ESSENTIAL CIVIL WAR CURRICULUM

Weather & The American Civil War

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Weather in the Mid-Nineteenth Century: The Little Ice Age

"Conversation about the weather is the last refuge of the unimaginative," said Oscar Wilde.[1] Of course, Oscar Wilde was not a Civil War general, for many of whom weather was in fact very important.

Weather was one of the biggest factors in the American Civil War. It affected every part of the conflict. "The difference between weather and climate is the measure of time: weather is what the atmospheric conditions are over a short period of time and climate is how atmospheric conditions behave over relatively long periods of time."[2] The American Civil War took place at the end of what is called the Little Ice Age. This climate change lasted from the 1300s to the mid 1800s and was responsible for Europe and North America having to endure much colder winters than those of the 21st century. Annual fluctuations in weather were both terrible and constant.

Historical climatology is a small but passionate field that emerged after the IGY. Scientists and humanities scholars realized the climates they had assumed they knew would have, instead, varied significantly throughout history. Historical climatologists seek to reconstruct past climates in order to consider the role they played in human history.[3]

Despite the name "Ice Age" this time period actually encompassed many dramatic changes in weather. By the time the Civil War began, the Little Ice Age was ending. Although records indicate a warming trend of 2-4ºF, this did not mean it was anywhere near actually warm. Virginia experienced alternating extreme precipitation, scorching heat, and bitter cold.[4]

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[1] Gabrielle Jackson, The Guardian, February 19, 2017. https://www.theguardian.com/commentisfree/2017/feb/20/conversations-last-refuge-the-art-and-heart-of-talking-about-the-weather, accessed June 30, 2020.

[2] NASA, "What's the Difference Between Weather and Climate?" February 1, 2005. See https://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html, accessed June 30, 2020.

[3] Marissa Rhodes, "The Little Ice Age: Weird Weather, Witchcraft, Famine and Fashion," November 27,2017. See https://digpodcast.org/2017/11/26/little-ice-age/, accessed June 30, 2020.

[4] Kathryn Shively Meier, "Weather during the Civil War," in Encyclopedia Virginia, Virginia Foundation for the Humanities, October 27, 2015. See https://www.encyclopediavirginia.org/Weather_During_the_Civil_War,

Keeping Weather Records

Prior to the mid-1800s there was no regulated way to track weather. In 1849 the Smithsonian Institution, by volunteering to donate weather-recording devices, established an observation network. By 1860, over 500 stations were telegraphing weather reports to newspapers such as the Washington Evening Star. Unfortunately, this work was interrupted by the Civil War. Detailed information from a variety of locations is difficult to piece together, but it is possible to get a general idea of the weather in a variety of places during the years of the war.[5] With accurate weather instruments available commercially, many Civil War era men and women recorded daily weather-related information in diaries and letters. Robert Krick's book *Civil War Weather in Virginia* is a compilation of the work of the Reverend C. B. Mackee's meticulous recordings of temperature, taken in Georgetown, at 7:00 a.m., 2:00 p.m., and 9:00 p.m., almost every day of the war. These are supplemented with other observations from newspapers and personal and military correspondence. Robert Krick is rumored to find it humorous that, after a lifetime of Civil War studies, his "best seller" is a book about weather.[6] No one appreciated knowing about the weather more than a Civil War general, and on February 9, 1870 former general and then-President Ulysses S. Grant signed into law the first national weather service, utilizing the technology of the U.S. Army's Signal Service.[7]

Weather Shaped Battles and Campaigns

Weather, one of the biggest factors of the American Civil War, is often overlooked. Both strategy and tactics were affected, as generals, privates, and presidents gazed at the skies, trying to decide when to begin campaigns (or end them), guessing at river floodings and the accumulation of mud. It was not only General Burnside who had difficulties with Confederate mud. During the Battle of New Market, May 15, 1864, the rains were so unrelenting that Confederate troops, crossing a wheat field, lost so many pieces of footwear that the field became known as the "field of lost shoes."[8]

One early example of the effect of weather is Major General George McClellan's Seven Days Battles (part of the Peninsula Campaign) in Hanover and Henrico counties, Virginia. The series of six battles took place from June 25-July 1, 1862. The Seven Days is usually remembered

accessed June 30, 2020.

[5] National Weather Service, "History of the National Weather Service". See https://www.weather.gov/timeline, accessed June 30, 2020.

[6] Robert K. Krick, *Civil War Weather in Virginia* (Tuscaloosa: The University of Alabama Press, 2007), 106.

[7] National Weather Service, "History".

[8] Ambrose Everett Burnside (1824-1881) was born in Indiana and graduated from the United States Military Academy in 1847 and served in the Mexican American War. Appointed major general in the US Army on May 18,1862, he commanded the Army of the Potomac (November 1862 to January 1863) and the Department of the Ohio (March 1863 to December 1863). After the war he served as governor of Rhode Island (1866-1869) and US Senator from Rhode Island (1875-1881), from John H. Eicher & David J Eicher, *Civil War High Commands* (Palo Alto, CA: Stanford University Press, 2002), 155-6, hereafter *CWHC*. For more detail on the Field of Shoes, see https://www.vmi.edu/museums-and-archives/virginia-museum-of-the-civil-war/the-battle/, accessed June 30, 2020.

as a defeat for the Union and the campaign in which Confederate General Joseph E. Johnston was wounded and Robert E. Lee was chosen to replace him. McClellan complained to President Lincoln (and anyone who would listen to him) about the constant rain and the resulting rise in the swollen rivers and deep bogs which made up much of the landscape of the Virginia Peninsula.[9] Even after McClellan sent his men forward, such weather continued to impede the Union advance toward Richmond.[10]

On both sides, soldiers were negatively impacted during this time. "Rain was the greatest discomfort a soldier could have; it was more uncomfortable than the severest cold with clear weather," wrote Confederate private Carleton McCarthy. A Pennsylvania cavalryman agreed, writing, "There is nothing in our mode of life to injure our health, but exposure to all kinds of weather. Sometimes we have to stay out all night, and the ground is now so muddy that we cannot walk fast without getting our feet wet and consequently cold."[11] By the time McClellan decided to end the campaign, the health of the Union forces had become almost completely untenable. The retreating army at Harrison's Landing was a stew of malaria, typhoid, dysentery, and everything else imaginable that could afflict a wet, tired, malnourished, wounded group of men suffering torrential rains and high heat.[12]

Hostile weather played a great part in the shaping of military engagements and campaigns, which often involved planning around "torrential rain, flooding, and mud that determined commanders' decisions in decisive ways."[13] Rain, fog, mud and snow often transformed the battlefield into a much more challenging landscape in which to attempt to direct an army. Adverse conditions often forced the delay, cancellation, or complete alteration of the military plans on both sides of the war. There was simply no accurate way to predict upcoming weather conditions or the duration of current weather. For example, during the engagements at Mill Springs and Chantilly,[14] the actual fighting capability of the soldiers was impeded by heavy rains, which made the

[9] Joseph Eggleston Johnston (1807-1891) was born in Virginia, graduated from the United States Military Academy in 1829 and served in the Mexican American War. Resigning from the US Army in April 1861 he was eventually appointed General CSA August 1, 1861. After the war he worked in railroads and insurance and served as a congressman from Virginia (1879-1881), *CWHC,* 322-3; George Brinton McClellan (1826-1885) was born in Pennsylvania, graduated from the United States Military Academy in 1846 and served in the Mexican American War. Appointed Major General in the US Army on May 14, 1861, he served as the commander-in-chief of the U.S. Army (November 1861-March 1862). He was the unsuccessful Democratic Party candidate for President in the 1864 election. After the war he served as governor of New Jersey (1878-1881), *CWHC,* 371-2.

[10] Meier, "Weather During the Civil War".

[11] Kathryn Shively Meier, *Nature's Civil War: Common Soldiers and the Environment in 1862 Virginia* (Chapel Hill: The University of North Carolina Press, 2013), 45-59, “This is No Place For the Sick.”

[12] Silver, 59-60.

[13] Kenneth W. Noe, “Fateful Lightning: The Significance of Weather and Climate to Civil War History,” in *The Blue, the Gray, and the Green*.

[14] The Battle of Mill Springs (also known as Battle of Logan’s Crossroads) occurred January 19, 1862 in Pulaski and Wayne Counties, Kentucky. The Battle of Chantilly (also known as the Battle of Ox Hill) occurred September 1, 1862 in Fairfax County Virginia.

ammunition for their small arms and artillery useless and prevented men from participating in the fighting or requiring them to attempt hand-to-hand combat.[15] Additionally, an unusual atmospheric phenomenon called an acoustic shadow is recorded as having masked the sounds of battle. An acoustic shadow is of little concern today, but when a battle depended on sound to identify where troops were or were not, it was of great importance. The phenomenon known as an acoustic shadow concerns the area where sound does not penetrate. This may be due to the absorption or refraction of sound waves. This phenomenon prevented both sides from using sound to identify areas of combat, preventing some units from combining against enemy forces and causing others to be nearly overwhelmed because there was no way to tell that an enemy unit was in close proximity. Another example is the fight at Iuka (September 1862) when two Union columns commanded by Major Generals Edward Ord and William Rosecrans failed to concentrate against Major General Sterling Price's Confederate Army of the West. Following the battle, Ord explained that for him and his men: "the wind, freshly blowing from us in the direction of Iuka during the whole . . . [of the battle] prevented our hearing the guns and co-operating with Rosecrans."[16]

Heat was as devastating to Civil War soldiers as rain and cold. The heat in the West——the deserts of what are now California, Arizona, New Mexico and Texas—had long been an enemy of human survival. Southwestern deserts alternated between long periods of blistering heat and a few weeks of monsoonal rains that were responsible for flash-flooding devastation. The Federal army had built forts along rivers in order to permit travel to the West, and caches of food and water were routinely planted along trails at strategic points. When Texas seceded and took much of the Federal army with it, now-Confederate soldiers sought to disrupt this method of travel. Historian Megan Kate Nelson detailed this struggle in *The Blue, the Gray, and the Green*, one of the few books to propose an environmental approach to the history of the Civil War. Whether one fought under Lieutenant Colonel Edward Canby, Major Isaac Lynde, Confederate Lieutenant Colonel John Baylor, or Confederate General Henry H. Sibley, the truth of the fighting could be found in the long lines of graves and skeletonized remains that marked the paths of every army fighting in heat over 110 degrees, with no shade, no scientific concept of hydration, and no water to do anything about it even if they had understood it.[17]

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[15] Shelby Foote, *The Civil War: A Narrative*, 3 vols. (New York: Random House Inc., 1958), 1:177-80 and 1:644-5.

[16] Edward Ord quoted in Lisa Brady, "Nature as Friction: Integrating Clausewitz into Environmental Histories of the Civil War," in *The Blue, the Gray, and the Green*, 155.

[17] Megan Kate Nelson, "The Difficulties and Seductions of the Desert: Landscapes of War in 1861 New Mexico," in *The Blue, the Gray, and the Green*, 34-51; Edward Richard Sprigg Canby (1817-1873) was born in Kentucky, graduated from the United States Military Academy in 1839 and served in the Mexican American War. He reached the rank of Major General USV during the Civil War, served in the regular army after the war, *CWHC*, 161; Isaac Lynde (?-1886) graduated from United States Military Academy in 1827. Appointed major he commanded a fort in New Mexico Territory in 1861. He abandoned the fort and later surrendered his entire force. He was dismissed the service and did not serve during the rest of the war, Stewart Sifakis, *Who Was Who During the Civil War* (New York: Facts on File, 1988), 400, hereafter *WWW;* John Robert Baylor (1822-1894) served as Lieutenant Colonel of the Texas Mounted Rifles. He proclaimed himself governor of the Confederate Territory of Arizona and later served in the Confederate Congress. After the war he practiced law in San Antonio, *CWHC*, 122; Henry Hopkins Sibley

Weather did not only affect the armies. Naval vessels, always at the whims of Mother Nature, were especially vulnerable. Even such seemingly invulnerable vessels like the ironclads suffered. The USS *Monitor* was lost off the coast of Cape Hatteras in North Carolina on December 31, 1862. A survivor wrote of the incident:

> The weather was heavy with dark, stormy-looking clouds and a westerly wind. We passed out of the Roads and rounded Cape Henry …when the wind shifted to the south-south-west and increased to a gale. The sea rolled over us as if our vessel were a rock in the ocean only a few inches above the water.[18]

In 1861 all storms classed as hurricanes were only categorized as Category 1 and none made landfall although the one in the first days of November disrupted the federal fleet off Port Royal, South Carolina. In 1862 there were no major tropical storms and there were only two in 1863, both considered Category 2. 1864 presented no storm activity that affected the United States at all, and the few storms of 1865 only made landfall after the formal surrenders of all Confederate forces. In fact, there were no damaging storms that hit the U. S. until 1871.[19] Although earthquakes are not weather, their absence or presence works in much the same way. A check of the earthquake data through the U. S. Geographical Survey (USGS) website shows no earthquakes with a magnitude of 7 or greater occurred during the Civil War. Luckily there were very few earthquakes at all recorded west of California.[20]

The Fog of War

Colonel Lonsdale Hale first used the phrase "fog of war" in 1896, but he was referring to the state of ignorance and confusion resulting from battlefield turmoil.[21] The literal "fog" of war during the Civil War existed as well. The existence of microclimates in places like Virginia and Maryland has not been studied extensively, but these small climate anomalies were responsible for isolated rain showers, and fog. The Antietam Valley is one example. Fog in river valleys is a common event, but it becomes more common during the late summer and early fall.[22] Such a fog covered the Antietam Valley during the morning hours of September 16, 1862. It is reported that visibility was only fifteen or twenty feet in any given direction. General McClellan wired Henry Halleck that he was unsure of the placement of Robert E. Lee's southern troops, but would attack

(1816-1886) was born in Louisiana, graduated from the United States Military Academy in 1838 and served in the Mexican American War. He resigned from the US Army in 1861 and was appointed Brigadier General in the Confederacy. He commanded the Army of New Mexico (December 1861-December 1862) and served in various campaigns in the west. After the war he became a general of artillery in Egypt, later returning to the United States and supported himself on the lecture circuit, *CWHC*, 487.

[18] Meier, "Weather During the Civil War".

[19] Ibid.

[20] Craig Swan, "Earthquakes and Hurricanes!: Natural Disasters and the Civil War". See https://markerhunter.wordpress.com/2011/08/27/earthquakes-and-hurricanes-acw/, accessed June 30, 2020.

[21] Colonel Lonsdale Augustus Hale, *The Fog of War* (London: Edward Stanford, 1896).

[22] National Weather Service, "Why Does Valley Fog Occur?". See https://www.weather.gov/arx/why_valleyfog, accessed June 30, 2020.

as soon as he was positive of their disposition.[23] The fog finally burned off, but not completely. There were still pockets of thick vapor obscuring the broken and wooded ground behind the hills, which hid Rebel troops. What to McClellan looked like a narrow summit sparsely surrounded by woods was in reality a broad piedmont of forest and ravine that provided cover for Confederate troops and artillery, with little geographical opportunity for a Yankee attack. The initial impression was all an illusion, and McClellan's plans were useless when the reality of the situation exposed itself.[24]

Impacts on the Soldier Experience

Rain and heat were not the only problems offered by the weather. Soldiers on both sides wrote about the weather constantly and complained just about as often. Winters were bitter and boring, and there was little to do. On both sides, most soldiers slept on the ground, or in flimsy tents. Union soldiers are often depicted in winter quarters of log cabins with chimneys, but they were not known for being exactly warm and snug. As winter wore on, spirits drooped, health was affected, and home-centered holidays like Christmas and New Years were missed. Homesickness was reported to company surgeons as a cause of ill health.

Exposure was awful for the troops, but it was even worse for prisoners of war. At Andersonville and other prison camps, the miserable little shanties and other thrown-together shelters were no help at all for exposed, starving men. Many died of diseases related to exposure, and others simply froze to death. The diary of Union Sergeant William G. Thiselton, 6th New York Heavy Artillery, Company "J" describes one of the results of nighttime picket duty in the winter: "November 24, 1863…the weather very cold some of the pickets were frozen to death in the rifle pits at Mine Run."[25]

Not everything was completely bleak, however. The Great Snowball Battle of Rappahannock Academy was one of winter's high points in 1863. Three days of snow in mid-February left at least seventeen inches of snow on the ground of the Confederate Army camp near Fredericksburg, Virginia. General Robert F. Hoke, himself only twenty-six years old, took one look at all that snow and saw…victory! He formed his men into an attack force of snowballers, led by officers and using cavalry, skirmishers and infantry maneuvers to take the camp of Colonel

[23] Henry Wager Halleck (1815-1872) was born in New York, graduated from the United States Military Academy in 1839 and served in the Mexican American War. He served as general in chief of the army (July 1862-March 1864) then as chief of staff until the end of the war. He held various commands after the war dying while commanding the Division of the South, *CWHC,* 274; Kevin Pawlak, "The Fog of War--When Modern Weather Gives Us a History Lesson," September 16, 2016. See https://emergingcivilwar.com/2016/09/16/the-fog-of-war-when-modern-weather-gives-us-a-history-lesson/, accessed June 30, 2020.

[24] Ibid.

[25] The Civil War Era in Winchester, "Lives of Soldiers," Thisleton Diary, 45. Online version is available at http://www.westchesterarchives.com/CW/images/Private/Thistleton_diary_resize/pgs41_80/diary_p45_resize.jpg, accessed June 30, 2020.

William Stiles' Georgia Brigade.[26] The "severe pelting" began, with men from other units quickly joining in on both sides. At first, Hoke men invaded the Georgian camp, but were soon repelled by Stiles warlike organization of his men into columns of companies, each man ready to "fire" the snowball held in his hand. Stiles found out, however, that his "enemy" had fortified their camp, and haversacks were loaded to the brim with ammunition. With no need to reload, Hoke's North Carolinians won the day, "whitewashing" the enemy with loose snow as a punishment before demanding a parole promise. Over 10,000 Confederates participated in this impromptu, but epic, snowball fight. One soldier wrote that it was, "one of the most memorable combats of the war." The weather turned mild and rainy in the following days. Other snowball battles were documented during the Civil War, including a snowball fight at Dalton, Georgia, but the Great Snowball Battle of Rappahannock Academy was unique in size, strategy and ample snow cover.[27]

Other Notable Weather Incidents

One particularly (in)famous weather-related incident that should be mentioned here is the Mud March of January 20-21, 1863. Union general Ambrose Burnside, still stinging from his massive loss to the Confederates at Fredericksburg, decided to move his army against the South again by crossing the Rappahannock and executing a massive turning movement against Lee's troops, entrenched on the southern side of the river.[28] On January 20, 1863, the day before General Burnside planned to begin his campaign, a winter wave cyclone hit the area. It brought copious amounts of precipitation. Historian James McPherson wrote:

> As soon as the general got his army in motion on January 20 the heavens opened, rain fell in torrents, and the Virginia roads turned into swamps. Artillery carriages sank to their axels, men sank to their knees, and mules sank to their ears.[29]

Burnside persisted, despite the treacherous Virginia clay. The churning up of the "sacred soil" by the boots of thousands of men, horses, and wheels turned the roads into deep, quicksand-like tracks and the end of the day of January 21 witnessed nearly 75,000 Yankees "bogged down

[26] Robert Frederick Hoke (1834-1912) enlisted as a private in 1861, participated in many engagements and ended the war as a Major General and division commander. After the war he engaged in a number of businesses in North Carolina, *WWW*, 313. William Henry Stiles; William Henry Stiles (1808-1865) served as colonel in the Confederate Army. See *Biographical Directory of the United States Congress*, http://bioguide.congress.gov/scripts/biodisplay.pl?index=S000925, accessed June 30, 2020.

[27] Kevin Ambrose, Dan Henry, Andy Weiss, *Washington Weather* (Gallatin, TN: Historical Enterprises, 2002), 17 and "A Desperate Snow Battle: A Confederate Snowball Fight, Winter 1862-1863". See https://www.battlefields.org/learn/primary-sources/desperate-snow-battle, accessed June 30, 2020.

[28] Brady, "Nature as Friction" in *The Blue, the Gray, and the Green*, 144.

[29] James M. McPherson, *Battle Cry of Freedom: The Civil War Era* (New York: Oxford University Press, 1988), 584.

and their equipment immobilized."[30] Additionally, strong winds and temperatures in the lower 30s added to the soldiers' misery. The Army of the Potomac attempted to turn around in retreat the next day, much to the amusement of the nearby Confederates, who laughed and taunted the muddy troops with signs saying things like, "This Way to Richmond".[31] Would Burnside have attempted this fiasco had he known the weather in advance? There was no way for him to do so, but both his past loss at Fredericksburg and the inability to predict the weather certainly affected his military strategy.

In conclusion, the Civil War was greatly affected by the weather, whether the armies were those of the Trans-Mississippi, the Far West, the Deep South, or Virginia. The men fighting the war endured what amounts to a four-year camping trip complete with bugs, illness, and shooting. The constant outdoors exposure to all kinds of weather was of concern to every soldier. "There is much sickness in our Regiment, but we have beautiful weather now and I hope the general health will improve rapidly," wrote a hopeful infantryman from the 45th Georgia on June 16, 1862.[32] Private Blackington, of Massachusetts, seconded this wish: "We have very pleasant weather out here now. It seems like summer. We have the merry birds singing their sweet melodious songs in the beautiful trees."[33] Soldier morale could be raised by the weather as quickly as it could be cast down. Nevertheless, illness in the ranks, a result of both seasons and weather, decimated all armies and impacted every aspect of soldier life, from the planning of grand battles to the digging of latrines. Weather is a subject rarely mentioned in most accounts of the war. It is often considered an excuse for poor performance when it is mentioned at all. Going forward, perhaps historians would do better to consider the reality faced by Confederate and Federal armies. The danger, fatigue—both mental and physical, and the presence of life-threatening illnesses attacking the forces need to be factored into future accounts. War is far more than bullets or cannon fire. More than two-thirds of the casualties during the American Civil War came from illness and exposure—much of it a direct result of the weather.

Time Line

1849: The Smithsonian Institution, by volunteering to donate weather-recording devices, established an observation network.

1850: Many scholars agree that this date marks the end of the meteorological period known as the Little Ice Age; a time of general warming followed.

July 21, 1861: The First Battle of Bull Run was fought in temperatures in the 90s with high

[30] Harold A. Winters, et al., "Too Much and Too Wet: The Civil War Mud March and Flanders' Field," in *Battling the Elements: Weather and Terrain in the Conduct of War* (Baltimore, MD: John Hopkins University Press, 1998), 38.
[31] James M. McPherson, Battle Cry of Freedom, 584.
[32] Marionhill Fitzpatrick, *Letters to Amanda: The Civil War Letters of Marionhill Fitzpatrick, Army of Northern Virginia*, Jeffrey C. Lowe, ed., (Macon, GA: Mercer University Press, 2005), 16.
[33] Private Blackington to Hannah, (April 15, 1862) in Meier, *Nature's Civil War*, 58.

humidity, causing serious issues with heatstroke among the soldiers.

January 29, 1862: The battle of Mill Springs was impeded by heavy, unrelenting rain.

April–June 1862: During the first half of the Peninsula Campaign, Union general George B. McClellan continually complained that he could not advance to Richmond because of rainy weather and flooded rivers, among other impediments.

June 25-July 1, 1862: McClellan finally moved the Army of the Potomac to the Virginia Peninsula in an attempt to take Richmond, the Confederate capital. Torrential spring rains caused the terrain to flood and the Virginia soil turned into a mass of sticky mud, culminating in the failure of McClellan's campaign.

September 1, 1862: Confederate General Thomas J. "Stonewall" Jackson clashed with Union General Isaac Stevens at the Battle of Chantilly during a heavy thunderstorm.[34]

September 16, 1862: Fog influenced the outcome of the Battle of Antietam.

September 19, 1862: Battle of Iuka was mismanaged due to an atmospheric acoustic shadow.

December 31, 1862: The USS Monitor sank off the coast of Cape Hatteras, North Carolina, during a monstrous gale.

January 20–22, 1863: Union General Ambrose E. Burnside led troops on the Mud March, a failed winter offensive in Virginia, during torrential rains and heavy mud, lowering Union morale.

May 2, 1863: At the Battle of Chancellorsville, Confederate General Thomas J. "Stonewall" Jackson's men were shielded from view during their famous flanking maneuver, thanks to the absence of dust because of earlier rain showers.

November 24, 1863: Pickets froze to death in rifle pits at Mine Run.

March 22, 1864: The "Great Snowball Battle" took place between regiments of the Confederate Army of Tennessee in Dalton, Georgia.

May 5–6, 1864: During the Battle of the Wilderness, hot weather contributed to the spread of forest fires. On the subsequent march to Spotsylvania Court House on May 7, men experienced heat stroke and exhaustion as the temperature rose.

May 15, 1864: At the Battle of New Market, a terrific downpour occured. While crossing a wheat field, Confederate soldiers' feet get stuck in the mud, earning the field the title the "field of lost

[34] Thomas Jonathan Jackson (1824-1863) was born in Kentucky and graduated from the United States Military Academy in 1846. He served in the Mexican American War. Rising to Lieutenant General with the Army of Northern Virginia, he fought in the major engagements until killed at Chancellorsville, *WWW*, 337-8; Isaac Ingalls Stevens (1818-1862) was born in Massachusetts and graduated from the United States Military Academy in 1839. He served in the Mexican American War. Rising to Major General, he served with the Army of the Potomac and was killed at the Battle of Second Bull Run, *WWW*, 622.

shoes."

February 1865: Union general William T. Sherman and his men successfully marched into South Carolina despite massive storms. Sherman proceeded to take Columbia and Charleston.[35]

1870: Former general and then-President Ulysses S. Grant signed a law creating the first national weather service, utilizing the technology of the U.S. Army's Signal Service

1957-1958: The International Geophysical Year began to track carbon dioxide in the atmosphere, starting the field of historical climatology.

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[35] William Tecumseh Sherman (1820-1891) was born in Ohio and graduated from the United States Military Academy in 1840. He served in the Mexican American War. Serving with Grant in the western theater he rose to the rank of Major General. He remained in the service after the war, appointed Commanding General United States Army from 1869 to 1883, *WWW,* 590-1.