

A comparison of Northwest Georgia from 1830-1850 preceding and following the Cherokee Removal of 1838 using GIS analysis.

This project uses GIS analysis to understand how Georgia's industry and infrastructure developed on the Cherokee lands from 1830-1850 by comparing Cherokee settlement and territorial boundaries with its corresponding Georgia counties.

The paper will be divided into four sections. Firstly, there will be contextual information on the Georgia Land Surveys & Lottery that distributed the Cherokee lands to White Georgians and precipitated the Cherokee Removal. Then the limited data we have on Cherokee improved lands in the region will be digitized and mapped as a reference (Cherokee settlement) for comparison in later tests. The third and fourth sections focus on analyzing demography and industrial-infrastructure growth in the region to observe the possible development in these areas and their underlying patterns. The third section focuses on the demographic makeup of Northwest Georgia from 1830-1850 to track the migration patterns into the region and uncover potential correlations with the emergence of gold-related industries and development. Key comparisons will be done between the relative percentage of the particular demographic group's population in the 'Cherokee counties' (Georgia counties corresponding to the past Cherokee lands) and the rest of the studied area (Georgia and the surrounding area corresponding to the past Cherokee lands). The fourth section analyzes the role of gold in the industrial development of Northwest Georgia, the growth of railroad infrastructure in the region, and both their effects on the Cherokee and her lands. Statistical tests include the percentage of the railroad/mining establishments in the Cherokee lands and seeing if there is a positive link between the proximity of the railroad to capital invested in the gold mines.

For Section 3, I expect to find that there would be a large influx of White settlers drawn to gold mining opportunities. Initial research suggests that while slavery existed as part of the mining labor force, it wasn't as significant in the mining industry compared with the agricultural industry in the South. For Section 4, I expect to find that there would be considerable industrial and infrastructural development inside the counties in Northwest Georgia that were once Cherokee territory since a lot of the territory overlapped with the marked gold lands. This region likely hosted increased mining activity and socio-economic development. The Cherokee lands, essential for travel between Georgia and Tennessee, likely saw developmental efforts to bolster trade and travel.

Section 1: History of the Georgia Land Surveys & Lottery, and Cherokee Removal

The Precedent of the Cherokee Removals

At the heart of the conflict surrounding the Cherokee territory was the question of who controlled the lands: Georgia, the Federal Government, or the Cherokees. From Georgia's perspective, their claim to the Cherokee lands went back to the 1795 Yazoo frauds, where "land companies had bribed the state legislature to award them vast tracts of land at a fraction of its values".¹ This was as they "gave up title to what are today Alabama and Mississippi in exchange for a promise from the federal government to remove Indians occupying the state's remaining claims" in the 1802 Georgia Compact 1802.² However, the Federal Government arguably acted as if the Cherokee lands were theirs to control. They funded Cherokee 'civilization' and education, granted reserves of 640 acres to select 'civilized' Cherokees in Georgia, calling 'Indians' 'citizens of the United States,' and "allowed missionaries to set up large and seemingly permanent establishments and Indian schools on Georgia's land".³

The Cherokees were not unaware of the interest in settling their lands from Georgia and the ever-looming problem of White encroachment. This was additionally informed by prior actions of the government towards other Native American tribes. Thus, after 1819, they "adopted a vigorous program of nationalism, refusing to fulfill the integration program implicit in the Georgia Compact" of 1802.⁴

The resulting Georgia resolutions of 1827 declared that the Cherokee must cede the lands to Georgia as they "belonged to her".⁵ The following series of conflicts ended in Judge John Marshall of the Supreme Court ruling that Georgia's law asserting state sovereignty over the Cherokees' land was unconstitutional. President Andrew Jackson, a firm believer in the removal of the Cherokees 'for their own benefit', refused to enforce this ruling, ensuring the Cherokees' later displacement in the Cherokee Removal. Jackson argued in Congress that the 'Indians' had no right to "tracts of country on which they have neither dwelt nor made improvements",⁶ which is not true.

History of the Georgia Land Survey and Lottery

In 1831, the Georgia General Assembly divided the Cherokee territory into "four 27-mile-wide sections, each containing a designated number of nine-square-mile districts". Gold lots were divided into 40-acre lots, while the remaining 60 Land Districts were divided into 160-acre lots.⁷ The General Assembly then assembled survey teams and instructed them to survey these lots and construct land plats. Surveyors drew lot lines and marked "water bodies, soil quality, tree types, terrain, and such cultural features as paths, roads, cultivated fields, and Indian towns".⁸ A map of the surveyed area is shown below. The dotted squares represent districts with lands marked as gold lands, while the rest were marked as districts with normal land.

¹ Theda Perdue, *The Cherokee Removal: A Brief History with Documents*, Third edition, The Bedford Series in History and Culture (Boston, MA: Bedford/St. Martin's, 2016), 71.

² David Williams, *The Georgia Gold Rush: Twenty-Niners, Cherokees, and Gold Fever* (Columbia, S.C.: University of South Carolina Press, 1993), 3.

³ William G. McLoughlin, "Georgia's Role in Instigating Compulsory Indian Removal," *The Georgia Historical Quarterly* 70, no. 4 (1986): 608.

⁴ McLoughlin, 608.

⁵ McLoughlin, 610.

⁶ David M. Wishart, "Evidence of Surplus Production in the Cherokee Nation Prior to Removal," *The Journal of Economic History* 55, no. 1 (1995): 120.

⁷ Williams, *The Georgia Gold Rush*, 47.

⁸ Douglas C. Wilms, "Cherokee Settlement Patterns in Nineteenth Century Georgia," *Southeastern Geographer* 14, no. 1 (1974): 46.

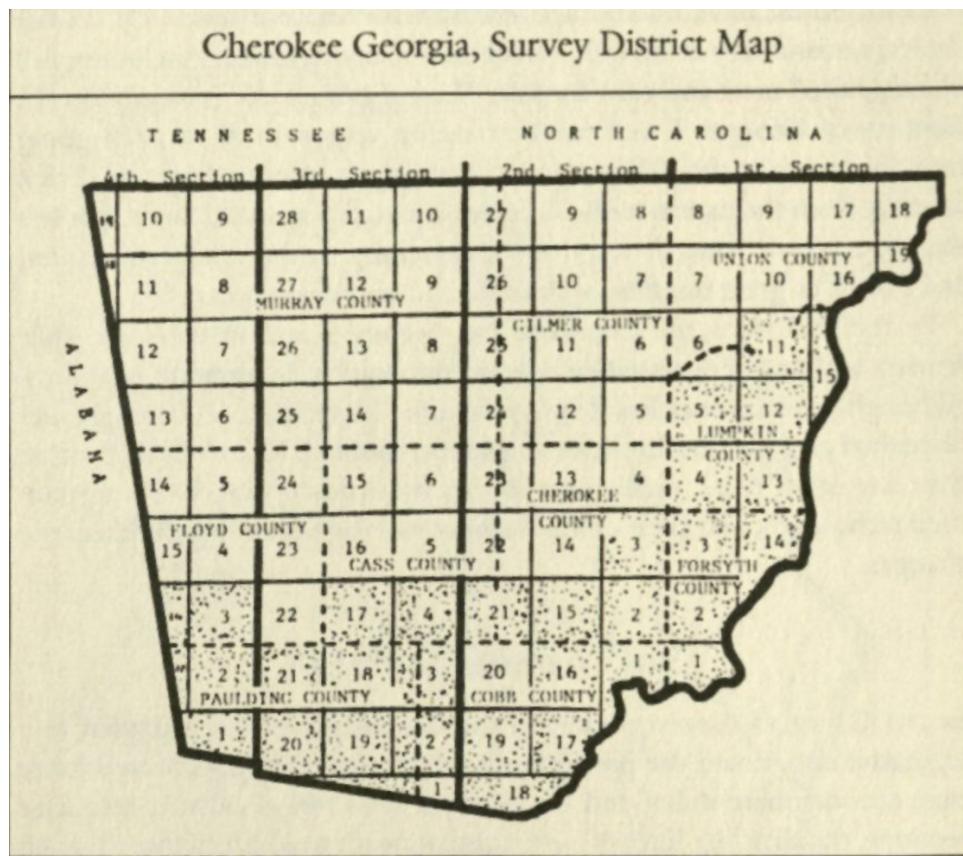


Fig 1. Cherokee Georgia, Survey District Map (Source: Wilms, 1991)

Following the surveys, land lotteries conceived by the Georgia state legislature following the scandal resulting from the Yazoo frauds were held. Most notable was the 1832 Land Lottery, popularly dubbed the Cherokee Lottery, where the lands were incorporated into larger counties, surveyed as land districts, then further divided into lots. A lottery was then held and the land lots were distributed to the fortunate drawers. After paying a small grant fee, the drawer had the land title.⁹ About 3/4 participants won nothing. In the “gold lottery, there were 133,000 names registered to draw for 35,000 lots”.¹⁰ Arguably the ‘amplification’ of land allotment garnered more excitement among White settlers in and around Georgia to get land, thus increasing the pressure on politicians for Cherokee removal.

⁹ Wilms, 46.

¹⁰ Williams, *The Georgia Gold Rush*, 52.

Section 2: Cherokee Settlement

Cherokee Settlement: Improved Lands

Despite the lack of historical data on Cherokee settlements, particularly before the Removal, historians have pieced together settlement patterns using Cherokee oral and written sources, and scant census data.

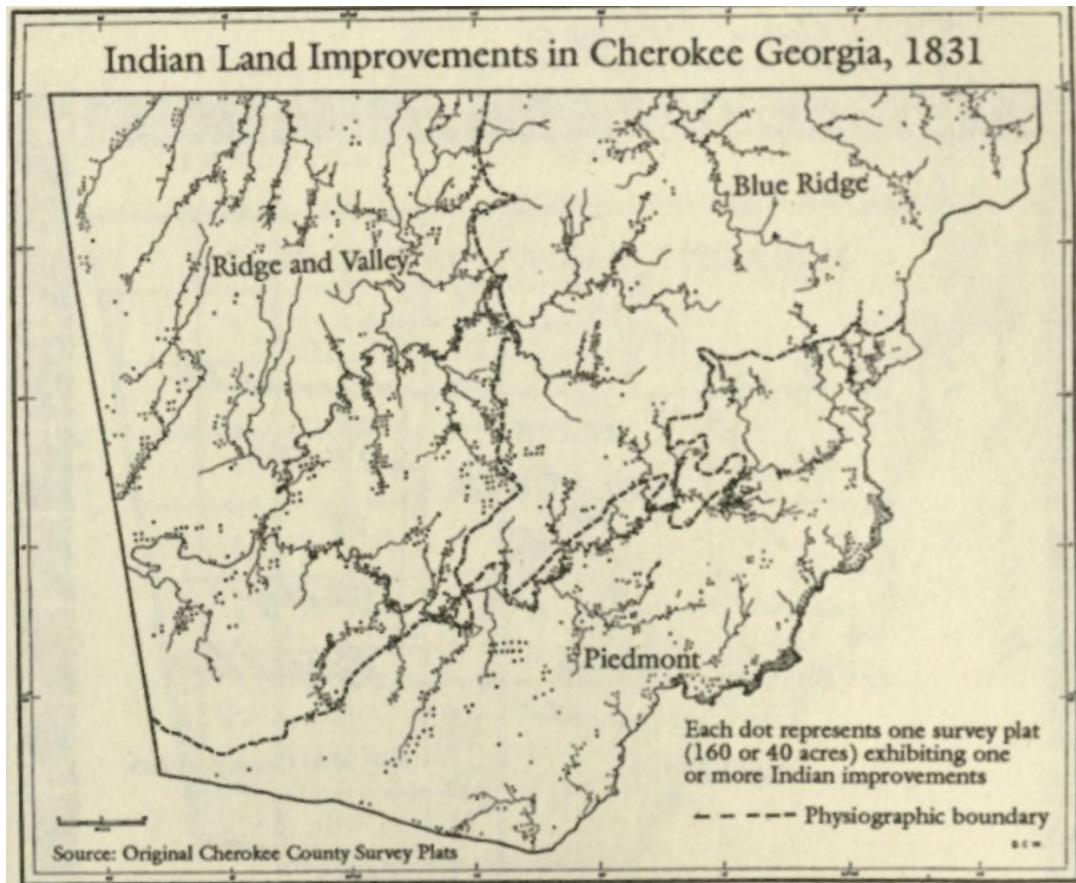


Fig 2. Indian Land Improvements in Cherokee Georgia, 1831 (Source: Wilms, 1991)

The map above depicts Cherokee improved lands in Northwest Georgia; improved lands are defined as lands showing signs of settlement, like dwellings and farms. Cherokee improvements were concentrated in the Northwest fertile lowlands, along the Chattahoochee River (as marked by the dotted diagonal line), and the Southeastern border. Fewer improvements were found in the mountainous northeast.¹¹ The improved land's proximity to streams and floodplains was favorable as the Cherokee "practiced a riverine agriculture".¹² Moreover, proximity to waterbeds and woodlands allowed for better farmland and food access.¹³ Proximity to at least two important roads' intersections was also important as the Cherokee could operate ferries, mills, and stores.¹⁴ Initially characterized by dispersed homesteads scattered among woodlands, Cherokee settlements adapted over time to accommodate Western encroachment, leading to increased dispersion to facilitate Western agrarianism.¹⁵

¹¹ Wilms, "Cherokee Settlement Patterns in Nineteenth Century Georgia," 48.

¹² Wilms, 50.

¹³ Wilms, 51.

¹⁴ Williams, *The Georgia Gold Rush*, 22.

¹⁵ Wilms, "Cherokee Settlement Patterns in Nineteenth Century Georgia," 52.

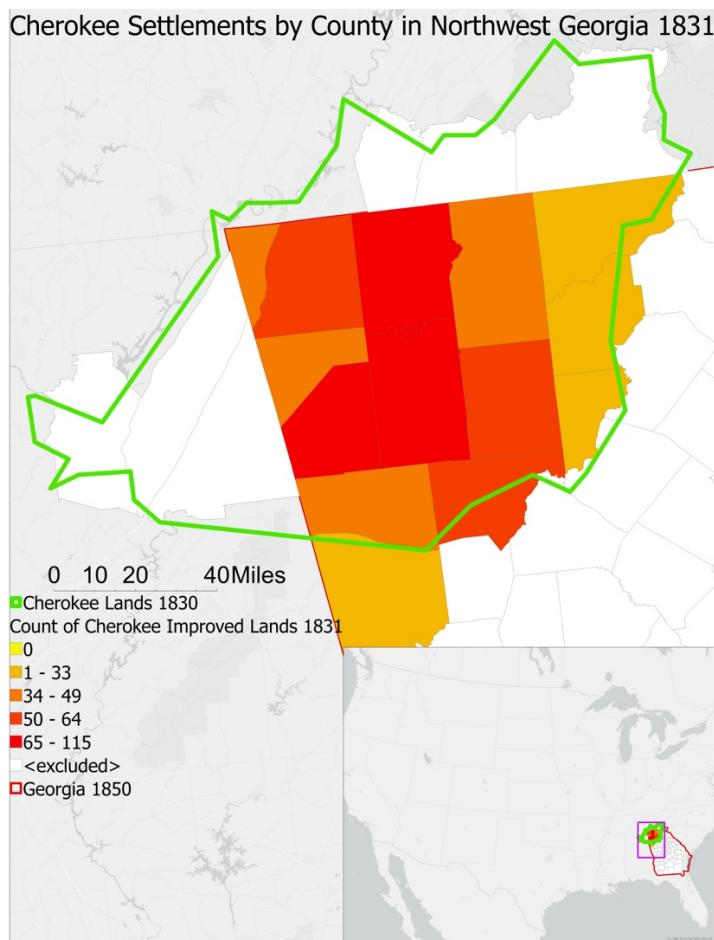


Fig 3. Cherokee Settlements by County in Northwest Georgia 1831
 (Cherokee Lands 1830 Source: Mapping 18th Century Cherokee Land Cessions)

Figure 3 is a choropleth map of the number of Cherokee improved lands. Figure 3 was made by digitizing and creating a new layer out of the number of Cherokee improved lands from the above map (Indian Land Improvements in Cherokee Georgia, 1831. This new layer was then spatial joined to US counties in 1850, then symbolized as a choropleth map with the count of improved lands as a variable. The green outline marks the Cherokee Lands boundary in 1830, which was its last change before the Cherokee Removal. This was done by creating a new polygon shapefile by georectifying a map of this territory.

Each dot on the original map represents one survey plat, which may have one but also more improved lands in them, causing a false perception of the smaller scale of the improved lands count. Also, the data the original map was based on were also likely a conservative estimation of the number of Cherokee improved lands as it was conducted by the state of Georgia's surveyors who may not have had the most comprehensive techniques and know the lay of the land like the native Cherokee. However, the figure does provide a useful approximation of the relative density and distribution of Cherokee settlements across Northwest Georgia.

Section 3: Demography of Northwest Georgia (1830-1850)

Increased Settlement in Northwest Georgia

The hopes of wealth for Gold in the region and the promises that the ‘Cherokee problem’ would be resolved brought a considerably large influx of people into the region in the 1830s before the Cherokee Removal of 1838, particularly White settlers who sought to work in mines or build their own businesses.

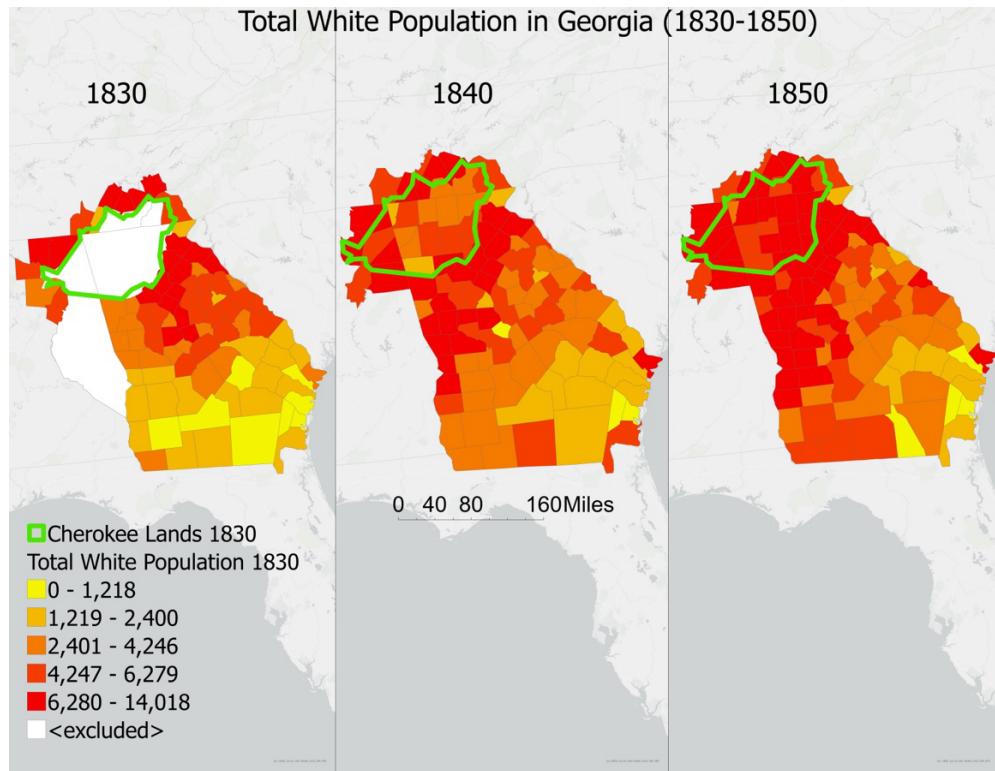


Fig 4. Total White Population in Georgia (1830-1850)

In Figure 4, the 1830 map still depicts the Cherokee territories as part of ‘Indian Land’, which isn’t very useful as it doesn’t include data on White settlement in the area. However, the higher populations of White people below and above the Cherokee territories suggest existing interest in the area.

For an idea of a ballpark figure of what would be the expected population in the Cherokee Lands assuming even distribution of the population throughout the studied area, I calculated what percentage the Cherokee Lands made up the studied area. This was 28%. Relative percentages of the White population were then calculated by dividing the White population in the Cherokee Lands by the total White population in the studied area and multiplying that figure by a hundred.

Considering the Cherokee Lands comprised 28% of the studied area and the White population proportion in the Cherokee Lands increased from 35.7% in 1840 to 42.69% in 1850, this indicates a trend in increasing White settlement in north Georgia post-1830, likely drawn by regional opportunities.

To facilitate White arrivals while contending with the Cherokee, Georgia decided “new settlers could not legally force Cherokee residents off their lands”. However, in 1834, Georgia also allowed those who

successfully drew gold or land lots to test and operate the land.¹⁶ Due to this ambiguity, the Cherokee and Whites conflicted in this shared space with contested ownership. Figures 3 and 4 show a significant overlap of Cherokee and White settlements, indicating possible substantial interaction. Despite Cherokee objections and federal interventions, mining and property theft persisted, escalating tensions that turned violent.¹⁷ However, there were instances of cooperation, e.g. Cherokees provided food for the incoming miners during food shortages.¹⁸

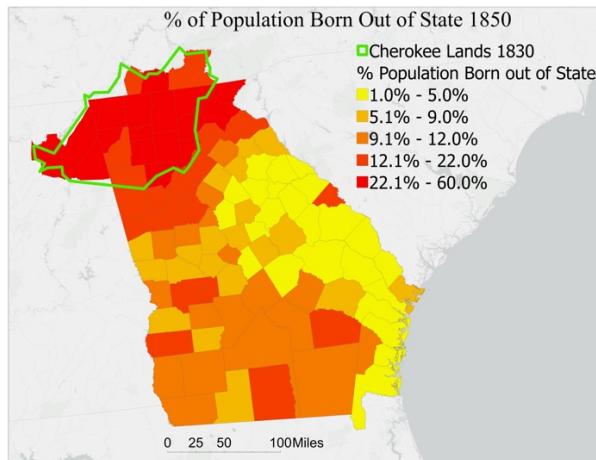


Fig 5. % of Population Born out of State, 1850

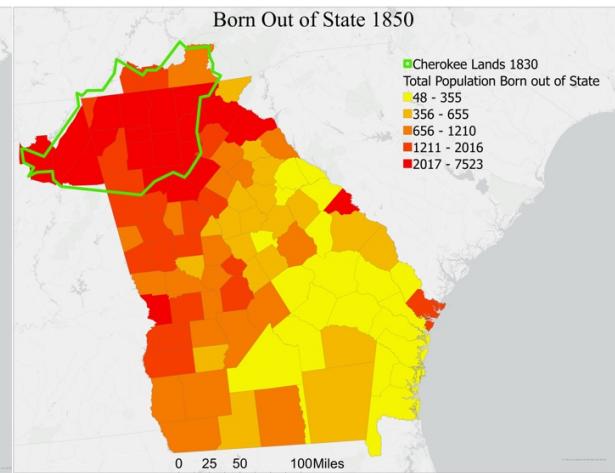


Fig 6. Total Population Born out of State, 1850

Despite not being able to enter the lottery for gold lands, a lot of laborers from out of state moved into Northwest Georgia for the opportunities the region would provide. Studying this population reveals migration patterns from beyond state borders, indicating attraction to the region's promising prospects. Figure 5 is where I calculated and symbolized the percentage of the population in each county that was born out of state by calculating a new field (born out of state population in each county/total population in each county) and symbolizing it. There appears to be a high concentration of people born out of state in Northwest Georgia. As seen in Figure 5, there is a considerable percentage of the population in the Georgian counties was born-out-of-state but in the US. Moreover, GIS statistical analysis, like the one done for the White population, of the total born out of state population (Figure 6) in the studied area in 1850 shows that 48.71% of the born out of state population resided within the past Cherokee territories, which is nearly half the total born out of state population. This could support the idea that there was a high influx of people coming into this region to find their place in the rapidly developing society there.

Diversification of the Workforce

It is commonly understood that the American South in the 1800s was largely reliant on slave labor. However, compared to the rest of the South, the makeup of the workforce in Northwest Georgia was more diverse. For example, besides the presence of White laborers, there were comparably high numbers of free people of color and international workers in the Cherokee counties, e.g. from “England, Wales, Scotland, Germany,” as noted from the 1850 US Census.¹⁹

¹⁶ Kenneth H. Wheeler, *Modern Cronies: Southern Industrialism from Gold Rush to Convict Labor, 1829-1894* (Athens: The University of Georgia Press, 2021), 16.

¹⁷ Williams, *The Georgia Gold Rush*, 30.

¹⁸ Williams, 91–93.

¹⁹ Wheeler, *Modern Cronies*, 59.

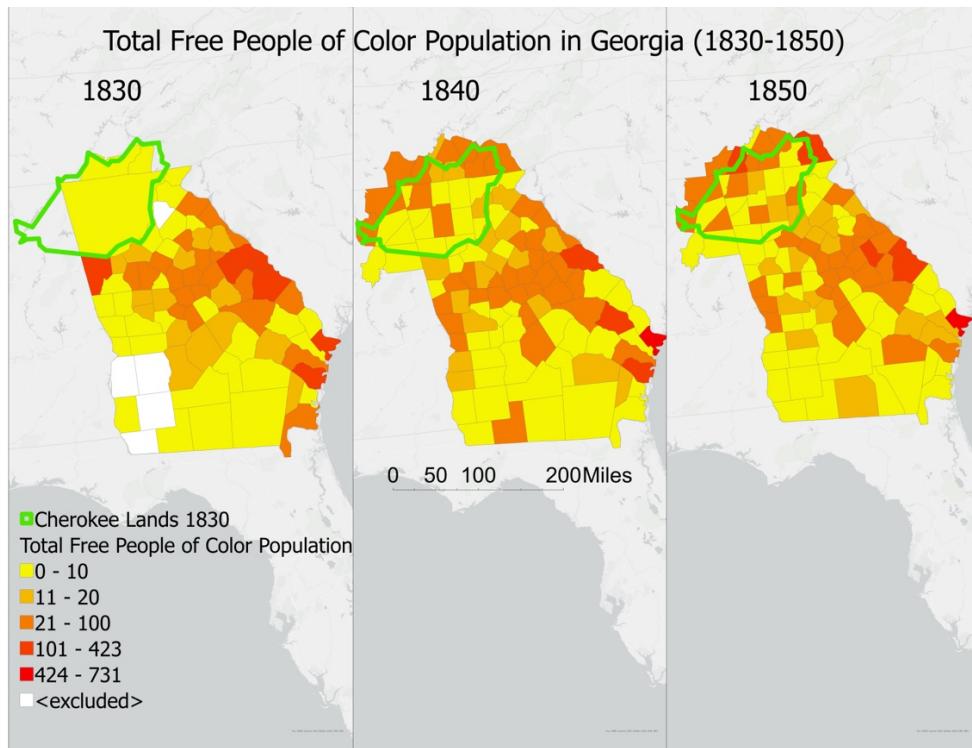


Fig 7. Total Free People of Color Population in Georgia (1830-1850)

Like the White settlers, historians posited that free people of color also sought opportunities in Northwest Georgia. While they couldn't take part in the Georgia lottery because of their status, they could work in the mines and if they had the resources, purchase lands and mines through a guardian. For example, Williams writes of a free person of color, James Boisclair, who arrived in Dahlonega to establish a cake and fruit shop. "He eventually discovered a rich vein of gold ore and had Dr Joseph J. Singleton, the first superintendent of the Dahlonega mint serve as his guardian for his purchase".²⁰

Figure 7 lacks a clear spatial pattern, suggesting an even distribution of the free people of color population. GIS analysis of the population shows that in 1840, the percentage of free people of color in the studied area was 17.33% in the Cherokee counties. This percentage went up to 23.69% in 1850. However, this rise appears modest and is less than the proportional area of Cherokee counties compared to the total studied area (28%), implying a limited influx. This could suggest that while free people of color certainly did come into the region, it wasn't to a huge extent, and they could have been more interested in opportunities in other areas of Georgia. However, it is hard to tell from the data whether these free persons of color were coming in from out of state or were recently emancipated, which could affect the interpretation of the results.

The comparably diverse workforce in Northwest Georgia may be because White residents were uncomfortable with the presence of a large slave population. Mine operators also generally preferred free labor over slavery as it was cheaper and did not involve feeding, clothing, and housing slaves.²¹

²⁰ Williams, *The Georgia Gold Rush*, 96.

²¹ Williams, 87.

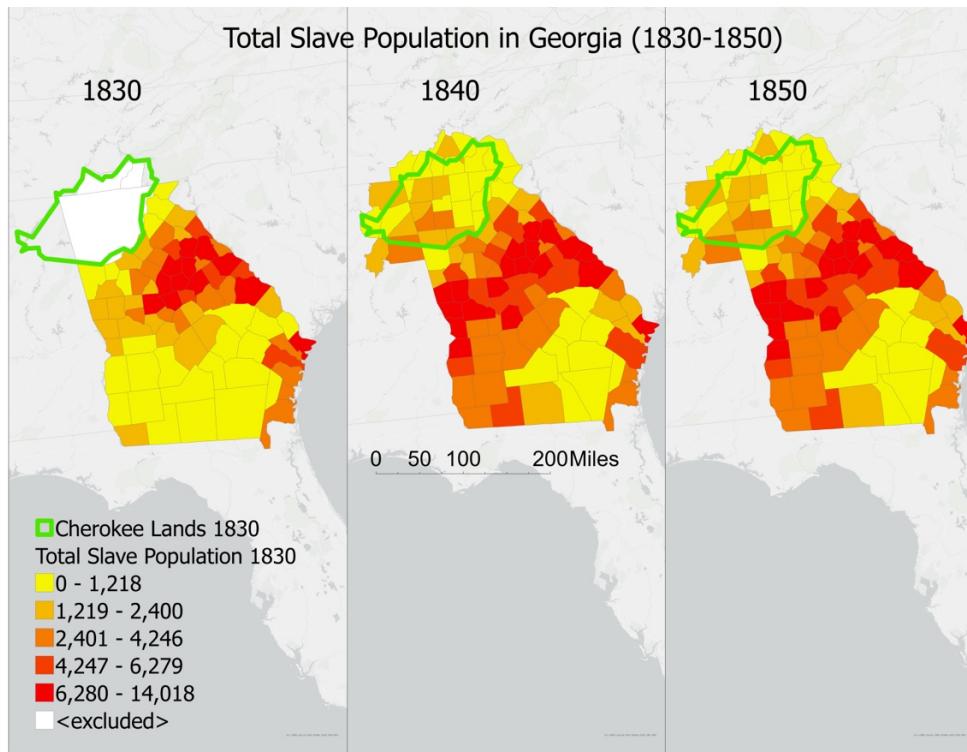


Fig 8. Total Slave Population in Georgia (1830-1850)

Some historians suggest that the decline in the slave population occurred as gold reserves diminished, and miners moved westward. It was not hard to find White laborers as “many prospectors who had been working the gold deposits sought work in large vein mines as the placers became scarcer”.²² Figure 8 depicts the total population of slaves in 1830, 1840, and 1850. GIS analysis reveals a slight increase in the proportion of slaves in Cherokee counties from 10.36% in 1840 to 11.07% in 1850. However, this difference appears negligible. Perhaps more important is that the Cherokee counties made up 28% of the studied area and 10-12% of slaves in the studied area were in the Cherokee counties. Also comparing the total slave population with the total White population, arguably slaves were not a dominant part of the mining workforce in the Cherokee counties. However, migratory slaves may be counted as living in other parts of Georgia where their slaveholders are located, suggesting higher proportions of slavery in the mining industries of the Northwest than what’s depicted in the data.

Overall, GIS analysis of the demographics of Northwest Georgia from 1830-1850 suggests that while there was a large influx of migration into the region due to the attraction of the Gold Rush, these were mainly White people and those born out of state (which would include White people). Although slaves did exist in a considerable capacity in the gold mining industry, they were comparably more transient, with greater proportions of slaves recorded as being in other parts of Georgia, likely for agricultural-related industries. International migrants and free persons of color likely did exist in some capacity in Northwest Georgia for economic purposes, but it was hard for me to infer more concrete results from the available data.

²² Williams, 88.

Section 4: Industrial Growth in Northwest Georgia (1830-1850)

Gold and Iron Industry Development

Gold and iron mining in Northwest Georgia were both lucrative during the Gold Rush. “By the end of 1832 over half a million dollars’ worth of gold [from the Georgia gold fields] had been deposited [at the United States Mint at Philadelphia].”²³ Iron became a substitute currency in many cash-starved areas.²⁴

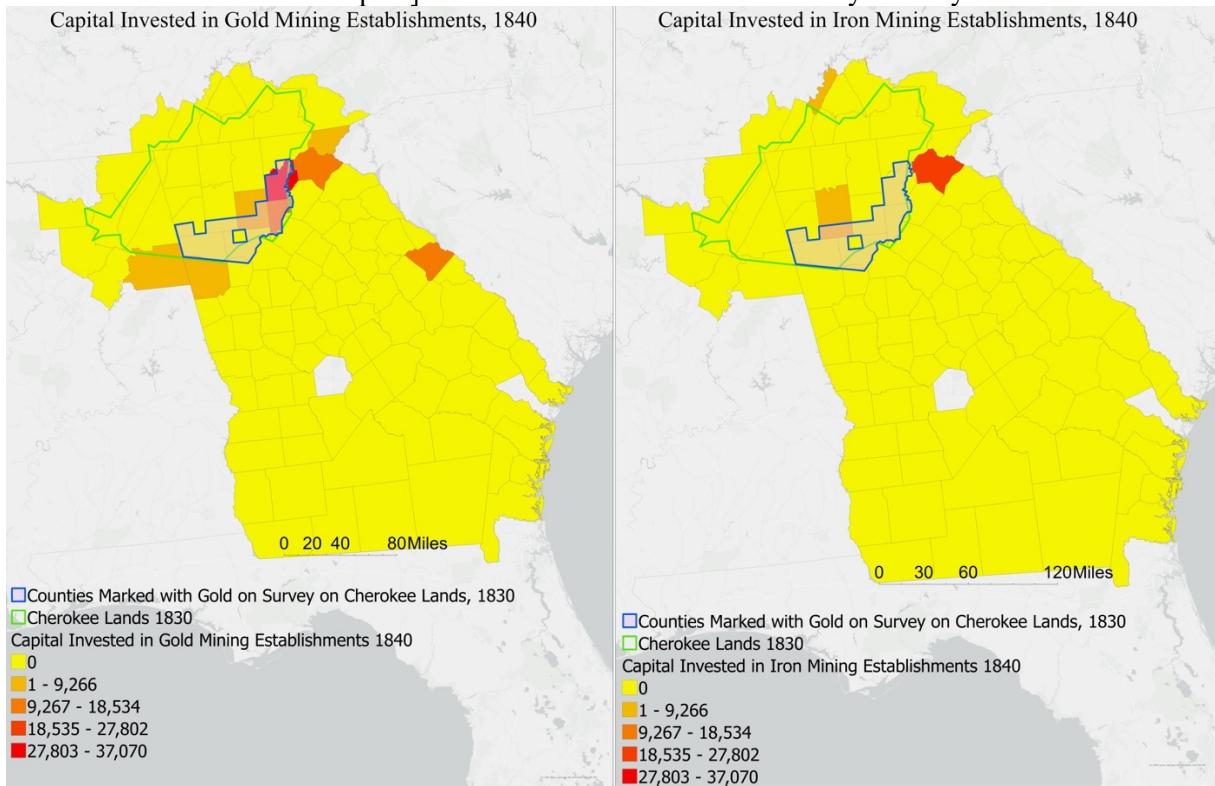


Fig 9. Capital Invested in Gold Mining Establishments, 1840 Fig 10. Capital Invested in Iron Mining Establishments, 1840 (Counties Marked with Gold on Survey on Cherokee Lands Source: Wilms, 1991)

As seen in Figure 9, the counties that corresponded with the surveyed gold lands had higher investments in the area, as expected. Considering the general overlap in the region with Figure 10, there could be a connection between the two industries, or at least they are receiving investments in the same area. Historians like Wheeler note how gold mining infrastructure in Northwest Georgia played a pivotal role in regional iron mine development”.²⁵ He credits the Stroup family with introducing iron manufacturing to Georgia. Some suggest a link between the gold and iron industries, with iron’s growth being tied to the gold industry’s development. The Stroups supplied early prospectors with specialized iron tools like ‘Georgia pans’.²⁶ Iron manufacturers learned from English iron manufacturing and purchased equipment from other US regions.²⁷ This suggests existing links between Southern economies and the North that may be underrepresented in the dominant narrative preceding the Civil War.

Railroad Development in Northwest Georgia

²³ Williams, 28.

²⁴ Wheeler, *Modern Cronies*, 46.

²⁵ Wheeler, 44.

²⁶ Wheeler, 47.

²⁷ Wheeler, 48–49.

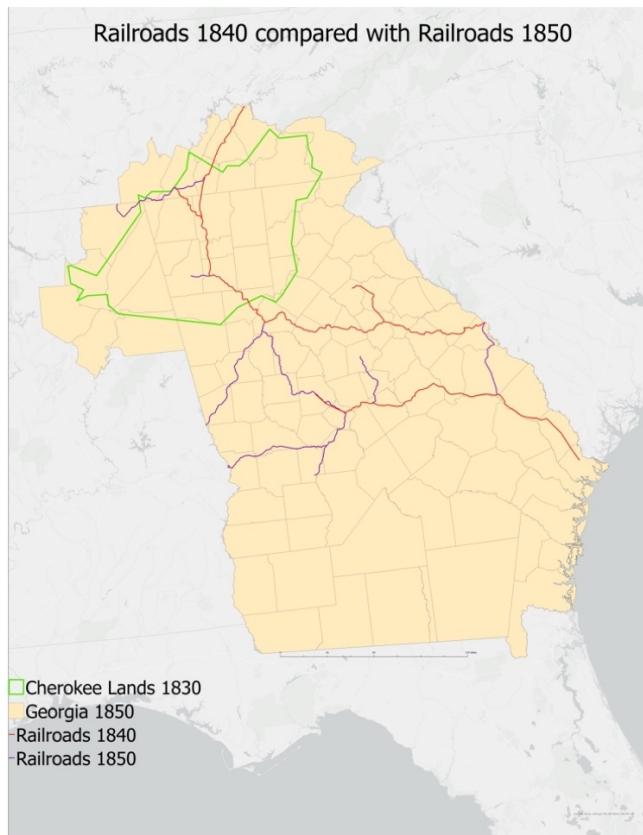


Fig 11. Railroads 1840 compared with Railroads 1850)

Railroads gained favor in the South over canals due to their compatibility with the region's soil and climate.²⁸ Figure 11 was created by mapping the Railroads 1840 and 1850 shapefiles after clipping them within the studied area. Figure 11 shows a focus on railroads linking Georgia to the Atlantic Coast, Alabama, and Tennessee, possibly for trade. I wonder why there isn't much development towards the South and Florida. From 1840 to 1850, railroad length in Georgia expanded significantly, growing from 1004.7 km to 1832.3 km, marking an 82.4% increase in railroads, as calculated by getting statistics of the sum of the shape_length variable in the railroad shapefiles.

Impact of the Railroad on the Gold/Iron Industry

The railroad that crosses the Cherokee counties is the Western & Atlantic (W&A) railroad. This railroad was chartered in 1836 to link with the Georgia Railroad which ran from Macon to Savannah and was completed in 1849. The W&A was arguably a key propeller of the development of the cities on its ends, Atlanta and Chattanooga. Many in Georgia, particularly the settlers in Northwest Georgia, advocated for this state-owned railroad to ideally promote self-sufficiency within the state and the South, as well as to link to the East Coast.²⁹

²⁸ Wheeler, 28.

²⁹ Wheeler, 5.

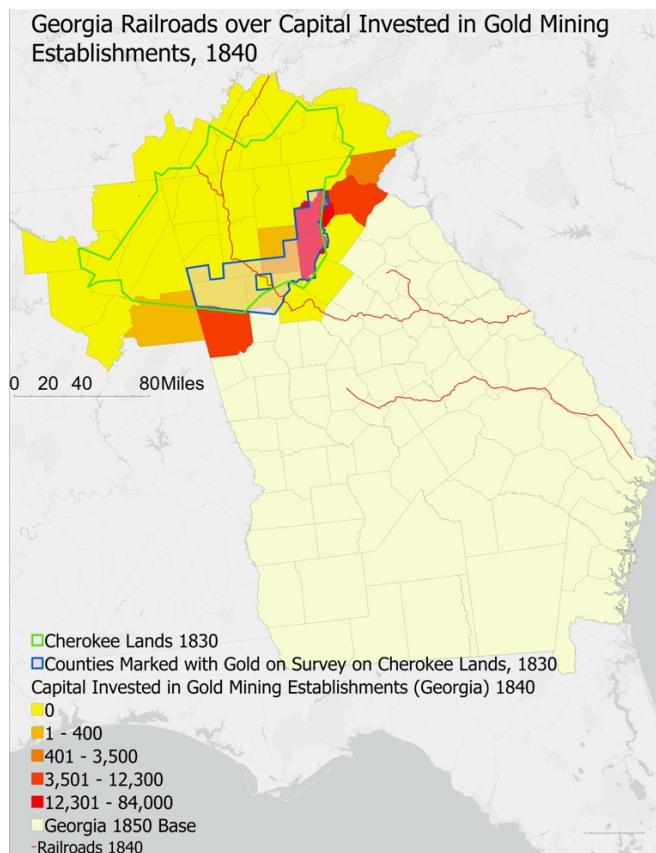


Fig 12. Georgia Railroads over Capital Invested in Gold Mining Establishments, 1840

Figure 12 shows the intersection of the railroads in 1840 with capital invested in the gold mines of 1840. The map itself appears to show while the railroad does cross the Cherokee lands, there wasn't relatively significant capital being invested near the railroad compared to farther away. Comparing Figure 12 with Figure 11 also shows that the number of gold mine establishments was also far from the railroad. GIS statistical analysis supports this by finding that the mean capital invested in the gold mines within 5 miles of the railroad was 8,411.8 compared to 1,933.1 outside of 5 miles. This was calculated by using spatial selection and getting the mean from statistics for the selected capital invested in the gold mines values. This could be because the profitability of gold mining is more location-of-gold dependent rather than proximity to railroad dependent. It could also be because the primary objective of the railroad was to link Atlanta and Chattanooga with the most straightforward path rather than be closer to the mines.

However, the development of this railroad brought about significant industrialization and growth as ancillary effects in the wider Northwest even if it wasn't directly related to the gold industry. The Gold Rush and railroad expansion drove the iron industry, spurring demand for coal production, e.g. from Chattanooga, and its transportation via the railroad.³⁰ The shift from raw material production to a self-sufficient economy was also notable in agriculture, which experienced heightened production in the 1850s.³¹ Self-sufficiency was a significant goal for Southerners considering secession. The W&A also ignited socio-political sentiments in the South, with places like Rowland Springs (built after W&A) serving as focal points for contemplating secession among Southern elites, underscoring their ambivalence towards ties with the North.³²

³⁰ Wheeler, 58.

³¹ Wheeler, 62.

³² Wheeler, 5.

Impact of Industrial and Infrastructural Development on Cherokee Settlement

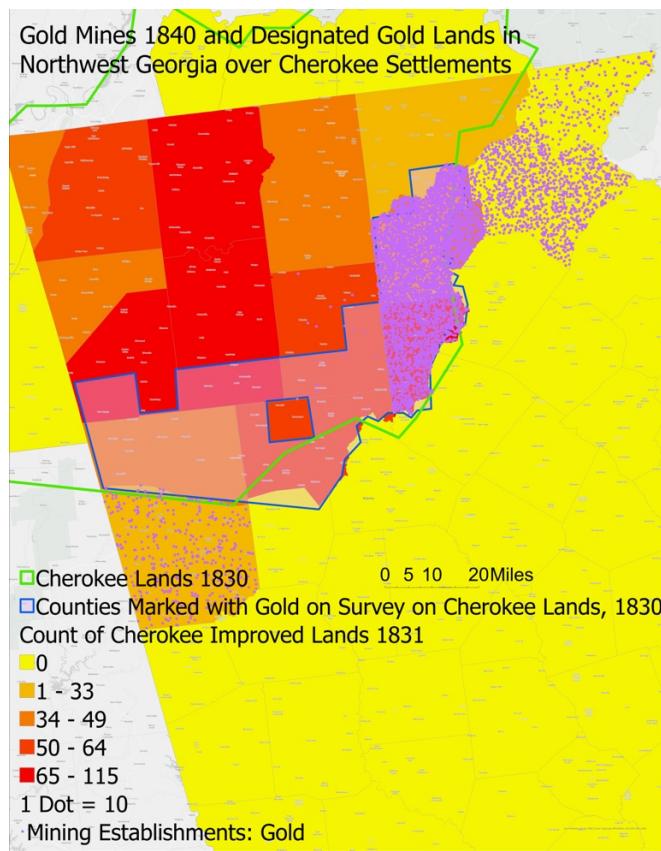


Fig 13. Gold Mines 1840 & Designated Gold Lands in Northwest Georgia over Cherokee Settlements

Gold and iron mining extended beyond the distributed Cherokee lands, suggesting mining wasn't exclusive to these areas, implying that while the initial lure to settle may have stemmed from gold discoveries, later mining activities outside these lands facilitated Northwest Georgia's development. The extent of differences between iron and gold is hard to infer from the figures as gold and iron may need different expenditures. However, these were the only comparable variables from NHGIS available.

Figure 13 depicts the Cherokee settlements count with the surveyed gold lands and a count of the mining establishments in the region in 1840 overlaid (symbolized using dot density). Mines were notably concentrated in densely settled Cherokee lands, particularly in Forsyth and Lumpkin counties. Forsyth had 14,200 gold mines, while Lumpkin had 37,070, significantly higher than the area's average count of 872. These counties also held elevated numbers of Cherokee improved lands—103 in Forsyth and 47 in Lumpkin—compared to the average count per county, which was 7.7. Further statistical analysis revealed that 64.8% of the mines in the studied area were in Cherokee lands, and 31.7% of Cherokee improved lands were within the gold lands. As such, it can be argued that the development of the mining industry in Northwest Georgia had a relatively significant impact on the Cherokee lands and society in terms of relative space and magnitude.

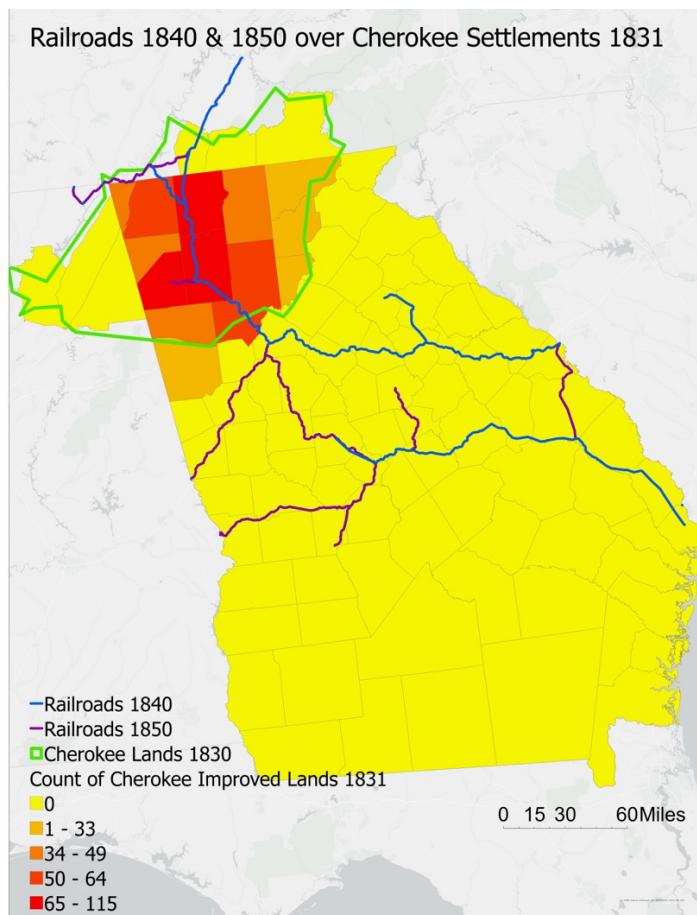


Fig 14. Railroads 1840 & 1850 over Cherokee Settlements 1831

Figure 14 makes it apparent that the W&A effectively bisects the Cherokee territory towards the north to Tennessee through higher density improved lands. This suggests that the building of the railroad likely had significant effects on the Cherokee, also on the physical landscape. Railroad construction and rapid industrialization had severe environmental consequences. The iron industry consumed vast amounts of timber.³³ Additionally, streams and hills in the area showed signs of extensive alteration and damage due to mining, leading to severe environmental degradation compared to the Cherokee era.³⁴

GIS analysis concludes that the percentage of the railroad in the Cherokee lands compared to the rest of the studied area was 22.7% in 1840, which is relatively close to the actual area proportion of the Cherokee territories compared to the rest of the studied area of 28%. This may suggest that there weren't necessarily significant amounts of railroad development in the Cherokee lands compared to the rest of Georgia. This percentage decreased in 1850 to 18.1% from 22.7% with the expansion of railroads towards the east and west (seen in Fig. 11). This may indicate that while the initial focus of railroad expansion was towards the north (Tennessee) through the Cherokee lands, not much focus on railroad expansion was necessary or in place in that area later. Nevertheless, its impact on the Cherokee land and settlements is clear.

Understanding the importance of the W&A in the development of Georgia and trade with Tennessee makes Georgia and the White settlers' desire for the Cherokee lands and the Cherokee removal more obvious, considering the map depicts how the Cherokee lands connect the rest of Georgia to Tennessee.

³³ Wheeler, 45.

³⁴ Wheeler, 65.

Conclusion

The vacuum left by the forced Cherokee Removal westward undeniably accelerated the already rapid development in Northwest Georgia that started in the 1830s following the discovery of gold in the area as Georgia claimed the Cherokee lands as her own.

Section 3 examines Northwest Georgia's demographics to gauge the influence of new gold-related industries on population movement. Figures 4, 5, and 6 indicate a substantial influx of White settlers and out-of-state arrivals, possibly concentrating in the region for its opportunities. However, Figure 7 depicts a more even distribution of the free people of color across the studied area. Perhaps they could have been more interested in living and relocating to other areas in Georgia. A limitation of this data is that there is no differentiation between the free persons of color who were coming in from out of state or were recently emancipated in the state, which affects the results.

Examining slavery's role in Northwest Georgia's labor force, Figure 8 illustrates a consistently lower slave population from 1840 to 1850 compared to the rest of Georgia. This could suggest slavery wasn't a dominant part of the mining workforce due to industry specifics and slaves' migratory nature, though this could also be because slaves weren't counted in the census for Northwest Georgia as they may have been counted in the other parts of Georgia their slaveholders were located. Although some historians argued that slavery in the Northwest only decreased from 1840 onwards as gold played out and the Western Gold Rush, I did not see much evidence of these changing slavery levels in Northwest Georgia. There was also an increase in slaves in the rest of Georgia, likely precipitating the Civil War and general expansion.

Section 4 covers industrial and infrastructural development in Northwest Georgia post late-1830s. Figures 9 and 10 hint at a potential connection between gold and iron industries, suggesting gold mining's influence on iron mining. However, it's uncertain if this linkage was definitive or if both resources naturally existed in the region. Figure 11 illustrates extensive railroad expansion in Georgia, notably the W&A, pivotal for Southern self-sufficiency and Atlantic Coast linkage. Figure 12 suggests that while the W&A bolstered industrialization, trade, and politics, it might not have directly impacted the gold industry. This raises questions about gold's role in funding initial development and its ongoing relevance. This could also be because the profitability of gold mining is more location-of-gold over proximity to railroad dependent. And the railroad's primary objective could be to link Atlanta and Chattanooga with the most straightforward path rather than be closer to the mines. This development contextualizes the differing perspectives of the South, whether centered on self-sufficiency tied to secession or connectedness with the broader nation. It also highlights the prominence of Southern industrial growth over the agrarianism for which it is most known.

The impact of industrial and infrastructural growth of the Cherokee Removal was significant. Figures 13 and 14 show that significant proportions of the mines in the region and the W&A were on densely populated Cherokee lands, thus suggesting significant societal and environmental impacts from industrial growth. But similar levels of railroad development also happened in the rest of Georgia, which may indicate that while the initial focus of railroad expansion and possibly industrial growth was in the Northwest, not much focus was placed in that area in terms of railroad expansion later as the focus moved west and eastward. Understanding the importance of the W&A's route through the Cherokee lands and the lucrative basis for industrial growth the gold mines provided makes Georgia and the White settler's desire for the Cherokee lands and removal much more apparent, and its impact on the Cherokee and its lands much more palpable. This is helpful in thinking about wider ideas in colonial encroachment on indigenous society and territories, as well as its environmental impact.

I would say that my expected findings were largely met through research and GIS, but there were unexpected findings too. I think it would be interesting to further investigate whether similar Gold Rushes during the period of Westward expansion followed similar brief explosive patterns of demographic and industrial-infrastructural growth.

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