

How Ecology and Land Use History Shaped the Battle of Chancellorsville

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ABSTRACT

The Battle of Chancellorsville (1-3 May 1863) in Spotsylvania County, Virginia, has often been regarded as one of the pivotal battles of the Civil War. Extensive deforestation to support the local iron industry beginning in the early 1700s resulted in a very dense coppice forest known as “The Wilderness,” which from historical accounts was likely characterized by successional oaks (*Quercus* spp.), pine (*Pinus* spp.), and evergreen “tanglefoot” (probably greenbrier, *Smilax* spp.). The Wilderness played a critical role in the outcome of the battle by influencing Union troop positions, severely limiting visibility, and providing cover for Confederate maneuvers. Uncontrolled wildfires in the Wilderness also claimed the lives of many of the wounded on the battlefield. Even the mortal wounding of Stonewall Jackson by his own men may be linked, in part, to the land use history and ecology of the battlefield because of the confusion caused by the wildfires and dense vegetation. This manuscript aims to explore first how the Wilderness came to be formed prior to battle, and secondly how the forest directly influenced the outcome of Chancellorsville using accounts provided by the men who fought in the battle.

Keywords: Chancellorsville, Civil War, vegetation, land use history, wildfire, coppice forest.

INTRODUCTION AND LAND USE HISTORY

Land use history is frequently used to explore the vegetation composition of modern forests. However, forest composition and land use history are less

frequently correlated to results of major events in human history. The Battle of Chancellorsville (hereafter referred to as “Chancellorsville¹”) is one such event in American history that was appreciably defined by the forest community in which it occurred.

The battlefield is located in Spotsylvania County, Virginia and lies on the divide separating the watersheds of the Rappahannock River from the Po and Ni rivers (National Park Service, 1986, 2012; Taverna & Patterson, 2008). The terrain is rolling to locally hilly with elevations ranging from 80-95 m along streams and valleys to 135 m along scattered ridges (Orwig &

¹ “Chancellorsville” is not a city, community, or other municipality within Virginia. Prior to the Civil War, a large mansion owned by the Chancellor family existed at the intersection of the Plank Road and Orange Turnpike, deep within the Virginia Wilderness. The area was (and still is) colloquially known as “Chancellorsville” (Gray, 2011).

Abrams, 1994b; Taverna & Patterson, 2008). Numerous streams and swamps on gently rolling wooded plateaus dissect the battlefield (National Park Service, 1986, 2012; Taverna & Patterson, 2008).

Spotsylvania County is located within the Piedmont Plateau physiogeographic province (Orwig & Abrams, 1994a). The composition of mature hardwood Piedmont communities varies with soils and topography (Fleming, 2012; Weakley et al., 2012). Prior to European settlement, Native Americans introduced fire to the Virginia landscape frequently enough to create savannah-like grasslands that featured sparse trees within the Piedmont (Beverly, 1947; Brender, 1974; Vale, 1982; Russell & Schuyler, 1988; Orwig & Abrams, 1994b; Fowler & Konopik, 2007; Fleming, 2012; Weakley et al., 2012). At the time of European contact, deciduous trees characterized most of the forested Piedmont—primarily oaks (*Quercus* spp.) and hickories (*Carya* spp.) (Braun, 1950; Sharitz et al., 1992). Shortly after European settlement, the fire-maintained grassland prairies all but disappeared (Fleming, 2012; Weakley et al., 2012).

From 1721-1863 most of the Virginia Piedmont forests were cleared in favor of agriculture and westward expansion (Orwig & Abrams, 1994b; Fleming, 2012; Weakley et al., 2012). However, many of these early farms were subsequently abandoned as a result of poor agriculture practices, and much of the Piedmont was eventually reforested with early successional species prior to the Civil War (Orwig & Abrams, 1994b). Through the course of the Civil War, most of central and eastern Virginia were once again cleared (Orwig & Abrams, 1994b).

Europeans first settled Spotsylvania County in 1721 (Orwig & Abrams, 1994b), but expansion into the area around what would become the Chancellorsville battlefield was slow prior to the Revolution in large part due to the hilly landscape which was only marginally usable for agriculture (Auwaerter et al., 2010). Instead of traditional agriculture, this area was characterized by a growing iron industry (Cappon, 1945; Mansfield, 1977; Auwaerter et al., 2010). Lieutenant Governor Spotswood (the namesake for Spotsylvania County) established the first successful iron mines in the Virginia Frontier between 1718 and 1720, and to feed his new industry Spotswood acquired much of the land that would become the battlefield (Auwaerter et al., 2010). Following Spotswood's death in 1740, his family continued to operate family furnaces and mining operations in the area; Catherine's Furnace (Fig. 1), was established sometime in the 1840s within a few kilometers of the Chancellor's Mansion and can still be seen today.



Fig. 1. Catherine's Furnace as it appeared in 2014. Photo by Robert H. Floyd.

Eighteenth and nineteenth century iron furnaces were fueled by hardwood charcoal that could require 400-800 ha of deforestation annually, and harvesting might be repeated as frequently as every 25 years (Whitney, 1994; Johnson et al., 2009). As early as 1732, Colonel William Byrd recounted passing through a second-growth forest plantation in the area that he described as "poisoned fields, with nothing but saplings growing on them" (Auwaerter et al., 2010). Colonel Byrd's "poison fields" are believed to have been woods hastily clear-cut to fuel the Spotswood iron furnaces (Auwaerter et al., 2010). These logging practices resulted in very dense, oak-dominated coppice forests (Taverna & Patterson, 2008), and by the time of the battle this densely vegetated, heavily disturbed area was colloquially known as "The Wilderness" (Official Record, 1887a: 889; Luvaas & Nelson, 1988). At the time of the battle, the Wilderness was an approximately 112 x 28 km stretch of second growth timbers, briars, thick underbrush, with occasional streams that made the terrain nearly impenetrable (Steckler & Blachley, 2000). It should be noted, however, at least some canopy trees—likely pines or other species that were less desirable for fueling a furnace—must have remained, because there are accounts of Union observers who climbed tall trees in an attempt to ascertain Confederate movements during the battle (Cullen, 1966; Luvaas & Nelson, 1988).

Limited information exists as to the exact species composition at the time of the battle; however, many accounts describe Chancellorsville as having been fought in "dense mid-story thickets" (Foote, 1963;

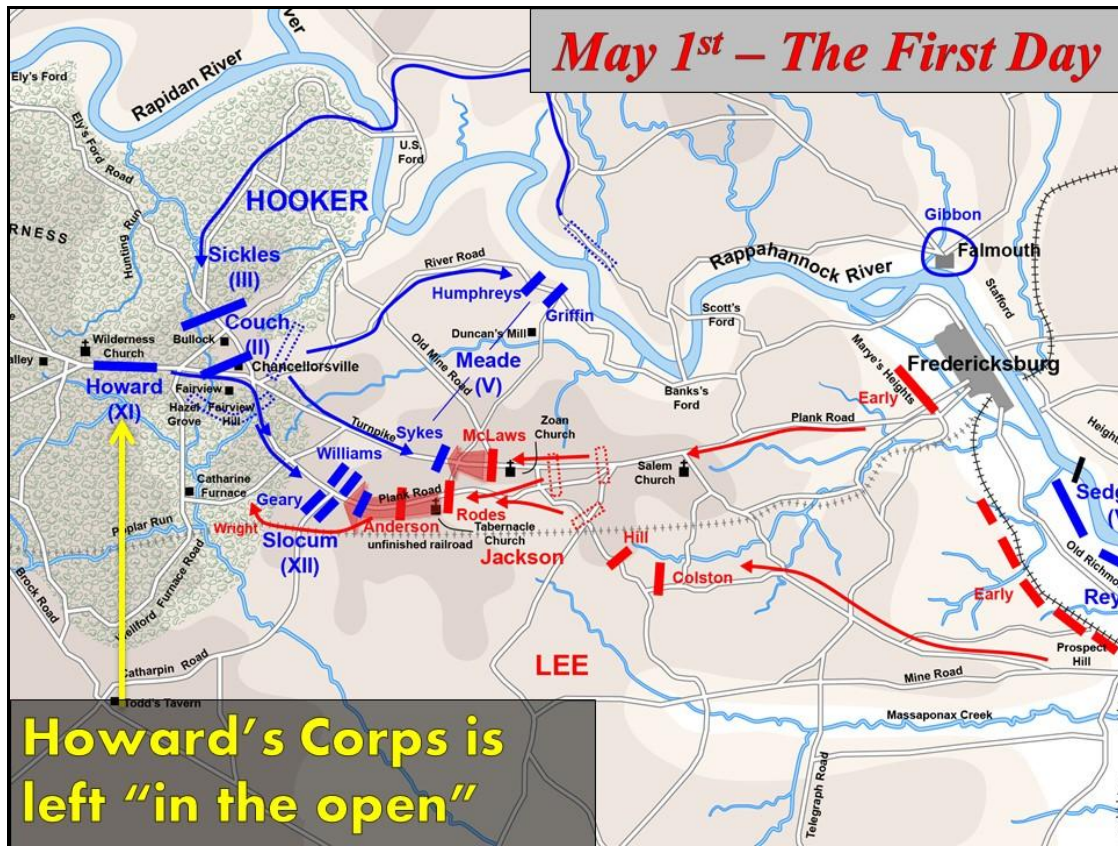


Fig. 2. The battle at Chancellorsville, 1 May 1863. Map by Jespersen (2014). This file is licensed under the Creative Commons Attribution 3.0 license and has been modified by the authors for use in this manuscript.

Gallagher, 1996) that would be consistent with a coppice forest. Cullen (1966) described the landscape as it appeared in 1863 as a dense forest of second-growth pine and scrub oak with numerous creeks, gullies, swamps, “heavy tanglefoot underbrush” (probably greenbrier, *Smilax rotundifolia*), and few farms or open spaces. An interpretive sign at the battlefield today speculates that the cutting operations left the landscape with emergent pines (*Pinus* spp.), stunted oaks (*Quercus* spp.), vines, greenbrier (*Smilax* spp.), and honeysuckle (*Lonicera* spp.). Several accounts are also provided in the official battle reports provided by officers on both sides. Confederate Colonel John T. Mercer provided one such account in which he described marching through “oak timber” and “strips of pine bushes” (Official Record, 1887a: 971; Luvaas & Nelson, 1988).

EFFECTS OF THE WILDERNESS ON THE BATTLE

The battle began on 1 May 1863 when Confederate General Robert E. Lee dispatched Lieutenant General

T. J. “Stonewall” Jackson to attack the Union Army of the Potomac, commanded by Major General Joseph Hooker, on the south side of the Rappahannock River along the eastern edge of the Wilderness (Cullen, 1966) (Fig. 2). Hooker’s response was to withdraw deeper into the Wilderness to prepare for a general engagement. However, Hooker positioned his army almost exclusively within the clearings and roadways that were cut through the Wilderness (Official Record, 1887a: 865-866; Luvaas & Nelson, 1988).

Major General Oliver O. Howard’s XI Corps occupied the westernmost position held by the Union, and they likewise established camp along the cleared areas adjacent to the Plank Road (Official Record, 1887a: 630; Luvaas & Nelson, 1988). Notably, Howard’s Corps failed to “anchor” the western end of the Union Army to a river or otherwise defensive position (Fig. 2) because the seemingly impenetrable coppice forest made maneuvers difficult and navigation very challenging. Swinton (1882) provided this description of the Wilderness: “It is impossible to conceive a field worse adapted to the movements of a grand army.”

Having discovered Howard's position, Confederate Generals Lee, Jackson, and Stuart developed a strategy that would use the Wilderness to shield troop movements around the Union position (Foote, 1963; Gallagher, 1996). The sheer density of the Wilderness was key to Confederate success, and the presence of evergreen species may have played a role. Union Brigadier General Alpheus S. Williams made reference to this aspect of the forest composition when he described his brigade "penetrating dense evergreen thickets" (Official Record, 1887a: 708; Luvaas & Nelson, 1988). General Williams may also be referring to abundant greenbrier, but it is reasonable to speculate from other accounts that pine (Official Record, 1887a: 925), American holly, mountain laurel (*Kalmia latifolia*), and other successional species could have also been present at the time.

On May 2nd at 0700 h, Stonewall Jackson led approximately 28,000 Confederates on a 12-mile road march south and west around the Union position, and throughout most of their maneuver, Jackson's men and his intentions were effectively shielded from Union observers (Foote, 1963; Wineman, 2013). If Jackson's movements had been detected and understood, Hooker's main force could have easily overwhelmed the remaining Confederate forces at the east of the Wilderness, and the entire Army of Northern Virginia would have likely been defeated piecemeal (Luvaas & Nelson, 1988).

In his official report following the battle, General Howard attributed the dense Wilderness as the primary reason for the disaster that befell his Corps: "the woods was so dense that he [Stonewall Jackson] was able to mass a large force, whose exact whereabouts neither patrols, reconnaissances [sic], nor scouts ascertained. He succeeded in forming a column opposite to and outflanking my right" (Official Record, 1887a: 630; Luvaas & Nelson, 1988).

The Confederates were remarkably successful in their initial attack, which drove fleeing Union forces deep into the Wilderness, and continued until nightfall (Foote, 1963; Gallagher, 1996). However, the Confederate attack ultimately stalled and coordination deteriorated. Confederate Brigadier General Raleigh E. Colston attributed much of this confusion to nightfall and "the very difficult and tangled nature of the ground over which the troops had advanced" (Official Record, 1887a: 1004-1005; Luvaas & Nelson, 1988).

By 2300 h Stonewall Jackson became agitated that the battle had stalled, and to assess the feasibility of a night attack, he rode beyond the Confederate picket lines and was mistakenly fired upon by his own men (Foote, 1963; Gallagher, 1996). It is reasonable to assume that the dense vegetation and sporadic wildfires

contributed to the general chaos associated with the "fog of war," and it was within this confusion that Jackson was mortally wounded. Nearly one year later at the Battle of the Wilderness, Confederate General James Longstreet would also be wounded by friendly fire while navigating through the same dense vegetation only a short distance from the place where Jackson was shot (Steckler & Blachley, 2000). Following Jackson's wounding, command of his corps was transferred first to Major General A.P. Hill, who was wounded soon thereafter, and subsequently to Major General J. E. B. Stuart (Foote, 1963; Luvaas & Nelson, 1988).

By morning on May 3rd, the Union had concentrated its forces around the Chancellor's mansion and along an open stretch of ground extending southward to an adjacent cleared hilltop called Hazel Grove. Once again the Confederates used the Wilderness to shield their maneuvers: "About sunrise we moved forward to the attack, through dense pine timber, driving before us the enemy's skirmishers, and at a distance of 400 yards [366 meters], emerging into the open field in front of a battery, which was placed on an abrupt hill [Hazel Grove] near a spring-house" (Official Record, 1887a: 925; Luvaas & Nelson, 1988). After taking Hazel Grove, Confederate artillery were directed toward the Chancellor's mansion; the Wilderness on three sides provided an effective shooting lane for the Confederates (Fig. 3), who effectively bombarded the mansion and left General Hooker with a serious, albeit non-fatal, head injury (Foote, 1963).

By day's end, Generals Lee and Stuart had effectively routed Hooker's army, which retreated deep within the Wilderness (Cullen, 1966). On 6 May 1863, the entire Union Army of the Potomac retreated once



Fig. 3. Stuart's position at Hazel Grove facing the Chancellor's Mansion, which in 1863 would have been clearly visible at the end of the clearing. Photo by Robert H. Floyd.

again north of the Rappahannock River (Foote, 1963; Cullen, 1966).

DISCUSSION

With over 30,000 casualties at the conclusion of the battle, Chancellorsville was to that date the bloodiest conflict ever fought in North America.² Amid the fighting, wildfires erupted throughout the Wilderness causing attack lines to stop, and many of the wounded failed to escape the flames (Foote, 1963). Private John O. Casler (CSA) provided one such account: “The woods, taking fire that night from the shells, burn rapidly and roasted the wounded men alive. As we went to bury them, we could see where they had tried to keep the fire from them by scratching the leaves away as far as they could reach. But it availed not; they were burnt to a crisp” (Casler, 1906). Flames with such high intensity may reflect considerable fuel accumulation within the O- and A-horizons over the course of many years. We were unable to find a published post-settlement fire history for the Wilderness, but more than 100 years of fire-suppression since European contact would have resulted in significant fuel accumulation at the time of the battle. Likewise, a coppice forest characterized by dense sprouts could have also accumulated considerable amounts of fuel in a relatively short amount of time. Confederate Brigadier General James H. Lane also made reference to the intensity of the fires in his official report: “the woods which we entered were on fire; the heat was excessive [...] the dead and dying of the enemy could be seen on all sides enveloped in flames, and the ground on which we formed was so hot as at first to be disagreeable to our feet” (Official Record, 1887a: 917-918; Luvaas & Nelson, 1988).

Almost one year after Chancellorsville, both armies would clash again in the Virginia Wilderness in another major confrontation named “The Battle of the Wilderness,” which was also characterized by spot fires and dramatic conflagrations throughout tangled thickets (Foote, 1963; Cullen, 1966). At Chancellorsville, the Union deliberately avoided the dense woods of the Wilderness, whereas at the Battle of the Wilderness the Union adopted the opposite strategy and elected to maneuver within the Wilderness. However, according to the official report by Major General Gouverneur Warren (USA), “the thick woods caused much confusion in our lines,” and his attack on 5 May 1864

ultimately failed because an adjacent Union line was unable to protect Warren’s flank, “on account of the woods” (Official Record, 1887b: 540).

THE CHANCELLORSVILLE BATTLEFIELD TODAY

Today, the Chancellorsville Battlefield is part of the Fredericksburg-Spotsylvania National Military Park (FSNMP), was designated for Federal preservation in 1927, and has been under Department of the Interior stewardship since 1933 (National Park Service, 1986, 2012). Although logging continued in the vicinity of the battlefield through the early 1990s, the Wilderness forests today are physically mature and far different from that of the Civil War-era stands (Taverna & Patterson, 2008). Taverna & Patterson (2008) characterize the most common stand type within the modern-day Chancellorsville Battlefield as “Oak/Heath Forests,” which the United States National Vegetation Classification (USNVC) describes as a Piedmont / Low Elevation Mixed Oak / Heath Forest (USNVC code CEGL008521) (Taverna & Patterson, 2008). Typical canopy species include oaks, hickories, red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), sweetgum (*Liquidambar styraciflua*), and tulip-poplar (*Liriodendron tulipifera*) (National Park Service, 1986). Sub-canopy vegetation includes dogwoods (*Cornus florida*), red cedar (*Juniperus virginiana*), black gum, mountain laurel (*Kalmia latifolia*), sassafras (*Sassafras albidum*), and other shrubs (National Park Service 1986). Wetlands and creeks extend through the battlefield park and include, among others, Coastal Plain / Piedmont Floodplain Swamp Forests (conservation rank G3G4) and Coastal Plain / Piedmont Acidic Seepage Swamps (Taverna & Patterson, 2008). In a study of the Fredericksburg-Spotsylvania Battlefield Parks, Orwig & Abrams (1994b) found comparatively less evidence of successional change in the upland forests of Chancellorsville, as compared to other Virginia battlefields. This phenomenon may be attributed to Nason, Tatum, and Catharpin soils which are characterized as somewhat impermeable clayey subsoils with moderate shrink-swell potential (Elder, 1985; Taverna & Patterson, 2008).

The National Park Service seeks to preserve the historic scenes and resources of the Chancellorsville Battlefield—and all of the FSNMP—by minimizing the impact of land use changes adjacent to the battlefields, and to present the park’s historic sites to visitors in a manner that promotes education and America’s Heritage (National Park Service, 1986). Their approach includes active management of forest conditions including, but not limited to, prescribed fire application,

² By the end of the Civil War, Chancellorsville was only the fifth bloodiest battle, following Gettysburg, Vicksburg, Spotsylvania Courthouse, and The Wilderness (The Civil War Trust, 2014).

invasive species management, and maintaining and restoring open areas that existed at the time of Chancellorsville (National Park Service, 1986, 2012).

It is perhaps worth noting that although the Wilderness no longer resembles the coppice forest that existed during the battle, the FSNMP General Management Plan (National Park Service, 1986) does not indicate a desire to return the Wilderness to the heavily disturbed condition that existed in 1863. Perhaps a point of future debate, presumably the caustic effects of replicating extensive nineteenth century logging practices on the contemporary landscape outweigh the value of returning the Wilderness to its condition at the time of the battle. Nevertheless, Chancellorsville is one of the most well-preserved American battlefields, and remains a valuable resource to our national, military, and natural heritage.

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