endeavors" in Fredericksburg and the tobacco warehouse they operated in Urbana, Virginia. (Hilliard et al. nd) The unspecified goods they sold to Hite were delivered through a second party, Hite's bother-in-law Jonathan Clark. The goods were likely transported from the Ross brothers' Fredericksburg store to Hite via Alexandria. (HFP, vol. 4.) Among the Ross brothers clients in the tobacco trade were Thomas Jefferson and James Madison." The Madison Papers include a letter from the Ross bothers' firm to James Madison which noted their shipping tobacco from Norfolk to London and Liverpool in 1803. (Founders on line 2019) Advertisements for the bothers' Fredericksburg store appeared in *The Virginia Herald and Fredericksburg Advertiser* on April 15, 1790 and again on Oct 12 & 26 1802. (Hilliard et al. nd) Wherever the brothers' business location, the Hite Family Papers also show that the Ross bother's firm purchased whiskey from Belle Grove. Historians Clarence R. Geier and Phoebe Harding who also identify the Ross brothers as Alexandria merchants, note that Isaac Hite "produced a valued whiskey, which [he] sold to Longs Tavern in Winchester and to the firm of C & J. Ross & Co. in Alexandria in large quantities." (Geier and Harding 2006, 222-223) The Hite Family Papers confirm the Ross Brothers' purchases of Belle Grove Whiskey on at least two occasions. In November of 1801 the brothers purchased 12 tierces (casks) and 3 barrels of Belle Grove whiskey, about 870 gallons. In June of 1802 they purchased an additional 9 tierces, about 638 gallons of Belle Grove whiskey. (HFP, vol. 4. Doc. 90)

Robert Young, merchant, attorney, and former general, whose business was located at the northeast corner of King and Washington Streets in Alexandria, is identified by Miller as active between 1795 and 1820. Young is also associated by Miller with Watson's Wharf on the Alexandria waterfront. (Miller 1992, 277) The Hite family papers show Young as having handled flour shipments from the Hite's and having sold both Hite flour and whiskey. (HFP, vol. 4, document 89 and 93) Hite's correspondence with Young offers insights as well into the speculative nature of the flour market and the various considerations that went into the timing of when to sell and how international events might alter plans. In correspondence with Hite, at one point Young tells Hite present flour prices are:

"equal to what we may expect...It is the prevailing opinion here that it [the price of flour] will fluctuate from 33/ to 36/--the price of this day. I do not suppose that it will be down for some time The great doubt is whether there will be war in Europe. Should that take place flour will be higher and if we have peace it may fall to 5 ½ [dollars] but not lower this season. But to secure 6 dollars or thereabouts in my humble opinion would be right. It will be best when a sale is made that it be for cash

for if time is given we cannot get but little more than the interest thereon. You have the prices of our markets daily and permit me to request that you give me your limits."

Hite Family Papers, vol. 4

One additional Alexandria merchant firm who we know dealt with the Hites was Claggett and Sage. The firm purchased flour from the Hites in 1841 and, in turn, sold the Hites oysters, salt and molasses (HFP, vol. 1, folder 2).

The extant record of the Hite's flour dealings supports the findings of historians Robert D. Mitchell and Warren R. Hofstra who identified that the "Export of wheat and flour...[in the late eighteenth and early nineteenth centuries] was "highly diffuse and decentralized, originating directly from larger farms, or more regularly from mills, and moving to markets in Alexandria...and tobacco went directly from plantations to fall-zone factors." [Mitchell and Hofstra 1995, 138] In each documented instance of Hite shipping flour to Alexandria, the correspondence indicates the flour was shipped by wagon. The receipts for shipments sometimes gave additional information on the means of delivery and in at least one instance Hite's receipt notes a driver who has apparently been identified as a slave. That driver, a Negro named James, made a delivery of "eleven barrels of super fine flour" to Korn and Wisemiller in Alexandria on June 6, 1796 (Laise, 2017) Another wagon driver identified in the Hite Family Papers was Jeremiah Langley. In 1791, Langley was "discharged with delivery of wheat to their mill to be ground and hauling of flour from Alexandria when needed by Isaac Hite and Son." [HFP, vol. 3, doc. 7 and 8] This correspondence also describes the late eighteenth century pattern of wheat shipments "dispatched directly from larger farms and mills to markets in Alexandria" rather than passing through Winchester. (Hofstra and Mitchell 1993, 636)

Alexandria, with its merchants purchasing wheat and especially flour, continued to grow in importance as a trading port in the late eighteenth and early nineteenth centuries. But as the town's commerce grew, it faced increasing competition from Philadelphia. That city's rise to prominence was propelled in part by the rapid growth of grain farming in the interior of the Pennsylvania colony. (Mitchell 1977) The Philadelphia Wagon Road, which had served as the primary migration route Lower Shenandoah Valley Settlers had long served to establish an important, direct trade connection from the Lower Valley to Philadelphia and that city's expanding international trade connections allowed the Philadelphia merchants to establish a thriving trade with England in particular. On the return voyage from England to Philadelphia, the ships' holds were filled with English dry goods destined for colonial purchasers. The preeminence of Philadelphia as the supplier of numerous trade goods to Virginia farmers, including those in the lower valley, in the last decade of the eighteenth century was noted by Harry Toulmin who wrote that "The stores, or shops (in Winchester), are numerous and considerable. They obtain their goods from Philadelphia, Baltimore, and Alexandria, but principally from Philadelphia." (Tinling and Davies 1948, 57)

Interestingly, Alexandria was included in the trade network Philadelphia developed after the Revolutionary War. A note by the unnamed “editor” of the Hite Family Papers dates the earliest record of Hite trading with merchants in Philadelphia to 1790: The editor noted that among the goods for sale in Hite’s general store, “Isaac Hite and Son,” were goods brought from Philadelphia, where typically they were ordered by a “factor” or “friend/associate” of the Hites in that city. Once the goods had been received by the factor in Philadelphia, they were “sent...by packet ship to a merchant in Alexandria, who served as a middleman.” The goods were then shipped from Alexandria to the Hites by the middleman, who also billed the Hites for the goods and, upon receipt of payment, would transfer the funds received to the Philadelphia merchant.” (HFP, vol. 4, doc. 8, editor’s Introduction and HFP, vol. 4, doc 9) The Hite family papers reveal that the Philadelphia merchant the Hites dealt with in 1790 was the Philadelphia firm, Clow and Company, from whom the Hite’s General store, trading as “Isaac Hite and Son,” received unspecified goods. The middleman for the Hites’ transactions with Clow and Company was Josiah Watson and Company of Alexandria. (HPF, vol. 4, doc 9)

The mercantile firm of Andrew Clow & Co. of Manchester, England, operated a store in Philadelphia as early as 1784. In the mid-1780s, the firm sold a variety of goods, including pillows, gloves, and wool and linen drapery. The firm also offered for sale imported items from England, including handkerchiefs and printed calicoes (see *Pennsylvania Packet*, and *Daily Advertiser* [Philadelphia], 25 Sept. and 17 Nov. 1784, and 21 Nov. 1786). In 1791, Clow’s store was located at 20 South Front Street, Philadelphia. (Andrew Clow & Company 2019) The Hite family papers also document that the family was continuing to trade with Philadelphia merchants in 1795 when William Wister, Isaac Hite, Jr.’s “factor” in Philadelphia, purchased household goods including forks, knives and clothes on behalf of Isaac Hite and Sons, Hite’s general store (HFP, Vol. 4, doc. 37)

The Hite Family Papers include more extensive records of trade with Philadelphia merchants for the period 1796-1802, In 1796, Wister, on behalf of Isaac Hite, Jr., purchased unnamed goods “to furnish” Belle Grove from at least six merchants in Philadelphia including Joseph Anthony, Jr., Roland Perry, John Guest and Co., Thomas Dobson, Pasquier and Co. (Fig. 6.9) and Daniel King. (HFP, vol. 4, doc. 54-59) Wister purchased sherry, wine and mediera for Hite from John Donaldson; (HFP, v. 4, doc. 70) cloth, ribbon, looking glasses, and whetting stones from Leonard Jacoby(HFP, vol. 4, doc. 39); and cloth and clothing from Edward Fox, (HFP, vol. 4, doc. 38) all of Philadelphia. Unnamed agents or factors made purchases for Isaac Hite, Jr. of additional household goods from at least six additional Philadelphia merchants including Henry Manley, and Daniel Brautigam. (HFP, vol. 4, doc. 41 and 63) Hite purchased raisins, almonds and citron from Adam Foulke in 1796 (HFP, vol. 4, 68) and that same year purchased Hite purchased household goods as well as some agricultural equipment including horse equipment, sickles and scythes from Twamley & Shoemaker in 1796. (HFP, vol. 4, doc. 40) William Wister, already identified as Hite’s factor and agent for purchasing goods from Philadelphia apparently purchased unspecified goods from several merchants who are presumed to have had stores located in Philadelphia but whose location remains has not been as yet documented. Included among those

presumed Philadelphia merchants are Jonathan Donaldson, L. Jacoby, Nottnagel, Monmolein and Co., Daniel King, Robert Haydock, and Charles Young. (HFP, vol. 4, doc. 43) Records of the accounts of Col Isaac Hite housed at the Virginia Historical Society in Richmond, Virginia note three men, or possibly firms, with whom Hite was trading between 1771 and 1773 but whose business locations have not been documented: John Phillips, Jacob Stump, and John Vannote. The location of another firm, Wiatt and Anderson, which whom the Hites traded in 1782, 1783, and 1784, is also unknown. The purchases from Wiatt and Anderson, may have been for goods that were sold in the Hite's store. (From VHS 1298, 1295 & 1296)

It is not clear from the available Hite correspondence whether the Hites sold flour directly to any Philadelphia merchants in this period. But, numerous Alexandria merchants had connections to Philadelphia and Isaac Hite, Jr. traded with several Alexandria merchants who also served as factors for trade with merchants in Philadelphia and Baltimore including William Wister and Joseph Stover who procured pewter and unspecified goods for Belle Grove from George Lauman of Philadelphia between 1794 and 1797 (HFP, vol. 4, doc. 44-45). Korn and Weismiller, in Alexandria purchased paint from Samuel Weatherill and Sons in Philadelphia which was shipped to Hite in 1796 (HFP, vol. 4, doc. 47 and 48). That same year Korn and Weismiller of Alexandria served as middlemen for the purchase of snuff, tobacco, paper and sugar from the Philadelphia firms of Thomas Leiper and Co. and Peter and Henry Miercken (HFP, vol. 4, doc. 67 and 6). Alexandria Merchant, William Hodgson, is also noted as having a Philadelphia connection providing cloth from that city to Hite through an unknown factor [HFP, vol. 4, doc. 64]. Hite purchased a variety of goods from numerous other Philadelphia merchants in 1796. He purchase cloth from Philip Nicklin and Co. (Fig. 6.10) Alexander Fullerton, John. N. Hagenau, Joseph Riddle and Co., and George Herberton [HFP, vol. 4, doc. 60, 61, 62, 65, and 66] . For each of these transactions, Hite's agent or factor is unknown. Window glass for Belle Grove was purchased from Daniel and Vincent Thuun of Philadelphia (Fig. 6.11) in 1796, through an unnamed factor as well [HFP, vol. 4, doc. 49].

The location of some additional merchants with whom Hite traded in this period also remain unknown. In 1794, William H. Booth purchased, on behalf of Hite, flooring for Belle Grove from the firm of Samuel Lothal (HFP, vol. 4, doc. 46). The locations of both Lothal's and Booth's businesses, however, are unknown, as is the location of merchant Robert Haydock from whom Hite purchased pipe and lead sheet for the construction of Belle Grove in 1796 (HFP, vol. 4, doc. 50) and Paul Beck, Jr. from whom Isaac Hite Jr. purchased coffee and pepper in 1796 (HFP, vol. 4, doc. 72).

The Hite's commercial interactions with Baltimore merchants seems to have been far less numerous at the end of the eighteenth century than those with Philadelphia merchants. Only one transaction with a Baltimore merchant is noted in the Hite papers during the period from 1790 to 1802. That transaction occurred in 1802 when Hite's factor, John Comegys purchased household goods, including linen, from an unnamed Baltimore merchant.(HFP vol. 4. Doc. 91) By the fourth decade of the nineteenth century,

transportation to Baltimore had been transformed by the coming of the railroad, first to Point of Rocks on the Potomac and then in 1834 to Harper's Ferry. With the rail connection to Baltimore now within easy reach, Hite's transactions with Baltimore merchants increased and appear to have included the sale of Hite flour. In 1834 Isaac Hite was corresponding with Baltimore businessman Samuel F. Merritt, who in a letter to Hite dated 14, Aug 1834 addressed the "subject of transmitting your produce and making your purchases in this city." In his letter to Hite, Merritt was apparently responding to a July letter he had received from Hite inquiring about selling flour in Baltimore. Merritt noted "our mutual family relatives in Virginia" and "carefully explained to Hite how his flour would be marketed and . . . shipped . . ." Merritt also noted to Hite that his "house will transact for yourself & friends under my supervision viz: on receipt of flour. Merritt explained the terms of the business arrangement and apparently eager to get business from Hite's region, Merritt noted that:

" . . . if you think that an amount of produce from your section of the Valley could be directed to Baltimore to make the agency of consideration to a man of business, I would at once embark in it myself as is in my power to extend business facilities & justice to the parties so consigning to all necessary extent."

Merritt proposed "terms" "on the receipt of flour" and addressed coordinating the transport of wheat to Baltimore telling Hite he needed to find an intermediary agent since

" . . . you will have to wagon to Harpers Ferry, from that to the Point of Rocks in the canal [boat], at and from the point of Rocks the rail road company take charge and give receipts which last will deliver here [Baltimore] at 39 cents per barrel at the warehouse door; at Harpers Ferry they will engage (i.e. there are persons there who will engage) for 34 cents per barrel deliverable here . . ."

Merritt concluded by advising Hite that "Should you make the experiment, direct the agent at the ferry to consign the produce to Edward Beatty & Company, Baltimore...the return freight, salt, plaster...should be subject to a similar regard..." (Samuel Merritt to Hite 1834)

Isaac Hite Jr.'s correspondence also shows that in 1835 he purchased salt, beans, and coffee from Baltimore merchant W. H. Beatty. In 1836, the year the railroad reached Winchester, Hite sold flour to Beatty. By the 1840's, the Hite's were shipping flour to another sales agent in Baltimore, Charles Dent (C.D) Hinks, who was in the grain business with his brother, Samuel, a future mayor of Baltimore. (Archives of Maryland 2019 and Samuel Hinks 2019) In return, the Hites were purchasing plaster from Hinks for use on their agricultural fields. In 1841, Hinks shipped 21 tons of plaster to the Hites. During the period of 1842 – 1844 Hinks was acting as the agent for the firm of Hite and Burgess which shipped flour to the Baltimore market (Hite family papers Vol. 1, folder 1) To date, no additional correspondence or evidence regarding the firm of Hite and Burgess has been discovered. Nor is it clear from the correspondence which members of the Hite family were dealing with Hinks or other Baltimore merchants.

A series of letters sent between January 1843 and June 1844 from C.D. Hinks to the firm of Hite and Burgess reveals the hazards of wheat and flour trading at near mid-century. The correspondence begins with a letter written in January 1843 from Hinks to Hite & Burgess warning Hite about a shipment of unsound wheat. Hinks tells Hite that "The inspectors have been grumbling for some time about it but only begin to reduce it this week. Please be careful or your brand will get into bad repute." Hinks to Hite and Burgess January 1843) A second letter from Hinks (Hinks to Hite and Burgess February 10, 1843) informs Hite & Burgess that their wheat has indeed been downgraded by inspectors. Concerns about the quality of wheat shipped by Hite and Burgess reappear in June of 1844 letter from Hinks to Hite and Burgess. In that letter, Hinks informs Hite & Burgess that he is returning their shipment of flour because it is "no good." Included with the letter was an invoice for charges incurred (Hinks to Hite and Burgess June 1844) The impact of the Erie Canal on flour trading over the winter of 1843-4 is the subject of other letters from Hinks to Hite and Burgess. Replying to a query from Hite about anticipated profits for the flour they have shipped to Hinks, Hinks tells Hite that flour shipped from the Midwest via the Erie canal had, by December 1843 flooded the Baltimore market and was "wrecking" the market. Hinks reports to Hite that the market is still down in March of 1844. (Hinks to Hite and Burgess March 1844)

The correspondence in the Hite Family Papers reveals that the Hites traded with at least four other Baltimore merchants during the 1840's included Thomas Black, a wheat merchant, from whom the Hites purchased peanuts; J. D. Ridgely from whom the Hites purchased cloth; O. Parker from whom the Hites purchased iron; and Wiley Wilson from whom the Hites purchased spices and molassas.

There were also two Winchester merchants known to have traded with the Hites whose names appear in the correspondence, W. M. Miller and Sons from whom the Hites obtained coffee and miscellaneous goods and Baker & Bros, Grocers and Common Merchants, from whom the Hites purchased coffee and coal oil. (Hite family Papers, vol. 1, folder 1) The research of historians Clarence Geier and Phoebe Harding has also revealed that Long's Tavern in Winchester purchased Belle Grove whiskey. (Geier and Harding 2006, 222-3)

The Hite family papers also includes correspondence with several additional merchants with whom the Hites transacted business between 1836 to 1860, but whose business locations are not identified, including: John Bell from whom Hite purchased cotton, combs and screws in 1838 and, "material" in 1841); J. M. McGill from whom Hite purchased horse supplies in 1841; Dorsey and Bowley from whom Hite purchased alum and ammonia in 1841; Jos. Blackburn from whom Hite purchased carpet in 1841; P. S. Dorsey from whom Hite purchased shoes in 1845; Thos. Mathews (possibly Metheney) from whom Hite purchased cloth and carpet in 1847; A. Marker (planks of wood), W. Miller from whom the Hites purchased an oil lamp in 1855; Meade and Maryl from whom the Hites purchased roofing supplies and 5 tons of plaster in 1860; Jno M. Miller from whom the Hites purchased plaster in 1860; and J. B. Taylor & Co. from whom the Hites purchased material, alpaca,

cashmere, silk, and blankets in 1860. The correspondence reveals the purchase of unspecified goods from three additional firms, Rhodes and Dyer with whom the Hites traded in 1842-3; Thos. Hack & Co. with whom the Hites traded in 1842 and Baker and Brown, with whom the Hites traded between 1849-51. The list of merchants and trade goods provides a window into the trade network that served the Lower Valley in the mid-nineteenth Century. Most interesting are the trade goods purchased by the Hites for agricultural use including horse supplies, alum and ammonia, and plaster. (see folders 1, 3, 7, 8 and 9 Hite family papers vol 1.)

Several bonds from people owing money to the Hite General Store (Fig. 6.12 and Fig. 6.13), which traded as "Isaac Hite and Son" are also noted in the Hite Family Papers. Current documentation shows that the Hite store was active between 1789 (the year of the earliest bond noted in the family correspondence) and 1797 when the store was sold. A January 14, 1797 letter from Isaac Hite Jr. in among the family papers notes that Issac sold his general store because of financial problems describing that: "In consequence of an absolute want of money and a favorable opportunity occurring, I disposed of all my store to Isaac and Jack Williams from whom I bought their grantee claim in part payment for the goods." [HFP, vol. 1, doc 10, Jan. 14, 1797 letter] An unsigned note from the editor of the Hite Family Papers notes that the store was stocked with goods purchased in Philadelphia. That note may reflect the fact that the Hite Family Papers document that, in May of 1795, William Wister, Hite's factor, purchased goods for the Hites' store in Philadelphia. (HFP vol. 4 doc. 37)

The Family Papers also identify store patrons who had been extended credit by the Hites. Among the bonds held by Isaac Hite and Son were bonds from: John Cockrall, 1789 [HFP, vol. 3, doc. 5] William Evans, 1790 (paid in 1797), [HFP, vol. 3, doc. 6], Fergus Cron, 1794 ,[HFP, vol. 3, doc. 8] and Jeremiah Langley, 1791. Langley's bond was discharged by delivery of wheat to their mill "to be ground and hauling of flour from Alexandria when needed." [HFP, vol. 3, doc. 7] Notes extended to merchants by the Hites are referenced in the *Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite, Jr.* compiled in 1837. Merchants referenced in the Inventory along with the dates of their notes include: Blakemore and Long (1836), John Worndorff & Co (1837), I Smith and Co. (1837), and David Huff E Co. (1837). Specific goods noted in the inventory include an "Isaac Williamson note for 10 (barrels?) of flour" (1834), "Jacob Supinger Note for 5 ½ bus wheat," (1827) and "David Boch Note for 20 Bus Rye" (1826) (Inventory, 1837)

Although the available Hite family correspondence is far from complete, the extant records of transactions involving wheat or flour show that from 1790 and 1820 Wheat grown by Isaac Hite and Isaac Hite, Jr. was being milled in the lower Valley, likely at the Hites' own mill, and that the processed flour was being shipped by wagon to Alexandria. Until the closing of Isaac Hite and Son in 1797 much of the merchant trade was conducted through the Hites' general store. Trade with Baltimore increased after the railroad reached Harper's Ferry in the 1830's. Later records, from the period 1846-1863, reveal that the Hite family was selling their wheat to other local merchant mills including Cedar Grove Mill, Mill Brook Mill, Cedar Creek Mill, Star Mill, and Union Mill in Winchester. The Hites' correspondence

for these later transactions does not reveal the final destination of the processed wheat nor the means of transporting the flour to market. It is likely however, that with the coming of the railroads to the Lower Valley, the flour was shipped from the lower Valley by rail, either to Baltimore and/or (after 1853) Alexandria.

The ultimate destination of lower Valley flour sold to merchants is difficult to ascertain. Documentation of the merchant network that served the Hite's and other farmers in the lower Shenandoah Valley typically allows produce from specific farmers in the lower valley to be traced only until it was purchased by merchants and factors located in the port town and cities already noted. Historians generally know, however, which countries merchant and factors traded with during specific time periods. For example, Historian Thomas Priesser's study of Alexandria merchants has specifically identified international trade with Scotland, London, the West Indies, and the island of Madeira. (Priesser 1977, 141) Priesser has also identified four primary international markets for Virginia grain: England, the West Indies, Southern Europe, and the Wine Islands. He has also identified that trade increased with England as the result of a crop failure in 1774. (Priesser, 1977, 131) It is very rare, however to know the final overseas destination of a particular shipment of flour or other produce. While most of the correspondence in the Hite Family Papers does not reveal the final destination of the trade goods sold by the Hites, the Hite Family Papers do include letters that describe trade, or at least potential trade, between the Hite General Store and Taylor Ballantine and Laville, merchants in Kingston, Jamaica. A letter from Obed Lewis, of Taylor Ballantine and Laville, outlines for the Hites' that:

"Although our prices for flour and be no means high—yet from the reduced prices—with you we presume there will be no loss. In our opinion superfine flour is the safest quality to ship to this market and we think there is no probability of its being lower than at this time, but that towards the Hurricane season it may rather rise."
[HFP, vol. 4, doc. 11]

Lewis' letter is assumed to have been sent sometime before March of 1792 since a receipt in the Hite Family Papers records that Hite and Son shipped that month 119 barrels of superfine flour to Jamaica in March 1792. [HFP, v. 4, doc. 12]. Hite's factor in the sale of flour to Taylor Ballantine and Laville was Col. George Gilpin of Alexandria. It seems likely that a principal in the firm of Taylor, Ballantine, and Laville was John Taylor (or Tailyour) "who had apprenticed as a tobacco factor in Virginia until 1775. It is known that "Taylor had worked for "George McCall & Co. in Fredericksburg, Virginia and later worked as a factor and trader in Glasgow, Virginia, and New York before moving to Jamaica in 1782." [Morgan 2018, 336] By March of 1783 Taylor was in Kingston and working, according to Nicholas Radburn, as a "town factor," a role that "involved selling rum & sugar and ca' and supplying the [plantations] with...articles ... such as lumber, flour, & ca,' all for a commission"- a "similar business to the Virginia tobacco trade." But one "that provided a safe and steady stream of relatively small receipts." (Radburn 2015, 152 and 254)

Historian Kenneth Morgan has also identified Taylor as “established in Kingston in handling plantation supplies and dry goods in the firm of McBean, Ballantine & Taylor.” Researching more deeply into Taylor’s business activities in Jamaica, Morgan has determined that sometime between 1785 and 1791 Taylor became what was known as a “Guinea factor.” According to Morgan: “Guinea factors – were the businessmen and the “key personnel in slave sales in the late eighteenth century British Caribbean. (Morgan 2016, 337]With his experience as a Guinea Factor, Taylor then formed the firm of Taylor, Ballantine & Fairlie with two Scottish partners James Fairlie and Peter Ballantine ((Morgan 2016, 336) Their firm “concentrated their slave sales on Kingston, the main port in Jamaica and the leading disembarkation center in the British Atlantic world for enslaved Africans throughout the eighteenth century,” [Morgan 2016, 337]

Review of the Hite Family Papers and the research conducted thus far has not revealed any correspondence or evidence confirming trade between the Hites and Taylor, Ballantine & Fairlie. However, Hite’s correspondence with Taylor’s representative in Jamaica reveals that the shadow of slavery was cast upon every aspect of the agricultural economy engaged by lower Valley farmers.

Chapter 6: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Allason Shenandoah Store Account Books, Ledger B, October 1762- September 1763, Library of Virginia

“Alexandria Lodge No. 39, Alexandria, Virginia, 1783-1788”

<http://www.aw22.org/documents/Lodge39.pdf> Accessed August 14, 2019

“Andrew Clow & Company,” *The Papers of George Washington Digital Edition*, ed. Theodore J. Crackel. Charlottesville: University of Virginia Press, Rotunda, 2008.

<http://financial.gwpapers.org/?q=content/andrew-clow-company> Accessed August 14, 2019

Archives of Maryland, “Samuel Hinks, (1815-1887), MSA SC 3520-12475,”

<https://msa.maryland.gov/megafile/msa/speccol/sc3500/sc3520/012400/012475/html/12475bio.html> Accessed August 14, 2019.

“Author James Madison”

<https://wwwFOUNDERS.archives.gov/?q=%20Author%3A%22Madison%2C%20James%22&s=1111211111&r=1> Founders on line, National Archives, 2018, [Accessed August 14, 2019](#)

“Colin and James Ross To James Madison,” 19 May, 1803,
<https://wwwFOUNDERS.archives.gov/?q=%E2%80%9Cto%20James%20Madison%20from%20Colin%20and%20James%20Ross%2C%2019%20May%201803%E2%80%9D%20&s=1111311111&sa=&r=3&sr=> Accessed 08.01.19

and

<https://FOUNDERS.archives.gov/documents/Madison/02-05-02-0016> Accessed 08.01.19

“Colin and James Ross To James Madison,” 13 July, 1803, Accessed 08.01.19
<https://wwwFOUNDERS.archives.gov/index.xqy?q=%E2%80%9Cto+James+Madison+from+Colin+and+James+Ross%2C+19+May+1803%E2%80%9D&s=1111211111&sa=&r=1&sr=>
Accessed 08.01.19

Crothers, A. Glenn, “Quaker Merchants and Slavery in Early National Alexandria, Virginia, in: *Journal of the Early Republic*, 25, (Spring 2005) pp. 47-77

Egnal, Marc, “The Changing Structure of Philadelphia’s Trade with the British West Indies, 1750-1775” in *The Pennsylvania Magazine of History and Biography*, vol. 99, No. 2, April, 1975, p. 156-179. <https://journals.psu.edu/pmhb/article/viewFile/43135/42856> Accessed July 7, 2019

“Founders Online,” National Archives,
<https://wwwFOUNDERS.archives.gov/?q=%20Author%3A%22Madison%2C%20James%22&s=1111211111&r=1> Accessed August 14, 2019

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Gilpin, W. Freeman, “The Grain Trade of Alexandria, Virginia, 1801 – 1815,” in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History,

Hamrick, Charles, *Virginia Merchant: William Hodgson of Alexandria: His Daybook for 1800-1803*, Athens, Georgia: Iberian/New Papyrus Publishing, 2011

Hart, Emma and Cathy Matson, “Situating Merchants in Late Eighteenth-Century British Atlantic Port Cities,” in: *Early American Studies: An Interdisciplinary Journal*, University of Pennsylvania Press, Vol. 15, no. 4, Fall 2017, pp. 660-682

Henretta, James A., “Families and Farms: Mentalite in Pre-Industrial America, in *The William and Mary Quarterly*, Vol. 35, no. 1 (Jan., 1978) pp. 3-32 <https://jstor.org/stable/1922569>
Accesses 01.07.2019

Hilliard, Tabatha, Keri Sansevere, and James Harrison, "A Home, a Seminary and a School: Remembering the Ross House," <https://tcnj.academia.edu/TabithaHilliard> Accessed 073019 and at [https://www.academia.edu/21874224/A Home a Hotel and a School Remembering the Ross House Union House](https://www.academia.edu/21874224/A_Home_a_Hotel_and_a_School_Remembering_the_Ross_House_Union_House) Accessed 073019

"Hinks to Hite and Burgess," January 10, 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia

"Hinks to Hite and Burgess," February 10, 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

"Hinks to Hite and Burgess," December 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

"Hinks to Hite and Burgess, March 1844," Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia, 1

"Hinks to Hite and Burgess, June 1844," Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

"Shipping Flour Receipts," for flour Shipped to Korn and Wisemiller in Alexandria (1796) Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia, doc. 14-33

Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:

HFP, v. 1 Folder 1, 2, 3, 7, 8, and 9

HFP, v. 1, doc 9

HFP, v. 1, doc 10, Jan. 14, 1797 letter

HFP, v. 2, doc 43-44

HFP, v. 2, doc. 55-57

HFP, v. 3, doc. 5, 6, 7, and 8

HFP, v. 4, doc. 8, editor's Introduction

HPF v. 4 doc 9

HFP, v. 4, doc. 11 and. 12

HFP, v. 4, doc. 37

HFP, v. 4, doc. 54-59

HFP, v. 4, doc. 70
 HFP, v. 4, doc. 39
 HFP, v. 4, doc. 38
 HFP, v. 4, doc. and 63
 HFP, v. 4, 68
 HFP, v. 4, doc. 40, 41
 HFP, v. 4, doc. 43, Editor's note indicates that William Wister was a "factor" or agent for Hite,
 HFP, v. 4, doc. 44-45
 HFP, v. 4, doc. 46
 HFP, v. 4, doc. 47 and 48
 HFP, v. 4, doc. 49
 HFP, v. 4, doc. 50
 HFP, v. 4, doc. 60, 61, 62, and 63
 HFP, v. 4, doc. 64, 65, and 66
 HFP, v. 4, doc. 67, 68, and 69
 HFP, v. 4, doc. 72
 HFP, vol. 4, docs. 84-87
 HFP, v. 4, doc. 89 (editor's note): Both Korn and Wisemiller and Robert Young were Alexandria merchants who handled Hite's flour shipments
 HFP, v. 4. Doc. 90
 HFP, v. 4. Doc. 91
 HFP, vol. 4, doc. 93
 HFP, vol. 4, doc. 99
 HFP, v. 4, doc. 89 (editor's note): Both Korn and Wisemiller and Robert Young were Alexandria merchants who handled Hite's flour shipments.
 Samuel F. Merritt to Isaac Hite, Jr. Baltimore, August 14, 1834, (see HFP, vol. 4, doc. 100 and VHS 1304 & 1305

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Hofstra, Warren R. and Robert D. Mitchell, "Town and Country in Backcountry Virginia: Winchester and the Shenandoah Valley, 1730-1800," in *The Journal of Southern History*, Vol. 59, No. 4, November, 1993

"Inventory and Appraisalment of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16&17 January 1837," by the executors and George Brinker, David Stickley, and George Bragg appraisers

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

"Korn and Wisemiller Building, 202 South Saint Asaph & 502 Prince Streets, Alexandria, Independent City, VA," HABS # VA-704 Historic American Building Survey, 1975
<https://www.loc.gov/item/va0142/> Accessed July 30, 2019

Laise, Kristen, "Were the Hites 'Nice' or 'Kind' to the People They Enslaved" [a training document dated Feb. 25, 2017, Cedar Creek and Belle Grove National Historical Park Archives

Malone, Miles, "Falmouth and the Shenandoah: Trade before the Revolution," in: *The American Historical Review*, vol. 40, no. 4 (July, 1935), p. 693-703.
<http://www.jstor.org/stable/1842420>
Accessed: November 25. 2018

Miller, T. Michael, *Artisans and Merchants of Alexandria Virginia 1780-1820, vol. 1*, Bowie, MD: Heritage Books, 1991

Miller, T. Michael, *Artisans and Merchants of Alexandria Virginia 1780-1820, vol 2*, Bowie, MD: Heritage Books, 1992

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Mitchell, Robert D. "From the Ground Up: Space Place and Diversity in Frontier Studies," in., *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, Michael J. Puglisi, ed. Knoxville: The University of Tennessee Press, 1997

Mitchell, Robert D. and Warren R. Hofstra, "How Do Settlement Systems Evolve? The Virginia Backcountry During the Eighteenth Century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995

Morgan, Kenneth, "Merchant Networks, the Guarantee System and the British Slave Trade in Jamaica in the 1790's," in *Slavery & Abolition*, vol. 37 no.2, 2016, pp. 335-352 at: <http://dx.doi.org/10.1080/0144039X.2015.1116305> (2016 Accessed November 25, 2018)

Pawlett, Nathaniel Mason, "A Brief History of the Roads of Virginia 1607-1840 (Revised), Charlottesville: Virginia Highway & Transportation Research Council, 2003.

Peterson, Arthur G., "The Alexandria Market Prior to the Civil War," *William and Mary Quarterly*, Vol. 12 – Series 2, 1932, pp. 104-114.

Peterson, Arthur G., "Flour and Grist Milling in Virginia," in *The Virginia Magazine of History and Biography*, Vol. XLIII, no. 2, April, 1935. p 97-108.

Thomas M. Preisser, *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776*, College of William and Mary, 1977

Thomas M. Preisser, "Alexandria and the Evolution of the Northern Virginia Economy, 1749-1776, in *The Virginia Magazine of History and Biography*," vol. 89, No. 3, July, 1981

Radburn, Nicholas, "Guinea Factors, Slave Sales, and the Profits of the Transatlantic Slave Trade in Late Eighteenth-Century Jamaica: The Case of John Tailyour," in: *The William and Mary Quarterly*, vol 72, no. 2, April 2015, 3rd series, pp. 243-286

Sprouse, Edith Moore, *Colchester: Colonial Port on the Potomac, Fairfax, Virginia*, Fairfax County Office of Comprehensive Planning, 1992

"Samuel Hinks," https://en.wikipedia.org/wiki/Samuel_Hinks Accessed August 14, 2019

Samuel F. Merritt to Issac Hite, Jr., "Selling Flour in Baltimore" (August 14, 1834) [HFP, vol. 4, doc. 100] and From VHS 1304 & 1305

Sarles, Frank B. Jr., "Trade of the Valley of Virginia, 1789 – 1860," Master's Thesis, University of Virginia, nd

"Stickley, Daniel, Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Tinling, Marion and Godfrey Davies, eds., *The Western Country in 1793: Reports on Kentucky and Virginia By Harry Toulmin*, San Marinno, Ca.: The Henry E. Huntington Library and Art Gallery, 1948.

Virginia Historical Society
VHS 1298, 1295 & 1296)
VHS 1304 & 1305

Watson, Josiah, The Papers of George Washington Digital Edition, ed. Theodore J. Crackel.
Charlottesville: University of Virginia Press, Rotunda, 2008,
<http://financial.gwpapers.org/?q=content/watson-josiah> Accessed July, 30, 2019

Whitmire, Mildred Edwards, "A Man and His Land: The Story of Jacob and Francis Madison Hite and the Cherokees," In the *Magazine of Jefferson County Historical Society* Vol. XLIV, Dec. 1978, p. 37-58

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 6:

Figures

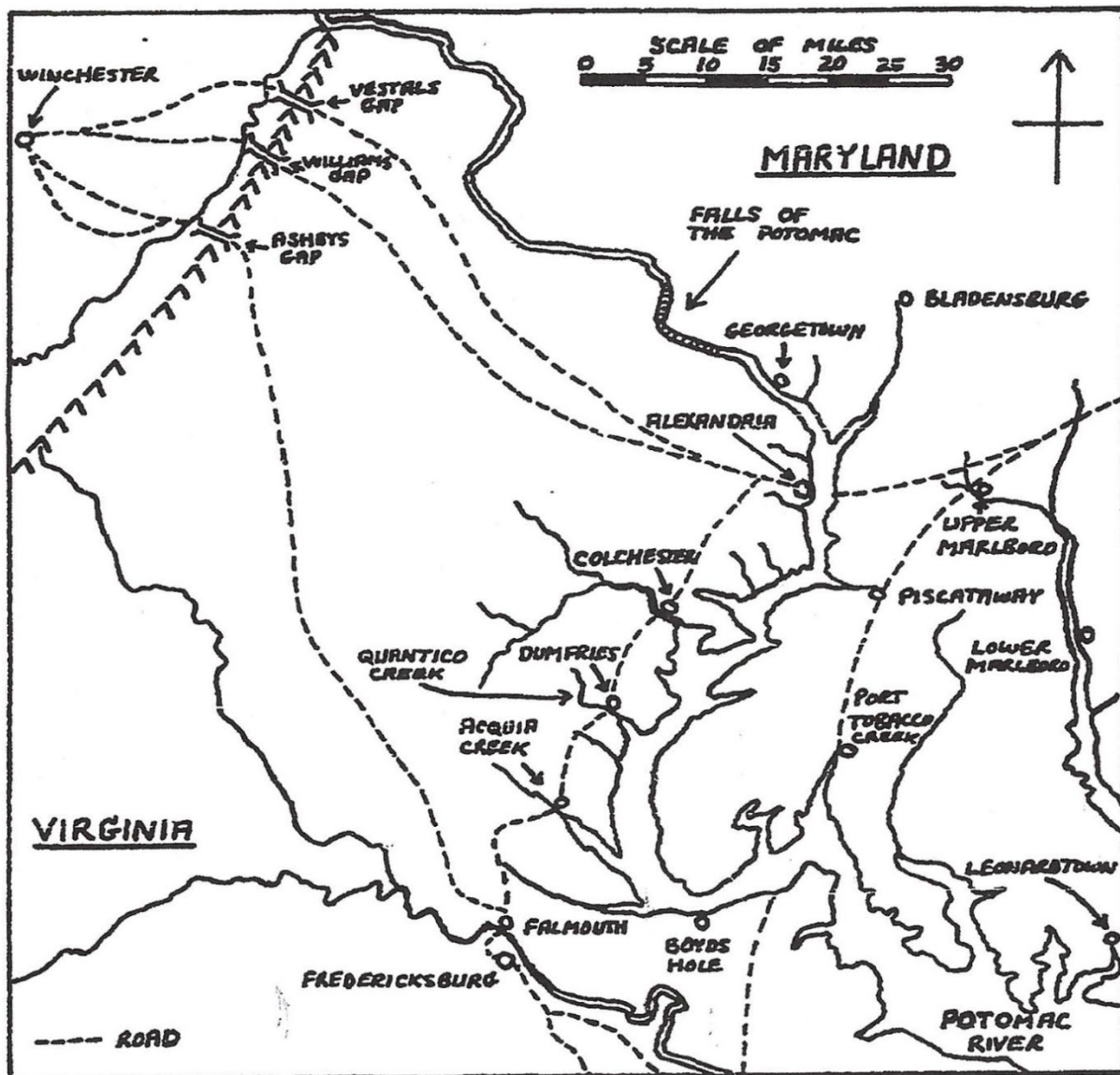


Figure 6.1 Northern Virginia ports and inland trade routes, c. 1775. From Preisser 1977.



Figure 6.2 The port of Colchester on the Occoquan River, c. 1862. From Sprouse 1992.

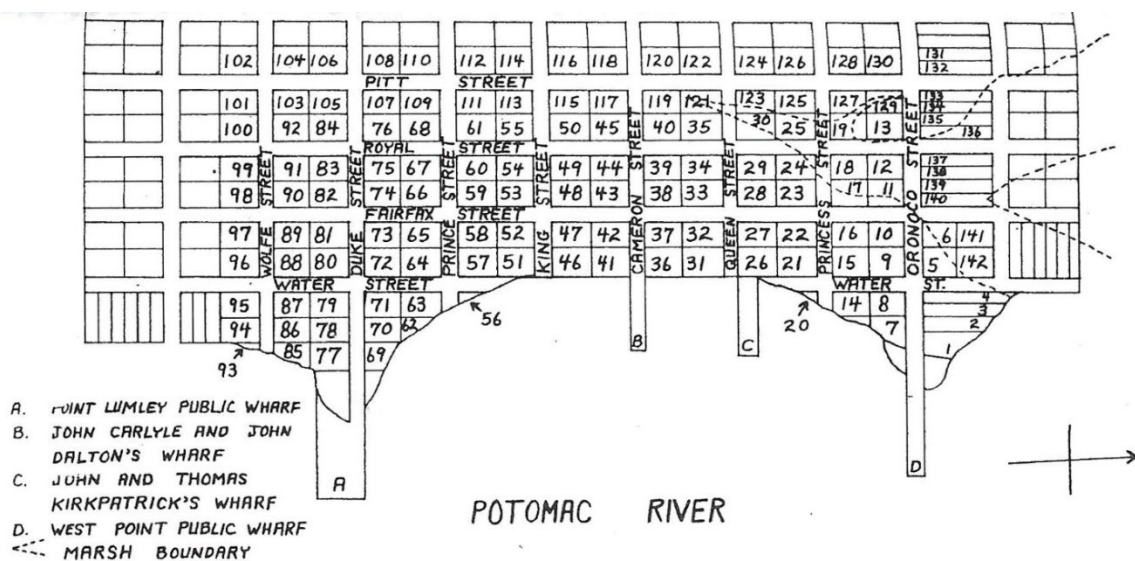


Figure 6.3 The deep-water port of Alexandria on the Potomac River, c. 1775. From Preisser 1981.

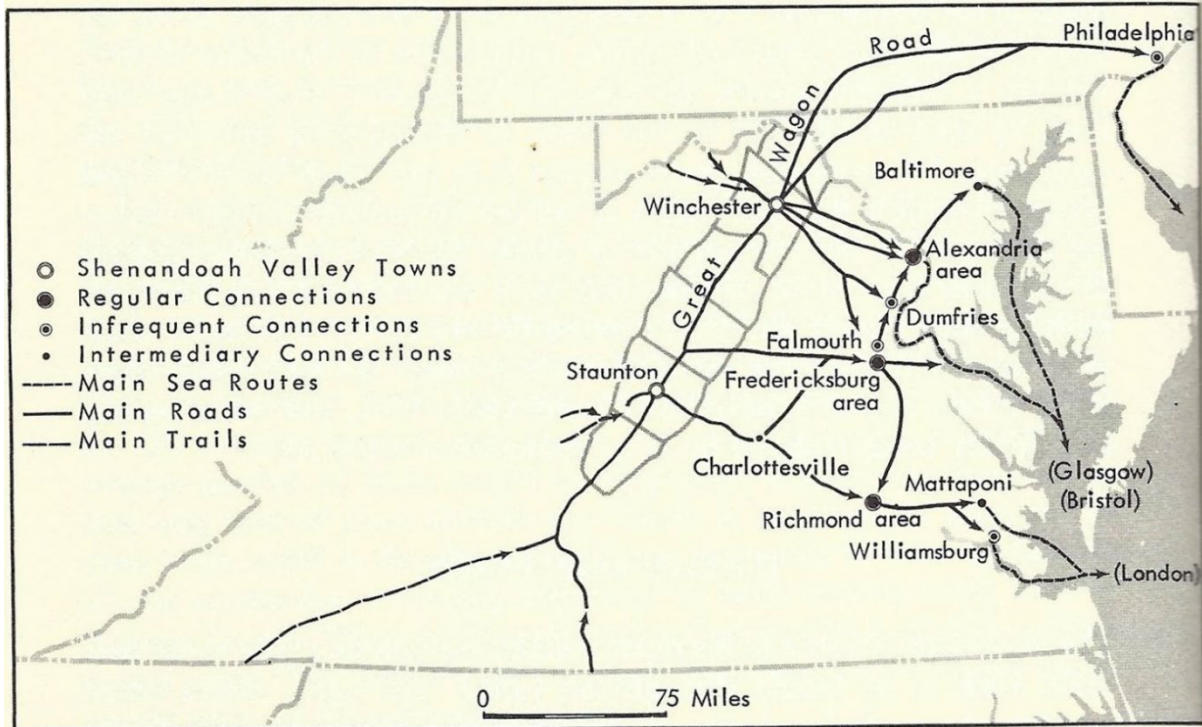


Figure 6.4 Shenandoah Valley trade connections to the eastern Virginia ports, c. 1760. From Mitchell 1977.

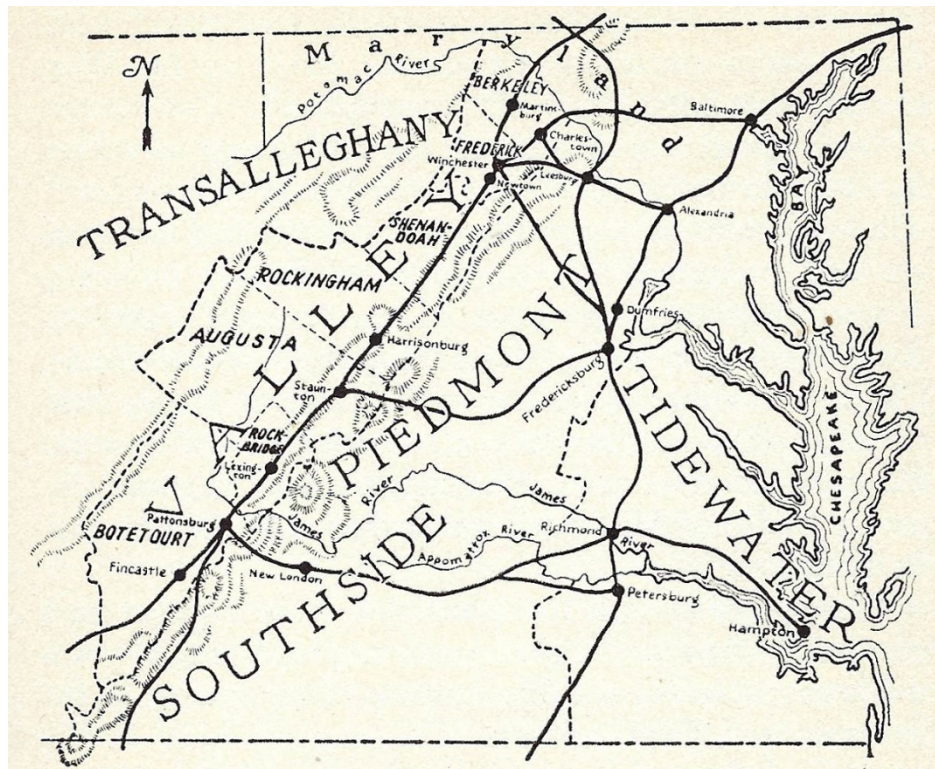


Figure 6.5 Trade Roads from the lower Shenandoah Valley to the northern Virginia Ports, c. 1786. From Hart 1942.

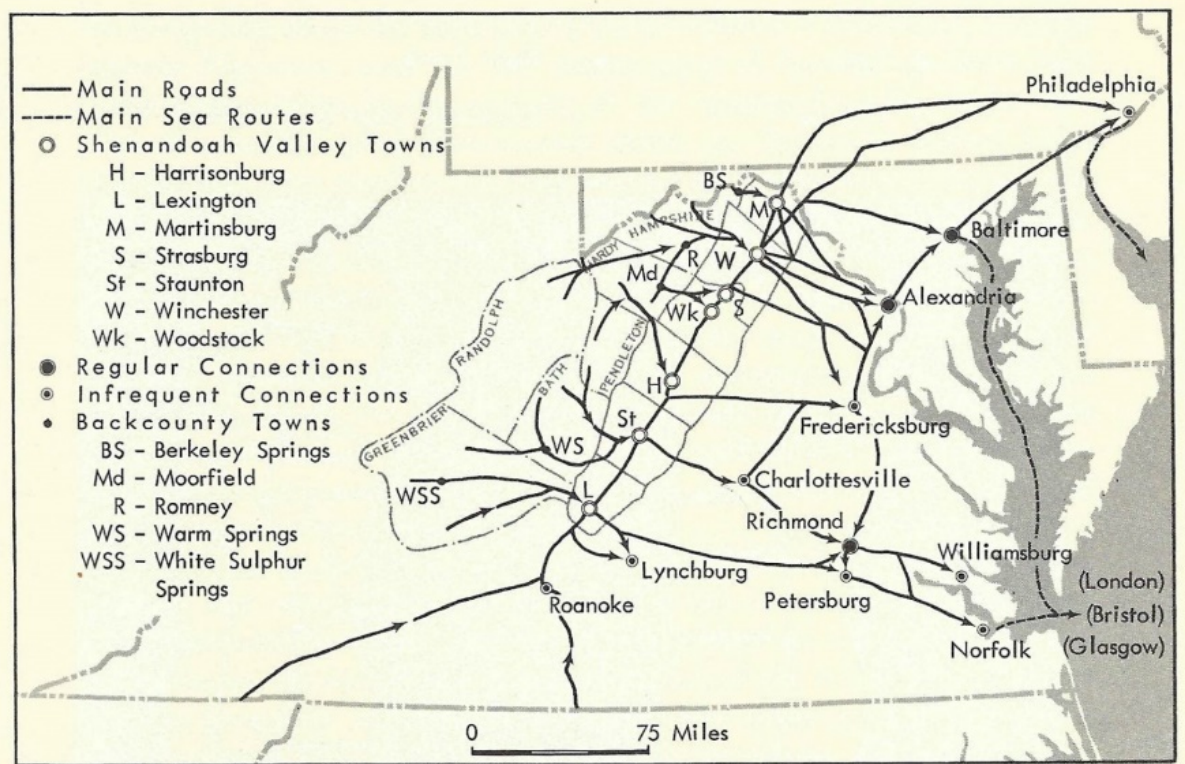


Figure 6.6 Shenandoah Valley trade connections to the Virginia ports, 1800. From Mitchell 1977.

Hite Family Trade Networks

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite, Jr.	Belle Grove	purchase	Shreve & Lawrason	merchants	Alexandria (SW corner of Prince and Union streets)	wagon				50 sacks rock salt, 42 bushels loose salt, 1 hogshead sugar, coffee, soal leather, needles, box of chocolates	1796		Blosser (n.d.), vol. 1, doc. 9; Miller (1992)	Goods for use at Belle Grove per HFP editor.
Isaac Hite, Jr.	Belle Grove	sale	Ricketts & Newton	merchants	corner of Prince and Fairfax streets, Alexandria	wagon	Korn and Weismiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	24 barrels flour	1796		Blosser (n.d.), vol. 1, doc. 9; Miller (1992)	Noted as "Hand's" flour. Stored with Ricketts and sold to Korn.
Isaac Hite Jr.	Belle Grove	purchase	Jonathan Clark	brother-in-law	VA somewhere		Colin & James Ross	mercantile firm	Frederick, Alexandria	not specified	1802		Blosser (n.d.), vol. 1, doc 18.	Not listed as Alexandria merchants in Miller (1991); listed in Fredericksburg in Spooner, 1795 <i>Herald</i> .
Isaac Hite Jr.	Belle Grove	purchase	Jonathan Clark	brother-in-law	VA somewhere			merchant	Richmond	not specified	1821 or prior		Blosser (n.d.), vol. 1, doc. 60	
Isaac Hite and Son (General Store)	Belle Grove	sale	Jeremiah Langley	miller	Frederick Co.	wagon		merchant	Alexandria	flour	1791		Blosser (n.d.), vol. 3, doc. 7	To clear debt at Hite General Store, Langley agrees to mill Hite flour and haul it from Alexandria.
Isaac Hite, Jr.	Belle Grove	sale							Baltimore	flour	1836		Blosser (n.d.), vol. 1, doc. 40	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Robinson, Sanderson & Co.	merchants	Fairfax Street, Alexandria	tombstone	1790		Blosser (n.d.), vol. 4, doc. 8; Miller (1992)	Ordered for store customer or Hite's sister Mary (Hite) McDonald.
Isaac Hite and Son (General Store)	Belle Grove	purchase	Josiah Watson and Co.	merchant	Alexandria		Clow and Co.*	merchantile firm	Philadelphia	unspecified	1790		Blosser (n.d.), vol. 4, doc. 9; Miller (1992)	*headquartered in Manchester, England
Isaac Hite and Son (General Store)	Belle Grove	purchase					Clow and Co.*	merchantile firm	Philadelphia	unspecified	1790		Blosser (n.d.), vol. 4, doc. 9	*headquartered in Manchester, England
Isaac Hite and Son (General Store)	Belle Grove	purchase					Bill Jackson and Evans		Philadelphia	cloth	1792		Blosser (n.d.), vol. 4, doc. 10	
Isaac Hite and Son (General Store)	Belle Grove	sale	Col. George Gilpin	merchant	Alexandria		Taylor Ballantine and Laville	mercantile firm	Kingston, Jamaica	flour	1792		Blosser (n.d.), vol. 4, doc. 11, 12	Hite flour sent to Jamaica in exchange for 4 hogheads of sugar, 5 barrels of coffee
Isaac Hite and Son (General Store)	Belle Grove	sale	Col. George Gilpin	merchant	Alexandria		Taylor Ballantine and Laville	mercantile firm	Kingston, Jamaica	flour	1791 or 1792		Blosser (n.d.), vol. 4, doc. 11	Flour sent to Jamaica in exchange for 4 hogheads of sugar, 5 barrels of coffee
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, January	£0,58,6	Blosser (n.d.), vol. 4, doc. 14; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				1 barrel superfine, 9 fine flour	1796, April		Blosser (n.d.), vol. 4, doc. 15; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				14 barrels fine flour	1796, April		Blosser (n.d.), vol. 4, doc. 16; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				3 superfine, 12 fine	1796, May		Blosser (n.d.), vol. 4, doc. 17; Miller (1991)	Hites purchased 1/2 barrels of crackers
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				16 superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 18; Miller 1991	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				13 superfine, 1 fine	1796, May		Blosser (n.d.), vol. 4, doc. 19; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				15 barrels superfine	1796, May	\$11.50	Blosser (n.d.), vol. 4, doc. 20; Miller (1991)	

Figure 6.7 The Hite’s business network and trade as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society.

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 21; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 22; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				33 barrels superfine flour	1796, May	\$10 / \$12 in 60 days	Blosser (n.d.), vol. 4, doc. 23; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				16 barrels flour [grade not specified]	1796, May		Blosser (n.d.), vol. 4, doc. 24; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				13 barrels superfine flour	1796, June		Blosser (n.d.), vol. 4, doc. 25; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon			West Indies	11 barrels superfine flour	1796, June	\$9 superfine	Blosser (n.d.), vol. 4, doc. 26; Miller (1991)	Sloop "Liberty" named as delivering to West Indies
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia					household goods incl. forks, knives, clothe	1795, May		Blosser (n.d.), vol. 4, doc. 37	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia		Edward Fox		Philadelphia*	clothe, clothing	1796, May		Blosser (n.d.), vol. 4, doc. 38	*per editor's notes at docs. 37, 43.
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia		Leonard Jacoby		Philadelphia	clothe, ribbon, looking glasses, whetting stones	1796, May		Blosser (n.d.), vol. 4, doc. 39	See also editor's note at doc. 43.
Isaac Hite and Son (General Store)	Belle Grove	purchase					Twamley & Shoemaker		Philadelphia	household goods, locks, tea kettles, horse equipment, carpentry tools, mill saws, sickles, scythes	1796, May		Blosser (n.d.), vol. 4, doc. 40	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Daniel Brautigam		Philadelphia	German Testaments, German Lutheran Bibles	1796, May		Blosser (n.d.), vol. 4, doc. 41	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Godfrey Baker and Co.		Philadelphia	German Bibles	1796, May		Blosser (n.d.), vol. 4, doc. 42	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods, pewter	1797, March		Blosser (n.d.), vol. 4, doc. 44	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1794, Nov.		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1795, Oct.		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1797, May		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1794, June		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite Jr.	Belle Grove	purchase	William H. Booth				Samuel Lothal			pine floor panks for Belle Grove construction	1794, Dec.		Blosser (n.d.), vol. 4, doc. 46	
Isaac Hite Jr.	Belle Grove	purchase					Samuel Weatherill and Sons		Philadelphia	paint supplies for Belle Grove construction	1796, May		Blosser (n.d.), vol. 4, doc. 47, 48	From painter Robert C. Walton, Mount Holly, NJ
Isaac Hite Jr.	Belle Grove	purchase					Daniel and Vincent Thuun		Philadelphia	window glass for Belle Grove construction	1796, May		Blosser (n.d.), vol. 4, doc. 49	
Isaac Hite Jr.	Belle Grove	purchase					Robert Haydock			pipe, lead sheet for Belle Grove construction	1796		Blosser (n.d.), vol. 4, doc. 50	
Isaac Hite Jr.	Belle Grove	purchase					William Hodgson	merchant, debt collector for Robinson and Sanderson	207 Prince Street, Alexandria	nails for construction of Belle Grove	1796, June		Blosser (n.d.), vol. 4, doc. 51; Miller (1991)	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Joseph Anthony, Jr.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 54	

Figure 6.7 The Hite’s business network and trade as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society, continued.

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Roland Perry		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 55	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		John Guest and Co.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 56	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Thomas Dobson		Philadelphia	American Encyclopedia set, to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 57	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Pasquier and Co.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 58	Store located at 91 South Second St., Philadelphia.
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Daniel King		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 59	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Philip Nicklin and Co.		Philadelphia	cloth	1796, May		HFP, v. 4, doc. 60	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Alexander Fullerton		Philadelphia	cloth	1796, May		Blosser (n.d.), vol. 4, doc. 61	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		John N. Hagenau		Philadelphia	cloth, household goods	1796, May		Blosser (n.d.), vol. 4, doc. 62	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Henry Manly		Philadelphia	household goods	1796, May		Blosser (n.d.), vol. 4, doc. 63	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		William Hodgson	merchant	Philadelphia	cloth	1976, Nov.		Blosser (n.d.), vol. 4, doc. 64	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Joseph Riddle and Co.		Philadelphia	fabric, cloth	1976, Nov.		Blosser (n.d.), vol. 4, doc. 65	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		George Herberton		Philadelphia	cloth	1798, May		Blosser (n.d.), vol. 4, doc. 66	
Isaac Hite Jr.	Belle Grove	purchase	Korn and Weismiller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria		Thomas Leiper and Co.		Philadelphia	snuff, tobacco, paper	1796, May		Blosser (n.d.), vol. 4, doc. 67	
Isaac Hite Jr.	Belle Grove	purchase					Adam Foulke		Philadelphia	raisins, almonds, citron	1796, May		Blosser (n.d.), vol. 4, doc. 68	
Isaac Hite Jr.	Belle Grove	purchase	Korn and Weismiller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria		Peter and Henry Miercken		Philadelphia	sugar	1796, May		Blosser (n.d.), vol. 4, doc. 69	
Isaac Hite Jr.	Belle Grove	purchase	William Wister				John Donaldson		Philadelphia	sherry, wine, madiera	1796, May		Blosser (n.d.), vol. 4, doc. 70	
Isaac Hite Jr.	Belle Grove	purchase					Paul Beck Jr.			coffee, pepper	1796, May		Blosser (n.d.), vol. 4, doc. 72	
Isaac Hite Jr.	Belle Grove	purchase					Korn and Weismuller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria	Malaga wine	1796, June		Blosser (n.d.), vol. 4, doc. 73; Miller (1991)	
Isaac Hite Jr.	Belle Grove	purchase					Tanney and Irish		Alexandria	sugar	1797, July		Blosser (n.d.), vol. 4, doc. 74	
Isaac Hite Jr.	Belle Grove	purchase					Joseph Stover	Hite friend	Strasburg	iron (presumably for Belle Grove forge)	1798, March		Blosser (n.d.), vol. 4, doc. 75	
Isaac Hite Jr.	Belle Grove	purchase					unnamed	blacksmith		links, sharpening coalters (on plow) and steeple, mending pair of stretchers, horse shoes, spikes	1798, April		Blosser (n.d.), vol. 4, doc. 76	
Isaac Hite Jr.	Belle Grove	purchase	Robert Young	merchant, lawyer	King Street, Alexandria					27 barrels superfine flour	1802, May		Blosser (n.d.), vol. 4, doc. 89; Miller (1991)	to be sold in Alexandria
Isaac Hite Jr.	Belle Grove	sale	Colin & James Ross	Scottish merchants	Alexandria					12 tierces [casks], 3 barrels Belle Grove whiskey (about 870 gal.)	1801, Nov.		Blosser (n.d.), vol. 4, doc. 90	
Isaac Hite Jr.	Belle Grove	purchase	Colin & James Ross	Scottish merchants	Alexandria					9 tierces whiskey (638 gal.)	1802, June		Blosser (n.d.), vol. 4, doc. 90	
Isaac Hite Jr.	Belle Grove	purchase	John Comegys	factor	Baltimore					buys goods for Hite in Baltimore, incl. linen	1802, Oct.		Blosser (n.d.), vol. 4, doc. 91	

Figure 6.7 The Hite’s business network and trade as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society, continued.

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	sale					Longs Tavern		Winchester	Belle Grove whiskey			Geier & Harding (2006), vol. 2, pt. 1, pp. 222-23	
Isaac Hite Jr.	Belle Grove	unknown	David Boch							d20 bushels of rye	1826		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	Jacob Supinger							5 1/2 bushels of wheat	1827		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	sale	Samuel Merritt	"general commission merchant"	Baltimore	wagon to Harpers Ferry, canal to Pt of Rocks, railroad to Baltimore				flour	1834		Blosser (n.d.), vol. 1, doc. 100	Provides detailed explanation by Merritt of shipping process. Ed. suggests this is Hite's first dealing w/the Balt. market.
Isaac Hite Jr.	Belle Grove	unknown	Isaac Williamson							"10 bles of flour"	1834		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	Blakemore and Long	merchant						unknown	1836		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	John H. Orndorff & Co.	flour merchant	Baltimore (NE corner of Baltimore and Pace streets)					unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	I. Smith & Co.	merchant						unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	David Huff & Co.	merchant						unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	purchase	J. M. McGill							curry combs, horse supplies, etc.	1840	\$1.92	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 1, 1.01.9	
Isaac Hite Jr.	Belle Grove	purchase	C. D. Hinks & Co.	sales agent	Baltimore	Baltimore (?)				21 tons plaster	1841		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 6	
Isaac Hite Jr.	Belle Grove	purchase	A. Marker							wood planks	1842	\$18.95	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 2, 1.01.19, 19a	
Hite and Burgess	Belle Grove	sale	C. D. Hinks & Co.	sales agent	Baltimore	Baltimore (?)				flour	1842		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 8; Matchett's Baltimore Directory, 1842	
Isaac Hite Jr.	Belle Grove	sale and purchase	David Alexander	factor			Claggett and Sage		Alexandria	sold flour; purchased oysters, salt, molasses	1844		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 2, 1.01.30	
Isaac Hite Jr.	Belle Grove	sale	William B. Walter	millor (?)						100 or 1000 bushels of wheat	1846		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.34	Hite sells Walter wheat to be delivered to mill.
Isaac Hite Jr.	Belle Grove	sale	Joseph Mahoney	millor	Cedar Grove Mill					48 bushels of wheat	1852		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.41	
Isaac Hite Jr.	Belle Grove	purchase	Ruskin and Thompson							164 bushels (of wheat?)	1853		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr.	
Isaac Hite Jr.	Belle Grove	sale		millor	Mill Brook Mill					505 bushels of wheat	1853		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.43	
Isaac Hite Jr.	Belle Grove	purchase	Danner estate sale							farm equipment	1853		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite, Jr.	Belle Grove	purchase	W. Miller							lamp oil	1855		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale	Joseph Mahoney	millor	Cedar Creek Mill					125 bushels of wheat	1855		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4, 1.01.47a	

Figure 6.7 The Hite's business network and trade as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society, continued.

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	sale		miller	Mill Brook Mill					392 bushels of wheat	1856		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale		miller	Cedar Grove Mill					162 bushels of wheat	1857		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale		miller	Mill Brook Mill					249 bushels of wheat	1857		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	purchase	William Jenkins							bill for bones and crushing	1858		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase	Meade & Maryl							roofing supplies, 5 tons plaster	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase	Johnathan M. Miller							plaster	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	\$31 bill
Isaac Hite Jr.	Belle Grove	sale	Miller & Showalter	miller	Mill Brook Mill					122 bushels of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	sale	W. B. Walter	miller	Union Mill, Winchester					800 bushels of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5, 1.01.66	
Isaac Hite Jr.	Belle Grove	sale		miller	Star Mill					54 pounds of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase					J. B. Taylor & Co.			alpaca, cashmere, silk, blankets	1860	\$24.16	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5, 1.01.67	
Isaac Hite Jr.	Belle Grove	sale	C. W. Bush	miller	Mill Brook Mill					17 bushels of wheat	1863		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5	

Source Notes

"Handley" denotes material located in the Stewart Bell Jr. Archives at the Handley Regional Library, Winchester, Virginia.

Figure 6.7 The Hite’s business network and trade as extracted from the Hite Family Papers at the Handley Library, Winchester and the Virginia Historical Society, continued.



Figure 6.8 Korn and Weismiller's retail store in Alexandria, Virginia. From the Historic American Building Survey.

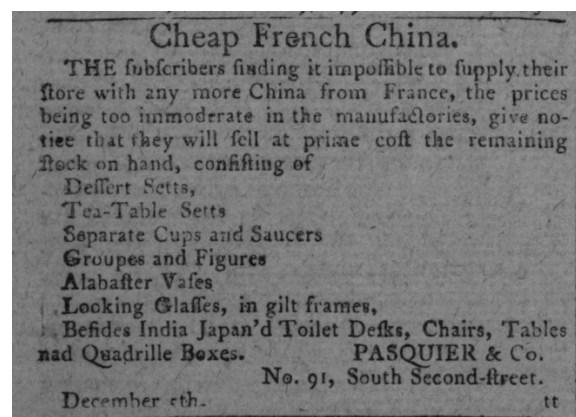


Figure 6.9 Advertisement for Philadelphia merchant Pasquier and Company, c. 1797.

CHINA GOODS.

THE Ship *ATLANTIC*, *Silas Swaine*, Commander,
from Canton, will commence the discharge of her
cargo to-morrow-morning at Walnut-street wharf

Consisting of

Yellow and white Nankeens of excellent quality
Persian Taffeties, black and coloured
Lustrings, do. do.
Sattins black of various qualities
Sewing silks in assorted colours
Vermilion in boxes
Cassia in chests
Quicksilver in jars


BOHEA,
SOUCHONG,
HYSON SKIN,
YOUNG HYSON,
BEST HYSON,
IMPERIAL, } **Fresh Teas.**

CHINA WARE, ornamental, with Table and Tea
Sets generally assorted.
WHITE SUGARS, and a quantity of
First quality Bengal SALT PETRE.

For Sale by
Philip Nicklin & Co.

April 8. t.th&s

Figure 6.10 Advertisement for Philadelphia merchant Philip Nicklin and Company.



Gazette Marine List.

PORT OF PHILADELPHIA.

Came up from the Port.

Schr. Eutaw, Ennis, P. Republican
Sugar, Coffee, &c. A. and V. Thuun.
Sloop Supply Smith, Kingston
Rum, Coffee, &c. T. & P. Mackie.

CLEARED.

Ship Elizabeth, Dyer, Hamburg
Sloop Alexander, Stites, Norfolk

No arrivals at the port.

The Philadelphia, Captain Parsons, arrived
at Leghorn the 14th June, from this port.
Ship Atalanta, Banbury, of and for Bal-
timore, 98 days from St. Sebastians, has ar-
rived at Reedy Island in distress, several of
the crew having died on the passage of the
Scurvy,
The Sch. Privateer La Fortune, captured
off the Havanna by the Ganges, has arrived
at Reedy island.

Figure 6.11 Daniel and Vincent Thuun, Philadelphia merchants, noted in Port of Philadelphia advertisement, c. 1800.



Figure 6.12 The Hite General Store at Belle Grove. The store traded as Isaac Hite and Son in the 1790's.



Figure 6.13 The Hite general Store at Bell Grove, aerial photo. The store was located just west of the Belle Grove house as this photo shows. Google Earth image 2019.

PART 2:

The Agricultural Landscape: Contributing Components

Chapter 7:

The Agricultural Landscape: Crops and Agriculture

Historians have recognized that the settlement generation that first came to the Lower Shenandoah Valley settled there in great measure because of the area's diverse resources and a natural environment that could be "harvested...and engaged in highly-self-sufficient, mixed-farm agriculture." (Hofstra and Geier 2000, 53) In particular, upon their arrival, the early settlers found in the Lower Valley "remarkably fine bottom lands and forest lands of "black and red oak, which is the mark of superior soil" and fertile uplands that could be transformed into "improved" upland pastures for livestock. (Tinling and Davies 1948, 49) Land selection for their agricultural enterprises was a critical first step for the early settlers and that first group of settlers, who came to the lower Shenandoah Valley led by Jost Hite, selected sites on the Hite patent lands that were not only well-watered and suitable for mill seats but were also lands "well adapted to wheat, grass, and red clover." (Tinling and Davies 1948, 48)

Land selection was a primary concern for the lower Valley's second generation as well. "A combination of historical circumstances and land attributes relating to geography and spatial location" focused the attention of the second generation of the Bowman and Hite families on the rich and varied lands found along Cedar Creek near the present-day Cedar Creek and Belle Grove National Historical Park. Those lands were located along the important limestone/shale interface and offered second generation farmers prime sites to implement and develop the practice of mixed agriculture farming. A practice that would evolve into a "grain-livestock complex" that would define successful lower Shenandoah Valley farming for the next two centuries. (Koons and Noyalas 2010, 15 and 40) The lands along Cedar Creek and within the Cedar Creek and Belle Grove National Historical Park were "propitiously located for commercial wheat farming and the conversion of wheat to flour." Those lands have been recognized as the:

"epicenter of wheat and flour production in the Shenandoah Valley. The fertile limestone-based soils of the river bottom lands were supremely well suited for the production of wheat, and the fast-flowing waters of Cedar Creek and its tributaries, as well as other nearby streams, provided ample motive power for turning grist mills' water wheels for the conversion of wheat to flour." (Koons and Noyalas 2010, 15)

The primary crops grown by farmers within the practice of "mixed agriculture" in the lower Valley included winter wheat, rye, barley and Indian corn. But other mixed agriculture crops grown in the lower Valley included short corn, oats, buckwheat, millet, and spelt. The so-called "English Grasses," red clover and timothy, were commonly grown to establish the more productive pastures needed to support livestock operations. (Koons and Noyalas 2010, 40; Hofstra 1997, 65; Hofstra and Geier 2000, 3; and Tinling and Davies 1948, 49-50) "Flax, for the home production of linen, has been identified as a key element of the crop mix as well." (Koons and Noyalas 2010, 40) The inventory of one early settler, James Vance, who had bought land in the Opequon Community from Jost Hite in 1742, provides a typical mix of crops that could be found on many early lower Shenandoah Valley farms. Vance grew barley, oats, wheat, rye, flax,

and hemp and he “farmed and kept livestock” including horses used for transport and plowing. Vance also raised sheep and the sheep’s wool was used in weaving. [Bragdon, 2009, 113]

From the time of the first settlement, a wide range of fruits and vegetables were grown primarily for home use. Research by historian John T. Schlebecker has revealed that, by 1850 “the people in the lower valley...ate heartily but they worked hard.” Wheat, corn, potatoes were staples. On average “possibly five to six bushels each of wheat and corn” were consumed by Valley residents each year along with “three bushels of potatoes.” According to Schlebecker, they also consumed “vague quantities of vegetables such as cabbage, beets, turnips, beans, carrots, celery, parsnips, and asparagus...[which] grew on nearly every farm in 1850.” Included in their diet was “the fruit and the juice, fresh and fermented, of apples, cherries, pears, peaches, grapes, raspberries, and strawberries. But mostly they ate meat,” primarily pork and beef, but also mutton and veal. “Chicken, turkey, duck, and goose” were consumed in “apparently large amounts” as well. (Schlebecker 1971, 464] Other fruits and vegetables grown in the lower valley, are noted in period documents and correspondence, including currents, lettuce, and radishes.

Few records have been found that reveal how the lower Valley’s early settlers obtained plants and seeds to establish their crops. It is likely that early settlers brought seed and some plants with them at the time of settlement. Farmers, for example, often planted fruit trees immediately upon their arrival and the establishment of new farms. Seed and plant exchanges among colonial planters and farmers were common. It is also likely that some seed from each harvest was saved for the next years planting. In time, with the establishment of the country’s first commercial nurseries in the late eighteenth century, farmers could purchase seeds and plants from horticultural importers and commercial nurserymen. Botanist John Bartram of Philadelphia, published the first plant catalogue by an American nursery in 1783 and both George Washington and Thomas Jefferson were known to have obtained plants from Bartram.

William Prince established a plant nursery on Long Island in 1791 and Prince’s catalogue of fruit trees and shrubs listed many of the fruits and berries grown by farmers in the lower Shenandoah Valley included cherries, apples, peaches, pears, grapes, raspberries, currents, and strawberries, along with gooseberries, mulberries, nectarines, and apricots. Another Philadelphia “seedsman,” Bernard McMahon, was in business by 1802-3 and publishing a broadsheet titled “A catalogue of Garden, Grass, Herb, Flower, Tree, & Shrub-Seeds, Flower-Roots, etc.” (Fig. 7.1) McMahon’s broadsheet is considered the first “seed catalogue to be published in America. (Bernard McMahon 2019) Included in McMahon’s catalogue were a list of seeds and roots to be specifically planted as agricultural crops. Among the agricultural seeds sold by McMahon were seeds for summer and winter wheat, Indian corn, spring and winter rye, hemp, timothy-grass, red and white clover, buckwheat, and millet, all agricultural crops known to have been grown in the lower Valley.

It is not known if McMahon sold seed to anyone in the Cedar Creek area but he did have a strong connection to Virginia. McMahon has been recognized as Thomas Jefferson’s “gardening mentor” as well as Jefferson’s favorite nurseryman. (Bernard McMahon 2019) Jefferson’s

Garden Book notes that he purchased grapes, currents, strawberries, raspberry, and gooseberry plants from McMahon in 1812. (*Thomas Jefferson* 1812)

One example of plants being purchased by a farmer in the Cedar Creek area is provided by ethnographer Kathleen Bragdon, who records that Daniel Stickley is known to have “imported fruit trees, and placed an order for Osage Orange trees.” (Bragdon 2009, 12) a durable thorny species native to the bottomlands in Arkansas, Oklahoma, Texas and Louisiana. How Stickley obtained the trees is unknown. Osage Orange was commonly planted to establish hedgerows or trained to grow into a living fence and nearly every farm appears to have had a small orchard. There are also occasional references to ornamental plants planted on area farms in the area of Cedar Creek. One example is a found in a letter from Ann T. Hite, who in 1828 noted that “We have had thus far the mildest winter I have experienced for several years. The honeysuckles have smart leaves, there has not been a week but we have got violets from the garden.” [HFP, vol. 2, doc. 29].

In the Settlement Era, many of the vegetables grown on lower Valley farms were grown for home use or, occasionally, for sale locally. But there is growing understanding that during the Settlement Era the farmers in the lower Valley were commercially oriented as well. They were alert early on for opportunities to produce cash crops and to bring excess agricultural production to regional and extra-regional markets. Specific evidence that individual lower Valley’s famers were actively growing and selling cash crops can be elusive since period business and sales records remain very limited. A close reading of existing period documents can, however, provide some support for the understanding that some crops provided harvests in excess of the needs of the farm family. One example of this type of evidence is found in the description of Stephen Hotsinpillar’s estate prepared after his death. In 1736 Hotsinpillar purchased a 450 acre tract of land from Jost Hite, where he farmed and practiced the trade of blacksmith.” At the time of his death, Hotsinpillar had eleven acres of wheat in the ground. Warren Hofstra has calculated that eleven acres of wheat would “feed a family of ten for a year.” Yet, “Hotsinpillar’s family at the time of his passing was considerable smaller.” (Hofstra 1997, 65) It seems likely then that Hotsinpillar’s additional wheat would have been sold and the money made from that sale made available for discretionary family use.

There is general agreement that the first cash crops raised by Valley farmers specifically for external markets were tobacco and hemp. “Both were grown to some degree throughout the region” but typically lower Valley farmers in the counties east of Winchester “produced a disproportionate share of the tobacco [while] upper-Valley farmers concentrated on hemp production.” (Koons and Noyalas 2010, 40) (Fig. 7.2 and 3) Historian Robert Mitchell asserts that the mixed farming structure of lower Valley agriculture was in place by 1750 and those changes to agriculture as practiced in the lower Valley that did occur after 1750’s were focused upon increasing production for specific outside markets. As a result, agriculture as practiced in the lower Valley was, according to Mitchell:

“a continuation of previous agricultural patterns. The mixed farming structure remained intact. No new major crops were introduced, and agricultural techniques remained

substantially unaltered. What was new, and what increased the rate of spatial and socio-economic change, was the increasing emphasis on production for outside markets.” “The sustained production of a “specific frontier produce for commercial purposes” occurred in the mid 1760s with the “development of commercial hemp production.” (Mitchell 1977, 162)

The importance of hemp as a commercial crop has been clearly identified by historian Freeman H. Hart. For Hart, “From the standpoint of a ‘money crop,’ hemp was the leading product of the Valley just before the Revolution.” (Hart 1942, p. 8) However, crop production in the lower Shenandoah Valley responded to local market conditions as well as major events that played out on the international stage. Robert D. Mitchell, for example, has described the Revolutionary War’s impact on the cultivation of hemp in the Shenandoah Valley, asserting that “the expansion of commercial hemp production was the most dramatic agricultural change of the [Revolutionary] war period. It has correctly been defined as a war-inspired industry.” Mitchell identifies the impact hemp production had on the larger agricultural landscape of the Shenandoah Valley asserting that “The emergence of wide-spread cultivation of labor-intensive hemp” provided “the first noticeable demand for Negro slaves among Valley farmers.” In contrast to hemp, wheat cultivation was much less labor-intensive and the processing of wheat into flour “was usually done off the farm at mill sites.” (Mitchell 1973, 125-126 and 128, see Footnote 18)

Wheat cultivation was also less labor intensive than the cultivation of tobacco and the historian John J. Zaborney has identified, the increase in wheat cultivation in Virginia began during the with the War of the Austrian Succession, which began in 1739. The war “made it difficult for Chesapeake producers to export tobacco to England...” Their tobacco shipments to England were targeted by Spanish and French naval forces in Chesapeake coastal waters and, according to Zaborney, the loss of tobacco shipments, combined with higher insurance rates, and “significant international demand for American grain” eventually led Virginia Planters to shift to increased wheat cultivation during the war. (Zaborney 2012)

Tobacco, however, would remain an important early commercial crop in the lower Shenandoah Valley, a crop that along with hemp, increased the demand for Negro slaves, who were needed for tobacco’s labor intensive cultivation. There is a strong argument that the first commercial agricultural crop of significance in the lower Valley was, in fact, tobacco. In a more recent study, Mitchell, along with co-author, Warren R. Hofstra, concedes that “... a few eastern Virginian planters,” who also had land east of Winchester had, by 1750, “introduced tobacco cultivation to the lower Valley. (Mitchell and Hofstra 1995, 138) The tobacco lands east of Winchester were part Frederick and Shenandoah Counties until 1836 when they became part of the newly formed Clarke and Warren Counties. (fig. 7.3) What is perhaps most significant about tobacco’s cultivation in the lower Valley is the understanding that, by 1750, production of tobacco in the lower Valley, while not large, had fostered trade with merchants who were located in port towns near the fall lines of several Virginia rivers, including both the Potomac and the Rappahannock. The lower Valley’s early tobacco trade was thus instrumental in helping to establish the economic structure of trade with eastern merchants and provide an

entré to trade with external agricultural markets. Those eastern merchants, as historians Emma Hart, Cathy Matson and David Hancock have recognized, were “out of necessity...international thinkers and actors who viewed the world as a connected series of markets that they could integrate and improve.” (Hart and Matson 2017, 663).

While hemp cultivation is seen to have increased significantly in response to the demands of the Revolutionary war, Mitchell asserts that “tobacco cultivation had all but disappeared during the Revolutionary War to be supplanted by more profitable crops. (Mitchell 1977, 179-80) Among the other, minor cash crops that were cultivated in the Shenandoah Valley were flax (for the production of linseed oil), ginseng and indigo. Only indigo, primarily grown in the Upper Valley, “had not been grown in the pioneer period.” (Mitchell 1977, 182) 150

Perhaps the most lasting agricultural impact of the French and Indian War was realized as a result of the increased production of wheat achieved by lower Valley farmers during the decade of the 1760’s:

“Until about the middle of the eighteenth century most wheaten flour was for local consumption. In the late 1750s, however, the need to feed troops fighting in the French and Indian War stimulated demand for flour, and Valley farmers responded by producing larger surpluses of wheat....because of changing market conditions in Europe and the West Indies...demand for flour on world markets had continued to rise so that by the late 1760’s prices for flour were high enough to offset the costs of its transportation to east-coast markets such as Alexandria, Baltimore, and Philadelphia.” Koons and Noyalas 2010, 41)

As a result of the demand for wheat brought about by the French and Indian War and increased demand for wheat and flour on the international market, it had become clear by the late 1760’s (fig. 7.4) that the “long term future of the regional economy lay in wheat.” (Koons and Noyalas 2010, 41) As historians Kenneth E. Koons and Jonathan Noyalas have identified:

“Valley farmers prospered during the final quarter of the eighteenth century as they allocated increasing proportions of their resources to wheat production...wheat had become the dominant cash crop of Shenandoah Valley farmers, and its production became the main engine of economic growth and development in the region.” (Koons and Noyalas 2010, 41)

Despite the temptations of profits that wheat could bring farmers in the lower Valley, the crop “never became a monoculture. Farmers produced burgeoning amounts of wheat but they did so within the diversity of enterprise that general mixed farming entailed.” (Koons and Noyalas 2010, 41)

While the move to less labor-intensive crops such as wheat reduced the number of slaves needed for profitable agricultural operations, it placed added emphasis on the temporary hiring of slaves by non-slaveholders at times of need. Historian John J. Zaborney has identified that

slave hiring could rescue “rural Virginia farmers from common agricultural problems of the early nineteenth century,” including drought, bad weather, and disease. Zaborney also notes that slaves were often hired to assist with bringing in a crop ready for harvest. Hired slaves according to Zaborney, worked in every part of the wheat harvest including cutting the wheat and cradling. Importantly, Zaborney asserts that “in white Virginians’ neighborhood and family networks, a hired slave at the right time could save a crop.” (Zaborney 2012, 22) For slave owners, slave hiring could bring in profits when crops did not or in times of economic downturn. (Zaborney 2012, 17-18)

The “mixed farming” regime that characterized the lower Shenandoah Valley included raising livestock and fattening cattle destined for markets in Philadelphia and Baltimore, both important enterprises undertaken by farmers in the lower Valley. These stock related activities would remain “a substantial source of farm revenue far into the nineteenth century.” (Koons and Noyalas 2010, 40) Livestock raised by lower Valley farmers included horses, cattle, swine, and sheep, along with geese and poultry (Koons and Noyalas 2010, 40 and Hofstra and Geier 2000, 53) John J. Zaborney has also identified that “neighborhood slave hiring was central to white Virginians’ livestock production,” as well, particularly during times of intense seasonal activities. A good example of intense seasonal activity identified by Zaborney was hog butchering. According to Zaborney, “white Virginians hired out many slaves to one another by the day to butcher hogs each year.” (Zaborney 2012, 21-22)

For historian Robert D. Mitchell, the importance of livestock and livestock products in the practice of mixed farming was clear. According to Mitchell, they “formed the backbone of the early mixed farming patterns of the valley.” Mitchell also identifies that it was livestock, cattle and swine in particular, that “insured the widespread cultivation of corn and the maintenance of both meadow and woodland pasture as major elements in the land use patterns of the valley.” (Mitchell 1977, 186-7). Period descriptions of livestock’s presence in the Valley can assist in developing a more thorough picture of the Shenandoah Valley’s complex and interrelated agricultural landscape in the eighteenth and nineteenth centuries. Historian James D. Rice notes, for example, that in the Valley, “livestock often ran free in the woods.” And a common sight in the lower Valley by the late 1740’s were “larger herds of cattle” with “...men...employed as drovers to herd [the cattle] to coastal markets.” (Rice 2009, 222). Livestock then was clearly a significant presence in the mixed farming regimes employed in the Lower Valley and farmers there “used quite a bit of their land to provide feed for their animals” and to fatten those cattle being driven to market. As a result, according to historian John T. Schlebecker, the amount of land that lower Valley farmers “actually used for farming came to a little less than half the land held in farms...” (Schlebecker 1971, 464)

Robert D. Mitchell describes the impact of the Revolutionary War on the continued need for livestock pasturage, recognizing that:

“During the Revolutionary War, cattle and horses were sent from the valley to eastern Virginia and “considerable amounts of corn, hay, oats, and natural pasturage were

required to feed the cattle, draft oxen, and draft and pack horses maintained by the Virginia regiments in the valley.” (Mitchell 1977, 183-4)

Mitchell also records that “the Shenandoah Valley remained one of the most important livestock-producing areas in post-Revolutionary Virginia.” The mix of livestock in post-Revolutionary War in Frederick and Shenandoah Counties has been calculated by Mitchell revealing that “cattle outnumbered horses 2:1, swine and sheep 1:1. (Mitchell 1977, 183-4) But all would need feed and pasturage. (Fig. 7.5)

The Revolutionary War was without question a defining event in the evolution of agriculture in the Shenandoah Valley. But the war’s impact was one of growth, intensification, and shifting commercial opportunity for Valley farmers. As Robert Mitchell has identified:

“By 1775 all the agricultural components which were to undergo changes in acreage, distribution, output, and relative importance during the Revolution were already well integrated into local farming systems. No new crop or livestock items were introduced into the region as a result of the war or its aftermath. [however, “a minor exception to this statement is the production of spelt, a rather primitive, hard-grained variety of wheat, which appears to have been first cultivated in small quantities by German farmers during the revolution, perhaps in response to the increased demands for wheat or to the presence of Hessian prisoners in Winchester”- see footnote 7 p. 121) The agrarian structure retained its mixed-farming base. The items most immediately stimulated by the outbreak of hostilities were livestock products, grains, and hemp.” (Mitchell 1973, 121)

The impact of the Revolutionary War on lower Valley crops and agriculture is revealed in Figure 7.6. This chart, created by historian Robert D Mitchell, shows the amount of production for the militia for various lower Valley crops and livestock products for the period 1779-1783. (Fig. 7.6) The high amount of production in Frederick County, particularly for flour, corn, and hay stands out and is consistent with the highly productive lands found in that county. One important agricultural change did occur following the Revolutionary War, however. After the War, there was an increase in tobacco planting in the Shenandoah Valley. According the Mitchell, at this time, planting tobacco was “widespread throughout the valley.” The increase in tobacco planting following the Revolutionary War came about in great measure because there was a general shortage of money following the War and in Virginia, in the years following the war, taxes could be paid with agricultural products, specifically, tobacco, wheat flour, hemp or flax. However, “flour was too profitable a commodity to be consumed by tax payments, and the decline in hemp prices made it a less attractive crop to cultivate.” (Mitchell 1973, 130) Historian Robert Mitchell has proposed that “Tobacco might not have been so widely cultivated if there had been no postwar depression...” (Mitchell 1973, 131) One Lower Valley farm with documentation that tobacco was grown only two years after the end of the Revolutionary War is Belle Grove. The Hite family papers include a 1785 contract between Isaac Hite, Jr. and “overseer Benjamin Little stated that Little was to receive “one sixth of all grain and *tobacco*” grown under his care (“Articles of Agreement”)

As the end of the eighteenth century approached, in the lower Shenandoah Valley little had changed in the mix of farm activities. Wheat, rye, oats, barley, corn, flax, hemp, and tobacco could all be seen grown on Shenandoah Valley farms where horses, cattle sheep, and pigs ranged the land. What had changed, however, was the emphasis Valley farmers now put upon wheat as their major crop. For Warren Hofstra:

“...the emphasis “clearly lay on wheat. ‘According to Isaac Weld, wheat was ‘produced in as plentiful crops as in any part of the United States;’ fifteen to twenty bushels to the acre is what the duc de La Rochefoucauld-Liancourt estimated in the mid-1790’s. By 1790 lower Shenandoah Valley farmers produced four million pounds of flour annually and more than two and one-half times that amount ten years later.” (Hofstra 2004, 288)

By 1810 Tench Coxe, the Treasury Department’s Purveyor of Public Supplies, responsible for “procuring and providing...generally all articles of supply, requisite for the service of the United States, had had described the Shenandoah Valley as ““by far the leading wheat-producing region in Virginia.” (Koons and Noyalas 2010, 13) By 1840, Valley farms were providing one fifth the entire wheat crop for Virginia, increasing to 22 percent at mid-century (Koons 2000, 6). Kathleen Bragdon has recognized that the production of wheat was not limited to the Valley’s largest farms. Instead, “nearly every farmer produced the grain,” (Bragdon 2009, 101) Bragdon’s assessment is not an exaggeration. Historians Kenneth E. Koons and Jonathan Noyalas, have documented that by 1850, “ninety-six percent of all farmers in the Valley produced wheat.” (Koons and Noyalas 2010, 44) Corn, commonly used to feed livestock, became the lower Valley’s principal secondary crop. (Fig. 7.7) The Valley’s main field crops included cereal grains such as oats and rye, as well as artificial grasses such as clover and timothy.” (Koons 2000, 4) Figure 7.8, a twelve-year crop rotation schedule from a farm near New Market, Virginia published in the Cultivator in August of 1849, shows that wheat, corn and the lower Valley’s typical field crops were all included in the rotation schedule. All of these crops, grown by lower Valley farmers, would contribute to the distinctive agricultural landscape of mixed farming that characterized the Shenandoah Valley and the lower Shenandoah Valley in particular. Reporting production of these crops, along with livestock production, was standard information requested on the Virginia Agricultural Census Schedules for 1850 and 1860. (Fig. 7.9 and 7.10)

Chapter 7: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Ann T. Hite Inventory and Appraisal by I. S. Danner, Ino M. Miller, and A. S. Burgess, dated February 24&25, 1851, (Will book, 23, pages 184-190 County Clerk's Office, Frederick County., Winchester, Virginia and Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va., Box 3, Folder #10

"Articles of Agreement with Overseer Little," Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va., HFP, vol. 3, doc. 3

"Bernard McMahan," *Thomas Jefferson Encyclopedia*, 2019
<https://www.monticello.org/site/research-and-collections/bernard-mcmahan>].

Bragdon, Kathleen J. with contributions from Donna Dodenhoff, Betty Duggan, Julie Earnstein, Audrey Hornung, Martha McCartney, Danielle Moretti-Langholtz and Edward Regan
Ethnographic Overview and Assessment Cedar Creek and Belle Grove National Historical Park, Northeast Region Ethnography Program National Park Service, Boston, Ma. 2009

Fromm, Roger W. "The Migration and Settlement of Pennsylvania Germans in Maryland, Virginia and North Carolina and Their Effects on the Landscape," in *Pennsylvania Folklife*, Vol. 37, no. 1, Autumn 1987, p. 33-42

Geier, Clarence and Joseph Whitehorne, "An Archaeological Assessment of Cultural Resources South of the Confluence of Meadow Brook and Cedar Creek in Frederick County," Virginia, nd

Greer, Mathew C., *Archaeological Investigations of Two Possible 19th Century Quarters Sites at Belle Grove Plantation, Frederick County, Virginia: 44FK520 and 44FK521*, February, 2016

Hart, Freeman H., *The Valley of Virginia in the American Revolution 1763-1789*, Chapel Hill: The University of North Carolina Press, 1942

Hart, Emma and Cathy Matson, "Situating Merchants in Late Eighteenth-Century British Atlantic Port Cities," in: *Early American Studies: An Interdisciplinary Journal*, University of Pennsylvania Press, Vol. 15, no. 4, Fall 2017, pp. 660-682

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va.,
HFP, vol. 2, doc. 29

HFP, vol. 1, docs 8-9
HFP, vol. 3, doc. 19
Editor introduction to docs 25-26, HFP, vol. 1
HFP, vol. 1, doc. 25, Aug. 12, 1803 letter to Madison
HFP, vol. 1, doc. 25, Aug. 12, 1803 addendum to letter to Madison
HFP, vol. 3, doc. 32
Hite Family Papers vol. 2
Hite Family Papers vol. 3
Folders 1, 2, 3, - [1.01.41] , [1.01.43b], [1.01.34]
Folder 4, [1.01.47a]
Folder 5, [1.01.66]
Folder 6, 7,
Folder 8 - [1.02.42, 44, 55, 56
Box 3, folder 10

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800," in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

"Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16 & 17 January 1837," by the executors and George Brinker, David Stickley, and George Bragg appraisers

Jefferson, Thomas, "Garden Book, Page 49, Thomas Jefferson," 1812, *Thomas Jefferson Papers*, https://www.masshist.org/thomasjeffersonpapers/doc?id=garden_49&archive=garden&query=mcmahon&tag=text&num=10&rec=1&numRecs=1#firstmatch Accessed August 3, 2019

Johnson, Clifton, "A Girl in the Shenandoah Valley," in *Battleground Adventures: The Stories of Dwellers on the Scenes of Conflict in Some of the Most Notable Battles of the Civil War*, Cambridge: Riverside Press, 1915.

Kalbman, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbman, LLC, September 2014

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons Kenneth E. and Jonathan Noyolas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Mitchell, Robert D., "Agricultural Change and the American Revolution: A Virginia Case Study," in *Agricultural History*, vol. 47, no. 2 (April 1973), pp. 119-132.
<http://www.jstor.org/stable/3742028>, Accessed: 27-11-2017

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977.

Mitchell, Robert D. and Warren R. Hofstra, "How do Settlement Systems Evolve? The Virginia backcountry during the eighteenth century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012

National Park Service Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007

Olmsted Collection, Hite Family Papers NT 69.77.51. Handley Regional Library Special Collections, Winchester, Va.

Peters, Margaret, and Maral S. Kalbman, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4,

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the old South*, Eugene L. Schwaab, ed. Lexington: Univ. of Kentucky Press, 1973.

The Southern Planter, Richmond: Virginia Vol 1, 2. and 3, 1841

Testimony by Caroline Heater and John H. Crisman, Oct. 24, 1871, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va., Box 5, Folder 8

Tinling, Marion and Godfrey Davies, eds., *The Western Country in 1793: Reports on Kentucky and Virginia By Harry Toulmin*, San Marinno, Ca.: The Henry E. Huntington Library and Art Gallery, 1948.

"Valuable Farm for Sale," *Shenandoah Herald*, July 21, 1870.

Verry, Robert, "Results of an Archeological Reconnaissance Belle Grove Plantation, Middletown, Virginia," October, 1984

"Virginia Husbandry," in *The American Farmer*, June 29, 1821, Baltimore: Maryland. Also in HFP, v. 3, doc. 33

Will of James Hoge, July 1795, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va., Box 5, Folder 4:

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 7:

Figures

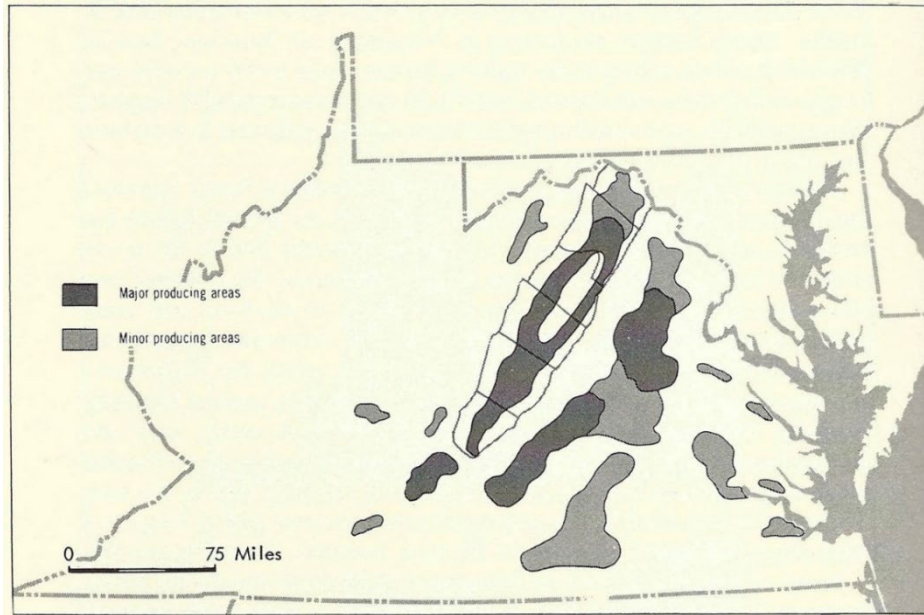


Figure 7.2 Hemp production areas of Virginia and the lower Shenandoah Valley, c. 1776. From Mitchell 1977.

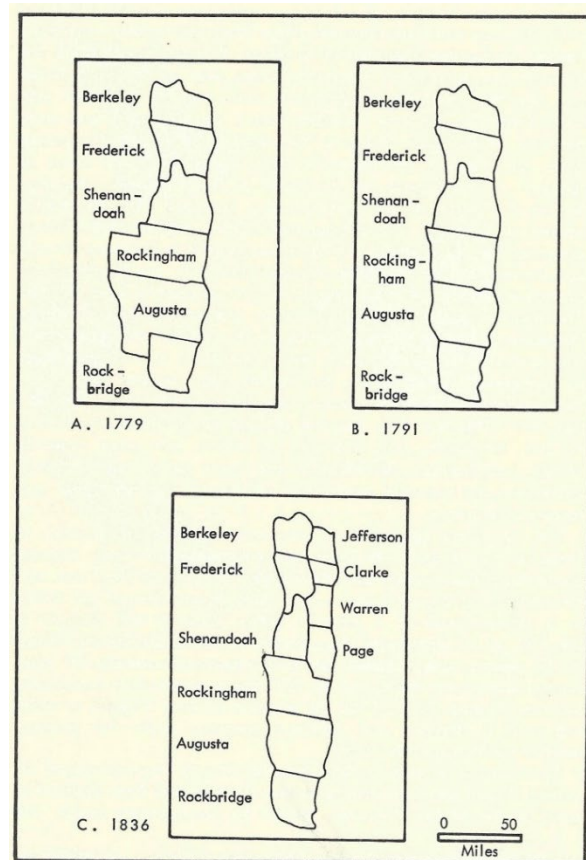


Figure 7.3 Lower Shenandoah County boundary changes 1776-1836. From Mitchell 1977. Tobacco was a prominent crop east in the lands of lower Shenandoah Counties that lay east of Winchester and the Blue Ridge.

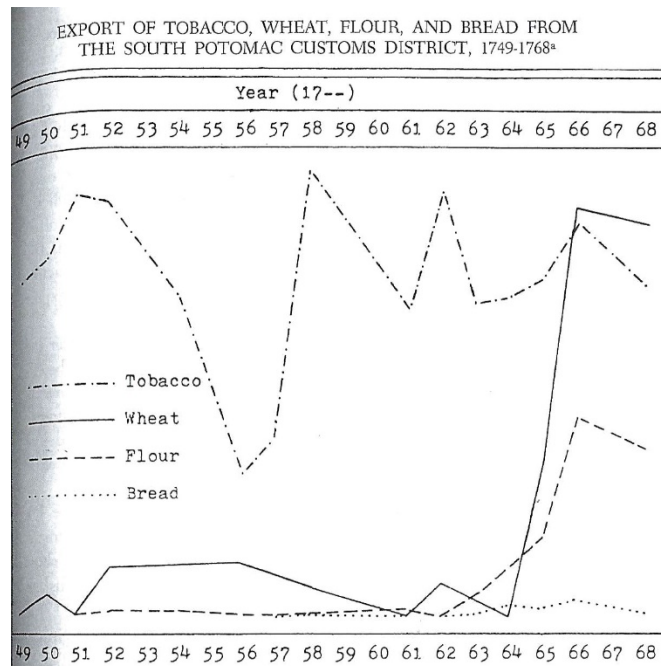


Figure 7.4 Export of tobacco, wheat, and flour 1750-1768 from the South Potomac Customs District. The changing demand for wheat and flour production in the late 1760's that this graph illustrates, was a harbinger of the fact that the "long term future of the regional economy lay in wheat." From Preisser 1981.

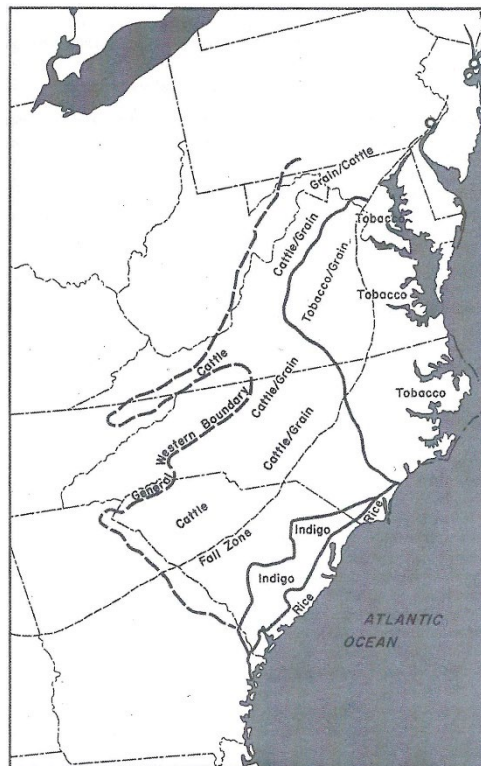


Figure 7.5 Southern regional economies map outlining the cattle and grain economy of the Shenandoah Valley. From Mitchell 1998.

PRODUCTION FOR MILITIA, 1779-1783 (SAMPLE YEARS) ¹											
County	Flour (pounds)	Meal (pounds)	Wheat (bushels)	Corn (bushels)	Rye (bushels)	Oats (bushels)	Hay (pounds)	Beef (pounds)	Bacon (pounds)	Pork (pounds)	Mutton (pounds)
Berkeley (1783)	12,611	900	941	2,537	60	—	c.30,000	16,066	462	265	c.150
Frederick (1782-83) ²	144,756	24,395	314	15,880	68	23	146,356	48,543	1,740	—	—
Shenandoah (1782-83) ²	27,928	—	72	506	56	141	17,948	80,645	510	165	45
Rockingham (1779-80) ²	8,320	1,540	210	900	150	c.500	c.50,000	136,000	2,242	3,215	1,380
Augusta (1779-80) ²	46,432	—	156	1,165	509	122	84,385	220,103	2,774	2,808	3,793
Rockbridge (1781-82) ²	4,547	3,664	5	209	20	c.110	1,228	72,184	833	518	100

SOURCE: Public Service Claims, 1779-1783, Virginia State Library, Richmond.

¹ The best sample year is indicated for each county, although the Berkeley County sample is very incomplete.

² The years 1779 and 1782 were years of unusually low precipitation.

Figure 7.6 This chart created by historian Robert D. Mitchell, shows the amount of production for the militia for various lower Shenandoah Valley crops and livestock products for the period 1779-1783.



Gordon and Hotchkiss reconnoitering Sheridan's outposts.



Figure 7.7 By the 1850's, corn, commonly used to feed livestock, had become the lower Shenandoah Valley's principal secondary crop. (Top) Battle reconnaissance in a Shenandoah Valley corn field. From James E. Taylor sketchbook, Western Reserve Historical Society. (Bottom) Corn fields above Bowman's Mill Ford, c. 1880's. From the Mollus Collection.

VIRGINIA FARMING.

L. TUCKER, ESQ.—Being a constant reader of the *Cultivator*, and not finding many communications from this part of the valley of Virginia, I thought it would not be intruding too much on your time to read an account of our farm, which is called the "Plains." This farm was taken up by a Mr. James Wood, and patented on the 12th day of January, 1746, exactly one hundred years ago this day. It was sold some four or five times, until my father bought it in the year 1829. My older brother moved on it in the year 1833, and was on it until 1835. He then bought a farm adjoining the town of New-Market, and I moved to this place, where I have been since. When my father bought this farm it was in very bad order; there was not a good pannel of fence on it, and not a single gate; the roof of the barn had been blown off by a storm and the barn-yard was only fenced in by an old rail fence, and not an acre of clover was on the place. The land was worked on the skinning system.² The barn-yard was so full of old manure that it was almost impossible to get to the barn, and some of the fields were so poor that one of them produced only four bushels of rye per acre, in the year 1837. The land lies well for cultivation; it is not very hilly, but there are about 100 acres of it a black marl bottom, and about 150 acres of upland, which is a sandy clay; there are also about 165 acres of wood land attached to it. We have run a lane through the centre of the farm so that we can let the cattle run from the barn-yards to any of the fields. We have hung 32 gates

to the yards, lane, and fields, so that we can get about without ever tearing down any fence. The gates are made on the plan that you published in your January number, page 18. There is a spring on the adjoining farm which runs through our bottom land and empties into the Little Shenandoah river that passes along the edge of our farm. We have a merchant mill on the bank of the river which is run by the spring branch; we have also a saw mill which is run by the river. The spring branch runs through the edge of the cattle yards, so that the cattle can get water at all times. The lane also has communication with the spring branch, so that the cattle can come from any of the back fields to the branch for water. We have graded a greater part of the lane, and have turnpiked nearly all the low places, so that we can get along at all seasons of the year. We have adjoining the barn three yards, with sheds, for the cattle, one yard with a shed for the sheep, and a horse stable with a large yard, in which is a shed for wagons, cariole, cart, and farm implements, also two small buildings for saddles and tools. The saw-mill is only about 100 feet from the cattle yards, so that we can easily haul all the saw dust to the horse stable and cattle yards, which we find a very good article for absorbing the liquids of the manure. We also find that tan bark is a very good article for the same purpose; we therefore have adopted the plan of bringing a load along when we take corn, flour, &c., to New-Market, which is only three miles from this place. We have improved the land very much with clover, plaster, ashes, and manure, and a proper rotation of crops. We find that the following rotation is very suitable for this farm.

First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.
Corn with Manure.	Oats.	Wheat.	Clover with plaster and ashes.	Ditto.	To be pastured.
Seventh Year.	Eighth Year.	Ninth Year.	Tenth Year.	Eleventh Year.	Twelfth Year.
Fallow.	Wheat.	Rye or bearded wheat, with short manure.	Clover with plaster and ashes.	Ditto.	To be pastured.

By the above system you will find that we have six fields in clover, three in wheat, one in oats, one in corn, and one in fallow. The best parts of the four clover fields are mowed, and the other is left to rot on the ground; the two other clover fields are pastured but lightly, as we send all our young cattle and sheep to our mountain farm, on the head of the river. We find that plaster and ashes have a very good effect on the upland, but on the marl bottom it does not have any effect. The upland is very good for clover, and the bottom is very suitable for timothy. The upland had a considerable quantity of loose rocks, but we hauled nearly all of them into the lane, and into several sink holes and dragged earth over them with the roadscraper. There were also a great many rocks in the fence corners that were hauled there some years ago; we also hauled them into the sink holes.

We have a pond at the mill which we have cleaned out several times, and hauled the mud, composed principally of marl, on the wheat fields, and harrowed it in with the wheat. It has proved a very good article on the upland, answering better than stable manure in the adjoining field. The last year we hauled out 131 four horse loads of the mud, 154 loads of barn yard manure in the spring, and 84 loads in the fall.

The year 1845 was very dry in this part of the valley, so that all summer crops were very short, but the wheat yielded tolerably well. The following was the quantity of hay, &c., raised on the Plains farm in the year 1845.

20 wagon loads of hay; 672 bushels of oats; 31 bush. of rye; 113 bush. potatoes; 650 corn; 800 wheat.

We have 119 sheep, 35 head of cattle, and six horses. We have a corn fodder machine which is run by a two horse power; it is the middle size of "Eastman's Patent." It was made too weak, so that we had to take it through a thorough repair, but now it does tolerably well. We have large mangers in the cattle sheds, where we feed the cut corn fodder in the evening, and straw in the morning. The sheep get straw in racks in the morning, and hay in the evening, but when the snow is off the ground they are permitted to run to the field that is to be put into corn in the spring; we then give no hay, but only straw. We also give a bucket full of oats to the 119 head, every evening and morning, in small mangers. The sheep-racks are made on the plan that the "Economs" have them in Germany. We have tried the "feeding boxes," but do not like them as well as the racks. When the manure is hauled out of the sheep-yard in the spring, we plow it up, and plant cucumbers, melons, beans, &c., which do very well, as the ground gets very rich by the sheep manure.

By attending to the sheep on the above plan we have very good luck with the lambs. Last spring we raised 29 lambs out of 32. Our sheep are grade Saxons, which seem to suit our climate very well. We put the rams to the ewes the latter part of October, so that the lambs will come the latter part of March, which is the best time for this part of the country; the lambs will then be able to travel to our mountain farm, after the ewes are sheared, which is the first week in May. Our young cattle are also then taken to the mountains, so that we

Figure 7.8 The 12-year crop rotation schedule for a lower Shenandoah Valley farm located near New Market, Virginia. The rotation, published in the agricultural-periodical, *The Cultivator*, in August of 1849, shows that wheat, corn and the lower Valley's typical field crops were all included in the rotation schedule.

1850 Agricultural Census Schedule

Schedule 4 - Productions of Agriculture in _____ in the county of _____ State of _____ in the year ending in June 1, 1850
Enumerated by me on the _____ day of _____ 1850 _____ Ass't Marshal

Name of Owner, Agent, or Manager of the Farm	Acres of Land		Cash Value of Farm	Value of Farming Implements and Machinery	Live Stock June 1, 1850								Produce during the year ending June 1, 1850						
	Improved	Unimproved			Horses	Asses and Mules	Milch Cows	Working Oxen	Other Cattle	Sheep	Swine	Value of Live Stock	Wheat	Rye	Indian Corn	Oats	Rice	Tobacco	
	No.	No.			Dolls.	Dolls.	No.	No.	No.	No.	No.	No.	Dolls.	Bush.	Bush.	Bush.	Bush.	Lbs.	Lbs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131d (6/03)

Produce during the year ending June 1, 1850																										
Ginned Cotton	Wool	Peas and Beans	Irish Potatoes	Sweet Potatoes	Barley	Buckwheat	Value of Orchard Products	Wine	Value of Market Gardens	Butter	Cheese	Hay	Clover Seed	Other Grass Seeds	Hops	Hemp		Flax	Flaxseed	Silk Cocoons	Maple Sugar	Cane Sugar	Molasses	Beeswax	Value of Homemade Manufactures	Value of Animals Slaughtered
																Dew Rotted	Water Rotted									
Bales (400 lbs)	Lbs	Bush	Bush	Bush	Bush	Bush	Dolls	Gallons	Dolls	Lbs	Lbs	Tons	Bush	Bush	Lbs	Tons	Tons	Lbs	Bush	Lbs	Lbs	Hbds (1,000 lbs)	Gallons	Lbs	Dolls	Dolls
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131d (6/03)

Figure 7.9 Virginia Agricultural Census Schedule for 1850. From the National Archives and Records Administration.

1860 Agricultural Census Schedule

Schedule 4 – Productions of Agriculture in _____ in the County of _____ in the State of _____
 Enumerated by me, on the _____ day of _____ in 1860 _____ Ass't Marshal

Name of Owner, Agent or Manager of the Farm	Acres of Land		Cash Value of Farm	Value of Farming implements and Machinery	Live Stock June, 1 1860								Produce During the year ending June 1, 1860							
	Improved	Unimproved			Horses	Asses and Mules	Milch Cows	Working Oxen	Other Cattle	Sheep	Swine	Value of Live Stock	Wheat	Rye	Indian Corn	Oats	Rice	Tobacco	Ginned Cotton	Wool
	No.	No.			No.	No.	No.	No.	No.	No.	No.	Dolls.	Bush.	Bush.	Bush.	Bush.	Lbs.	Lbs.	Bales (400 lbs)	Lbs.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131e (6/03)

Produce during the year ending June 1, 1850																										
Ginned Cotton	Wool	Peas and Beans	Irish Potatoes	Sweet Potatoes	Barley	Buckwheat	Value of Orchard Products	Wine	Value of Market Gardens	Butter	Cheese	Hay	Clover Seed	Other Grass Seeds	Hops	Hemp		Flax	Flaxseed	Silk Cocoons	Maple Sugar	Cane Sugar	Molasses	Beeswax	Value of Homemade Manufactures	Value of Animals Slaughtered
																Dew Rotted	Water Rotted						Hhds (1,000 lbs)			
Bales (400 lbs)	Lbs	Bush	Bush	Bush	Bush	Bush	Dolls	Gallons	Dolls	Lbs	Lbs	Tons	Bush	Bush	Lbs	Tons	Tons	Lbs	Bush	Lbs	Lbs	Lbs	Gallons	Lbs	Dolls	Dolls
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131d (6/03)

Figure 7.10: Virginia Agricultural Census Schedule for 1860. From the National Archives and Records Administration.

Chapter 8:

The Agricultural Landscape: Livestock

As historians Kenneth E. Koons and Jonathan Noyalas have documented, the early settlers of the lower Shenandoah Valley brought to the Valley “a system of agriculture known as “general mixed farming,” which entails production of a broad range of crops and livestock.” General mixed farming was identified as “the dominant form of agriculture practiced in Pennsylvania, and the settlers were well versed in that practice.” Importantly, Koons and Noyalas further identified that it is “generally recognized that the fundamental, foundational aspect of mixed farming was diversity of enterprise.” (Koons and Noyalas 2010, 39)

The diversity of enterprise that characterized general mixed farming or “mixed husbandry” as it was sometimes referred to, “minimized the risk associated with reliance on a sole cash crop.” In practice, it meant “the cultivation of various crops, and keeping most kinds of domesticated animals.” Koons and Noyalas provide this description of “Mixed Husbandry” published in 1880 in the *American Agriculturist for the Farm, Garden, or Household*:

“It implies a thorough knowledge of animal and vegetable life in all conditions of soil and climate, every aspect of rural economy at home and abroad, and also an acquaintance with the allied arts and sciences. It possesses one prominent advantage over the other systems, and that is its freedom from risk, and sure returns from money invested. If one crop is a failure, another may be exceptionally good; if pork is low, beef and wool may be high...” (Koons and Noyalas 2010, 83)

Historian John T. Schlebecker has identified the numerous roles that livestock assumed within the mixed farming system. According to Schlebecker livestock “served chiefly to provide traction, manure, meat, wool, and dairy foods for the inhabitants.” (Schlebecker 1971, 465-476) Under the mixed farming system, “if the farm is well stocked and cultivated, it will be continually undergoing improvement, and instead of becoming exhausted, will get more and more productive.” (Koons and Noyalas 2010, 83) The productive “mixed farm” thus grew a variety of crops and raised a range of livestock.” (Moore et al 2012 , 36-7) Having a range of livestock helped insure the diverse farming operation remained productive. For example, if the offering price for a harvested commercial crop such as wheat or rye dropped too low, those crops could be ground at the local mill and “either fed to fattening cattle, or distilled.” (Schwaab 1973, 140). The mixed farming system employed in the lower Valley, and described by Koons and Noyalas, soon came to be widely identified as the “grain-livestock complex” and the productive synergy of that complex would persist “...into the early decades of the twentieth century. (Koons and Noyalas 2010, 40)

Koons and Noyalas also recognized as well that “stock raising and fattening cattle destined for markets in Philadelphia and Baltimore” was also an “important enterprise among Valley farmers,” one that would remain a “substantial source of farm revenue far into the nineteenth

century.” (Koons and Noyalas 2010, 40) “The practice of driving cattle down the Valley to Philadelphia had been established as early as the late 1740’s and the drives “provided commercial opportunities for farmers throughout the region.” [Mitchell, 1998, p. 24] (Fig. 8.1) Large herds of cattle were also driven down the Valley on their way to the market in Baltimore.(Fig. 8.2) Lower Shenandoah Valley farmers, and others from farther up the Valley, “were employed as drovers to herd surplus cattle to [these] coastal markets.” (Rice 2009, 222) Historian John J. Zaborney has identified that by the mid-nineteenth century hired slaves were also included among the drovers moving cattle down the Valley. (Zaborney 2012, 105) As the cattle were moved through the lower Valley they required access to pastures and winter feed. To fill those needs, numerous lower Valley farmers became “grassiers,” who served an important role within the “mixed system” of livestock. One prominent grassier was Isaac Hite, Jr. at Belle Grove. John Skinner, editor of *The American Farmer*, after a visit with Isaac Hite, Jr., described the “grassing” operation at Belle Grove in the early 1820’s:

“The general system pursued by Major H is a *mixed* one – under which the cultivation of the staple grains, wheat, rye, oats, and corn are combined with the manufacture of some into spirit, and with *grazing*, to a large extent – Cattle for grazing are bought at his gate as they are driven down the valley. In some seasons the droves amount to 12,000 head...they are generally purchased in September, fed through the winter on straw and corn fodder – salted – fattened the next summer and fall, and sometimes sold on the farm, but more generally sent to market and disposed of at an advance, heretofore, of little less than double their first cost.” (Schwaab 1973, 140)

Hite described the role of the grassiers within the economic structure that supported lower Valley agriculture in a letter to his father-in-law, James Madison:

“The grassing system derives celebrity also from political considerations. In our extensive regions remote from the navigation livestock is and must continue to be the staple of the country. The grassiers of the Atlantic states constitute the chief medium through which it can find a market. Our backcountry dealers in cattle bring them here during the summer and fall, and sell them to our grassiers for cash. This cash is principally applied to the purchase of goods in our seaport towns, and these goods are again bartered for cattle. Hence it is evident that the more it must tend to invigorate, enrich, and cement every quarter of our vast empire.”
 (“Hite to Madison” 1803)

Thus the livestock component of the grain-livestock complex was woven through every aspect of life in the Lower Valley. For historian Robert D. Mitchell, “Livestock and livestock products...formed the backbone of the early mixed farming patterns of the valley” and “livestock products” would continue to be “important items in both local and export trade.” (Mitchell 1977, 183) At the time of settlement and the period of developing back country neighborhoods, “there was general ownership of cattle and horses; and the more limited possession of pigs and sheep” as well as geese. (Mitchell and Hofstra 1995, 133 and Koons and Noyalas 2010, 40] “Historian Kenneth Koons is more forceful when he asserts that: “On virtually

every farm, horses, served as draft animals, while cattle provided meat and dairy products. Swine were ubiquitous on farms of the valley...." (Koons 2000, 4) Samuel Kercheval provides support for Koon's characterization of livestock ownership by the early settlers noting that among the early settlers, "the Hites, Fry's, Vanmeters, and many others, raised vast stocks of horse, cattle, hogs, etc." (Kercheval 1925, 58) Koons and Noyalas note that the livestock that the early settlers of the lower Valley brought with them, from Pennsylvania, including "horses, cattle, swine and sheep... were 'well adapted' to prevailing seasonal temperatures and amounts of rainfall." (Koons and Noyalas 2010, 13) Koons and Noyalas also note that "swine were a main source of animal protein among eighteenth- and nineteenth-century rural populations" while sheep, which were an additional source of meat, "also provided wool for home or local production of textiles" (Koons and Noyalas 2010, 40 and Bragdon, et al. 2009, 113) Slavery was integral to livestock production throughout the Commonwealth. Historian John J. Zaborney has identified that "neighborhood slave hiring was central to white Virginians' livestock production [Including butchering hogs]...white Virginians hired out many slaves to one another by the day to butcher hogs each year." (Zaborney 2012, 21-22)

Historian John T. Schlebecker asserts the importance of meat in the mid-nineteenth century diet. According to Schlebecker, by 1850:

"The people in the lower valley...ate heartily." Along with breads and other foods made from flour, the vegetables they consumed included corn, potatoes, cabbage, beets, turnips, beans, carrots, celery, parsnips, and asparagus,[which] grew on nearly every farm in 1850." They also "consumed both the fruit and the juice, fresh and fermented of apples, cherries, pears, peaches, grapes, raspberries, and strawberries. But mostly they ate meat' – Pork, beef, mutton, veal, chicken, turkey, duck, and goose. (Schlebecker 1971, 464)

According to Historian Robert D. Mitchell, by 1775 all the components of the grain-livestock complex that were of "importance during the Revolution were already well integrated into local farming systems." Mitchell identifies as well that "no new...livestock items were introduced into the region as a result of the [Revolutionary] war or its aftermath." For Mitchell, while "the agrarian structure retained its mixed-farming base... the items most immediately stimulated by the outbreak of hostilities [at the beginning of the Revolutionary War] were livestock products, grains, and hemp." (Mitchell 1973, 124, footnote 1) Livestock production in the Shenandoah Valley, stimulated by the demands of the Revolutionary War (Fig. 8.3), would continue after the War with the Valley continuing as "one of the most important livestock producing areas in post-Revolutionary Virginia." (Mitchell 1977, 183) Beef was one of the most important livestock products demanded by the war effort. But according to Mitchell, "few farmers could afford to supply more than three or four steers to support the war effort. The largest supplier of beef was G. A. Bowman of Shenandoah County who supplied 7,346 pounds of beef..." (Mitchell 1973, 124, footnote 12) The demand of the war were, of course widespread. Shenandoah Valley farmers had met the need for beef and horses elsewhere in the Commonwealth during the Revolutionary War by shipping cattle, as well as horses to the eastern part of the state. (Mitchell 1977, 183) Shenandoah Valley farmers also worked hard to provide the "considerable

amounts of corn, hay, oats, and natural pasturage “ that were required “to feed the cattle, draft oxen, and draft and pack horses maintained by the Virginia regiments in the valley.” (Mitchell 1977, 184) Robert D. Mitchell has identified that the need to provide adequate pasturage, and supply large amounts of livestock feed, “insured the widespread cultivation of corn and the maintenance of both meadow and woodland pasture as major elements in the land use patterns of the valley.” (Mitchell 1977, 186). The Revolutionary War had, in no small way, propelled the agricultural production of the lower Shenandoah Valley but the war had not significantly changed the mix of crops and livestock that characterized the grain-livestock complex practiced in the lower Valley. Warren Hofstra observes that: “By the end of the eighteenth century, little had changed in the mix of farm activities; wheat, rye, oats, barley, corn, flax, hemp, and tobacco could all be seen grown on Shenandoah Valley farms; horses, cattle sheep, and pigs ranged the land. (Hofstra 2004, 288)

In addition to the beef cattle that providing meat for consumption, Valley dairy cattle provided milk from which Valley farmers produced cheese and butter. John T. Schlebecker has identified that by 1850, dairy cattle comprised half of the cattle on lower Valley farms. (Schlebecker 1971, 465] Butter was one of the lower Valley agricultural products sold both regionally and to extra-regional markets. Accordingly, butter was one of agricultural products included on the 1850 and 1860 Agricultural Census Schedules. [Fig.8. 4 and 8.5] The scale of the butter making operations on lower Valley could be substantial. “In 1850 Mrs. Hite’s...dairy cattle’s milk was used to make 500 pounds of butter. (Bragdon et al. 2009, 121)

Livestock also performed various critical agricultural functions on lower Valley farms. “Wheat farming entailed four major tasks: plowing and preparing the fields; sowing and covering the seed; harvesting the crop; and threshing the grain.” (Koons and Noyalas 2010, 52) Draft animals were employed at every stage of the process. “Horses served as the main source of draught power for plowing and hauling” and, on most lower Valley farms, horses were used for spreading soil amendments and manuring the fields . (Koons and Noyalas 2010, 40) Some of the larger plows were pulled by as many as three horses and by the mid-nineteenth century, horse-drawn seed drills (Fig. 8.6) were being used to sow seeds in the cultivated fields (Koons and Noyalas 2010, 52-54) Horses also pulled the harrows used to cover the freshly sowed seeds. By the mid-nineteenth century, an “increasing numbers of farmers’ were harvesting their wheat “with horse-drawn mechanical reapers.” The mechanical reapers, such as the well-known McCormick Reaper, (Fig. 8.7) saved substantial amounts of labor, revolutionizing wheat farming.” Nancy B. Stewart asserts that “after 1834, when Cyrus McCormick invented the horse-drawn reaper, the horse , always highly valued for plowing and logging in Shenandoah County, became even more important to farmers. The new machine replaced many field ‘hands,’ increased the yield, and lowered the cost of producing wheat.” (Stewart undated, 8] By the antebellum period Valley farmers also were using large, mechanical threshing machines “powered by horses on treadmills or turning a power sweep.” (Fig. 8.8) (Koons and Noyalas 2010, 52-54) Civil War artist James E. Taylor described one such threshing machine located near Harpers Ferry, It was powered by “seven horses in a merry-go-round under the persuasions of an impartial lash.” (Koons and Noyalas 2010, 56, footnote 22) The “horse-power th’ashing” at the Stickley farm across Cedar Creek from Belle Grove was noted in Clifton Johnson’s

Battleground Adventures: The Stories Of Dwellers On The Scenes Of Conflict In Some Of The Most Notable Battles Of The Civil War. [Johnson 2015, 392-395]

During the harvest season, horse-drawn wagons (Fig. 8.9) hauled the harvested wheat and other harvested crops to barns, granaries and other storage structures. Other agricultural products were also hauled to nearby mills for processing including fibers, seeds to be pressed for their oil, and raw materials to be processed into soil amendments. From the mills and lower Valley farms, horse-drawn wagons transported agricultural produce such as wheat, flour, and whisky, to local and distant markets. Until the coming of the railroads, Alexandria was the primary destination for produce and goods shipped out of the lower Valley by wagon.

While horses served as the primary draft animals used in the Shenandoah Valley, they weren't the only draft animals used in the lower Valley. John Skinner recorded that, at Belle Grove:

"Oxen are much used in the cart and harrow, by Major H., who is of the opinion that they may and *ought to be* employed to do all of the *hauling* on a farm. His oxen draw wood two miles as fast as horses, and he thinks that they are coming into much more general use than formerly. The perverse prejudice against mules as being as prevalent in Jefferson county exists here with the same force." (Schwaab 1973, 140)

Thomas Palmer in his "Observations of Virginia," published in 1814, also noted that, in the northern part of Virginia, oxen were used as draft animals whereas in the southern part of the state mules were depended upon, "which being a very hardy animal, is not apt to be injured by the carelessness so natural to slaves." (Schwaab 1973, 96)

Early nineteenth Century agricultural periodicals such as *The Farmer's Register*, *The Southern Planter*, *The American Farmer*, *The Practical Farmer*, *The Cultivator*, and *The Valley Farmer* typically would have regular essays and articles on all aspects of mixed farming including livestock. The period agricultural press would come to embody "the collective spirit of the American agrarian consciousness" and many press publications encouraged farmers to adopt more efficient practices including selecting and raising improved breeds of livestock. In August of 1849, *The Cultivator* published a lengthy description of "The Plains," a farm located three miles from New Market in the Shenandoah Valley. The letter, provided a good account of the farm's operation and progressive practices employed there, including the creation of a central farm lane that allowed the farm's cattle access from the barnyard to any of the nearby fields. The fields were all fenced and thirty-two gates, allowed easy access to the fenced fields. (*The Cultivator*, August 1849) Barbara Heath, who has researched the 19th-Century landscape of the Massie Farm in James City County, Virginia, has drawn a direct connection between period modifications and replacement of farm fencing and the agricultural reform movement of the nineteenth century. Heath has identified similar connections between the reform movement in agriculture and period changes to the orientation of ditches, as well as shifts "in the size and appearance of the house yard." (Heath, 1999, 64) Progressive farming practices also encouraged and explored more efficient adjacencies in farm layout. For example, fenced cattle yards at The Plains were located close-by the farm's sawmill and sawdust from the mill was

utilized in both the cattle yard and the nearly horse stable to “absorb the liquids of manure.” (*The Cultivator*, 238)

The livestock operation at The Plains, included “119 sheep [graded saxons], 35 head of cattle, and six horses.” The sheep were fed straw in the morning, hay, supplemented with oats, in the evening. When “the snow is off the ground” the [livestock] “had the run of the corn fields before spring planting. In the spring, the sheep yard was plowed up and planted with “cucumbers, melons, beans, etc., which do very well, as the ground gets very rich by the sheep manure.” The farm also employed the use of an “Eastman’s patent” horse-powered corn fodder machine. (*The Cultivator*, 238) (Fig. 8.10)

There is documentation of livestock on particular farms listed by county that was collected for the 1850 and 1860 Agricultural Census Schedules. The census form used for each year asked farmers for the number of horses, asses and mules, milch cows, other cattle, working oxen, sheep, and swine owned by the farmer. (Fig. 8.4 and Fig. 8.5) The form also asked for the total value of all the livestock listed and the value of animals slaughtered. The only livestock related produce listed on the form was butter and cheese. Also listed on the form was beeswax. (Agricultural Census Schedules 1850 and 1860) Although the goal of the census was to record every farmers agricultural production, the census form allowed farms to be identified by the “owner, agent, or manager” of the farm. If the owner’s agent or farm manager was listed on the completed census form, it can make identification of a particular farm in that year’s census difficult or impossible without more extensive research than the scope of this report allows. We are fortunate, however, that the 1850 Agricultural Census Schedule clearly identifies the farm of Anne T. Hite and the 1860 Agricultural Census schedule clearly identifies the farm of C. J. Hite. Anne T. Hite, Isaac Hite, Jr’s widow and owner of Belle Grove in 1850, listed Belle Grove as having 550 Improved and an additional 150 unimproved acres with 16 horses, no asses or mules, 7 milch cows, 4 working oxen, 18 other cattle, 70 sheep, and 44 swine. C. J. Hite, who owned the Bowman-Hite farm in 1860, reported 225 improved and 135 unimproved acres and listed 6 horses, 1 ass or mule, 6 milch cows, no working oxen, 29 other cattle, 12 sheep, and 38 swine. (Agricultural Census Schedules 1850 and 1860)

Several other nearby farms are also clearly identified in the Agricultural Census records for 1850 and 1860. David Stickley a neighbor of Belle Grove, reported in 1850 that his farm included 844 improved acres and 732 unimproved acres with 7 horses, no asses, mules, or working oxen, 10 milch cows, 30 other cattle, 125 sheep, and 25 swine. George Brinker, owner of Fort Bowman in 1850, reported 250 improved acreage and only 40 unimproved acreage on the farm. Brinker also listed 7 horses, no asses, mules, or working oxen, 6 milch cows, 14 other cattle, 35 sheep, and 35 swine. In 1853 Brinker sold Fort Bowman to Henry Kern. Research by Maral S. Kalbian has shown that, in 1860, Kern reported owning “4 horses, 3 cows and 11 sheep. He also reported 10 acres of ‘grassland.’” (Agricultural Census Schedules 1850 and 1860) For Kalbian, the census record indicates that “Kern had prospered since his acquisition of the Fort Bowman property from George Brinker. Kalbian et al. 2014, 22 There is at least one reference to cattle being taken from Belle Grove to Alexandria after 1860. On February 26, 1861, John W. Cooley, who by then was a “co-owner of the property, was recorded as having been “away...taking

some cattle to Alexandria, Virginia.” (Sulfridge undated, 1) It is not known how the cattle were transported to market, but by 1861, it would seem likely that the cattle were shipped to Alexandria by the Manassas Gap Railroad which, in 1853, had reached Strasburg in Shenandoah County.

An additional source of information about the agricultural landscape and the livestock owned by farmers in the lower Valley can be found in the summary reports of the post-war reparation claims made by farmers in the lower Valley and along Cedar Creek. The reparation claims, officially, the “Claims of Loyal Citizens for Supplies Furnished During the Rebellion,” were submitted to the United State Commissioners of Claims in the 1870’s. Among the claimants was Caroline Heater, also an adjacent neighbor of Belle Grove, who, along with her late husband, had a farm along Meadow Brook between Belle Grove and Middletown. At the time of the battle of Cedar Creek, the Heater farm, located adjacent to Belle Grove, consisted of between 500 and 600 acres that sat astride the Valley Pike. In her claim to the Commissioners, Heater and three witnesses who testified on her behalf listed among her property lost: 48 “fat” hogs (150-200 lbs.) and 76 stock hogs, 30 Beef Cattle, 25 Sheep, 8 horses, and three colts. Among the other claimants from Frederick County were: Dr. Henry C. Shipley, from Middletown and another neighbor of Belle Grove, who listed claims for hogs, calves, and sheep and George Rinker, also of Middletown, who listed a claim for Hogs. A dozen additional claims submitted to the Commissioners by Frederick and Shenandoah County farmers were reviewed for this report and horses, cattle, sheep, and hogs, were listed on nearly every submitted claim. (Commissioner of Claims Summary Reports)

Wills and property inventories provide an additional source of information regarding livestock ownership in the lower Valley and along Cedar Creek. Isaac Hite, Jr., in the February 18, 1832 Codicil to his will, left his wife, Anne T. Hite, “to dispose” of his livestock “as she wishes” as long as she was “still living when the youngest child reaches 21 and remains unmarried.” (Will book 19, Isaac Hite, Jr.) Isaac Hite, Jr.’s inventory of 1837 lists 20 horses, 12 colts, 20 milch cows, 1 bull 6 oxen, 5 beeves, 14 steers, 6 yearling cattle, 11 spring calves, 5 suckling calves, 145 Merirro Sheep, 46 hogs, shoats, etc, 3 sows, and 1 boar. Ann T. Hite’s 1851 Inventory includes the following livestock: 14 horses (including one pair of carriage horses), 1 pair of large oxen, 1 pair of muley (without horns) oxen, 1 fat steer, 2 muley steers, 1 bull, 14 cows, 2 calves, 6 sows, 36 shoats (young pigs), and 82 “old” sheep - “lotto include lambs.” (Ann T. Hite Inventory 1851)

There were, of course hazards and risks associated with raising livestock. Isaac Hite, Jr. in a letter to James Madison in 1805 complained that: “My beeves, which were intended for market this summer are all poor—the grass being burnt up too much to fatten them.” The lack of a sale posed a problem as Hite as he had a claim against him and was unable to pay it. (“Hite to Madison” 1805)

Keeping livestock in their respective pastures could sometimes prove challenging as well. In 1817, Isaac Hite, Jr. wrote to his neighbor, Isaac Bowman concerning the condition of Bowman’s fences. In his letter, Hite reminded Bowman that Hite’s overseer had ridden to Bowman’s house, Fort Bowman, last summer to tell Bowman’s wife that: “your cattle were in my oats.” (“Hite to Bowman,” 1817)

The Civil War would severely impact farming in the lower Valley, But as far as livestock was concerned, research by historian Kenneth Koons has revealed that the impact was not long term for many lower Valley farmers. According to Koons, “by 1880...the number of horses, asses, mules, milk cows, beef cattle, and sheep had risen to levels higher than those of 1860.” (Koons, 2000, 11) The quick recovery of livestock levels in the lower Valley was a good indication of the central role livestock played in the region’s mixed farming operations.

Chapter 8: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

1850 Agricultural Census Schedule 4 – Productions of Agriculture, Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1850-agriculture.pdf>
July 24, 2019

1860 Agricultural Census Schedule 4 – Productions of Agriculture. Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1860-agricultural.pdf>
July 24, 2019

Bragdon, Kathleen J. with contributions from Donna Dodenhoff, Betty Duggan, Julie Earnstein, Audrey Hornung, Martha McCartney, Danielle Moretti-Langholtz and Edward Regan
Ethnographic Overview and Assessment Cedar Creek and Belle Grove National Historical Park, Northeast Region Ethnography Program National Park Service, Boston, Ma. 2009

The Cultivator: A Monthly Journal Devoted to Agriculture, Horticulture, Floriculture and to Domestic and Rural Economy, Luther Tucker: Albany, New York, New Series, Vol VI, August 1849, p. 238, <https://archive.org/details/cultivator01socigooq/page/n6> Accessed 07.30.19

Heath, Barbara J., “Nineteenth-Century Small Farms and Plantations,” in *The Archaeology of 19th-Century Virginia, Special Publication No. 36 of the Archeological Society of Virginia*, John H. Sprinkle, Jr. and Theodore R. Reinhart Editors, Richmond, Va.: Spectrum Press, 1999

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia

Hofstra, Warren R., "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

"Isaac Hite, Jr. to Isaac Bowman, 1817," HFP, vol. 1, doc, 50, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va.

"Isaac Hite, Jr. to James Madison," Aug. 12, 1803, HFP, vol. 1, doc. 25, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va.

Johnson, Clifton, "A Girl in the Shenandoah Valley," in *Battleground Adventures The Stories Of Dwellers On The Scenes Of Conflict In Some Of The Most Notable Battles Of The Civil War, Collected in Personal Interviews by Clifton Johnson*, New York: Houghton Mifflin Company, 1915.

Kalbian, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbian, LLC, September 2014

Kercheval, Samuel, *A History of the Valley of Virginia, 4th edition*, Strasburg, Va.: Shenandoah Publishing House, 1925

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons Kenneth E. and Janathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977.

Mitchell, Robert D., "Agricultural Change and the American Revolution: A Virginia Case Study," in *Agricultural History*, vol. 47, no. 2 (April 1973), pp. 119-132.
<http://www.jstor.org/stable/3742028>, accessed: 27-11-2017

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012

Palmer, Thomas H., *Observations of Virginia*," May 30, 1814, in *Travels in the Old South: Selected from Periodicals of the Times*, ed. Eugene Schwaab, Lexington: University Press of Kentucky, 1973

"The Records of the Commissioners of Claims listing the approved and dis-approved Claims of Loyal Citizens for Supplies furnished during the Rebellion,"
<https://www.fold3.com/image/34/222377542>) Accessed: November 25, 2018

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the Old South: Selected from Periodicals of the Times*, ed. Eugene Schwaab, Lexington: University Press of Kentucky, 1973

Sulfridge, Wayne, "Murder at Belle Grove Plantation: The Death of Hettie Cooley and the Trial of Harriet Robinson," unpublished paper, nd, from the files of Belle Grove, Inc.

Stewart, Nancy B., "How Did Shenandoah County Get into the Slavery Business?," *Cedar Creek and Belle Grove National Historical Park Archives*

Will Book 19, pp. 358-9, Frederick County Clerk's Office

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 8:

Figures

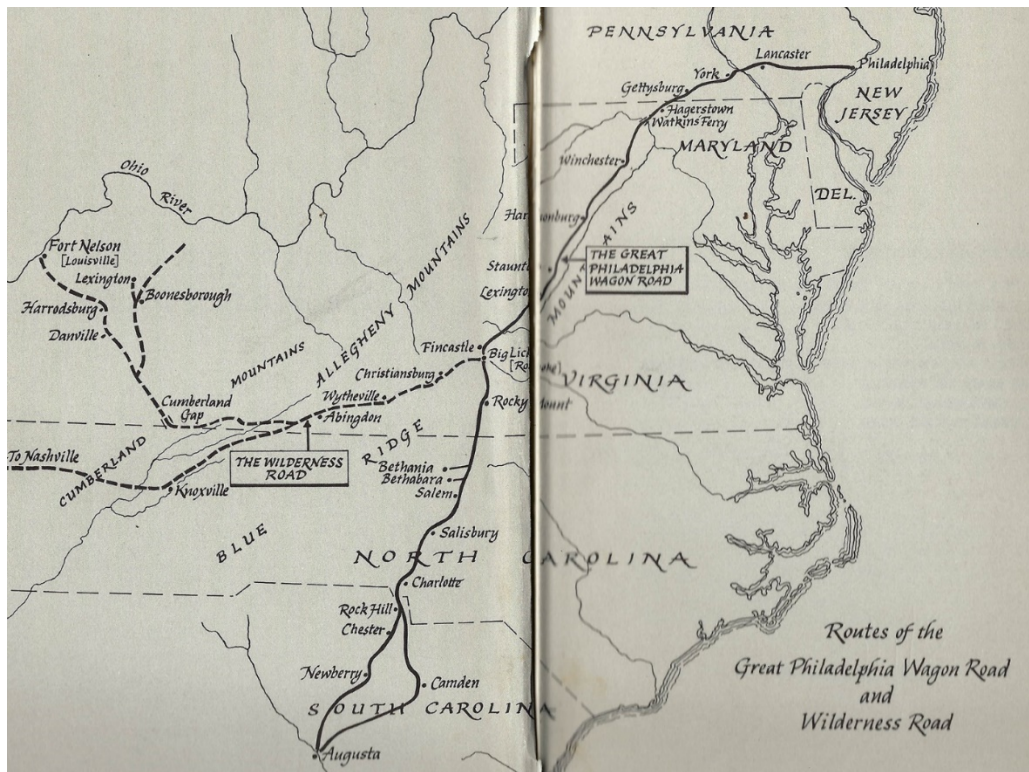


Figure 8.1 The route for driving cattle north along the Philadelphia Wagon Road to the cattle market in Philadelphia. From Rouse 1973.

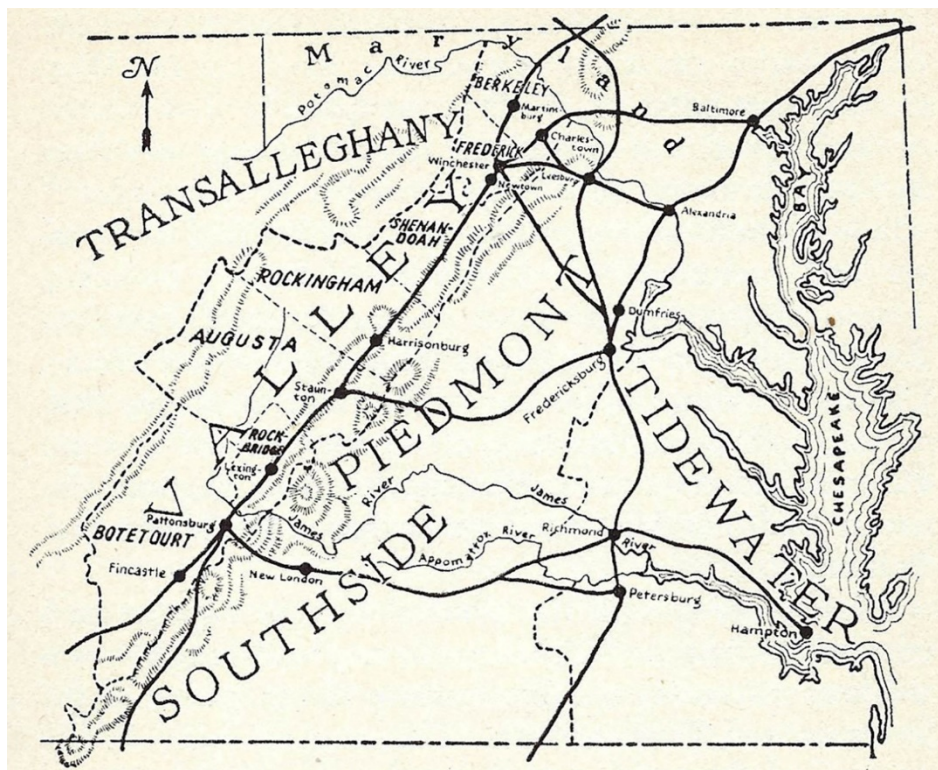


Figure 8.2 The route for cattle driven to the market in Baltimore. From Hart 1942.

PRODUCTION FOR MILITIA, 1779-1783 (SAMPLE YEARS) ¹											
County	Flour (pounds)	Meal (pounds)	Wheat (bushels)	Corn (bushels)	Rye (bushels)	Oats (bushels)	Hay (pounds)	Beef (pounds)	Bacon (pounds)	Pork (pounds)	Mutton (pounds)
Berkeley (1783)	12,611	900	941	2,537	60	—	c.30,000	16,066	462	265	c.150
Frederick (1782-83) ²	144,756	24,895	314	15,880	68	23	146,356	48,543	1,740	—	—
Shenandoah (1782-83) ²	27,928	—	72	506	56	141	17,948	80,645	510	165	45
Rockingham (1779-80) ²	8,320	1,540	210	900	150	c.500	c.50,000	136,000	2,242	3,215	1,380
Augusta (1779-80) ²	46,432	—	156	1,165	509	122	84,385	220,103	2,774	2,808	3,793
Rockbridge (1781-82) ²	4,547	3,664	5	209	20	c.110	1,228	72,184	833	518	100

SOURCE: Public Service Claims, 1779-1783, Virginia State Library, Richmond.

¹ The best sample year is indicated for each county, although the Berkeley County sample is very incomplete.

² The years 1779 and 1782 were years of unusually low precipitation.

Figure 8.3 Agricultural production by lower Shenandoah Counties for the militia 1779-1783. From Mitchell 1973.

1850 Agricultural Census Schedule																				
Schedule 4 - Productions of Agriculture in _____ in the county of _____ State of _____ in the year ending in June 1, 1850																				
Enumerated by me on the _____ day of _____ 1850 _____ Ass't Marshal																				
Name of Owner, Agent, or Manager of the Farm	Acres of Land		Cash Value of Farm	Value of Farming Implements and Machinery	Live Stock June 1, 1850								Produce during the year ending June 1, 1850							
	Improved	Unimproved			Horses	Asses and Mules	Milk Cows	Working Oxen	Other Cattle	Sheep	Swine	Value of Live Stock	Wheat	Rye	Indian Corn	Oats	Rice	Tobacco		
	No.	No.			Dolls.	Dolls.	No.	No.	No.	No.	No.	No.	Dolls.	Bush.	Bush.	Bush.	Bush.	Lbs.	Lbs.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Produce during the year ending June 1, 1850																										
Ginned Cotton	Wool	Peas and Beans	Irish Potatoes	Sweet Potatoes	Barley	Buckwheat	Value of Orchard Products	Wine	Value of Market Garden	Butter	Cheese	Hay	Clover Seed	Other Grass Seeds	Hops	Hemp		Flax	Flaxseed	Silk Cocoons	Maple Sugar	Cane Sugar	Molasses	Beeswax	Value of Homemade Manufactures	Value of Animals Slaughtered
																Dew Reted	Water Reted									
Bales (400 lbs)	Lbs	Bush	Bush	Bush	Bush	Dolls	Gallons	Dolls	Lbs	Lbs	Tons	Bush	Bush	Lbs	Tons	Tons	Lbs	Bush	Lbs	Lbs	Lbs	Gallons	Lbs	Dolls	Dolls	
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										

Figure 8.4 Virginia Agricultural Census Schedule for 1850. From the National Archives and Records Administration.

1860 Agricultural Census Schedule

Schedule 4 – Productions of Agriculture in _____ in the County of _____ in the State of _____
 Enumerated by me, on the _____ day of _____ in 1860 _____ Ass't Marshal

Name of Owner, Agent or Manager of the Farm	Acres of Land		Cash Value of Farm Dolls.	Value of Farming Implements and Machinery Dolls.	Live Stock June, 1 1860										Produce During the year ending June 1, 1860									
	Improved	Unimproved			Horses	Asses and Mules	Milk Cows	Working Oxen	Other Cattle	Sheep	Swine	Value of Live Stock	Wheat	Rye	Indian Corn	Oats	Rice	Tobacco	Ginned Cotton	Wool				
	No.	No.			No.	No.	No.	No.	No.	No.	No.	Dolls.	Bush.	Bush.	Bush.	Bush.	Lbs.	Lbs.	Bales (400 lbs)	Lbs.				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21				



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131e (6/03)

Ginned Cotton		Wool	Peas and Beans	Irish Potatoes	Sweet Potatoes	Barley	Buckwheat	Value of Orchard Products	Wine	Value of Market Garden	Butter	Cheese	Hay	Clover Seed	Other Grass Seeds	Hops	Hemp		Flax	Flaxseed	Silk Cocoons	Maple Sugar	Cane Sugar	Melasses	Beeswax	Value of Homemade Manufactures	Value of Animals Slaughtered
																	Dew Reted	Water Reted									
																	Bales (400 lbs)	Lbs									
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	



National Archives and Records Administration

NARA's website is www.archives.gov

NA Form 14131d (6/03)

Figure 8.5 Virginia Agricultural Census Schedule for 1860. From the National Archives and Records Administration.

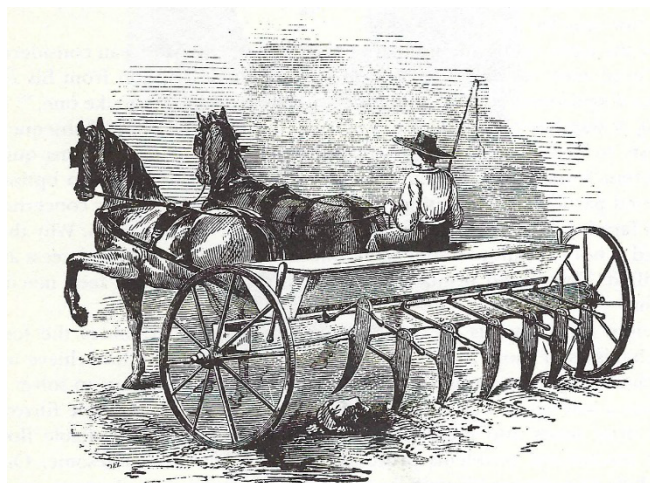
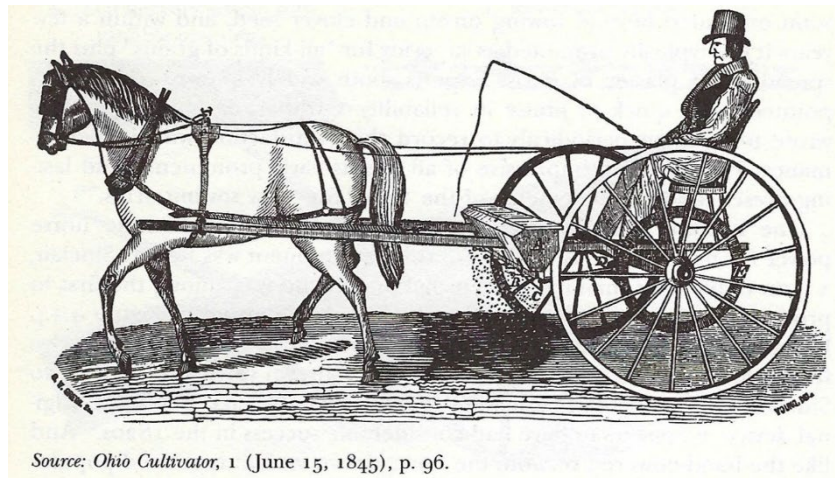
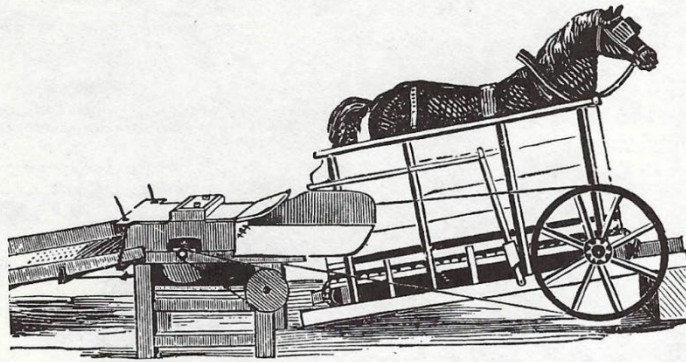


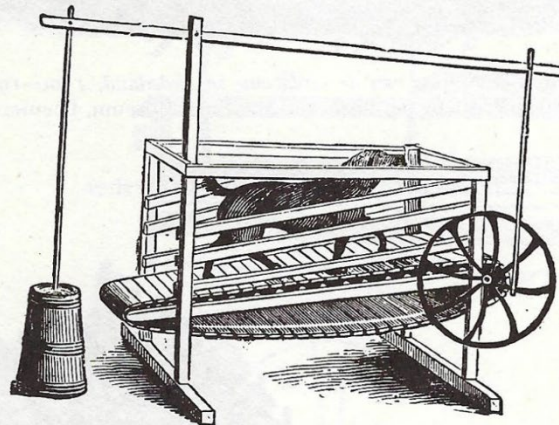
Figure 8.6 Mid-nineteenth century horse drawn seed drills. From McClelland 1997.



Figure 8.7 The horse-drawn McCormick Reaper. From Mary Evans Library Photographs.



A. Horse treadmill with threshing machine



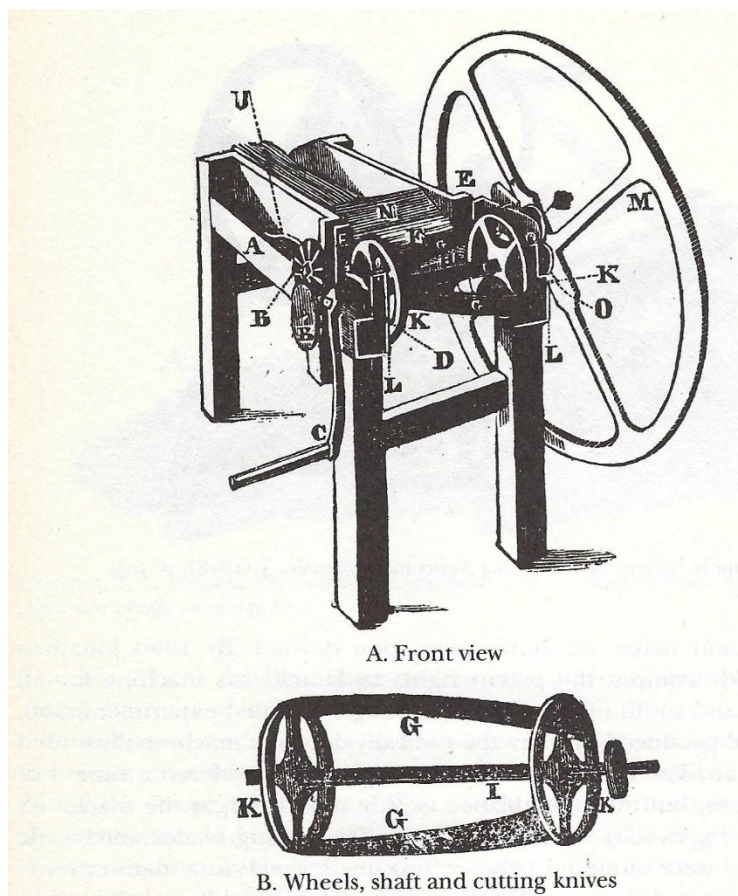
B. Dog treadmill with churn

Source: John J. Thomas, *Farm Implements and Farm Machinery* (New York: Orange Judd, 1869), pp. 188, 191.

Figure 8.8 (Top) Horse-powered treadmill threshing machine. (Bottom) A dog-powered treadmill churn. From McClelland 1997.



Figure 8.9 A typical freight wagon of the type built and utilized in the lower Shenandoah Valley. From Rouse 1973.



Source: *American Farmer*, 3 (January 4, 1822), p. 326.

Figure 8.10 "Eastman's patent" horse-powered corn fodder machine used to cut corn into fodder. From *The Cultivator* August 1849.

Chapter 9:

The Agricultural Landscape: Progressive Farming and the Agricultural Reform Movement Practices

The period between the 1770's, the "Age of Jefferson," and the outbreak of the Civil War witnessed a remarkable revolution of agricultural practices nationwide. It was a period characterized by tremendous interest in "scientific" farming practices in particular. Historian Peter D. McClelland has identified that it was in the "half century following the American Revolution," that "modifications first began in earnest across almost the entire range of farming practices" throughout the country. Among the farming practices that were most studied were the application of fertilizer, the design of better crop rotations, the development of better pastures, the design of new and improved farming implements, and livestock breeding . McClelland described the maturation of American farming practices at the end of this period, when for the first time the "quintessential question of modern producers – Is there a better way?" became pervasive among American farmers." The prominence of that question reflected an attitudinal transformation" that "was accomplished in less than two decades, primarily between 1815 and 1830" (McClelland 1997, X). There was a "shift in attitude among American farmers that affected how they thought about, and went about, their agrarian tasks." (McClelland 1997, 92-3) This shift signaled for McClelland the beginning of the "first revolution in America's agricultural sector." (McClelland 1997, 9) The "attitudinal transformation" of farmers of this period was also recognized by James Madison, who as the newly elected president of the Agricultural Society of Albemarle County, Virginia in May of 1819, addressed the Society and acknowledged that "the present generation...for the first time seems to be awakened to the necessity of reform." (McClelland 1997, 52-53)

By the 1820's the "revolution" identified by McClelland had become a full-fledged "agrarian reform" movement that would lead ultimately to the "farm becoming "the symbol of Americanism...which meant that the agrarian landscape had to reflect the nation's prosperity and importance...and for 'improvement' of farmsteads and the rural landscape." Central to the spread and popularization of this movement's ideas was the concurrent development of period agricultural periodicals. During the first half of the nineteenth-century "proponents of a transformed landscape articulated their ideas" in these periodicals, including the "almanacs, newspapers and catalogues" of the day. (Manning-Sterling 2000, 189) The growth of progressive ideas and the implementation of progressive principles was spurred through the collective efforts of numerous agricultural societies and farmer's clubs, including over thirty local agricultural societies in Virginia alone. No less a figure than George Washington had identified agricultural societies as a mechanism to "promote the growth of agriculture by 'collecting and diffusing information, while encouraging and assisting a 'spirit of discovery and improvement.'" "In theory, then, the establishment of societies was a desirable institutional development to foster change in the early phases of an agricultural revolution." In practice," according to Peter McClelland, "they were remarkably ineffective." (McClelland 1997, 208), The oldest agricultural society in the country was "that of Philadelphia" but it did little between 1793 and 1805 when it was revived by a new president . (McClelland 1997, 212) However, as

the first agricultural societies were being formed, “resistance to new farming practices was formidable.” That resistance was spurred by farmers who were loath to change without “supporting demonstrations in the field” (McClelland 1997, 210) Over time, however, the workings of the agricultural societies and the agricultural press would come to embody “the collective spirit of the American agrarian consciousness” and the many agricultural publications identified for their readers “the identifying practices of a model farmer” while encouraging farmers “to adopt practices that resulted in more efficient use of time, labor, and money, including better stock selection, increased crop variety, and modern agricultural tools” (Manning-Sterling 2000, 189). In total then, “the Agricultural Reform Movement advanced new perspectives for the agrarian world that changed the manner in which farmers viewed themselves, their neighbors, their farms, and their community.” (Manning-Sterling 2000, 212) Virginia, led by the exemplar of the long-held farming practices and the early acceptance of progressive farming principles and techniques by Shenandoah Valley farmers, would play a leading role in agricultural reforms in the decades before 1860. (Turner, 1964, 167)

Farming practices in America and in many parts of Virginia had held on to long-followed traditional practices. For example, for generations, American farming practices had virtually assured the rapid exhaustion of fertility on land newly cleared.” The common practice of “rapid clearing, hard use, and move on” assumed that the long-term fertility of the land was not a concern. Rather, the practice was in place because of economic considerations, concisely described by Thomas Jefferson, who observed that “we can buy an acre of new land cheaper than we can manure an old one.” (McClelland 1997, 223) That economic imperative along with early crop rotation regimes such as the “three shift system” of Indian corn, wheat, and pasture” contributed to rapid soil exhaustion. (McClelland 1997, 226)

In contrast to the “three shift system,” the farmers in the Shenandoah Valley, “farmers practiced a system of agriculture known as “general mixed farming,” which entails production of a broad range of crops and livestock” characterized by what historians have described as a “diversity of enterprise.” (Koons and Noyalas 2010, 39) However, general mixed farming was not unique to Virginia or the Shenandoah Valley. It was also the “dominant form of agriculture practiced in Pennsylvania, and migrants from that colony who settled in the Shenandoah Valley brought this system of farming with them.” (Koons and Noyalas 2010, 39) By the early nineteenth Century, the success of the Valley’s farmers had been widely recognized and their success reflected in some measure the high quality of the agricultural lands in the lower Shenandoah Valley and along Cedar Creek, which historian Robert Mitchell has described as “better endowed physically for agriculture” than the upper, southern, half of the Valley. But Mitchell also recognized that the farmers of the lower Valley “appear to have been more progressive,” than farmers elsewhere in the Valley. (Mitchell 1977, 142-3) As a result, Shenandoah Valley farmers, and lower Shenandoah Valley farmers in particular had “acquired a reputation outside the region for their practices of mixed farming” and their willingness to adopt newly developed “elements of scientific agriculture” (Koons 2000, p. 5-6) Two early examples of the Lower Valley farmers’ progressive practices are referenced by Mitchell: first, “the use of the cradle to harvest grain,” (Fig. 9.1) particularly by farmers in Frederick County, and, second, the planting of the “English Grasses,” clover and timothy, “to improved pastures in

the lower Valley during the 1750's, almost two decades before they were used widely in the rest of the Valley." (Mitchell 1977, 142-3)

A more comprehensive description of the overlaps between "diversity of enterprise" and "progressive" farming practices is provided by historian Kenneth E. Koons who observed that:

" The Diversity of enterprise characteristic of farming in the Valley of Virginia enabled farmers to exploit the complementary of crop production and stock raising, and to practice 'plaster and clover husbandry' and other soil improvement techniques associated with the agricultural reform movement of the late eighteenth century. Deep plowing, the amendment of soils with plaster and lime, and a scheme of crop rotation that included clover were viewed as essential to sound farm management...farmers grazed livestock on fields of artificial grasses such as clover, or they mowed the grasses and stored them for overwintering livestock. Farmers also penned livestock in order to accumulate manure for replenishing the nutrients in cropland soils." (Koons 2000, 5)

The progressive farming movement coincided with the Valley's growing focus on wheat as its most important crop. As Historian Warren Hofstra has asserted, "wheat changed the landscape" as clearing land for additional planting fields "proceeded at a rapid rate." So much woodland was being cleared that wood was beginning to be thought valuable." At the same time, as Hofstra observed, "the landscape created by the drive for competence became the landscape of improvement. Farmers built new houses, farmyards became compounds with structures for every agricultural purpose and fields increased in size" (Hofstra 2004, 289) The application then of the principles and methods of progressive farming would also influence the landscape's physical transformation even as the lower Valley farmers' commitment to "diversity of enterprise" guided their agricultural efforts throughout the wheat growing period. For Example, although wheat became "the dominant cash crop of Shenandoah Valley farmers, and its production became the main engine of economic growth and development in the region, the crop never became a monoculture." The progressive farming techniques employed by Valley farmers allowed them to produce "burgeoning amounts of wheat, but they did so within the diversity of enterprise that general mixed farming entailed. (Koons and Noyalas 2010, 41)

Along with the noted opportunities offered by diversified farming, in the late Eighteenth Century, farmers and planters in Virginia were beginning to recognize that there was a clear economic impetus for moving away from growing a single crop such as tobacco and instead adopting a system of a more diversified agriculture. Historian Thomas Preisser has identified, one of the Commonwealth's most notable farmers, George Washington, "found that pursuing a policy of diversified agriculture, in which the cultivation of wheat played the leading role, was more profitable than planting tobacco year after year." In fact, according to Preisser, "many Northern Virginia planters reluctantly moved from the cultivation of tobacco to more diversified forms of agriculture because there was more money to be made raising wheat, Indian corn, beans and other foodstuffs." (Preisser 1977, 133).

Importantly, the mixed farming strategies employed by farmers in the Shenandoah Valley could influence significant aspects of a farm's operation. In particular, the "diversity of enterprise" approach offered Valley farmers the potential to realize multiple benefits across a wide spectrum of the typical farm's production. Commercial livestock management in particular provided multiple benefits for Valley farmers. Animals provided far more than "traction" and manure, however. Cattle and swine provided meat for the Valley's population with "swine serving as a main source of animal protein among eighteenth and nineteenth-century rural populations." "Cattle also provided farmers with milk, cheese, and butter. In addition, surplus beef, cured bacon, and butter were sold on the agricultural market. Schlebecker 1971, 465-6) "Sheep were an additional source of meat but also provided wool for home or local production of textiles." Thus, diversity of enterprise would serve as the foundation for the grain-livestock complex that persisted in the lower Valley until well into "the early decades of the twentieth century." (Koons and Noyalas 2010, 40)

"Farmers in the Valley also knew about the nitrate-fixing powers of legumes such as clover." Applying that knowledge, "farmers used red clover in almost every crop rotation." (Schlebecker 1971, 471) (fig.9. 2) But Valley farmers also sowed clover along with various artificial grasses such as timothy "to provide summer grazing and winter forage for livestock..." (Koons and Noyalas 2010, 40) In addition, "Many farmers kept hives of bees, thus assuring fertilization of the crop while securing some honey on the side." (Schlebecker 1971, 471) The Valley's natural resources could also provide multiple benefits for the region's farmers. Limestone, cleared from agricultural fields as they were put into cultivation, was ubiquitous in the lower Valley as a building material. But limestone could also be "softened by burning" then "ground and pulverized" into "agricultural lime" at hammermills to be "used as a soil amendment to sweeten acidic soils and some Valley farmers constructed lime kilns for farm production of agricultural lime." (Koons and Noyalas 2010, 9-10)

The period press extolled the virtues of mixed farming. By the 1820's improvements in farming practices led an unidentified contributor to *The Valley Farmer* to reflect on the total transformation of agriculture that the publication was witnessing and reporting upon:

"Several reflections have suggested themselves to my mind during this season...the first is the conviction that our agriculturalists are improving...the day has gone by, when our farmer, in the old clodhopper spirit, laughs at the book farmers, and ridicules the spirit of enquiry, which guided by science and governed by fair experiments, teaches him what are the properties of the soil that he tills – its component ingredients – its fitness for certain products – its deficiency and their cure. The value of manure and the proper means of increasing this food for the land that gives food to him; the value of his straw which to keep his soil ready for his wheat, should be carried back to the fields that produced it...the value of the *mineral* manures...of *lime*, for the slate hill covered with a tangled sour sorrel or the marshy drains and slashes, that without it, bring nothing but sour grass and weeds – of plaster, as well to stimulate his clover crops; as to fix the useful properties of the manure of his stable and cow-yard, by mixing it in with this manure when it is fresh – all these and many other valuable truths the farmer is now

willing to learn and believe from the reports of the diligent ELLSWORTH – or the essays of the observant SKINNER – and he proves them by his own experiments and experience, and the results of his increased knowledge, is seen in the *improved condition* of our agriculture. Another thought...is the great importance of having a FARMERS' CLUB in the county...connected with them is a subscription to the best works on the science - the information derived from those useful periodical works which contain information on every subject relating to farming. There is one just established in New York, under the management of that distinguished friend of agriculture J. S. Skinner, published by Greely & McElrath." ("The Harvest," 10)

Period periodicals sought to bring the latest news and farming advances to the attention of farmers, occasionally doing so in very direct ways. In the inaugural issue of the *Southern Planter*, published in Richmond, Virginia, beginning in 1841. The periodical's inaugural issue described that the *Southern Planter*, "a monthly periodical" "will be devoted, exclusively, to the promotion of Agriculture, horticulture, and the allied arts." The periodical would "offer in condensed form" the observations and deductions of "practical men" and enable "the Planter of the South...to obtain the benefits of his neighbor's experience with little labor and less cost." ("Prospectus" 1841, 1] The chief object of *The Southern Planter* was "to afford a medium for the interchange of opinions and observations." Among the opinions offered in the first issue was the advice that: "every farmer should cultivate at least two or three acres of hemp, for his own use." But the writer also advised that planting hemp had a second, equally important purpose noting that "the crop is a fertilizer, rather than an exhauster." ("Hemp" 1841, 40) The *Southern Planter's* inaugural issue also discussed numerous farming practices that could be enhanced by applying progressive farming practices and principles including improving soils; the use of lime, manure, compost, plaster, and bone dust; crop rotation and the use of cover crops; cultivation practices for various crops including: wheat, corn, oats, rye, and "green crops;" new methods of draining land; proper fencing; and proper wood cutting. Also included were articles on recent technological advances in farm equipment, including ploughs and threshing machines and an introductory article on the role and importance of agriculture societies. ("American Machinery" 1841, 35)

Another important agricultural periodical was *The American Farmer*, described by Eugene L. Schwaab as "the first really successful agricultural journal in America," (Schwaab 1973, 136) *The American Farmer*, began publication in 1819 in Baltimore. Its publisher was John S. Skinner, who traveled through the Shenandoah Valley in the summer of 1820. Skinner's "Observations on the Agriculture of Virginia" garnered from that trip appeared in *The American Farmer* 2 published in January, 1821. Skinner's focus in part was to report on progressive farming practices he observed in his travels. He recognized the advantages of mixed farming which he understood could provide farmers with flexibility to sustain farming operations in times of economic hardship. In an 1821 article in *The American Farmer*, Skinner noted that when the selling price of certain crops, wheat and rye, became so low that there was no profit in selling the crop mixed farming allowed farmers to still find a use for the harvest as both crops were then "ground, and either fed to fattening cattle [sic] or distilled." (Hite *Commonplace Book 1776-1859*, 6-7)

One of the “progressive “ farmers in the Lower Shenandoah Valley visited by Skinner, was Isaac Hite owner of the Belle Grove Plantation on Cedar Creek south of Middletown. For Skinner, his visit to “Bell Grove “[sic] in 1820 “opened a wide field for interesting observation” and offered an example for “the notice of the large landholder of the South.” Hite’s “general system” of farming in place at Belle Grove in 1820 was described by Skinner as “a mixed one- under which the cultivation of the staple grains, wheat, rye, oats and corn are combined with the manufacture of some of these into spirit, and with grazing.” (Skinner-Schwaab 1973, 140). Skinner described “Major H” as an “industrious and observant owner,” identifying Hite as “...the first to introduce the use of plaster of Paris [or gypsum] in connection with the *field* culture of clover in the Valley of Shenandoah...” Gypsum, or plaster of Paris, had been used with increasing frequency following the revolution, and by the second decade of the nineteenth century was often reported as being ‘in general use’ in many sections of the country. A key reason for this rising popularity was the evident success this fertilizer had in restoring fertility when used in conjunction with ‘English grasses,’ particularly clover.” But without scientific knowledge about the relevant chemistry, “doubts began to surface” among some farmers (McClelland 1997, 224) Isaac Hite, Jr. was among those progressive farmers who paid close attention to the success of various soil amendments. After their meeting, Skinner describe Hite as:

“well satisfied after more than twenty-five years’ experience, that [gypsum’s] effect on clover and other crops, had greatly diminished: as a substitute for Gypsum, which had been for many years almost the sole reliance, he was about to construct kilns for burning lime to which he had been more immediately been introduced by the essays of Doctor Black of Delaware.” (Skinner-Schwaab 1973, 139)

To give some sense of the scale of the use of plaster in the fields at Belle Grove, the plantation purchased 21 tons of plaster purchased from Baltimore merchant C. D. Hinks in 1841 (Belle Grove Collection 890 folder 6)

The “field culture” of clover noted by Skinner was described in more detail by Isaac Hite in a 1803 letter to his father-in-law, James Madison, another recognized “progressive farmer.” In that letter Hite described the benefits of giving his arable lands a regularly scheduled “rest under grass.” Hite describes the system and the evolution of his own experience quoting Mr. Arthur Young, who: “somewhere speaking of the culture of the earth,” observed:

“that repose under grass is the very soul of husbandry.” The aphorism, I believe to be perfectly correct and it was at an early period in my career of farming I became sensible of its importance Hence I was induced to sow clover seed and at first gave my arable lands two years rest under grass, but at length extended it to three. That is, ten years ago after reaping I did not reap again until the fifth year, then again in the tenth. The first of these crops did not equal my expectation but the present one far exceeds it. The winter’s frost produced no serious effects—the wheat everywhere on a variety of fields and soils did remarkably well and suffered only from a luxuriancy of vegetation. It is true

some of the weaker parts of the fields were plastered but the principal cause of its' success may fairly be ascribed to the system." ("Hite to Madison" 1803)

Hite included in his letter to Madison an estimate of grain yields as evidence of his assertions:

"Now as it requires two years to make the crop of wheat, it will of course take 19 years cropping according to the grain system to produce a sum equal to 5 years according to the clover system—and as each crop requires and ploughings the proportion to each other will be as 3 is to 28 ½. But as land under continual grain crops will certainly depreciate, it would be found upon experiment that the difference is really much greater than here stated. Hence, Sir, ...the position in which this subject is placed...affords ample demonstration of the preeminence of our system over the other. (Hite to Madison 1803)

In that same letter to Madison Hite acknowledged that:

"The grassing system derives celebrity also from political considerations. In our extensive regions remote from the navigation livestock is and must continue to be the staple of the country. The grassiers of the Atlantic states constitute the chief medium through which it can find a market. Our backcountry dealers in cattle bring them here during the summer and fall, and sell them to our grassiers for cash. This cash is principally applied to the purchase of goods in our seaport towns, and these goods are again bartered for cattle. Hence it is evident that the more it must tend to invigorate, enrich, and cement every quarter of our vast empire." ("Hite to Madison" 1803)

Two years later Hite wrote to Madison again extolling the virtues of "sowing lands with clover seed" - also described as "fallow and seed – noting to Madison that he could expect to double the yield of wheat per acre within the course of ten years by doing so. ("Hite to Madison" 1805)

A 1820 letter to Jacob and Ann Mary Frederic, tenant farmers on Hite-owned land, gives additional insights into Hite's use of both plaster and the planning of clover in the farm fields. Hite instructed the Frederics that twenty acres of newly cleared land should:

"be well ploughed with a single coulter plough twice transversely and then with another plough before it shall be planted in corn. The corn ground is to be sown with at least five pecks of clean wheat rolled with a half bushel of plaster and 3 quarters of clean clover seed for every bushel of wheat sown." (HFP, vol. 3, doc. 32)

Hite gave specific instructions to his tenants regarding grazing on this parcel of land stating: "It is expressly stipulated that the above premises are at no time to be grassed or stock of any kind to be suffered to go thereon for the purpose of feeding or grazing." (HFP, vol. 3, doc. 32) Hite's instructions to his tenant and the attention he paid to the grassing "system" reflect the systematic approach to farming that characterized the nineteenth century progressive farming.

After the Civil War, James Heater, whose farm abutted Belle Grove, received what can be considered high praise from his neighbors who described him as “a good systematic farmer.” (Belle Grove Collection 890, Folder 8.)

The interest in diversified farming and implementing progressive farming practices would intensify in the decades leading up to the Civil War. During this period, Valley farmers employed the “the most up-to-date devices” and “farm implements” of the time. (Schlebecker 1971, 469-70). By mid-century, several progressive agricultural practices had become standard practice including “the use of manure, or compostec[sic], or guano, or marl, or plaster, or ammonia, or something at planting.” (Schlebecker 1971, 470) and “nitrogen-fixing legumes, such as clover, became a standard element in the crop rotation sequence for Valley farmers (Schlebecker 1971, 470-471) Gypsum, or plaster of Paris was used with increasing frequency following the revolution, and by the second decade of the nineteenth century was often reported as being ‘in general use’ in many sections of the country. A key reason for this rising popularity was the evident success this fertilizer had in restoring fertility when used in conjunction with ‘English grasses,’ particularly clover.” But without scientific knowledge about the relevant chemistry, some farmers would admit to doubts as to its ability to improve yields. (McClelland 1997, 224). The same doubts affected the use of lime and recommended crop rotation systems. As a result, the use of soil amendments and fertilizers became more widespread and varied as farmers turned to crop rotation regimes used in Europe. “Farmers in the Old World had grappled with designing better crop rotations for centuries and had discovered a variety of crop sequences that helped to maintain the fertility of the soil.” But which of the many options would be best was a question that was difficult to answer. (McClelland 1997, 226).

To prevent soil exhaustion, agricultural reformers recommended intricate cultivation routines involving [crop rotation], application of guano, schemes that included clover, application of animal manure, and limited grazing." The attention farmers paid to avoid soil exhaustion led Historian John T. Schlebecker to assert that it was during this period that nationwide the “most spectacular developments...occurred in agricultural chemistry” For Schlebecker, it was “chemistry, as well as mechanics,” that was responsible for transforming “farming nationwide between 1840 and 1860.” (Schlebecker, 1971, 470-471) That transformation is evident in the “generally accepted...three-stage depiction of early American attention to rotation” outlined by Peter D. McClelland: 1. Neglect in the Colonial Period; 2. The post-revolutionary experimentation by a few, and 3. The post-1815 adoption of improved rotation systems by many. (McClelland 1997, 228). Among the early adoptees of a new crop rotation system was Isaac Hite, Jr.

The period was also recognized as the “age of farm machinery.” (Peterson 1935, 97-108) a time when “a host of new farming devices burst forth from the literature and swept across the landscape...this wave of innovation, in turn, signaled the beginning of a major shift in attitude among American farmers that affected how they thought about, and went about, their agrarian tasks.” (McClelland, 1997, 92-93) Research has determined that “all Valley farmers owned quite a bit of equipment.” (Schlebecker 1971, 267) The period between 1790 and 1820 saw the invention of the iron plow (Fig. 9.3) which would eventually replace the traditional wooden

plows by the end of the 1820's. By 1821 William Balthrope had patented a new corn cutter and an improved straw cutter that could cut "every kind of forage" had been developed by Jonathan Eastman. (Fig. 9.4). Cyrus McCormick patented the McCormick Reaper in 1834 (Fig. 9.5) By 1816, American-made commercially produced devices such as Bennet's Clover and Turnip sowing machine - commonly called seed drills (Fig. 9.6) - and "judged superior to the hand alternative" of broadcast sowing (McClelland 1997, 86) were becoming available to American farmers. By the 1840's, a variety of grain drills would all but replace hand and broadcast sowing. (Peterson 1935, 97-108 and McClelland 1997, 866) By this same time, harrows, with improved geometries, were in common use to cover the newly sown seeds. (Fig. 9.7) Additional technologically advanced farming equipment from the period included fanning mills, (Fig. 9.8) and the stationary thresher, (Fig. 9.9). This same period saw the introduction of the platform Scale. (Peterson 1935, 102-104)

Kathleen Bragdon recounts how historian Thomas K. Cartmell, from Middletown, Virginia, described his home town, located just north of Belle Grove, as a "Valley manufacturing point." Cartmell identified James Ridings, whose house and shop were on First Street, "as the inventor of a threshing machine ca. 1817. And noting that Ridings' invention was "the first successful effort to produce a machine to supplant the flail and threshing floor, to thresh wheat from the straw in this county, had its start in the same town" (Bragdon 2009, 103-104). Miller, and farmer, Daniel Stickley, whose mill and property were located across Cedar Creek southeast of Belle Grove, is identified as using one of Ridings' threshing machines in his farm operations. (Bragdon, 2009, 110-111)

The nineteenth century saw a marked increase in new labor-saving technology. By the mid-century, an increasing number of Shenandoah Valley farmers were harvesting their wheat with horse-drawn mechanical reapers.

"Numerous brands of reapers were commercially available to farmers, but the McCormick Reaper, invented by Cyrus McCormick in the upper Valley in the 1830s and perfected during ensuing decades, became the most well-known and widely-used mechanical reaping machine. Mechanical reapers saved substantial amounts of labor, revolutionizing wheat farming. By some estimates, a mechanical reaper could harvest as much wheat as five or six cradlers." (Koons and Noyalas 2010, 52-54)

This same period saw the introduction of mechanical threshing machines for the threshing of wheat in addition to the mechanical reapers. Threshing wheat after it had been harvested had traditionally been done by the use of a flail. With the flail:

"sheaves of wheat were unbound and laid on a threshing floor (typically the wooden floor of a barn), and then beaten with flails in order to separate the grain from the stalks. Winnowing removed the chaff from the grain. Traditionally, this was accomplished by throwing the mix of grain and chaff into a breeze, which would carry the lighter chaff away from the heavier grain (often barns were sited to facilitate winnowing; with doors open, prevailing winds would blow across the threshing floor).

Increasingly during the nineteenth century, however, a mechanical device called a “wheat fan” could be used to clean grain. This was essentially a wooden box with a hopper into which the mix of grain and chaff was poured as the operator used a hand crank to rotate a fan. The rotation of the fan created a strong flow of air under a set of screens that moved back and forth. The screens caught fragments of straw and other debris; grain falling through the screens fell into a container beneath; and the flow of air blew the chaff off of and away from the grain. (Koons and Noyalas 2010, 56) (see Fig. 9.8)

“Mechanical threshing machines came into use during the 1820s and became widely available during succeeding decades.” The early mechanical threshers were small enough to be worked by hand by one man. By the late antebellum period, large, horse powered threshing machines were available and these large machines could cut threshing time and labor costs drastically (Fig. 9.9) “One of these large threshing machines, which...is depicted in a threshing scene in the Shenandoah Valley in 1864 sketched by artist James E. Taylor, who accompanied Sheridan’s troops in the Valley in 1864.” (Koons and Noyalas 2010, 54-56) Valley farmers who owned the larger threshing machines often :

“moved their threshing machines from farm to farm through their neighborhoods, spending a few days at each until the threshing of the wheat or other small cereal grains produced on that farm was complete. In 1850, for example, William Harner, of Rockingham County, “thrashed” his wheat on July 19th and then “moved [the] machine to William Crickenbargers.” By November 14, Harner had threshed the wheat (and sometimes rye) of eighteen other farmers of his neighborhood. After threshing, farmers hauled bags of wheat to a nearby grist mill where it was converted into flour and packaged into barrels to be sold locally or transported to extra-regional markets. (Koons and Noyalas 2010, 54-56)

Thus, as the lower Shenandoah Valley agricultural landscape matured into a commercial farm region in the late antebellum period...progressive farming techniques” and the use of labor-saving agricultural technology, became... essential ingredient[s] in the region’s agricultural prosperity...” (Bragdon, 2009, 144-6). “the comparative strength and vitality of the regional economy resulted from the balanced *mix* of agriculture and manufacturing that prevailed.” (Koons and Noyalas 2010, 56)

The adaptation of the latest technology by Valley farmers can be seen in the various farm inventories undertaken during this period, often undertaken to settle the estate upon the death of a farm owner.

The 1837 inventory of the estate of Isaac Hite, Jr. included 1 wheat threshing machine, a stationary wheat machine, mowing scythes, plows including a McCormick plow, and wheat cradles, (Bragdon 2009, 119-20 and Isaac Hite, Jr. Inventory 1837) Fourteen years later the inventory of the Ann T. Hite [Isaac, Jr.’s widow] estate, revealed that she owned the following agricultural equipment: a mowing scythe, 1 wheat fan, grain cradle, old plows, timber for a harrow, 1 McCormick Wheat reaper, 5 double shovel ploughs, 5 single shovel ploughs, harrow,

1 McCormick plough, 2 large bar shears, and 1 wheat fan. The inventory also revealed that Hite owned copies of two period agricultural periodicals, *American Farmer* and the *Practical Farmer*. (Belle Grove Collection 890, Folder #10)

Chapter 9: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

"A Great Downpour for 30 Hours," *Winchester Times*, June 5, 1889

"American Machinery," in *The Southern Planter*, Vol. 1, No. 3, p. 35

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:
Box 18 Folder 6
Box 5, Folder 8.
Box 3, Folder10

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast Region Ethnography Program National Park Service, 2009

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, The Cultural Resources: Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

"The Harvest," in *The Valley Farmer*, Winchester, Virginia, Vol. 2, no. 1. P. 10-11

Heath, Barbara J., "Nineteenth-Century Small Farms and Plantations," in *The Archaeology of 19th-Century Virginia, Special Publication No. 36 of the Archeological Society of Virginia*, John H, Sprinkle, Jr. and Theodore R. Reinhart Editors, Richmond: Spectrum Press, 1999

"Hemp," in *The Southern Planter*, Vol 1. No. 3, April, 1841 p. 40

Hite Family Commonplace Book (1776-1859), Blosser, ed. (Virginia Historical Society: Hite Family Papers MssIH637535a-40) Doc. 33.p. 6-7

Hite Family Papers, (HFP), Handley Library, Winchester, Virginia:
HFP, v. 3, doc. 32

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the*

Great Valley of Virginia 1800-1900, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16 & 17 January 1837 by the executors and George Brinker, David Stickley, and George Bragg appraisers

"Isaac Hite, Jr. to Madison," Aug. 12, 1803, HFP, vol. 1, doc. 25, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va.

"Isaac Hite, Jr. to Madison," Aug. 13, 1805, HFP, vol. 1, doc. 32, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Va.

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park, December 15, 2010*

Manning-Sterling, Elise, "Antietam: The Cultural Impact of a Battle on an Agrarian Landscape," in *Archeological Perspectives on the American Civil War*, Geier, Clarence R. and Stephen R. Potter, eds, Gainesville: University Press of Florida, 2000.

McClelland, Peter D., *Sowing Modernity: America's First Agricultural Revolution*, Ithica: Cornell University Press, 1997

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012.

Peterson, Arthur G., "Flour and Grist Milling in Virginia," in *The Virginia Magazine of History and Biography*, Vol. XLIII, no. 2, April, 1935. p 97-108.

Preisser, Thomas M., *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776*, College of William and Mary, 1977

"Prospectus of the Southern Planter," *The Southern Planter* Vol 1, 1841.

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Skinner, John S., to James Madison, 18 November, 1822
<https://founders.archives.gov/documents/Madison/04-02-02-0524> Accessed 080119

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the Old South: Selected from Periodicals of the Times*, vol. 1, Eugene Schwaab, ed., Lexington: University Press of Kentucky, 1973

The Southern Planter, Vol 1, no.'s 1, 2, 3, 4, 7, 11, & 12, 1841, Richmond, Va.:

"Prospectus of the Southern Planter," Vol 1, 1841, p. 1

"The Henrico Agricultural Society," Vol 1. No. 1 January, 1841 p. 2

"Book Farming," Vol 1. No. 1 January, 1841 p. 3

"The Plough," Vol 1. No. 1 January, 1841 p. 10

"Manure," Vol 1. No. 1, January, 1841 p. 11

"The Plough," Vol 1. No. 2, February, 1841 p. 17

"Tobacco," Vol 1. No. 3, April, 1841 p. 33

"American Machinery," Vol. 1, No. 3, p. 35

"Hemp," Vol 1. No. 3, April, 1841 p. 40

"Bone Dust," Vol 1. No. 3, April, 1841 p. 41

"American Farmer," Vol 1. No. 3 April, 1841 p. 41

"Wheat," Vol 1. No. 4 May, 1841 p. 71

"Weeding Wheat," Vol 1. No. 4 May, 1841 p. 71

"Harvesting Wheat." Vol 1. No. 4 May, 1841 p. 71

"Draining," Vol 1. No. 7, August, 1841, p. 129

"Orchards," Vol 1. No. 7, August, 1841 p. 71

"Wheat," Vol 1. No. 11&12, 1841 p. 225

Turner, Charles W., "Virginia State Agricultural Societies 1811-1860," in *Agricultural History*, Vol. 38 No. 3 (July, 1964). pp. 167-177, Published by: Agricultural History Society

"Virginia Farming," *The Cultivator, a Monthly Journal Dedicated to Agriculture, Horticulture, Floraculture, and to Domestic and Rural Economy*, New Series, vol. 3, August 1846, Albany, NY: C. van Benthuysen & Company, pp. 238-239

<https://books.google.com/books?id=XIDdLBlzN9sC&pg=PA195&dq=the+cultivator+1846&hl=en&sa=X&ved=0ahUKEwiNxaggh-LjAhXpx1kKHd51AM0Q6AEILTAB#v=onepage&q=the%20cultivator%201846&f=false>
accessed March 3. 2019

“Virginia Husbandry,” in *The American Farmer* (Baltimore), June 29, 1821, Hite Family Papers (HFP), v. 3, doc. 33]

Chapter 9:

Figures

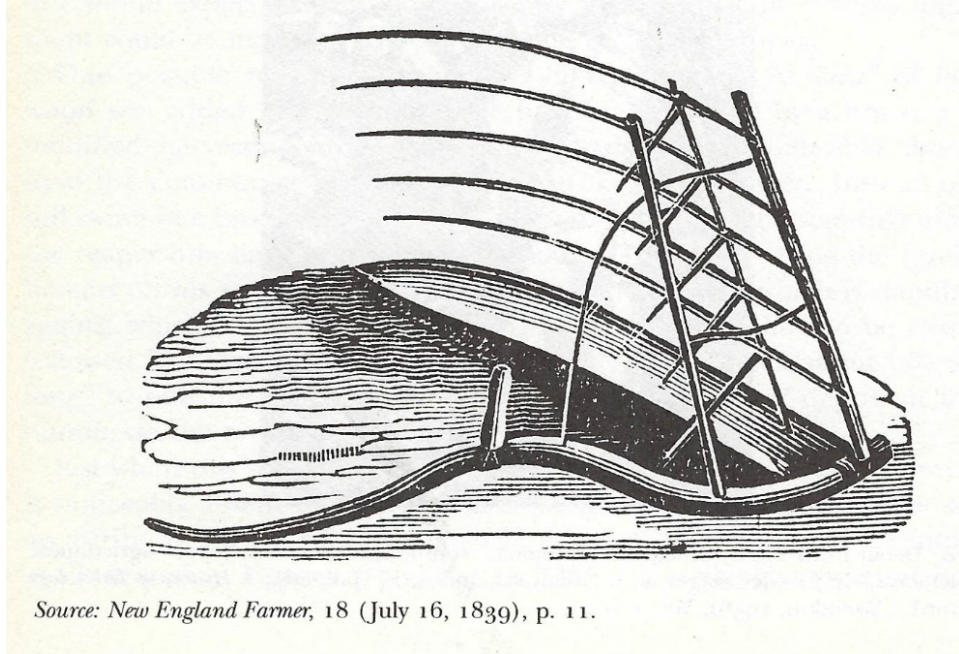


Figure 9.1 American Grain Cradle, c. 1839. Used during the harvest. From McClelland 1997.

VIRGINIA FARMING.

L. TUCKER, Esq.—Being a constant reader of the *Cultivator*, and not finding many communications from this part of the valley of Virginia, I thought it would not be intruding too much on your time to read an account of our farm, which is called the "Plains." This farm was taken up by a Mr. James Wood, and patented on the 12th day of January, 1746, exactly one hundred years ago this day. It was sold some four or five times, until my father bought it in the year 1829. My older brother moved on it in the year 1833, and was on it until 1835. He then bought a farm adjoining the town of New-Market, and I moved to this place, where I have been since. When my father bought this farm it was in very bad order; there was not a good pannel of fence on it, and not a single gate; the roof of the barn had been blown off by a storm and the barn-yard was only fenced in by an old rail fence, and not an acre of clover was on the place. The land was worked on the skinning system." The barn-yard was so full of old manure that it was almost impossible to get to the barn, and some of the fields were so poor that one of them produced only *four bushels* of rye per acre, in the year 1837. The land lies well for cultivation; it is not very hilly, but there are about 100 acres of it a black marl bottom, and about 150 acres of upland, which is a sandy clay; there are also about 165 acres of wood land attached to it. We have run a lane through the centre of the farm so that we can let the cattle run from the barn-yards to any of the fields. We have hung 32 gates

to the yards, lane, and fields, so that we can get about without ever tearing down any fence. The gates are made on the plan that you published in your January number, page 18. There is a spring on the adjoining farm which runs through our bottom land and empties into the Little Shenandoah river that passes along the edge of our farm. We have a merchant mill on the bank of the river which is run by the spring branch; we have also a saw mill which is run by the river. The spring branch runs through the edge of the cattle yards, so that the cattle can get water at all times. The lane also has communication with the spring branch, so that the cattle can come from any of the back fields to the branch for water. We have graded a greater part of the lane, and have turnpiked nearly all the low places, so that we can get along at all seasons of the year. We have adjoining the barn three yards, with sheds, for the cattle, one yard with a shed for the sheep, and a horse stable with a large yard, in which is a shed for wagons, cariole, cart, and farm implements, also two small buildings for saddles and tools. The saw-mill is only about 100 feet from the cattle yards, so that we can easily haul all the saw dust to the horse stable and cattle yards, which we find a very good article for absorbing the liquids of the manure. We also find that tan bark is a very good article for the same purpose; we therefore have adopted the plan of bringing a load along when we take corn, flour, &c., to New-Market, which is only three miles from this place. We have improved the land very much with clover, plaster, ashes, and manure, and a proper rotation of crops. We find that the following rotation is very suitable for this farm.

First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.
Corn with Manure.	Oats.	Wheat.	Clover with plaster and ashes.	Ditto.	To be pastured.
Seventh Year.	Eighth Year.	Ninth Year.	Tenth Year.	Eleventh Year.	Twelfth Year.
Fallow.	Wheat.	Rye or bearded wheat, with short manure.	Clover with plaster and ashes.	Ditto.	To be pastured.

By the above system you will find that we have six fields in clover, three in wheat, one in oats, one in corn, and one in fallow. The best parts of the four clover fields are mowed, and the other is left to rot on the ground; the two other clover fields are pastured but lightly, as we send all our young cattle and sheep to our mountain farm, on the head of the river. We find that plaster and ashes have a very good effect on the upland, but on the marl bottom it does not have any effect. The upland is very good for clover, and the bottom is very suitable for timothy. The upland had a considerable quantity of loose rocks, but we hauled nearly all of them into the lane, and into several sink holes and dragged earth over them with the roadscraper. There were also a great many rocks in the fence corners that were hauled there some years ago; we also hauled them into the sink holes.

We have a pond at the mill which we have cleaned out several times, and hauled the mud, composed principally of marl, on the wheat fields, and harrowed it in with the wheat. It has proved a very good article on the upland, answering better than stable manure in the adjoining field. The last year we hauled out 131 four horse loads of the mud, 154 loads of barn yard manure in the spring, and 84 loads in the fall.

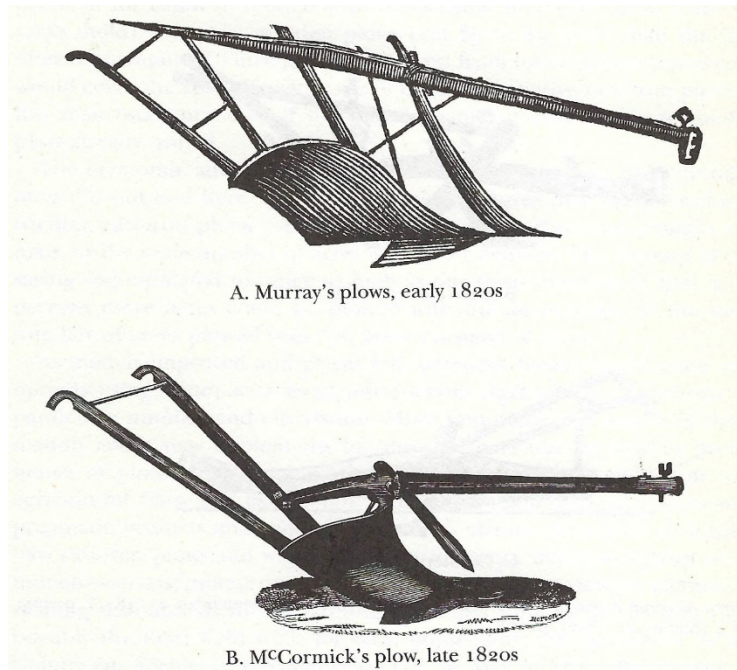
The year 1845 was very dry in this part of the valley, so that all summer crops were very short, but the wheat yielded tolerably well. The following was the quantity of hay, &c., raised on the Plains farm in the year 1845.

20 wagon loads of hay; 672 bushels of oats; 31 bush. of rye; 113 bush. potatoes; 650 corn; 800 wheat.

We have 119 sheep, 35 head of cattle, and six horses. We have a corn fodder machine which is run by a two horse power; It is the middle size of "Eastman's Patent." It was made too weak, so that we had to take it through a thorough repair, but now it does tolerably well. We have large mangers in the cattle sheds, where we feed the cut corn fodder in the evening, and straw in the morning. The sheep get straw in racks in the morning, and hay in the evening, but when the snow is off the ground they are permitted to run to the field that is to be put into corn in the spring; we then give no hay, but only straw. We also give a bucket full of oats to the 119 head, every evening and morning, in small mangers. The sheep-racks are made on the plan that the "Economs" have them in Germany. We have tried the "feeding boxes," but do not like them as well as the racks. When the manure is hauled out of the sheep-yard in the spring, we plow it up, and plant cucumbers, melons, beans, &c., which do very well, as the ground gets very rich by the sheep manure.

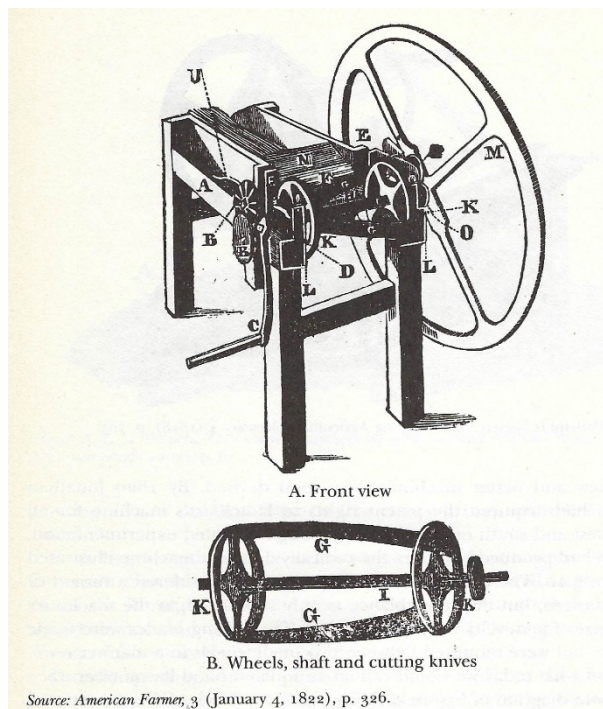
By attending to the sheep on the above plan we have very good luck with the lambs. Last spring we raised 29 lambs out of 32. Our sheep are grade Saxons, which seem to suit our climate very well. We put the rams to the ewes the latter part of October, so that the lambs will come the latter part of March, which is the best time for this part of the country; the lambs will then be able to travel to our mountain farm, after the ewes are sheared, which is the first week in May. Our young cattle are also then taken to the mountains, so that we

Figure 9.2 The 12-year crop rotation schedule for a lower Shenandoah Valley farm located near New Market, Virginia. The rotation, published in the agricultural-periodical, *The Cultivator*, in August of 1849, shows Red Clover in the crop rotation.



Sources: *American Farmer*, 2 (August 11, 1820), p. 160, and 12 (October 8, 1830), p. 240.

Figure 9.3 Iron plows, developed in the period between 1790 and 1820, had replaced the traditional wooden plows by the end of the 1820's. (Bottom) B - The McCormick plow. From McClelland 1997.

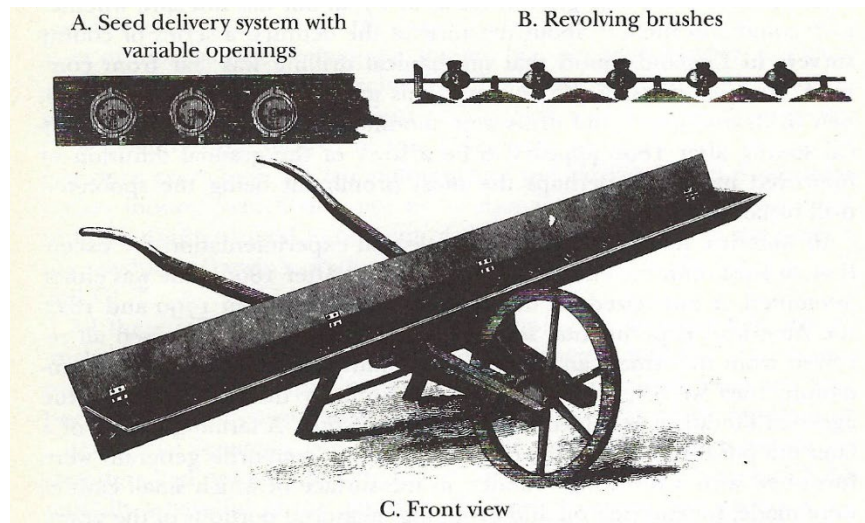


Source: *American Farmer*, 3 (January 4, 1822), p. 326.

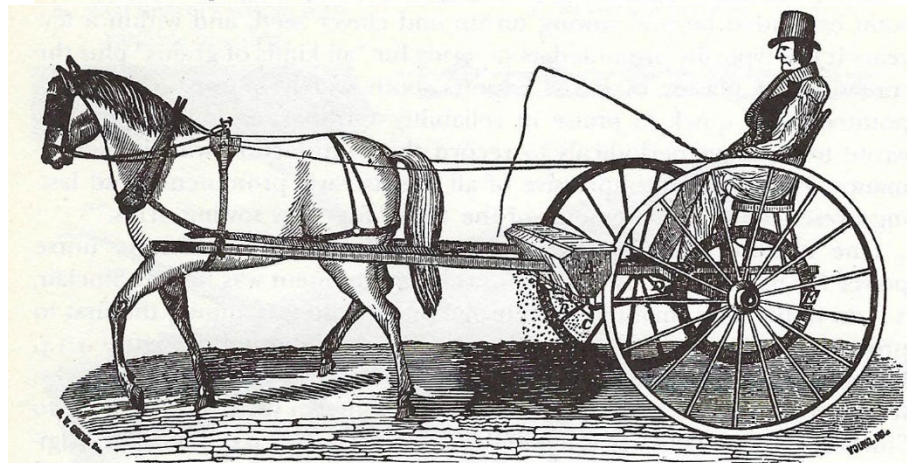
Figure 9.4 Jonathan Eastman's improved straw cutter, c. 1822, could cut "every kind of forage." From *The Cultivator*, August 1849.



Figure 9.5 The McCormick reaper, was introduced by Cyrus McCormick in 1834. From the Mary Evans Library Photographs.



Sources: Philadelphia Society for Promoting Agriculture, *Memoirs*, 4 (1818), p. 45.



Source: *Ohio Cultivator*, 1 (June 15, 1845), p. 96.

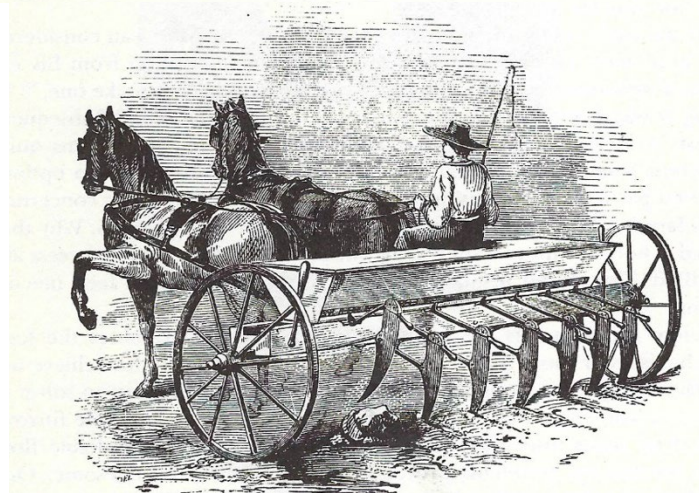
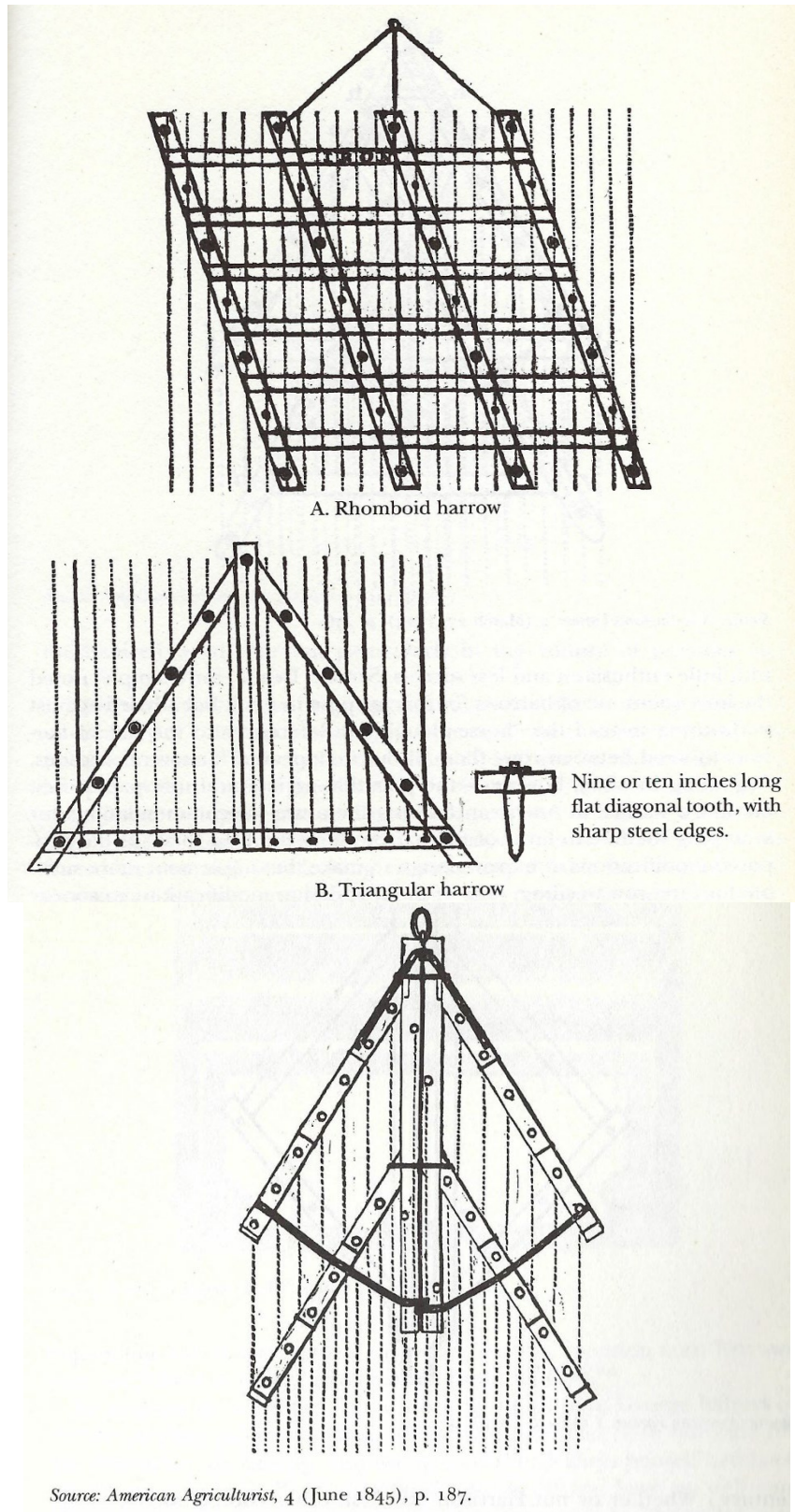


Figure 9.6 (Top) Bennett's broadcast hand drill, c. 1816. (Middle) Hatch's sowing machine, c. 1845. (Bottom) Palmer's wheat drill, c. 1849. Bennett's seed drill provided superior sowing capabilities compared to hand broadcast sowing. All from McClelland 1997.



Source: *American Agriculturist*, 4 (June 1845), p. 187.

Figure 9.7 Early American harrows. (Top and Middle) c. 1816-1818. (Bottom) Improved American Geddes harrow, c. 1845. From McClelland 1997.

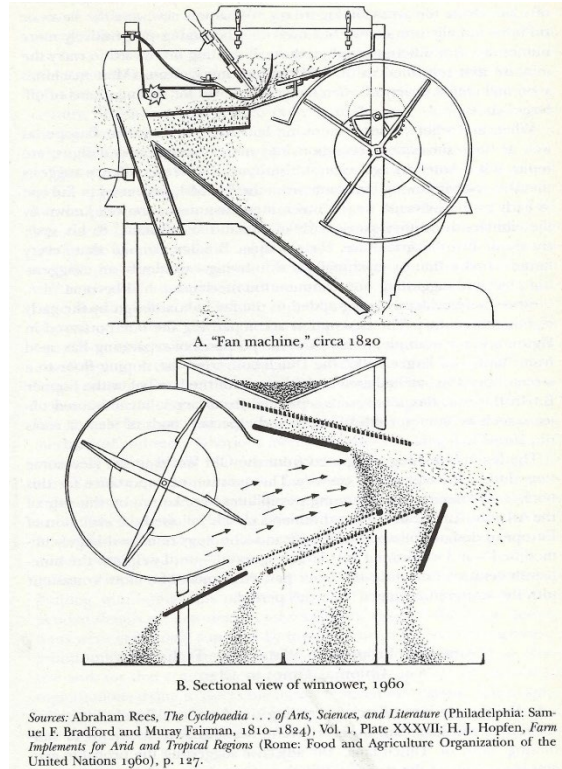


Figure 9.8 (Top) A - 19th century improved wheat fan, c. 1820. From McClelland 1997.

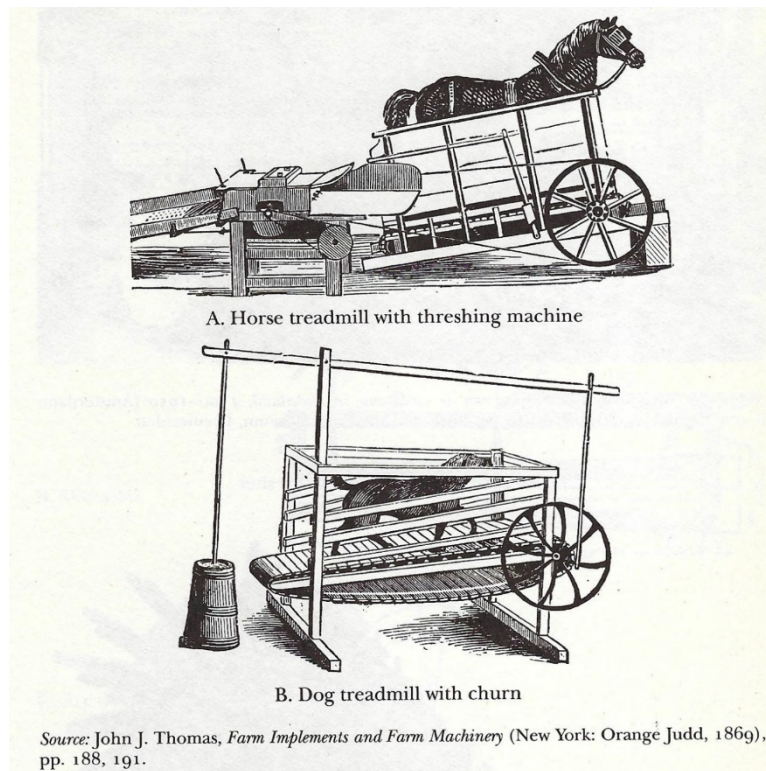


Figure 9.9 (Top) A - 19th century horse-powered stationary threshing machine with treadmill. From McClelland 1997.

Chapter 10:

The Agricultural Landscape: Virginia Agricultural Societies and Agricultural Publications

The nineteenth century agricultural reform movements were accompanied by a growth in state and local societies to promote agricultural reform, education, and sharing the most up-to-date agricultural science, horticultural techniques, and test results for new and advanced agricultural equipment. No less a figure than George Washington had identified agricultural societies as a mechanism to “promote the growth of agriculture by ‘collecting and diffusing information, while encouraging and assisting a ‘spirit of discovery and improvement.” “In theory, then, the establishment of societies was a desirable institutional development to foster change in the early phases of an agricultural revolution.” In practice,” according to Peter McClelland, “they were remarkably ineffective.” (McClelland 1997, 208), Historian Charles W. Turner, however, places Virginia among those states that served as national leaders in agricultural reform during the antebellum period. (Turner 1964, 167) Virginia’s leadership in this area was supported by the development of both a state-wide agricultural society and numerous, local and regional agricultural societies throughout the Commonwealth. “The Societies encouraged agricultural education, held surveys, backed agricultural journals and the establishment of a department of agriculture.” (Turner 1964, p. 175)

“The first state society, the Virginia Society for Promoting Agriculture, was organized in Richmond in May 1811.” Members of the society participated in an annual meeting and gave papers on the best practices for growing various crops. (Turner 1964, 167) Nine years later the society was reorganized and renamed the United Agricultural Society of Virginia. The reorganized society’s “aim was to act as a clearing house for local societies and the pen memorials to Congress in opposition to the high tariff policy.” (Turner 1964, 167) In the late 1820’s the society was renamed again as the Virginia Central Agricultural Society, The renamed society continued to support both national and state wide initiatives and appointing delegates to “help form a national agricultural society in Washington,” all while holding fairs to support agriculture and Virginia farmers. (Turner 1964, 169] The first county fair in Virginia was the Fredericksburg Agricultural Fair held in 1823. (Turner 1964, 174) During this same period, numerous agricultural societies would be organized across the state. These local agricultural societies worked to support the growing number of local, county, and regional agricultural fairs.

The Virginia Central Agricultural Society was reorganized in 1837-38, when there was a movement to form a new “organization for the purposes of serving as an agricultural lobby before the General Assembly, and [establishing and] holding regular state fairs and the sponsoring of state agricultural surveys.” (Turner 1964, 169-70] The first recorded state fair nationwide was held in 1846 and by 1853 “regular state fairs” were being held across the country and organizing and supporting the state fairs would prove to be “one of the most valuable services performed by the State Societies.” (Turner 1964, 174] The first livestock fair in America had been held “a year or two earlier than 1811.” In that year, a livestock exhibition was organized by Elkanah Watson in Pittsfield, MA. 1811 was also the year in which Watson

formed the Berkshire Agricultural Society, a society comprised of “ordinary farmers.” Watson would transform the “initial format of a livestock exposition” into an “elaborate exposition, festival, and social gathering.” (McClelland 1997, 213-214)

The interest in livestock fairs was spurred by changes to the agricultural land itself. As more and more land was “improved” and put into agricultural production, the land available for foraging decreased. That led to an increased interest in “better breeds” of livestock that could be maintained on designated pastures or on smaller areas of foraging. These “better breeds,” however, were less hardy and required “more attention to their food and shelter,” necessitating additional outlays for fences and buildings to house the animals. The expense of implementing a more interconnected livestock system was not insignificant and initially that expense limited farmers interest. But eventually improved livestock would become a subject of great interest and the livestock fairs would help Virginia farmers make the transition to better breeds. (McClelland 1997, 231) Historian Peter D. McClelland has identified three stages of breed development that paralleled the rise of agricultural and livestock fairs. The first stage was the colonial period when interest in livestock breeding was “all but non-existent.” The second stage was the period “between the Revolution and the War of 1812” when there was some interest by elites in “importing better breeds from abroad.” The third stage, between 1815-1830, saw breed improvement become “a topic of general interest.” (McClelland 1997, 234) In Virginia, “the [state and local] fairs were helpful in stirring interest in agricultural betterment and bringing together farmers from all sections that they might exchange ideas and learn by seeing.” (Turner 1964, 175)

Charles Turner has identified over thirty local agricultural societies and “farmers’ clubs that were established in Virginia between 1811 and 1860. Turner’s list of agricultural societies and clubs includes:

“The Albemarle Hole and Corner Club; the Mecklenburg Hole and Corner Club; Prince Ann Hole and Corner Club; and the North Anna Hole and Corner Club; as well as groups in the following counties: Amelia; Amherst; Berkeley; Botetourt; Brunswick; Buckingham; Caroline; Charles City; Charlotte; Cumberland; Essex; Fredericksburg; Greenbrier; Gloucester; Hanover; Henrico; Kanawaka; King and Queen; King William; Lancaster; Loudon; Norfolk; Nottoway; Orange Union; Prince William; Powhatan; Rappahannock; Roanoke; and Rockbridge. (Turner 1964, 167, footnote 2)

The “Hole and Corner” Clubs were so named for their visits to local farms, where they looked into every “hole and corner” for opportunities to improve the farming operation. Turner also identified several other, apparently more regional agricultural societies and clubs. Turner’s list included the Seaboard [sic]; Tidewater, the Union, the Virginia and North Carolina, and Valley Agricultural Societies. (Turner 1964, 167, footnote 2]

The Valley Agricultural Society noted by Turner is believed to be the Valley Agricultural Society of Virginia. The society, formed in the lower Shenandoah Valley, was in existence as early as 1821. In that year, a meeting of the Society was the subject of a short article titled “Agriculture

Society of the Valley" published in the *Winchester Republican*, which announced a meeting of the society on Dec. 21st, 1821. In 1822 the *Winchester Star* published under the same title, "Agriculture Society of the Valley," membership acceptance letters from James Madison, Thomas Jefferson, and Richard Peters. Each had been added to the Agriculture Society of the Valley as "honorary" members. Jefferson, in his letter of acceptance, affirmed that: "I am indeed devoted, and ever have been, to the interests of agriculture." Richard Peters noted that: "A spirit of agricultural improvement pervades every section of our Union." He also wrote of the "indispensable necessity" of "such associations" where "men of scientific requirements mix with practical farmers." ("Agriculture Society of the Valley," 1822)

The Valley Agricultural Society was apparently "officially" recognized by Virginia's House of Delegates either at the end of 1825 or early in 1826. On December 27,th 1825, The Leesburg Newspaper, the *Genius of Liberty*, reported that "Mr. Winston reported sundry resolutions from the Committee of Propositions and Grievances" and declared "reasonable the petition of the Agricultural Society of the Valley, for an act of incorporation." ("Virginia Legislature" 1825)

Nearly a year later on 28 November, 1826, an announcement appeared in the *Genius of Liberty* reporting on a meeting of the Valley Society held on November 9th of that year. Originally published in the *Winchester Star*, The announcement identified the Society president as William B. Page and the Vice-President as William M. Barton. The secretary was identified as Thomas Cramer. The Society's November meeting included the selection of a field "for the exhibition of various animals offered for premiums," a "manufacturers exhibition," and a "ploughing match." The Society members also passed a resolution stating that members of the Society "use their influence in the appointment of an agricultural committee in the house of delegates and urge on the legislature the importance of adopting measures for the improvement of agriculture." (The *Winchester Republican*" 1826)

The detailed activities of the Valley Agricultural Society between 1826 and 1850 are, for the most part, unknown, nor has a membership list been discovered. But, in November of 1850, the following announcement from the Society appeared in the *Spirit of Jefferson*, published in Charlestown, Virginia revealing the Society's role in testing new and improved farm equipment:

"To the plough makers and farmer," The Valley Agricultural Society expects shortly to receive from New York, a Dynanometer for the purpose of testing the draught of Ploughs, and on reception of the same hope to have a competition of all the Ploughs now in use; and therefore, desire all Plough Makers to have one of their make ready for the competition, as also the Farmers who have good implements of the kind, to have them in good order and ready for the contest." ("To the Plough Makers and Farmer" 1850)

In the fall of the following year, 1851, the Valley Agricultural Society announced that the Society's "first annual exhibition" would take place "on Wednesday and Thursday, the 15th and 16th of October next, half a mile east of Charlestown." The announcement noted that "premiums for livestock, poultry, agricultural implements, Dairy, honey and fruit as well as

vegetables and flowers” would be awarded. (“Valley Agricultural Society” 1851) In the fall of 1852 the Society announced that it would hold its second annual exhibition on the on the “grounds of the Society,” located a “half mile from Charlestown on the 18th and 19th of October. The announcement of the fair included a short observation on agricultural societies in general:

“It is with no ordinary feelings of pleasure we perceive that the Agricultural communities throughout the country, are becoming sensibly alive to the propriety, nay necessity, of Agricultural Societies. This feeling augurs well for the interest of husbandry, and should be cherished and fostered by everyone, however remotely he may be connected with the cultivation of the earth.” (“Agricultural Fairs” 1852)

Three years later an article in the Shepherdstown Register recorded that:

“At a meeting of the Valley Agricultural Society held on the grounds of the Society after the exhibition of the 19th. It was moved and seconded that the Valley Agricultural Society, be no longer in existence; that lease for the ground expired with that exhibition.” (“A Meeting of the Agricultural Society” 1855)

The Valley Agricultural Society appears to have been quickly reconstituted, however. In October of 1857, the Richmond Daily Dispatch reported that: “The annual fair of the Valley Agricultural Society opened last Tuesday, at Winchester. Va. and was largely attended. The exhibition of articles and stock was very fine.” (“Valley Fair” 1857”) The Society held at least one more fair before the outbreak of the Civil War. In October of 1860, the Alexandria Gazette reported that: “The annual Fair and Exhibition of the Valley Agricultural Society...is to be held at the Show Grounds, near Winchester.” (“Virginia News” 1860) Interestingly, 2 month’s earlier, in August of 1860, an article in the Alexandria Gazette invited the citizens of Alexandria to the Lyceum “ in reference to a fair and exhibition of the Potomac, Piedmont and Valley Agricultural Society in this place in the autumn.” (“Public Meeting” 1860) It seems likely then that when the Valley Agricultural Society was reconstituted after 1855, it may have been consolidated with a like-minded group from the Piedmont.

Virginia’s agricultural societies sponsored fairs, exhibitions, and meetings to promote agriculture and more progressive farming practices throughout the Commonwealth. Farmers in Virginia and elsewhere also had access to a range of agricultural periodicals that also championed progressive agricultural practices and agricultural reform. In Virginia, there was an close connection between the state’s agricultural society and at least one early agricultural publication, the *Farmer’s Register* (Fig. 10.1), founded by Virginia planter Edmond Ruffin in 1832 or 1833. John Skinner, founding editor of *The American Farmer*, called the *Farmer’s Register*, “ the best publication on agriculture which this country or Europe has ever produced ” (Craven 1928, 310) Ruffin, who also served as the editor of the *Farmer’s Register*, had been elected secretary-treasurer of the newly re-named United Agricultural Society of Virginia in 1820. Ruffin had “spent most of his adult life involved in agriculture.” To address the depletion of Tidewater Virginia farmlands caused by decades of tobacco cultivation Ruffin had developed new soil revitalization techniques that included applying calcium carbonate-rich marl to

depleted fields to increase crop production. "Ruffin's contributions in agricultural science were reflected in his writings and editorship of the *Farmers Register*." ("Edmund Ruffin Biography" 2019) Ruffin, has been called "the greatest name of the new period" by historian Avery O. Craven, and recognized by Craven as the "editor of the greatest agricultural paper of the time" (Craven 1928, 309-310). Later, in the 1850's, Ruffin would serve as the editor of the *Southern Planter*. (Turner 1964, 169-71) Virginia farmers supported both of Ruffin's publications, as well as several out-of-state agricultural publications, including *The Cultivator*, published in Albany New York. By 1839, only *The Cultivator's* home state of New York had more subscribers to *The Cultivator* than Virginia. (Turner 1964, 176)

Another important agricultural periodical for Virginia Farmers was *The American Farmer* (Fig. 10.2), which began publication in 1819 from Baltimore under the guidance of its founding editor, John S. Skinner, a former Baltimore postmaster "*The American Farmer* proved to be one of the most successful of the early farm papers and agricultural periodicals" and it "had the endorsement of such men as Jefferson, Madison, and Pickering." The magazine began as an eight-page quarto devoted to "rural economy, internal improvements, news, prices current...and contained news on agriculture, horticulture, and livestock, market prices, and activities of agricultural societies." (American Farmer 2019) "It was the Farmer's 'great aim and chief pride to collect information from every source, on every branch of husbandry,' in order that the readers by comparisons might discover 'the best system' for 'all circumstances. 'Almost from its first issue *The American Farmer* became the organ through which individual reformers conveyed their ideas to the public, and through which the agricultural societies ordered their papers and proceedings published." (Craven 1928, 308) The October 10, 1820 issue of *The American Farmer* included the agricultural prices paid on the Baltimore market which Skinner described as a "true and accurate statement, of the then selling prices of country produce, live stock [sic] and all the principal articles brought for sale in the Baltimore market." ("American Farmer" 1820). Copies of *The American Farmer*, along with another agricultural publication, *Practical Farmer* (Fig. 10.3), are known to have been included in the 1851 inventory of Ann T. Hite's estate. However, the publication dates of the periodicals included in Hite's inventory remain unknown.

One additional publication, one with direct connections to farmers in the lower Valley, the *Valley Farmer*, appears in period records. In September 1825, *The Genius of Liberty*, a Leesburg, Virginia newspaper, published an announcement noting that:

"the enterprising editor of the *Winchester Republican* has announced his intention of publishing a weekly agricultural journal under the direction of the Society of the Valley, and to be called the *Valley Farmer*...the topics confined to the latitude of the state of Virginia...Such a paper, on the cheap plan proposed, is known to be much needed. We wish it prosperity." [*Genius of Liberty*, 1825]

Avery Craven has identified that the *Valley Farmer* was indeed published in Winchester, Virginia, (Craven, 1928, p. 309, see note 32,) and an undated essay by the "Editor of the Gazette" that appeared in the *Valley Farmer* gives a broad account of the spirit of the

progressive farming movement, the importance of the agricultural societies, and the impact of progressive and reformist editors and essayists such as Skinner:

“Several reflections have suggested themselves to my mind during this season...the first is the conviction that our agriculturalists are improving...the day has gone by, when our farmer, in the old clodhopper spirit, laughs at the book farmers, and ridicules the spirit of enquiry, which guided by science and governed by fair experiments, teaches him what are the properties of the soil that he tills – its component ingredients – its fitness for certain products – its deficiency and their cure. The value of manure and the proper means of increasing this food for the land that gives food to him; the value of his straw which to keep his soil ready for his wheat, should be carried back to the fields that produced it...the value of the *mineral* manures...of *lime*, for the slate hill covered with a tangled sour sorrel or the marshy drains and slashes, that without it, bring nothing but sour grass and weeds – of plaster, as well to stimulate his clover crops; as to fix the useful properties of the manure of his stable and cow-yard, by mixing it in with this manure when it is fresh – all these and many other valuable truths the farmer is now willing to learn and believe from the reports of the diligent ELLSWORTH – or the essays of the observant SKINNER – and he proves them by his own experiments and experience, and the results of his increased knowledge, is seen in the *improved condition* of our agriculture. Another thought...is the great importance of having a FARMERS’ CLUB in the county...connected with them is a subscription to the best works on the science - the information derived from those useful periodical works which contain information on every subject relating to farming. There is one just established in New York, under the management of that distinguished friend of agriculture J. S. Skinner, published by Greely & McElrath.” (“The Harvest” no date, 10-11]

In the late summer of 1820, John Skinner, the editor of *The American Farmer*, “a knowledgeable promoter of agricultural reform.” (Craven 1928, 308] left Baltimore to “ride up the fine limestone valley of Shenandoah ... to view, for the first time, the most beautiful, and most bountiful portion of our country.” (Koons and Noyalas 2010, 1) Historians Kenneth E. Koons and Jonathan Noyalas, have identified that:

“Skinner’s purpose [for the trip] was to note ‘whatever might fall under my view which should appear extraordinary, either for its excellence or defects, in the Agricultural implements, habits, produce, live stock, [sic] &c. of the counties through which I might pass,’ so that he could report to his readers on ‘prevailing agricultural practices’ in Virginia. As the editor of a periodical devoted to the improvement of agriculture, Skinner would have been eager to see for himself the agrarian characteristics of this ‘delightful’ and ‘highly cultivated’ region where an “improving’ state of agriculture prevailed For, by the time of his visit to the Shenandoah Valley, the region had become widely known for its farmers’ high levels of wheat production.” (Koons and Noyalas 2010, 1)

Skinner's journey, and the lessons in agricultural reform it provided, were published in the *American Farmer* in his essay "Observations on the Agriculture of Virginia," (Schwaab 1973, 136-37) In that essay, Skinner reported on a visit the Wheatland estate near Charlestown, Virginia, which Skinner described as "a "model farm distinguished by its systematic arrangements" and the "fixed and judicious rotation of its crops." (Schwaab 1973, 137) Skinner also described a visit to Isaac Hite Jr's. Belle Grove, where he found:

"...amongst the other improved implements of modern invention in use on this estate I observed the cultivators of the best model, much employed for working corn; and as I apprehend, the most efficient *Threshing Machine*, which has been made or used in this country. These machines are made by Mr. Wright of Middletown." (Schwaab 1973, 141)

In June of 1821 Skinner published a second essay on Virginia farming practices in the *American Farmer*, "Virginia Husbandry." The essay recounts lessons Skinner found at Belle Grove, by then an estate of some 6,000 acres:

"Major H. was the first who introduced the use of Plaster of Paris, in connection with the *field* culture of clover in the Valley of Shenandoah—and was well satisfied after more than 25-years experience that its effect on clover and other crops, had greatly diminished as a substitute for gypsum, which had been for many years almost the sole reliance. He was about to construct kilns for burning lime, to which he had been more immediately induced by the essays of Doctor Black, of Delaware, published in the commencement of the second volume of his work." (Schwaab 1973, 139)

As Skinner's essays suggest, during the antebellum period farmers in the Shenandoah Valley, and elsewhere in Virginia, read a wide range of agricultural periodicals, including *The Cultivator*, published in Albany New York. (Fig. 10.4) Letters and testimonials by Virginia farmers from around the state regularly appeared in *The Cultivator* and in August of 1849, a lengthy description of The Plains, a farm three miles from New Market, was published in *The Cultivator*. The description, in a letter from Siram P. Henkel, provides a good account of the farm's operation and the progressive practices Henkel had instituted. The farm had been in the Henkel family for 17 years. When the farm was purchased, it was recognized to be in "bad order" having been worked on what Henkel described as the "skinning system." Despite the poor farming practices of the previous owner, Henkel noted that the "land lies well for cultivation; it is not very hilly" with "about 100 acres of it in black marl bottom, and about 150 acres of upland, which is sandy clay; there are also about 165 acres of woodland attached to it." ("Virginia Farming" 1849, 238) A central farm lane at The Plains allowed the cattle access from the barnyard to any of the farm's fields. The fields were fenced and 32 gates, based upon a design published in *The Cultivator*, allowed easy access to the fields. The family had "improved the land very much with clover, plaster, ash, and manure, and a proper rotation of crops" on a twelve year cycle (Fig. 10.5). At the time of writing Henkel's letter, the farm had six fields in clover, three in wheat, one in oats, one in corn, and one in fallow." Four clover fields were mowed and two were "lightly pastured." In 1845 the harvest included "20 wagon loads of hay;

672 bushels of oats; 31 bush. of rye; 113 bush. Potatoes; 650 corn; 800 wheat." The application of both plaster and ashes was described as "having a very good effect on the upland, but on the marl bottom it does not have any effect." The upland was noted as "very good for clover" while the bottom was "very suitable for timothy." Henkel described that mud, primarily composed of marl from a mill pond at one of the mills, was spread on the wheat fields, and harrowed "in with the wheat." For Henkel, the mud "has proved a very good article on the upland, answering better than stable manure..." the cattle yards were close-by the sawmill and sawdust from the mill was utilized in both the cattle yard and horse stable to "absorb the liquids of manure." The farm had "119 [grade saxon] sheep, 35 head of cattle, and six horses." The sheep were fed straw in the morning, hay in the evening, supplemented with oats, and "when the snow is off the ground" they had the run of the corn fields before spring planting. In the spring, the sheep yard was plowed up and planted with "cucumbers, melons, beans, etc., which do very well, as the ground gets very rich by the sheep manure." Henkel also noted the use of an "Eastman's patent" horse-powered corn fodder machine. ("Virginia Farming" 1849, 238)

Another Virginia-based agricultural periodical of wide circulation, *The Southern Planter* (Fig. 10.6), was published in Richmond, beginning in 1841. Its founder was Charles Tyler Botts, a Virginia farmer and lawyer. In the years following its founding, *The Southern Planter* exhibited "a constant emphasis on agricultural societies, agricultural improvement and education." (Carr 1971, 25) "The general aims of *The Southern Planter's* editors were for the "improvement of agriculture as a science and as an occupation; to direct these improvements to Virginia and the Upper South, and to keep the farmer informed." The *Southern Planter* also consistently emphasized the importance of agricultural societies (Carr 1971, 26) as demonstrated by this "Prospectus" included in the periodical's first issue:

"The subscriber proposes to publish a monthly periodical to be called THE SOUTHERN PLANTER. It will be devoted, exclusively, to the promotion of Agriculture, Horticulture, and the Household Arts...Rejecting long and even perhaps able essays, he designs to make his paper the medium for the promulgation, in a condensed form, of the observations and deductions of practical men. In this way it is hoped that the Planter of the South may be enabled to obtain the benefits of his neighbor's experience with little labor and less cost." ("Prospectus" 1841, 1)

The Southern Planter's "subscriber" also proposed "to extract from...other works, both foreign and domestic, all valuable information of a general character." The goal of the publication was "to add to the valuable communications, more particularly applicable to our Southern soil, climate, and institutions. Enriching the whole with neat cuts, where the opportunity offers or the subject demands it" and to introduce to Virginia "a plan, much used and highly approved to the north; that of publishing an agricultural paper at so small a price, as to bring it within reach of all." ("Prospectus" 1841, 1)

That first volume of *The Southern Planter* reported on the formation of the Henrico Agricultural Society, and included essays on the plough and the testing of "Hart's improved Berkshire wheel plough" which required the "least draft," when compared to Ferguson's improved Scotch

plough. The first volume of *The Southern Planter* also reported on a ploughing match in Worcester, Massachusetts; Additional essays advised on the timing and application of manure to “wheat crop and the grasses; hay; and new products.” (Southern Planter 1841, 10-16)

The Southern Planter's second issue included a more expanded essay on the plough including discussion of the virtues of the Scotch plough, (Fig. 10.7) “constructed on mathematical principles and...an implement that expends less power in moving the earth than almost any other...” (Southern Planter 1841, 18) Other essays in that first year of publication addressed the cultivation of numerous crops (including asparagus, tobacco, hemp, clover, corn, cucumbers, grasses, hemp, oats, rye, potatoes, sugar beets, cabbage, and wheat), drainage, irrigation, fencing and gates, flour, timber, fruit and orchards, vineyards, agricultural machinery (including a recommendation for the McCormick threshing machine), hogs, cows, sheep, and fowls, soils, and soil amendments (including compost, manure, lime, plaster, brewers grain, bran, and bone dust). Additional essays focused upon progressive farming techniques (such as the rotation of crops), agricultural societies and fairs, and the economy of slavery.

Among the specific advice offered in *The Southern Planter* in that first year of publication was that: “Every farmer should cultivate at least two or three acres of hemp, for his own use – he will find it simple and convenient in the extreme. The crop is a fertilizer, rather than an exhauster.” (Southern Planter 1841, 40) The editors also championed improved drainage noting that: “We are inclined to believe the very greatest improvement in modern husbandry is the system of complete and thorough draining now insisted on by the best agriculturists of the day.” (Southern Planter 1841, 129) Finally, the editors spoke reflectively about the changes underway, changes brought about by the acceptance and implementation of progressive farming practices:

“What a wonderful change the last twenty years have wrought in the agriculture of the United States...barbarous and exhausting systems by which the most fertile plains were reduced to cheerless desserts, have been abandoned - ignorance has been enlightened – science has been wrought to the aid of practice and agriculture has been assumed her station amongst the noblest arts.” (Southern Planter 1841, 41)

Chapter 10: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

"Agricultural Fairs," *Spirit of Jefferson*, Charlestown, Va. 12 October 1852

"Agriculture Society of the Valley," *Winchester Star* 1822

"*The American Farmer*", October 10, 1820 <https://www.loc.gov/item/sf88091326/> accessed 07.24.19

Bentley, J. P., "The Harvest," in *The Valley Farmer*, Vol. 2, p. 10-11. nd, Special Collections Call Number S1.V3, University of Virginia Library.

Carr, Francis Frederick, Jr., *The Southern Planter, 1841-1861*, University of Richmond, Master's Thesis, 1971

Craven, Avery O., "The Agricultural Reformers of the Ante-bellum South," in *The American Historical Review*, Vol. 33, no. 2, (Jan. 1928), p. 310

"Edmund Ruffin Biography," *The Civil War in America: Biographies*
<http://www.loc.gov/exhibits/civil-war-in-america/biographies/edmund-ruffin.html>
Accessed 07.24.19

The Genius of Liberty
<https://viriniachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN--->
---- Accessed 07.24.19

Genius of Liberty, 27 September 1825 <https://viriniachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN----->
Accessed 07.24.19

"The Harvest," in *The Valley Farmer*, Vol. 2, no. 1., no date (c. 1841), P. 10-11]

Koons, Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

McClelland, Peter D., *Sowing Modernity: America's First Agricultural Revolution*, Ithaca: Cornell University Press, 1997

"A Meeting of the Agricultural Society", *Shepherdstown Register*, 3 November 1855

"Prospectus," *The Southern Planter*: Volume 1, no 1. p. 1

"Public Meeting," *The Alexandria Gazette*, Volume 61, Number 182, 1 August 1860

Schwaab, Eugene L., ed., *Travels in the Old South: Selected from Periodicals of the Times*, vol. 1, Lexington: University Press of Kentucky, 1973

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the Old South: Selected from Periodicals of the Times*, vol. 1, Eugene Schwaab, ed., Lexington: University Press of Kentucky, 1973

The Southern Planter: Richmond, Va.: Volume 1, no. 1, 1841, pp. 1 and 10-16,

The Southern Planter: Richmond, Va.: Volume 1, no. 2, 1841, pp. 18, 40, 41, and 129.

"To the Plough Makers and Farmer" *Spirit of Jefferson*, Charlestown, Va., 12 November 1850

Turner, Charles W., "Virginia State Agricultural Societies 1811-1860," in *Agricultural History*, Vol. 38 No. 3 (July, 1964). pp.167-177, Published by: Agricultural History Society

"Valley Agricultural Society," *Spirit of Jefferson*, Charlestown, Va., 30 September 1851

"Valley Fair", *Daily Dispatch* (Richmond), 17 October 1857"

"Virginia Farming," in *The Cultivator: A Monthly Journal Devoted to Agriculture, Horticulture, Floriculture and to Domestic and Rural Economy*, Luther Tucker: Albany, New York, New Series, Vol VI, August 1849, p. 238, <https://archive.org/details/cultivator01socigoog/page/n6> Accessed 07.30.19

"Virginia Legislature: House of Delegates" *Genius of Liberty*, Leesburg, Va., Number 51, 27 December 1825

"Virginia News" *Alexandria Gazette*, Volume 61, Number 239, 6 October 1860

"*The Winchester Republican*, Nov. 17," in the *Genius of Liberty*, 28 November, 1826, <https://viriniachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN---> Accessed 07.24.19

Chapter 10:

Figures

THE
FARMERS' REGISTER.

A MONTHLY PUBLICATION,

Devoted to the Improvement of the Practice,

AND

SUPPORT OF THE INTERESTS OF AGRICULTURE.

EDMUND RUFFIN, EDITOR AND PROPRIETOR.

And he gave it for his opinion, "that whoever could make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together. S=ift.

VOL. I

PUBLISHED BY THE PROPRIETOR.

Digitized by Google

Figure 10.1 *The Farmers Register*, Vol. 1, 1833, cover. *The Farmer's Register* was founded by Virginia planter Edmond Ruffin in 1832 or 1833.

AMERICAN FARMER.

RURAL ECONOMY, INTERNAL IMPROVEMENTS, NEWS, PRICES CURRENT.

"O fortunatos nimium sua si bona norint
Agricolae." VIRG.

VOL. I.

BALTIMORE, FRIDAY, APRIL 2, 1819.

NUM. 4.

AGRICULTURE.

The RUTA BAGA or SWEDISH TURNIP.

THE high commendations bestowed upon the *Ruta Baga*, and the decided preference given to it over other roots and vegetables, as food for live stock, by Mr. BARNEY, of Delaware, (the owner of the mammoth oxen lately slaughtered in this market) will naturally beget an anxiety to know more of its peculiar qualities, and to learn the best mode of cultivating and preserving it.

All those objects will be best accomplished by the perusal of a Treatise lately written by the celebrated Mr. COBBETT, whose pen communicates new life and originality to the most exhausted subjects. We have, therefore, determined to offer to our readers, all that he has said on this matter, as well in his "first" as in his "second part of a year's residence in the United States;" both of which little volumes will be found, especially his notices of agriculture, highly entertaining and instructive.

The length of his remarks, and the near approach of the season for sowing the seed, induce us to commence the publication of his Treatise on *Ruta Baga* in the present number. It will be continued in each one, successively, until finished.

Mr. BARNEY assures us, that, but for the liberal use of the *Ruta Baga*, in feeding the two remarkable oxen, lately sold by him in this market, a much greater quantity of Indian meal would have been consumed; and, moreover, that without the *Ruta Baga*, which helped to constitute that variety necessary to sustain a constant appetite, it is even doubtful whether they could have been made to attain to such extraordinary excellence in the weight and quality of the meat. He fully concurs with Mr. Cobbett, in estimating potatoes, and other vegetables, as altogether insignificant, in comparison with the *Ruta Baga*; and observes, that besides their intrinsically nutritious quality, they act finely as a medicine, counteracting the astringent effect which would result from a more exclusive use of dry food; all which we must confess, appears very natural and worthy of consideration.

FROM COBBETT'S YEAR'S RESIDENCE.

RUTA BAGA.

Culture, mode of preserving, and uses of the *Ruta Baga*, sometimes called the *Russia*, and sometimes the *Swedish Turnip*.

DESCRIPTION OF THE PLANT.

IT is my intention, as notified in the public papers, to put into print an account of all the experiments which I have made and shall make, in Farming and in Gardening upon this Island. I several years ago, long before tyranny showed its present horrid front in England formed the design of sending out, to be published in this country, a treatise on the cultivation of the root and green crops, as cattle, sheep and hog food. This design was suggested by the reading of the following passage in Mr. CHANCELLOR LIVINGSTON'S *Essay on Sheep*, which I received in 1812. After having stated the most proper means to be employed in order to keep sheep and lambs during the winter months he adds:—"Having brought our flocks through the winter we now come to the most critical season, that is the latter end of March and the month of April. At this time the ground being bare, the sheep will refuse to eat

their hay, while the scanty picking of grass, and its purgative quality, will disable them from taking the nourishment that is necessary to keep them up. If they fall away, their wool will be injured, and the growth of their lambs will be stopped, and even many of the old sheep will be carried away by the dysentery. To provide food for this season is very difficult. Turnip and Cabbage will rot, and bran they will not eat after having been fed on it during the winter. Potatoes, however, and the *Swedish Turnips*, called *Ruta Baga*, may be usefully applied at this time, and so, I think, might *Paranths* and *Carrots*. But, as few of us are in the habit of cultivating these plants to the extent which is necessary for the support of a large flock, we must seek resources more within our reach." And then the Chancellor proceeds to recommend the leaving the second growth of clover uncut, in order to produce early shoots from sheltered buds for the sheep to eat until the coming of the natural grass and the general pasture.

I was much surprised at reading this passage; having observed, when I lived in Pennsylvania, how prodigiously the root crops of every kind flourished and succeeded with only common skill and care; and, in 1815, having by that time had many crops of *Ruta Baga* exceeding thirty tons, or about one thousand five hundred heaped bushels to the acre, at Botley I formed the design of sending out to America a treatise on the culture and uses of that root, which, I was perfectly well convinced, could be raised with more ease here than in England, and that it might be easily preserved during the whole year, if necessary, I had proved in many cases.

If Mr. CHANCELLOR LIVINGSTON whose public spirit is manifested fully in his excellent little work, which he modestly call an *Essay*, could see my *Ewes* and *Lambs* and *Hogs*, and *Cattle*, at this "critical season" [I write on the 27th of March], with more *Ruta Baga* at their command than they have mouths to employ on it; if he could see me, who am on a poor and exhausted piece of land, and who found it covered with weeds and brambles in the month of June last; who found do manure and have bought none; if he could see me overstocked, not with mouths, but with food, owing to a little care in the cultivation of this invaluable Root, he would, I am sure, have a reason to be convinced, that, if any farmer in the United States is in want of food at this pinching season of the year, the fault is neither in the soil nor in the climate.

It is, therefore, of my mode of cultivating this Root in this Island, that I mean, at present to treat; to which matter I shall add, in another PART of my work, an account of my experiments as to the MANGLE WURTZLE, or SCARCITY ROOT; though, as will be seen, I deem that root, except in particular cases, of very inferior importance. The Parsnip, the Carrot, the Cabbage, are all excellent in their kind and in their uses; but, as to

these, I have not yet made, upon a scale sufficiently large here, such experiments as would warrant me in speaking with any great degree of confidence. Of these and other matters I propose to treat in a future PART, which I shall probably publish towards the latter end of the present year.

The *Ruta Baga* is a sort of Turnip well known in the state of New-York; where under the name of the *Russia* Turnip, it is used for the table from February to July. But as it may be more of a stranger in other parts of the country, it seems necessary to give it enough of description to enable the reader to distinguish it from every other sort of Turnip.

The leaf of every other sort of Turnip is of a yellowish green, while the leaf of the *Ruta Baga* is of a bluish green, like the green peas when nearly their full size, or like the green of a young and thrifty early Yorkshire cabbage. Hence it is, I suppose, that some persons have called it the *Cabbage Turnip*. But the characteristics the most decidedly distinctive are these: that the outside of the bulb of the *Ruta Baga* is of a greenish hue mixed, toward the top, with a colour bordering on a red; and that the inside of the bulb, if the sort be true and pure, is of a deep yellow, nearly as deep as that of gold.

MODE OF SAVING AND PRESERVING THE SEED.

This is rather a nice business, and should be by no means executed in a negligent manner. For, on the well attending to this, much of the success depends; and it is quite surprising how great losses are in the end, frequently sustained by the saving in this part of the business, of an hour's labour or attention. I one year lost more than half of what would have been an immense crop, by a mere piece of negligence in my bailiff as to the seed, and I caused a similar loss to a gentleman in Berkshire, who had his seed from the same parcel that mine was taken, and who had sent many miles for it, in order to have the best in the world.

The *Ruta Baga* is apt to degenerate, if the seed be not saved with care. We, in England, select the plants to be saved with seed. We examine well to find out those that run least into neck and green. We reject all such as approach at all towards a whitish colour, or which are even of a greenish colour, towards the neck, where there ought to be a little reddish cast.

Having selected the plants with great care, we take them up out of the place where they have grown, and plant them in a plot distant from every thing of the Turnip or Cabbage kind which is to bear seed. In this Island I am now, at this time, planting mine for seed [27th March] taking all our English precautions. It is probable, that they would do very well, if taken out of a heap to be transplanted, if well selected; but, lest this should not do well, I have kept my selected plants all the winter in the ground in my garden well covered with corn stalks and leaves from the trees; and, indeed, this is so very little a matter

INTERNET ARCHIVE

AMHERST

Figure 10.2 American Farmer, Vol. 1, page 1. The American Farmer, began publication in 1819 from Baltimore under the guidance of its founding editor, John S. Skinner, a former Baltimore postmaster.

THE
PRACTICAL FARMER,
OR
Spirit of the Boston Cultivator,
CONTAINING A
COLLECTION OF VALUABLE ESSAYS,
ON
PRACTICAL AGRICULTURE, &c.

BY WILLIAM BUCKMINSTER.

BOSTON:
DAVID H. WILLIAMS.

1840.

Figure 10.3 *The Practical Farmer*, William Buckminster 1840.

✓
THE
CULTIVATOR,

A MONTHLY JOURNAL DEVOTED TO

AGRICULTURE, HORTICULTURE, FLORICULTURE,

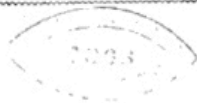
AND TO

DOMESTIC AND RURAL ECONOMY.

ILLUSTRATED WITH ENGRAVINGS OF

**FARM HOUSES AND FARM BUILDINGS, IMPROVED BREEDS OF
CATTLE, HORSES, SHEEP, SWINE AND POULTRY,
FARM IMPLEMENTS, DOMESTIC
UTENSILS, &c.**

NEW SERIES—VOL. IV.



ALBANY, NEW-YORK :

PUBLISHED BY LUTHER TUCKER, No. 10 GREEN-STREET

OFFICE IN NEW-YORK CITY AT

M. H. NEWMAN & Co's BOOKSTORE, No. 109 BROADWAY,

WHERE SINGLE NUMBERS OR COMPLETE SETS OF THE BACK VOLUMES CAN ALWAYS BE OBTAINED.

FROM **THE** STEAM PRESS OF C. VAN BENTHUYSEN.

1847.

Digitized by Google

Figure 10.4 *The Cultivator*, an agricultural periodical published in Albany New York, but read by many Virginia farmers and planters.

VIRGINIA FARMING.

L. TUCKER, Esq.—Being a constant reader of the *Cultivator*, and not finding many communications from this part of the valley of Virginia, I thought it would not be intruding too much on your time to read an account of our farm, which is called the "Plains." This farm was taken up by a Mr. James Wood, and patented on the 12th day of January, 1746, exactly one hundred years ago this day. It was sold some four or five times, until my father bought it in the year 1829. My older brother moved on it in the year 1833, and was on it until 1835. He then bought a farm adjoining the town of New-Market, and I moved to this place, where I have been since. When my father bought this farm it was in very bad order; there was not a good pannel of fence on it, and not a single gate; the roof of the barn had been blown off by a storm and the barn-yard was only fenced in by an old rail fence, and not an acre of clover was on the place. The land was worked on the skinning system." The barn-yard was so full of old manure that it was almost impossible to get to the barn, and some of the fields were so poor that one of them produced only *four bushels* of rye per acre, in the year 1837. The land lies well for cultivation; it is not very hilly, but there are about 100 acres of it a black marl bottom, and about 150 acres of upland, which is a sandy clay; there are also about 165 acres of wood land attached to it. We have run a lane through the centre of the farm so that we can let the cattle run from the barn-yards to any of the fields. We have hung 32 gates

to the yards, lane, and fields, so that we can get about without ever tearing down any fence. The gates are made on the plan that you published in your January number, page 18. There is a spring on the adjoining farm which runs through our bottom land and empties into the Little Shenandoah river that passes along the edge of our farm. We have a merchant mill on the bank of the river which is run by the spring branch; we have also a saw mill which is run by the river. The spring branch runs through the edge of the cattle yards, so that the cattle can get water at all times. The lane also has communication with the spring branch, so that the cattle can come from any of the back fields to the branch for water. We have graded a greater part of the lane, and have turnpiked nearly all the low places, so that we can get along at all seasons of the year. We have adjoining the barn three yards, with sheds, for the cattle, one yard with a shed for the sheep, and a horse stable with a large yard, in which is a shed for wagons, cariole, cart, and farm implements, also two small buildings for saddles and tools. The saw-mill is only about 100 feet from the cattle yards, so that we can easily haul all the saw dust to the horse stable and cattle yards, which we find a very good article for absorbing the liquids of the manure. We also find that tan bark is a very good article for the same purpose; we therefore have adopted the plan of bringing a load along when we take corn, flour, &c., to New-Market, which is only three miles from this place. We have improved the land very much with clover, plaster, ashes, and manure, and a proper rotation of crops. We find that the following rotation is very suitable for this farm.

First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.
Corn with Manure.	Oats.	Wheat.	Clover with plaster and ashes.	Ditto.	To be pastured.
Seventh Year.	Eighth Year.	Ninth Year.	Tenth Year.	Eleventh Year.	Twelfth Year.
Fallow.	Wheat.	Rye or bearded wheat, with short manure.	Clover with plaster and ashes.	Ditto.	To be pastured.

By the above system you will find that we have six fields in clover, three in wheat, one in oats, one in corn, and one in fallow. The best parts of the four clover fields are mowed, and the other is left to rot on the ground; the two other clover fields are pastured but lightly, as we send all our young cattle and sheep to our mountain farm, on the head of the river. We find that plaster and ashes have a very good effect on the upland, but on the marl bottom it does not have any effect. The upland is very good for clover, and the bottom is very suitable for timothy. The upland had a considerable quantity of loose rocks, but we hauled nearly all of them into the lane, and into several sink holes and dragged earth over them with the road scraper. There were also a great many rocks in the fence corners that were hauled there some years ago; we also hauled hauled them into the sink holes.

We have a pond at the mill which we have cleaned out several times, and hauled the mud, composed principally of marl, on the wheat fields, and harrowed it in with the wheat. It has proved a very good article on the upland, answering better than stable manure in the adjoining field. The last year we hauled out 131 four horse loads of the mud, 154 loads of barn yard manure in the spring, and 84 loads in the fall.

The year 1845 was very dry in this part of the valley, so that all summer crops were very short, but the wheat yielded tolerably well. The following was the quantity of hay, &c., raised on the Plains farm in the year 1845.

20 wagon loads of hay; 672 bushels of oats; 31 bush. of rye; 113 bush. potatoes; 650 corn; 800 wheat.

We have 119 sheep, 35 head of cattle, and six horses. We have a corn fodder machine which is run by a two horse power; it is the middle size of "Eastman's Patent." It was made too weak, so that we had to take it through a thorough repair, but now it does tolerably well. We have large mangers in the cattle sheds, where we feed the cut corn fodder in the evening, and straw in the morning. The sheep get straw in racks in the morning, and hay in the evening, but when the snow is off the ground they are permitted to run to the field that is to be put into corn in the spring; we then give no hay, but only straw. We also give a bucket full of oats to the 119 head, every evening and morning, in small mangers. The sheep-racks are made on the plan that the "Economs" have them in Germany. We have tried the "feeding boxes," but do not like them as well as the racks. When the manure is hauled out of the sheep-yard in the spring, we plow it up, and plant cucumbers, melons, beans, &c., which do very well, as the ground gets very rich by the sheep manure.

By attending to the sheep on the above plan we have very good luck with the lambs. Last spring we raised 29 lambs out of 32. Our sheep are grade Saxons, which seem to suit our climate very well. We put the rams to the ewes the latter part of October, so that the lambs will come the latter part of March, which is the best time for this part of the country; the lambs will then be able to travel to our mountain farm, after the ewes are sheared, which is the first week in May. Our young cattle are also then taken to the mountains, so that we

Figure 10.5 The twelve-year cycle for the "proper rotation of crops" employed at The Plains, a farm three miles from New Market, Virginia in the Shenandoah Valley published in *The Cultivator* in 1849.

THE
SOUTHERN PLANTER,

A MONTHLY PERIODICAL,

DEVOTED TO

AGRICULTURE, HORTICULTURE AND THE HOUSEHOLD ARTS.



VOLUME III.
CHARLES T. BOTTS, EDITOR.

RICHMOND:
PRINTED BY P. D. BERNARD, MUSEUM BUILDING.
1843.

Digitized by Google

Figure 10.6 *The Southern Planter*, Vol. 3, 1843. *The Southern Planter*, published in Richmond, Virginia, was founded by Virginia farmer and lawyer Charles Tyler Botts in 1841.

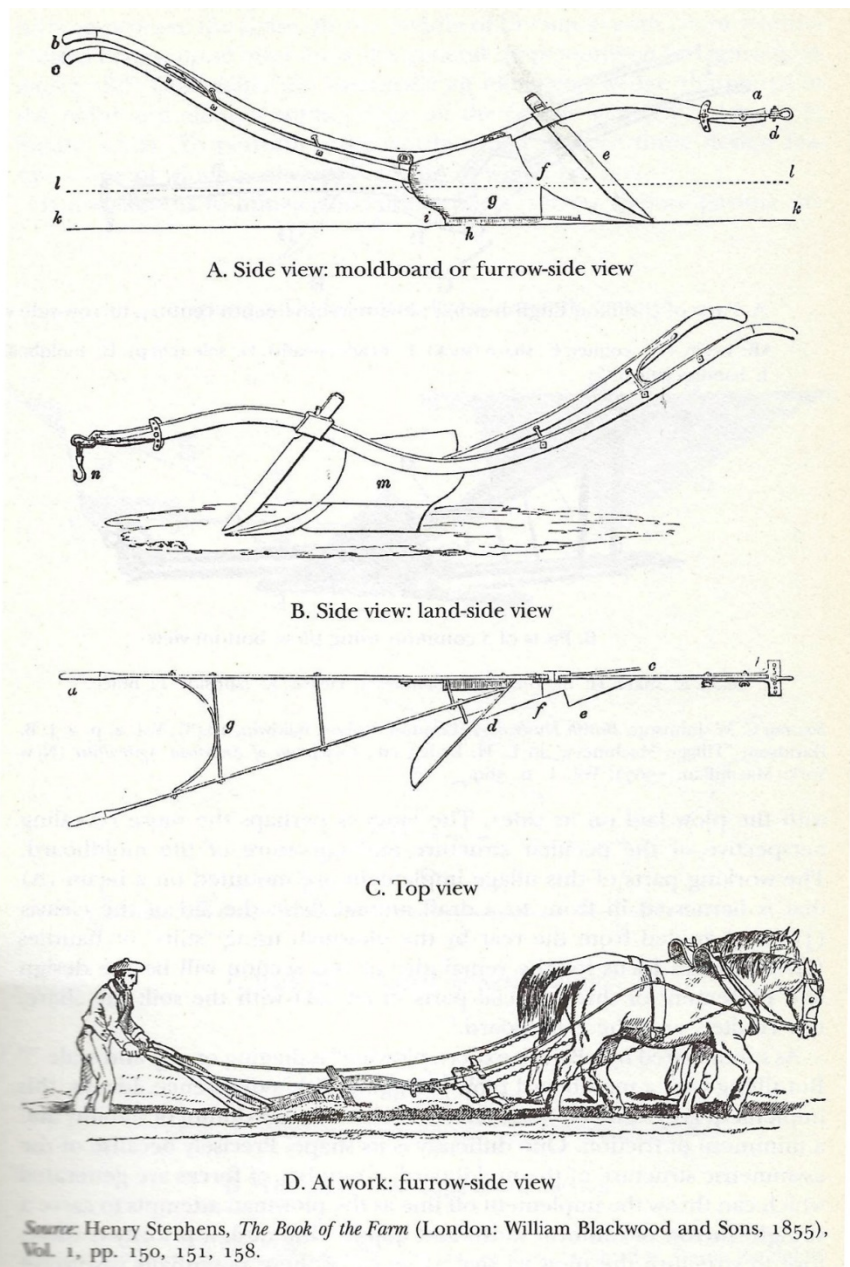


Figure 10.7 The Scotch Plough. From *The Southern Planter*, 1841.

Chapter 11

The Agricultural Landscape: Slavery

Ethnographer Kathleen Bragdon has identified that by the beginning of the eighteenth Century, “the Blue Ridge and Allegheny mountains were recognized as refuges for escaped slaves.” Bragdon notes that “One of the earliest documentary references to the presence of African Americans in the Valley” was the escape of “fifteen enslaved people...from a James River plantation” [who] “made their way into the Valley near to present-day Lexington in 1729,” several years before Jost Hite and his early band of Settlers arrived at Opequon Creek. (Bragdon 2009, 86) For Bragdon, an accurate:

“understanding of the African American experience in the Valley from the eighteenth century through the twentieth century has been overshadowed by emphasis upon the European cultural groups who settled in the region, and has also been obscured by widespread misperceptions about the presence of slavery in the Valley, and the attitudes of white Valley settlers towards enslavement and the use of enslaved labor.” (Bragdon 2009, 92)

Citing the work of Claus Wust, the “chronicler of German Immigration to the eastern United States who wrote the “definitive text” on “early German settlers in Virginia,” [loyolanotredameelib.org] Bragdon recognizes that:

‘Much has been written by German-American authors and repeated by others about the deep aversion Germans in Virginia had for the institution of slavery. There is no contemporary evidence in the extant letters, diaries, and church records to support such a sweeping claim. (Bragdon 2009, 93)

In the two decades after settlement, Historians Robert D. Mitchell and Warren Hofstra assert that while “indentured servants and an occasional slave were present before 1750,” labor requirements, were primarily met by members of the individual, farm-owning families. [Hofstra and Mitchell, 1995] However, historian William Couper has identified “Jost Hite, who led the first group of settlers to the lower Shenandoah Valley and established the Opequon neighborhood north of Cedar Creek, and his son John as “large slave-owners, by Valley standards.” According to Couper, among the Hite’s slaves were “many artisans.” [Couper 1952, 247] An assertion consistent with Hite’s ownership, along with his son John, of both a mill and a forge. Kathleen Bragdon has noted that by the 1760’s only ten percent of the farming families in the Shenandoah Valley “owned enslaved workers.” But she also identifies that the percentage of slave owning households was higher than that in the lower Valley citing evidence that “by 1783, 38% of households in Frederick County included enslaved people.” She further identifies that while the majority of slaveholders, owned “fewer than five individuals,” in contrast to the majority of slaveholders Isaac Hite, who had a large, plantation-scale farming operation by 1782, “called 38 enslaved people his property...” (Bragdon 2009, 93)

The increase in slavery in the lower Shenandoah Valley in the mid eighteenth century can be attributed in part to the increased demand for hemp during the French and Indian War and the planting of tobacco on the lands east of present-day Winchester. Hemp and tobacco were among the first crops grown in the lower Valley for commercial purposes. They were also among the most labor intensive crops to grow and harvest which led to the use of slave labor for their cultivation. Historian Robert D. Mitchell asserts that it was “the emergence of wide-spread cultivation of labor-intensive hemp” that “brought the first notable demand for Negro slaves among Valley farmers.” (Mitchell 1973 126) There is scant evidence of hemp being grown at on the Belle Grove property but the Hite Family Commonplace Book records suggest that Tobacco cultivation “appears to have occurred at Belle Grove for an unspecified length of time in the late 18th century” The evidence of tobacco being grown by the Hites is supplied in the family’s *Commonplace Book*, which notes a 1785 contract with the plantation’s overseer Benjamin Little stating that Little was to receive “one sixth of all grain and tobacco” grown under his care (Greer 2016, 6-7]

By the end of the eighteenth Century slavery was a clearly a significant presence in the lower Valley seems. Historian Robert D. Mitchell has documented the presence of 9,500 slaves in the lower Valley by 1800. (Mitchell 1977, 181) Historians Kenneth Koons and Jonathan Noyalas establish that in that same year, 1800, slaves comprised twenty percent of the Valley’s total population and that “proportion fluctuated only slightly from then until the Civil War.” “By 1850, the number of slaves in the Valley had risen to 24,841, and they constituted 19.5 percent of the total population.” Thus, according to Koons and Noyalas, “through most of the first half of the nineteenth century, one in every five inhabitants of the Valley was an African American held in bondage.” Koons and Noyalas identify that “the increase in the number of slaves in the Valley during the second half of the eighteenth century” occurred at the same time when “wheat farming was becoming increasingly commercialized.” They further assert that “slave holders” who “practiced general mixed farming with an emphasis on wheat production successfully integrated slavery into their agrarian enterprises.” (Koons and Noyalas 2010, 31) The impact of slavery in the lower Valley is also established by Kathleen Bragdon, who notes that “for Frederick County, in the post-Revolutionary War period, the labor force was peopled principally by enslaved African Americans.” Bragdon documents that:

“In 1790, Frederick County possessed the highest percentage of African Americans in the Valley, at 21.3 percent of the county population (Suter 1999:10). Some of these arrived with newly-arrived planters, some were acquired through sale, but principally they were transmitted through inheritance or gift.” (Bragdon 2009, 116)

While many small farmers and tenant farmers were not slave owners, recent scholarship has determined that “Slave hiring was pervasive in rural areas, agriculture, and households.” Short-term slave hiring for agricultural work from slave owners with too many slaves on hand, according to historian John J. Zaborney was “pervasive in rural Virginia” and slave hiring was “integral to Virginia slavery because hiring touched *all* types of slaves, *all* locations and occupations, and *all* types of whites.” (Zaborney 2012, 3 and 22) “By the turn of the nineteenth century, hired slaves were everywhere slavery was in Virginia.” (Zaborney 2012, 163)

What is the evidence of slavery at Belle Grove at the end of the turn of the nineteenth Century? Mathew Greer has noted in his 2016 archaeological report on Belle Grove that “currently, no known record directly speaks to the presence of enslaved Virginians residing at Belle Grove prior to 1783. Although it seems certain that some enslaved individuals were present during this time period...” (Greer 2016, 7) In 1782, Isaac Hite, Sr. reported 38 slaves as his property but they were not identified with specific family agricultural lands. The following year, 1783, Hite’s slaves were joined by fifteen slaves brought to Belle Grove by Isaac Hite, Jr’s new wife Nelly Madison Hite. “By 1800, this [enslaved] community [at Belle Grove] had grown to approximately 50 individuals.” (Greer 2017, 2] and a receipt for Isaac Hite, Jr.’s personal property taxes in the Hite Family papers shows Isaac was being taxed for 44 slaves. (Hite Family Papers, vol, 4.) In 1820, Isaac Hite, Jr. reported 103 slaves as his property, 58 of whom were male. (Bragdon 2010, 119) Not all of the enslaved worked at Belle Grove, however. During this period, the enslaved community at Belle Grove “was likely divided across...the four primary tracts (or quarters) the Hite’s operated” including the Belle Grove tract...the Guilford tract (1,100 acres...located 11.1 miles northeast of Belle Grove in Clark County), the Rockville tract (1,700 acres...located three mile north northwest of Belle Grove in Frederick County), and...the Long Meadow tract, (located southeast of Belle Grove on the North fork of the Shenandoah River in Shenandoah County) which Isaac inherited from his father in 1795.” (Greer 2016, 8)

The 1837 inventory of Isaac Hite, Jr’s property executed following his death, showed that he owned 44 enslaved individuals, 24 of whom were male. One of the enslaved men was noted to be a blacksmith. (Bragdon 2010, 119) In 1838, Anne T. Hite, Isaac Hite, Jr.’s widow owned only 24 enslaved individuals. In 1840, the number had dropped to only twelve. But, ten years later in 1850 the number had risen to 26, (Fig. 11.1 and Figure 11.2) while Isaac Fontaine Hite, Anne’s son, “who farmed nearby, had 16 slaves.” (Bragdon 2009, 120) The reduction in the number of enslaved individuals at Belle Grove may reflect the decline in the enslaved population in the “older wheat producing areas’ identified by historian Kenneth Keller. But that decline in the enslaved population may also reflect the impact of mechanization and the progressive farming movement’s emphasis on labor saving agricultural devises such as the McCormack reaper. By mid-century, according to Keller:

“Where slavery had disappeared or where it was declining most dramatically, wheat farmers mechanized more rapidly than in places where slavery continued to be an entrenched factor in the growing of wheat.” (Keller 2000, 28]

However, a certain amount of caution should be exercised in describing the “decline of slavery” prior to the Civil War. Historian John J. Zaborney asserts that “slave hiring made Virginia slavery stronger, not weaker in the years before the Civil War.” (Zaborney 2012, 3) According to Zaborney, those non-slave owners who rented slaves engaged in the “acquisition of power over the slaves of others,” even though they themselves were not slaveholders. For Zaborney, “the pattern was plain.” In hiring slaves, “white Virginians of varied economic means were alike in that any of them could be a slave’s master.” (Zaborney 2012, 116) Slave hiring was so common

in antebellum Virginia that slave-hiring agents soon emerged who were able to make “their living solely by hiring out others’ slaves.” (Zaborney 2012, 26)

Perhaps the most well-known evidence of the scope of slavery at Belle Grove are the newspaper advertisements taken out by Isaac Hite in October of 1824 (Fig. 11.3) announcing that he intended “to sell sixty slaves, of various ages in families...” (Laise 2017, 3) That sale might have indirectly been the result of the combined effects of wheat’s rise as the lower Valley’s primary agricultural crop and progressive farming practices, including agricultural mechanization. Wheat “required little attention until harvest.” And while slaves “worked every part of the wheat harvest,” the work was seasonal. One response to a surplus of slaves brought about by these economic changes was the sale of slaves to plantations in the deep South as done by Isaac Hite, Jr. in 1824. Other slaveholders hired out their slaves and in the antebellum period, “the agricultural, industrial, and urban sectors of Virginia’s economy competed fiercely for the slaves white Virginians wished to hire out.” (Zaborney 2012, p. 11 and p. 146) “In the Shenandoah Valley, the owner of Folly Farm Plantation [near Staunton] hired out between one dozen and two dozen each year through the 1850’s.” (Zaborney 2012, p. 161) The full extent of slaveholding by Virginia farmers can be difficult to accurately determine, however, since “Virginia slave owners who hired out their slaves avoided tax payments on those slaves...” Slave hirers, not slave owners were responsible for taxes on hired enslaved workers. As a result, slaves appeared “on and off annual personal property tax records in the years after the Revolution.” (Zaborney 2012, p. 14)

The impact of a slave sale such as Hite’s could be profound on the enslaved population. Nancy B. Stewart has described how slaves who were sold could be sent by “Anthony Spengler’s weekly wagons to Alexandria or driven overland by foot, in shackles to the southern cotton fields.” (Stewart. p. 7) Jonathan Noyalas has identified at least one slave trader, Dolf White, who operated in the lower Valley. It is unknown if White, who was located in Middletown, ever bought or sold slaves from the Hite’s or other nearby slave owners in the Cedar Creek neighborhood, or acted as an agent for slave hires. (Noyalas 2004, 39) Kristen Laise lists two occasions when Isaac Hite, Jr. placed runaway slave notices in Baltimore newspapers. In November of 1800 Isaac placed an ad in the *Baltimore American* and in 1806, he placed an ad for a runaway slave in another Baltimore newspaper, *The Telegraph and Daily Advertiser*. It is unknown if the runaway slaves in question were ever returned to Hite, who along with his father Isaac, Sr. was described by Laise as “among the owners of the largest number of enslaved people in southern Frederick County.” (Laise 2017, 2) Evidence of the full extent of enslavement at the Hite family’s agricultural operations is recorded in the Hite family’s *Commonplace Book*. In the seven decades from the 1780’s to 1851, the Hite’s *Commonplace Book* records the list of 274 enslaved people the family owned. (Greer 2017, 3) (Fig. 11.4) The centrality of enslavement in the operation of the family’s agricultural holdings is brought to light by Kathleen Bragdon who notes that “none of the records kept by members of the Hite Family,” including we presume the *Commonplace Book*, “suggest that they had any interest in freeing their slaves.” (Bragdon 2009, 119)

The Hites were certainly not the only slave owners along Cedar Creek, however. Historian Robert D. Mitchell has compiled inventories of ownership in the lower Valley of selected “items”, including slaves, from 1740 to 1800. Mitchell’s inventory, compiled from county will books, is included as Figure 11.5. We also know that several nearby farmers along the lower reaches of Cedar Creek, including Hite neighbors and relatives, were among those lower Valley farmers who owned enslaved individuals. A judgement against Jacob Hite in Frederick County in 1772 revealed that he owned at least 15 “Negroes.” (Hart 1942]) The 1787 Personal Property tax records for Isaac Bowman showed him owning eight slaves. (Kalbian et al. 2014, 9) In 1814, Isaac was charged for eight slaves but only seven slaves in 1815. (Kalbian et al. 2014, 19) The 1840 slave schedule shows that George Brinker recorded five slaves. In 1850 Brinker recorded only four slaves (Kalbian et al. 2014, 22). Charles J. Hite was first recorded in the Warren County personal property tax records for 1850 as owning one slave. In 1851, Charles J. Hite was recorded as the owner of five slaves. (Fig. 11.6) In 1860, Hite was charged for eight slaves. Among the eight were five children. (Peters 2010, 9] In 1852, “George W. S. Bowman was taxed for twenty-three slaves. The slave lists assembled by Archeologist Laurie J. Paonessa for the Heater House just south of Middletown, Virginia reveal that in 1800, Simon Hoge who owned the property (then known as Cedar Grove Plantation) also owned four slaves. In 1810, Hoge owned 5 slaves. But by 1815, that number had been reduced to 3. By 1820, the property had been sold to Cornelius E. Baldwin, Jr. who, in that year is shown as owning 11 slaves. The 1828 probate records, following Baldwin’s death show that he owned 12 slaves at the time of his death. In 1830, Baldwin’s widow, Nelly, is shown owning 10 slaves. By 1850, the property had been purchased by Solomon Heater, who would work the property without the use of slave labor, hiring workers as needed from both the lower Valley’s white and free African-American populations. (Paonessa 1996, tables 4 and 5)

Numerous historians have documented the various tasks that enslaved individuals undertook in the general mixed farming system that was practiced by almost every successful farmer in the lower Valley. Upon settlement on the land, among the first tasks necessary at Belle Grove, and on nearly every other farm, would have been clearing the “largely wooded land” for agricultural fields and pastures. For example, the 300 acres of the land along Cedar Creek that would comprise the core of what would become Belle Grove was originally purchased and settled by James Hoge and sold to Isaac Hite, Sr. in 1748. It is not known if this tract of land included cleared fields at the time of Hite’s purchase. If the land had not been cleared, clearing operations would have likely been undertaken by Hite’s slaves “sometime around mid-century.” (Greer 2016, 4) Koons and Noyalas note that “Slave labor was utilized heavily for tasks associated with wheat farming—plowing, sowing, reaping, and threshing.” The work of slaves was:

“integral to the production of food and fiber in a grain-livestock economy. In addition to helping with the production of small cereal grains other than wheat...slaves planted, thinned, hoed, shocked, and shucked corn, the “crop of second-most importance” in the Valley, and they mowed and harvested hay. Their work included a diverse array of activities, from planting fruit trees to picking apples, building fences to cutting firewood,

and feeding and caring for livestock to butchering hogs.” (Koons and Noyalas 2010, 31-32)

Kenneth Keller’s research into period diaries has documented a more expanded set of tasks performed by slaves including:

“laying off new fields, removing stones from fields, cutting trees and hauling wood and wheat to market, harrowing, scraping manure from barnyards, plowing, hauling and spreading gypsum, manure, and fertilizer, planting and working with green-manure crops, harvesting and threshing wheat, staking wheat, maintaining wood and stone fences, preparing seed wheat, cutting clover grown in what fields after harvest, burning straw and chaff...hauling coal, harvesting ice, salting beef and mutton, planting corn and other crops, shucking corn, pounding hominy, planting and tending gardens and hotbeds, storing root crops, patching bags, making shingles, making butter and cheese, repairing cisterns, sheering sheep, tending livestock, greasing and oiling harnesses, working on roads, making current wine, mowing, cutting oats, and working on neighboring farms.” (Keller 2000, 28)

Not all enslaved workers were assigned agricultural related tasks or worked in the fields. The *Hite Family Commonplace Book* includes the notation that the enslaved worker “Young Truelove, rolled eight pounds of yarn and ‘thread[ed] and bleached” along with “20 skiens [sic] wool.” It also documents that the enslaved workers Nancy and Betty were given yarn to spin. (Greer 2016, 55) Other documented tasks for the enslaved at Belle Grove included cooking, making cheese, and making small kitchen articles such as skimmers, ladles, forks...strainer[s]...and...wood vessels.” (HFP, vol. 2, doc. 13, 15, and 17) Also among the enslaved individuals at Belle Grove and other large farms and plantations in the Lower Valley, were “skilled craftsmen and women including blacksmiths, woodworkers, masons, leather-workers, millers, coopers, weavers, and seamstresses.” (Bragdon 2009, 119 and Kalbian and Boyer 2002, 8) Enslaved individuals also worked in Hite’s other commercial enterprises, performing essential tasks in Hite’s grist mill, his sawmill, and in Belle Grove’s distillery. Among the “complex tasks” slaves performed at “model progressive farms” such as Belle Grove were:

“threshing wheat with a machine, operating saw- and gristmills with steam-powered waterwheels, distilling whiskey, and driving wagons filled with whiskey, flour and other Belle Grove products to merchants in Winchester, Alexandria and Fredericksburg.” (Bragdon 2009, 114)

We do know the name of at least one wagon driver, James, apparently one of Isaac Hite’s slaves, who was trusted to take a load of flour by wagon trip to the Alexandria baking firm of Korn and Wisemiller in 1796. The receipt in the Hite family papers notes: “Received by a Negro James, eleven barrels of super fine flour.” (Laise 2017, 2]

Among the additional tasks listed by Bragdon undertaken by enslaved workers “on farms with diversified crop and stock operations” were: “Tending livestock and repairing farm buildings,

building new structures, and mending and building new fences.” It is very likely that enslaved individuals also performed numerous tasks associated with Hite and Son, the Hite’s general store at Belle Grove as well as tasks at the family’s mills and distillery. What becomes clear is the fact that at Belle Grove enslaved individuals were involved in nearly every aspect of the farm’s varied and complex day-to-day workings, performing “skilled, semi-skilled and unskilled tasks, all essential to the plantation’s operation.” (Bragdon 2009, 119) Importantly, Kathleen Bragdon has also identified that the movement of enslaved people in the Valley was not limited to the physical “plantations or commercial concerns of the slaveholder.” In the lower Valley the enslaved people “engaged in a range of tasks throughout the year, and were accustomed to traveling around the Valley communities.” (Bragdon 2009, 119)

“In the Lower Valley, a larger percentage of enslaved Africans worked side by side with the families that owned them, or were rented out to local businessmen, manufacturers, and farmers, and participated in a kind of shadow economy. For example, many enslaved Africans had accounts at the local stores. Slavery became increasingly integrated into the newly-emergent industrial economy of the early nineteenth century, as the region’s agricultural and industrial composition changed with the introduction of a wheat farm economy and more manufacturing enterprises.” (Bragdon 2009, 131)

The *Hite Family Commonplace Book* also notes that enslaved individuals at Belle Grove were likely selling poultry they raised to the Hite family. (Greer 2016, 53-54)

Enslaved workers also performed essential tasks at the lower Valley’s numerous industrial and manufacturing operations, including iron furnaces such as the Redwell furnace on Hawksbill Creek near Luray, Virginia. The enslaved work force at Redwell “not only operated the furnace but also labored in the mountain forests to produce the massive amounts of charcoal required to fuel the foundry.” (Bragdon 2009, 123) The enslaved were also a part of the workforce that built and maintained the early roads in the lower Valley and the roads that connected the lower Valley to the Potomac ports. Road historian Nathaniel Pawlett has identified that:

“After 1657 road operations were placed in the hands of the gentlemen justices of the county courts, who appointed individual overseers of roads [or “surveyors of highways”] to handle specific roads or portions thereof...all tithables, males above the age of 16 whether free or slave, were to work on the roads under their supervision when so ordered by the parish vestry.” (Pawlett 2003, 4)

The mixed agricultural economy of the lower Valley was characterized by varied work that “dictated the need for flexible labor practices.” (Bragdon 2009, 122) That needed flexibility extended into the labor practices associated with slavery. “slave hiring added a degree of flexibility to the system by providing a mechanism by which excess slave labor could be distributed to those with a demand for additional labor.” Kenneth Koons has speculated that the hiring of slaves in Shenandoah County likely included farmers “needing supplemental or seasonal labor” hiring enslaved workers who were owned by non-farmers (Koons 2000, 237)

Farmers in the lower Valley, as well as manufacturers “who needed labor but either did not own slaves or did not own a sufficiency of them to meet their labor needs, could hire-out slaves owned by others.” (Koons and Noyalas, 2006, p. 239) Jonathan Noyalas has identified that:

“A regular at renting slaves was Thornton McLeod, a farmer from Newtown. Four receipts survive detailing the hiring of slave labor for one year. All of McLeod's rented slaves came from Joseph Long, a wealthy farmer from Newtown. McLeod's agreement to Long for renting a slave for 1851 reads as follows: ‘On or before the 25th day of December 1851 I promise To pay Jos. Long, his heirs, or assigns ten dollars it being for the hire of Ann a black girl for the year 1851...’ (Noyalas 2004, 19)

As these historians have documented, in the lower Valley, enslaved individuals “were used in the increasingly common practice of “out-hiring.” But the practice of slave hiring was wide spread throughout the Shenandoah Valley where, “perhaps more so than elsewhere in the slave South, ‘slave-hiring, provided a mechanism by which non-slave owners could utilize and benefit from slave labor.” (Koons and Noyalas 2010, 35) The importance of slave hiring within the larger agricultural economy has been noted by Kathleen Bragdon, who cites the 2010 study of slave hiring in the Shenandoah Valley’s Augusta County conducted by Susanne Simmons and Nancy Sorrells, which suggested that “slave hiring in fact not only adapted easily to the agricultural economy of small family farms and related grain industries in Augusta County, but was the cornerstone upon which the economy was built.” (Bragdon 2009, 122) Bragdon has also cited the work of historian David Martin, who study of slave hiring has challenged earlier scholarship that saw slave hiring as an indicator of the “end of the institution of slavery.” For Martin, slave hiring “represents an evolution in the use of enslaved labor in the industrialized South in the decades prior to the Civil War.” (Bragdon 2009, 123) Building on the work of Martin, Bragdon’s compared the slave employers noted in the 1860 slave schedule and the Frederick County census for that same year. Bragdon’s study revealed that “only four of the employers owned slaves, underlining the importance of hires to the farming and rural industry enterprises of non-slaveholding farmers.” (Bragdon 2009, 148) Hiring out slaves could provide slave holders with an important source of additional income. Margaret Peters and Maral Kalbian have identified that George W. S. Bowman was able to raise a “sizable sum...by the hiring out of several of the Bowman family slaves.” (Peters and Kalbian 2010, 7) In addition to hiring slaves, lower Valley farmers also hired free blacks. The Heater family, non-slave holders, whose farm was adjacent to Belle Grove, is known to have hired at least one free black, Alfred Ashby.

The impact of the work and skills of the lower Valley’s enslaved workers and free blacks was profound. As Kenneth Koons and Jonathan Noyalas have identified, “During the nineteenth century, as farmers and their laborers—black as well as white—made the Shenandoah Valley the most productive wheat farming region of Virginia and the South.” They accomplished this at the same time “a technological revolution” was transforming “the practice of agriculture in the United States.” (Koons and Noyalas 2010, 52] But the fullness of that record is only now beginning to be understood. As Kathleen Bragdon has identified, “Federal census terms such as

“farmhand’ and ‘laborer” “obscured” the many “skilled and semi-skilled tasks enslaved and Free Blacks performed.” (Bragdon 2009, 114) Bragdon has also acknowledged that we know understand that:

“The landscape of slavery at Belle Grove Plantation represents a key element of its material heritage. Ultimately, all of the space around extant eighteenth-century and antebellum nineteenth-century features served simultaneously as planter space and as the space of enslaved peoples.” (Bragdon 2009, 128)

Work is now ongoing at Belle Grove to locate and investigate the domestic and work spaces of the plantation’s enslaved people. An archaeological investigation at Quarter Site B, a contemporary domestic site” believed to have been inhabited by members of the plantation’s enslaved community. (Greer 2017, 1) Interestingly, Quarter Site B, located approximately 500 feet north-northwest of the Belle Grove manor house, is also visible from the plantation office and store. Between Quarter Site B and the plantation office/store is an open field that extensive archaeology has determined has never been plowed. The lack of agricultural activity in this field would have preserved the open, unobstructed view of Quarter Site B from the plantation office and store. Matthew Greer has proposed that this spatial composition allowed the plantation office and store to operate as a panopticon, a viewing place that allowed the plantation overseer to observe the enslaved occupants at Quarter Site B without his observation always being verifiable by the enslaved occupants. For Greer, this “complex assemblage of components” functioned to facilitate the “control of daily life at the Quarter Site B.” (Greer 2017, 1 and 7) Greer’s speculative findings support the assertion of Kathleen Bragdon made a decade earlier that: “at Belle Grove Plantation, the Hite family likely endeavored to replicate the landscapes of ‘control’ employed by large slaveholders in the east.” (Bragdon 2006, 116)

The work at Belle Grove pre-sages the importance of investigating the larger landscape of slavery that permeated all aspects of life in the lower Valley from the time of settlement to through the Civil War and beyond. The emergence of new technologies and sophisticated analytical techniques “pioneered at other eighteenth-century sites,” (Bragdon 2009, 128) promises to make the continued archeological investigations at Belle Grove and other future sites within the Belle Grove and Cedar Creek Historical Park a landscape of expanding knowledge and discovery.

Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Ancestry.com. *1850 U.S. Federal Census - Slave Schedules* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Original data: United States of America, Bureau of the Census. *Seventh Census of the United States, 1850*. Washington, D.C.: National Archives and Records Administration, 1850. M432, 1,009 rolls.

Ancestry.com. *1860 U.S. Federal Census - Slave Schedules* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2010. Original data: United States of America, Bureau of the Census. *Eighth Census of the United States, 1860*. Washington, D.C.: National Archives and Records Administration, 1860. M653, 1,438 rolls.

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast Region Ethnography Program National Park Service, 2009.

Couper, William, *History of the Shenandoah Valley, Vol. II*, New York: Lewis Historical Publishing Company, Inc. 1952.

Fromm, Roger W. "The Migration and Settlement of Pennsylvania Germans in Maryland, Virginia and North Carolina and Their Effects on the Landscape," in *Pennsylvania Folklife*, Vol. 37, no. 1, Autumn 1987, p. 33-42

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, The Cultural Resources: Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Grassl, Gary C., "KLAUSWUST: FOREMOST GERMAN-AMERICAN HISTORIAN DIES AT AGE 77 (1925-2003)"
<https://loyolanotredamelib.org/php/report05/articles/pdfs/Report45MemoriampXI-XIV.pdf>
accessed 07.30.19

Greer, Mathew C., *Archaeological Investigations of Two Possible 19th Century Quarters Sites at Belle Grove Plantation, Frederick County, Virginia: 44FK520 and 44FK521*, February, 2016

Greer, Matthew C., "Panopticism and the Practical Politics of Slavery in the Shenandoah Valley," paper presented at the 47th Annual Middle Atlantic Archaeology Conference, Virginia Beach, Virginia, 18 March 2017

Greer, Matthew "Starting Over after Being Taken Away: Enslaved Women, Forced Relocation, and Sexual Relationships in Antebellum Virginia," unpublished conference presentation, 2017

Hart, Freeman H., *The Valley of Virginia in the American Revolution 1763-1789*, Chapel Hill: The University of North Carolina Press, 1942

Hite, Isaac, Will: Frederick County Clerk's Office. Will Book 19, pages 354-357

Hite Family Commonplace Book (1776-1859), (Virginia Historical Society: Hite Family Papers MssIH637535a-40)

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:

vol. 2, doc. 7;

vol. 2, doc. 12-20;

vol. 2, doc. 39

vol. 3, doc. 2;

vol. 3, doc. 3;

vol. 3, doc. 16;

vol. 3, doc. 35;

vol. 3, doc. 39;

vol. 3, doc. 41;

vol. 4, doc. 88;

vol. 4, doc. 96;

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800," in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Kalbman, Maral S. and Leila O. W. Boyer, "Final Report African-American Historic Context, Clarke County, Virginia," September 26, 2002.

Kalbiam, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbiam, LLC, September 2014

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E., "The Colored Laborers Work as Well as When Slaves: African Americans in the Breadbasket of the Confederacy," in *Archaeological Perspectives on the American Civil War*, Clarence R. Geier and Stephen R. Potter, eds. Gainesville: University Press of Florida, 2000

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park, December 15, 2010*

Laise, Kristen, "Were the Hites 'Nice' or 'Kind' to the people they Enslaved," a training document dated Feb. 25, 2017, Cedar Creek and Belle Grove National Historical Park Archives

"List of Enslaved Compiled from Notes in the Hite Family Commonplace Book (1776-1859)" (Virginia Historical Society: Hite Family Papers MssIH637535a-40)
https://bellegrove.org/images/uploads/List_of_Enslaved_Recorded_in_Commonplace_Book_put_on_Website.pdf, accessed 07.30.19

Mitchell, Robert D., "Agricultural Change and the American Revolution: A Virginia Case Study," in *Agricultural History*, vol. 47, no. 2 (April 1973), pp. 119-132.
<http://www.jstor.org/stable/3742028>, accessed: 27-11-2017

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977.

Mitchell, Robert D. and Warren R. Hofstra, "How Do Settlement Systems Evolve? The Virginia Backcountry During the Eighteenth Century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995, pp. 123-147

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012

Noyalas, Jonathan A., *Two Peoples, One Community: The African American Experience in Newtown (Stephens City), Virginia, 1850-1875*, 2004

Paonessa, Laurie J., *Archeological Investigations at the Heater House, Middletown, Virginia: Submitted to the Cedar Creek Battlefield Foundation Inc. Middletown, VA.* 1996.

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Pawlett, Nathaniel Mason, "A Brief History of the Roads of Virginia 1607-1840 (revised), Charlottesville: Virginia Highway & Transportation Research Council, 2003

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Stewart, Nancy B., "How Did Shenandoah County Get into the Slavery Business?" Cedar Creek and Belle Grove National Historical Park Archives

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Chapter 11:

Figures

21 (17)

SCHEDULE 2.—Slave Inhabitants in Distict 16 in the County of Fredricks of Virginia, enumerated by me, on the 16 day of Oct, 1850. James Gatten Ass't Marshal.

NAMES OF SLAVE OWNERS.	Number of Slaves.	DESCRIPTION.			Fugitive from the State.	Number manumitted.	Deaf & dumb, blind, insane, or idiotic.
		Age.	Sex.	Colour.			
1	2	3	4	5	6	7	8
	4	36	M	B			
	5	25	F	B			
	6	29	M	B			
10	7	15	M	B			
	8	12	M	B			
	9	9	M	M			
	10	7	M	B			
	11	9	F	B			
Thomas G. Miller	1	45	M	B			
	2	26	M	M			
	3	30	F	B			
	4	18	F	B			
5	5	12	M	B			
	6	4	M	B			
	7	9	F	M			
	8	1	M	M			
Alexander Newman	1	36	F	B			
	2	9	M	M			
Elizabeth Ash	1	40	M	B			
	2	21	F	B			
	3	14	F	M			
	4	10	M	B			
	5	5	M	B			
	6	3	F	B			
Daniel Shull	1	54	M	B			
Philip Swan	1	49	F	M			
	2	38	M	B			
	3	25	M	B			
	4	46	M	B			
	5	21	F	M			
	6	9	M	B			
Elizabeth Shull	1	30	M	B			
	2	25	M	B			
	3	25	M	B			
	4	25	F	B			
	5	19	F	B			
Richard Molyneux	1	63	F	B			
	2	45	M	B			
	3	41	M	B			
	4	32	F	B			
	5	17	M	B			
	6	13	F	B			
	7	13	F	B			
	8	13	F	B			
	9	13	F	B			
	10	13	F	B			
	11	13	F	B			
	12	13	F	B			
	13	13	F	B			
	14	13	F	B			
	15	13	F	B			
	16	13	F	B			
	17	13	F	B			
	18	13	F	B			
	19	13	F	B			
	20	13	F	B			
	21	13	F	B			
	22	13	F	B			
	23	13	F	B			
	24	13	F	B			
	25	13	F	B			
	26	13	F	B			
	27	13	F	B			
	28	13	F	B			
	29	13	F	B			
	30	13	F	B			
	31	13	F	B			
	32	13	F	B			
	33	13	F	B			
	34	13	F	B			
	35	13	F	B			
	36	13	F	B			
	37	13	F	B			
	38	13	F	B			
	39	13	F	B			
	40	13	F	B			
	41	13	F	B			

Figure 11.1 Anne T. Hite, 1840 Slave Schedule.

2 (20)

SCHEDULE 2. Slave Inhabitants in District 16ⁿ in the County of Fredrick 17ⁿ State of Virginia, enumerated by me, on the 21st day of Oct, 1850. James Cather Ass't Marshal.

NAMES OF SLAVE OWNERS.	Number of Slaves.	DESCRIPTION.			Fugitive from the State.	Number unexamined.	Deaf & dumb, blind, insane, or idiotic.
		Age.	Sex.	Color.			
1	2	3	4	5	6	7	8
	24	50	F	M			
	25	67	F	B			
	26	71	F	B			
<u>August H. Hite</u>	1	30	F	M			
	2	9	F	M			
	3	8	F	B			
	4	6	F	M			
	5	4	M	M			
<u>J. L. Knechwal</u>	1	19	F	B			
<u>Israel Williamson</u>	1	58	M	B			
	2	19	M	M			
	3	45	F	B			
	4	20	F	M			
	5	18	F	M			
	6	7	M	B			
	7	3	M	B			
<u>Philip A. Hite</u>	1	11	M	B			
<u>George Knight</u>	1	45	M	B			
	2	17	F	M			
	3	11	F	B			
	4	8	M	B			
	5	6	F	B			
	6	64	F	B			
<u>Walker Mc. Hite</u>	1	43	F	B			
	2	40	F	M			
	3	33	M	M			
	4	16	F	M			
	5	19	F	B			
	6	8	F	B			
	7	50	M	B			
	8	50	F	B			
	9	36	M	B			
	10	39	M	M			
	11	35	M	B			
	12	14	M	B			
	13	10	M	B			
	14	8	M	B			
	15	13	M	B			
<u>James Ridings</u>	1	60	F	B			
	2	34	M	M			
	3	10	F	B			
	4	10	F	B			
	5	10	F	B			
	6	10	F	B			
	7	10	F	B			
	8	10	F	B			
	9	10	F	B			
	10	10	F	B			
	11	10	F	B			
	12	10	F	B			
	13	10	F	B			
	14	10	F	B			
	15	10	F	B			
	16	10	F	B			
	17	10	F	B			
	18	10	F	B			
	19	10	F	B			
	20	10	F	B			
	21	10	F	B			
	22	10	F	B			
	23	10	F	B			
	24	10	F	B			
	25	10	F	B			
	26	10	F	B			
	27	10	F	B			
	28	10	F	B			
	29	10	F	B			
	30	10	F	B			
	31	10	F	B			
	32	10	F	B			
	33	10	F	B			
	34	10	F	B			
	35	10	F	B			
	36	10	F	B			
	37	10	F	B			
	38	10	F	B			
	39	10	F	B			
	40	10	F	B			
	41	10	F	B			
	42	10	F	B			
	43	10	F	B			
	44	10	F	B			
	45	10	F	B			
	46	10	F	B			
	47	10	F	B			
	48	10	F	B			
	49	10	F	B			
	50	10	F	B			
	51	10	F	B			
	52	10	F	B			
	53	10	F	B			
	54	10	F	B			
	55	10	F	B			
	56	10	F	B			
	57	10	F	B			
	58	10	F	B			
	59	10	F	B			
	60	10	F	B			
	61	10	F	B			
	62	10	F	B			
	63	10	F	B			
	64	10	F	B			
	65	10	F	B			
	66	10	F	B			
	67	10	F	B			
	68	10	F	B			
	69	10	F	B			
	70	10	F	B			
	71	10	F	B			
	72	10	F	B			
	73	10	F	B			
	74	10	F	B			
	75	10	F	B			
	76	10	F	B			
	77	10	F	B			
	78	10	F	B			
	79	10	F	B			
	80	10	F	B			
	81	10	F	B			
	82	10	F	B			
	83	10	F	B			
	84	10	F	B			
	85	10	F	B			
	86	10	F	B			
	87	10	F	B			
	88	10	F	B			
	89	10	F	B			
	90	10	F	B			
	91	10	F	B			
	92	10	F	B			
	93	10	F	B			
	94	10	F	B			
	95	10	F	B			
	96	10	F	B			
	97	10	F	B			
	98	10	F	B			
	99	10	F	B			
	100	10	F	B			
	101	10	F	B			
	102	10	F	B			
	103	10	F	B			
	104	10	F	B			
	105	10	F	B			
	106	10	F	B			
	107	10	F	B			
	108	10	F	B			
	109	10	F	B			
	110	10	F	B			
	111	10	F	B			
	112	10	F	B			
	113	10	F	B			
	114	10	F	B			
	115	10	F	B			
	116	10	F	B			
	117	10	F	B			
	118	10	F	B			
	119	10	F	B			
	120	10	F	B			
	121	10	F	B			
	122	10	F	B			
	123	10	F	B			
	124	10	F	B			
	125	10	F	B			
	126	10	F	B			
	127	10	F	B			
	128	10	F	B			
	129	10	F	B			
	130	10	F	B			
	131	10	F	B			
	132	10	F	B			
	133	10	F	B			
	134	10	F	B			
	135	10	F	B			
	136	10	F	B			
	137	10	F	B			
	138	10	F	B			
	139	10	F	B			
	140	10	F	B			
	141	10	F	B			
	142	10	F	B			
	143	10	F	B			
	144	10	F	B			
	145	10	F	B			
	146	10	F	B			
	147	10	F	B			
	148	10	F	B			
	149	10	F	B			
	150	10	F	B			
	151	10	F	B			
	152	10	F	B			
	153	10	F	B			
	154	10	F	B			
	155	10	F	B			
	156	10	F	B			
	157	10	F	B			
	158	10	F	B			
	159	10	F	B			
	160	10	F	B			
	161	10	F	B			
	162	10	F	B			
	163	10	F	B			
	164	10	F	B			
	165	10	F	B			
	166	10	F	B			
	167	10	F	B			
	168	10	F	B			
	169	10	F	B			
	170	10	F	B			
	171	10	F	B			
	172	10	F	B			
	173	10	F	B			
	174	10	F	B			
	175	10	F	B			
	176	10	F	B			
	177	10	F	B			
	178	10	F	B			
	179	10	F	B			
	180	10	F	B			
	181	10	F	B			
	182	10	F	B			
	183	10	F	B			
	184	10	F	B			
	185	10	F	B			
	186	10	F	B			
	187	10	F	B			
	188	10	F	B			
	189	10	F	B			
	190	10	F	B			
	191	10	F	B			
	192	10	F	B			
	193	10	F	B			
	194	10	F	B			
	195	10	F	B			
	196	10	F	B			
	197	10	F	B			
	198	10	F	B			
	199	10	F	B			
	200	10	F	B			
	201	10	F	B			
	202	10	F	B			
	203	10	F	B			
	204	10	F	B			
	205	10	F	B			
	206	10	F	B			
	207	10	F	B			
	208	10	F	B			
	209	10	F	B			
	210	10	F	B			
	211	10	F	B			
	212	10	F	B			
	213	10	F	B			
	214	10	F	B			
	215	10	F	B			
	216	10	F	B			
	217	10	F	B			
	218	10	F	B			
	219	10	F	B			
	220	10	F	B			
	221	10	F	B			
	222	10	F	B			
	223	10	F	B			
	224	10	F	B			
	225	10	F	B			
	226	10	F	B			
	227						

67
 ad
 k,
 d.
 rs
 St
 i,
 d-
 2
 2
 D
 20
 u.
 20
 0
 12
 rd

SALES BY THE EIGHT OF TEN THOUSAND IN THE CITY.
 Salisbury, N. C. Aug. 16, 1824. [25—3w]

SIXTY SLAVES FOR SALE.
 ON the twenty-fifth day of October next, at my place of residence, I shall offer for sale, at public auction, a large number of HORSES and CATTLE, of various descriptions, descended from that celebrated breed imported by Miller. They consist of prime Milch Cows, Ovens, well broken to the yoke, and several young Bulls. Also, a great variety of PLANTATION IMPLEMENTS, viz: Wagons, Carts, Ploughs, &c. &c.
 On the day following, viz. 25.h, I shall proceed to sell sixty SLAVES, of various ages, in families. The terms of sale, for all sums under \$50, cash; all above \$100, a credit of 1 2 3 and 4 years. Good personal security will only be required for all sums under \$1000, but all those above that sum must be secured by deeds of trust on land. Interest to be estimated from the day of sale.
 It will be incumbent on those who wish to purchase above \$1000 worth, to produce certificates from the Clerks of the District and County Court, that their lands are free from incumbrances, with their estimation of its value.
 ISAAC HITE.
 Belle-grove, Frederick County, Va
 aug 4—3aw6w
 H. PECK,

Paper: Daily National Intelligencer; Date: 09-08-1824; Volume: XII; Issue: 3632; Page: [1]; Location: Washington (DC), District of Columbia

This entire product and/or portions thereof are copyrighted by NewsBank and/or the American Antiquarian Society. 2004

Figure 11.3 Advertisement for Isaac Hite's Belle Grove slave sale in 1824. Laise 2017.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Primus (not given in)	1754	Run Away		
Ned	1758	Dead		
Chloe	1760	Purchased of (illegible) cost 140,0,0	(noted as having) "had the measles"	
Frank	1767	Gave George Hite 80 l for him		
Abba	1769	Received in Exchange with George Hite		
Frank	1769	Bought of PISOthic		
Charlotte	1770	Bought from William Elsey		
Hannah	1773	Purchased of Buck		Bought of John Buck
Nelly	1774	Purchased of Holmes, Dead		Bought of Judah Holmes
Frederick	1775	(bought of Booth)		
Nancy (Marjory's)	1777	Dead		
Sarah	1778	Bought of W.P.F 2/6/09 for 90,0,0		
Tom	1778			
Nancy	1779	Purchased of Grey, Dead		
Patrick	1782	Purchased of Grey		
John (Carpenter)	1785	Bought of Phil. Slaugh. Gave to Madison		
Sam (Milly's)	1787			
Philis	1788	Exch.Rachel & Issac for Philis and 2 kids		
Anthony (Milly's)	1789			
Prissy	1790	Purchased of Grey		
Unknown Name	1790	Bought of William P. Flood, 2/6/09 for 100,		Name Judah and Dead 1836
Judy	1794	Dead		and Purchased of Abraham Bowman
Betty & her children	1795	Purchased of (illegible) cost 140,0,0	(noted as having) "had the measles"	
Betty (Truelove)	1795	Dead		

Figure 11. 4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
George (Sarah's)	1798	Bought of W.P.F. 2/6/09 for 75,0,0, Dead		
George Reed	1798	Purchased of Mrs. Colson for \$500		born August 1798 and (noted as having) "had the measles"
Howard (Chloe's)	1798	Died December 20, 1834		
Sally (Sarah's)	1800	Bought of W.P.F. 2/6/09 for 50,0,0, Sold		
Jim (Nancy's)	1801			
Winney (Sarah's)	1802	Bought of W.P.F. 2/6/09 for 40,0,0, Sold		
Jim (Nancy's)	1805	Gave Cornelius		
Abraham (Sarah's)	1806	Bought of W.P.F. 2/6/09 for 35, To Madison		
Becca (Phillis)	1807			
Moses (Sarah's)	1807	Bought of W.P.F. 2/6/09 for 25,0,0		
Daniel (Nelly's)	1808	Given to Isaac		
Ellen (Libby's)	1809	Purchased of William Roach		
Harriot (Sarah's)	1813	Sold		
Jordan (Nancy's)	1813	Sold November 13, 1834		
Daniel (Phyllis')	1814	Dead		
Elizabeth (Nelly's)	1817			
Mary (Pender's)	1819			
Milley (Judy's)	1819	Given to Hugh		Milly (Judah's)
Abigail (Winney's)	1820	Given to Becca		
Hannah (Sally's)	1836			
Martha	1841	Bought of Sally Winesberger		
Betey	15-Feb			
Daniel (Blacksmith)	14 January 1773	Died October 24, 1836		

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Jack	18 years old this 10 October 1820	Purchased of Hughes		
William	18 years old this 10 October 1820	Purchased of Hughes, To serve 7 years		
Nancy	19 years old in August 1796			
Little Jim	21 years old August 1796			
David (Charlotte's)	August 1806			
Marcus (Judah's)	August 1817			Given to Cornelius
Henry	August 19, 1780	Run Away		
Diana	August 24, 1775			
Peggy (Kate's)	August 25, 1801	Gave to Nelly		
Daniel (Charlotte's)	August 27, 1808			
Joanna (her daughter)	August 30, 1793	Gave her to Mr. (illegible) for Simon		
Willis (Maria's)	August 31, 1848			
Benjamin & Frank (Twins)	August 7, 1786			
Betty	August 8, 1784	Dead		
Charles (Charlotte's)	March 24, 1815			
Adams (Hannah's)	December 1811			
Susy (Truelove's)	December 1, 1806	Given to Isaac by deed July 27, 1832		December 5, 1806
Sally	December 10, 1763	sold		
Frances (Fanny's)	December 13, 1826			spelling of Francis
Betsy (Abba's)	December 15, 1805	Died		
Jimmy (Nancy's)	December 19, 1805			
Cephel	December 2, 1785	Bought him of Mr. Macon for 80,0,0 Sold		

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Taylor (Sarah's)	December 20, 1807			
Daniel	December 29, 1771	Run Away		
Peyton (Sarah's)	December 4, 1817			
Joshua (Chloe's)	December 5, 1802		(noted as having) "had the measles"	
Celia (Phillis)	December 8, 1808	Sold		
Milley (Sarah)	December 9, 1800	Dead		
Maria (Judy's)	February 15, 1825			
Patty (Katy)	February 16, 1806			
Eliza	February 17, 1750			
Winnie (Abba's)	February 1802	Given to Isaac by deed July 27, 1832		
Thornton (Sarah's)	February 1812	Sold		
Anthony (Judah's)	February 1823	Given to Walker		
Jimmy	February 2, 1765	dead		
Hannah	February 20, 1790	Received in Exchange with George Hite		
Solomon (Nancy's)	February 22, 1819	Given to Isaac		
Nancy (Peggy's)	February 23, 1847			
Alfred (Pender's)	February 24, 1821			
Betsy (Winney's)	February 24, 1824	Given to Matilda		Betsey (Winna's)
Franklin (Nancy's)	February 27, 1822			Given to Hugh
Jonathan (Judah's)	February 28, 1836	Dead		
Abner (Libby's)	February 3, 1813	Gave to Madison		
Simon	February 5, 1776	Dead		
Jerry (Abba's)	February 9, 1800			
Judy (Abba's)	February 9, 1800			
Robert (Fanny's)	February 9, 1819			Given to Hugh
Anthony	January 12, 1789			
Henry (Penny)	January 14, 1795	40,0,0 Gave to Madison		
Sally (Abba's)	January 16, 1808			

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Cephe	January 1779	By my sister McDonald's will		
Sally	January 1780	Bought of Armistead Long		
Winna (Lucy's)	January 18, 1843	Sold		
Louisa (Abba's)	January 1804	Given to Isaac by deed July 27, 1832		January 4, 1804
Gabriel (Susan's)	January 1812			
Peggy (Mary's)	January 1813	Gave to Madison		
Unknown (Demas)	January 1813	Dead		
Rachel (Charlotte's)	January 19, 1805	Bought from William Elsey		
Daniel (Hannah's)	January 2, 1810	Given to Isaac		
Bill (Truelove's)	January 23, 1792			Given to Walker, Name also listed as Billy
Matilda (Sarah's)	January 24, 1815			
Seth (Truelove's)	January 25, 1797	Sold		
Ann Eliza (Maria's)	January 25, 1850			
John (Phyllis's)	January 27, 1818			
Truelove	January 28, 1754			
Thomas (Abba's)	January 28, 1798	Died		
Amanda (Maria's)	January 28, 1847	Dead		
Esther (Betsey's)	January 4, 1803		(noted as having) "had the measles"	
Elijah (Judah's)	January 4, 1832			Given to Cornelius, sold bought by A.T. Hite
Reuben (Lusano)	January 5, 1771			
Lucy (Diana's)	January 6, 1801	Dead		
Sally Ann Morton (Abba's)	January 6, 1808			
Shadrack (Daphne)	January 7, 1767	120,0,0		
Catherine (Sally's)	January 7, 1848			
Amos (Sinah's)	January 8, 1818			
Adam	July 1, 1775	Dead		
Peggy	July 17, 1776	Exchanged with George Hite		
Louisa (Sally's)	July 17, 1834	Dead		

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Dick (Phebe's)	July 18, 1810	Sold		
Maria (Sarah's)	July 18, 1814	Dead		
Daphne (Anna's)	July 1811			
Sam (Mary's)	July 1811	Purchased of Tunnel \$400 Gave to Madison		
Jordan	July 2, 1786	Dead		
James (Sinah's)	July 21, 1820			
Sam	July 23, 1787			
Jonathan (Milly's)	July 23, 1796	Died		
Mary	July 24, 1790	Given to Madison		
Robin (Milley)	July 25, 1755	100,0,0		
Katy	July 26, 1782	Given to Nelly Baldwin		
Jefrey	July 27, 1762			
Jack	July 4, 1786	Sold		
Milly	July 8, 1768	Given to Madison		
Frank (Peg)	June 11, 1761	90,0,0		
Abraham (Anna)	June 11, 1800	15,0,0		
Lucy (Winney's)	June 12, 1825	Sold		
Emily (Nancy's)	June 15, 1816			
Anna (Daphne)	June 16, 1772	80,0,0		
Rachael	June 1782	Bought of Stowe		
Jacob	June 1799	Run Away		
Piriscilla	June 20, 1778			
Eliza (Suze's)	June 21, 1822			
Ophelia (Sally's)	June 21, 1849	Dead		
Frank (Hannah's)	June 22, 1818	Sold to his father		
Nathan (Nancy's)	June 24, 1815	Sold November 13, 1834		
Frank (Peggy's)	June 24, 1849			
Rachel (Truelove's)	June 25, 1794	Sold		
James Henry (Peggy's)	June 27, 1848			
Anstep (Nelly's)	June 30, 1812	Dead		
David	June 4, 1773	Sold		
Unnamed (Nancy's)	June 7, 1799			

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Sylvia (Charlotte's)	June 8, 1810			
Willis (Pender's)	June 9, 1797	Given to Madison		
Bill	March 13, 1783			
Penny	March 15, 1770	Died		
Sandy (Sinah's)	March 15, 1822			
Reuben (Winny's)	March 15, 1827	Given to Isaac		
Joanna	March 16, 1773			
Lucy (Anna's)	March 16, 1806			
Elias (Judah's)	March 16, 1830			
Martha (Sally's)	March 16, 1832	Dead		
Evelina (Nancy's)	March 18, 1809			
Milley (Anna's)	March 18, 1809	Sold		
Charity (Phebe's)	March 1812			
Bob (Sinna)	March 1813	Sold		
George (Judah's)	March 1816	Purchased of Abraham Bowman		Given to Walker
Jake (Sally's)	March 20, 1830	Dead		
Lewis (Phyllis's)	March 21, 1816			
Barbary (Caty's)	March 22, 1799			
Jasper (Sally's)	March 26, 1830	Dead 1835		
Caroline (Fanny's)	March 3, 1821	Given to Sarah		
Elizabeth (Sally's)	March 3, 1828	Dead		
Sara Elizabeth (Halley's)	March 3, 1828			
Linus (Sarah)	March 30, 1797			
Caroline (Fanny's)	March 30, 1821	Given away		
Mary (Judy's)	March 6, 1821			
James, Sr.	March 8, 1756	42 Years old in August 1796		
Henry (Katy's)	March 9, 1808			
Soloman	May 1, 1784	Exchanged with George Hite		
James (Louisa's)	May 1, 1827			
Pendar	May 10, 1779	Given to Madison		
Adam (Nancy's)	May 10, 1813			
Emily (Judy's)	May 13, 1834			

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Judy (Sally's)	May 14, 1844			
Charles	May 15, 1786	Bought		
Sam (Judah's)	May 1814	Purchased of Abraham Bowman		
Becca (Diana)	May 2, 1806	Died		
Sarah (Sina's)	May 28, 1766			
Becca (Winney's)	May 28, 1822			Sold and Rebecca (Winna's)
Maria (Susy's)	May 29, 1824	Dead		
Ambrose	May 3, 1789	Given to Nelly Baldwin		
Ben (Anna's)	May 3, 1803			
Betsy Ann (Hannah's)	May 31, 1820			Sold to her father
Truelove's Boy	May 5, 1788	Died a week old		
James (Louisa's)	May 5, 1829			
Carter (Sarah's)	May 8, 1806	Hay		
Joshua	May 9, 1798	Died		
Libby (Sarah's)	May 9, 1803	Given to Nelly		
Levi Jones (Airry's)	May 9, 1824			
Reuben (Suckey's)	November 1, 1797			
Truelove (Sarah's)	November 16, 1783			
Pinder (Charlotte's)	November 1801	Bought from William Elsey		
Ellen (Libby's)	November 1810	Gave to Madison		
Moses	November 27, 1795	Purchased of William Buck cost \$600		
Moses (Milley's)	November 3, 1794	Given to Madsion		
Peter	November 4, 1792	Madison gave me		
Abba (Winney's)	November 5, 1820			
Eliza (Kate's)	November 8, 1803	Given to Nelly		
Patrick	October 13, 1798	Bought of Armistead Long		
George	October 1767	Bught from Solomon Hoge for 73,10,0		
Patrick (Sally's)	October 1798	Sold		

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Nelson (Chloe's)	October 1805	Dead		
Simon & Suckey (Sarah's Twins)	October 1805	Sold to Madison		
Belinda (Pendar's)	October 1817			
Elizabeth (Nelly's)	October 25, 1816			
Adam (Abba's)	October 27, 1793	Died November 11, 1794		
Charles (Diana's)	October 27, 1807	Gave to Madison		
Rachael (Sinah's)	October 27, 1823			
Isaac (Abba's)	October 6, 1798			
Charlotte (Pender's)	October 6, 1799	Gave to Madison		
Raphhael	October 7, 1788	Exchanged		
Isaac (Sally's)	September 1842			
Westley (Judah's)	September 1, 1827			Given to Hugh
Unnamed (Nelly's)	September 10, 1814	Dead		
Demas	September 12, 1777	Exchanged with George Hite		
Charles	September 12, 1819			
Thornton (Liney's)	September 15, 1834			
Washington (Jenny's)	September 15, 1834			
Billy Webster	September 18, 1781			
Webber (Lysa)	September 18, 1781			Webber (Lisa's)
Emelia (Maria's)	September 4, 1844			
George (Abba's)	September 6, 1792	Given to Nelly Baldwin		
Carter		Purchased of John Hay		
Charles		Bought		
Frank (Jenny's)		Given to Matilda		
Job		(Bought of Holmes)		Bought of Judah Holmes and born in 1755

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

NAME (MOTHER'S NAME)	BIRTHDATE	NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE MADE IN COMMONPLACE BOOK	ADDITIONAL NOTE TAKEN FROM POSSIBLE DUPLICATE RECORD IN COMMONPLACE BOOK
Leah (Sukey's)		both dead		
Lewis				
Nat		Purchased of Tunnel		
Richard		Sold for 155,0,0		

Figure 11.4 List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society, continued.

Also Listed in Commonplace Book:
The Enslaved of Isaac Fontaine Hite (son of Isaac Hite, Jr. and Ann Tunstall Maury Hite)

NAME	BIRTHDATE	DEATH DATE	WHERE OBTAINED
Fanny (Nancy's)	April 1796	died August 1809	Father's Estate
Sally (Nancy's)	April 18, 1800		Mother's Estate
Martha (Sally's)	1841		Mother's Estate
Billy (Truelove's)	January 23, 1792	Sold to Moore	Father's Estate
Kate (Sally Thomas)		January 17, 1848	Father's Estate
Daniel (Nelly's)	1808		Father's Estate
Rueben (Winny's)	March 15, 1827		Father's Estate
Harry		November 1854	Purchased of Miller
George			Purchased of Jacob Miller
Eliza (Kate's)	November 8, 1803		Bought of Isaac Tobin
Catherine (Eliza's)	March 1823		Bought of Isaac Tobin
Moses (Eliza's)	May 20, 1832		Sold
Christley (Eliza's)	July 19, 1834		
Henry (Eliza's)	October 20, 1836		Sold
Washington (Eliza's)	February 22, 1839		Sold
Emily (Eliza's)	April 14, 1845		
Amanda	March 4, 1829		Purchased of Daniel Powers
Elizabeth (Amanda's)	April 23, 1846		Purchased of Daniel Powers
Jane (Amanda's)	December 18, 1850	Died	
Robert (Amanda's)	November 25, 1852	Died	
Phebe (Amanda's)	January 4, 1854		
Franklin (Amanda's)	December 6, 1856		
Beus (Amanda's)	June 15, 1858		
Molly (Martha's)	February 22, 1857	Died	
Libby (Amanda's)	June 15, 1859		
Ann Eliza (Catherine's)	October 27, 1859		

Figure 11.4: List of enslaved persons recorded in *Hite Family Commonplace Book*, Virginia Historical Society.

	1740-49				1750-59				1760-69				1770-79				Shenandoah County	
	Augusta County		Frederick County		Augusta County		Frederick County		Augusta County		Frederick County		Augusta County		Frederick County			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
Total no. of inventories	69		105		186		175		225		192		183		120		52	
Horses																		
—at least 1	67	97	96	91	170	91	160	91	206	91	181	94	159	87	95	80	45	87
—more than 5	44	64	45	43	94	50	64	37	121	54	60	31	60	33	31	26	6	11
Wagon or cart	5	7	18	17	23	12	33	19	47	21	58	30	48	26	50	42	24	46
Plow	23	33	41	40	54	30	61	35	78	35	92	48	90	47	75	63	41	80
Still	4	6	4	4	8	4	13	7	7	3	14	7	13	7	16	13	8	15
Furniture (3 or more items)	17	25	60	57	44	24	100	57	60	27	152	80	78	43	102	85	45	87
Servant	0	0	4	4	6	3	22	13	10	4	8	4	15	8	18	15	2	4
Slave	5	7	3	3	7	4	9	5	33	15	18	9	37	20	28	23	6	11
Book	25	36	49	47	70	38	78	45	93	41	86	45	93	48	52	43	23	44
Money (cash, debts owed to)	23	33	55	52	46	25	75	43	57	25	121	63	50	27	49	41	22	43

Sources: Orange County Will Books 1 and 2; Frederick County Will Books 1-4; Augusta County Will Books 1-6; Shenandoah County Will Book A.

	Frederick County				Shenandoah County				Augusta County				Rockbridge County			
	1780-89		1790-1800		1780-89		1790-1800		1780-89		1790-1800		1780-1789		1790-1800	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total no. of inventories	114		133		138		150		115		105		90		102	
Item																
Horses—																
—at least 1	99	87	113	85	110	80	118	80	92	80	85	81	73	81	81	80
—more than 5	20	17	34	26	20	15	20	13	50	44	39	37	36	40	34	33
Wagon or cart	33	29	65	48	36	26	55	37	30	26	42	40	21	23	25	25
Plow	53	46	92	69	84	61	88	60	49	43	46	44	42	47	53	52
Still	13	11	15	11	10	7	12	8	31	27	24	23	7	8	6	6
Furniture (3 or more items)	99	87	120	90	100	72	103	70	49	43	47	45	40	44	49	48
Servant	3	2	0	0	0	0	0	0	6	5	1	1	1	1	0	0
Slave	27	24	50	30	12	9	14	9	40	35	40	38	26	30	29	28
Book	50	44	64	48	58	42	67	45	52	45	48	46	35	40	50	50
Money (cash, debts owed to)	41	36	64	48	53	38	74	50	23	20	27	26	42	47	19	18

SOURCES: Frederick County Will Books 4-6 and Will Book 1 (Superior Court); Shenandoah County Will Books A-E; Augusta County Will Books 6-9 and Will Book 1-A (Superior Court); and Rockbridge County Will Books 1 and 2.

¹ The dates for Rockbridge County are 1778-89.

Figure 11.5 Inventory of slave ownership in the lower Shenandoah Valley compiled by historian Robert D. Mitchell included in "Shenandoah Valley inventories, horses, plows, and slaves, 1780-1800."

Page No. 16

SCHEDULE 2.—Slave Inhabitants in in the County of Warren **State**
of Virginia, enumerated by me, on the 12th day of Aug., 1860. J. A. Downing Ass't Marshal.

1	2				6	7	8	9	1	2				6	7	8	9
	Number of Slaves	Age	Sex	Color						Number of Slaves	Age	Sex	Color				
1	1	11	m	m					"	1	7	m	B				1
2	"	1	8	f	m				"	1	5	f	m				2
3	"	1	7	m	m				"	1	4	m	B				3
4	"	1	5	m	m				"	1	3	m	m				4
5	"	1	3	m	m				"	1	2	f	m				5
6	"	1	2	m	B				"	1	2	f	B				6
7	"	1	2	m	m				"	1	1	m	B				7
8	"	1	1	m	m				"	1	1	f	B				8
9	"	1	1	m	B				"	1	1	f	B				9
10	Charles J. Hite	1	28	m	m				"	1	12	f	B				10
11	"	1	24	f	m				S. R. Rogers	1	25	m	m				11
12	"	1	30	m	m				Geo. W. Grayson	1	52	f	m				12
13	"	1	8	m	m				"	1	18	m	B				13
14	"	1	7	f	m				"	1	16	f	B				14
15	"	1	6	m	m				Thomas Downing	1	22	m	B				15
16	"	1	3	f	m				Jno. Powers	1	30	f	B				16
17	"	1	1	f	m				"	1	22	m	B				17
18	"	1	1	f	m				"	1	21	f	B				18
19	Man Jones, prop	1	40	m	m				"	1	17	f	B				19
20	L. M. S. Bowman	1	64	m	m				"	1	10	f	B				20
21	"	1	59	m	B				"	1	5	f	B				21
22	"	1	48	f	B				"	1	3	f	B				22
23	"	1	42	f	m				G. Neville	1	32	f	B				23
24	"	1	41	m	B				"	1	4	f	m				24
25	"	1	30	f	B				"	1	2	f	B				25
26	"	1	28	m	B				G. Neville, Master	1	33	f	B				26
27	"	1	24	f	B				for 2 others	1	28	m	B				27
28	"	1	24	m	B				"	1	17	m	B				28
29	"	1	19	m	B				"	1	5	m	B				29
30	"	1	20	f	B				"	1	6	f	B				30
31	"	1	14	m	m				J. W. Hendrick	1	60	f	B				31
32	"	1	13	f	B				"	1	45	m	B				32
33	"	1	13	f	B				"	1	22	f	B				33
34	"	1	19	f	B				"	1	20	m	B				34
35	"	1	12	f	B				"	1	15	m	B				35
36	"	1	11	f	B				"	1	7	f	B				36
37	"	1	10	m	m				My Family.com	1	5	m	B				37
38	"	1	10	m	B				"	1	1	f	B				38
39	"	1	9	f	B				"	1	1	f	B				39
40	"	1	7	m	B				Wm. Barthol, prop	1	24	m	B				40
No. of owners, _____		No. of male slaves, <u>42</u>		No. fugitives, _____		No. deaf and dumb, _____		No. insane, _____		No. of slave houses, _____							
No. of female slaves, <u>37</u>		No. manumitted, _____		No. blind, _____		No. idiotic, _____											
Total slaves, <u>79</u>																	

Figure 11.6 In 1851, slave ownership recorded for Charles J. Hite showed he owned five enslaved persons. The 1860 Slave Schedule shows Charles owning nine enslaved persons.

PART 3:

The Agricultural Landscape: Understandings and Opportunities

Chapter 12:

The Agricultural Landscape: The Agricultural Landscape at the Battle of Cedar Creek

The detailed knowledge of the evolution and specific period use of the “improved” agricultural fields and pastures and woodlands on the farms and plantations along Cedar Creek in the 18th and early 19th century’s has thus far eluded researchers. The first sustained effort to develop accurate period mapping of the agricultural landscape in the Valley was undertaken during and immediately after the Civil War. The Civil War period mapping was developed primarily by topographical engineers during reconnaissance missions, in after-action reports, and in after-action mapping, and analysis. The most notable of the topographical engineers was Jedediah Hotchkiss, who served on the staff of Confederate General Stonewall Jackson. A reconnaissance map made by Hotchkiss “enabled the surprise Confederate assault at Cedar Creek in October 1864.” (“Jedediah Hotchkiss” 2019). Two maps of the battlefield drawn by Hotchkiss in 1864, after the battle, (Fig. 12.1, Fig. 12.2, and Fig. 12.3) show the battlefield’s topography relief; the battlefield’s natural features, including Cedar Creek and forested areas; cleared, open lands; and both Union and Confederate troop dispositions. Hotchkiss’ maps also show the location of numerous mills and dwellings. Some structures also are identified by the owner’s name. Hotchkiss’ sketch of the Battle of Belle Grove or Cedar Creek, executed in 1895, provides similar detail. Among the most detailed maps of the battlefield are those drawn by Lt, Colonel G. L. Gillespie, Major of Engineers, USA. Gillespie’s maps, also drawn after the war, show details in addition to those shown on the Hotchkiss maps, including fence lines and field layouts. (Fig. 12.4, and Fig. 12.5)

Not all Civil war battles were mapped to the same level of detail as was the Battle of Cedar Creek. The battle’s strategic importance and the subsequent mapping of the battlefield has given us substantial graphic documentation of the spatial character of the battlefield’s agricultural landscape at the time of the battle. The maps show those areas that had been “improved” or cleared of woods along with the remaining woodlands at the time of the battle. This mapping documentation can be augmented by analysis of written after-action reports and participant memoirs, post-Civil War reparations claims, and period sketches by artists who accompanied the opposing armies. The aggregated information available allows some measure of a more detailed understanding of the agricultural landscape that had developed along Cedar Creek since the mid-eighteenth century.

As the various period maps show, much of the fertile bottom land and upland ridges and moderate slopes on the battlefield and along the primary approach routes had been cleared for agricultural fields and pasture. Many of these open fields on both sides of the Valley Pike served as Union Army encampment sites as the Battle of Cedar Creek unfolded. (Fig. 12.1 and Fig. 12.6) However, the maps and other period sources provide little indication of what crops might have been grown in these fields or if the open areas were croplands or pasture. According to historians Warren Hofstra and Clarence Geier, during the Civil War cornfields, in

particular, were typically documented in period military records. (Hofstra, and Geier 2000, 61, see note 27) But descriptions of corn fields are absent from the battle accounts and no cornfields are identified on maps of the battlefield. (Fig. 12.7) This may be because the Battle of Cedar Creek was fought in October - after the corn crop had likely been harvested. Bottom lands along the creeks and rivers would be the most likely fields to have been planted in corn while wheat was more often planted in upland fields. On the Heater farm, next to Belle Grove, we know from Caroline Heater's post-war reparation claim that the Heater's grew corn on 40 acres of bottom land along Meadow Brook. But Heater's claim does not specifically attribute the loss of that corn crop to actions associated with the Battle of Cedar Creek. Given the various progressive farming crop rotation cycles employed in the lower Valley, and a lack of specific period field and crop descriptions, we cannot at this time pin-point what crops were grown in a particular field at a specific time or if a field had been left "resting under grass" or was fallow at the time of the battle. Steeper slopes and ravines were typically wooded as were other areas that served as wood lots on lower Valley farms. The C. J. Hite farm, described by Geier and Hardin as "the focus of the local farming operation," provides a good example of the open fields and woodland mix at the time of the battle. The farm's lands, excepting the steeper slopes (Fig. 12.8) and ravines and scattered wooded areas:

"would have most likely been cleared and used for either row crops or livestock, providing quality views of the farm of Widow Bowman to the south, the trace of the Valley Turnpike as it ascends Hupp's Hill from Stickley Hill to the southwest, and the lands of Harmony Hall to the west." (Geier and Harding 2006, 64) (also see Stackpole 1961, 286 and Fig. 12.1)

The cleared bottom lands below the C. J. Hite farmhouse (Fig. 12.9) were noted by William Lincoln in his history of the 34th Massachusetts's infantry. Describing the 34th's move across the farm against the Confederate artillery located across Cedar Creek, Lincoln wrote that "between us and the creek there was a piece of low open ground, about two hundred yards wide, which must be crossed." (Lincoln 1879, 372) While Gillespie's 1895 map shows open ground in this area along Cedar Creek, the exact nature of this "open ground" is not clear at this time. The ground could have been planted in corn and that crop harvested prior to the battle, but it is also possible that the land was fallow or open pasture land. More extensive research into unit histories or the memoirs of soldiers who participated in this skirmish could provide additional information about the nature of this open ground.

East of the C. J. Hite house, Thoburn's division artillery had been placed on a high, open knoll (Fig. 12.10 and 12.3) from which the guns "commanded two fords of the creek [Cedar Creek], one on the right [Harmony Hall Ford], nearby, connecting with the pike just beyond the bridge, and the other several hundred yards distant (Bowman's Mill Ford), in front." (Geier and Harding 2006, 54) Thoburn's siting of his artillery on this knoll also allowed for observation of the Widow Bowman's Ford located on Cedar Creek to the southwest of the C. J. Hite house between the Harmony Hall and Bowman Mill fords. Although both the Hotchkiss and Gillespie maps show the slopes above the Harmony Hall ford to be wooded. On the left of Thoburn, the Hotchkiss maps show another wooded area. "Col. Rutherford B. Hayes's Eighth Corps was

encamped southeast of the Valley Pike atop the broad, northern end of a ridge running more or less parallel to the road" (Mahr 1992, 126) and separated from Thoburn on a ridge approximately a mile to the southwest by a ravine. Not shown as wooded on some of the battle maps is that "deep ravine" (Fig. 12.11 and 12.12) that separated Thoburn from Hayes' position on the cleared knoll to Thoburn's rear. To the east of Haye's position, an open, "rolling plain" extended "several miles to the east past the Cooley farm and a mile or so northeast towards the outskirts of Middletown." (Mahr 1992, 126) Confederate Captain D. Augustus Dickert, who "passed over Thoburn's trenches" during the assault would later note that:

"Such a sight as met our eyes as we mounted their works was not often seen. For a mile or more in every direction towards the rear was a vast plain or broken plateau, with not a tree or shrub in sight. Tents whitened the field from one end to the other..." (Mahr 1992, 133)

There were, however a series of three "wooded ravines" to the south of the Hayes' position that would be "crossed by the advancing Confederates" under General Gordon's command. Historian Theodore Mahr records that Gordon's men "advanced through the woods in fine order" to attack Haye's position. (Mahr 1992, 128) Another "belt of woods" filled "the narrow ravine that separated the ridge" on which Hayes's corps was camped "from the Pike." (Mahr, 1992, 129) Union reinforcements from Thomas's Brigade would cross the Pike and this shallow, steeped sloped ravine before climbing the wooded slope to the north of and below Haye's ridge. (Mahr, 1992, 140) As the Union reinforcements were driven back down the slope and across the Pike, many paused in this ravine to escape the Confederate fire. Georgian, I. G. Bradwell described that many of these troops were "killed or wounded" as they "huddled" in the ravine or "scrambled to ascend the steep side of the ravine, catching to bushes or any object that offered help." (Mahr 1992, 142-143) This ravine, a significant feature noted in the battle accounts, would become known as the "Death Trap."

Similar steep, wooded ravines with thickets and undergrowth are noted frequently in the battle accounts including the "ravine of Meadow Brook" north of the Belle Grove house crossed by Union troops during their initial retreat from the Confederate attack. (Fig. 12.13) The battle accounts also note the wooded "Bluffs" on the north side of Cedar Creek and the "tangle of 'small trees and brush'" on hillsides of the Valley of Meadow Brook near its confluence with Cedar Creek and below the steep bluffs along Cedar Creek west of Belle Grove.(Mahr 1992, 168) (Fig. 12.14) For graphic clarity and the legibility of the battlefield's topography and troop movements across the battlefield, not all of these ravines are shown as wooded on maps of the battle. Also not shown on the period maps is the "heavy growth of thickets and underbrush just north of the Hite Lane" along a bend of Cedar Creek. (Fig. 12.14.1) Those thickets, below the C. J. Hite House, impeded the advance of Connor's Brigade during the attack on Thoburn's Division." (Geier and Harding 2006, 68) Other wooded areas described by Mahr include the "wooded bluffs overlooking Cedar Creek" west of "Henry Shipley's white cottage house, Belle View..."[Mahr 1992, 199) and a "belt of woods bordering Meadow Brook" north of the pike west of Middletown. (Mahr 1992, 205) Small patches of woods are noted by Mahr "directly north of Belle Grove," in the "valley of Meadow Brook," and farther upstream, near the position

of the 2nd Conn. Artillery (Mahr 1992, 208). A “stand of timber along the Old Forge Road...about 1000 yards northeast of Dr. Shipley’s” is also noted by Mahr (Mahr 1992, 214) as are the “steep, rugged, wooded slopes bordering Meadow Brook on the southeastern side” of Cemetery Hill near Middletown and the crest of Cemetery Hill as it curved back to the north. The crest of the hill, which overlooked the broad, open valley of Middle Marsh Run, was described by Mahr as covered with thick woods. (Fig. 12.15) (Mahr 1992, 218) Mahr also notes the “Wooded ridge just north of Hottle’s Mill Road...” which overlooked the valley of Middle Marsh Run (Mahr 1992, 261) along with “woods and scattered timber along Hottle’s Mill Road. (Mahr 1992, 297) (Fig. 12.1 and 12.2) The only wooded area described by Mahr as a “woodlot” was located on the “plain” on the south side of Meadow Brook about 1000 yards north of Belle Grove and 500 yards from the southern limits of Middletown.” (Mahr 1992, 198] This woodlot may have been the 60 acre woodlot described by Mrs. Heater in her post-war claims application. (Fig. 12.1 and 12.3) Finally, Mahr also notes “a belt of woods” across Cedar Creek on the slopes below the Stickley farm “just south of the road...” [the Valley Pike]. (Mahr 1992, 65) (Fig. 12.2)

The battle accounts also describe numerous open areas including “the wide open fields” located between Belle Grove and the Valley Pike. (Fig. 12.16) Fields that Mahr notes had been “long since stripped of their rail fences.” (Mahr 1992, 137, 163 and 174) Union General Emery’s headquarters was located in these fields several hundred yards south of Belle Grove and his corps was camped according to Mahr “across the fields farther south of Belle Grove.” (Mahr 1992, 123) Other open areas noted in the battle accounts include: the “high, stony knob overlooking the confluence of Meadow Brook and Cedar Creek” (Mahr 1992, 126); Mahr also notes the “grassy fields,” likely pasture, east of the Belle Grove house (these fields were located to the rear of Emory’s trenches) (Mahr 1992, 162); “the broad, open valley of Middle Marsh Run” overlooked by Cemetery Hill near Middletown (Mahr 1992, 218); the open fields east of Dr. Shipley’s Belle View house and south of the fence on the Shipley farm road (Mahr 1992, 214); the “coverless approach across marshy ground directly to the south” of Cemetery Hill (Mahr 1992, 218); and the “broad, open field of ‘red earth’ [that] stretched away to the south from Belle View.” (Mahr 1992, 199] The noted red earth” is a one of the rare battlefield descriptions that suggests a plowed agricultural field.

Stone walls or “fences” were a character defining feature of many lower Shenandoah Valley farms (Fig. 12.17) and Mahr notes stone walls in several locations on the battlefield including: “a “low stone wall” along the Pike west of the Daniel Stickley farm. (Mahr 1992, 120]; a low stone wall that apparently ran from the Belle Grove lane before cutting across the fields to the southwest (Mahr, 1992, 161 and 199); a stone wall at the bottom of the ravine bordering Meadow Brook [apparently below Red Hill] (Mahr 1992, 191]; a remnant of the “old graveyard wall,” on Cemetery Hill (Mahr 1992, 218-219 and 223); the “string of stone walls” north of Middletown (Fig. 12.18) near Miller’s Mill (Wert 1987, 231 and Mahr 1992, 237); and the stone wall-lined Miller Lane that ran from David J. Miller’s Mill on Meadow Brook toward Middle Marsh Run. (Mahr 1992, 260) Historians Clarence R. Geier and Kimberly Tinkham note the numerous stone walls that lined the Valley pike near Middletown, quoting Robert Tanner ‘s description of the battle:

"It was approximately 3:30 P.M. when the rebel guns [Chew's] ... burst on to the high ground overlooking Middletown. Federal wagon trains, ambulances, cavalry were jammed on the macadam pike. There was not a Union cannon or infantryman in sight. Stone walls on either side of the road corseted the enemy into a thin line that stretched out of sight both to the north and south, an artilleryists delight." (Geier and Tinkham 2006, 164) (Fig. 12.17)

Another landscape feature noted in the battle accounts is a rail fence (Fig. 12.19) along Shipley's farm road, also noted as the farm lane that led from Hottle's Mill Road to Shipleys. (Mahr 1992, 212 and 203). The fate of many other, missing rail fences on the Cedar Creek Battlefield is noted by Historian Jeffry D. Wert who describes the "the kneeling defenders on Cemetery Hill as "protected by trees and some breastworks of rails and stones." (Wert 1987, 208) Rail fences were also among the primary sources of firewood for both the Union and Confederate armies, who typically stripped the fields of these character defining features wherever they camped.

More recent studies initiated by the Belle Grove National Historical Park have also identified aspects of the agricultural landscape at the time of the battle. Clarence R. Geier and Phoebe Harding, in their 2006 report on the Cultural Resources in the Belle Grove National Historical Park, identify the existing open high ground above Meadow Brook, as open land at the time of the battle and the fields "where the Union cattle herd was kept in October of 1864," suggesting that the open land there was pasture. Importantly, they found that land use there was found to be "comparable to that at the time of Sheridan's October 1864 encampment at Cedar Creek." (Geier and Harding 2006, 201) They also identified that the current condition of the Union XIX Corps Encampment area to be "consistent with circumstances at time of Battle of Cedar Creek [with] no significant alteration of landscape." Although they did note "some reforestation" had occurred in that area. (Geier and Harding 2006, 271) Geier and Harding also found the fields just north of Bowman's Mill Ford, where Kershaw deployed his command for the attack on Thoburn's position after crossing of Cedar Creek at Bowman's Mill Ford, "remains in agricultural fields as at the time of the Battle" (Geier and Harding 2006, 132) (Fig. 12.20)

The general character of the larger landscape, with scattered wooded areas (Fig. 12.21) as shown on the various period maps, seems consistent with the description of the Battlefield by Confederate General Clement A. Evans, who described the Cedar Creek area after a reconnaissance from the Confederate signal station located at the top of Massanutten Mountain just south of Bowman's Mill Ford. To Evans, Cedar Creek was:

"like a placid rill showing here and there between occasional patches of wood, finally buried itself below Strasburg in the bosom of the Shenandoah...The valley pike, like a white ribbon lay along the center, the country roads looked like foot paths, the woods like parks, and the fields like little gardens with nice fences dividing. But the whole view presented a magnificent natural picture." (Stackpole 1961, 286) (Fig. 12.22 and Fig. 12.23)

An additional source of information about the agricultural landscape at the time of the battle can be found in the summary reports of the post-war reparation claims made to the United State Commissioners of Claims in the 1870's by farmers in the lower Valley and along Cedar Creek. The claims, officially, identified as the *Claims of Loyal Citizens for Supplies Furnished During the Rebellion*, listed the property taken from loyal citizens or destroyed by Union troops along with the estimated value of that property. Among the property listed in the claims were crops in the field, harvested crops, wood fencing (including fence rails, panels, posts and post caps), stone fences, standing timber, cut timber, planking, livestock, livestock feed, poultry, seeds, pasturage, flour, and bacon. (The Records of the Commissioners of Claims)

Among the claimants was Caroline Heater, who with her late husband had a farm along the Valley Pike and Meadow Brook between Middletown and Belle Grove. Caroline Heater was originally from Pennsylvania and was believed to be a Union supporter who engaged in pre-Union activities during the war. At the time of the battle, the Heater farm, located adjacent to Belle Grove, consisted of between 500 and 600 acres that sat astride the Valley Pike. The Hotchkiss map shows Union troop encampments on the Heater property on both sides of the Turnpike. Heater's testimony noted that the entire farm was fenced including the land on both sides of the Turnpike. There were two houses on the Heater farm, both enclosed with fencing. Fences also enclosed a 30-acre field and two additional fields. (The Records of the Commissioners of Claims)

In her claim, Heater, and three witnesses who testified on her behalf, listed among the property lost: 8 miles of fencing, described as worm fence; 60 acres of timber, predominantly first quality white oak mixed with black oak with some walnut. Before the battle. Heater estimated that, before battle, the farm had 75-80 acres of good standing timber; 30 acres of corn "on one bottom and about 10 acres on the other, just across the run;" 48 "fat" hogs (150-200 lbs.) and 76 stock hogs; 30 Beef Cattle; 25 Sheep; 8 horses and three colts; along with: 1,500 bushels of wheat; 20 bushels of Clover seed; 10 tons of hay; plus 20 tons of "old hay." Heater offered varying testimony on the amount of oats that were lost. At first, she notes 700 bushels of oats were lost but as the claim evolved, she later claimed to have lost only about 200 bushels. (The Records of the Commissioners of Claims)

A more extensive review of the *Records of the Commissioners of Claims'* listings for both the approved and dis-approved Claims for Frederick County, Shenandoah County, and the town of Winchester reveal that nearly all of the claims that included crop losses noted the loss of corn, wheat, and hay. Some claimants also noted losing the labor of their slaves. Among the additional claimants from Frederick County was another neighbor of Belle Grove, Dr. Henry C. Shipley, from Middletown, who listed claims for: green corn, timothy hay, hogs, calves, and sheep. George Rinker, also of Middletown, listed claims for: Hogs, hay, and corn. Other Frederick County farmers who submitted claims included: Leroy Newcome, who listed claims for: hay, corn, oats, timothy, flour, and pork; Henry S. Singhass, who listed claims for corn, hay, apples, cattle, hogs, 1 mare, pasturage for 30 horses and mules for one month, timber, and rails; Lycurgus E. Savage, who listed claims for stone fences, planks, locust posts, cords of wood,

planks, timber, lumber, corn, corn fodder, hay, and one “fine horse;” Elijah Williams, who listed claims for: corn, potatoes, horses, and hogs; Alex W. Albin, who listed claims for: hay, corn, oats, horse, hogs, and planks; and Elijah Hodgson, who listed claims for: horses, cattle, hogs, bacon, cut wood, standing timber, planks, corn, and hay. (The Records of the Commissioners of Claims)

At least four farmers from the Frederick County town of Winchester also submitted claims to the Commissioners including Jos. E. Funkhouser, who listed claims for: horses, cattle, sheep, hogs, shoats, clover and timothy hay, corn, wheat, and potatoes. James Sherman, listed claims for: hay, corn, oats, potatoes, cattle, sheep, and hogs. John S. Magill, listed claims for rails, horses, cows, hogs, corn, and hay. Joseph Clowser, listed claims for: corn, oats, potatoes, hay, bacon, and lumber. (The Records of the Commissioners of Claims) Shenandoah County farmers who submitted claims included Isaac R Hite, of Locust Grove, who listed claims for: 40 bushels of Corn, 40 shocks of corn fodder, 400 fence rails and 1 small beef and Daniel Keller, who listed claims for: corn, hay, corn fodder, timothy and clover, straw, cattle, horses, chickens, and hogs. (The Records of the Commissioners of Claims)

One additional source of post-Civil War period imagery that can inform our understanding of the agricultural landscape at the time of the Battle of Cedar Creek is the photographic record of visits to the battlefield made by former combatants and photographers in the 1880’s. The photographs taken by the Thomas and Walter Biscoe twenty years after the battle during their 1884 Allegheny Valley Tour provide especially important understandings of the agricultural landscape at the time of the battle. (LaBarbara, 2019) The Biscoe brothers’ photographs confirm the spatial character of the battlefield noted in the written accounts of the battle provide and provide 1880’s period examples of landscape features such as fences and stone walls (see Fig. 12.17, Fig. 12.19, Fig. 12.22, and Fig. 12.23)

The collective evidence of the agricultural landscape as it existed at the time of the Battle of Cedar Creek provides a general description of the agricultural lands that comprised the battlefield and most importantly provide a clear picture of the agricultural landscape’s character-defining spatial matrix. The spatial character and defining features of the battlefield’s agricultural landscape closely align with what might be identified as a “typical” lower Valley farms at the time of battle.

Chapter 12: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

Buck, Captain S.D., "Battle of Cedar Creek – Tribute to Early," in *Confederate Veteran*, Vol. II, no. 3, March 1894.

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, The Cultural Resources: Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence and Joseph Whitehorne, *An Archaeological Assessment of Cultural Resources South of the Confluence of Meadow Brook and Cedar Creek in Frederick County, Virginia*, nd

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

"Heater Damage Claim," Belle Grove Collection 890 THL Box 13, Folder 2:, The Handley Library, Winchester, Virginia

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

James E. Taylor Sketchbook, Western Reserve Historical Society, Manuscript Collections, MS2152B,
<https://wrhs.saas.dgicloud.com/islandora/search/james%20taylor%20sketches?type=dismax>
Accessed July 30, 2019

"Jedediah Hotchkiss: Biography," American Battlefield Trust, 2019
<https://www.battlefields.org/learn/biographies/jedediah-hotchkiss>, Accessed July 30, 2019

LaBarbara, Jane Meeters, "Thomas and Walter Biscoe and their 1884 Allegheny Valley Tour," West Virginia University Libraries,

<https://news.lib.wvu.edu/2016/07/06/thomas-and-walter-biscoe-and-their-1884-allegheny-valley-tour/> accessed October 2, 2018

Lewis, Thomas A., *The Guns of Cedar Creek*, New York: Harper and Row, Publishers, 1988

Lincoln, William S., *Life with the Thirty-Fourth Mass. Infantry in the War of the Rebellion*, Worcester, Mass: Press of Noyes, Snow & Company, 1879.

Mahr, Theorore C., *The Battle of Cedar Creek: Showdown in the Shenandoah October 1-30, 1864*. Lynchburg, Virginia: H.E. Howard, Inc., 1992

National Park Service Cultural Landscape Inventory, Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007

Noyalas, Jonathan A., *The Battle of Cedar Creek: Victory from the Jaws of Defeat*, Charleston, S. C., History Press, 2009

Paonessa, Laurie J., *Archeological Investigations at the Heater House, Middletown, Virginia: Submitted to the Cedar Creek Battlefield Foundation Inc. Middletown, VA. 1996.*

"The Records of the Commissioners of Claims listing the approved and dis-approved Claims of Loyal Citizens for Supplies furnished during the Rebellion,"
<https://www.fold3.com/image/34/222377542>) Accessed: November 25, 2018

Stackpole, Edward J. *Sheridan in the Shenandoah: Jubal Early's Nemesis*, Harrisburg, PA: The Stackpole Co., 1961

Thomas Dwight Biscoe Collection, PHO-003, Marietta College Library

Verry, Robert, *Results of an Archeological Reconnaissance Belle Grove Plantation, Middletown, Virginia*, October, 1984

Wert, Jeffry D., *From Winchester to Cedar Creek: The Shenandoah Campaign of 1864*, New York: Touchstone, Simon and Schuster, 1987

Chapter 12: Map Sources

Fuller and Whitney: Union and Confederate campaigns in the lower Shenandoah Valley illustrated : twenty years after : at the first reunion of Sheridan's veterans on the fields and in the camps of the valley Library of Congress Geography and Map Division Washington, D.C. Retrieved from the Library of Congress at <http://hdl.loc.gov/loc.gmd/g3882sm.gcw0656000>

Gillespie, G. L. 1864. *Battle Fields of Fisher's Hill 22 Sept. 1864 and Cedar Creek 19 Oct. 1864, Virginia [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439175/>.

Gillespie, G. L. 1866 Map of the Battlefield at Cedar Creek, Virginia and the Cavalry Fight of Tom's Brook Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com>

Hotchkiss, Jedediah. 1862. *Map of the Shenandoah Valley [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/99446754/>.

Hotchkiss, Jedediah. 1864a. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th [1-inch grid] [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625101/>.

Hotchkiss, Jedediah. 1864b. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th [3/8-inch grid] [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625102/>.

Chapter 12:

Figures

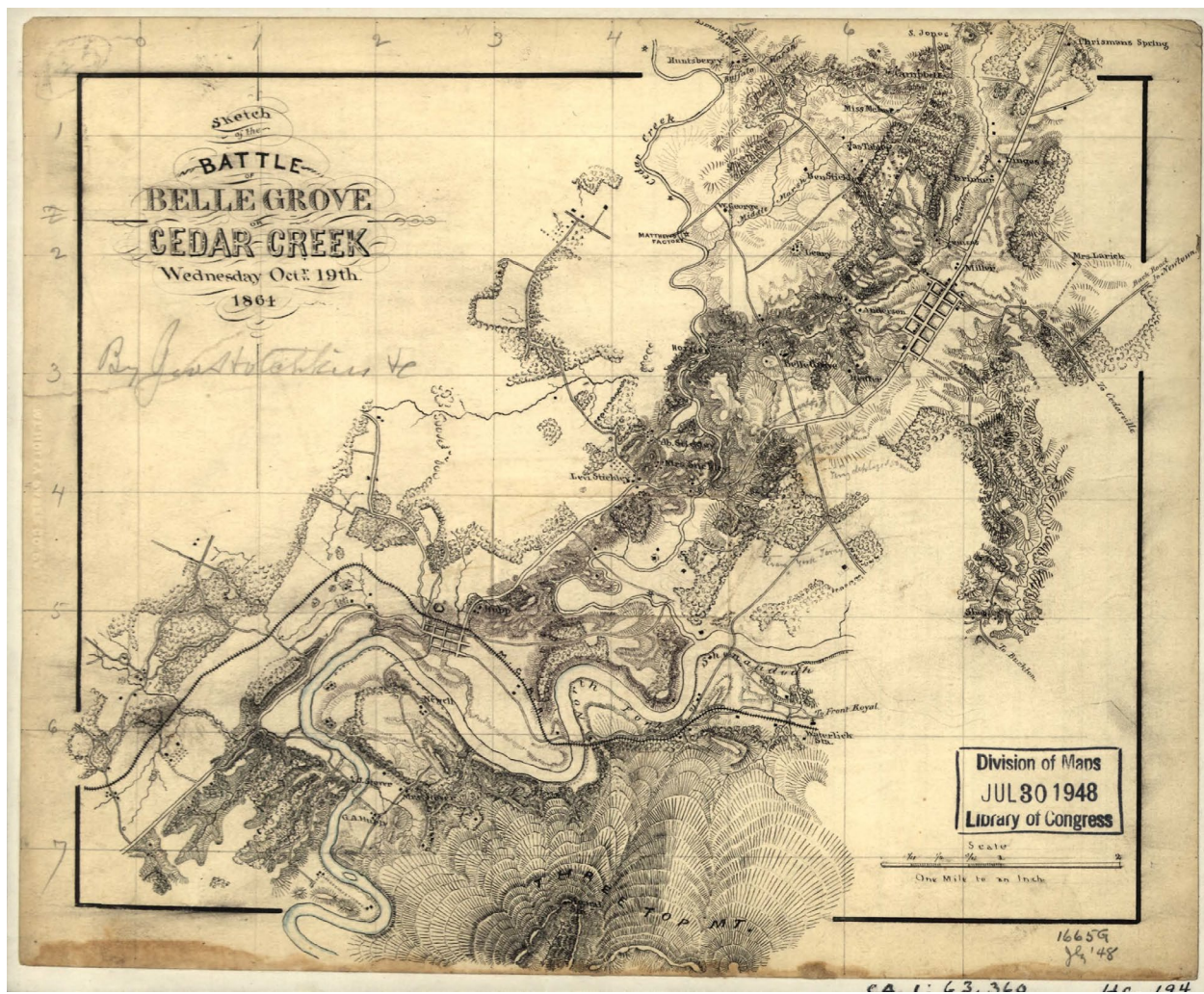


Figure 12.1 Battlefield maps drawn by Hotchkiss after the battle show the battlefield's topography. The battlefield's natural features, including Cedar Creek, forested areas and cleared, open lands, and both Union and Confederate troop dispositions.



Figure 12.2 Battlefield maps drawn by Hotchkiss after the battle show the battlefield's topography. The battlefield's natural features, including Cedar Creek, forested areas and cleared, open lands, and both Union and Confederate troop dispositions.

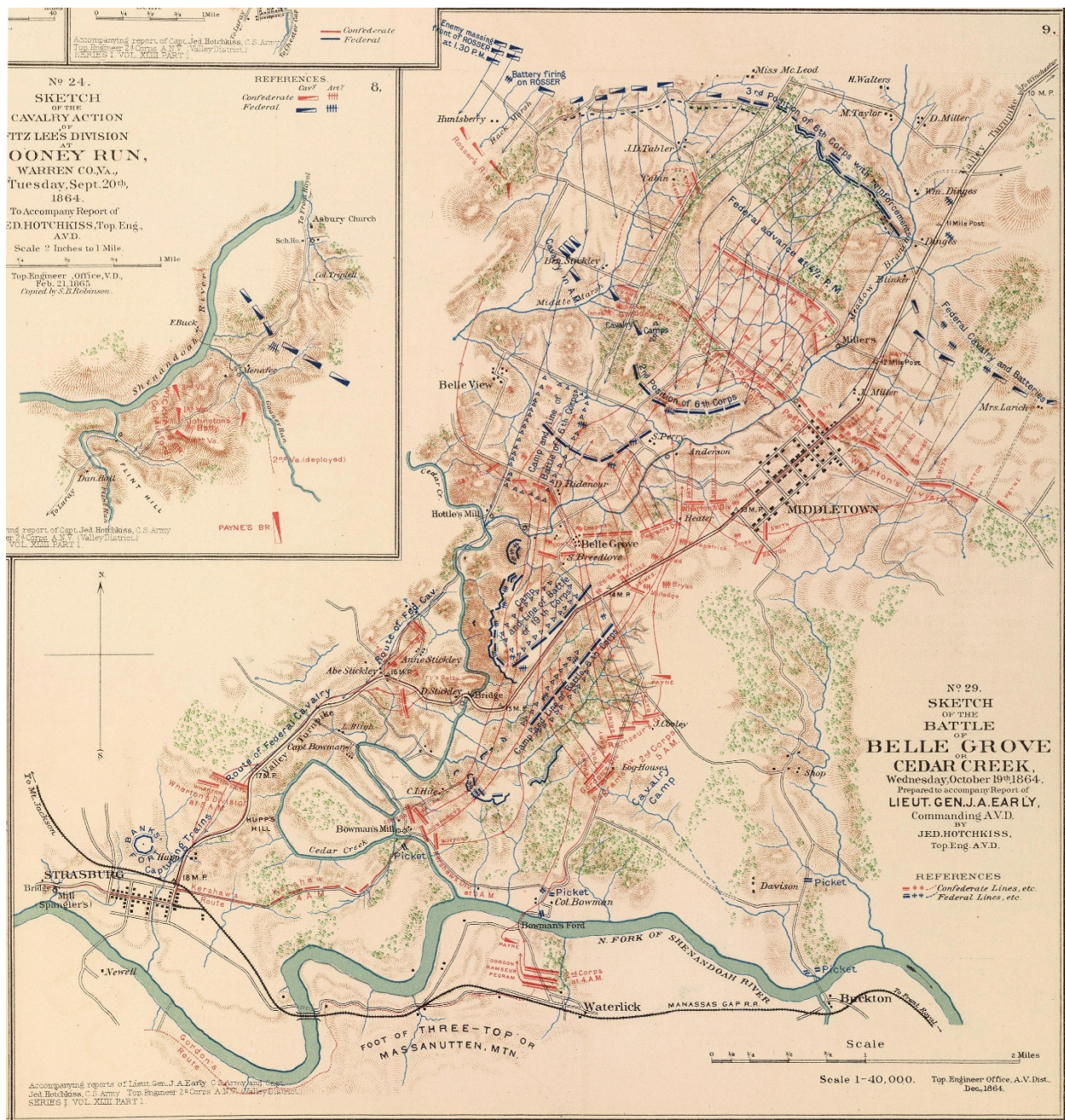


Figure 12.3 Battlefield maps drawn by Hotchkiss after the battle show the battlefield's topography. The battlefield's natural features, including Cedar Creek, forested areas and cleared, open lands, and both Union and Confederate troop dispositions.

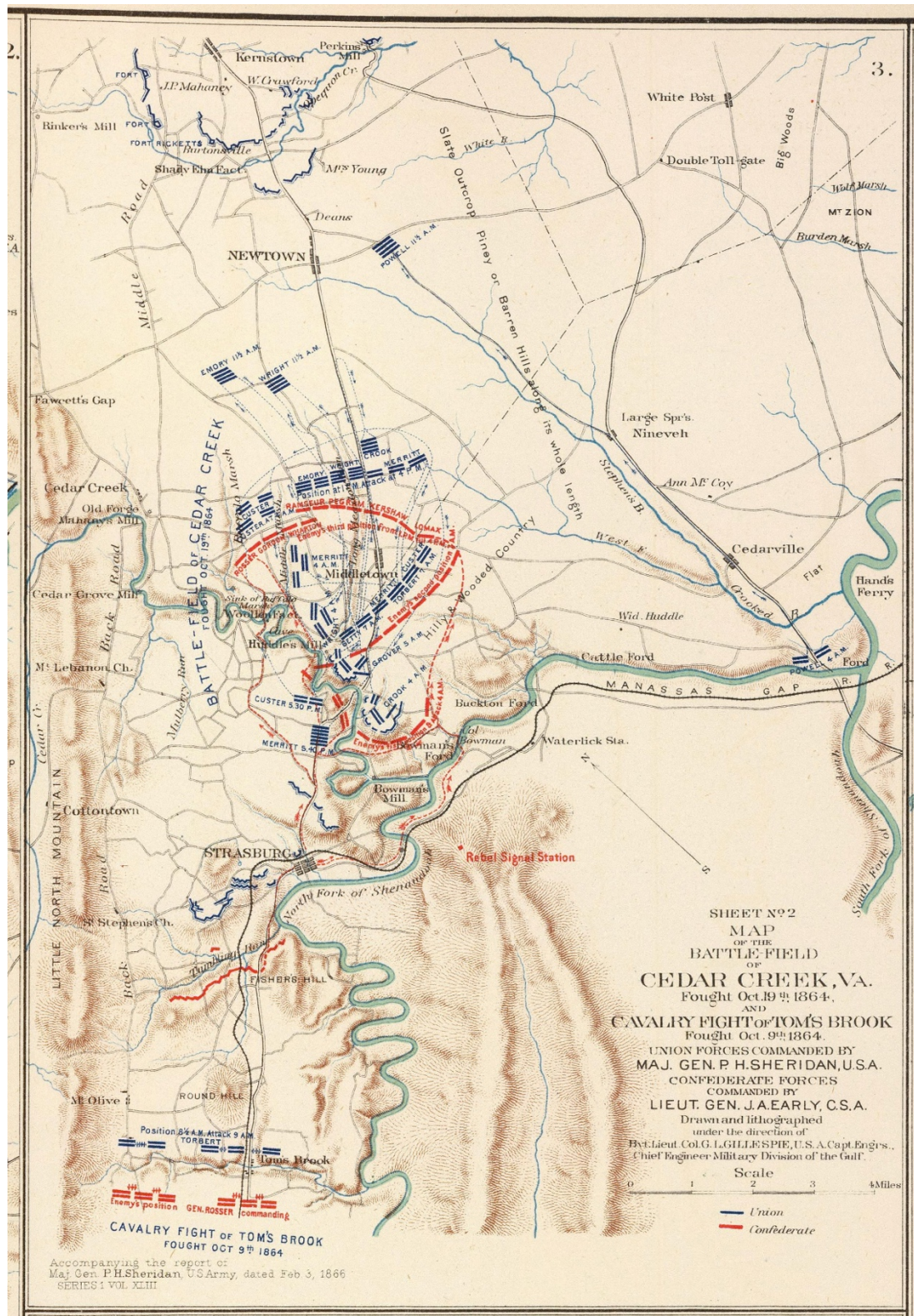


Figure 12.4 Among the most detailed maps of the battlefield are those drawn by Lt. Colonel G. L. Gillespie, Major of Engineers, USA. Gillespie's maps, also drawn after the war, show details in addition to those shown on the Hotchkiss maps, including fence lines and field layouts.

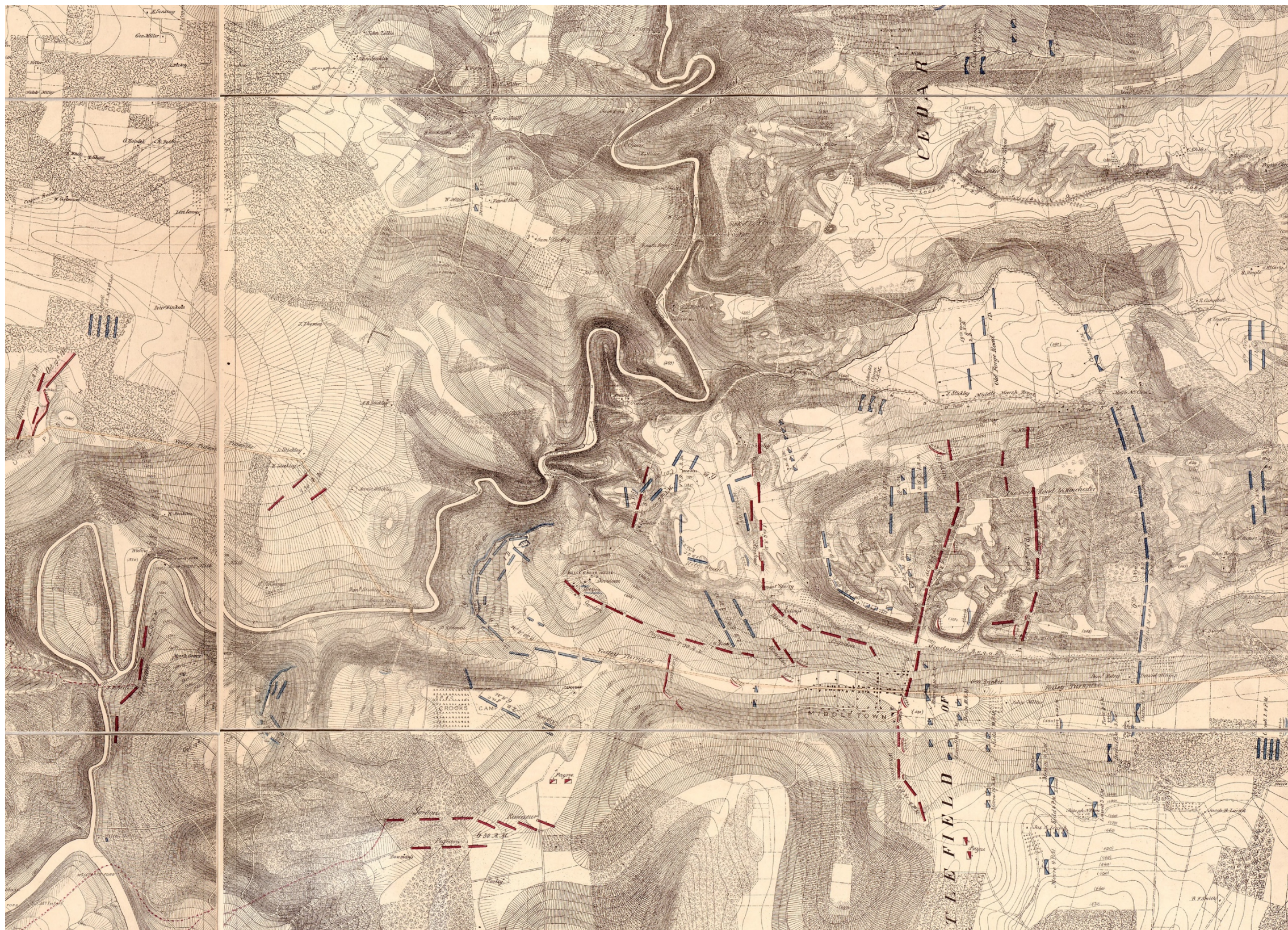


Figure 12.5 Among the most detailed maps of the battlefield are those drawn by Lt. Colonel G. L. Gillespie, Major of Engineers, USA. Gillespie's maps, also drawn after the war, show details in addition to those shown on the Hotchkiss maps, including fence lines and field layouts.

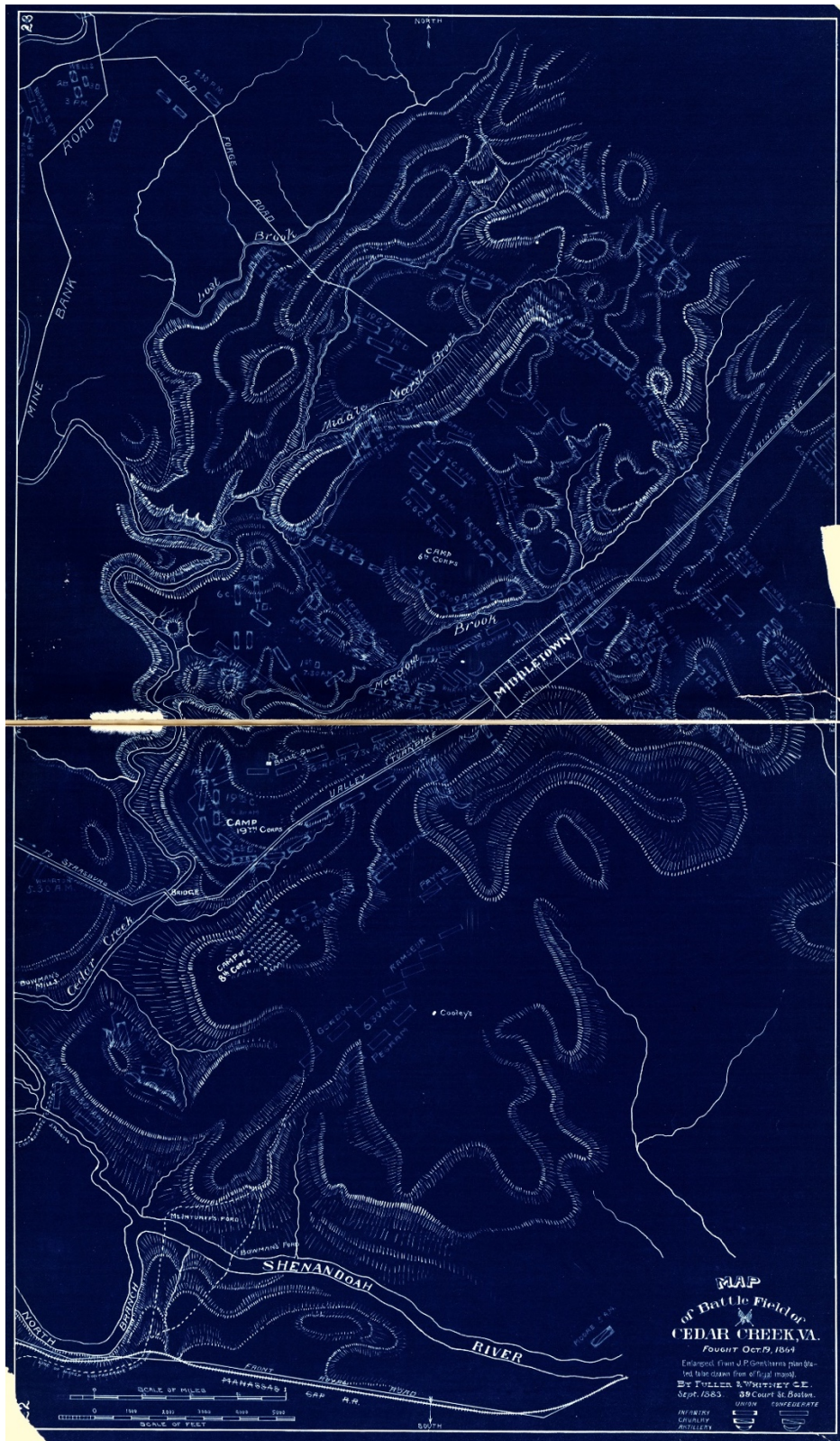


Figure 12.6 Open fields on both sides of the Valley Pike served as Union Army encampment just prior to the Battle of Cedar Creek. They were encampment sites again for the Sheridan Reunion of 1883, as this map by Fuller and Whitney shows



Gordon and Hotchkiss reconnoitering Sheridan's outposts.

Figure 12.7 Battle reconnaissance in a Valley corn field from James E. Taylor's Sketchbook. Corn fields are not noted on any of the after-action maps of the Battle of Cedar Creek. From Taylor 2019.



Figure 12.8 Steep slopes on the C. J. Hite Farm (the present-day Bowman-Hite Farm) above Cedar Creek and the Harmony Hall Ford. Battlefield maps by Hotchkiss and Gillespie show that the slopes here were wooded.



Figure 12.9 The cleared bottomlands below the C. J. Hite farmhouse remain open fields today. Photo by authors.

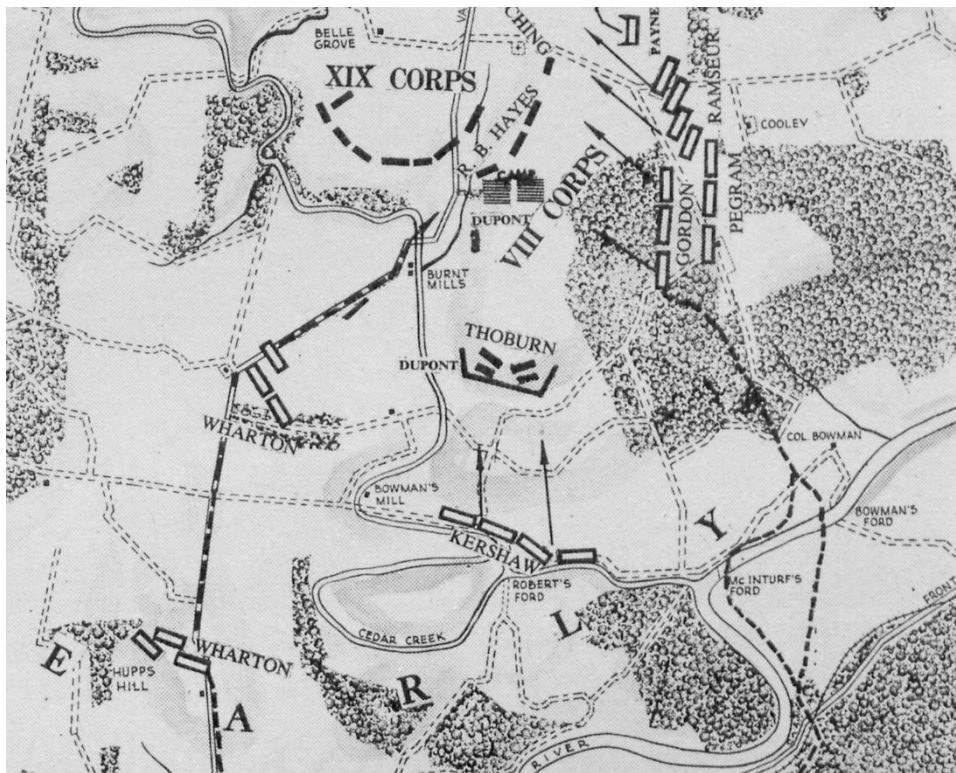


Figure 12.10 Detail map from *Sheridan in the Shenandoah* showing the location of Thoburn's artillery. The gun positions were overrun by Confederate infantry at the start of the battle. From Stackpole 1961.

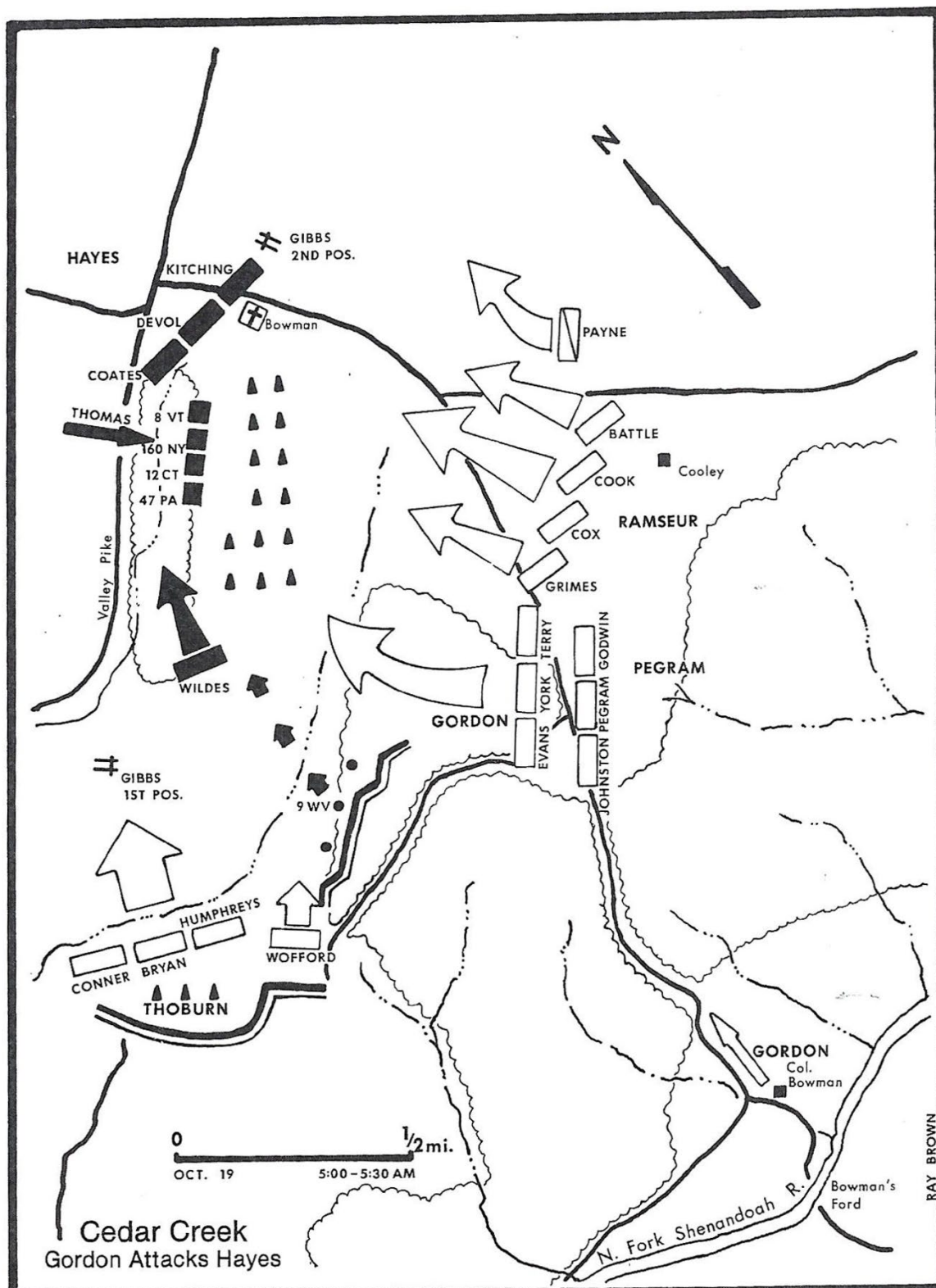


Figure 12.11 The wooded ravine "Death Trap" north of Thoburn's position at Cedar Creek. From Mahr 1992.



Figure 12.12 (Top and Bottom) Two contemporary views of the “Death Trap.” The wooded ravine that separated Thoburn from Hayes’ position on the cleared knoll to Thoburn’s rear remains wooded today. Photos by author.



Figure 12.13 The view north from the Belle Grove Attic window in 1890. In the distance is the ravine along Meadow Brook north of the Belle Grove House. This wooded ravine was noted in the battle accounts and crossed by Union troops during their initial retreat from the Confederate attack.



Figure 12.14 The steep, wooded bluffs along Cedar Creek west of Belle Grove remain wooded today. Photo by authors.

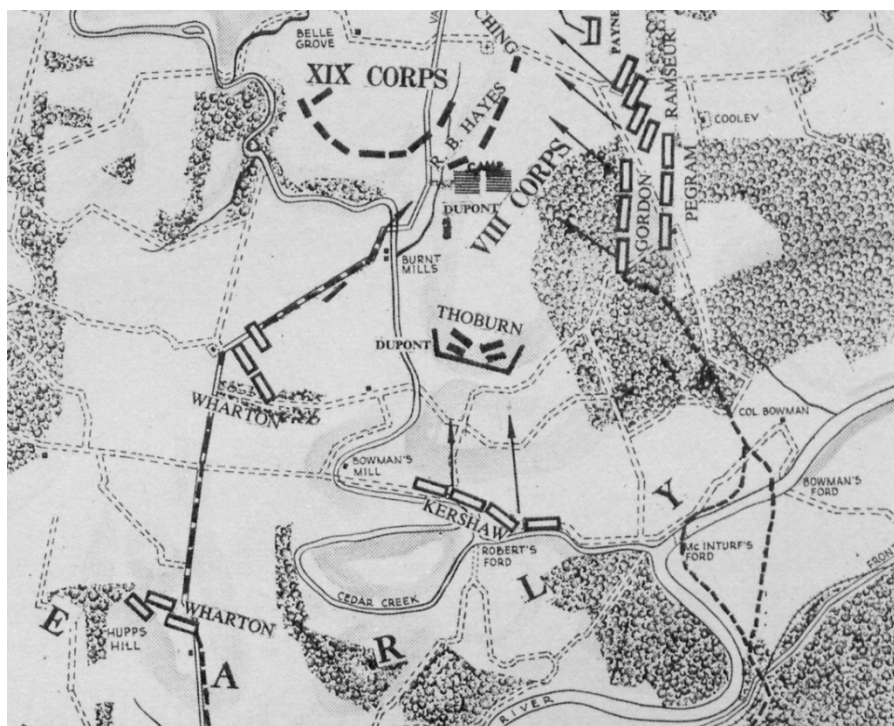


Figure 12.14.1. At the time of the battle there was a heavy growth of thickets and underbrush just north of Kershaw's position shown on the map above that slowed the Confederate advance. Today, the slopes in that area remain heavy thickets.



Figure 12.15 (Top) The thick woods at the crest of Cemetery Hill near Middletown described by Mahr remain today. Photo by authors. (Middle) the woods above the Stickley Farm also remain. Photo by authors. (Bottom) The woods at the crest of Cemetery Hill near Middletown can be seen in this period photograph by the Biscoe Brothers, c. 1880's.

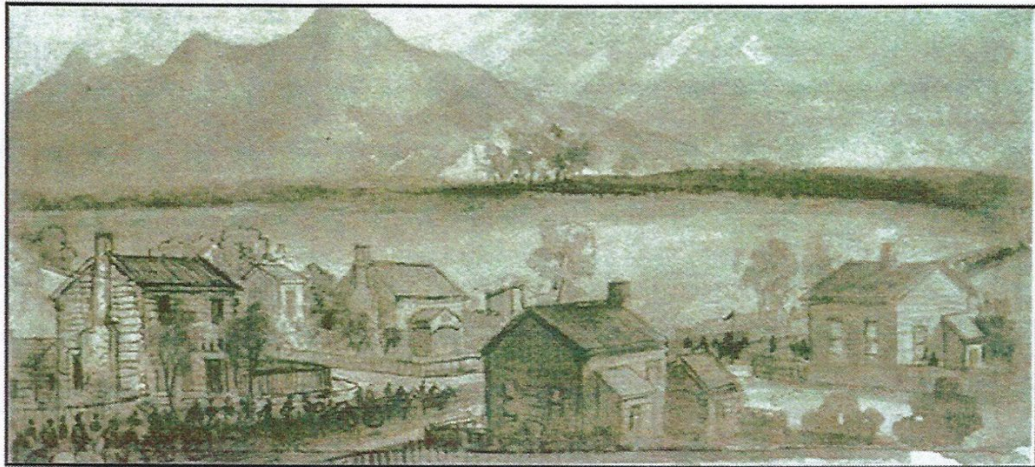
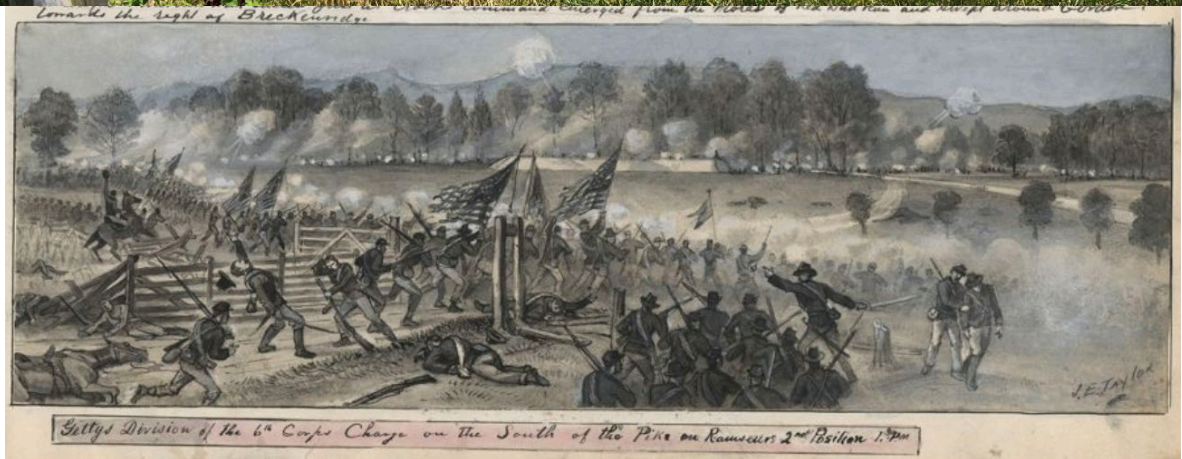


Figure 12.16 Open fields on the battlefield. (Top) The fields between Belle Grove and the Valley Pike today. Photo by authors. (Middle) Open fields southeast of Middletown. From James E. Taylor's sketchbook. (Bottom) Another Taylor sketch showing open fields along the Valley Pike.



Figure 12.17 Period stone wall "fences" along the Valley Pike in the 1880's. From the Bisco Collection. Similar walls are noted along the Valley Pike west of the Daniel Stickley Farm in battle accounts.

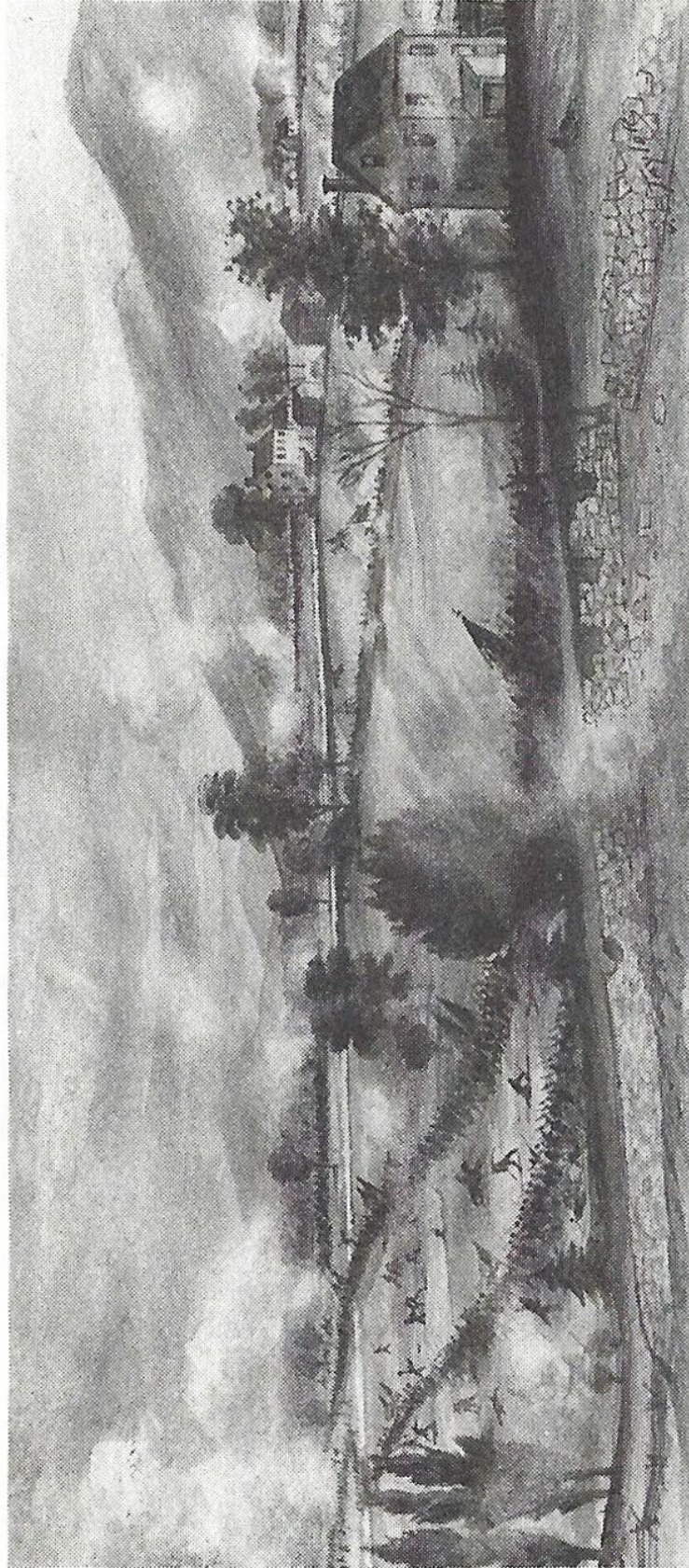


Figure 12.18 The "string of stone walls" north of Middletown near Miller's Mill are shown in this sketch by James E. Taylor.



Figure 12.19 Rail fences on the Cedar Creek Battlefield in the 1880's. From the Biscoe Collection.



Figure 12.20 (Top) Agricultural fields above Bowman's Mill Ford in 2011. Photo by authors. (Bottom) The same fields in in the decades after the battle. From the Mollus Collection.

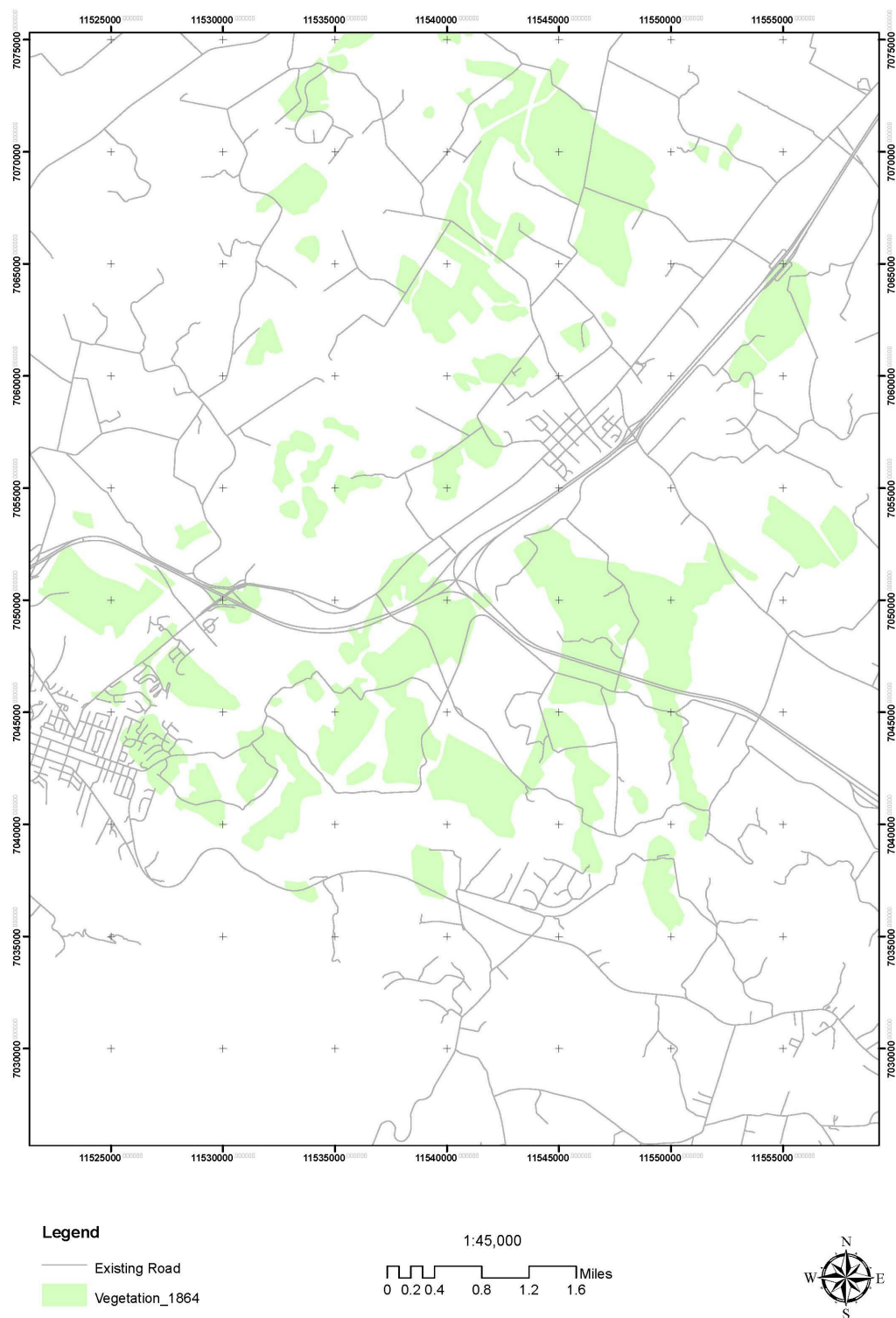


Figure 12.21 Scattered wooded areas at the time of the battle as shown on the battle maps. From Katen et al. 2012.



Figure 12.22 Along the Valley Pike between Belle Grove and the Stickley Farm in the 1880's. From the photos of Thomas and Walter Biscoe. Photo collage assembled by authors.



Figure 12.23 View of Massanutten Mountain looking south across Cedar Creek, the Stickley house, and the Cedar Creek battlefield, in the 1880's. From the Biscoe Collection.

Chapter 13

The Agricultural Landscape: Typical Period Farms

As identified by historians Clarence R. Geier and Kimberly Tinkham, collectively, the “average” farms of the lower Shenandoah Valley offer a significant opportunity to interpret the area’s “vibrant rural agricultural economy from the time of initial settlement through the 20th century.” (Geier and Tinkham 2006, 15) given that opportunity, from the extant evidence, can we begin to understand the particular set of factors that influenced what might reasonably be identified as the “typical” period farm in the lower Shenandoah Valley? What factors informed the layout, size and daily and seasonal operations that were typical of the farms established by the lower Valley’s early settlers. Might the extant evidence also inform our understanding of how, and in response to what factors, did the “typical” Lower Valley farm evolve over time?

One factor that clearly was recognized by the area’s early settlers was the richness of the lands that lay at the interface of the Valley’s limestone and shale geology. The earliest patents along Opequon and Cedar Creek included both limestone and shale lands offering the early settlers varied upland and bottomlands (Fig.13.2–Fig.13.8) that could support a variety of crops and pasture lands and varied forest resources, including woodland forage for livestock; timber that could be split into fence rails or milled into lumber; a ready supply of firewood for domestic use; and fuel for the lower Valley’s furnaces. (Fig. 13.9 and Fig. 13.10) Historians Warren Hofstra and Clarence Geier have identified that several of the lower Valley’s “large farms,” including Carysbrook, Hill and Dale, Hackwood, Huntsbury, and Milburn, were “established near the shale-limestone interface and utilizing the resources of both landforms.” (Hofstra and Geier 2000, 57) Also located along the shale-limestone interface are the Belle Grove Plantation and the present-day lands of the Cedar Creek and Belle Grove National Historical Park. (Fig. 13.10.1) The lands located at the interface were also typically well-watered featuring both streams and springs that provided a consistent source of water for livestock as well as power for the numerous local mills that would serve the needs of the early lower Valley farmers. The land attributes at the interface were defining characteristics of the prime lands of the lower Valley and the early subdivision of the lands in Jost Hite’s Opequon settlement appear to have insured that every settler’s lands provided the critical range of attributes necessary for successful farming. Historians Kenneth Koons and Johnathan Noyalas identified these same factors and attributes as characterizing features of the farmlands at the Cedar Creek and Belle Grove National Historical Park:

“A combination of historical circumstances and attributes relating to geography and spatial location contributed to the emergence of farmlands in the Cedar Creek and Belle Grove National Historical Park area of the lower Shenandoah as the epicenter of wheat and flour production in the Shenandoah Valley. The lands encompassed by Cedar Creek and Belle Grove National Historical Park were propitiously located for commercial wheat farming and the conversion of wheat to flour. The fertile

limestone-based soils of the river bottom lands were supremely well suited for the production of wheat, and the fast-flowing waters of Cedar Creek and its tributaries, as well as other nearby streams, provided ample motive power for turning grist mills' water wheels for the conversion of wheat to flour." (Koons and Noyalas 2010, 15) (Fig. 13.11)

If the criteria for land selection and the resultant and consistent geological and natural attributes of the land constituted one measure of a "typical" early settlement period farm, equally telling are the varied livestock and crops found on Valley farms in the 18th Century. The typical lower Valley farm in the settlement period raised livestock and planted agricultural crops that the early settlers knew well and "they had brought with them to the [Shenandoah] Valley." The livestock raised by the early settlers included horses, cattle, swine, and sheep while the agricultural crops the settlers planted included wheat, corn, small cereal grains and hay. The early settlers brought to the Shenandoah Valley crops and livestock that were not only familiar to them but also were "well adapted to prevailing seasonal temperatures and amounts of rainfall." (Koons and Noyalas 2010, 13)

The farmers in the lower Valley also :

"sowed various artificial grasses, such as timothy and clover, to provide summer grazing and winter forage for livestock. Flax for the home production of linen formed a key element of the crop mix as well. Horses served as the main source of draught power for plowing and hauling; cattle provided meat, milk, cheese, and butter; swine were a main source of animal protein among eighteenth- and nineteenth-century rural populations; sheep were an additional source of meat but also provided wool for home or local production of textiles. This "grain-livestock complex" that arose in the Shenandoah Valley during the settlement era persisted through the nineteenth century and into the early decades of the twentieth century." (Koons and Noyalas 2010, 40)

Stephen Hotsinpillar farmed a "450 acre tract of land" purchased from Jost Hite in 1736. After his death in 1776, Hotsinpillar's estate listed the following livestock: "cattle, horses, and hogs," while his crops included "rye, wheat, oats and corn." Hotsinpillar also had "stored provisions of flour, bacon, hemp, flax, and wool for textiles and distilled considerable quantities of liquor...in May when the appraisal was conducted Hotsinpillar still had...eleven acres of wheat in the ground. The eleven acres alone would have been sufficient to feed a family of ten for a year and Hotsinpillar's family at the time of his passing was considerable smaller," suggesting that Valley farmers were raising surplus crops that could be sold and provide a means of accumulating wealth. (Hofstra 1997, 65)

Historian Warren R. Hofstra provides us with description of another 18th century farm, the lands of the Allen family, "along the upper Opequon." The Allen family farm included "about 150 acres of upland, cleared and in good repair, and about 25 acres of good meadow, a considerable quantity, more of which may be made; 125 acres of woodland, well timbered,

a good apple orchard, and a number of cherry and peach trees, and has on it several never failing springs; a stream of water runs through a part thereof, sufficient for a mill; there are likewise...two tolerable dwelling houses, two good kitchens and smoke house, one still house, large enough for three or four stills, two good barns, stables and other necessary houses..." (Hofstra, 2004, 289)

The mix of open uplands, "improved" cultivated land cleared for crops or pasture (Fig. 13.8) and "well timbered" woodland, (Fig. 13.9 and Fig. 13. 10) along with streams and "never failing springs," (Fig. 13.12) would be signature physical features of what can reasonably be described as "typical" lower Valley farms. Orchards were common (Fig. 13.13 and Fig. 13.16) as was a still house or distillery for converting grain crops into liquor, and additional farming related support structures such as barns, stables, granaries, storage structures for harvested crops, kitchens, smoke houses and ice houses. Many "typical" larger farming operations also included one or more mills, including grist mills, saw mills, and, in time, merchant mills. Larger farming operations may have also had a lime kiln for producing agricultural lime from limestone cleared from "improved" agricultural fields. Some period descriptions also note a system of gates and fences that subdivided the farm and gave spatial definition to its many operations and organized desired adjacencies. Fencing was also an integral component of the livestock operations that developed in the lower Shenandoah Valley during the progressive farming era. The earliest fences were described by historian John T. Schlebecker, who noted that "Most families [in the Opequon settlement] probably practiced a form of infield-outfield agriculture, fencing in gardens and crops around a farmstead and leaving an extensive open range across property boundaries for livestock." (Schlebecker 1971, 53) As farming developed into larger, more profitable mixed farming operations with a heavier emphasis on crop production, that fencing pattern would change as pastures and livestock areas would be fenced rather than the crop production areas. (Fig. 13.16.1 – 13.21) Rail fences, both post and rail and "Virginia" rail fences, also called snake or worm fences, were common in the lower Valley. Stone walls, sometimes called "fences," made of the abundant local limestone, were also used to delineate field divisions in the lower Valley particularly those fields and pastures along area roads including the Valley Pike.

The farming practices of the early lower Valley farmers, characterized by historians Kenneth E. Koons and Jonathan Noyalas as "general mixed agriculture" (Koons and Noyalas 2010, 29) would serve as a strong foundation for what in the 19th Century would be identified as "progressive farming." The 18th Century farmers in the lower Shenandoah Valley all appear to have worked the land with a knowledge of the principles of general mixed agriculture. They sought land that would support a variety of crops and support varied livestock production, and they practiced the diversity of enterprise that characterized mixed agriculture. That diversity of enterprise offered the farmers agricultural alternatives during periods of economic hardship. Lower Valley farmers also demonstrated an entrepreneurial spirit that sought out opportunities to produce surplus agricultural goods. That surplus sold on the open market would allow lower Valley farmers to gradually build individual and family wealth and acquire additional land for their agricultural enterprises.

The second half of the 18th Century brought both change and opportunity to the farmers of the lower Valley and they demonstrated the capacity to respond quickly to changing market opportunities. The changes that came after the 1750's occurred even though "the mixed farming structure remained intact" and there was "a continuation of previous agricultural patterns." After the 1750's, "no new major crops were introduced, and agricultural techniques remained substantially unaltered. What was new, and what increased the rate of spatial and socio-economic change, was the increasing emphasis on production for outside markets." One of the most notable changes saw "the sustained production of a "specific frontier produce for commercial purposes," which occurred in the mid 1760s with the "development of commercial hemp production." (Mitchell 1977, 162) "Before 1760 up to 90% of all farm products in the valley were used for subsistence purposes...[by the end of the century] "most valley farmers could devote no more than 50% of their total output for sale." (Mitchell 1977, 187)

Another "typical" aspect of farming in the lower Shenandoah Valley, even in the eighteenth century, was the fact that agriculture in the lower Valley was never isolated from the influence of national and international events. The farms, mills and merchant operations in the lower Valley were, in fact, part of and responded to larger agricultural and economic systems and networks. One of the first and most important events that brought both significant change and opportunity to farmers in the lower Valley was the French and Indian War. In the American Colonies, that War began in 1754 and did not end until 1763. The conflict brought to the lower Valley an increased demand for the production of wheat and wheaten flour to feed the troops in the western area of conflict. As historians Kenneth Koons and Jonathan Noyalas have identified, while wheat had always been an important component of the mix of crop system as practiced by Valley farmers:

"...until about the middle of the eighteenth century most wheaten flour had been produced primarily for local consumption. In the late 1750s, however, the need to feed troops fighting in the French and Indian War stimulated demand for flour, and Valley farmers responded by producing larger surpluses of wheat. After the War, demand for flour continued to rise because of changing market conditions in Europe and the West Indies..." (Koons and Noyalas 2010, 41)

By the early nineteenth century the Shenandoah Valley, and the lower Valley in particular, would be recognized as one of the premier wheat growing regions in the country. By the antebellum period, Kenneth E. Koons and Jonathan Noyalas, have identified that "among Valley farmers...wheat cultivation was nearly universal." Typically, Lower Valley farmers grew winter wheat. The winter wheat crop was "sown in the fall and harvested the following summer" establishing a seasonal rhythm for the planting and harvesting of the Valley's major crop. So universal was the planting of wheat in the Shenandoah Valley during the antebellum period, that historians have determined that, by 1850, "96 percent of all farmers in the Valley produced wheat..." (Koons and Noyalas, 2010, 44 and 52)

Another crop widely grown in the Shenandoah Valley in the eighteenth century was hemp. The “local agricultural conditions” in the Valley “were conducive to the production of a fine, strong, long-fibered hemp.” (Mitchell 1977, 164) The demand for hemp increased in the early 1760’s, in response to “the growing importance of hemp to British naval security during the French and Indian War. The need for hemp led to England to enact a “hemp bounty in 1764” (Mitchell and Hofstra 1995, 138) That bounty was provided for in “An Act for Granting a Bounty upon the Importation of Hemp, and Rough and Undressed Flax, from his Majesty’s Colonies in America.” (Smith 2019, 1) Increased hemp production in the Valley in the 1760’s, in response to the market created by the French and Indian War, was an early example cited by historian Robert D. Mitchell of “the sustained production of a “specific frontier produce for commercial purposes.” (Mitchell 1977, 162) Mitchell also identified that while:

“the Valley’s earliest settlers produced a range of different foodstuffs or other farm goods for home use and local sales, they were commercially oriented...and they embraced emergent opportunities to produce cash crops for wider, extra-regional markets.” (Koons and Noyalas 2010, 40)

Even before the French and Indian War, hemp was, according to historian Robert D. Mitchell, one of the “first cash crops raised by Valley farmers for external markets.” (Koons and Noyalas 2010, 40) The Revolutionary War also brought about an increased demand for hemp and flax, another eighteenth century agricultural cash crop widely grown in the Shenandoah Valley. During the War, linseed oil, extracted from pressed flax seed and used as a drying agent in paints and in the manufacture of soft soap, was produced by Shenandoah Valley oil mills. The increased production of linseed oil in the Shenandoah Valley continued after the Revolutionary War and “by 1810 the Valley almost monopolized Virginia’s production of linseed oil.” (Mitchel 1977, 182)

Another widespread eighteenth century agricultural practice in the lower Shenandoah Valley was “stock raising and fattening cattle destined for markets in Philadelphia and Baltimore.” That practice began in the settlement period and that would continue to be “a substantial source of farm revenue far into the nineteenth century” (Koons and Noyalas 2010, 40) Farming operations at Belle Grove included feeding and raising cattle for those northern markets. The Hite’s routinely purchased large numbers of cattle in the fall; “fed them through the winter on straw [hay] and corn fodder;” and fattened them the next summer and fall, before selling the cattle for “little less than double their first cost.” (“Virginia Husbandry” 1821)

By the second half of the Eighteenth Century, new technology and better crop rotation regimes were influencing typical farming practices in the lower Valley. As historian James D. Rice has identified:

“By the 1770’s, “the Age of Jefferson...small independent farmers...were in the process of switching to plow agriculture, which more profoundly disturbed the soil,

encouraged the stripping of all vegetation from the fields (including stumps), destroyed the root systems of perennial species (thus altering the soil chemistry by starving out the microorganisms that live upon those roots), and encourage crop rotations and short fallows instead of the older system of allowing old fields to return to forests in twenty-year-long fallows.” (Rice 2009, 247-49) (Fig. 13.22)

The new practices that came about with the introduction of “plow agriculture” placed increased emphasis on more “scientific” farming and helped to bring about what would come to be known as “progressive” farming. The widespread interest in progressive farming would result in the rise of local and state agricultural societies, including numerous agricultural societies in Virginia. Agricultural publications and programs supported by Virginia’s agricultural societies provided Valley farmers with the latest information on both scientific farming practices and the results of field testing of newly developed agricultural technology. Lower Valley farmers on farms large and small, who were already committed to the practice of mixed agriculture, embraced the spirit of progressive farming wholeheartedly.

“By the 1820s commercial fertilizers made it possible to more continuously work each field, to put into production marginal soils, and to alter rotations to include fewer replenishing crops such as clover, grass, or turnips. Mechanized grist mills, reapers, and other machines introduced after the Revolution made it possible for each individual farmer to keep more land under cultivation, while continued population growth put many more farmers in the fields.” (Rice 2009, 247-49)

Farmers in the lower Valley also embraced those new technologies, including “the most up-to-date devices” and “farm implements” of the time that propelled progressive farming. (Schlebecker 1971, 469-70) Among the new generation of devices and implements were improved ploughs, wheat cradles, stationary threshers, wheat fans, seed drills, the McCormack reaper. (Fig. 13.23 and 13. 24) During the antebellum period...the use of labor saving agricultural technologies, became...essential ingredients of the region’s agricultural prosperity...” (Bragdon, et al. 2009, 144-146)

As a result of these shared common practices farms in the lower Valley had a consistent, recognizable spatial character that featured a matrix of open, “improved,” bottomlands and upland agricultural fields and pastures, preserved woodlands, and a core architectural ensemble that included the dwelling complex, with its attendant structures such as the kitchen, spring house and smoke house; along with various agricultural oriented structures including barns, granaries, storage structures, mills, distilleries, limestone kilns, farmyards complexes, orchards, and fenced pastures and agricultural fields. (Fig. 13.25) Warren Hofstra has recognized that a “sale notice for a farm on the Opequon Creek four miles from Winchester in 1791...” provides a broad spatial description of the typical lower Valley farm at the end of the eighteenth century:

"There are upwards of 100 acres cleared and under fence – 10 acres of meadow, chiefly timothy, which may be watered at very little expense. - There are on the premises, a good orchard and an excellent spring, a good dwelling house, kitchen, spring house, and two new barns." (Hofstra 2004, 289)

Hofstra offers a second farm, the "Hollingsworth farm along the original Philadelphia Wagon Road near Winchester," as another example of a typical lower Valley farm at the end of the eighteenth century. Hofstra has identified that the Hollingsworth farm had "about 100 acres of cleared land, nearly the same quantity of wood land, and 30 acres of meadow, well-watered." There was also a "convenient stone dwelling-house a merchant mill, a saw mill and fulling-mill, a good barn and other out houses." (Hofstra 2004, 289) Additional period farms studied by Hofstra included the farm of William Vance, "338 acres, of which he cultivated 86, maintained 14 in meadow, and preserved sufficient space for a thirty-two tree orchard. In addition, he built a log shop, stable, still house, meat house, and two log dwellings." Vance also apparently farmed a parcel on a farm owned by Adam Stephens. Stephen's farm is noted to have had 184 of its 400 acres in cultivation. (Hofstra 2004, 289)

Descriptions of farms in the Lower Valley with similar acreage and spatial characteristics appear throughout the first half and well into the second half of the nineteenth century. "In 1850, the farm of Joseph Shambaugh had 4 horses, 3 cows, and nine other cattle. Agricultural yields on Shambaugh's farm in that same year included 450 bushels of wheat, 350 bushels of Indian corn, 30 bushels of rye, 20 b of oats, 20 b of Irish potatoes, 2 b of sweet potatoes, 30 tons of hay, and a bushel of grass seeds." (National Park Service 2007, P. 19) According to the 1850 agriculture census records, Shambaugh's farm included 320 acres, 220 acres of which was "improved" or in agricultural use." (National Park Service 2007, 22-3) Historian John T. Schlebecker describes the "typical" Lower Valley farm in 1850 as: "a farm of 280 acres of cleared land typically had some 80 acres in corn and 120 acres in small grain...a typical farm of 120 used acres had about 20 acres in corn and 43 in wheat...a 280 acre farm had about 65 head of cattle, 5 cows, 15 horses, 20 sheep, and 90 hogs in the course of a year..." (Schlebecker 1971, 468) The average farm size in Warren County in 1850 was smaller, only 143 acres according to Schlebecker. The 1860 Agricultural Census situates the C. J. Hite farm within the range of the typical farm for both counties, with 225 acres under cultivation plus an additional 135 acres in woodland [Peters and Kalbian 2010, 21] The Hite farm has also been identified as "typical of many farms in the county that tended to be located along creeks. Wheat and hemp were among the primary crops. Large corn crops were cultivated as well, not only for human consumption but to provide fodder for livestock." (Peters and Kalbian 2010, 16)

Can an analysis of the period agricultural census records support Peter's and Kalbian's judgement of the Hite farm as typical of many farms in the county not just in acreage and proportion of cultivated land, but in its farming practices, crops grown, and livestock raised? By comparing C. J. Hite's 1860 Warren County Agricultural census records to the crop production and livestock found on other farms of similar acreage in both the 1850 and 1860

agricultural census, could the “typicality” of the Hite farm and other similar-sized farms characterized by Kathleen Bragdon as “middling” be more deeply understood?

In 1850 the Hite farm had 225 acres of “improved” acreage, or acreage under cultivation. Hite had an additional 135 acres of “unimproved” land, likely steeper, wooded slopes. Hite’s harvest that year included 250 bushels of wheat, 40 bushels of rye, 1700 bushels of Indian corn and 50 bushels of oats. His livestock included 6 horses, 1 mule, 6 milch cows, “29 other cattle,” 12 sheep, and 38 swine. Seven other farms noted in the 1860 Warren County Agricultural Census, with “improved” acreage ranging in from 216 to 230 acres and an average improved acreage of just under 224 acres, were reviewed. Included among the farms whose census reports were reviewed were the farms of M. Whitaker, J. M. McKay, J. W. Kendrick, B. Hufferman (or Hufflinger), L. Boyd, D. C. Hall, Sammy N. Cominad. The seven farms reported and average of roughly 6 horses, no mules, 6 milch cows, 14 “other cattle,” 26 sheep, and 23 swine. They averaged 438 bushels of wheat, 65 bushels of rye, 580 Bushels of Indian corn, and 86 bushels of oats. The larger corn harvest on the Bowman-Hite lands likely reflects the large acreage of bottomland that were part of the farm’s “improved” lands.

Comparisons can also be made to farms of similar acreage reporting in the available 1850 Agricultural Census. Nine farms in Shenandoah county ranging in acreage from 215 to 240 “improved” acres and with an average “improved” acreage of just under 226 acres reported the following averages: nearly 8 horses, nearly 6 milch cows, 17 “other cattle, 18.5 sheep, and just over 26 swine. They also reported average harvests of nearly 320 bushels of wheat, 1189 bushels of wheat, and 384 bushels of Indian corn, and nearly 160 bushels of oats. Almost no rye was report in the census data. The Frederick County Agricultural census for that same year, 1850, included 8 farms ranging in improved acreage from 210 to 238 acres with an average acreage of 232 acres. The eight farms reviewed reported the following averages: nearly 9 horses, 5 milch cows, just over 12 “other cattle”, nearly 13 sheep, and just under 26 swine. Average harvests reported included 585 bushels of wheat and nearly 318 bushels of Indian corn. Fewer than half of the farms reported a harvest of oats and none reported growing rye.

What the analysis reveals is that farms with similar sized “improved acreage in the period 1850-1860 had relatively similar agricultural production and similar livestock numbers. The attention to how the census forms were organized and filled out clearly seemed to recognize an emphasis on the Valley’s major crops of wheat, corn, oats and rye, along with livestock. Hay production is inconsistently reported. And the tonnages that do appear suggest the possibility of selling excess production. Butter, a consumable that was often shipped to buyers outside the Valley, is noted frequently, but not by every farmer. It is common to find no production numbers at all recorded for minor crops such as barley and buckwheat or those crops grown for home consumption such as flax.

Analysis of the 1850 Agricultural Census also offers the opportunity to gain insights into what reasonably be identified as an average large farm in the Lower Valley, farms that

Kathleen Bragdon characterized as “elite” farms. That year’s Ann T. Hite’s census report for Belle Grove notes that the farm had 550 “improved” acres under cultivation along with an additional 150 unimproved acres. Livestock included 16 horses, 7 milch cows, 4 working oxen, 18 other cattle, 70 sheep, and 44 swine. Reported crop production included 1500 Bushels of wheat and 750 bushels of Indian Corn. No entries were included for minor crops or products for commercial sale, such as butter. Kathleen Bragdon’s research has found that, in addition to the recorded crops, “the Hite’s engaged in commercial livestock management (for meat, dairy, and wool) as well as farming, they grew wheat, oats, corn, potatoes, and fruits” Mrs. Hite’s sheep yielded 350 pounds of wool, her dairy cattle’s milk was used to make 500 pounds of butter. (Bragdon et al. 2009, 120-121). Seven large farms with comparable acreage under cultivation appear in the 1850 Agricultural census for adjacent Shenandoah County. They were the farms of John Koontz, David Stickley, Abraham Carroll, John Hayes, Samuel Moore, John Brannson, and Patrick C. Richards. The cultivated acreage for those seven farms ranged from 500 – 844 acres with an average cultivated acreage of nearly 580 acres. Unimproved acreage ranged from 115 acres to 800 acres. Their livestock included on average 10 horses, between 7 and 8 Milch cows, 20 other cattle, and nearly 52 swine. David Stickley reported a large herd of sheep, 125 head, but three farms report no sheep and the three remaining farms averaged only 15 sheep. They averaged 1189 bushels of wheat and nearly 1200 Bushels of Indian Corn. Only two farms reported growing rye and three reported harvesting oats.

The financial pressures farmers faced in the aftermath of the Civil War forced many farmers to sell their farms in the decade following the War. Farm sale ads in the 1870’s give another measure of the “typical” small farm in the lower Valley. Among the sale announcements were the following:

“LAND SALES”

“I offer for sale my farm situated 1 ½ miles from Columbia Furnace. My farm consists of 170 acres, of which 100 are cleared and under good fencing, including 40 acres of good bottom. Improvements consisting of a good house, barn, ice-house, dry-house, and all necessary out buildings, GOOD ORCHARD, of about 200 trees, and an abundance of cherries, &c. There is also a fine water power. This is an excellent grazing farm . . .” (“Land Sales: Valuable Farm for Sale” July 21, 1870)

“ . . . I now offer at PRIVATE SALE this valuable farm, CONTAINING 158 ACRES of first class limestone land, situated on Pugh’s Run, about 2 miles and a half from Woodstock. There is about SIXTY ACRES of good oak and pine timber included in the tract . . . the tract is well watered by Pugh’s Run and another small branch running through, and an excellent well of water at the house, a good rough cast, two story dwelling house Granery, Smoke House, Weave House &c – no barn.” (“Valuable Farm for Sale” August 4, 1870)

“Valuable Real Estate In Frederick County, Virginia, at PUBLIC SALE”

Ad for 200 acres, good limestone land, situated within a mile of Vacluse station and within two miles of Middletown Depot of the Winchester and Strasburg Railroad...This tract is well timbered under good fencing, a fine stream of water running through it, considerable meadowland; there is a good orchard of apple and peach trees on the place." ("Valuable Real Estate" 1872)

"Public Sale of Land"

the first tract contains 328 ½ acres ((of the real estate left by John Richards) situated on Cedar Creek in the southwestern part of the County. There is a good dwelling house, stable, and other out houses...and a spring of good water. There are 50 acres of Bottom and sixty-eight acres of upland cleared for cultivation. The second tract contains five hundred and one acres and adjoins the former, making 829 ½ acres Cedar Creek runs through the two tracts and they contain fine bottom lands, Grazing lands, and good Timber lands." (Public Sale of Land" 1872)

These farms all fall well within the average farm size in the Lower Valley described by Ethnographer Kathleen Bragdon who has identified that "Over more than two centuries of settlement, as it became one of Virginia's most prosperous agricultural regions, the lower Shenandoah Valley retained its character as a region of predominantly medium-sized farm holdings of 100-499 acres." (Bragdon 2009, 145) The "character" of that typical farm was the result of the practice of general mixed agriculture. Under that system, a typical farm included a mix of open, improved agricultural land used for field crops or pasture with some preserved woodlands, typically on steeper upland slopes. Corn was typically grown in the rich bottom lands and wheat in the more upland areas. Pasture lands also were primarily found in the rolling uplands. As progressive farming practices evolved, fields and pastures would come to be fenced to separate livestock from planted crops. Several types of fences can be seen in the photographs taken by Thomas and Walter Biscoe during their 1884 Allegheny Valley Tour (LaBarbara, 2019 and *Thomas Dwight Biscoe Collection*, 2019) including the regionally traditional Virginia rail or "worm" fence. But by the early decades of the nineteenth Century, the "greatest disadvantage" of the worm fence had been recognized: "its tremendous consumption of both timber and land. The width of a typical worm fence was about eight feet, with stakes and riders, ten feet. Each mile of such a fence occupied one and two-tenths acres of otherwise cultivated land." A ten rail high fence "required over five thousand rails." (Patrick 1983, 36.) Crop rotations were commonly practiced with some fields "resting under grass" or left temporarily fallow. The farmland was "well-watered" either by streams or reliable springs. A networked road system led from farm to farm and from farm to mills. When rail transportation came to the Valley new roads would increasingly lead to the growing towns that served as collection and shipping points for lower Valley produce.

The descriptions of these "typical" farms are also consistent with the spatial character of the agricultural lands within the Cedar Creek and Bell Grove Historical Park as they are shown on the Civil War battle maps. (Fig. 13.26 and 13.27)The post-war decades brought increased public attention to the old battlefields and former combatants and photographers

traveled to the old sites of conflict including the fields of conflict along Cedar Creek. The post-war photographic record of their visits to the Cedar Creek Battlefield and the present-day lands of the Cedar Creek and Belle Grove National Historical Park is also consistent with the mapping history and perhaps provides us the best spatial understanding of the lower Valley's "typical period farm." The photographs taken by Thomas and Walter Biscoe during their 1884 Allegheny Valley Tour (LaBarbara, 2019 and *Thomas Dwight Biscoe Collection*, 2019) provide especially important understandings of the period agricultural landscape. (Fig. 13.28 and 13. 29) The period photographs, when studied along with the existing agricultural landscape, (Fig. 13.30) confirm much of the character-defining spatial matrix of fields, pastures, and woodlands described in numerous scholarly studies and period accounts and maps.

Chapter 13: Bibliography

In addition to listing works cited in this chapter, this bibliography also includes a range of consulted sources that have contributed to the overall understanding of the agricultural landscape of the lower Shenandoah Valley presented in the chapter.

1850 Agricultural Census Schedule 4 – Productions of Agriculture, Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1850-agriculture.pdf>
July 24, 2019

1860 Agricultural Census Schedule 4 – Productions of Agriculture. Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1860-agricultural.pdf>
July 24, 2019

Bragdon, Kathleen J. with contributions from Donna Dodenhoff, Betty Duggan, Julie Earnstein, Audrey Hornung, Martha McCartney, Danielle Moretti-Langholtz and Edward Regan *Ethnographic Overview and Assessment Cedar Creek and Belle Grove National Historical Park*, Northeast Region Ethnography Program National Park Service, Boston, Ma. 2009

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006.

Greer, Mathew C., "Archaeological Investigations of Two Possible 19th Century Quarters Sites at Belle Grove Plantation, Frederick County, Virginia: 44FK520 and 44FK521" February, 2016

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800" in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:
HFP, vol, 1, doc. 32
HFP, vol. 2, doc. 28, Letter from Ann T. Hite,

Johnson, Clifton, *Battleground Adventures the Stories Of Dwellers on the Scenes Of Conflict in Some of the Most Notable Battles of The Civil War: Collected In Personal Interviews by Clifton Johnson*,

Illustrated By Rodney Thomson, Boston and New York: Houghton Mifflin Company, 1915

Kalbian, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville, Virginia; Maral S. Kalbian, LLC, September 2014

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

LaBarbara, Jane Meeters, "Thomas and Walter Biscoe and their 1884 Allegheny Valley Tour," West Virginia University Libraries,
<https://news.lib.wvu.edu/2016/07/06/thomas-and-walter-biscoe-and-their-1884-allegheny-valley-tour/> accessed October 2, 2018

"Land Sales: Valuable Farm for Sale" *Shenandoah Herald*, July 21, 1870

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977.

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012.

National Park Service Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007

Patrick, Vanessa, E., *Partitioning the Landscape: The Fence in Eighteenth-Century Virginia*, Colonial Williamsburg Foundation Library Research Report Series – 0134, Williamsburg, VA: The Colonial Williamsburg Foundation, 1983. At:
<https://research.history.org/DigitalLibrary/View/index.cfm?doc=ResearchReports%5CRR0134.xml> Accessed August 15, 2019

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

"Public Sale of Land" *Winchester Times*, Undated, (likely Sept/Oct.1872)

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the Old South: Selected from Periodicals of the Times*, vol. 1, Eugene Schwaab, ed., Lexington: University Press of Kentucky, 1973

Smith, John, L. Jr., "The Truth about George Washington and Hemp," *Journal of the American Revolution*, <https://allthingsliberty.com/2016/10/truth-george-washington-hemp/>, Accessed Mar. 25, 2019.

Thomas Dwight Biscoe Collection, PHO-003, Marietta College Library

"Valuable Farm for Sale," *Shenandoah Herald*, July 21, 1870

"Valuable Farm for Sale," *Shenandoah Herald*, August 4, 1870.

"Valuable Real Estate In Frederick County, Virginia, at PUBLIC SALE," *Winchester Times*, Oct. 2, 1872

"Virginia Husbandry," in *The American Farmer*, June 29, 1821, HFP, vol. 3, doc. 33

"Will of James Hoge, July 1795" Belle Grove Collection 890 THL Box 5, Folder 4

Chapter 13: Map Sources

Gillespie, G. L. 1864. *Battle Fields of Fisher's Hill 22 Sept. 1864 and Cedar Creek 19 Oct. 1864, Virginia [map]*. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439175/>.

Gillespie, G. L. 1873 Map of the Battle Fields of Fisher's Hill and Cedar Creek by G. L. Gillespie . Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].

Hotchkiss, Jedediah. 1862. *Map of the Shenandoah Valley* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/99446754/>.

Hotchkiss, Jedediah. 1864a. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [1-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625101/>.

Hotchkiss, Jedediah. 1864b. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [3/8-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625102/>.

Hotchkiss, Jedediah. 1895/1864a. *Battle Fields of Fisher's Hill and Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies, No. 29*. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].

Hotchkiss, Jedediah. 1895/1864b. *Map of the Battle Field of Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies, No. 2*. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.069].

Hotchkiss, Jedediah. 1895/1864c. *Sketch of the Battle of Belle Grove or Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, plate 99. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.099].

Chapter 13:

Figures



Figure 13.1 Bottomland at Long Meadow. Photo by authors.



Figure 13.2 Bottomland at Bowman's Mill. Photo by authors.



Figure 13.3 Bottomland on the Bowman-Hite farm. Photo by authors.



Figure 13.4 Upland above the Bowman-Hite house. Photo by authors.



Figure 13.5 Rolling upland at the Heater House. Photo by authors.



Figure 13.6 Upland pasture at the Bowman-Hite Farm. Photo by authors.



Figure 13.7 Upland fields at Belle Grove. Photo by authors.



Figure 13.8 Corn in the bottomland above Bowman's Mill Ford with upland pasture above. From the Mollus Collection.



Figure 13.9 Wooded slopes at the Bowman-Hite Farm. Photo by authors.



Figure 13.10 Woodland at the crest of the hill above the Middletown Cemetery. Photo by authors.



Figure 13.11 Cedar Creek below the Bowman-Hite Farm. Photo by authors.



Figure 13.12 Heater House spring house ruins. Photo by authors.

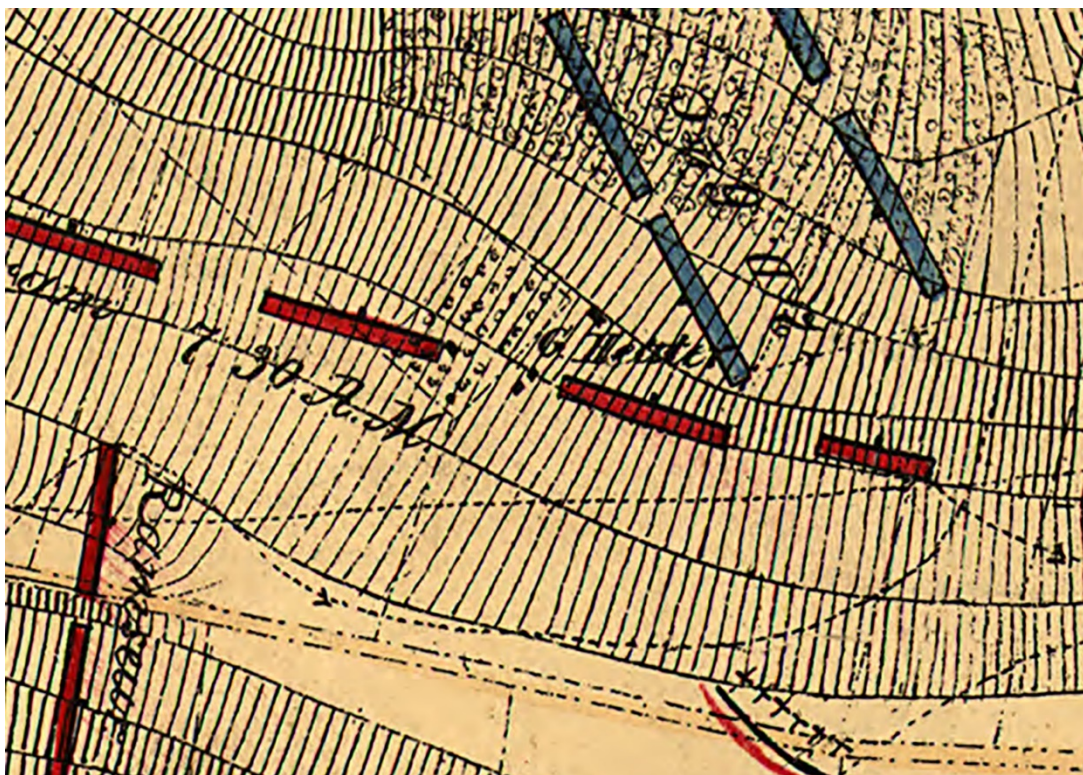


Figure 13.13 Detail from Gillespie's 1873 map of the Battlefields of Fisher's Hill and Cedar Creek showing the Heater's Farm Orchard.

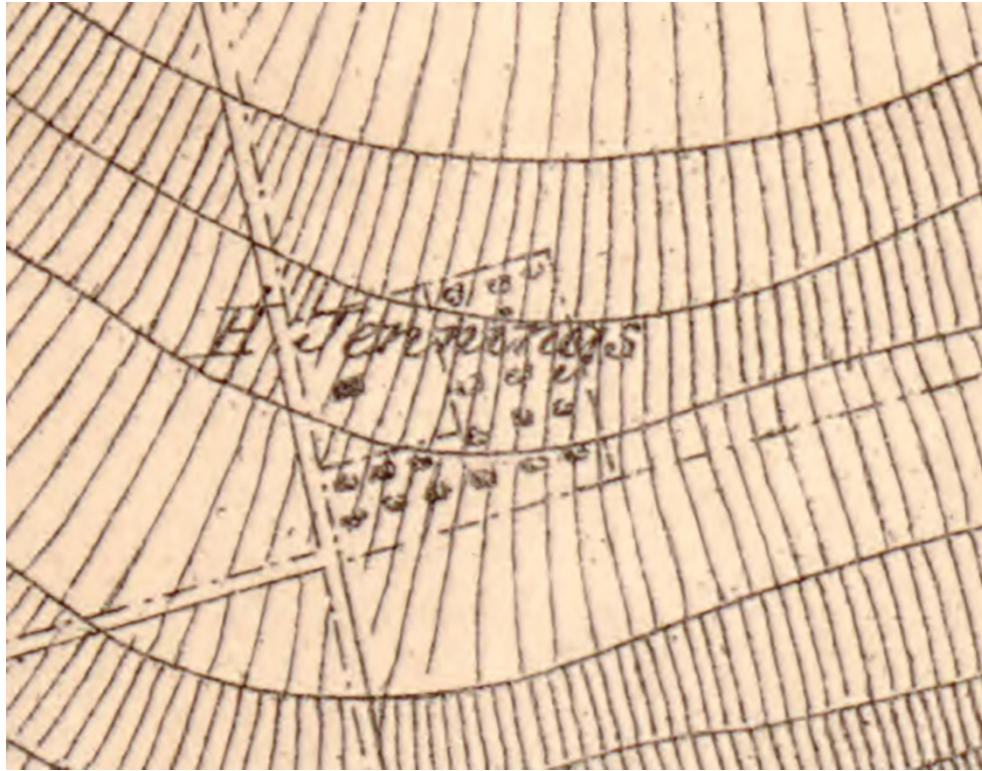


Figure 13.14 Detail from Gillespie's 1873 map of the battlefields of Fisher's Hill and Cedar Creek showing the Jennings Farm Orchard.



Figure 13.15 The present-day Orchard at Belle Grove. Photo by authors.



Figure 13.16 The remnant Orchard at the Bowman-Hite Farm in 2012. Photo by authors.

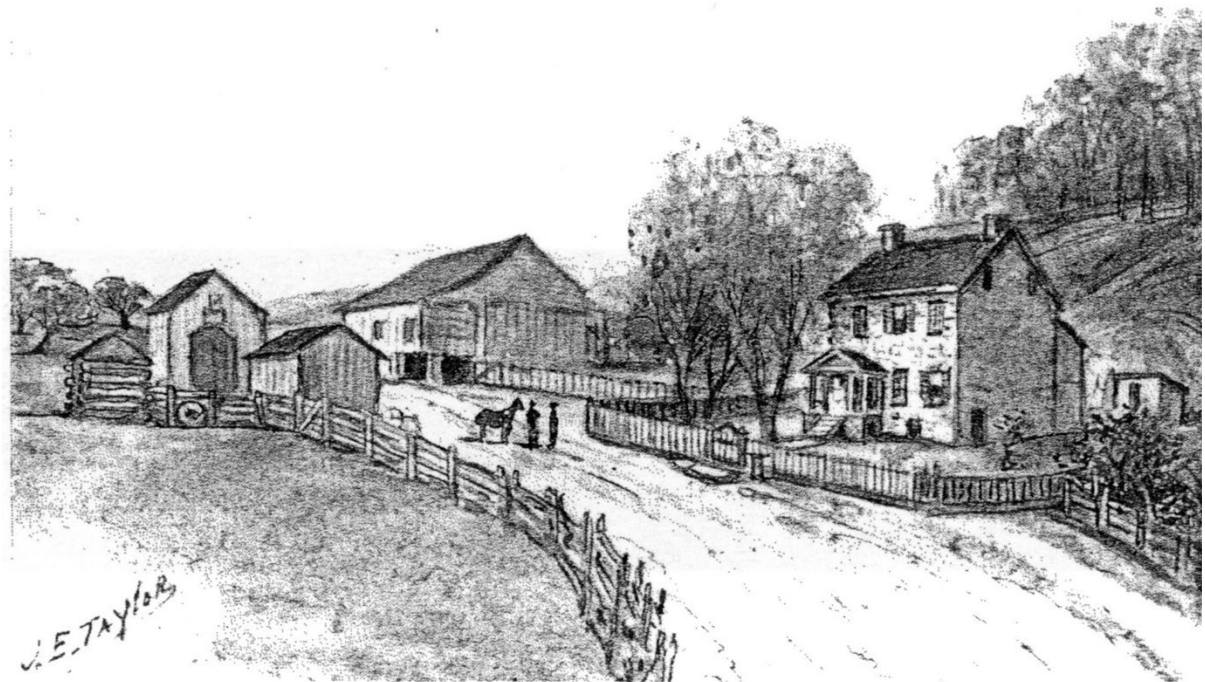


Figure 13.16.1 Taylor House and road. Sketch shows the farm subdivided by fences and gates. From James E. Taylor's sketchbook.



Figure 13.17 Stone "fences" along the Valley Pike in the 1880's. From the Biscoe Collection.



Figure 13.18 Rail Fences on the Cedar Creek Battlefield in the 1880's. From the Biscoe Collection.



Figure 13.19 Rail fences enclosing upland pastures, c. 1880. From the Mollus Collection.



Figure 13.20 Board fencing enclosing the agricultural fields above Bowman's Mill Ford fields, c. 1880. From the Mollus Collection.

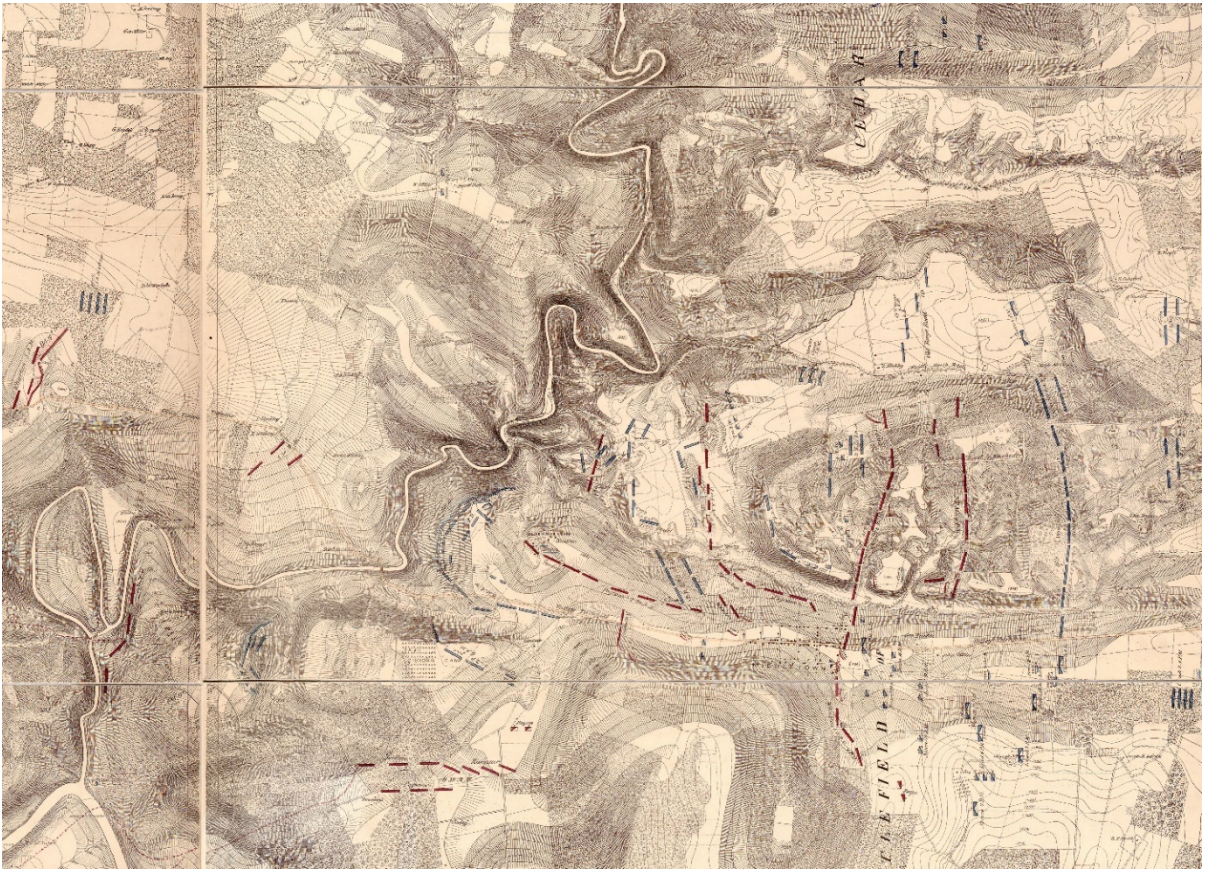


Figure 13.21 Gillespie 1873 map of the Battlefields of Fisher's Hill and Cedar Creek showing fences and property lines.

VIRGINIA FARMING.

L. TUCKER, Esq.—Being a constant reader of the *Cultivator*, and not finding many communications from this part of the valley of Virginia, I thought it would not be intruding too much on your time to read an account of our farm, which is called the "Plains." This farm was taken up by a Mr. James Wood, and patented on the 12th day of January, 1746, exactly one hundred years ago this day. It was sold some four or five times, until my father bought it in the year 1829. My older brother moved on it in the year 1833, and was on it until 1835. He then bought a farm adjoining the town of New-Market, and I moved to this place, where I have been since. When my father bought this farm it was in very bad order; there was not a good pannel of fence on it, and not a single gate; the roof of the barn had been blown off by a storm and the barn-yard was only fenced in by an old rail fence, and not an acre of clover was on the place. The land was worked on the skinning system." The barn-yard was so full of old manure that it was almost impossible to get to the barn, and some of the fields were so poor that one of them produced only four bushels of rye per acre, in the year 1837. The land lies well for cultivation; it is not very hilly, but there are about 100 acres of it a black marl bottom, and about 150 acres of upland, which is a sandy clay; there are also about 165 acres of wood land attached to it. We have run a lane through the centre of the farm so that we can let the cattle run from the barn-yards to any of the fields. We have hung 32 gates

to the yards, lane, and fields, so that we can get about without ever tearing down any fence. The gates are made on the plan that you published in your January number, page 18. There is a spring on the adjoining farm which runs through our bottom land and empties into the Little Shenandoah river that passes along the edge of our farm. We have a merchant mill on the bank of the river which is run by the spring branch; we have also a saw mill which is run by the river. The spring branch runs through the edge of the cattle yards, so that the cattle can get water at all times. The lane also has communication with the spring branch, so that the cattle can come from any of the back fields to the branch for water. We have graded a greater part of the lane, and have turnpiked nearly all the low places, so that we can get along at all seasons of the year. We have adjoining the barn three yards, with sheds, for the cattle, one yard with a shed for the sheep, and a horse stable with a large yard, in which is a shed for wagons, cariole, cart, and farm implements, also two small buildings for saddles and tools. The saw-mill is only about 100 feet from the cattle yards, so that we can easily haul all the saw dust to the horse stable and cattle yards, which we find a very good article for absorbing the liquids of the manure. We also find that tan bark is a very good article for the same purpose; we therefore have adopted the plan of bringing a load along when we take corn, flour, &c., to New-Market, which is only three miles from this place. We have improved the land very much with clover, plaster, ashes, and manure, and a proper rotation of crops. We find that the following rotation is very suitable for this farm.

First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.
Corn with Manure.	Oats.	Wheat.	Clover with plaster and ashes.	Ditto.	To be pastured.
Seventh Year.	Eighth Year.	Ninth Year.	Tenth Year.	Eleventh Year.	Twelfth Year.
Fallow.	Wheat.	Rye or bearded wheat, with short manure.	Clover with plaster and ashes.	Ditto.	To be pastured.

By the above system you will find that we have six fields in clover, three in wheat, one in oats, one in corn, and one in fallow. The best parts of the four clover fields are mowed, and the other is left to rot on the ground; the two other clover fields are pastured but lightly, as we send all our young cattle and sheep to our mountain farm, on the head of the river. We find that plaster and ashes have a very good effect on the upland, but on the marl bottom it does not have any effect. The upland is very good for clover, and the bottom is very suitable for timothy. The upland had a considerable quantity of loose rocks, but we hauled nearly all of them into the lane, and into several sink holes and dragged earth over them with the road scraper. There were also a great many rocks in the fence corners that were hauled there some years ago; we also hauled hauled them into the sink holes.

We have a pond at the mill which we have cleaned out several times, and hauled the mud, composed principally of marl, on the wheat fields, and harrowed it in with the wheat. It has proved a very good article on the upland, answering better than stable manure in the adjoining field. The last year we hauled out 131 four horse loads of the mud, 154 loads of barn yard manure in the spring, and 84 loads in the fall.

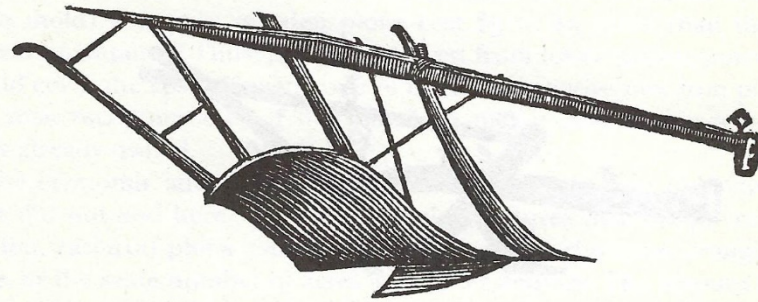
The year 1845 was very dry in this part of the valley, so that all summer crops were very short, but the wheat yielded tolerably well. The following was the quantity of hay, &c., raised on the Plains farm in the year 1845.

20 wagon loads of hay; 672 bushels of oats; 31 bush. of rye; 113 bush. potatoes; 650 corn; 800 wheat.

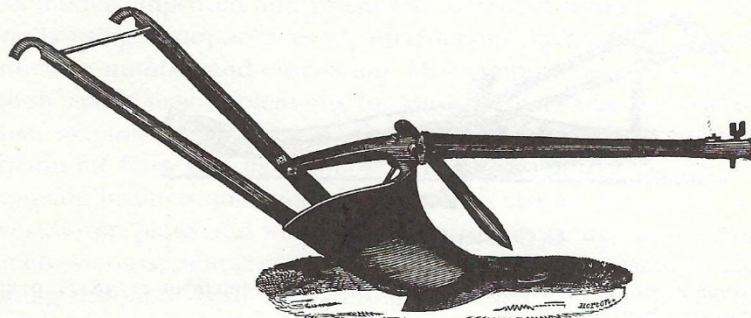
We have 119 sheep, 35 head of cattle, and six horses. We have a corn fodder machine which is run by a two horse power; It is the middle size of "Eastman's Patent." It was made too weak, so that we had to take it through a thorough repair, but now it does tolerably well. We have large mangers in the cattle sheds, where we feed the cut corn fodder in the evening, and straw in the morning. The sheep get straw in racks in the morning, and hay in the evening, but when the snow is off the ground they are permitted to run to the field that is to be put into corn in the spring; we then give no hay, but only straw. We also give a bucket full of oats to the 119 head, every evening and morning, in small mangers. The sheep-racks are made on the plan that the "Economs" have them in Germany. We have tried the "feeding boxes," but do not like them as well as the racks. When the manure is hauled out of the sheep-yard in the spring, we plow it up, and plant cucumbers, melons, beans, &c., which do very well, as the ground gets very rich by the sheep manure.

By attending to the sheep on the above plan we have very good luck with the lambs. Last spring we raised 29 lambs out of 32. Our sheep are grade Saxons, which seem to suit our climate very well. We put the rams to the ewes the latter part of October, so that the lambs will come the latter part of March, which is the best time for this part of the country; the lambs will then be able to travel to our mountain farm, after the ewes are sheared, which is the first week in May. Our young cattle are also then taken to the mountains, so that we

Figure 13.22 The twelve-year cycle for the "proper rotation of crops" employed at The Plains, a farm three miles from New Market, Virginia in the Shenandoah Valley. Published in *The Cultivator* in 1849.

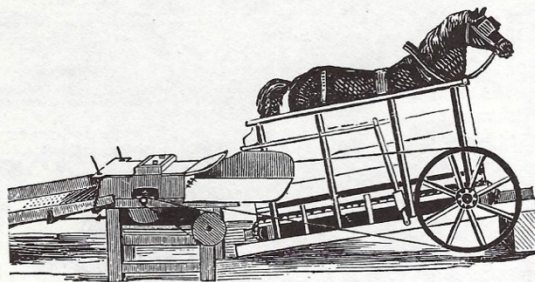


A. Murray's plows, early 1820s

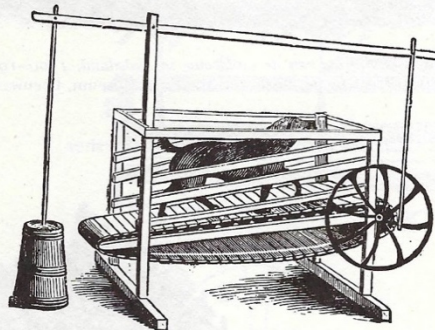


B. McCormick's plow, late 1820s

Sources: *American Farmer*, 2 (August 11, 1820), p. 160, and 12 (October 8, 1830), p. 240.



A. Horse treadmill with threshing machine



B. Dog treadmill with churn

Source: John J. Thomas, *Farm Implements and Farm Machinery* (New York: Orange Judd, 1869), pp. 188, 191.

Figure 13.23 (Top) McCormick's improved plow. (Middle) A horse-powered threshing machine. (Bottom) A dog-powered treadmill churn, c. 1860. From McClellan 1997.

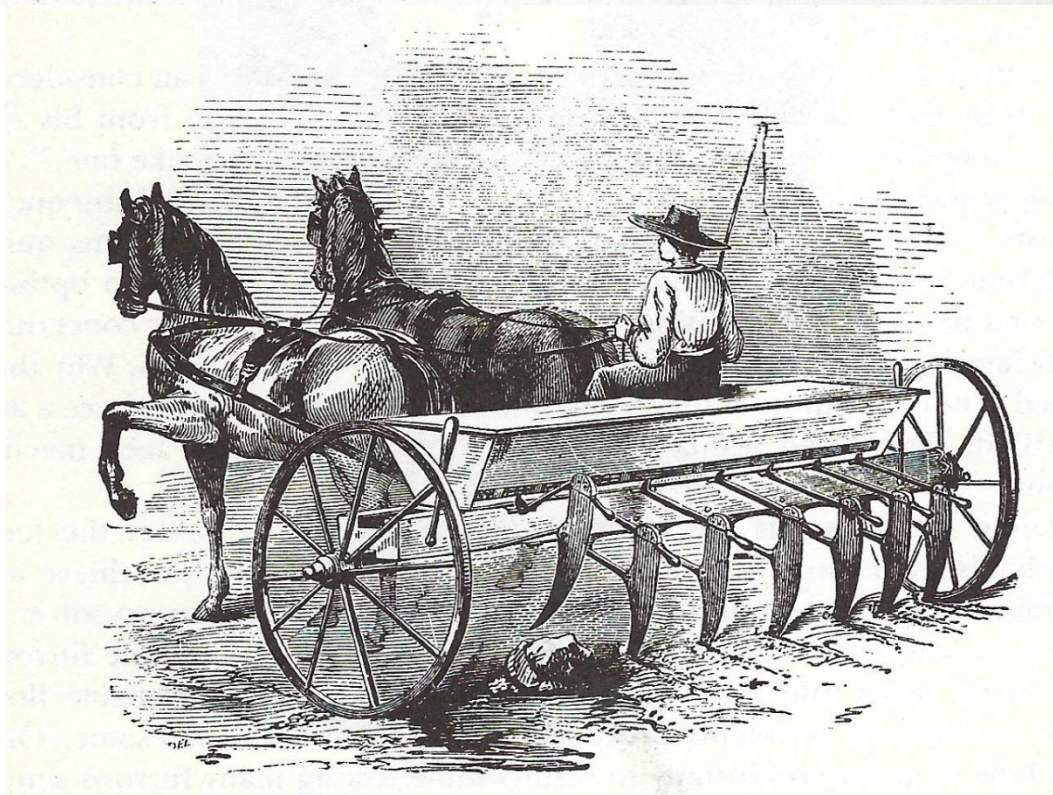
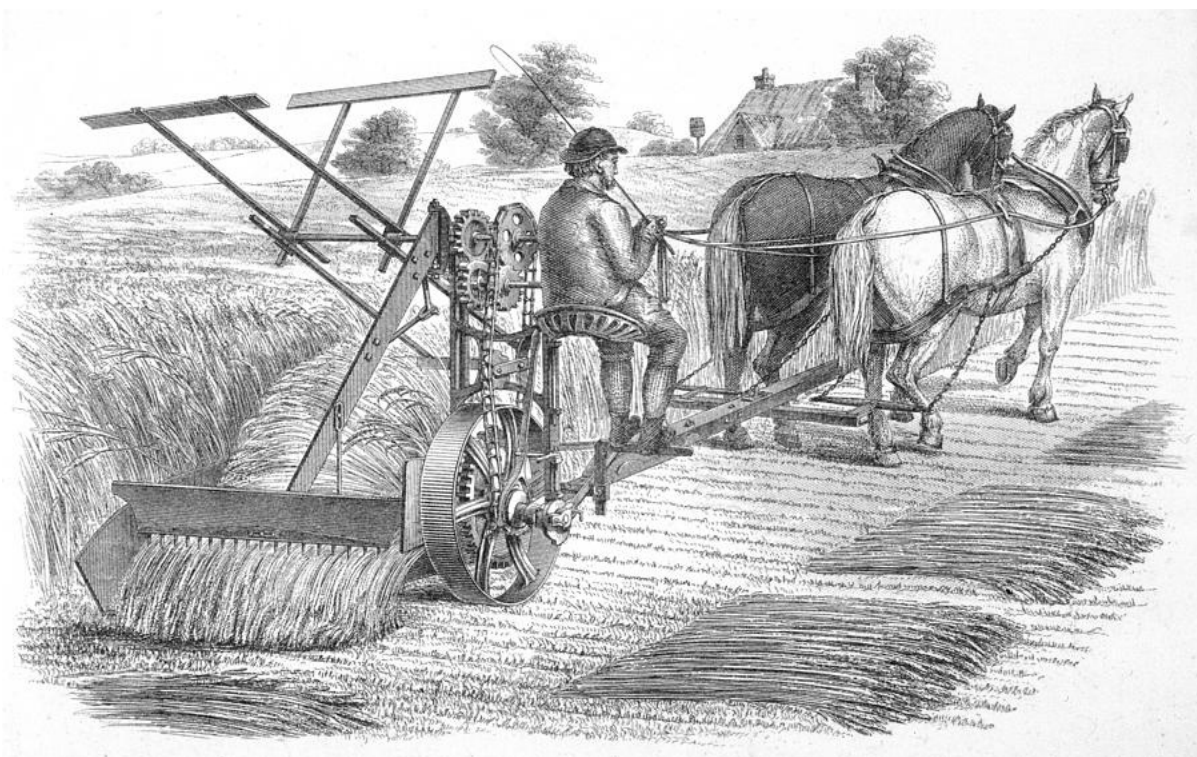


Figure 13.24 (Top) McCormick reaper, c. 1850. From Mary Evans Library Photographs. (Bottom) Palmer's wheat drill. From McClelland 1997.



Figure 13.25 Farm complex along the Valley Pike. From the Biscoe Collection.

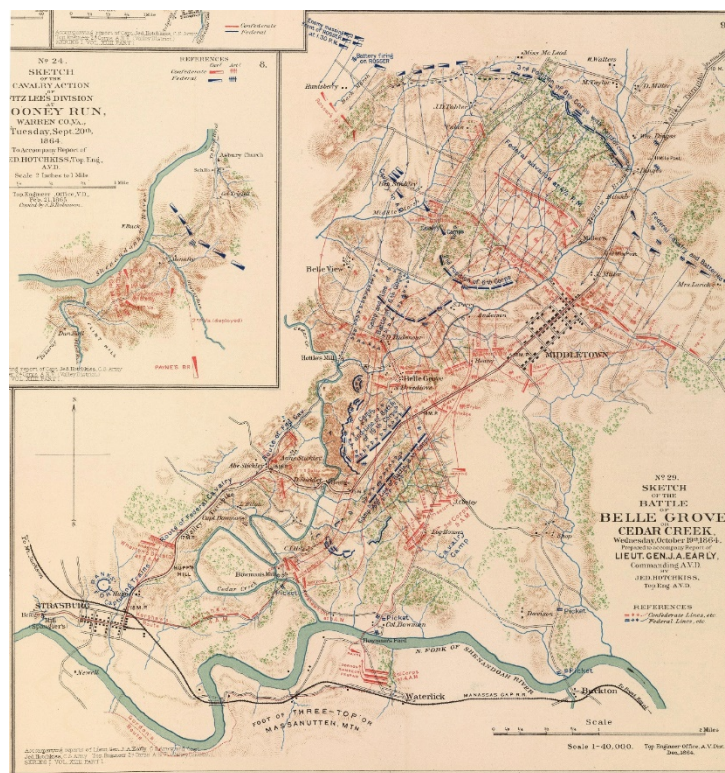


Figure 13.26 Jedediah Hotchkiss' Sketch of the Battle of Belle Grove and Cedar Creek, c. 1895.

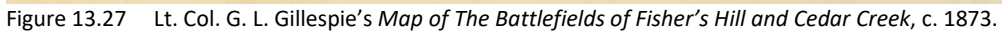




Figure 13.28 The open uplands east of the Valley Pike looking northeast across Cedar Creek in the 1880's. From the Biscoe Collection.



Figure 13.29 Panorama looking northwest along the Valley Pike between Belle Grove and the Stickley Farm in the 1880's. From the photos of Thomas and Walter Biscoe. Photo collage assembled by the authors.



Figure 13.30 (Top) Agricultural fields above Bowman's Mill Ford in 2011. Photo by authors. (Bottom) The same fields in in the decades after the battle. From the Mollus Collection.

Chapter 14

The Agricultural Landscape: Interpretation Opportunities

The thematic narratives developed in this study provide a deep map of the specific physical circumstances, events, contexts and opportunities that influenced agriculture and the agricultural landscape as it would develop along Cedar Creek and the lands of the Cedar Creek and Belle Grove National Historical Park. The narratives situate the agricultural landscape of the Park within the powerful interpretive stories that intersect here and gave form and character to this landscape. Working the land and improving its potential were always operational objectives of the farmers and planters who settled here. Agriculture as it developed here was not an isolated undertaking, it was an integral part of our national story.

Agriculture, as it developed in the lower Shenandoah Valley and, in particular, along Cedar Creek, was profoundly influenced by local, national and international events and contexts. As this study shows, understanding the agricultural landscape that developed here can enrich our understanding not only of the Battle of Cedar Creek but also provide a critical interpretive armature through which the many overlapping stories can be told including the story of settlement along Cedar Creek and its rich environmental context; the story of evolving transportation infrastructures that served the agricultural economy of the lower Valley; the story of period milling and its integration with agriculture practices; and the story of agricultural economics and early American merchant networks that connected the lower Valley with the world at large. Agriculture as it developed here can also be the armature for bringing to light the stories of America's Progressive Farming and Agricultural Reform Movement; the crops and livestock operations that characterized the region's exemplary mixed farming agricultural system; and provide exemplars of Progressive Farming practices on typical lower Valley farms and plantations. Agriculture can also serve as an important lens through which to tell the story of the land's important role as the Battle of Cedar Creek unfolded.

This study has also revealed that the evidence to bring forth the story of agriculture here is widely scattered, fragmented, and as yet incomplete. There is scant, detailed information about the practice of agriculture on specific individual sites within the patchwork of open fields and forest that developed here. Given the fragmented and incomplete evidence, bringing the agricultural landscape to life is a challenge - a puzzle of stories that can be brought together to reveal both the exemplary practice of agriculture here and the evolution of the agricultural landscape along the lower reaches of Cedar Creek and the lands of the Cedar Creek and Belle Grove National Historical Park.

In response to the fragmented and incomplete detailed site-specific evidence available, this study has brought to light the rich contextual evidence that links the evolution of agriculture along Cedar Creek to larger narratives of regional, national and international importance. The study's overlapping thematic narratives provide a rich contextual understanding of the

evolution of the agricultural landscape of the lower Shenandoah Valley and provided a clearer understanding of the character defining events, features, and practices that defined the agricultural landscape along lower Cedar Creek and the lands of the Cedar Creek and Belle Grove Historical Park from the mid-18th century through the first half of the 19th Century and the Civil War.

The broad contextual framework within which the agricultural landscape along Cedar Creek evolved has revealed two overarching critical infrastructures that can be interpreted for Park visitors. The first can be characterized as the environmental infrastructure of the land itself, its geology, topography, soils, vegetation, and hydrology, attributes that both structured the physical landscape along lower Cedar Creek and defined the land's rich agricultural potential. The lands along the lower reaches of Cedar Creek were particularly well favored for successful agriculture and the settlement generation quickly recognized the lands' attributes and worked to harness all that they offered in support of successful agricultural operations. The mix of land uses, and the evolving agricultural practices along Cedar Creek developed in response to the natural infrastructure there and would give form and character to the spatial composition of the agricultural landscape.

Understanding the area's environmental context at the time of settlement provides an important foundation for understanding the early settlement along the lower reaches of Cedar Creek and the eventual success of farming and agricultural operations that developed there.

The area's geology at the limestone/slate interface gave the lower reaches of Cedar Creek a rich variety of resources, including varied soil types that were suitable for supporting a mix of agricultural land uses and a full range of period agricultural practices focused upon growing crops, raising livestock, and maintaining woodlots. The soils of the limestone lands were recognized as highly productive for corn, wheat, and pasture grasses. Limestone outcroppings found close to the surface in the lower valley's uplands, provided a ready supply of building material for the early settlers and, later, the limestone would be processed into agricultural lime to enrich agricultural fields. Limestone walls, made of stone harvested from newly cleared agricultural fields, would help to define the spatial character of Cedar Creek's agricultural landscape. In its varied forms and uses, limestone would become a defining material presence throughout the Valley.

The shale lands while considered "unproductive for most forms of agriculture" featured a topography well-suited for developing water-powered mills. Cedar Creek's dynamic presence as it traverses the limestone/slate interface, and its potential as a power source on lands sloping lands with the necessary elevation drop for water-powered mills, fostered the development of a vibrant milling industry along lower Cedar Creek that supported local agriculture and was the instrumental means of converting the region's primary grain crop, wheat, into the region's most important trade commodity, flour. It was flour, more than any other commodity that linked the farmers of the lower Valley with regional, national and international markets.

Access to water resources has been recognized as perhaps the most important single factor in governing the process of the early settler's population dispersal. But property boundaries in the Cedar Creek Neighborhood, and at the earlier settled nearby Opequon Neighborhood, were carefully cast to capture a variety of natural resources in addition to water, including fertile soil, bottomlands, rolling uplands, and steeper, upland forested slopes. The large catchment area of Cedar Creek brought periodic flooding along the stream's course as it passes through the original Bowman Patent lands and the present-day Cedar Creek and Belle Grove National Historical Park. The periodic flooding deposited sediments that replenished the rich bottomlands along Cedar Creek including the lands along the creek extending from Harmony Hall and the Bowman-Hite Farm to the North Fork of the Shenandoah River. Finally, the strategic importance of Cedar Creek and its numerous fords would be contributing factors to bringing the Union and Confederate Armies together here at the Battle of Cedar Creek in 1864.

The forest along Cedar Creek at the time of settlement and the mix of tree species within the forest composition provided settlers with the necessary variety of timber resources required by varied agricultural operations. As timber was harvested to clear "improved" agricultural land along Cedar Creek, forest fragments, often with superior species or located on steep terrain or less productive shale lands or on land too rocky to farm, were retained as woodland to provide the raw materials for fencing, fuel, and processed lumber for future farm use. Trees and shrub thickets in steep ravines on the Cedar Creek Battlefield, land that had never been "improved" for agricultural use, would prove to be important defining landscape features during the Battle of Cedar Creek.

Complementing the environmental infrastructure along lower Cedar Creek was a second, man-made infrastructure developed over time to both enable and support lower Shenandoah Valley agriculture and the regional agricultural economy. Included among the man-made infrastructures was the regional transportation infrastructure of roads, river transportation improvements, canals, and railroads necessary to deliver the produce from harvested crops and livestock from farm to local, regional, national and international markets. The ongoing efforts to improve roads connecting the lower Valley to the eastern ports and the merchant networks developed by farmers and planters in the lower Valley extended well into the 19th Century. These efforts were accompanied by widespread interest in developing a waterborne transportation network to bring the produce of the upper and lower Shenandoah Valley to Virginia's eastern ports. Merchants from the Potomac River port of Alexandria in particular actively promoted improved navigation of the Potomac and then the Shenandoah Rivers as a means of speeding western agricultural produce and other goods to distant markets. By 1819, improvements to navigation on the North Fork of the Shenandoah River would bring river transportation to the mouth of Cedar Creek, only a short distance from Bowman's Mill. By 1834 farmers along Cedar Creek could ship their agricultural produce from Harper's Ferry on the Potomac River by rail to Baltimore. 1836 brought a rail connection to Winchester and by 1853 the Manassas Gap Railroad had reached Strasburg and the nearby farmers along Cedar Creek reaped the

benefits of competition between three competitive alternatives for the shipment of goods to eastern ports.

In the lower Valley, the demand for improved transportation was propelled by an general understanding that faster, more efficient means of transportation were essential precursors to a prospering agricultural economy. As Warren Hofstra has observed, "It was by road and wagon...that farmers took the first step in transforming their wheat crops into flour profits." For Hofstra, the roads in the lower Shenandoah Valley were the physical manifestation of the settlers' needs to connect with one another, to facilitate local exchanges, and to connect the farmers of the lower Valley to markets for their agricultural production. The fine-grained" local "road system" that quickly developed was comprised primarily of country lanes that all "all led somewhere," from farmstead to farmstead, to the Great Road leading to Philadelphia, to the road to Baltimore, and to those roads that led east through the gaps in the Blue Ridge to Alexandria and the Potomac and Rappahannock River ports.

Perhaps most significantly, the local roads connected farmers to the network of mills that comprised a second, man-made infrastructure supporting Valley agriculture. That network of mills included grist mills, merchant mills, sawmills, and hammer mills that processed much of the agricultural production of the lower Valley into market commodities; processed local mineral resources into agricultural fertilizer and the "chemistry" that supported progressive agriculture regimens, and transformed local timber resources into fencing and lumber for farm structures that would, in the 19th Century, be used to subdivide and spatially organize the region's developing agriculture landscape according to the principles of Progressing Farming that sought a "better way" for agricultural endeavors.

The third critical man-made infrastructure developed to support agriculture in the lower Valley were the merchant networks that planters and farmers established to bring lower Valley agricultural production to national and international markets. The merchants who comprised this economic infrastructure were located primarily in those eastern port towns and cities with good road connections to the lower Shenandoah Valley. Among the ports were Philadelphia, Baltimore, Alexandria, Georgetown, Falmouth, Fredericksburg, Colchester, and Dumfries. The trade with the merchant network was not one-way trade with goods moving only from the lower Valley to the merchants at the eastern ports. The merchants were a vital part of the economic infrastructure that also brought to the lower Valley the necessary goods needed by lower Valley farmers to farm their lands. It was through the network of merchants that seeds and plants, fertilizers, soil amendments, and farming equipment were shipped to the lower Valley. The merchant network thus included numerous merchants from whom lower Valley farmers and planters purchased household goods, clothing, fabrics, wine and spirits, food stuffs, construction materials, and discretionary goods purchased with the income provided by their agricultural commodity sales.

A additional component of the lower Valley's economic infrastructure that supported agriculture were those lower Valley towns that, over time, began to "perform significant

market functions.” The most important lower Valley town integrated into the agricultural economy was Winchester, which upon its founding, served as an important stop along the Valley Pike and during the French and Indian War became a center of the wartime cattle trade. With the coming of the railroad to Winchester in the 1830’s, the town became a collection point for lower Valley agricultural goods being shipped to Baltimore merchants. Closer to Cedar Creek, another lower Valley town that was integrated into the agricultural economy was Middletown. In Middletown, new and improved agricultural equipment was manufactured. The agricultural equipment manufactured in Middletown was purchased by lower Valley farmers and planters.

One additional infrastructure that served the agricultural economy of the Shenandoah Valley merits noting, the network of horticultural importers and commercial nurserymen from whom lower Valley planters and farmers could purchase seeds and plants to establish and maintain their agricultural operations. Few records of these purchases exist but the establishment and rise of commercial nurseries in America coincides with the rise of agriculture in the lower Shenandoah Valley. Among the possible sources for seeds and plants were botanist John Bartram of Philadelphia, who published what some consider to be the first plant catalogue by an American nursery in 1783, William Prince of Long Island, who published a list of Fruit Trees and Shrubs “to be Sold” in 1771, and Bernard McMahon, of Philadelphia, who was in business by 1802-3 and published what is considered the first “seed catalogue to be published in America, a broadsheet titled “A catalogue of Garden, Grass, Herb, Flower, Tree, & Shrub-Seeds, Flower-Roots, etc.”

All of these infrastructures supported the development and evolution of the varied agricultural operations in the lower Shenandoah Valley from the time of settlement through the Civil War and beyond. What traces then of those infrastructures and agricultural operations that served as character-defining elements exist today on the lands of the Cedar Creek and Belle Grove National Historical Park?

Interpretive Opportunities

Three important opportunities exist to interpret the larger contextual infrastructures that served the agricultural landscape of the lower Shenandoah Valley and the lands along Cedar Creek, the period local road system in the Cedar Creek neighborhood, the concentration of mill seats along Cedar Creek and its lower tributaries, and the Hite Family Store.

The first interpretive opportunity are the local roads in the Cedar Creek Neighborhood that lead to the early mill seats and fords on the streams within the park. The existing alignments and traces of the period local road system can serve as an exemplar of the transportation infrastructures that linked farm to farm and farm to mill and would grow to serve the larger economic networks established and cultivated by lower Valley farmers and planters. The lower Valley’s agricultural production, including wheat and flour, was first transported by road to local regional, national, and international markets. The roads also

provide an entrée to introduce the story of the evolving road, river, and rail transportation networks that developed to deliver lower Valley agriculture to markets at the eastern ports.

While no intact period mills exist along Cedar Creek or its tributaries within the Park, the concentration of mill seats located along Cedar Creek and its lower tributaries offer an important second interpretive opportunity. The concentration of mill seats can serve as an exemplar of the extensive network of mills that served agriculture in the lower Valley and serve as an entrée to the story of integrated milling and agricultural operations; the cultivation of wheat in the Shenandoah Valley; and the lower Valley's emergence in the early 19th century as the leading wheat-producing region in Virginia. The mills also provide an entrée to the story of the lower Valley's transition from early grist mills to commercial merchant mills; the development of flour as the lower Valley's most important agricultural commodity; the close association between milling and distillery operations, the Progressive Farming Movement's emphasis on efficiency as a precept of progressive farming; and the multiple roles of farmer, miller, and distiller that Valley farmers often undertook in the daily practice of mixed farming.

The Hite family General Store, which traded as Hite and Son, provides an important third interpretive opportunity. The story of the store can serve as an entrée to the story of the complex merchant networks that linked lower Valley plantations and farms to local, regional, national and international markets and bring alive the story of the merchant network established by the Hite family in the 18th century and cultivated and expanded until the beginning of the Civil War.

The natural processes and lay of the land – the geology, soils and landforms in the Cedar Creek Neighborhood and the existing spatial character of the agricultural landscape along Cedar Creek and within the Cedar Creek and Belle Grove National Historical Park can provide important interpretive opportunities to tell the stories of the land's inherent natural infrastructure, the initial subdivision of lands to insure adequate resources for each farm, the subsequent "improvement" of agricultural lands into farm fields, pastures, and woodland resources, and the resultant character defining matrix of fields, pastures, orchards, and woodlands that developed in the lower Valley. (Fig. 14.3 and 14.4) The agricultural landscape that developed along Cedar Creek and its character-defining spatial matrix and landforms along with the resources of Cedar Creek offer a signature opportunity to interpret the Battle of Cedar Creek, a battle fought on a very specific agricultural ground. The character-defining spatial matrix of the agricultural lands is, however, vulnerable to incremental change as woodlands areas have encroached into previously open agricultural fields and pasture areas since the Battle of Cedar Creek. Figures 14.5 – 14.10 illustrate the incremental change to the landscape's spatial character that has occurred from the time of the battle to 2002.

Examples allowing for the interpretation of all of the character-defining contexts and physical elements can be found and/or interpreted from examples within the current boundaries of the Cedar Creek and Belle Grove National Historical Park including those

identifying features of the environmental context and infrastructure and those identifying man-made infrastructures outlined in this report.

Limits of This Study

While the rich environmental context of the lands along Cedar Creek is well understood, the extant physical evidence of ephemeral agricultural practices remains incomplete. The physical traces of agricultural operations in specific fields have all but vanished. What has not been well documented are the detailed agricultural histories of the existing fields within the agricultural lands of the Park. Crop rotations undertaken in the 19th century and the lack of period documentation, make it difficult to know with certainty what crops were planted in a particular field at a particular time. Tracing the impact on the land of changing, improved agricultural practices, improved crop and livestock selections, and the introduction of improved agricultural equipment would require archaeology at a scale beyond the resources available at the present time. Some character-defining elements of the agricultural landscape, including certain fence types, leave few traces. The Virginia Worm Fence, for example, (Fig. 14.1) typically leaves no clear archaeological evidence. However, various fence types, including stone fences, can be seen in the battlefield photographs taken by the Biscoe Brothers in the 1880's. (Fig. 14.1 - 14.3)

The fragmentary nature of the physical evidence is compounded by scattered and fragmentary archival evidence as well. The various family papers that do exist are either incomplete or in some cases have yet to be fully catalogued and digitized. A potential source of additional information are period records from the many merchants with whom farmers in the lower Valley are known to have traded, Locating and researching all the extant merchant archives is, however, well beyond the scope of this project. Some known archives, including the records of the Shenandoah Company and the business records of the Allason brothers, are so extensive that a complete review of the documents would have required time and effort beyond the scope of this project. Following other, tantalizing research threads, including locating and researching potentially widely scattered existing archives, would also require more time than was available for this research. While a complete history of the business records for lower Valley farming operations that traded with dozens of merchants over multiple generations may simply never be possible to recover, some critical source material no doubt resides in archives that have thus far eluded researchers.

Armatures for On-Going Documentation and Expanding the Knowledge Base

We anticipate that, over time, more evidence and understandings will come to light through continued archaeology and additional archival research undertaken as part of future studies. In anticipation of those evidential discoveries and future site documentation findings, this project has developed a data base framework, Appendix A, B, and C, that can serve as an armature for aggregating the findings from on-going research and future

discoveries and assist in providing a more complete understanding of the agricultural landscape of Cedar Creek and the Cedar Creek and Belle Grove National Historical Park. Appendix A provides a Microsoft Excel formatted data file that includes the known Merchant Network established by Isaac Hite and expanded by Isaac Hite, Jr. and other family members at Belle Grove. The data base currently includes entries spanning the period 1790 to 1863 and provides a framework for expanding the known network as includes the *Vineyard Site Evaluation Report* created by Virginia Tech's Center for Geospatial Information Technology. The report was created utilizing software developed by the Center and will allow for the creation of environmental data for individual specified agricultural fields, pastures, orchard sites, and woodlands within the boundary of the Cedar Creek and Belle Grove National Historical Park. Appendix C includes the newly created "Cedar Creek Agricultural Landscape GIS Database. This GIS Database offers an analytical tool for understanding the evolution of the agricultural landscape of the Cedar Creek and Belle Grove National Historical Park. The GIS database's layers, or feature classes, and the associated attribute tables describe and spatialize various components of the agricultural landscape of the Park and its immediate context.

Chapter 14:

Figures



Figure 14.1 The Virginia Work, or Snake Rail Fence on the Cedar Creek Battlefield, c. 1880's. From the Biscoe Collection.



Figure 14.2 Post and Rail Fence. From the Biscoe Collection.



Figure 14.2.1 Stone Wall "Fences" along the Valley Pike near Middleton. From the Biscoe Collection.



Figure 14.3 The mosaic of open fields, pasture and woodland along Cedar Creek. From the Biscoe Collection.



Figure 14.5 Area Woodland Vegetation, 1864. Interpolated from the maps of the Battle of Cedar Creek. From Katen et al. 2012.

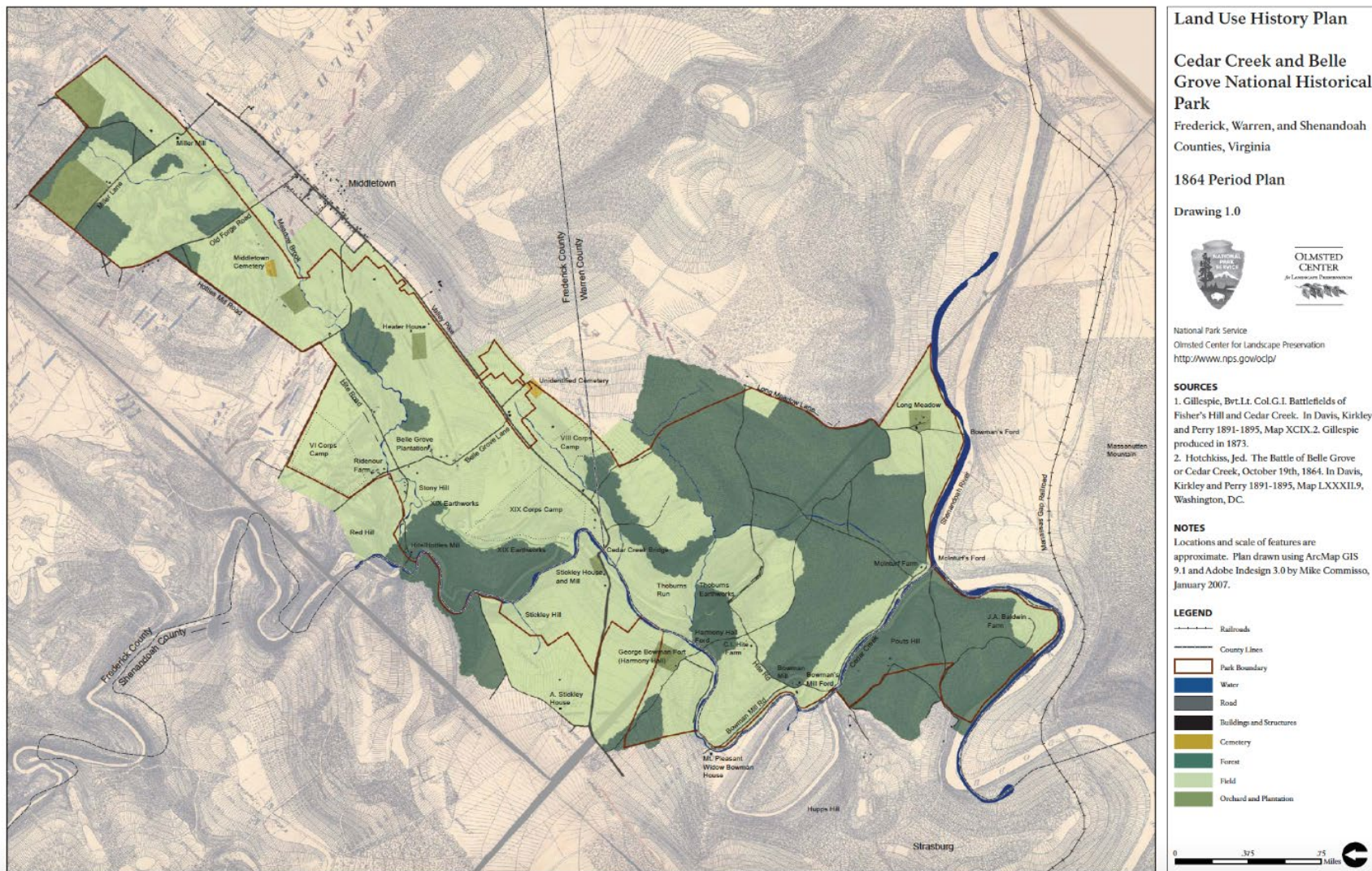
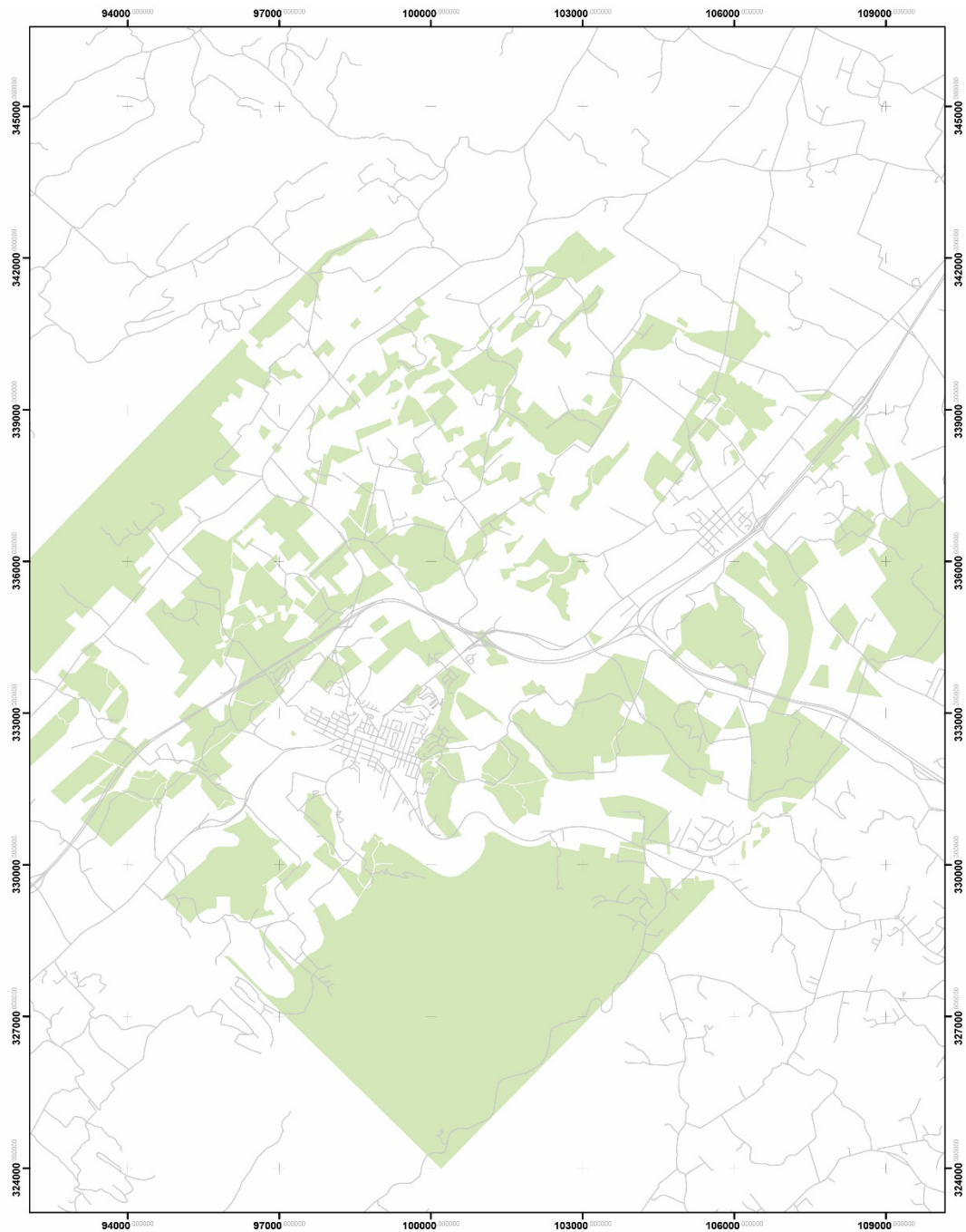


Figure 14.5.1 Land Use History Plan: 1864 Period Plan, Cedar Creek and Belle Grove National Historical Park showing forest, fields, and orchard locations. From *Land Use History of the Cedar Creek and Belle Grove National Park*, Olmsted Center for Landscape Preservation 2007.



Legend

- Existing Road
- Vegetation_1873

1:70,000

0 0.350.7 1.4 2.1 2.8 Miles



Figure 14.6 Area Woodland Vegetation, 1873. Interpolated from the maps of the Battle of Cedar Creek and period maps. From Katen et al. 2012.



Legend

- Existing road
- Vegetation_1895

1:65,000
0 0.3750.75 1.5 2.25 3 Miles



Figure 14.7 Area Woodland Vegetation, 1895. Interpolated from the maps of the Battle of Cedar Creek and period maps. From Katen et al. 2012.



Figure 14.8 Bowman-Hite House Woodland Vegetation Composite, 1937-1967. From Katen et al. 2012.

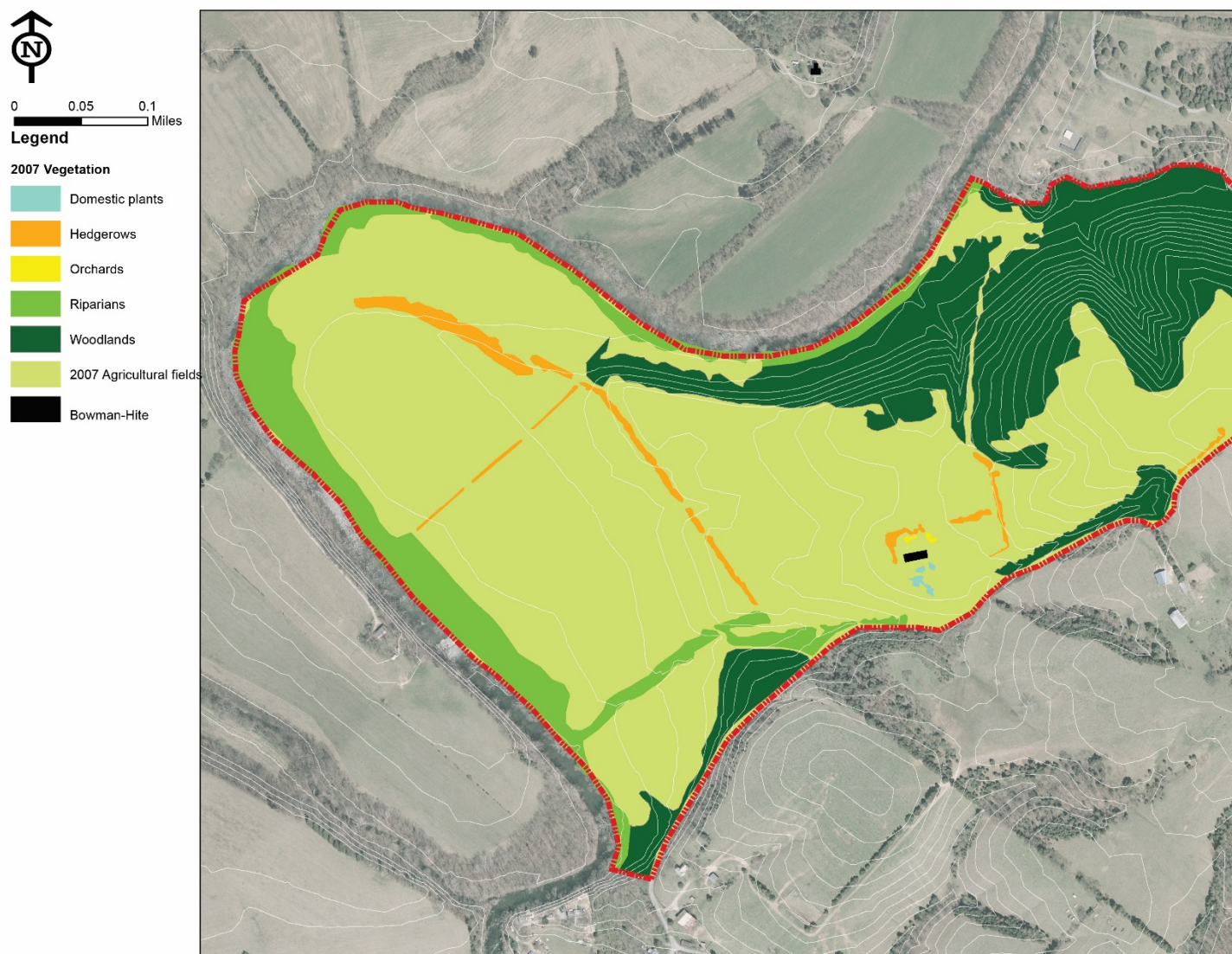


Figure 14.9 Bowman-Hite House Vegetation Matrix of Woodlands, Agricultural Fields, and Orchards. From Katen et al. 2012.

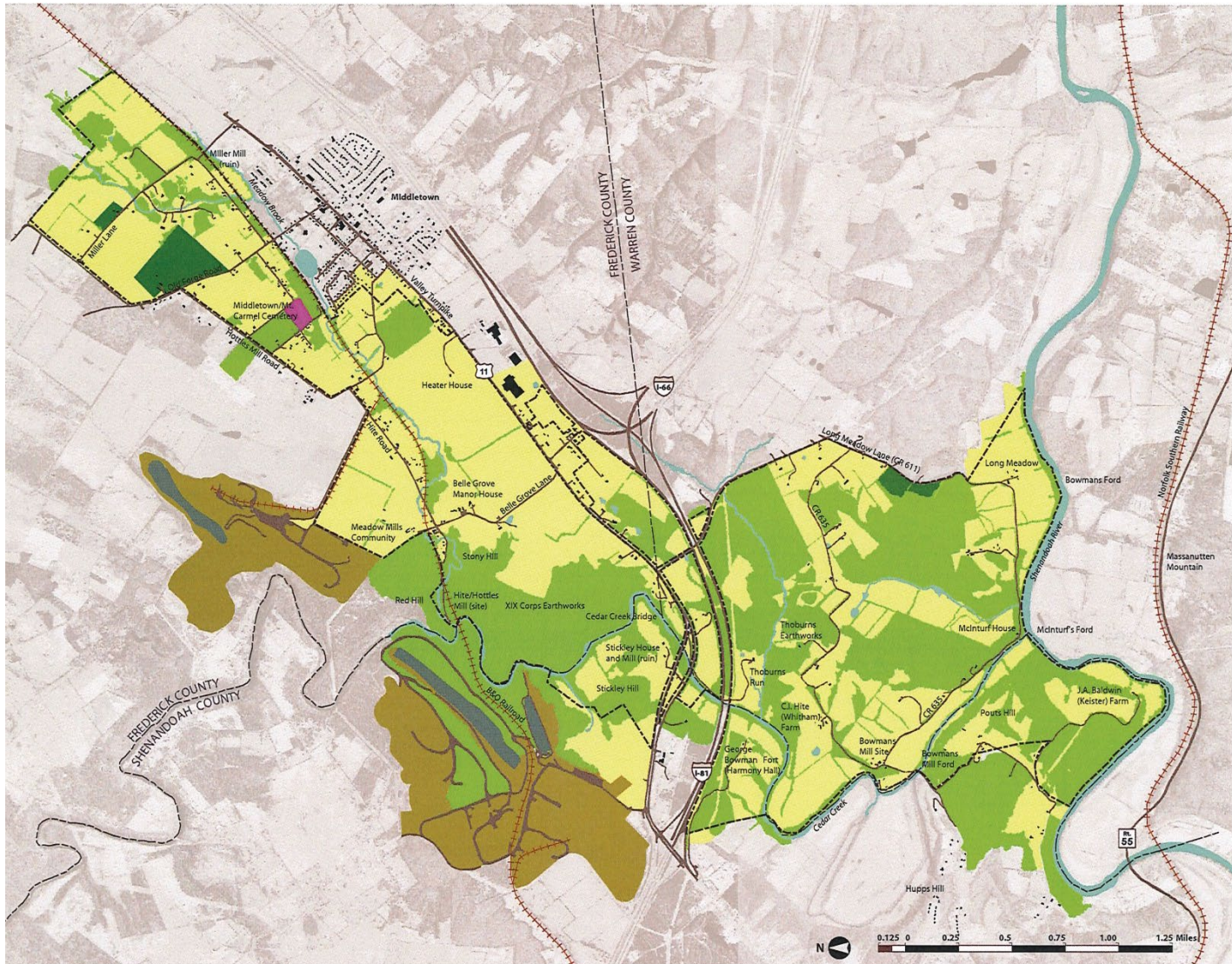


Figure 14.10 Cedar Creek and Belle Grove National Historical Park Land Use Map, 2002. Showing the existing vegetation matrix of "Forest/Woodland," "Field/Grassland," and Orchards. From the *Land Use History of the Cedar Creek and Belle Grove National Historical Park*, Olmsted Center for Landscape Preservation 2007.

Comprehensive Bibliography

1850 Agricultural Census Schedule 4 – Productions of Agriculture, Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1850-agriculture.pdf>
July 24, 2019

1860 Agricultural Census Schedule 4 – Productions of Agriculture. Accessed at:
<https://www.archives.gov/files/research/genealogy/charts-forms/1860-agricultural.pdf>
July 24, 2019

Allason Shenandoah Store Account Books, Ledger B October 1762- September 1763, Library of Virginia

“A Great Downpour for 30 Hours,” *Winchester Times*, June 5, 1889

“Agricultural Fairs”, *Spirit of Jefferson*, Charlestown, Va. 12 October 1852

“Agriculture Society of the Valley,” *Winchester Star* 1822

Alexandria Lodge No. 39, Alexandria, Virginia, 1783-1788
<http://www.aw22.org/documents/Lodge39.pdf> Accessed August 14, 2019

“*The American Farmer*”, October 10, 1820 <https://www.loc.gov/item/sf88091326/> accessed 07.24.19

“American Machinery,” in *The Southern Planter*, Vol. 1, No. 3, p. 35

Ancestry.com. *1850 U.S. Federal Census - Slave Schedules* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2004. Original data: United States of America, Bureau of the Census. *Seventh Census of the United States, 1850*. Washington, D.C.: National Archives and Records Administration, 1850. M432, 1,009 rolls.

Ancestry.com. *1860 U.S. Federal Census - Slave Schedules* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2010. Original data: United States of America, Bureau of the Census. *Eighth Census of the United States, 1860*. Washington, D.C.: National Archives and Records Administration, 1860. M653, 1,438 rolls.

“Andrew Clow & Company,” *The Papers of George Washington Digital Edition*, ed. Theodore J. Crackel. Charlottesville: University of Virginia Press, Rotunda, 2008.
<http://financial.gwpapers.org/?q=content/andrew-clow-company> Accessed August 14, 2019

Ann T. Hite Inventory and Appraisal by I. S. Danner, Ino M. Miller, and A. S. Burgess, dated February 24&25, 1851, (Will book, 23, pages 184-190 County Clerk’s Office, Frederick County., Winchester

Articles of Agreement with Overseer Little [HFP, vol. 3, doc. 3]

Archives of Maryland, "Samuel Hinks, (1815-1887), MSA SC 3520-12475,"
<https://msa.maryland.gov/megafile/msa/speccol/sc3500/sc3520/012400/012475/html/12475bio.html> Accessed August 14, 2019.

"Author James Madison"

<https://wwwFOUNDERS.archives.gov/?q=%20Author%3A%22Madison%2C%20James%22&s=1111211111&r=1> Founders on line, National Archives, 2018, Accessed August 14, 2019

Benedetta, J., "Colonial and Early National Transportation, 1700-1800"
<https://www.roads.maryland.gov/OPPEN/II-Colon.pdf>. Accessed Nov. 19, 2018

Bentley, J. P., "The Harvest," in *The Valley Farmer*, Vol. 2, p. 10-11. Nd, Special Collections Call Number S1.V3, University of Virginia Library

"Bernard McMahan," *Thomas Jefferson Encyclopedia*, 2019
<https://www.monticello.org/site/research-and-collections/bernard-mcmahan>].

Biltmire, William. 1846, February 12. "For rent, The mill situated on Cedar Creek . . ."
Shenandoah Herald.

Blosser, Jacob M., compiler/editor. n.d. *Letters from Belle Grove: An Edited Collection of Hite Family Papers from the Archives of Handley Regional Library and the Virginia Historical Society: Vols. 1-4*. Middletown, VA: Belle Grove Plantation.

Bragdon, Kathleen, *Ethnographic Overview and Assessment: Cedar Creek & Belle Grove National Historical Park*, Boston: Northeast Region Ethnography Program National Park Service, 2009

Bruggeman, S.C. "The Shenandoah River Gundalow," *Virginia Magazine of History and Biography*, 118(no.4), 315-349.

Bruggeman, Seth C. "The Shenandoah River Gundalow and the Politics of Material Reuse," The College of William and Mary, Master's Thesis, 2000.

Buck, Captain S.D., "Battle of Cedar Creek – Tribute to Early," in *Confederate Veteran*, Vol. II, no. 3, March 1894.

Carr, Francis Frederick, Jr., *The Southern Planter, 1841-1861*, University of Richmond, Master's Thesis, 1971

C. D. Hinks to Issac Hite and Burgess, Jan 1844 , Hite Family Papers, Folder 8 Dec, 1843-March 1844, Handley Regional Library, Stewart Bell Jr. Archives Room

Cedar Creek and Belle Grove National Historical Park. 2019. *Long Meadow: Silent Witness to Valley History* [website]. Retrieved from <https://www.nps.gov/cebe/learn/historyculture/long-meadow.htm>

Chapman, Thomas, "Journal of a Journey Through the United States, 1795-6," in *The Historical Magazine and Notes and Queries Concerning the Antiquities, History and Biography of America*, Morrisania, NY: Henry B. Dawson, 1869, Series II, Vol. 5p. 357-368

"Colin and James Ross To James Madison," 19 May, 1803,
<https://wwwFOUNDERS.archives.gov/?q=%E2%80%9Cto%20James%20Madison%20from%20Colin%20and%20James%20Ross%2C%2019%20May%201803%E2%80%9D%20&s=1111311111&sa=&r=3&sr=> Accessed 08.01.19

and

<https://FOUNDERS.archives.gov/documents/Madison/02-05-02-0016> Accessed 08.01.19

"Colin and James Ross To James Madison," 13 July, 1803, Accessed 08.01.19
<https://wwwFOUNDERS.archives.gov/index.xqy?q=%E2%80%9Cto+James+Madison+from+Colin+and+James+Ross%2C+19+May+1803%E2%80%9D&s=1111211111&sa=&r=1&sr=> Accessed 08.01.19

"Colonial and Early National Transportation, 1700-1800"
<https://www.roads.maryland.gov/OPPEN/II-Colon.pdf>. Accessed August 12, 2019

Commisso, Michael and Eliot Foulds, *Land Use History for Cedar Creek and Belle Grove National Historical Park*, Boston: National Park Service Olmsted Center for Landscape Preservation, 2007.

Couper, William, *History of the Shenandoah Valley, Vol. II*, New York: Lewis Historical Publishing Company, Inc. 1952.

Craven, Avery O., "The Agricultural Reformers of the Ante-bellum South," in *The American Historical Review*, Vol. 33, no. 2, (Jan. 1928), p. 310

Crothers, A. Glenn, "Quaker Merchants and Slavery in Early National Alexandria, Virginia, in: *Journal of the Early Republic*, 25, (Spring 2005)

The Cultivator: A Monthly Journal Devoted to Agriculture, Horticulture, Floriculture and to Domestic and Rural Economy, Luther Tucker: Albany, New York, New Series, Vol VI, August 1849, p. 238, <https://archive.org/details/cultivator01socigooq/page/n6> Accessed 07.30.19

Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised, National Park Service, 2007

"Edmund Ruffin Biography," *The Civil War in America: Biographies*
<http://www.loc.gov/exhibits/civil-war-in-america/biographies/edmund-ruffin.html>
Accessed 07.24.19]

Egnal, Marc, "The Changing Structure of Philadelphia's Trade with the British West Indies, 1750-1775" in *The Pennsylvania Magazine of History and Biography*, vol. 99, No. 2, April, 1975, p. 156-179. <https://journals.psu.edu/pmhb/article/viewFile/43135/42856> Accessed July 7, 2019

Founders Online, National Archives,
<https://wwwFOUNDERS.archives.gov/?q=%20Author%3A%22Madison%2C%20James%22&s=1111211111&r=1> Accessed August 14, 2019

Fromm, Roger W. "The Migration and Settlement of Pennsylvania Germans in Maryland, Virginia and North Carolina and Their Effects on the Landscape," in *Pennsylvania Folklife*, Vol. 37, no. 1, Autumn 1987, p. 33-42

Geier, Clarence R. and Phoebe Harding, *An Overview and Assessment of Cultural Resources and Landscapes Within the Legislated Cedar Creek-Belle Grove National Historical Park, Vol. II, Part 1: Archaeological Sites and Cultural Features*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence R. and Kimberly Tinkham, *An Overview and Assessment of Archeological Resources and Landscapes within Lands Managed by Cedar Creek and Belle Grove National Historical Park. Volume I: Park History, Previous Research, Cultural Resources and Significant Historic Military and Domestic Themes, Threat to Resource, with Recommendations for Resource Management and Interpretation*, Harrisonburg, VA: Department of Sociology and Anthropology, James Madison University, 2006

Geier, Clarence and Joseph Whitehorne, "An Archaeological Assessment of Cultural Resources South of the Confluence of Meadow Brook and Cedar Creek in Frederick County," Virginia, nd

Geier, Clarence, Joseph W. A. Whitehorne, and Kimberly D. Tinkham, *An Overview of Cultural Resources and Landscapes Within the Legislated Cedar Creek -Belle Grove National Historical Park, Vol. III,: Cultural and Natural Viewscapes*, June 2006

The Genius of Liberty
<https://virginiachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN----->

Genius of Liberty, 27 September 1825 <https://virginiachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN----->

Gilham, William, "The Soils of the Valley of Virginia," in *The Southern Planter*, Volume 16, 1856, Richmond: P.D. Bernard, pp. 20-28

<https://archive.org/details/historicalmagazi1869morr/page/356> accessed 07.31.19

Gilpin, W. Freeman, The Grain Trade of Alexandria, Virginia, 1801 – 1815, in: *The North Carolina Historical Review*, Vol. 4, No. 4, (October, 1927), The North Carolina Office of Archives and History, pp. 404 – 427

Grassl, Gary C., “KLAUSWUST: FOREMOST GERMAN-AMERICAN HISTORIAN DIES AT AGE 77 (1925-2003)”
<https://loyolanotredamelib.org/php/report05/articles/pdfs/Report45MemoriampXI-XIV.pdf>
accessed 07.30.19

Greer, Mathew C., “Archaeological Investigations of Two Possible 19th Century Quarters Sites at Belle Grove Plantation, Frederick County, Virginia: 44FK520 and 44FK521” February, 2016

Greer, Matthew C., “Panopticism and the Practical Politics of Slavery in the Shenandoah Valley,” paper presented at the 47th Annual Middle Atlantic Archaeology Conference, Virginia Beach, Virginia, 18 March 2017

Greer, Matthew “Starting Over after Being Taken Away: Enslaved Women, Forced Relocation, and Sexual Relationships in Antebellum Virginia,” unpublished conference presentation, 2017

Greiner, Anthony, “Navigation and Commerce on the Shenandoah River of Virginia,” in *Log of the Mystic Seaport, Mystic*, Conn.: Mystic Seaport Museum, Summer, 1990 p. 42-46

Hamrick, Charles, *Virginia Merchant: William Hodgson of Alexandria: His Daybook for 1800-1803*, Athens, Georgia: Iberian/New Papyrus Publishing, 2011

Hart, Emma and Cathy Matson, “Situating Merchants in Late Eighteenth-Century British Atlantic Port Cities,” in: *Early American Studies: An Interdisciplinary Journal*, University of Pennsylvania Press, Vol. 15, no. 4, Fall 2017, pp. 660-682

Hart, Freeman H., *The Valley of Virginia in the American Revolution 1763-1789*, Chapel Hill: The University of North Carolina Press, 1942

“The Harvest,” in *The Valley Farmer*, Winchester, Virginia, Vol. 2, no. 1. P. 10-11

Hayden, Bruce P., and Patrick J. Michaels, “Virginia’s Climate, accessed at:
<http://climate.virginia.edu/description.htm> July 5, 2019

Hazen, Theodore, R., “The History of Flour Milling in America,”
<http://www.angelfire.com/journal/millrestoration/history.html> Accessed 072119

Heath, Barbara J., "Nineteenth-Century Small Farms and Plantations," in *The Archaeology of 19th-Century Virginia, Special Publication No. 36 of the Archeological Society of Virginia*, John H. Sprinkle, Jr. and Theodore R. Reinhart Editors, Richmond, Va.: Spectrum Press, 1999

"Hemp," in *The Southern Planter*, Vol 1. No. 3, April, 1841 p. 40

Hendricks, Christopher E, *The Backcountry Towns of Colonial Virginia*, Knoxville; University of Tennessee Press, 2006

Henretta, James A., "Families and Farms: Mentalite in Pre-Industrial America, in *The William and Mary Quarterly*, Vol. 35, NMo. 1 (Jan., 1978) pp. 3-32 <https://jstor.org/stable/1922569> Accessed 01.07.2019

Herron, James, "Shenandoah River Survey Field Notes 1831-1832," *New Shenandoah Company Records 1831-1849*, Archive and Manuscript Room, BPW 103 30030, Library of Virginia

Herron, James. 1834-1837. *Sketchbooks*. Virginia Board of Public Works, New Shenandoah Company records (BPW 103.30030). Richmond, VA: Virginia Museum of History and Culture, Special Collections.

Hilliard, Tabatha, Keri Sansevere, and James Harrison, " A Home, a Seminary and a School: Remembering the Ross House," <https://tcnj.academia.edu/TabithaHilliard> Accessed 073019 and at [https://www.academia.edu/21874224/A Home a Hotel and a School Remembering the Ross House Union House](https://www.academia.edu/21874224/A_Home_a_Hotel_and_a_School_Remembering_the_Ross_House_Union_House) Accessed 073019

Hinks to Hite and Burgess, January 10, 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia]

Hinks to Hite and Burgess, February 10, 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

Hinks to Hite and Burgess, December 1843, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

Hinks to Hite and Burgess, March 1844, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

Hinks to Hite and Burgess, June 1844, Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia,

"The History of Baltimore" in The City of Baltimore Comprehensive Master Plan (final Draft) online at: <https://planning.baltimorecity.gov/sites/default/files/History%20of%20Baltimore.pdf>, Accessed July 16, 2018

Hite Family Commonplace Book (1776-1859), Blosser, ed. (Virginia Historical Society: Hite Family Papers MssIH637535a-40) Doc. 33.p. 6-7

Hite, Issac, Jr. Isaac Hite Will: Frederick County Clerk's Office. Will Book 19, pages 354-357
3rd codicil

Hite Family Papers (HFP), Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections, Winchester, Virginia Including:

Folders, 1, 2, 3, 4, 5, 6, 7, 8, 9

HFP, vol. 1, doc 8

HFP, vol. 1, doc 9

HFP, vol. 1, doc 10

HFP, vol. 1, doc. 25-26

HFP, vol. 1, doc. 32

HFP, vol. 1, doc. 45

HFP, vol. 1, doc. 61

HFP, vol. 2, doc. 6

HFP, vol. 2, doc. 7

HFP, vol. 2, doc. 12-20

HFP, vol. 2, doc. 28

HFP, vol. 2, doc. 29

HFP, vol. 2, doc. 39

HFP, v. 3, doc. 2

HFP, v. 3, doc. 3

HFP, v. 3, doc. 5

HFP, v. 3, doc. 6

HFP, v. 3, doc. 7

HFP, v. 3, doc. 8

HFP, v. 4, doc. 8, (editor's introduction)

HFP, v. 3, doc 14

HFP, v. 3, doc 15

HFP, v. 3, doc. 16

HFP, v. 3, doc. 18

HFP, v. 3, doc. 19

HFP, v. 3, doc. 31

HFP, v. 3, doc. 32

HFP, v. 3, doc. 33

HFP, v. 3, doc. 35

HFP, v. 3, doc. 39 Last Will and Testament of Isaac Hite, Jr

HFP, v. 3, doc. 41

HFP, v. 4, doc. 8, ed. intro
 HFP, vol. 4, doc 9
 HFP, vol. 4, doc. 11
 HFP, v. 4, doc. 12
 HFP, v. 4, doc. 37
 HFP, v. 4 doc. 38
 HFP, v. 4 docs.
 HFP, v. 4 doc. 39
 HFP, v. 4 docs. 40-41
 HFP, v. 4, doc. 43-50
 HFP Korn and Wisemiller *flour receipts. (14-30, 31-36)*
 HFP, v. 4 docs. 54-70
 HFP, v. 4 doc. 72
 HFP, v. 4 docs. 84-88
 HFP, v. 4, doc. 89 (see editor's note)
 HFP, v. 4, doc. 90-91
 HFP, v. 4, doc. 93
 HFP, v. 4, doc. 96
 HFP, v. 4, doc. 99-100
 HFP, Folder 3, 1.01.34
 HFP Folder 3, 1.01.41
 Belle Grove Collection, 890 THL, Winchester, Virginia: Handley Regional Library Special Collections
 Box 3, Folder #10, Ann T. Hite 1851 estate inventory
 Box 5 , Folder 4: Will of James Hoge, July 1795
 Land Sale to Isaac Hite, 1794
 Folder 8: Testimony by Caroline Heater and John H. Crisman, Oct. 24, 1871
 Box 4 Folder 6
 Box 13, Folder 2: Heater Damage Claim
 Box 18, Folder 1, Folder 4, Folder 5, Folder 6

Hite Flour Shipped to Korn and Wisemiller in Alexandria (1796)
Shipping flour receipts. (14-30, 31-36)

Hofstra, Warren R., "A Separate Place: The formation of Clarke County, Virginia," White Post, Virginia: Clarke County Sesquicentennial Committee, 1986,

Hofstra, Warren R., "Ethnicity and Community Formation on the Shenandoah Valley Frontier, 1730-1800" in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Hofstra, Warren "Land Policy and Settlement in the Northern Shenandoah Valley," in *Appalachian Frontiers: Settlement, Society, & Development in the Pre-industrial Era*, Robert D. Mitchell , ed. Lexington: The University Press of Kentucky, 1991.

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R. , "Private Dwellings, Public Ways, and the Landscape of Early Rural Capitalism in Virginia's Shenandoah Valley," in *Gender, Class and Shelter: Perspectives in Vernacular Architecture, V*, edited by Elizabeth Collins Cromley and Carter L. Hudgins, Knoxville: The University of Tennessee Press, 1995.

Hofstra, Warren, *The Planting of New Virginia: Settlement and Landscape in the Shenandoah Valley*, Baltimore: The John Hopkins University Press, 2004.

Hofstra, Warren R., and Clarence R. Geier, "Farm to Mill to Market: Historical Archaeology of an Emerging Grain Economy in the Shenandoah Valley," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville; The University of Tennessee Press, 2000.

Hofstra, Warren R. and Robert D. Mitchell, "Town and Country in Backcountry Virginia: Winchester and the Shenandoah Valley, 1730-1800," in *The Journal of Southern History*, Vol. 59, No. 4, November, 1993, pp. 619-646.

Hofstra, Warren R., and Karl Raitz, eds., *The Great Valley Road of Virginia: Shenandoah Landscapes from Prehistory to the Present*, Charlottesville: The University of Virginia Press, 2010

Hunter, Robert Fleming, "The Turnpike Movement in Virginia, 1816-1860, PhD dissertation, Columbia University 1957.

"Inventory and Appraisement of the Slaves and Personal Estate of Isaac Hite dec'd taken in the 16 & 17 January 1837" by the executors and George Brinker, David Stickley, and George Bragg appraisers

Isaac Hite, Jr. to Isaac Bowman, 1817 [HFP, vol. 1, doc, 50]

Isaac Hite, Jr. to James Madison, Aug. 12, 1803, HFP, vol. 1, doc. 25

Isaac Hite, Jr. to Madison, Aug. 13, 1805, HFP, vol, 1, doc. 32

Isaac Hite Will: Frederick County Clerk's Office. Will Book 19, pages 354-357

James E. Taylor Sketchbook, Western Reserve Historical Society, Manuscript Collections, MS2152B,
<https://wrhs.saas.dgicloud.com/islandora/search/james%20taylor%20sketches?type=dismax>
Accessed July 30, 2019

“Jedediah Hotchkiss: Biography,” American Battlefield Trust, 2019
<https://www.battlefields.org/learn/biographies/jedediah-hotchkiss>, Accessed July 30, 2019

Jefferson, Thomas, “Garden Book, Page 49, Thomas Jefferson,” 1812, *Thomas Jefferson Papers*,
https://www.masshist.org/thomasjeffersonpapers/doc?id=garden_49&archive=garden&query=mcmahon&tag=text&num=10&rec=1&numRecs=1#firstmatch Accessed August 3, 2019

Johnson, Clifton, “A Girl in the Shenandoah Valley,” in *Battleground Adventures: The Stories of Dwellers on the Scenes of Conflict in Some of the Most Notable Battles of the Civil War*, Cambridge: Riverside Press, 1915.

Johnson, Clifton, *Battleground Adventures the Stories Of Dwellers on the Scenes Of Conflict in Some of the Most Notable Battles of The Civil War: Collected In Personal Interviews by Clifton Johnson*, Illustrated By Rodney Thomson, Boston and New York: Houghton Mifflin Company, 1915

Johnson, Robert L., “The Hydraulic Turbine: 01.01, The Barker’s or Scotch Water Wheel at Hacienda Buena Vista,” pp. 1-5. in *Barker’s Hydraulic Turbine 1851*, Dedication Brochure, Ponce, Puerto Rico, July 16, 1994, American Society of Mechanical Engineers and the Conservation Trust of Puerto Rico, 1994.
<https://www.asme.org/wwwasmeorg/media/resourcefiles/aboutasme/who%20we%20are/engineering%20history/landmarks/177-barker-turbine-hacienda-buena-vista-1853.pdf>
Accessed July 30, 2019

Kalbian, Maral S. and Leila O. W. Boyer, “Final Report African-American Historic Context, Clarke County, Virginia,” September, 26, 2002

Kalbian, Maral S. and Dennis J. Pogue and Margaret T. Peters, *Historic Overview and Physical Investigations of Fort Bowman, Shenandoah County, Virginia*, Berryville: Va., Maral S. Kalbian, LLC, September, 2014

Katen, Brian, Mintai Kim and Patrick Miller, *Bowman-Hite Farm, Cedar Creek and Belle Grove National Historical Park Cultural Landscape Analysis, Vols. 1 and 2*, Landscape Architecture Program, Virginia Tech, 2012

Keller, Kenneth W. “Our once beautiful but now desolated Valley,”
<http://www.shenandoahatwar.org/our-once-beautiful-but-now-desolated-valley/>
Accessed August 9, 2019

Keller, Kenneth W., “Rhinelanders on the Virginia Frontier,” in *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, edited by Michael J. Puglisi, Knoxville: The University of Tennessee Press, 1997

Keller, Kenneth W., "The Wheat Trade on the Upper Potomac, 1800-1860," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Kercheval, Samuel, *A History of the Valley of Virginia*, 4th edition, Strasburg, Va.: Shenandoah Publishing House, 1925

Klein, Daniel B., and John Majewski, "Turnpikes and Toll Roads in Nineteenth-Century America," <http://eh.net/encyclopedia/turnpikes-and-toll-roads-in-nineteenth-century-america/> August 12 2004.

Kline's Mill, Frederick County, USA <https://millpictures.com/mills.php?millid=2533&mill=Kline>, accessed 073019

Koons, Kenneth E., "The Colored Laborers Work as Well as When Slaves: African Americans in the Breadbasket of the Confederacy," in *Archaeological Perspectives on the American Civil War*, Clarence R. Geier and Stephen R. Potter, eds. Gainesville: University Press of Florida, 2000

Koons, Kenneth E., "The Staple of our Country: Wheat in the Regional Farm Economy of the Nineteenth-Century Valley of Virginia," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Koons, Kenneth E. "'Our once beautiful but now desolated Valley,'" <http://www.shenandoahatwar.org/our-once-beautiful-but-now-desolated-valley/> accessed August 12, 2019

Koons Kenneth E. and Jonathan Noyalas, *Historic Resource Study Cedar Creek and Belle Grove National Historical Park*, December 15, 2010

"Korn and Wisemiller Building, 202 South Saint Asaph & 502 Prince Streets, Alexandria, Independent City, VA," HABS # VA-704 Historic American Building Survey, 1975 <https://www.loc.gov/item/va0142/> Accessed July 30, 2019

LaBarbara, Jane Meeters, "Thomas and Walter Biscoe and their 1884 Allegheny Valley Tour," West Virginia University Libraries, <https://news.lib.wvu.edu/2016/07/06/thomas-and-walter-biscoe-and-their-1884-allegheny-valley-tour/> accessed October 2, 2018

"Land Sales: Valuable Farm for Sale" *Shenandoah Herald*, July 21, 1870

Laise, Kristen, "Were the Hites 'Nice' or 'Kind' to the people they Enslaved," training document dated Feb. 25, 2017 in *Cedar Creek and Belle Grove National Historical Park Archives*

Lewis, Thomas A., *The Guns of Cedar Creek*, New York: Harper and Row, Publishers, 1988

Lewis, Thomas A., *West from Shenandoah: A Scotch-Irish Family Fights for America 1729-1781: A Journal of Discovery*, Hoboken, New Jersey: John Wiley & Sons, 2004

Lincoln, William S., *Life with the Thirty-Fourth Mass. Infantry in the War of the Rebellion*, Worcester, Mass: Press of Noyes, Snow & Company, 1879.

"List of Enslaved Compiled from Notes in the Hite Family Commonplace Book (1776-1859)," Virginia Historical Society Collection, Virginia Museum of History and Culture, Richmond Virginia,: Hite Family Papers MssIH637535a-40) and at [https://bellegrove.org/images/uploads/List of Enslaved Recorded in Commonplace Book put on Website.pdf](https://bellegrove.org/images/uploads/List_of_Enslaved_Recorded_in_Commonplace_Book_put_on_Website.pdf), accessed 07.30.19

Mahr, Theorore C., *The Battle of Cedar Creek: Showdown in the Shenandoah October 1-30, 1864*. Lynchburg, Virginia: H.E. Howard, Inc., 1992

Malone, Miles, "Falmouth and the Shenandoah: Trade before the Revolution," in: *The American Historical Review*, vol. 40, no. 4 (July, 1935), p. 693-703. <http://www.jstor.org/stable/1842420> Accessed: November 25, 2018

Manning-Sterling, Elise, "Antietam: The Cultural Impact of a Battle on an Agrarian Landscape," in *Archeological Perspectives on the American Civil War*, Geier, Clarence R. and Stephen R. Potter, eds, Gainesville: University Press of Florida, 2000.

Marsh, William, *Landscape Planning, 5th Edition*, Hoboken, New Jersey: John Wiley & Sons, 2010

May Evans Picture Library <https://fineartamerica.com/featured/1-mccormick-reaper-mccormicks-patent-mary-evans-picture-library.html>

Maryland Manual On-Line "Historical Chronology of Frederick County, Maryland," accessed at: <https://msa.maryland.gov/msa/mdmanual/36loc/fr/chron/html/frchron.html>. Accessed August 9, 2019

McClelland, Peter D., *Sowing Modernity: America's First Agricultural Revolution*, Ithica: Cornell University Press, 1997

McMahon, Bernard, "A Catalogue of Garden, grass, herb, flower, tree & shrub-seed, flower-roots, &c.&c., 1804 Accessed at. <https://archive.org/details/CUbiodiversity3451435> July 23, 2019

"A Meeting of the Agricultural Society", *Shepherdstown Register*, 3 November 1855

Miller, J. 2019. MillPictures.com. Retrieved from <https://millpictures.com/>.

Miller, T. Michael, *Artisans and Merchants of Alexandria Virginia 1780-1820, vol. 1*, Bowie, MD: Heritage Books, 1991

Miller, T. Michael, *Artisans and Merchants of Alexandria Virginia 1780-1820, vol 2*, Bowie, MD: Heritage Books, 1992

Mitchell, Robert D., "Agricultural Change and the American Revolution: A Virginia Case Study," in *Agricultural History*, vol. 47, no. 2 (April 1973), pp. 119-132.
<http://www.jstor.org/stable/3742028>, accessed: 11-27-2017

Mitchell, Robert D., *Commercialism and Frontier: Perspectives on the Early Shenandoah Valley*, Charlottesville: University Press of Virginia, 1977

Mitchell, Robert D. "From the Ground Up: Space Place and Diversity in Frontier Studies," in., *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, Michael J. Puglisi, ed. Knoxville: The University of Tennessee Press, 1997

Mitchell, Robert D. and Warren R. Hofstra, "How do Settlement Systems Evolve? The Virginia backcountry during the eighteenth century," in *Journal of Historical Geography*, Vol. 21, no. 2, 1995, pp. 123-147

Mitchell, Robert D., *The Settlement Fabric of the Shenandoah Valley, 1790-1860: Pattern, Process, and Structure*," in *After the Backcountry: Rural Life in the Great Valley of Virginia 1800-1900*, Edited by Kenneth E. Koons and Warren R. Hofstra, Knoxville: The University of Tennessee Press, 2000.

Mitchell, Robert D., *The Southern Backcountry: A Geographical House Divided*," in *The Southern Colonial Backcountry: Interdisciplinary Perspectives on Frontier Communities*, David Colin Crass, Steven D. Smith, Martha A. Zierden, and Richard D. Brooks, eds., Knoxville: The University of Tennessee Press, 1998.

Mitchell, Robert D., Warren R. Hofstra, and Edward Conner, "Reconstructing the Colonial Environment of the Upper Chesapeake Watershed," in *Discovering the Chesapeake: The History of an Ecosystem*, edited by Philip D. Curtin, Grace S. Brush, and George W. Fisher, Baltimore: The John Hopkins University Press, 2001

Mollus Collection, US Army Military History Institute
U S Army Heritage and Education Center
At Carlisle Barracks

Moore, William H., Jerrell Blake, Jr., Kevin T. Goodrich, Thomas D. Young, and David W. Lewes, *An Archaeological Assessment of the Bowman-Hite Farm Property, Cedar Creek and Belle Grove National Historical Park, Warren County, Virginia*, Williamsburg, Virginia: William and Mary Center for Archaeological Research, 2012.

Morgan, Kenneth , Merchant Networks, the Guarantee system and the British Slave trade in Jamaica in the 1790's in, *Slavery & Abolition*, vol. 37, no.2, 2016, pp. 335-352 at: <http://dx.doi.org/10.1080/0144039X.2015.1116305> Accessed November 25, 2018)

National Park Service Cultural Landscapes Inventory: Whitham Farmstead: Cedar Creek & Belle Grove National Historical Park, Revised 2007

National Register of Historic Places Nomination for Opequon Historic District, Frederick County, Virginia p. 8]. https://www.dhr.virginia.gov/VLR_to_transfer/PDFNoms/034-5037_Opequon_Historic_District_2002_Final_Nomination.pdf accessed July 30, 2019

Newlon, Howard Jr., "Private Sector Involvement in Virginia's Nineteenth-Century Transportation Improvement Program" Howard Newlon, Jr. *Transportation Research Record* 1107, 1987
<http://onlinepubs.trb.org/Onlinepubs/trr/1987/1107/1107-001a.pdf> Accessed July 11, 2019

Nigro, Robert, review of *The Potomac Canal: George Washington and the Waterway West*. By Robert Kapsch, in *West Virginia History: a Journal of Regional Studies*, New Series Vol. 2, no.2, Fall 2008 pp. 111-112

Noyalas, Jonathan A., *The Battle of Cedar Creek: Victory from the Jaws of Defeat*, Charleston, S. C., History Press, 2009

Noyalas, Jonathan A. , *Two Peoples, One Community: The African American Experience in Newtown (Stephens City), Virginia, 1850-1875*, 2004

Olmsted Collection (National Trust) Hite Family Papers, NT 69.77.51, Handley Library, Winchester, Virginia

Palmer, Thomas H., "Observations of Virginia," May 30, 1814, in *Travels in the Old South: Selected from Periodicals of the Times*, ed. Eugene Schwaab, Lexington: University Press of Kentucky, 1973

Paonessa, Laurie J. 1996. *Archeological Investigations at the Heater House, Middletown, Virginia*." Submitted to the Cedar Creek Battlefield Foundation Inc. Middletown, VA.

Patrick, Vanessa, E., *Partitioning the Landscape: The Fence in Eighteenth-Century Virginia, Colonial Williamsburg Foundation Library Research Report Series – 0134*, Williamsburg, VA: The Colonial Williamsburg Foundation, 1983. At:

<https://research.history.org/DigitalLibrary/View/index.cfm?doc=ResearchReports%5CRR0134.xml> Accessed August 15, 2019

Pawlett, Nathaniel Mason, *A Brief History of the Roads of Virginia 1607-1840, (revised)* Charlottesville: Virginia Highway & Transportation Research Council, 2003

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Pawlett, Nathaniel Mason, "A Brief History of the Roads of Virginia 1607-1840, (revised)" Charlottesville: Virginia Highway & Transportation Research Council, 2003

Peters, Margaret, and Maral S. Kalbian, *The Bowman-Hite Property Warren County, Virginia: Narrative History, Timeline, and Annotated Bibliography*, 2010.

Peterson, Arthur G., "The Alexandria Market Prior to the Civil War," *William and Mary Quarterly*, Vol. 12 – Series 2, 1932, pp. 104-114.

Peterson, Arthur G., "Flour and Grist Milling in Virginia," in *The Virginia Magazine of History and Biography*, Vol. XLIII, no. 2, April, 1935. p 97-108.

"The Potowmack Canal" at <https://www.nps.gov/grfa/learn/historyculture/canal.htm> accessed August 9, 2019

Preisser, Thomas, M., "Alexandria and the Evolution of the Northern Virginia Economy, 1749-1776," in *The Virginia Magazine of History and Biography*, vol. 89, July 1981, no. 3 p. 282-293

Preisser, Thomas M., *Eighteenth-Century Alexandria, Virginia Before the Revolution, 1749-1776* College of William and Mary, 1977

Prince, William, "To be Sosd, by William Prince, at Flushing-Landing on Long Islan, Near ZNew York, A Large collection of Fruit Trees...etc. 1771 Accessed at: <http://scarc.library.oregonstate.edu/omeka/exhibits/show/seed/early-19th-century/early-19th-century-american> January 15, 2020

"Prospectus" *The Southern Planter*: Volume 1, no 1. P. 1

"Public Meeting," *The Alexandria Gazette*, Volume 61, Number 182, 1 August 1860

"Public Sale of Land" *Winchester Times*, Undated, (likely Sept/Oct.1872)

Puglisi, Michael J., *Diversity and Accommodation: Essays on the Cultural Composition of the Virginia Frontier*, Knoxville: The University of Tennessee Press, 1997

Radburn, Nicholas, "Guinea Factors, Slave Sales, and the Profits of the Transatlantic Slave Trade in Late Eighteenth-Century Jamaica: The Case of John Tailyour," in: *The William and Mary Quarterly*, vol 72, no. 2, April 2015, 3rd series, pp. 243-286

"Record of Dividends to Shareholders of the New Shenandoah Company," in the Daniel Stickley Papers, 1829-1912, (Mss. 39.2 St5) (msu an2), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

"The Records of the Commissioners of Claims listing the approved and dis-approved Claims of Loyal Citizens for Supplies furnished during the Rebellion,"
<https://www.fold3.com/image/34/222377542>) Accessed: November 25, 2018

Rice, James D., *Nature and History in the Potomac Country: From Hunter Gatherers to the Age of Jefferson*, Baltimore: The John Hopkins University Press, 2009.

"Samuel Hinks," https://en.wikipedia.org/wiki/Samuel_Hinks Accessed August 14, 2019

Samuel F. Merritt to Isaac Hite, Jr. Baltimore, August 14, 1834, (see HFP, vol. 4, doc. 100 and VHS 1304 & 1305

Sarles, Frank B. Jr., "Trade of the Valley of Virginia, 1789 – 1860," Master's Thesis, University of Virginia, nd

Schlebecker, John. T., "Farmers in the Lower Shenandoah Valley, 1850," in *The Virginia Magazine of History and Biography*, vol. 79, October 1971, no. 4, p. 462-476

Schwaab, Eugene L., ed., *Travels in the Old South: Selected from Periodicals of the Times*, vol. 1, Lexington: University Press of Kentucky, 1973

Skinner, John S., "Observations on the Agriculture of Virginia," in *Travels in the old South*, Eugene L. Schwaab, ed. Lexington: Univ. of Kentucky Press, 1973.

Skinner, John S., to James Madison, 18 November, 1822
<https://founders.archives.gov/documents/Madison/04-02-02-0524>
Accessed August 1, 2019

Smith, John, L. Jr., "The Truth about George Washington and Hemp," *Journal of the American Revolution*, <https://allthingsliberty.com/2016/10/truth-george-washington-hemp/>, Accessed Mar. 25, 2019.

Sonner, Calvin. 1999. Shenandoah County Mills and Millers. Accessed September 2019 at <https://www.csonner.net/mills.htm>.

The Southern Planter, Vol 1, no.'s 1, 2, 3, 4, 7, 11, & 12, 1841, Richmond, Va.:
"Prospectus of the Southern Planter," Vol 1, 1841, p. 1

"The Henrico Agricultural Society," Vol 1. No. 1 January, 1841 p. 2
 "Book Farming," Vol 1. No. 1 January, 1841 p. 3
 "The Plough," Vol 1. No. 1 January, 1841 p. 10
 "Manure," Vol 1. No. 1, January, 1841 p. 11
 "The Plough," Vol 1. No. 2, February, 1841 p. 17
 "Tobacco," Vol 1. No. 3, April, 1841 p. 33
 "American Machinery," Vol. 1, No. 3, p. 35
 "Hemp," Vol 1. No. 3, April, 1841 p. 40
 "Bone Dust," Vol 1. No. 3, April, 1841 p. 41
 "American Farmer," Vol 1. No. 3 April, 1841 p. 41
 "Wheat," Vol 1. No. 4 May, 1841 p. 71
 "Weeding Wheat," Vol 1. No. 4 May, 1841 p. 71
 "Harvesting Wheat." Vol 1. No. 4 May, 1841 p. 71
 "Draining," Vol 1. No. 7, August, 1841, p. 129
 "Orchards," Vol 1. No. 7, August, 1841 p. 71
 "Wheat," Vol 1. No. 11&12, 1841 p. 225

Sprouse, Edith Moore, "Colchester: Colonial Port on the Potomac, Fairfax, Virginia:" Fairfax County Office of Comprehensive Planning, 1992

Spencer, Michael, 50% Draft Bowman-Hite House Historic Structures Report, Feb. 2012

Stackpole, Edward J. *Sheridan in the Shenandoah: Jubal Early's Nemesis*, Harrisburg, PA: The Stackpole Co., 1961

Stewart, Nancy B., "How Did Shenandoah County Get into the Slavery Business?," *Cedar Creek and Belle Grove National Historical Park Archives*

Stickley, Daniel, Papers, 1829-1912, (Mss. 39.2 St5), Swem Special Collections Research Center, Earl Gregg Swem, Library, William & Mary University, Williamsburg, Virginia.

Sulfridge, Wayne, "Murder at Belle Grove Plantation: The Death of Hettie Cooley and the Trial of Harriet Robinson," unpublished paper, nd, from the files of Belle Grove, Inc.

Swem, Earl G., *Bulletin Virginia State Library, vol. 10, Nos. 1-4: A Bibliography of Virginia, Part II* Richmond: Library of Virginia, 1917

<https://books.google.com/books?id=5JliAQAAAMAAJ&printsec=frontcover&dq=Bulletin+virginia+state+library+Vol+10+1917&hl=en&sa=X&ved=0ahUKEwj9ptaZoOLjAhWBByIkKHYHIClwQ6AEIKDAA#v=onepage&q=turnpike%20companies&f=false> Accessed July 11, 2019

Thomas Dwight Biscoe Collection, PHO-003, Marietta College Library

Tinling, Marion and Godfrey Davies, eds., *The Western Country in 1793: Reports on Kentucky and Virginia By Harry Toulmin*, San Marinno, Ca.: The Henry E. Huntington Library and Art Gallery, 1948.

"To the Plough Makers and Farmer" *Spirit of Jefferson*, Charlestown, Va., 12 November 1850

Trout, W. E., *The Shenandoah River Atlas*, Friends of the Shenandoah River: Front Royal, Va., 1997

Turner, Charles W., "Virginia State Agricultural Societies 1811-1860," in *Agricultural History*, Vol. 38 No. 3 (July, 1964). pp. 167-177, Published by: Agricultural History Society

United States Federal Industrial and Manufacturing Census Schedules. 1850, 1860. Shenandoah County, Virginia. Retrieved from Ancestry.com.

US Station Daily Date: Access by State, <http://www.esrl.noaa.gov/psd/data/usstation>
Accessed July 5, 2019

"Valley Agricultural Society," *Spirit of Jefferson*, Charlestown, Va., 30 September 1851

"Valley Fair", *Daily Dispatch* (Richmond), 17 October 1857"

"The Valley Turnpike Company," Accessed at:
<https://www.nps.gov/cebe/learn/historyculture/the-valley-turnpike-company.htm> accessed
February 18, 2019

"Valuable Farm for Sale," *Shenandoah Herald*, July 21, 1870.

"Valuable Farm for Sale," *Shenandoah Herald*, August 4, 1870.

Verry, Robert, "Results of an Archeological Reconnaissance Belle Grove Plantation, Middletown, Virginia, October, 1984

"Vineyard Site Evaluation Report: Cedar Creek and Belle Grove National Historical Park,"
Virginia Tech Center for Geospatial Technology, June 6. 2019

"Virginia Farming," *The Cultivator, a Monthly Journal Dedicated to Agriculture, Horticulture, Floraculture, and to Domestic and Rural Economy*, New Series, vol. 3, August 1846, Albany, NY: C. van Benthuyssen & Company, pp. 238-239
<https://books.google.com/books?id=XIDdLBIZN9sC&pg=PA195&dq=the+cultivator+1846&hl=en&sa=X&ved=0ahUKEwiNxaqgh-LjAhXpx1kKHd51AM0Q6AEILTAB#v=onepage&q=the%20cultivator%201846&f=false>
accessed March 3. 2019

Virginia Historical Society Collection, Virginia Museum of History and Culture, Richmond
Virginia, Hite Family Papers:

VHS 1293

VHS 1298

VHS 1295

VHS 1296

VHS 1304

VHS 1305

VHS 1306 (Certificate for 6 shares of stock for the Strasburg & Capon Turnpike Co. owned by Charles I. Hite. Dated June 12 1849.

VHS 1296

VHS 1295

VHS 1298

Verry, Robert, "Results of an Archeological Reconnaissance Belle Grove Plantation, Middletown, Virginia," October, 1984

"Virginia Husbandry," in *The American Farmer*, June 29, 1821, Baltimore: Maryland. Also in HFP, v. 3, doc. 33

"Virginia Legislature: House of Delegates" *Genius of Liberty*, Leesburg, Va., Number 51, 27 December 1825

"Virginia News" *Alexandria Gazette*, Volume 61, Number 239, 6 October 1860

Watson, Josiah, *The Papers of George Washington Digital Edition*, ed. Theodore J. Crackel. Charlottesville: University of Virginia Press, Rotunda, 2008,
<http://financial.gwpapers.org/?q=content/watson-josiah> Accessed July, 30, 2019

Wayland, John W., *A History of Shenandoah County Virginia*, Strasburg, Va.: Shenandoah Publishing House, 1927

Wayland, John W., *The Bowmans: A Pioneering Family in Virginia, Kentucky and the Northwest Territory*, Staunton, Va.: The Press of the McClure Company, Inc., 1943

Wayland, John W., *Twenty-Five Chapters on the Shenandoah Valley: To Which is Appended a Concise History of the Civil War in the Valley*, Second Edition, Harrisonburg, Va.: C. J. Carrier Company, 1976

Wert, Jeffry D., *From Winchester to Cedar Creek: The Shenandoah Campaign of 1864*, New York: Touchstone, Simon and Schuster, 1987

Whitmire, Mildred Edwards, "A Man and His Land: The Story of Jacob and Francis Madison Hite and the Cherokees," In the *Magazine of Jefferson County Historical Society* Vol. XLIV, Dec. 1978, p. 37-58

Will Book 19, pp. 358-9, Frederick County Clerk's Office

"Will of James Hoge, July 1795" Belle Grove Collection 890 THL Box 5, Folder 4

Williams, Maxine S., *Myth and Reality: Alexandria, Virginia, 1745-1820*, (2000), thesis and Dissertations. Paper 638, Lehigh University
<https://preserve.lehigh.edu/cgi/viewcontent.cgi?article=1638&context=etd> accessed 04.13.19

"*The Winchester Republican*, Nov. 17," in the *Genius of Liberty*, 28 November, 1826,
<https://viriniachronicle.com/cgi-bin/virginia?a=cl&cl=CL1&sp=GL&e=-----en-20--1--txt-txIN--->

"Winchester and Potomac Railroad,"
https://en.wikipedia.org/wiki/Winchester_and_Potomac_Railroad, accessed September 5, 2019

Zaborney, John J., *Slaves for Hire: Renting Enslaved Laborers in Antebellum Virginia*, Baton Rouge: Louisiana State University Press, 2012

Zartman, I. William. 2002. *National Register of Historic Places: Opequon Historic District [Frederick County, Virginia]*. Retrieved from
https://www.dhr.virginia.gov/VLR_to_transfer/PDFNoms/034-5037_Opequon_Historic_District_2002_Final_Nomination.pdf.

Map Sources

Anderson, J. K. 1914. *Railroads, Canals, Navigation Projects, and Public Institutions in which the Commonwealth of Virginia Had Invested Money as of Date January 1st, 1861* [map]. Public Service Commission of West Virginia. Retrieved from the Library of Congress at <http://hdl.loc.gov/loc.ndlpcoop/glva01.lva00078>.

Boye, Herman, L. V. Buchholtz, and Benjamin Tanner. 1859/1825. *A Map of the State of Virginia, Constructed in Conformity to Law from the Late Surveys Authorized by the Legislature and Other Original and Authentic Documents* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439988/>.

Dwyer, Thomas, and Manassas Gap Railroad Company. 1855, Sept. *Map of the Manassas Gap Rail Road and Its Extensions* [map]. Baltimore, MD. Retrieved from the Library of Congress at <https://lccn.loc.gov/98688704>.

- Evans, Lewis. 1771. *A General Map of the Middle British Colonies in America, viz. Virginia, Maryland, Delaware, Pensilvania [sic], New Jersey, New York, Connecticut, & Road Island* [map]. London: Carington Bowles. Retrieved from the Library of Congress at <http://hdl.loc.gov/loc.gmd/g3710.ar071602>.
- Gillespie, G. L. 1864. *Battle Fields of Fisher's Hill 22 Sept. 1864 and Cedar Creek 19 Oct. 1864, Virginia* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/99439175/>.
- Gillespie, G. L. 1873 Map of the Battle Fields of Fisher's Hill and Cedar Creek by G. L. Gillespie . Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].
- Herbert, William, and Robert Sayer. 1755. *A New and Accurate Map of the English Empire in North America* [map]. London. Retrieved from the Library of Congress at <https://lccn.loc.gov/74695024>.
- Herron, James. 1832. "Map of the Shenandoah River" [map]. In Kapsch, Robert. 2007. *The Potomac Canal: George Washington and the Waterway West*. Morgantown: West Virginia University Press.
- Hotchkiss, Jedediah. 1862. *Map of the Shenandoah Valley* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/99446754/>.
- Hotchkiss, Jedediah. 1864a. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [1-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625101/>.
- Hotchkiss, Jedediah. 1864b. *Sketch of the Battle of Belle Grove or Cedar Creek, Wednesday, Oct'r 19th* [3/8-inch grid] [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2005625102/>.
- Hotchkiss, Jedediah. 1895/1864a. *Battle Fields of Fisher's Hill and Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, No. 29. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.082].
- Hotchkiss, Jedediah. 1895/1864b. *Map of the Battle Field of Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, No. 2. Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.069].
- Hotchkiss, Jedediah. 1895/1864c. *Sketch of the Battle of Belle Grove or Cedar Creek* [map]. In *Atlas to Accompany the Official Records of the Union and Confederate Armies*, plate 99.

Washington, DC: Government Printing Office. Retrieved from the David Historical Map Collection at <https://www.davidrumsey.com> [image no. 1780.099].

Jefferson, Thomas, Samuel John Neele, and John Stockdale. *A Map of the Country between Albemarle Sound, and Lake Erie, Comprehending the Whole of Virginia, Maryland, Delaware and Pennsylvania, with Parts of Several Other of the United States of America* [map]. London, John Stockdale. Retrieved from the Library of Congress at <https://www.loc.gov/item/74691933/>.

Lake, D. J. 1885. *Frederick County, Virginia* [atlas]. Philadelphia: D. J. Lake & Company (reprinted in 1997 by G. P. Hammond Publishing, Strasburg, VA).

Lathrop, J. M. 1885. "Map of Davis Magisterial District" [map]. In *An Atlas of Shenandoah and Page Counties, Virginia*. Philadelphia: D. J. Lake & Co. Accessed at the Library of Virginia, Richmond.

Meigs, John Rodgers. 1864. *Map of the Shenandoah & Upper Potomac Including Portions of Virginia and Maryland* [map]. Cumberland, MD: Office of Chief Engineer. Retrieved from the Library of Congress at <https://www.loc.gov/item/99448348/>.

Trout, W. E., III. 1997. *The Shenandoah River Atlas*. Front Royal, VA: Virginia Canals and Navigations Society.

United States Army Corps of Engineers, J. N. Macomb, and D. H. Strother. 1863. *Upper Potomac from McCoy's Ferry to Conrad's Ferry and Adjacent Portions of Maryland and Virginia* [map]. Washington, DC: J. F. Gedney. Retrieved from the Library of Congress at <https://lcn.loc.gov/99447368>.

United States Army Corps of Topographical Engineers. 1864. *Central Virginia* [map]. Washington, DC: Bureau of Topographical Engineers. Retrieved from the Library of Congress at <https://www.loc.gov/item/2006635254/>.

Vaisz, W. 1852. *Map of the Virginia Central Rail Road* [map]. Philadelphia, PA: Virginia Central Rail Road. Retrieved from the Library of Congress at <https://lcn.loc.gov/98688843>.

Varle, Charles, and Benjamin Jones. 1809. *Map of Frederick, Berkeley, & Jefferson Counties in the State of Virginia* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2008621756/>.

Wood, John. 1820. *Frederick County* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2012589212/>.

Wood, John. 186- [sic]. *Frederick County, Virginia, from Wood's Map* [map]. Retrieved from the Library of Congress at <https://www.loc.gov/item/2002627443/>.

APPENDICES:

**Armatures for On-Going Documentation and Expanding the
Knowledge Base**

Appendix A

Hite Merchant Network

Hite Family Trade Networks

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite, Jr.	Belle Grove	purchase	Shreve & Lawrason	merchants	Alexandria (SW corner of Prince and Union streets)	wagon				50 sacks rock salt, 42 bushels loose salt, 1 hogshead sugar, coffee, soal leather, needles, box of chocolates	1796		Blosser (n.d.), vol. 1, doc. 9; Miller (1992)	Goods for use at Belle Grove per HFP editor.
Isaac Hite, Jr.	Belle Grove	sale	Ricketts & Newton	merchants	corner of Prince and Fairfax streets, Alexandria	wagon	Korn and Weismiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	24 barrels flour	1796		Blosser (n.d.), vol. 1, doc. 9; Miller (1992)	Noted as "Hand's" flour. Stored with Ricketts and sold to Korn.
Isaac Hite Jr.	Belle Grove	purchase	Jonathan Clark	brother-in-law	VA somewhere		Colin & James Ross	mercantile firm	Frederick, Alexandria	not specified	1802		Blosser (n.d.), vol. 1, doc 18.	Not listed as Alexandria merchants in Miller (1991); listed in Fredericksburg in Spooner, 1795 <i>Herald</i> .
Isaac Hite Jr.	Belle Grove	purchase	Jonathan Clark	brother-in-law	VA somewhere			merchant	Richmond	not specified	1821 or prior		Blosser (n.d.), vol. 1, doc. 60	
Isaac Hite and Son (General Store)	Belle Grove	sale	Jeremiah Langley	miller	Frederick Co.	wagon		merchant	Alexandria	flour	1791		Blosser (n.d.), vol. 3, doc. 7	To clear debt at Hite General Store, Langley agrees to mill Hite flour and haul it from Alexandria.
Isaac Hite, Jr.	Belle Grove	sale							Baltimore	flour	1836		Blosser (n.d.), vol. 1, doc. 40	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Robinson, Sanderson & Co.	merchants	Fairfax Street, Alexandria	tombstone	1790		Blosser (n.d.), vol. 4, doc. 8; Miller (1992)	Ordered for store customer or Hite's sister Mary (Hite) McDonald.
Isaac Hite and Son (General Store)	Belle Grove	purchase	Josiah Watson and Co.	merchant	Alexandria		Clow and Co.*	mercantile firm	Philadelphia	unspecified	1790		Blosser (n.d.), vol. 4, doc. 9; Miller (1992)	*headquartered in Manchester, England
Isaac Hite and Son (General Store)	Belle Grove	purchase					Clow and Co.*	mercantile firm	Philadelphia	unspecified	1790		Blosser (n.d.), vol. 4, doc. 9	*headquartered in Manchester, England
Isaac Hite and Son (General Store)	Belle Grove	purchase					Bill Jackson and Evans		Philadelphia	cloth	1792		Blosser (n.d.), vol. 4, doc. 10	
Isaac Hite and Son (General Store)	Belle Grove	sale	Col. George Gilpin	merchant	Alexandria		Taylor Ballantine and Laville	mercantile firm	Kingston, Jamaica	flour	1792		Blosser (n.d.), vol. 4, doc. 11, 12	Hite flour sent to Jamaica in exchange for 4 hogheads of sugar, 5 barrels of coffee
Isaac Hite and Son (General Store)	Belle Grove	sale	Col. George Gilpin	merchant	Alexandria		Taylor Ballantine and Laville	mercantile firm	Kingston, Jamaica	flour	1791 or 1792		Blosser (n.d.), vol. 4, doc. 11	Flour sent to Jamaica in exchange for 4 hogheads of sugar, 5 barrels of coffee
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, January	£0,58,6	Blosser (n.d.), vol. 4, doc. 14; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				1 barrel superfine, 9 fine flour	1796, April		Blosser (n.d.), vol. 4, doc. 15; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				14 barrels fine flour	1796, April		Blosser (n.d.), vol. 4, doc. 16; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				3 superfine, 12 fine	1796, May		Blosser (n.d.), vol. 4, doc. 17; Miller (1991)	Hites purchased 1/2 barrels of crackers
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				16 superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 18; Miller 1991	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				13 superfine, 1 fine	1796, May		Blosser (n.d.), vol. 4, doc. 19; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				15 barrels superfine	1796, May	\$11.50	Blosser (n.d.), vol. 4, doc. 20; Miller (1991)	

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 21; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				12 barrels superfine flour	1796, May		Blosser (n.d.), vol. 4, doc. 22; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				33 barrels superfine flour	1796, May	\$10 / \$12 in 60 days	Blosser (n.d.), vol. 4, doc. 23; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				16 barrels flour [grade not specified]	1796, May		Blosser (n.d.), vol. 4, doc. 24; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon				13 barrels superfine flour	1796, June		Blosser (n.d.), vol. 4, doc. 25; Miller (1991)	
Isaac Hite and Son (General Store)	Belle Grove	sale	Korn and Wisemiller	bakers	S.E. corner Prince & St. Asaph streets, Alexandria	wagon			West Indies	11 barrels superfine flour	1796, June	\$9 superfine	Blosser (n.d.), vol. 4, doc. 26; Miller (1991)	Sloop "Liberty" named as delivering to West Indies
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia					household goods incl. forks, knives, clothe	1795, May		Blosser (n.d.), vol. 4, doc. 37	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia		Edward Fox		Philadelphia*	clothe, clothing	1796, May		Blosser (n.d.), vol. 4, doc. 38	*per editor's notes at docs. 37, 43.
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister	Hite's "factor"	Philadelphia		Leonard Jacoby		Philadelphia	clothe, ribbon, looking glasses, whetting stones	1796, May		Blosser (n.d.), vol. 4, doc. 39	See also editor's note at doc. 43.
Isaac Hite and Son (General Store)	Belle Grove	purchase					Twamley & Shoemaker		Philadelphia	household goods, locks, tea kettles, horse equipment, carpentry tools, mill saws, sickles, scythes	1796, May		Blosser (n.d.), vol. 4, doc. 40	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Daniel Brautigam		Philadelphia	German Testaments, German Lutheran Bibles	1796, May		Blosser (n.d.), vol. 4, doc. 41	
Isaac Hite and Son (General Store)	Belle Grove	purchase					Godfrey Baker and Co.		Philadelphia	German Bibles	1796, May		Blosser (n.d.), vol. 4, doc. 42	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods, pewter	1797, March		Blosser (n.d.), vol. 4, doc. 44	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1794, Nov.		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1795, Oct.		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1797, May		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite and Son (General Store)	Belle Grove	purchase	William Wister, Joseph Stover		Philadelphia		George Lauman		Philadelphia	unspecified goods	1794, June		Blosser (n.d.), vol. 4, doc. 45	
Isaac Hite Jr.	Belle Grove	purchase	William H. Booth				Samuel Lothal			pine floor pans for Belle Grove construction	1794, Dec.		Blosser (n.d.), vol. 4, doc. 46	
Isaac Hite Jr.	Belle Grove	purchase					Samuel Weatherill and Sons		Philadelphia	paint supplies for Belle Grove construction	1796, May		Blosser (n.d.), vol. 4, doc. 47, 48	From painter Robert C. Walton, Mount Holly, NJ
Isaac Hite Jr.	Belle Grove	purchase					Daniel and Vincent Thuun		Philadelphia	window glass for Belle Grove construction	1796, May		Blosser (n.d.), vol. 4, doc. 49	
Isaac Hite Jr.	Belle Grove	purchase					Robert Haydock			pipe, lead sheet for Belle Grove construction	1796		Blosser (n.d.), vol. 4, doc. 50	
Isaac Hite Jr.	Belle Grove	purchase					William Hodgson	merchant, debt collector for Robinson and Sanderson	207 Prince Street, Alexandria	nails for construction of Belle Grove	1796, June		Blosser (n.d.), vol. 4, doc. 51; Miller (1991)	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Joseph Anthony, Jr.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 54	

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Roland Perry		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 55	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		John Guest and Co.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 56	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Thomas Dobson		Philadelphia	American Encyclopedia set, to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 57	
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Pasquier and Co.		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 58	Store located at 91 South Second St., Philadelphia.
Isaac Hite Jr.	Belle Grove	purchase	William Wister	agent/factor	Philadelphia		Daniel King		Philadelphia	to furnish Belle Grove	1796, May		Blosser (n.d.), vol. 4, doc. 59	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Philip Nicklin and Co.		Philadelphia	cloth	1796, May		HFP, v. 4, doc. 60	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Alexander Fullerton		Philadelphia	cloth	1796, May		Blosser (n.d.), vol. 4, doc. 61	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		John N. Hagenau		Philadelphia	cloth, household goods	1796, May		Blosser (n.d.), vol. 4, doc. 62	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Henry Manly		Philadelphia	household goods	1796, May		Blosser (n.d.), vol. 4, doc. 63	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		William Hodgson	merchant	Philadelphia	cloth	1976, Nov.		Blosser (n.d.), vol. 4, doc. 64	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		Joseph Riddle and Co.		Philadelphia	fabric, cloth	1976, Nov.		Blosser (n.d.), vol. 4, doc. 65	
Isaac Hite Jr.	Belle Grove	purchase	unknown	agent/factor	Philadelphia		George Herberton		Philadelphia	cloth	1798, May		Blosser (n.d.), vol. 4, doc. 66	
Isaac Hite Jr.	Belle Grove	purchase	Korn and Weismiller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria		Thomas Leiper and Co.		Philadelphia	snuff, tobacco, paper	1796, May		Blosser (n.d.), vol. 4, doc. 67	
Isaac Hite Jr.	Belle Grove	purchase					Adam Foulke		Philadelphia	raisins, almonds, citron	1796, May		Blosser (n.d.), vol. 4, doc. 68	
Isaac Hite Jr.	Belle Grove	purchase	Korn and Weismiller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria		Peter and Henry Miercken		Philadelphia	sugar	1796, May		Blosser (n.d.), vol. 4, doc. 69	
Isaac Hite Jr.	Belle Grove	purchase	William Wister				John Donaldson		Philadelphia	sherry, wine, madiera	1796, May		Blosser (n.d.), vol. 4, doc. 70	
Isaac Hite Jr.	Belle Grove	purchase					Paul Beck Jr.			coffee, pepper	1796, May		Blosser (n.d.), vol. 4, doc. 72	
Isaac Hite Jr.	Belle Grove	purchase					Korn and Weismuller	bakers	S.E. corner Prince and St. Asaph streets, Alexandria	Malaga wine	1796, June		Blosser (n.d.), vol. 4, doc. 73; Miller (1991)	
Isaac Hite Jr.	Belle Grove	purchase					Tanney and Irish		Alexandria	sugar	1797, July		Blosser (n.d.), vol. 4, doc. 74	
Isaac Hite Jr.	Belle Grove	purchase					Joseph Stover	Hite friend	Strasburg	iron (presumably for Belle Grove forge)	1798, March		Blosser (n.d.), vol. 4, doc. 75	
Isaac Hite Jr.	Belle Grove	purchase					unnamed	blacksmith		links, sharpening coalters (on plow) and steeple, mending pair of stretchers, horse shoes, spikes	1798, April		Blosser (n.d.), vol. 4, doc. 76	
Isaac Hite Jr.	Belle Grove	purchase	Robert Young	merchant, lawyer	King Street, Alexandria					27 barrels superfine flour	1802, May		Blosser (n.d.), vol. 4, doc. 89; Miller (1991)	to be sold in Alexandria
Isaac Hite Jr.	Belle Grove	sale	Colin & James Ross	Scottish merchants	Alexandria					12 tierces [casks], 3 barrels Belle Grove whiskey (about 870 gal.)	1801, Nov.		Blosser (n.d.), vol. 4, doc. 90	
Isaac Hite Jr.	Belle Grove	purchase	Colin & James Ross	Scottish merchants	Alexandria					9 tierces whiskey (638 gal.)	1802, June		Blosser (n.d.), vol. 4, doc. 90	
Isaac Hite Jr.	Belle Grove	purchase	John Comegys	factor	Baltimore					buys goods for Hite in Baltimore, incl. linen	1802, Oct.		Blosser (n.d.), vol. 4, doc. 91	

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	sale					Longs Tavern		Winchester	Belle Grove whiskey			Geier & Harding (2006), vol. 2, pt. 1, pp. 222-23	
Isaac Hite Jr.	Belle Grove	unknown	David Boch							d20 bushels of rye	1826		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	Jacob Supinger							5 1/2 bushels of wheat	1827		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	sale	Samuel Merritt	"general commission merchant"	Baltimore	wagon to Harpers Ferry, canal to Pt of Rocks, railroad to Baltimore				flour	1834		Blosser (n.d.), vol. 1, doc. 100	Provides detailed explanation by Merritt of shipping process. Ed. suggests this is Hite's first dealing w/the Balt. market.
Isaac Hite Jr.	Belle Grove	unknown	Isaac Williamson							"10 bles of flour"	1834		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	Blakemore and Long	merchant						unknown	1836		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	John H. Orndorff & Co.	flour merchant	Baltimore (NE corner of Baltimore and Pace streets)					unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	I. Smith & Co.	merchant						unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	unknown	David Huff & Co.	merchant						unknown	1837		Handley, Belle Grove Coll., 890 THL, Box 7	From the Inventory/ Appraisal of Hite Estate, Jan. 16, 17, 1837.
Isaac Hite Jr.	Belle Grove	purchase	J. M. McGill							curry combs, horse supplies, etc.	1840	\$1.92	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 1, 1.01.9	
Isaac Hite Jr.	Belle Grove	purchase	C. D. Hinks & Co.	sales agent	Baltimore	Baltimore (?)				21 tons plaster	1841		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 6	
Isaac Hite Jr.	Belle Grove	purchase	A. Marker							wood planks	1842	\$18.95	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 2, 1.01.19, 19a	
Hite and Burgess	Belle Grove	sale	C. D. Hinks & Co.	sales agent	Baltimore	Baltimore (?)				flour	1842		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 8; Matchett's Baltimore Directory, 1842	
Isaac Hite Jr.	Belle Grove	sale and purchase	David Alexander	factor			Claggett and Sage		Alexandria	sold flour; purchased oysters, salt, molasses	1844		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 2, 1.01.30	
Isaac Hite Jr.	Belle Grove	sale	William B. Walter	milller (?)						100 or 1000 bushels of wheat	1846		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.34	Hite sells Walter wheat to be delivered to mill.
Isaac Hite Jr.	Belle Grove	sale	Joseph Mahoney	milller	Cedar Grove Mill					48 bushels of wheat	1852		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.41	
Isaac Hite Jr.	Belle Grove	purchase	Ruskin and Thompson							164 bushels (of wheat?)	1853		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr.	
Isaac Hite Jr.	Belle Grove	sale		milller	Mill Brook Mill					505 bushels of wheat	1853		Handley, Belle Grove Coll., 890 THL, Box 5, miller fldr., 1.01.43	
Isaac Hite Jr.	Belle Grove	purchase	Danner estate sale							farm equipment	1853		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite, Jr.	Belle Grove	purchase	W. Miller							lamp oil	1855		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale	Joseph Mahoney	milller	Cedar Creek Mill					125 bushels of wheat	1855		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4, 1.01.47a	

Hite Family Member		Purchase or Sale	Middleman or Factor				Final Destination			Good(s)	Year	Market Price	Source	Notes
Name	Location		Name	Description	Location	Transport Mode	Name	Description	Location					
Isaac Hite Jr.	Belle Grove	sale		miller	Mill Brook Mill					392 bushels of wheat	1856		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale		miller	Cedar Grove Mill					162 bushels of wheat	1857		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	sale		miller	Mill Brook Mill					249 bushels of wheat	1857		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 4	
Isaac Hite Jr.	Belle Grove	purchase	William Jenkins							bill for bones and crushing	1858		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase	Meade & Maryl							roofing supplies, 5 tons plaster	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase	Johnathan M. Miller							plaster	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	\$31 bill
Isaac Hite Jr.	Belle Grove	sale	Miller & Showalter	miller	Mill Brook Mill					122 bushels of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 5, fldr. 5	
Isaac Hite Jr.	Belle Grove	sale	W. B. Walter	miller	Union Mill, Winchester					800 bushels of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5, 1.01.66	
Isaac Hite Jr.	Belle Grove	sale		miller	Star Mill					54 pounds of wheat	1860		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5	
Isaac Hite Jr.	Belle Grove	purchase					J. B. Taylor & Co.			alpaca, cashmere, silk, blankets	1860	\$24.16	Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5, 1.01.67	
Isaac Hite Jr.	Belle Grove	sale	C. W. Bush	miller	Mill Brook Mill					17 bushels of wheat	1863		Handley, Belle Grove Coll., 890 THL, Box 18, fldr. 5	

Source Notes

"Handley" denotes material located in the Stewart Bell Jr. Archives at the Handley Regional Library, Winchester, Virginia.

Appendix B

Vineyard Site Evaluation Report: Cedar Creek and Belle Grove National Historical Park

Vineyard Site Evaluation Report

This report is provided by Virginia Tech's Center for Geospatial Information Technology for the Virginia Wine Board project "Virginia Vineyards Portal." A portion of this material is based upon research supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement No. 2010-51181-21599, "Improved grape and wine quality in a challenging environment: An eastern US model for sustainability and economic vitality."



Figure 1: VGIN: Virginia Base Mapping Program, Orthoimagery (MostRecentImagery)

Geographic Location: 39.0118, -78.3046

Planar Area: 6508.13 acres



Table of Contents

Table of Contents	2
American Viticultural Areas	4
Soil Data	5
Soil Aggregation Method	5
Soil Attributes	5
USDA-NRCS Soil Survey Geographic Database (SSURGO)	6
Soil Series Attributes	7
Soil Series Attributes	8
Soil Series Attributes	9
Soil Series Attributes	10
Soil Series Attributes	11
Soil Series Attributes	12
Soil Series Attributes	13
Soil Series Attributes	14
Soil Series Attributes	15
Climate Data	16
Temperature	16
Growing Season	17
Growing Season Statistics	17
Annual Growing Season Length	17
Degree Day Accumulation	18
Precipitation	18
Ferguson Cold Hardiness Model	19
Cabernet franc	20
Cabernet Sauvignon	21
Pinot gris	22
Phenology Milestones	23
Grapevine Climate/Maturity Groupings	24
Elevation	25
Slope	26
Aspect	27
Lithology	28
Land Cover	29
Land Surface Forms	30
Topographic Moisture Potential	31
Data Sources	32

Note: To report errors or problems with this report, send an email to cgitsupport@vt.edu.

*** indicates that data was unavailable when the report was requested.**

The planar area calculation is based on the two dimensional surface of the given site. Due to the spatial resolution of the available data, the area of the flat site is the most accurate representation that can currently be provided.

American Viticultural Areas

"A viticultural area for American wine is a delimited grape-growing region having distinguishing features as described in the Code of Federal Regulations (CFR) at 27 CFR part 9 and a name and delineated boundary as established in part 9 of the regulations. These designations allow vintners and consumers to attribute a given quality, reputation, or other characteristic of a wine made from grapes grown in an area to its geographic origin" - Alcohol and Tobacco Tax and Trade Bureau (ttb.gov)

The American Viticultural Areas were digitized for Virginia as enumerated by the Electronic Code of Federal Regulations (e-CFR) Title 27, Chapter I, Subchapter A, Part 9. Accessed March 2015.

The e-CFR website provides up-to-date, explicit geographic definitions of every recognized AVA under U.S. Code: Title 27 (Alcohol, Tobacco Products and Firearms).

This material is available through the support of the Virginia Wine Board, Virginia Vineyards Association, Virginia Department of Agriculture and Consumer Services, and by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement No. 2010-51181-21599.

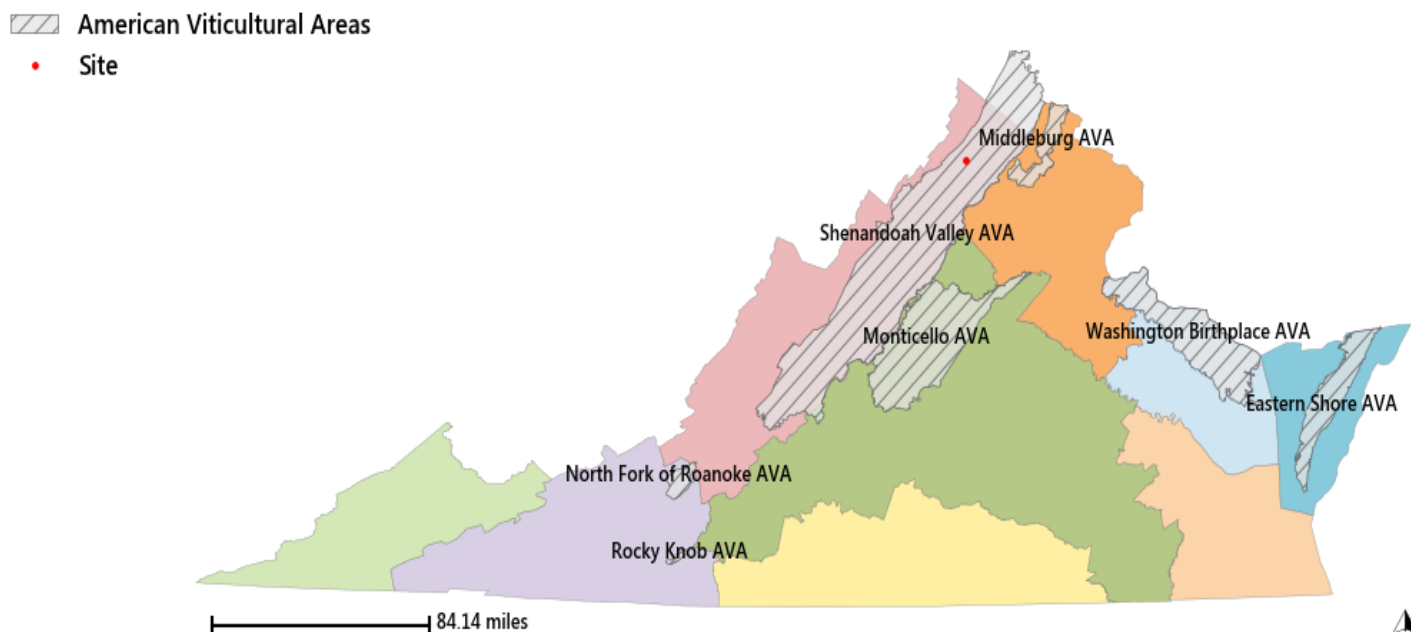


Figure 2: American Viticultural Areas and Virginia Growing Regions

Heart of Appalachia	Blue Ridge Highlands	Shenandoah Valley
Southern Virginia	Central Virginia	Northern Virginia
Hampton Roads	Chesapeake Bay	Eastern Virginia

Soil Data

Soil Aggregation Method

The soil data is aggregated according to the weighted average method outlined by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), SSURGO Data Packaging and Use document. Each soil attribute is aggregated by component based on the depth of the horizons or layers above the restrictive layer. The components are aggregated at the map unit level according to the percent composition.

$$\text{Weighted Horizon Aggregation} = \sum \text{Horizon Variable} * \left(\frac{\text{Horizon Depth}}{\text{Restrictive Depth}} \right)$$

$$\text{Weighted Component Aggregation} = \sum \frac{\text{Weighted Horizon Aggregation}}{\text{Aggregation Variable}} * \left(\frac{\text{Component Percent of Map Unit}}{\text{Total Map Unit Composition}} \right)$$

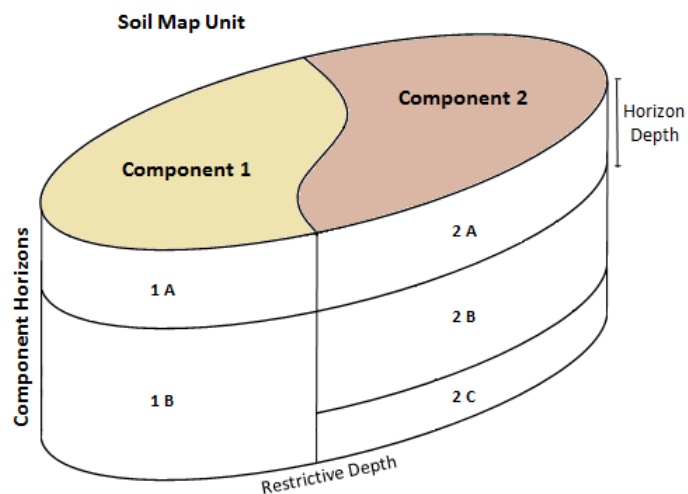


Figure 3: USDA Soil Aggregation Method

Soil Attributes

Organic Matter

Organic matter is generated by the decomposition of plant and animal waste by the communities of soil arthropods and microbial decomposers that it supports. Organic matter improves soil fertility, structure, aeration and drainage. In large quantities, organic matter releases excess Nitrogen that can lead to vigorous vine growth.

Soil Depth

Deep soil depth acts as a protective buffer against drought as it allows for greater volume of potential soil moisture and ample space for cultivation of large, healthy, perennial root structures.

Available Water Capacity (A.W.C.)

Available Water Capacity describes the quantity of water available for uptake by plants after gravitational forces have removed excess water from a saturated soil. The ability of a soil to hold water is a function of soil texture and organic matter content.

Saturated Hydraulic Conductivity (Ksat)

Ksat is a measure of the rate at which water moves through a column of saturated soil also described as permeability. Soils with Ksat values above 0.6 inches per hour tend to be better suited for viticultural production.

Cation Exchange Capacity

Cation exchange capacity represents the amount of readily exchangeable cations that can be electrically adsorbed to negative charges in the soil, soil constituent, or other material, at pH 7.0, as estimated by the ammonium acetate method.

Bulk Density

Bulk density describes the relationship between soil solids and pore space where air and water can be stored in a given volume of soil. Bulk density is a key factor in productive viticulture because bulk densities higher than 1.6 g/cm³ indicate compacted soil, restricted water movement, poor root development and loss of soil aeration.

Soil pH

Soil pH is easily amended, but the cost of amendment whether through lime or gypsum applications may be cost prohibitive for some growers if pH is above 7.5 or below 4.0. Appropriate soil pH levels are critical to vine health. Low pH values are especially detrimental to grapevines as Aluminum and Copper are made plant available which can lead to stunted growth and toxicity.

USDA-NRCS Soil Survey Geographic Database (SSURGO)

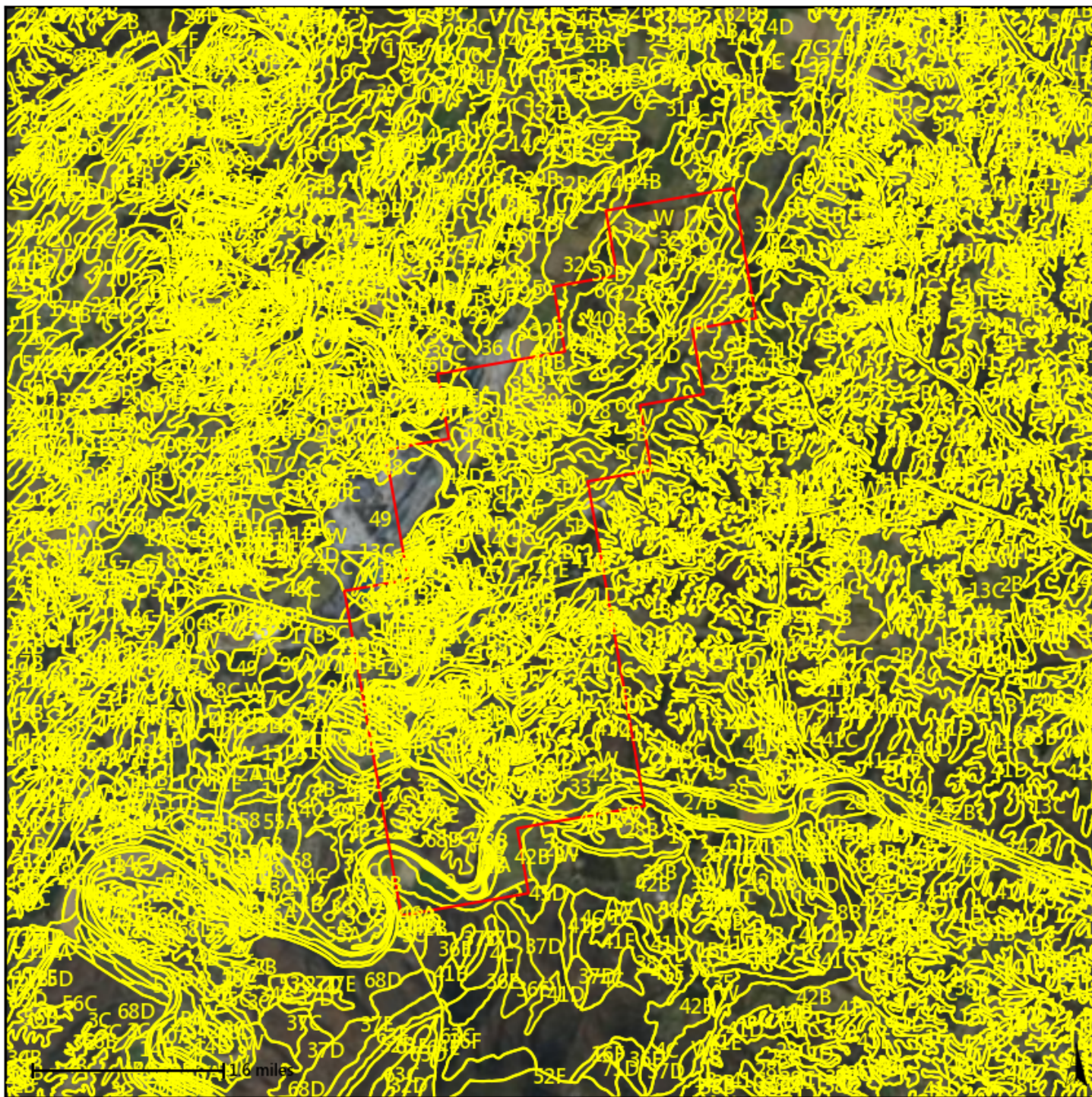


Figure 4: USDA, Natural Resources Conservation Service: Soil Survey Geographic Database, VBMP Orthoimagery (MostRecentImagery)

The following soil data is derived from the official Soil Survey Geographic Database (SSURGO). Soil attributes for each map unit within the requested site are included in this report according to the properties and characteristics stored in the National Soil Information System (NASIS).

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Berks channery silt loam, 3 to 8 percent slopes (1B)	313.64	4.82%	0.86	88.22	High	0.12	5.73	4.31	1.38	5.51
					Rep.	0.09	3.31	2.8		
					Low	0.05	1.91	2.34		
Berks channery silt loam, 8 to 15 percent slopes (1C)	321.71	4.94%	0.91	88.22	High	0.12	5.73	4.98	1.38	5.53
					Rep.	0.09	3.36	3.15		
					Low	0.05	1.91	2.63		
Berks channery silt loam, 15 to 25 percent slopes (1D)	28.82	0.44%	0.66	88.22	High	0.12	5.73	12.13	1.39	5.67
					Rep.	0.09	3.43	7.98		
					Low	0.05	0.6	3.81		
Lodi silt loam, 7 to 15 percent slopes (23C)	3.52	0.05%	0.32	158.0	High	0.18	2.36	13.66	1.48	5.0
					Rep.	0.14	1.46	9.05		
					Low	0.11	0.57	5.62		
Lodi silt loam, 15 to 25 percent slopes (23D)	3.77	0.06%	0.32	158.0	High	0.18	2.36	13.66	1.48	5.0
					Rep.	0.14	1.46	9.05		
					Low	0.11	0.57	5.62		
Lodi silt loam, 15 to 25 percent slopes, very rocky (25D)	19.64	0.3%	0.32	158.0	High	0.18	2.36	13.66	1.48	5.0
					Rep.	0.14	1.46	9.05		
					Low	0.11	0.57	5.62		
Monongahela loam, 2 to 7 percent slopes (28B)	29.56	0.45%	1.46	66.06	High	0.21	1.89	15.87	1.36	4.98
					Rep.	0.19	1.21	11.55		
					Low	0.16	0.54	7.36		
Monongahela loam, 7 to 15 percent slopes (28C)	1.26	0.02%	1.46	66.06	High	0.21	1.89	15.87	1.36	4.98
					Rep.	0.19	1.21	11.55		
					Low	0.16	0.54	7.36		
Newark silt loam, 0 to 2 percent slopes, frequently flooded (33)	57.33	0.88%	0.64	152.28	High	0.23	1.98	11.13	1.35	6.7
					Rep.	0.2	1.28	8.06		
					Low	0.17	0.57	4.01		
Sequoia silt loam, 2 to 7 percent slopes (38B)	91.64	1.41%	0.64	76.0	High	0.22	1.18	18.73	1.82	6.32
					Rep.	0.19	0.78	11.35		
					Low	0.13	0.37	9.83		

Figure 5: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Sequoia silt loam, 7 to 15 percent slopes (38C)	33.82	0.52%	0.64	76.0	High	0.22	1.18	18.73	1.82	6.32
					Rep.	0.19	0.78	14.16		
					Low	0.13	0.37	9.83		
Unison loam, 2 to 7 percent slopes (39B)	14.3	0.22%	0.46	152.0	High	0.18	3.84	14.86	1.46	5.3
					Rep.	0.14	2.2	12.17		
					Low	0.11	0.57	7.18		
Unison loam, 7 to 15 percent slopes (39C)	17.85	0.27%	0.46	152.0	High	0.18	3.84	14.86	1.46	5.3
					Rep.	0.14	2.2	12.17		
					Low	0.11	0.57	7.18		
Weikert-Berks channery silt loams, 8 to 15 percent slopes (41C)	6.25	0.1%	1.11	46.65	High	0.12	5.89	2.03	1.44	5.25
					Rep.	0.1	3.69	1.45		
					Low	0.08	1.96	1.27		
Weikert-Berks channery silt loams, 15 to 25 percent slopes (41D)	238.66	3.67%	4.33	65.15	High	0.09	6.7	5.3	1.34	5.25
					Rep.	0.07	4.27	3.42		
					Low	0.06	0.89	1.53		
Weikert-Berks channery silt loams, 25 to 65 percent slopes (41E)	463.45	7.12%	4.96	57.67	High	0.1	6.87	0.0	1.35	5.08
					Rep.	0.08	4.43	0.0		
					Low	0.06	1.98	0.0		
Zoar silt loam, 0 to 7 percent (42B)	321.53	4.94%	0.56	165.0	High	0.14	0.55	12.78	1.49	5.0
					Rep.	0.12	0.34	11.0		
					Low	0.1	0.13	8.41		
Buckton silt loam, 0 to 2 percent slopes, occasionally flooded (5)	59.16	0.91%	0.52	185.0	High	0.18	3.34	7.39	1.39	7.86
					Rep.	0.15	1.95	5.79		
					Low	0.11	0.57	3.62		
Carbo-Endcav-Rock outcrop complex, 7 to 15 percent slopes (7C)	18.88	0.29%	0.52	99.54	High	0.16	0.55	22.07	1.42	6.72
					Rep.	0.14	0.35	17.6		
					Low	0.11	0.16	13.06		
Chagrin fine sandy loam, 0 to 2 percent slopes, frequently flooded (9)	144.63	2.22%	0.7	152.0	High	0.2	1.98	11.68	1.32	6.5
					Rep.	0.16	1.28	7.27		
					Low	0.12	0.57	4.25		

Figure 6: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm3)	Soil pH
Water (W)	37.29	0.57%	0.0	0.0	High	0.0	0.0	0.0	0.0	0.0
					Rep.	0.0	0.0	0.0		
					Low	0.0	0.0	0.0		
Caverns sandy loam, 0 to 2 percent slopes, rarely flooded (10A)	5.36	0.08%	0.69	183.0	High	0.19	5.95	6.85	1.58	6.5
					Rep.	0.14	3.97	4.68		
					Low	0.1	1.98	2.55		
Chilhowie silty clay loam, 2 to 7 percent slopes (11B)	27.11	0.42%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 7 to 15 percent slopes (11C)	46.88	0.72%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 15 to 25 percent slopes (11D)	24.1	0.37%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 25 to 35 percent slopes (11E)	51.88	0.8%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 7 to 15 percent slopes, rocky (12C)	10.8	0.17%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 7 to 15 percent slopes, very rocky (13C)	18.25	0.28%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Chilhowie silty clay loam, 15 to 35 percent slopes, very rocky (13D)	22.58	0.35%	0.56	89.0	High	0.11	0.5	27.55	1.35	7.4
					Rep.	0.09	0.32	23.26		
					Low	0.07	0.15	18.93		
Coursey loam, 2 to 7 percent slopes (14B)	53.17	0.82%	1.72	152.76	High	0.17	1.88	15.04	1.55	4.6
					Rep.	0.13	1.21	10.55		
					Low	0.09	0.54	6.01		

Figure 7: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Alonzo loam, 2 to 7 percent slopes, rarely flooded (1B)	68.91	1.06%	1.77	165.0	High	0.18	1.98	14.92	1.58	5.93
					Rep.	0.16	1.28	10.11		
					Low	0.12	0.57	5.32		
Alonzo loam, 7 to 15 percent slopes (1C)	5.13	0.08%	1.77	165.0	High	0.18	1.98	14.92	1.58	5.93
					Rep.	0.16	1.28	10.11		
					Low	0.12	0.57	5.32		
Frederick and Poplimento silt loams, 2 to 7 percent slopes (20B)	7.72	0.12%	0.35	161.8	High	0.18	1.79	16.09	1.36	5.38
					Rep.	0.14	1.16	12.25		
					Low	0.1	0.54	8.33		
Frederick and Poplimento silt loams, 7 to 15 percent slopes (20C)	15.49	0.24%	0.35	161.8	High	0.18	1.79	16.09	1.36	5.38
					Rep.	0.14	1.16	12.25		
					Low	0.1	0.54	8.33		
Frederick and Poplimento silt loams, 15 to 25 percent slopes, rocky (22D)	6.51	0.1%	0.35	161.8	High	0.18	1.79	16.09	1.36	5.38
					Rep.	0.14	1.16	12.25		
					Low	0.1	0.54	8.33		
Gilpin silt loam, 7 to 15 percent slopes (25C)	2.55	0.04%	0.56	66.0	High	0.14	1.98	10.74	1.34	4.6
					Rep.	0.12	1.28	7.73		
					Low	0.1	0.57	4.7		
Berks channery silt loam, 3 to 8 percent slopes (2B)	14.96	0.23%	0.86	88.22	High	0.12	5.73	4.31	1.38	5.51
					Rep.	0.09	3.31	2.8		
					Low	0.05	1.91	2.34		
Berks-Weikert channery silt loams, 8 to 15 percent slopes (3C)	99.17	1.52%	1.09	65.89	High	0.12	5.98	2.34	1.39	5.27
					Rep.	0.09	3.73	1.43		
					Low	0.06	1.44	1.24		
Moomaw fine sandy loam, 2 to 7 percent slopes (43B)	25.41	0.39%	1.04	46.0	High	0.21	1.98	11.75	1.55	5.0
					Rep.	0.17	1.28	8.15		
					Low	0.12	0.57	4.45		
Moomaw fine sandy loam, 7 to 15 percent slopes (43C)	11.49	0.18%	1.04	46.0	High	0.21	1.98	11.75	1.55	5.0
					Rep.	0.17	1.28	8.15		
					Low	0.12	0.57	4.45		

Figure 8: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Nomberville loam, 0 to 2 percent slopes, rarely flooded (46A)	14.15	0.22%	0.92	157.0	High	0.22	2.74	10.96	1.61	7.0
					Rep.	0.19	1.65	7.91		
					Low	0.16	0.57	4.84		
Opequon silty clay loam, 2 to 15 percent slopes, rocky (47C)	32.02	0.49%	0.6	51.0	High	0.17	1.98	26.99	1.52	6.5
					Rep.	0.15	1.09	19.55		
					Low	0.13	0.2	12.01		
Opequon silty clay loam, 2 to 15 percent slopes, very rocky (48C)	7.35	0.11%	0.6	51.0	High	0.17	1.98	26.99	1.52	6.5
					Rep.	0.15	1.09	19.55		
					Low	0.13	0.2	12.01		
Opequon silty clay loam, 15 to 25 percent slopes, very rocky (48D)	32.37	0.5%	0.6	51.0	High	0.17	1.98	26.99	1.52	6.5
					Rep.	0.15	1.09	19.55		
					Low	0.13	0.2	12.01		
Blairton silt loam, 2 to 7 percent slopes (4B)	37.36	0.57%	0.94	79.0	High	0.15	0.98	11.3	1.57	4.6
					Rep.	0.12	0.64	8.18		
					Low	0.1	0.31	5.01		
Timberville silt loam, 2 to 7 percent slopes, frequently flooded (54B)	14.19	0.22%	0.57	165.0	High	0.18	2.47	14.61	1.45	5.1
					Rep.	0.14	1.6	10.89		
					Low	0.1	0.74	7.23		
Toms silt loam, 0 to 2 percent slopes (55A)	6.24	0.1%	1.64	165.0	High	0.16	0.11	25.27	1.4	6.5
					Rep.	0.14	0.06	19.86		
					Low	0.12	0.02	14.45		
Trappist silt loam, 2 to 7 percent slopes (56B)	1.36	0.02%	0.77	102.0	High	0.19	0.82	15.75	1.48	4.6
					Rep.	0.14	0.54	11.06		
					Low	0.09	0.26	6.9		
Udorthents-Urban land complex (58)	38.49	0.59%	0.0	25.0	High	0.0	0.0	0.0	0.0	0.0
					Rep.	0.0	0.0	0.0		
					Low	0.0	0.0	0.0		

Figure 9: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Unison loam, 2 to 7 percent slopes (59B)	27.01	0.42%	0.47	157.0	High	0.18	3.12	17.89	1.46	5.3
					Rep.	0.15	1.84	12.56		
					Low	0.12	0.57	7.16		
Unison loam, 7 to 15 percent slopes (59C)	19.85	0.31%	0.47	157.0	High	0.18	3.12	17.89	1.46	5.3
					Rep.	0.15	1.84	12.56		
					Low	0.12	0.57	7.16		
Braddock loam, 2 to 7 percent slopes (5B)	14.47	0.22%	0.39	165.0	High	0.15	4.12	13.38	1.35	4.6
					Rep.	0.13	2.35	10.03		
					Low	0.1	0.57	6.73		
Weikert-Berks channery silt loams, 15 to 35 percent slopes (68D)	271.25	4.17%	3.95	67.67	High	0.11	6.66	0.43	1.35	5.17
					Rep.	0.08	4.22	0.38		
					Low	0.06	1.46	0.21		
Broadway silt loam, 0 to 2 percent slopes, occasionally flooded (7A)	38.06	0.58%	0.85	183.0	High	0.18	3.42	8.88	1.57	7.9
					Rep.	0.14	1.99	6.73		
					Low	0.11	0.57	4.11		
Carbo silty clay loam, 2 to 7 percent slopes (8B)	12.99	0.2%	0.77	94.0	High	0.15	0.58	27.81	1.36	6.53
					Rep.	0.13	0.37	23.22		
					Low	0.11	0.17	18.73		
Water (W)	70.52	1.08%	0.0	0.0	High	0.0	0.0	0.0	0.0	0.0
					Rep.	0.0	0.0	0.0		
					Low	0.0	0.0	0.0		
Frankstown channery silt loam, 7 to 15 percent slopes (13C)	36.54	0.56%	0.32	157.0	High	0.14	1.98	12.51	1.39	5.83
					Rep.	0.12	1.28	11.0		
					Low	0.08	0.57	7.0		
Frederick-Poplimento loams, 2 to 7 percent slopes (14B)	78.87	1.21%	0.26	168.41	High	0.15	1.58	12.6	1.36	5.49
					Rep.	0.13	1.03	9.75		
					Low	0.09	0.48	6.44		
Frederick-Poplimento loams, 7 to 15 percent slopes (14C)	209.07	3.21%	0.26	168.41	High	0.15	1.58	12.6	1.36	5.49
					Rep.	0.13	1.03	9.75		
					Low	0.09	0.48	6.44		

Figure 10: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Frederick-Poplimento loams, 15 to 25 percent slopes (14D)	84.83	1.3%	0.26	168.32	High	0.15	1.58	12.57	1.36	5.49
					Rep.	0.13	1.03	9.72		
					Low	0.09	0.48	6.43		
Frederick-Poplimento very gravelly loams, 25 to 60 percent slopes (15E)	25.51	0.39%	0.28	172.67	High	0.15	1.77	14.11	1.35	5.48
					Rep.	0.12	1.15	11.08		
					Low	0.08	0.53	7.17		
Frederick-Poplimento, very rocky loams, 15 to 25 percent slopes (16D)	6.56	0.1%	0.26	168.41	High	0.15	1.58	12.6	1.36	5.49
					Rep.	0.13	1.03	9.75		
					Low	0.09	0.48	6.44		
Frederick-Poplimento-Rock outcrop complex, 2 to 15 percent slopes (17C)	139.35	2.14%	0.27	168.91	High	0.15	1.61	12.78	1.36	5.49
					Rep.	0.13	1.05	9.9		
					Low	0.09	0.49	6.53		
Frederick-Poplimento-Rock outcrop complex, 15 to 45 percent slopes (17E)	100.18	1.54%	0.27	168.91	High	0.15	1.61	12.78	1.36	5.49
					Rep.	0.13	1.05	9.9		
					Low	0.09	0.49	6.53		
Berks channery silt loam, 3 to 8 percent slopes (1B)	91.99	1.41%	0.86	88.22	High	0.12	5.73	4.31	1.38	5.51
					Rep.	0.09	3.31	2.8		
					Low	0.05	1.91	2.34		
Berks channery silt loam, 8 to 15 percent slopes (1C)	42.96	0.66%	0.91	88.22	High	0.12	5.73	4.98	1.38	5.53
					Rep.	0.09	3.36	3.15		
					Low	0.05	1.91	2.63		
Lobdell silt loam (28)	18.22	0.28%	0.79	163.0	High	0.22	3.23	11.11	1.4	5.8
					Rep.	0.21	1.9	6.88		
					Low	0.14	0.57	5.69		
Massanetta loam (29)	149.97	2.3%	2.91	157.0	High	0.22	1.98	22.09	1.45	7.9
					Rep.	0.21	1.28	14.67		
					Low	0.11	0.57	9.72		
Oaklet silt loam, 2 to 7 percent slopes (32B)	191.28	2.94%	0.63	160.0	High	0.14	0.51	27.67	1.38	6.01
					Rep.	0.13	0.33	21.31		
					Low	0.11	0.15	18.21		

Figure 11: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Oaklet silt loam, 7 to 15 percent slopes (32C)	390.34	6.0%	0.63	160.0	High	0.14	0.51	27.67	1.38	6.01
					Rep.	0.13	0.33	21.31		
					Low	0.11	0.15	18.21		
Pagebrook silt loam (34)	11.8	0.18%	0.93	157.0	High	0.17	0.92	27.27	1.4	7.36
					Rep.	0.13	0.57	22.29		
					Low	0.11	0.23	16.3		
Pagebrook silty clay loam (35)	10.41	0.16%	0.79	152.0	High	0.15	0.65	30.94	1.42	7.63
					Rep.	0.1	0.39	25.44		
					Low	0.08	0.14	18.39		
Swimley silt loam, 2 to 7 percent slopes (39B)	83.88	1.29%	0.36	170.0	High	0.15	1.98	26.2	1.39	7.0
					Rep.	0.13	1.28	21.29		
					Low	0.12	0.57	15.52		
Swimley silt loam, 7 to 15 percent slopes (39C)	92.53	1.42%	0.36	170.0	High	0.15	1.98	26.2	1.39	7.0
					Rep.	0.13	1.28	21.29		
					Low	0.12	0.57	15.52		
Blairton silt loam, 2 to 7 percent slopes (3B)	16.88	0.26%	0.54	91.0	High	0.18	1.16	9.92	1.56	4.6
					Rep.	0.13	0.73	6.84		
					Low	0.08	0.29	4.67		
Timberville silt loam, 2 to 7 percent slopes (40B)	43.68	0.67%	0.65	168.0	High	0.18	2.57	14.18	1.45	5.88
					Rep.	0.14	1.68	10.58		
					Low	0.07	0.78	6.89		
Weikert-Berks channery silt loams, 15 to 25 percent slopes (41D)	54.29	0.83%	4.33	65.15	High	0.09	6.7	5.3	1.34	5.25
					Rep.	0.07	4.27	3.42		
					Low	0.06	0.89	1.53		
Weikert-Berks channery silt loams, 25 to 65 percent slopes (41E)	21.16	0.33%	4.96	57.67	High	0.1	6.87	0.0	1.35	5.08
					Rep.	0.08	4.43	0.0		
					Low	0.06	1.98	0.0		

Figure 12: National Soil Information System

Soil Series Attributes

Soil Series	Area (acres)	Percent of Site Area	Organic Matter (%)	Soil Depth (cm)		A.W.C. (cm/cm)	Ksat (in/hr)	Cation Exchange Capacity	Bulk Density (g/cm ³)	Soil pH
Carbo silt loam, 2 to 7 percent slopes (5B)	252.95	3.89%	0.94	66.0	High	0.22	0.82	9.0	1.35	7.0
					Rep.	0.17	0.53	7.3		
					Low	0.14	0.24	4.95		
Carbo silt loam, 7 to 15 percent slopes (5C)	193.57	2.97%	0.94	66.0	High	0.22	0.82	9.0	1.35	7.0
					Rep.	0.17	0.53	7.3		
					Low	0.14	0.24	4.95		
Carbo-Oaklet, very rocky silt loams, 2 to 15 percent slopes (6C)	481.22	7.39%	0.79	110.53	High	0.18	0.67	17.84	1.36	6.53
					Rep.	0.15	0.43	13.94		
					Low	0.13	0.19	11.23		
Carbo-Oaklet-Rock outcrop complex, 2 to 15 percent slopes (7C)	55.49	0.85%	0.79	109.38	High	0.18	0.68	17.62	1.36	6.54
					Rep.	0.15	0.44	13.77		
					Low	0.13	0.2	11.07		
Chilhowie silty clay loam, 2 to 7 percent slopes (8B)	1.88	0.03%	0.51	69.0	High	0.13	0.66	19.38	1.35	7.56
					Rep.	0.11	0.43	14.6		
					Low	0.08	0.19	12.88		
Chilhowie silty clay loam, 7 to 15 percent slopes (8C)	16.03	0.25%	0.51	69.0	High	0.13	0.66	19.38	1.35	7.56
					Rep.	0.12	0.43	14.6		
					Low	0.1	0.19	12.88		
Water (W)	5.75	0.09%	0.0	0.0	High	0.0	0.0	0.0	0.0	0.0
					Rep.	0.0	0.0	0.0		
					Low	0.0	0.0	0.0		

Figure 13: National Soil Information System

Climate Data

The climate data in this report is based on Oak Ridge National Lab's Daymet data set, gridded estimates of daily weather parameters for North America. This data set, which is maintained by the Distributed Active Archive Center, contains daily estimates with a spatial resolution of 1 square kilometer dating back to 1980. The following derived products are a result of continued efforts of CGIT.

Temperature

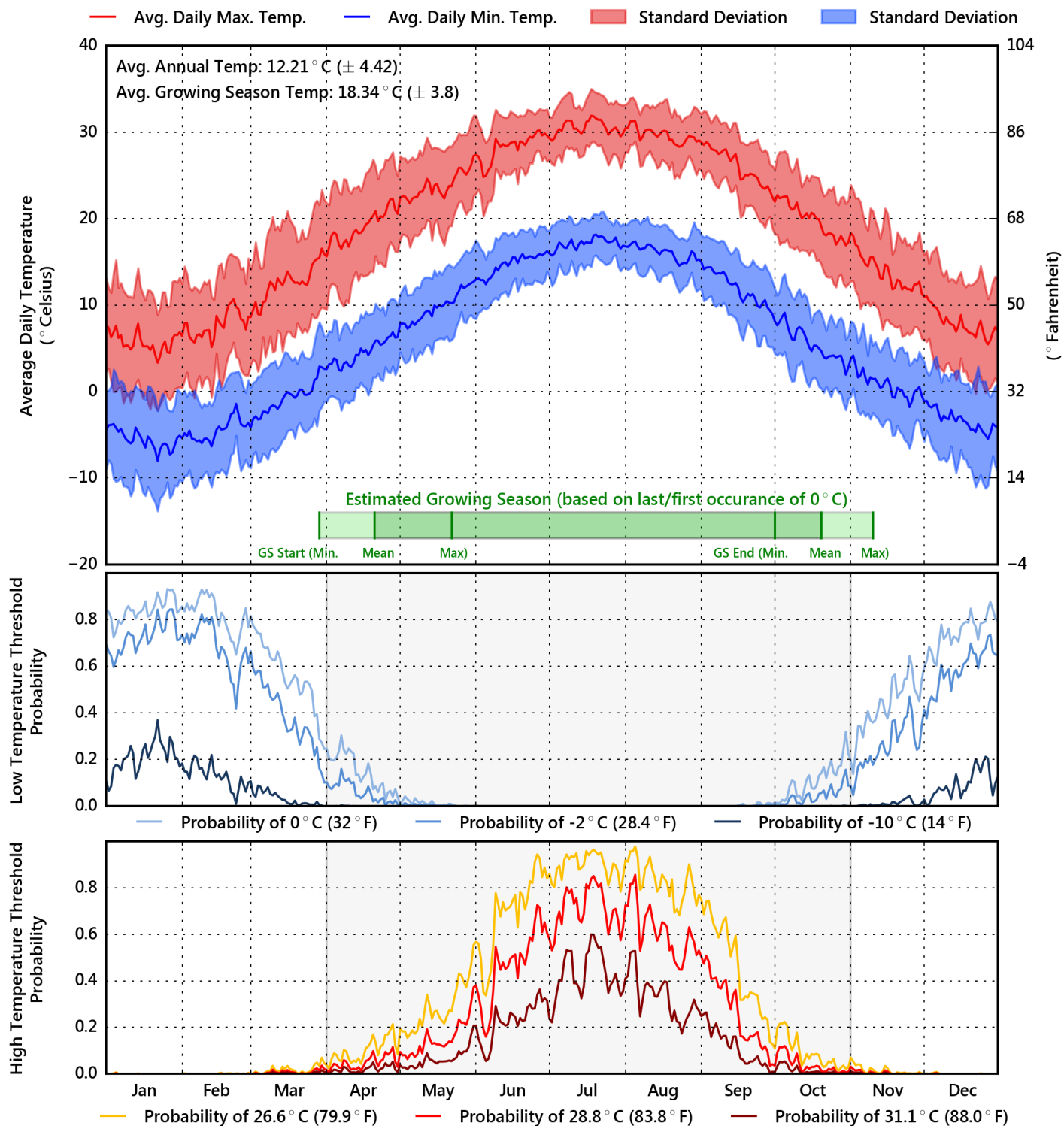


Figure 14: Daymet Temperature Graph

Growing Season

Growing season metrics are calculated based on the first and last occurrence of a given temperature threshold. The following growing season information is based on daily minimum temperatures from Daymet temperature data.

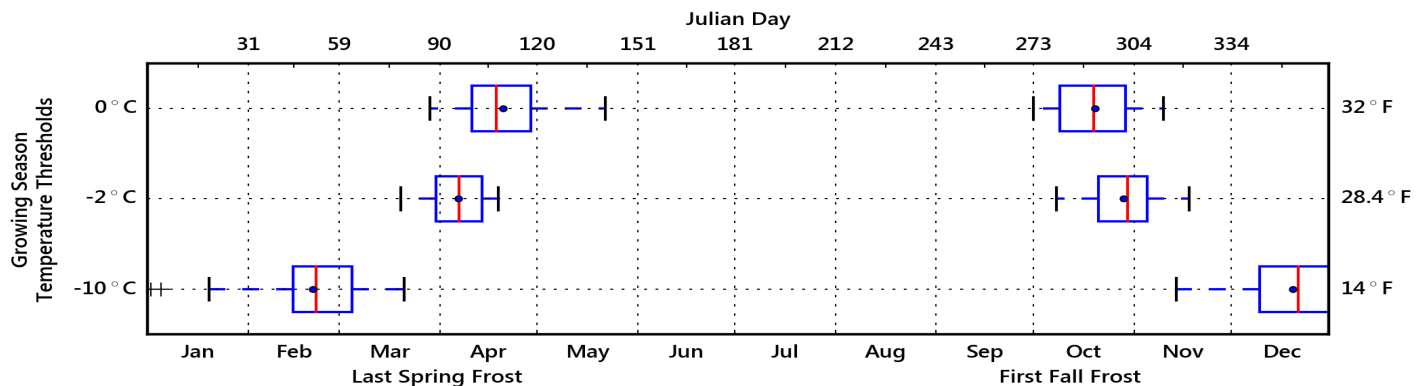
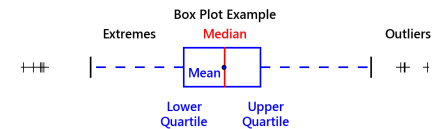


Figure 15: Daymet Growing Season Graph

Growing Season Statistics

Growing Season Temperature Thresholds	Growing Season Start				Growing Season End				Growing Season Length			
	min	max	mean	std	min	max	mean	std	min	max	mean	std
0°C (32°F)	87	141	109.53	13.72	273	313	292.06	11.08	144	211	182.53	16.99
-2°C (28.4°F)	78	108	95.78	8.09	280	321	300.81	9.61	172	236	205.03	11.63
-10°C (14°F)	1	79	50.83	17.33	317	385	353.0	14.86	238	381	302.17	25.77

Figure 16: Daymet Growing Season Statistics (Julian Day of Year)

Annual Growing Season Length

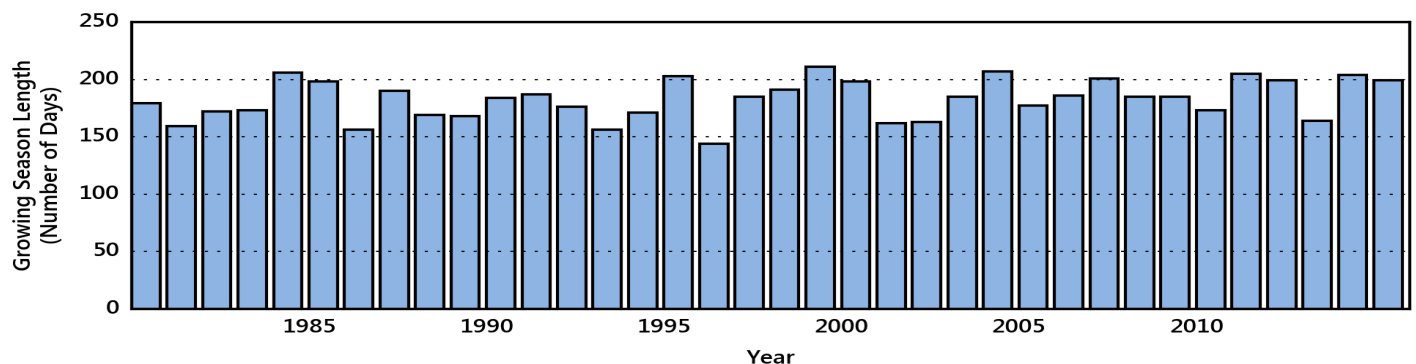


Figure 17: Daymet Annual Growing Season Graph - Calculated based on the occurrence of 0°C (32°F).

Degree Day Accumulation

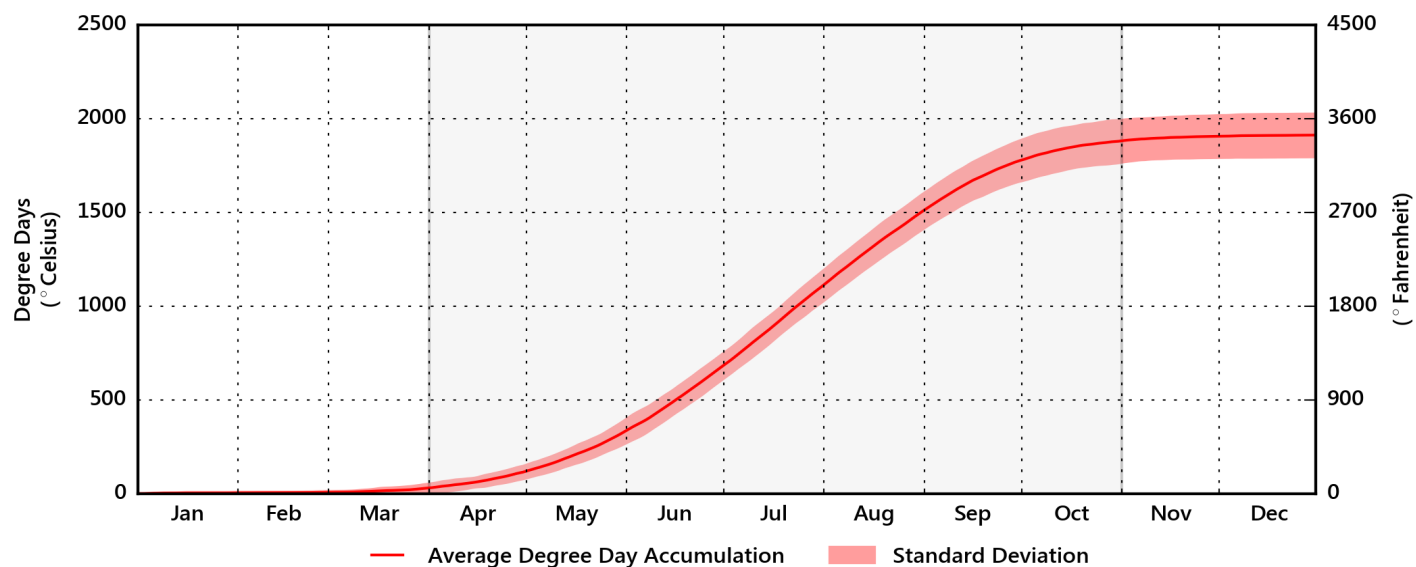


Figure 18: Daymet Degree Day Graph

Degree Days represent the average heat accumulation based on air temperature. Degree days are very important to predicting the stages of vine development, such as bud break, veraison, and maturity. Degree days are calculated by evaluating the difference between the average daily temperature and a reference value, in this case 10°C. Figure 18 shows the average accumulation according to 36 years of accumulations calculated from Daymet temperature data.

Precipitation

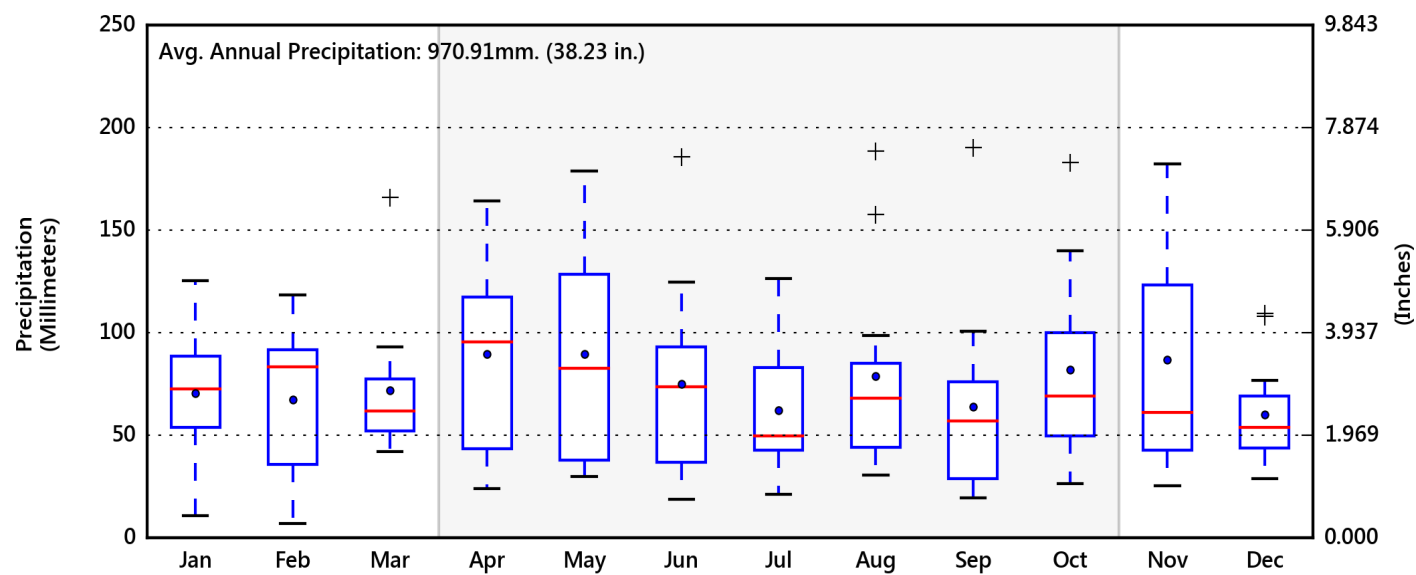
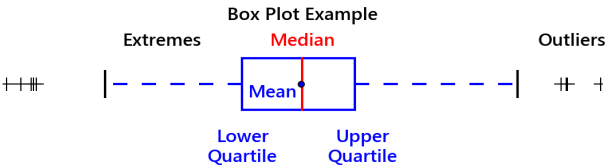


Figure 19: Daymet Precipitation Graph

The precipitation data in figure 19, represents 36 years of total precipitation each month. This data comes from Daymet daily precipitation estimates, representing the sum of all forms converted to water-equivalent.



Ferguson Cold Hardiness Model

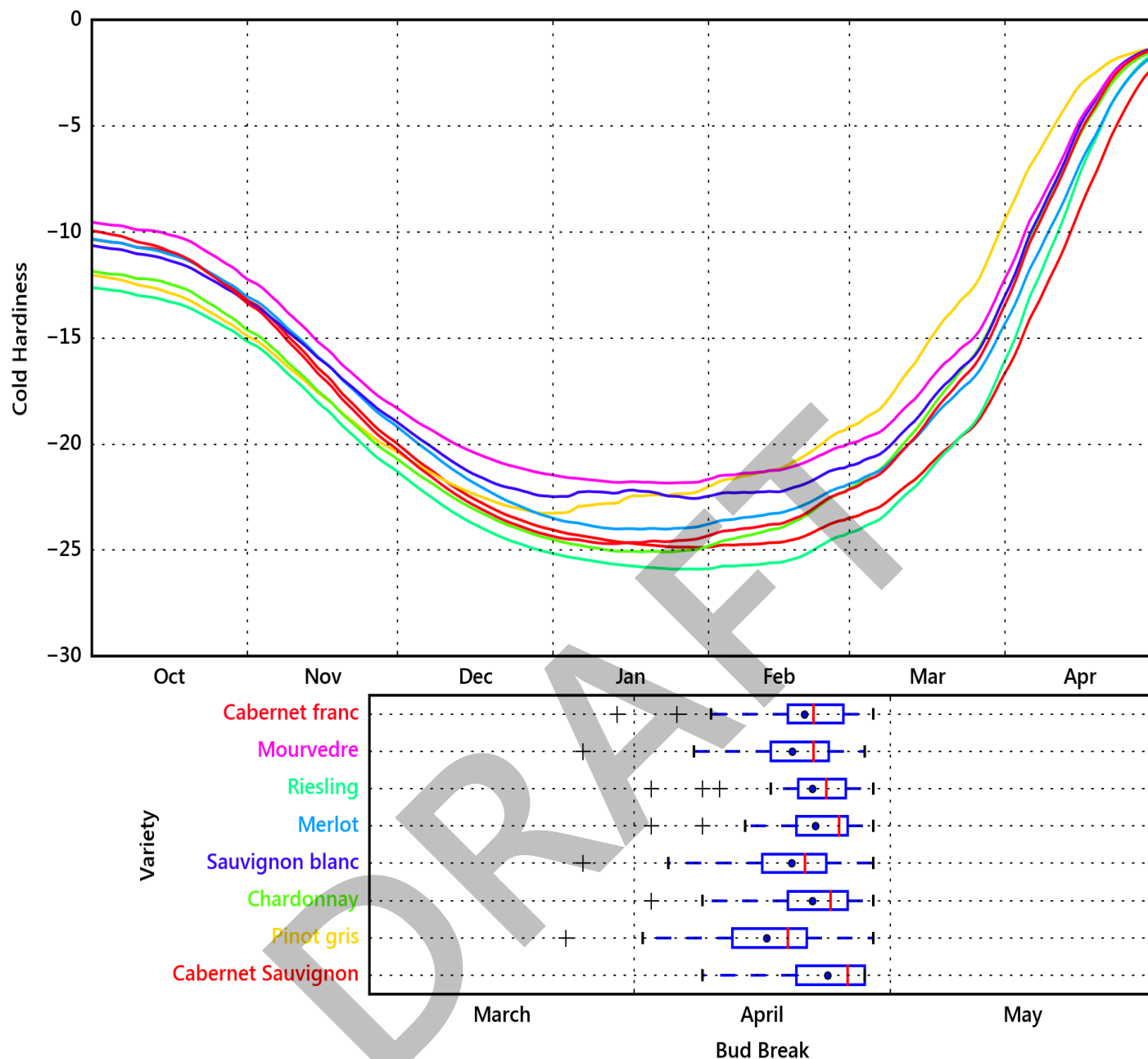


Figure 20: Ferguson Cold Hardiness Graph (based on Daymet temperature data)

"The model uses mean daily temperature as the sole input variable to drive daily changes in hardiness. Genotype-specific parameters, such as initial and maximum hardiness, temperature thresholds, acclimation and deacclimation rates, and chilling and heating requirements, were optimized through an iterative process." (Ferguson et al., 2014) This model can be used to estimate the date bud break based given thresholds.

This model is distributed by the Washington State University Viticulture Program, located at: WSU-IAREC, 24106 North Bunn Rd., Prosser, WA 99350, USA.

Cabernet franc

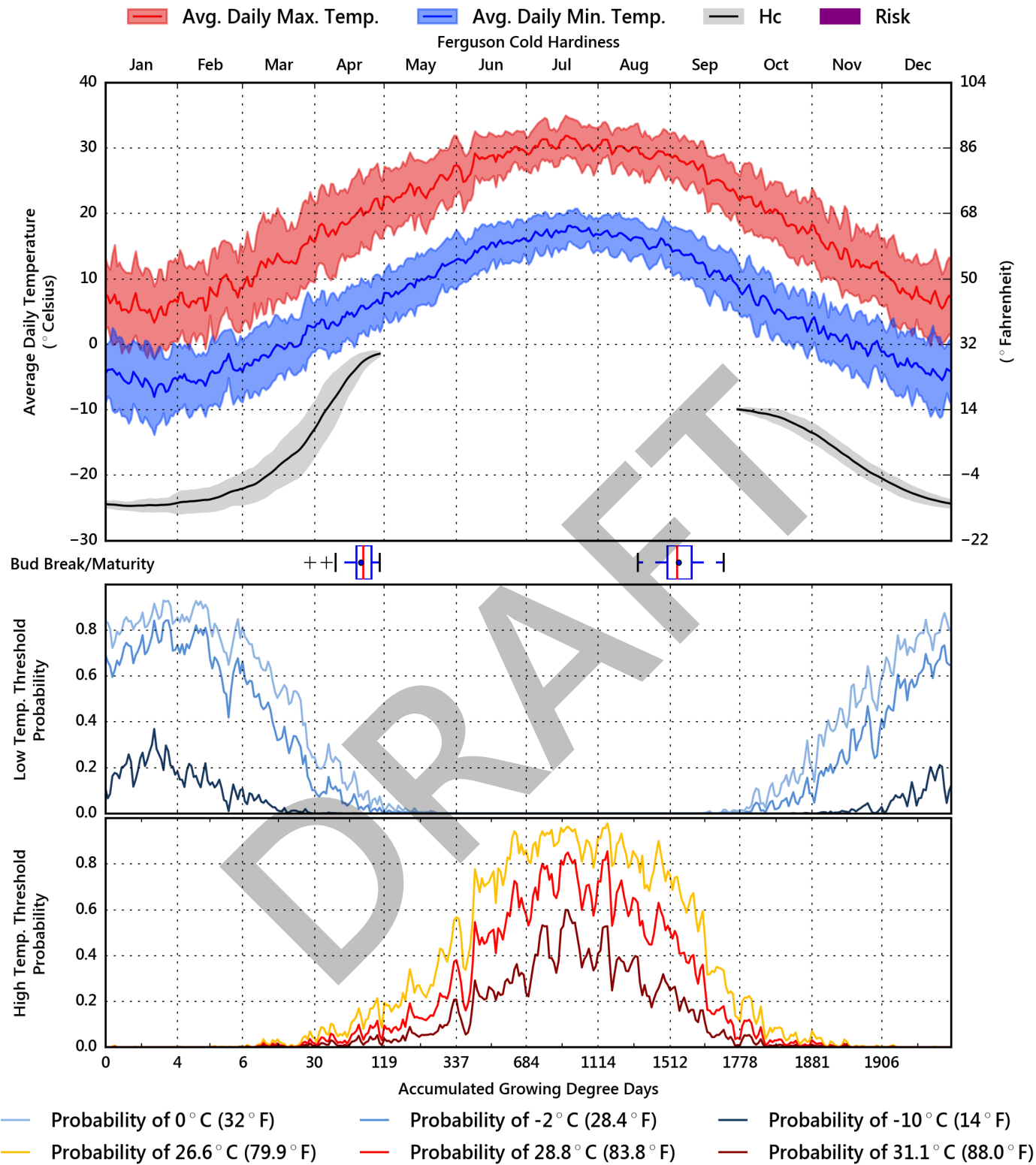


Figure 21: Cabernet franc Phenology Profile

Cabernet Sauvignon

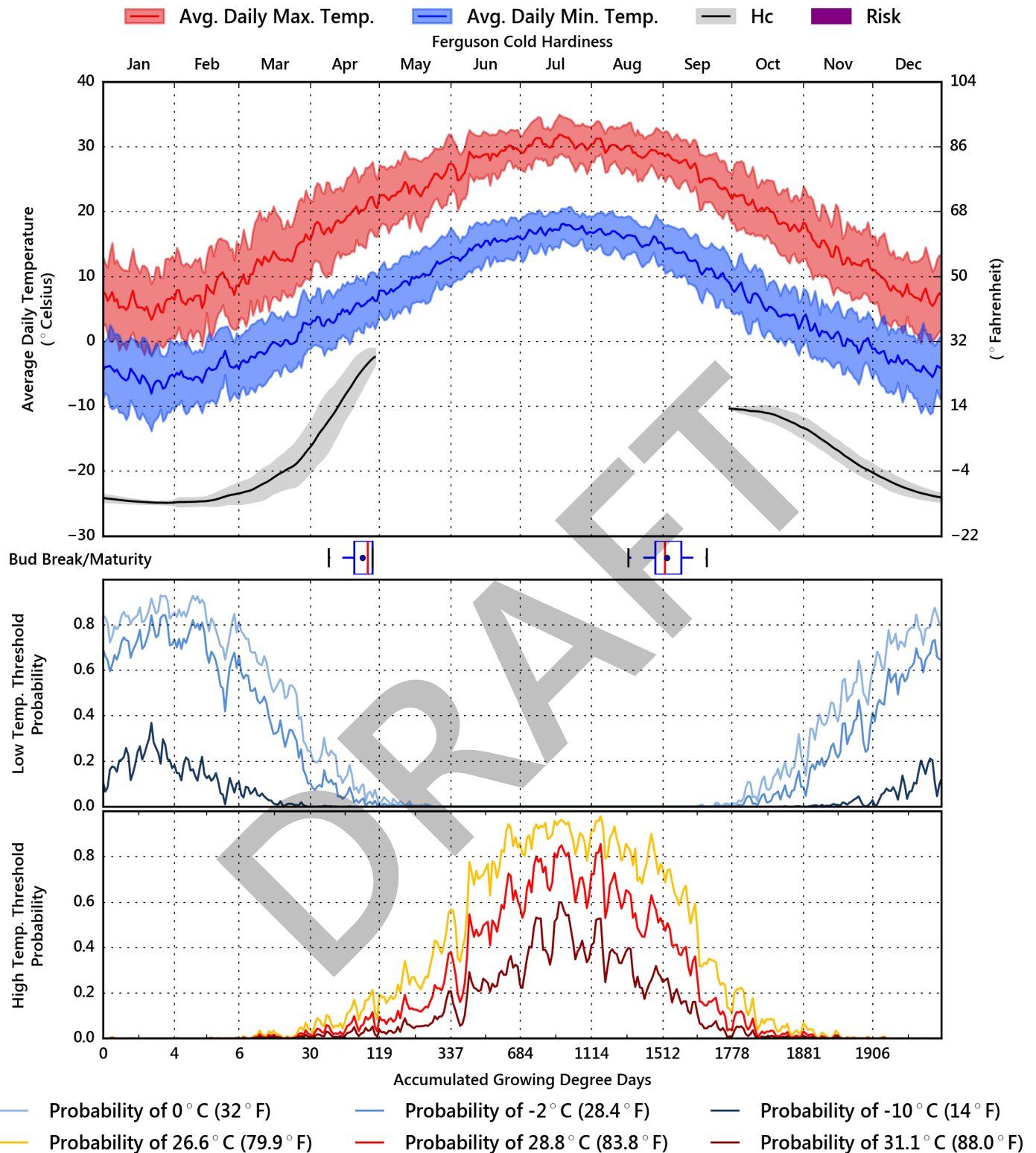


Figure 22: Cabernet Sauvignon Phenology Profile

Pinot gris

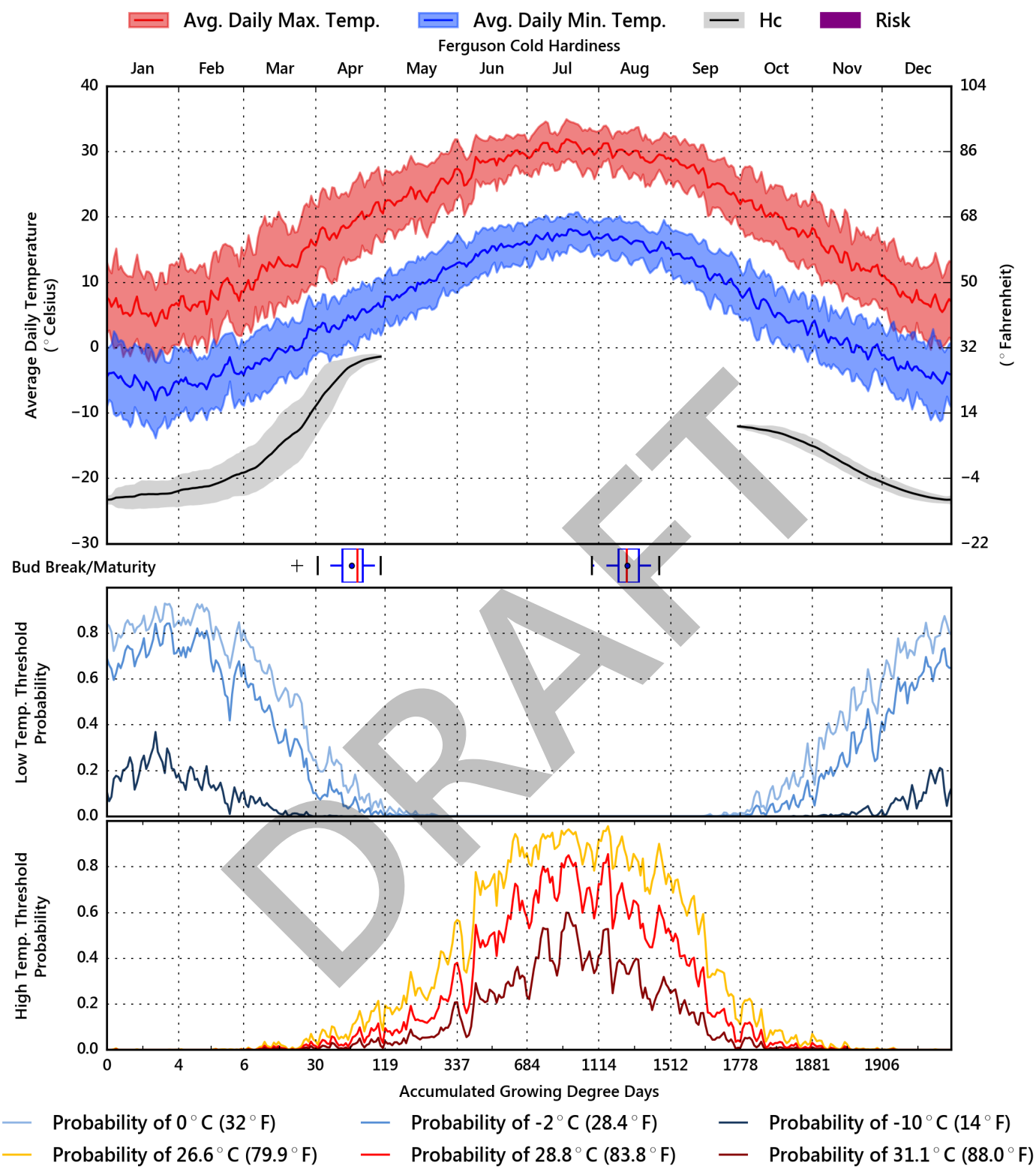


Figure 23: Pinot gris Phenology Profile

Phenology Milestones

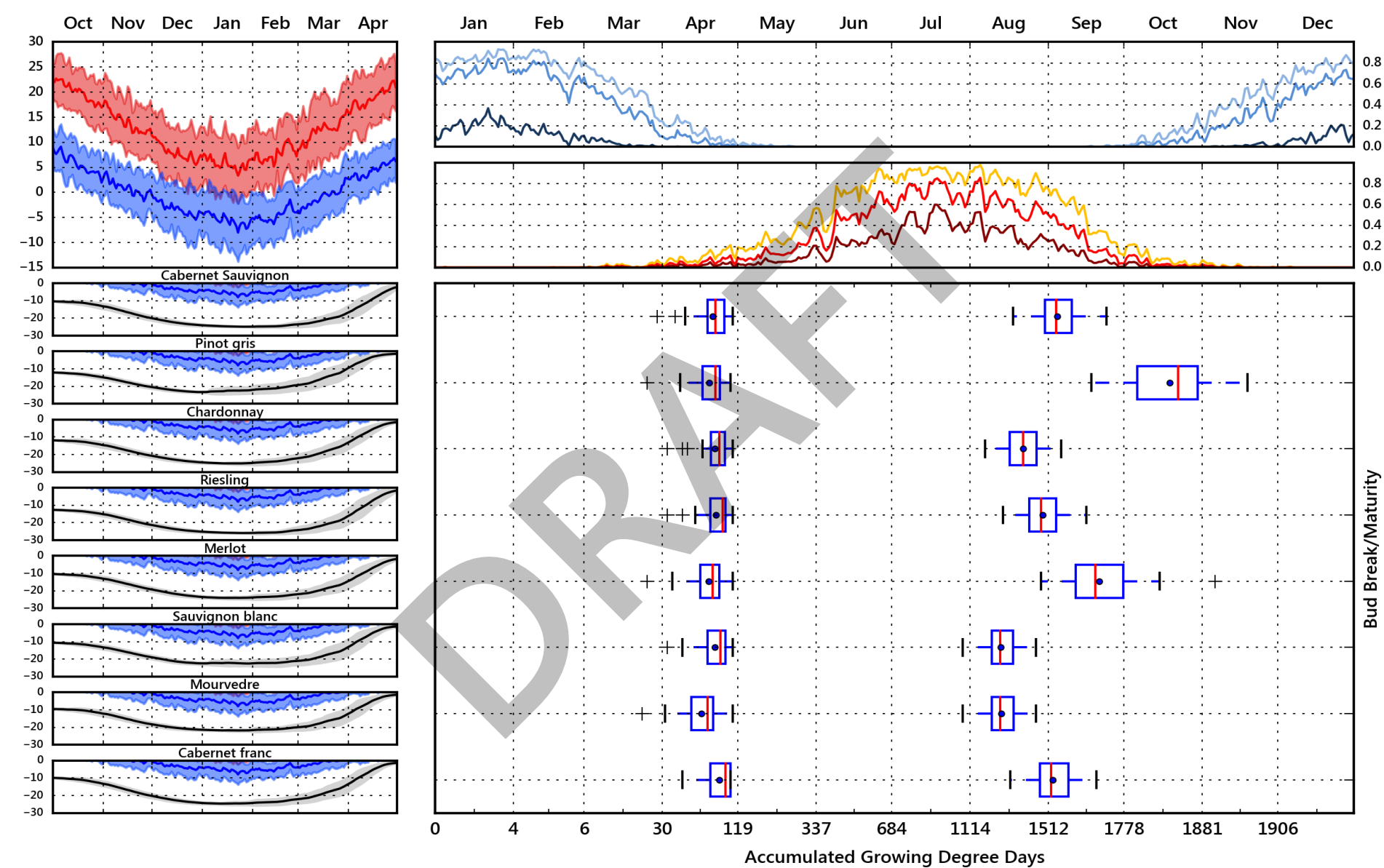


Figure 24: Phenology Milestones

Grapevine Climate/Maturity Groupings

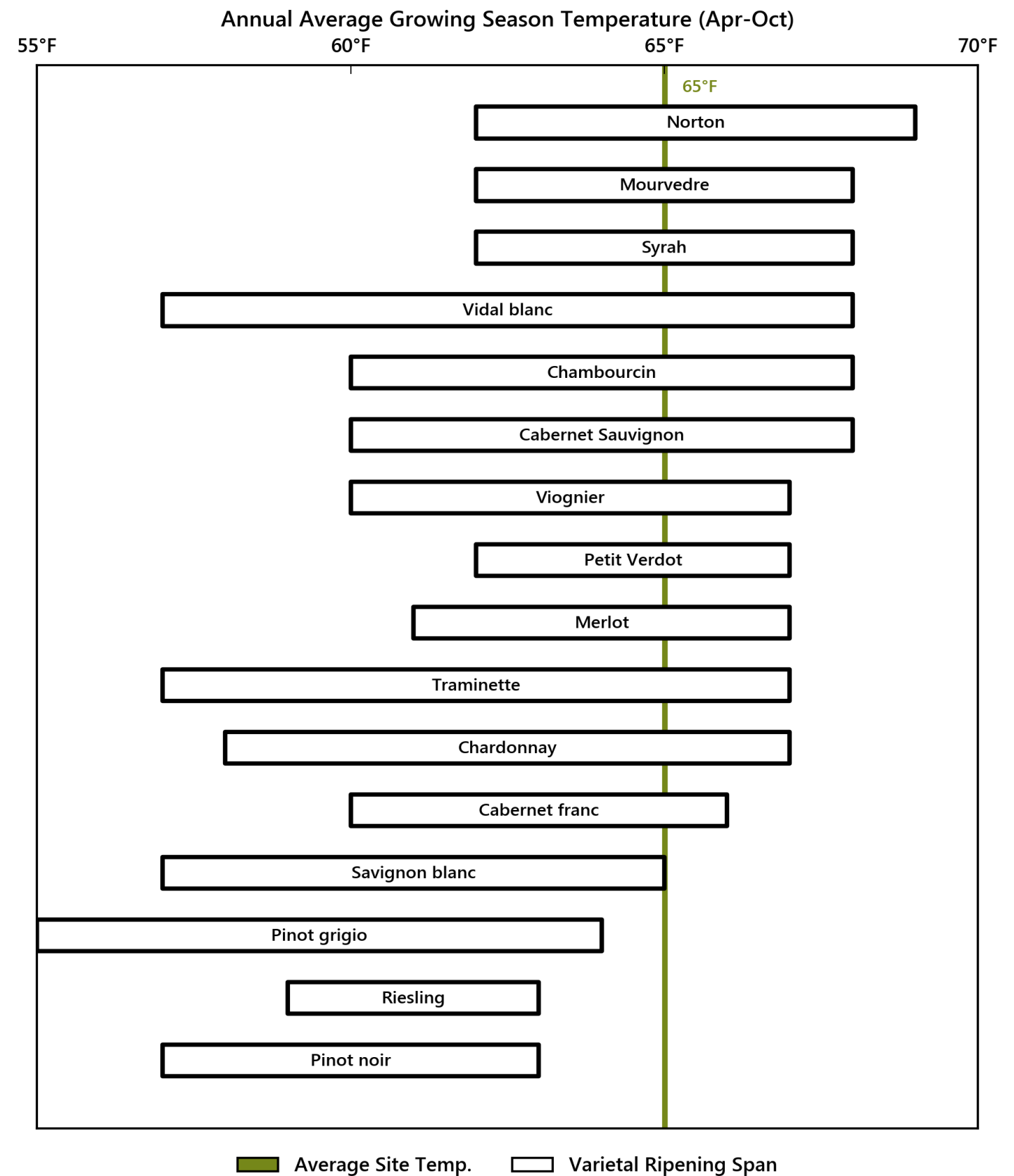


Figure 25: Maturity Grouping Graph

This graphic is based on the work of Dr. Gregory Jones (Jones 2006; Jones et al. 2012), it was adapted for the Commonwealth of Virginia by Dr. Tony Wolf during the Eastern U.S. Grape & Wine Quality Initiative.

Elevation

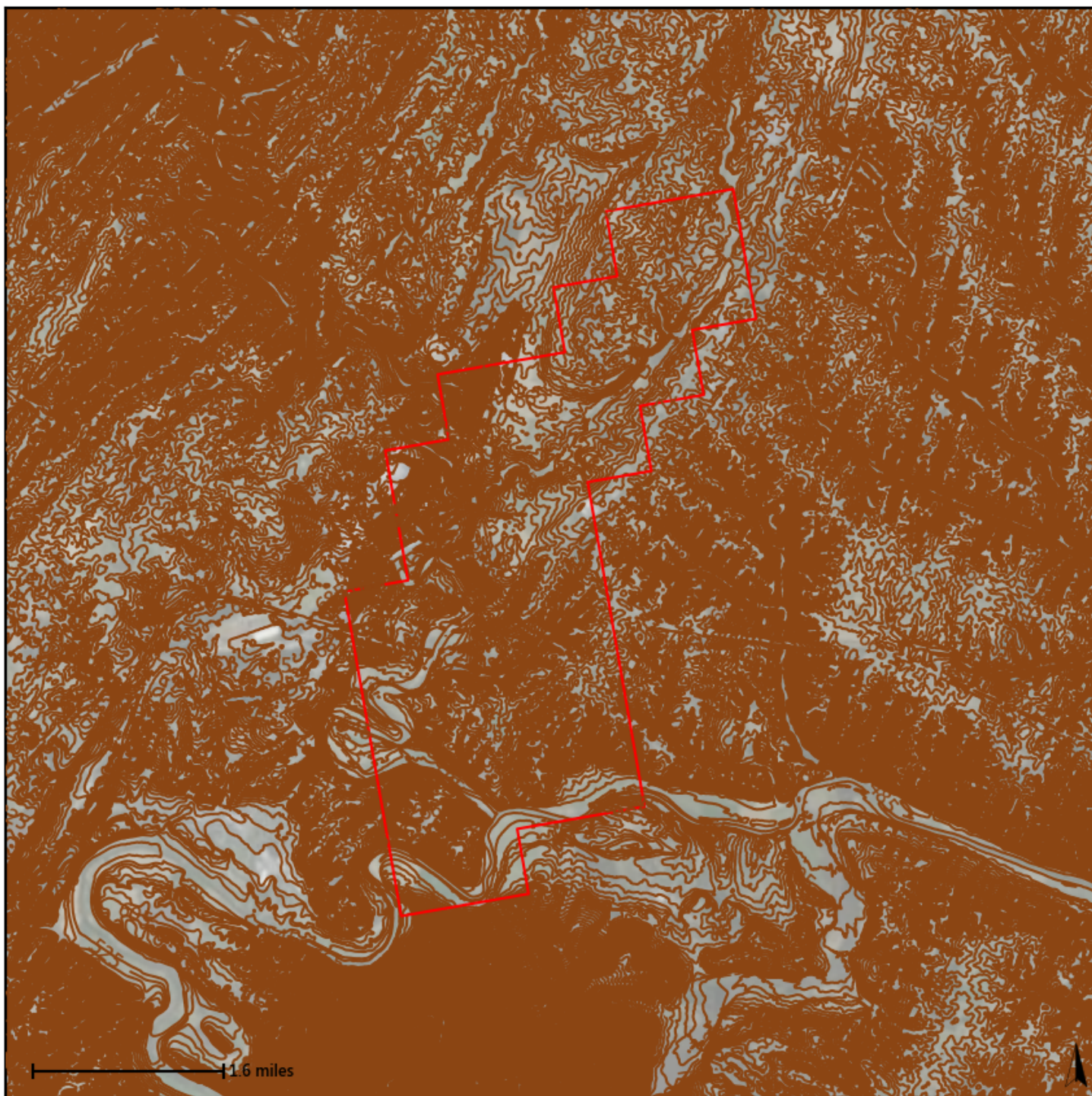


Figure 26: USGS National Elevation Dataset: Elevation Contours, VBMP Orthoimagery (MostRecentImagery)

Average Site Elevation: 633.27 ft

Minimum Site Elevation: 306.18 ft

Maximum Site Elevation: 794.36 ft

The contour map shown above is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The contours are generated dynamically at a 10 foot interval.

Slope

The slope map shown in figure 27 is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The slope values are calculated using GDAL, an open source geospatial python library.

Average Site Slope: 11.43 °
Minimum Site Slope: 0.0 °
Maximum Site Slope: 308.2 °

The classification method for the slope map in figure 28 was established by CGIT during the Eastern U.S. Grape & Wine Quality Initiative.

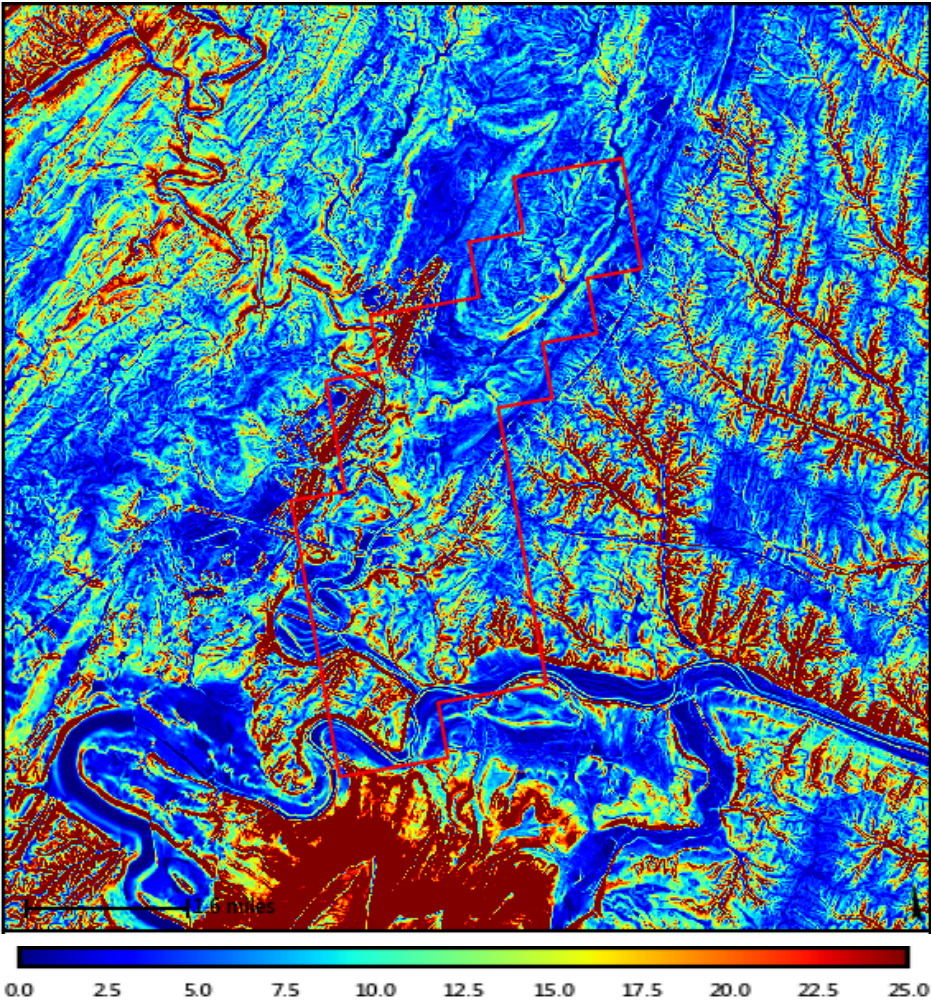


Figure 27: USGS National Elevation Dataset: Slope (calculated)

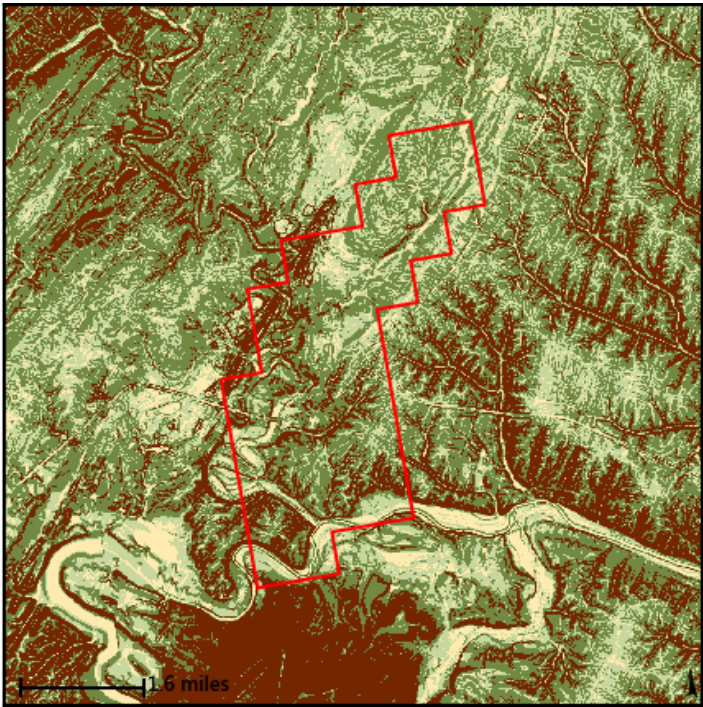


Figure 28: USGS National Elevation Dataset: Classified Slope (calculated)

	Classification Range	Percent of Site
Flat Land	0% - 2%	8.77%
Suitable	2% - 5%	23.71%
Highly Suitable	5% - 15%	46.56%
Unsuitable	> 15%	20.85%

Aspect

The aspect map shown in figure 29 is created from the USGS National Elevation Dataset. This data has a spatial resolution of 1/3 arc-second, ~ 10 meters. The aspect values are calculated using GDAL, an open source geospatial python library.

Average Site Aspect: 187.65 °
Minimum Site Aspect: -1.0 °
Maximum Site Aspect: 360.0 °

The classification method in figure 30 represents the downslope orientation as the appropriate cardinal direction.

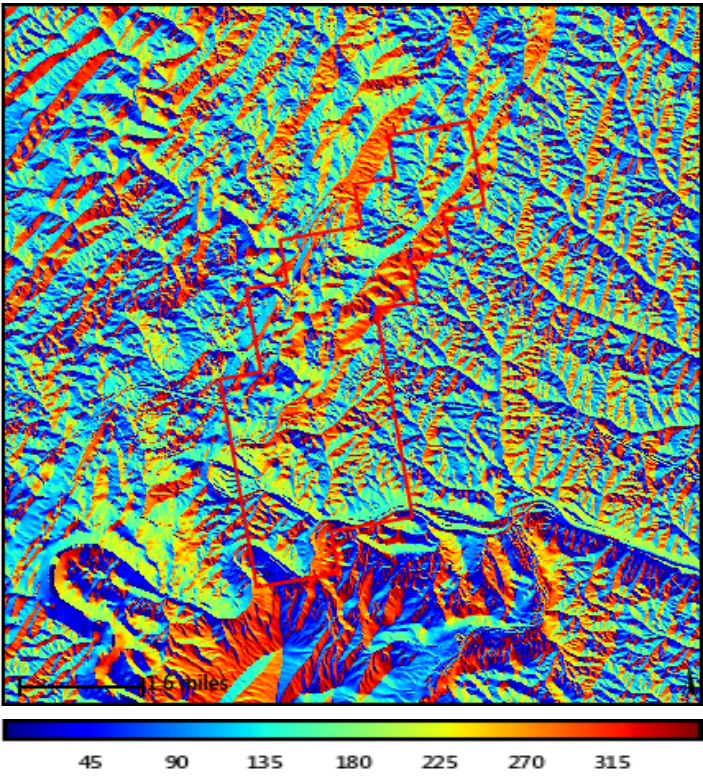


Figure 29: USGS National Elevation Dataset: Aspect (calculated)

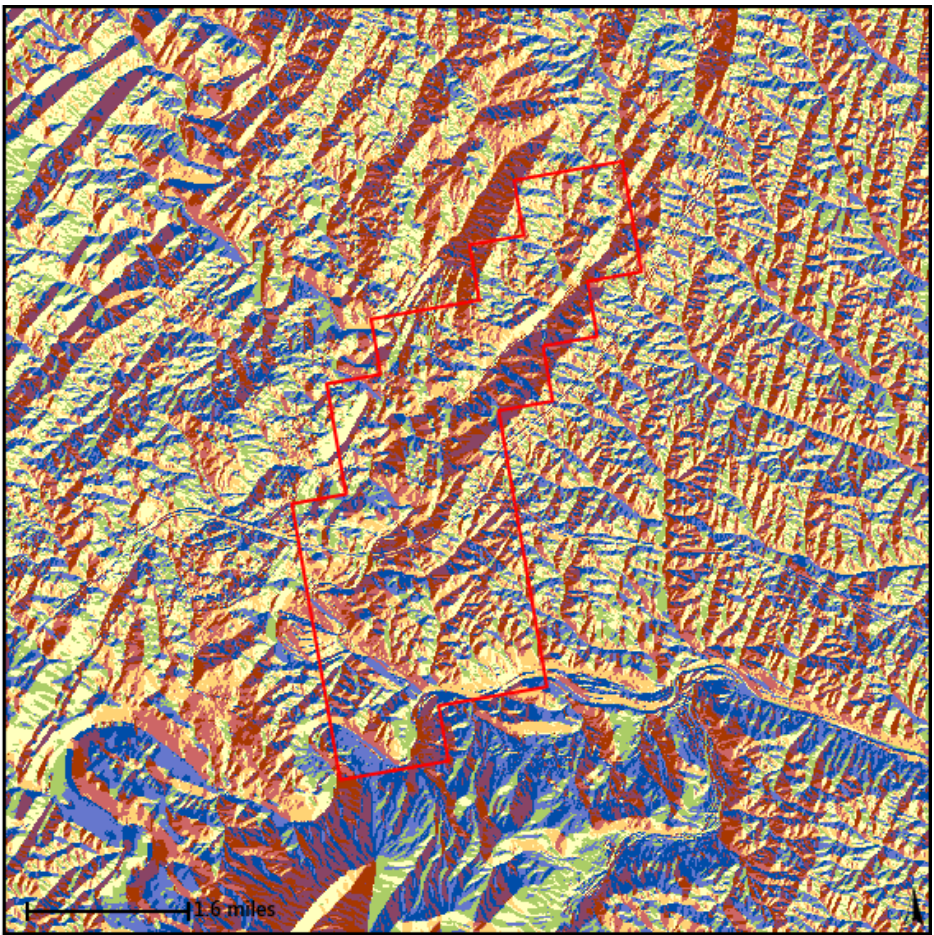


Figure 30: USGS National Elevation Dataset: Classified Aspect (calculated)

Direction	Bearing (°)	Percent of Site
Northern	337.5 to 22.5	0.0%
Northeastern	22.5 to 67.5	9.33%
Eastern	67.5 to 112.5	10.57%
Southeastern	112.5 to 157.5	16.07%
Southern	157.5 to 202.5	14.96%
Southwestern	202.5 to 247.5	12.68%
Western	247.5 to 292.5	12.38%
Northwestern	292.5 to 337.5	14.45%

Lithology

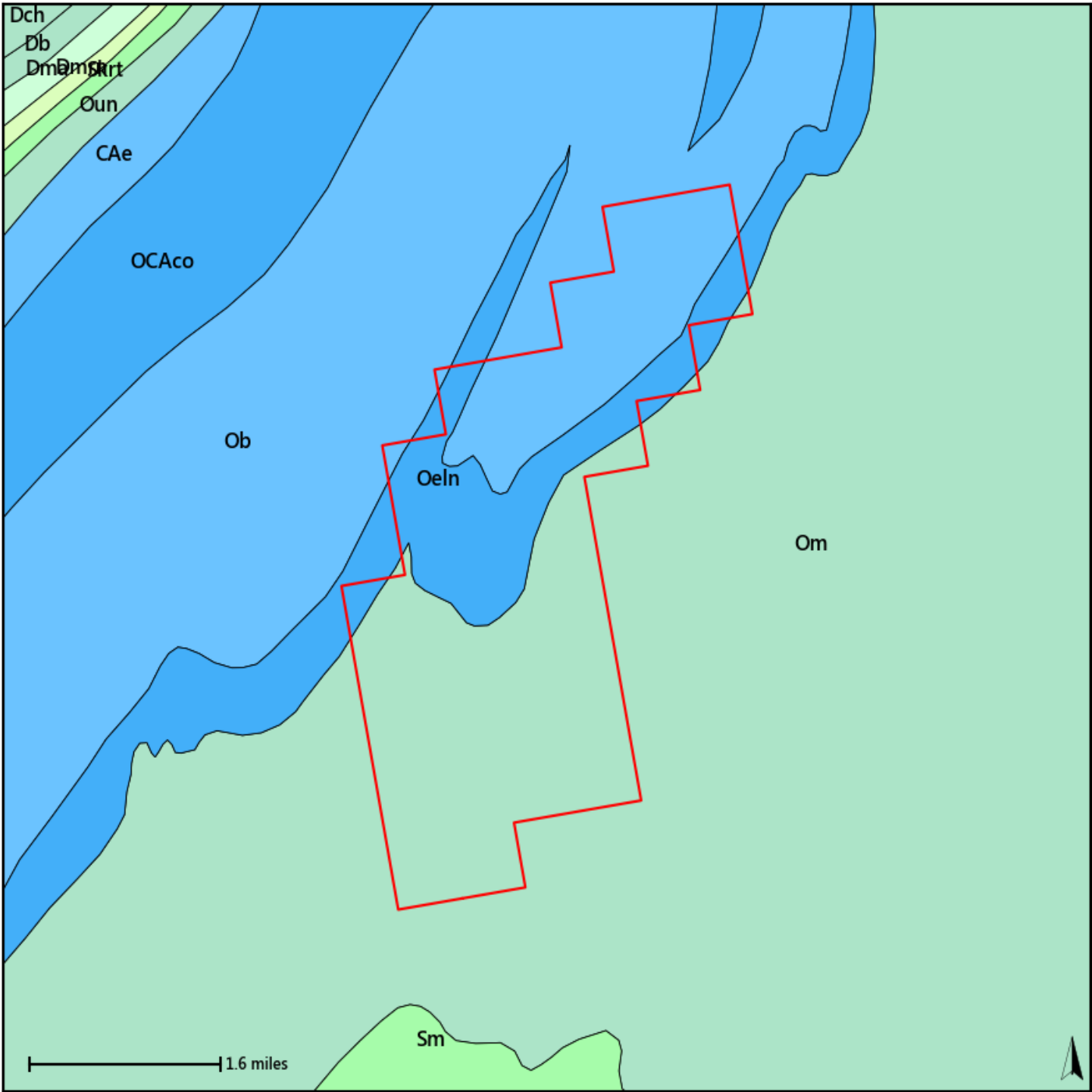


Figure 34: USGS Division of Geology and Mineral Resources, Lithology

Shale (Db)	Limestone (OCAco)	Sandstone (Dma)
Shale (Dch)	Black Shale (Dmrn)	Shale (Oun)
Shale (Om)	Dolostone (Dolomite) (Ob)	Dolostone (Dolomite) (CAe)
Limestone (Oeln)	Arenite (Skrt)	Arenite (Sm)

Land Cover

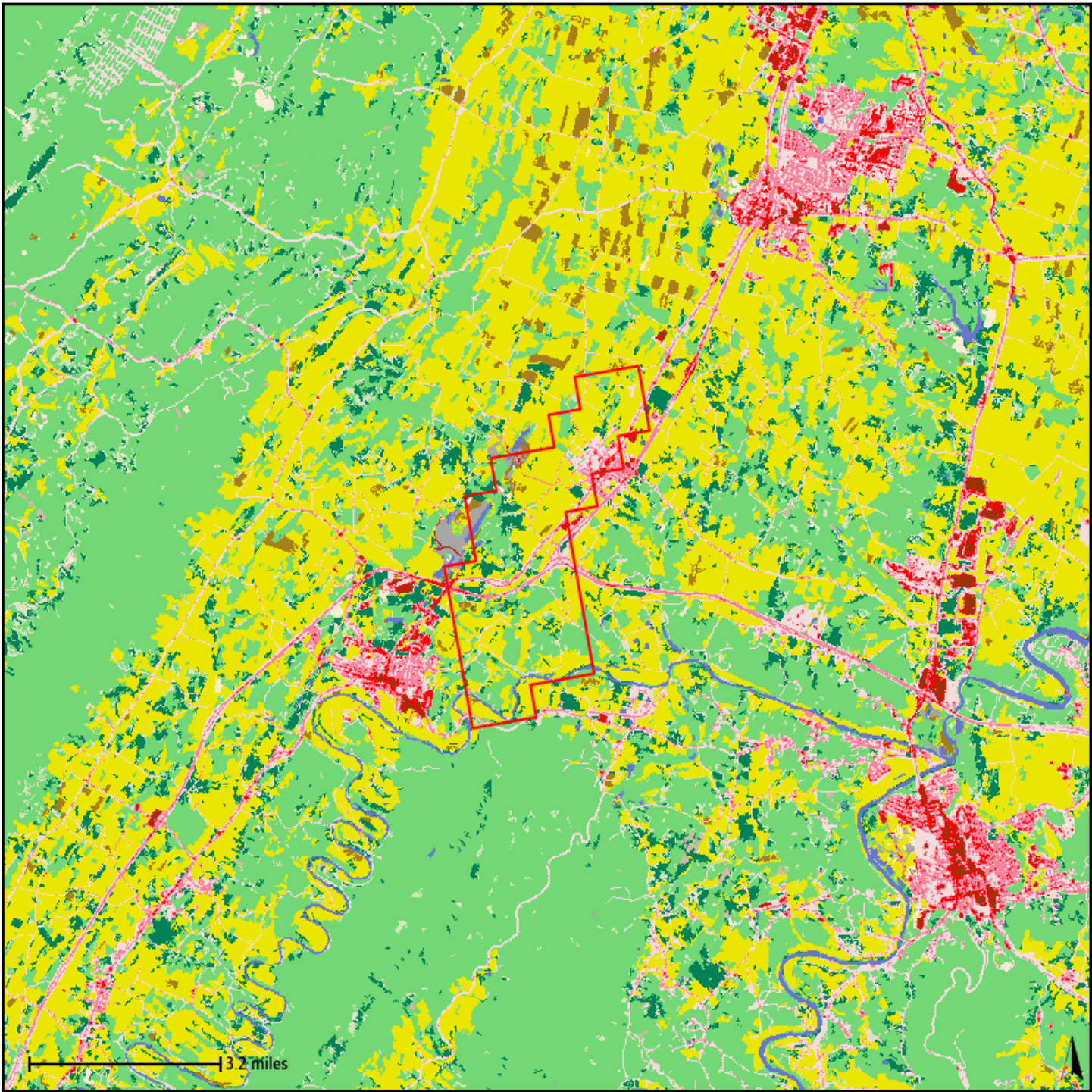


Figure 31: Multi-Resolution Land Characteristics Consortium: National Land Cover Database, 2011

1.8%	Open Water	1.35%	Barren Land	8.26%	Open Space	22.58%	Deciduous Forest
5.04%	Developed-Low Density	8.03%	Evergreen Forest	0.86%	Developed-Med. Density	2.53%	Mixed Forest
0.15%	Developed-High Density	0.11%	Shrub/Scrub	0.3%	Grassland/Herbaceous	0.05%	Woody Wetlands
47.13%	Pasture/Hay	0.11%	Herbaceous Wetlands	1.69%	Cultivated Crops		

The National Land Cover Database (NLCD) uses 16 land cover classifications. This data has a spatial resolution of 30 meters.

Land Surface Forms

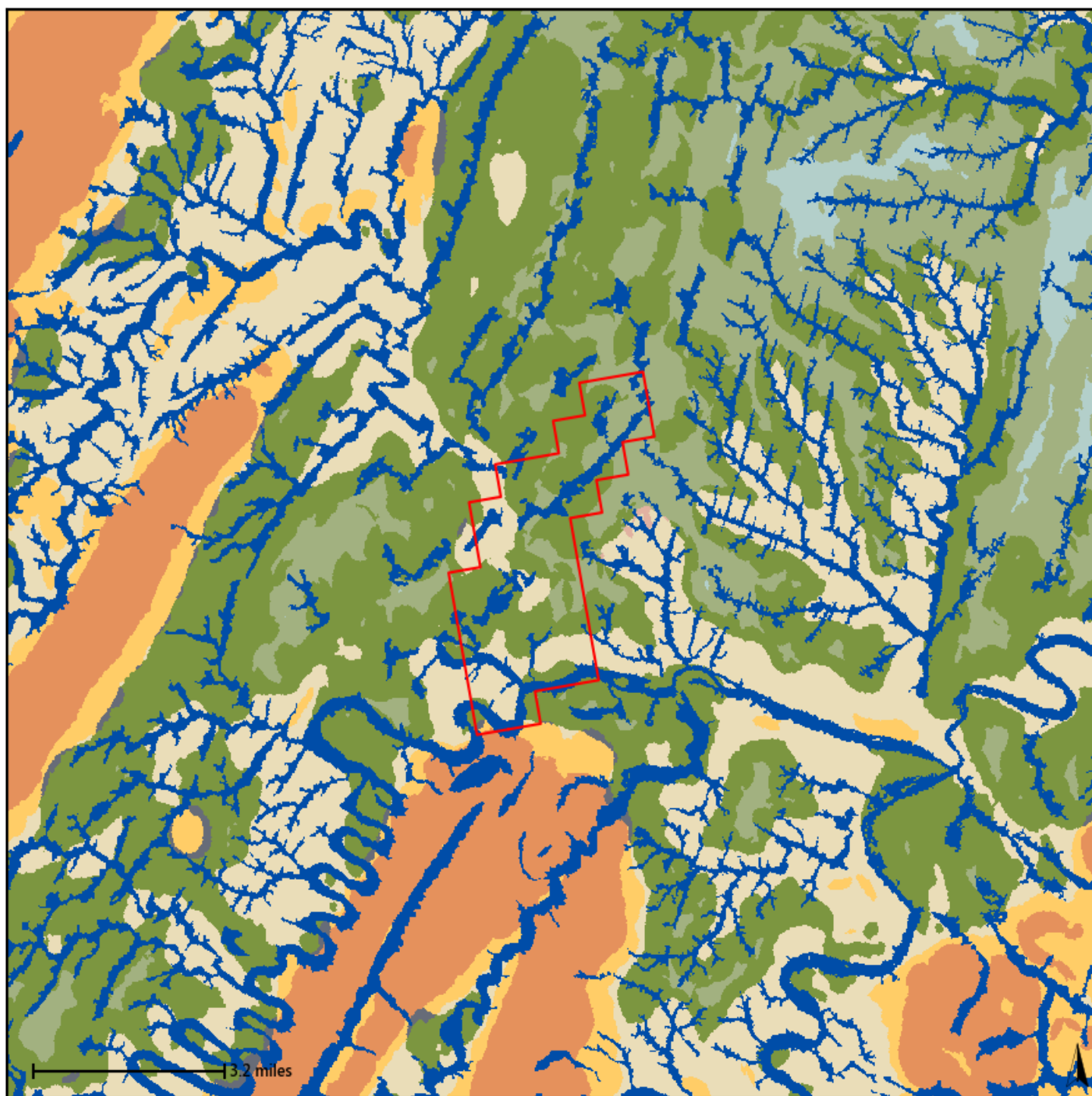


Figure 33: USGS Land Surface Form Dataset

0.0%	Flat Plains	44.18%	Irregular Plains	0.0%	Low Hills	0.33%	Breaks/Foothills	0.12%	Low Mountains
14.98%	Smooth Plains	0.16%	Escarpments	19.92%	Hill	20.31%	Drainage Channels	0.0%	High Mountains/ Deep Canyons

"As part of an effort to map terrestrial ecosystems, the U.S. Geological Survey has generated land surface form classes to be used in creating maps depicting standardized, terrestrial ecosystem models for the conterminous United States, using an ecosystems classification developed by NatureServe." (Cress, Sayre, Comer, and Warner)

Topographic Moisture Potential

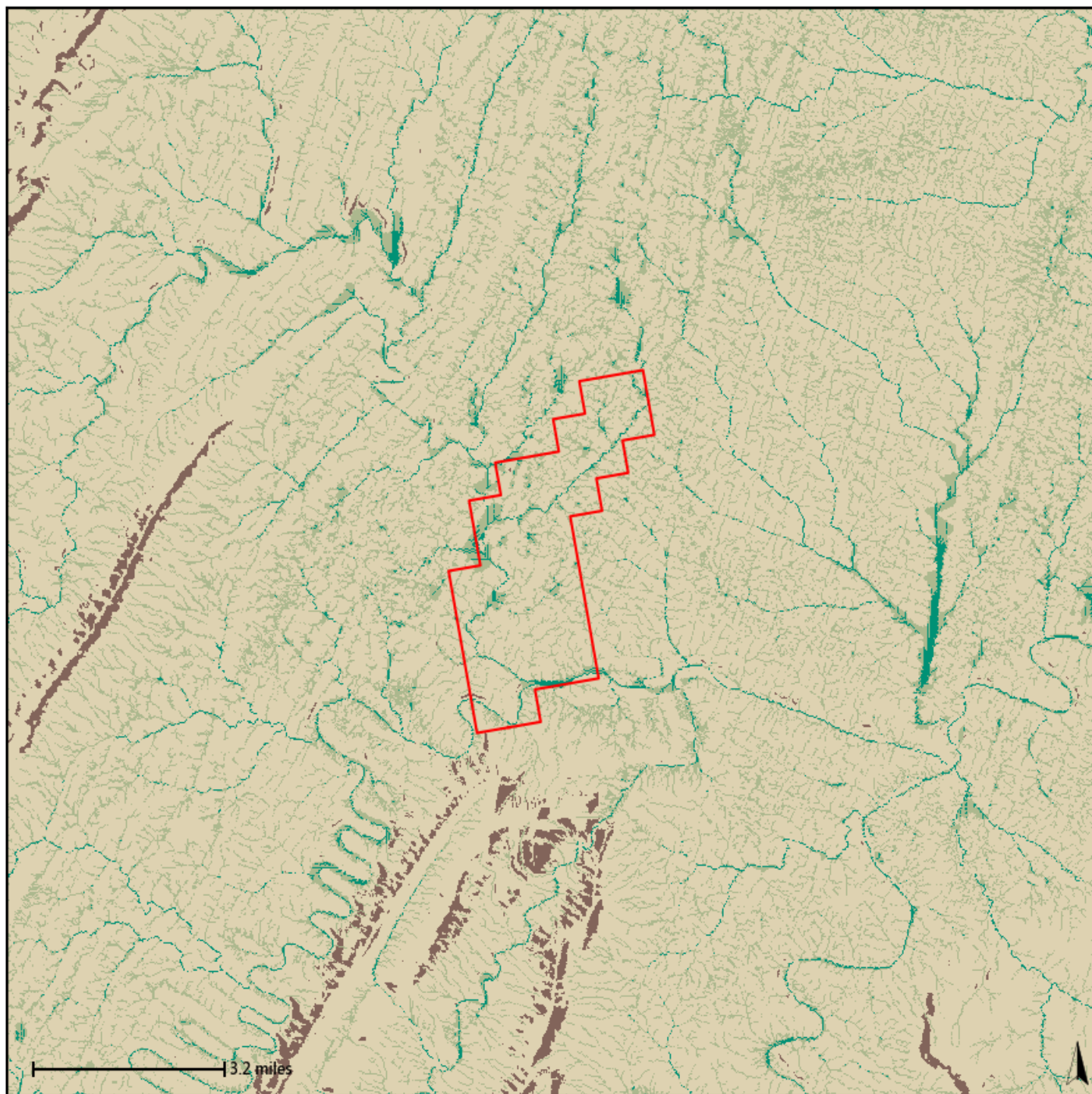


Figure 32: USGS Topographic Moisture Potential

21.81%	Mesic Uplands	74.49%	Dry Uplands	0.16%	Very Dry Uplands
3.54%	Potential Wetlands (Periodically Saturated or Flooded Land)				

This dataset was derived from the Compound Topographic Index (CTI) dataset, which was itself a derivative product of the National Elevation Dataset (NED), created by the Elevation Derivatives for National Applications (EDNA) project.

Data Sources

This vineyard evaluation report was created automatically by interpreting publicly-available data as it applies to vineyard suitability. The GIS data layers used in this report are generalized and may not capture all details of a specific site. Furthermore, site management practices can significantly alter natural conditions.

Imagery:

Data available from the Virginia Geographic Information Network (VGIN). Virginia Base Mapping Program (VBMP), most recently available orthoimagery. Data collected in spring 2009, 2011, or 2012.

Soils Data:

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Soil Survey Geographic (SSURGO) Database for all available counties in Virginia and Maryland. Available online at <http://websoilsurvey.nrcs.usda.gov/>. Accessed 5/31/2018.

Climate Data:

Thornton, P.E., M.M. Thornton, B.W. Mayer, Y. Wei, R. Devarakonda, R.S. Vose, and R.B. Cook. 2016. Daymet: Daily Surface Weather Data on a 1-km Grid for North America, Version 3. ORNL DAAC, Oak Ridge, Tennessee, USA. Accessed February 17, 2016. Time period: 1980-01-01 to 2015-12-31. <http://dx.doi.org/10.3334/ORNLDAAAC/1328>

Thornton, P.E., Running, S.W., White, M.A. 1997. Generating surfaces of daily meteorological variables over large regions of complex terrain. *Journal of Hydrology* 190: 204-251. [http://dx.doi.org/10.1016/S00022-1694\(96\)03128-9](http://dx.doi.org/10.1016/S00022-1694(96)03128-9)

Elevation Data:

Data Credit: National Elevation Dataset <http://ned.usgs.gov/> Accessed 4/27/2015

Land Cover Data:

Homer, C.G., Dewitz, J.A., Yang, L., Jin, S., Danielson, P., Xian, G., Coulston, J., Herold, N.D., Wickham, J.D., and Megown, K., 2015, Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. *Photogrammetric Engineering and Remote Sensing*, v. 81, no. 5, p. 345-354. Accessed 4/2/2015.

Landforms Data:

Originator: USGS Rocky Mountain Geographic Science Center Publication_Date: November 2008 Title: Terrestrial Ecosystems Geospatial_Data_Presentation_Form: raster dataset Data Used: Compound Topographic Index (CTI), EDNA (Elevation Derivative for National Applications), US Geological Survey, <http://edna.usgs.gov/edna/datalayers/cti.asp>

Cress, J.J., Sayre, Roger, Comer, Patrick, and Warner, Harumi, 2009, Terrestrial Ecosystems Land Surface Forms of the Conterminous United States: U.S. Geological Survey Scientific Investigations Map 3085, scale 1:5,000,000, 1 sheet.

Topographic Moisture Potential Data:

Cress, J.J., Sayre, Roger, Comer, Patrick, and Warner, Harumi, 2009, Terrestrial Ecosystems Topographic moisture potential of the conterminous United States: U.S. Geological Survey Scientific Investigations Map 3086, scale 1:5,000,000, 1 sheet.

Lithology Data:

Dicken, Connie L., Nicholson, Suzanne W., Horton, John D., Kinney, Scott A., Gunther, Gregory, Foose, Michael P., and Mueller, Julia A.L., 2005, Integrated Geologic Map Databases for the United States: Delaware, Maryland, New York, Pennsylvania, and Virginia: U.S. Geological Survey Open-File Report 2005-1325, U.S. Geological Survey, Reston, VA.

Appendix C

GIS User Guide Introduction

Introduction

The Cedar Creek Agricultural Landscape GIS Database is intended as both a visual representation of and an analytical tool for understanding the evolution of the agricultural landscape of the Cedar Creek and Belle Grove National Historical Park and its region. It contains a series of layers, or feature classes, and associated attribute tables that describe various components of the agricultural landscape of the Park region, including roads, mills, homesteads, fords, manufacturing sites, early land purchases, and railroads. It also contains digitized historical maps and contemporary and historical aerial photographs of the region from which features such as pastures, forest cover, crop land, and fence lines have been identified. The feature classes can be layered to reveal important relationships and understandings (e.g., the proximity of mills to roads, the selection of specific soil types for crop fields). Using the expanded information in the attribute tables associated with many of the feature classes, the database can also be queried to create new maps based on specific criteria (e.g., mills operating at the start of the Civil War, changing forest cover over time).

The database should be understood as a work in progress. It is intended as a living document that can expand as more information about the historical landscape of the Park region is uncovered and added to the database. Work on the database began with setting up a framework for the database. The team then combed through the historical resources identified in the written report for data that could be spatialized and then entered this into the database. As time and funding allow, future researchers can add more information to the database. For example, information about slave ownership among the various landholders within the Park could be added.

Some Limitations of the Database

In general, maps and data tables, like those in this database, give the illusion of precision when, in fact, historical data can be vague and ambiguous. In order to be able to map some of the historical data found, its ambiguities had to be translated into quantifiable data. In these cases, every effort was made to be transparent about the inaccuracies introduced by this translation process. For example, a mill that documentary sources said opened in “the first quarter of the century” had to be assigned a specific year in the attribute table in order to facilitate database queries about mills in operation at specific times. In such cases, a note is included in the attribute table (or in some cases in the user guide for the feature class) indicating the date was assigned.

Several Civil War-era maps of the Park region were rectified to overlay the contemporary USGS base maps and aerial photographs using the Georeferencing tool in ArcGIS Pro. However, because the historical maps were drawn with varying degrees of precision, the georeferencing process is imperfect and the locations, sizes, etc., of the derived feature classes should be understood as approximate.

None of the vector feature classes (i.e., points, lines, polygons) have been ground-truthed. Although they have been located/drawn on the USGS base map, they have not been tied to real locations on the surface of the earth. Ground-truthing of critical features can be done at a later date as funding and priorities allow.

How to Use the User Guide

Like the database itself, the User Guide is intended to be a living document. For this reason, a digital copy of the full guide will be provided as an MS Word document rather than a PDF. As the database expands, the User Guide can be updated to reflect these changes.

The guide is organized by feature class. The first section contains the “Mapping Guidelines” or basic strategy used for mapping each feature class. The second section (when applicable) lists the column headings contained in the attribute table (in the database) associated with the feature class. Many of these tables contain a great deal of additional information than is visible in the map layer. As applicable, the final section lists the sources for all the information on the map layer and in the attribute table.

How to Access the Database

The Cedar Creek Agricultural Landscape GIS Database was created using ArcGIS Pro 2.4.1. It will be made available on Google drive or a separate hard drive as a packaged project file.