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Mapping Ghost Towns in the Santa Cruz Mountains

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Mapping Ghost Towns in the Santa Cruz Mountains

GSP 510 Final Project

BY: SARAH BREWER

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Abstract

This project identifies areas of archaeological sensitivity for historic resources related to the segment of the South Pacific Coast Railroad that spanned from Los Gatos to Glenwood in the steep terrain of the Santa Cruz Mountains in Central California. The rail line was only in use for 60 years (1880-1940) until the completion of a major highway drew travelers to greater automobile use. During the construction and operation of the rail line, small towns sprouted at the railroad stops, most of which were abandoned along with the rail line in 1940. Some of these towns are now inundated by reservoirs. This project maps the abandoned rail line and “ghost towns” by using ArcGIS Pro (version 2.5.1) to digitize the railway, wagon roads, and structures shown on a georeferenced topographic quadrangle created in 1919 (Marshall et al., 1919). Through spatial analysis, an area of archaeological sensitivity was created that identifies where artifacts and features related to the railway and its associated towns from turn of the 19th Century are likely to be found.

Introduction

Project Location

The project is located in the Santa Cruz Mountains between Los Gatos and the small hamlet of Glenwood in Central California (Figures 1 and 2). The heavily forested land is characterized by steep hills and deep valleys, bisected roughly north-to-south by the Los Gatos Creek.

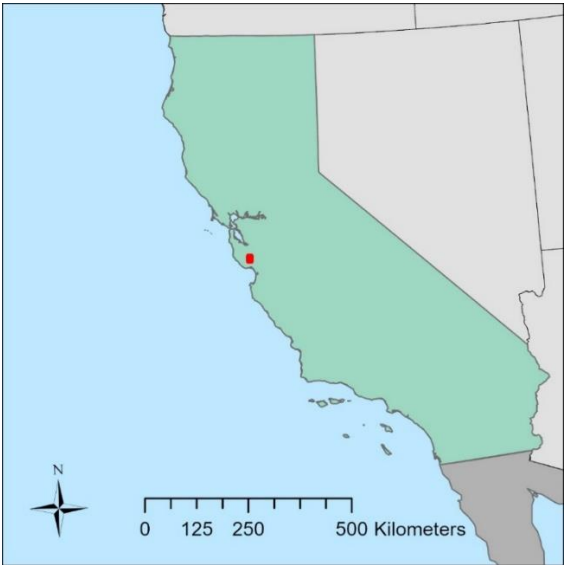


Figure 1. Project Vicinity (Source: Natural Earth)



Figure 2. Project Location (Source: Esri)

Historical Context

The Santa Cruz Mountains have a long history of difficult passage. Prior to the introduction of European migrants, speakers of the Tamien and Somontac Ohlone aboriginal dialects (Levy, 1978; Milliken, 1995) visited the sandstone outcrops along Los Gatos Creek to mill acorns, and likely resided, at least temporarily (Cartier, 1986; Santa Cruz Archaeological Society, 2010). In 1791, fourteen years after the Spanish established the Santa Clara de Asís mission in Santa Clara, Father Fermín Francisco De Lasuén founded Misión la Exaltación in Santa Cruz (Lowman, 2011). Lasuén forged a path, called the “Camino Real” through the rugged mountains to connect the two missions (Beal, 1991). After the Mission system was disbanded in the mid-1800s, an early settler, Zachariah “Buffalo” Jones, who owned a sawmill along Los Gatos Creek, turned the old mission road into a toll road. The road was only 6-7 feet wide, and so steep that a horse-drawn buggy needed to be disassembled in areas and carried by hand (Beal, 1991). By 1858, the Santa Cruz Gap Turnpike Joint Stock Company, who had purchased the road from Jones in

1857, upgraded the road from Los Gatos to the summit to an 8-foot-wide road which ran up the west side of Los Gatos Canyon, through the small stagecoach stops of Lexington and Alma (Beal, 1991).

A rail line was completed in 1880 through the mountains with the majority of the work conducted by Chinese laborers (Luna, 2017). The construction of the railroad was intensive. Because of the rough terrain, two extensive tunnels measuring over a mile each were burrowed through the mountains (Hamman, 1980). Boom towns and railroad stops such as Wright's Station, Laurel, and Glenwood developed at the entrances and exits of the tunnels (Figure 3). The mountain community used the railroad stops to export lumber, and crops, and bring weekenders from the Bay Area to come picnic near Austrian Gulch (Young, 1979; Figure 4). A standard gauge was added to the existing rail in 1898 allowing both narrow gauge and standard gauge rail cars to travel on the tracks (Hamman 1980).

The opening of the narrow-gauge railroad through the mountains from Los Gatos to Santa Cruz in 1880 was the most important event in the Santa Cruz Mountains history since the arrival of the first white settlers. It wiped out towns that had existed for years; it brought new communities into being overnight; and it changed the face of the land. Nothing was ever the same again after the railroad (Young, 1979).



Figure 3. Wright's Station 1893 (Los Gatos Local History Research Collection)

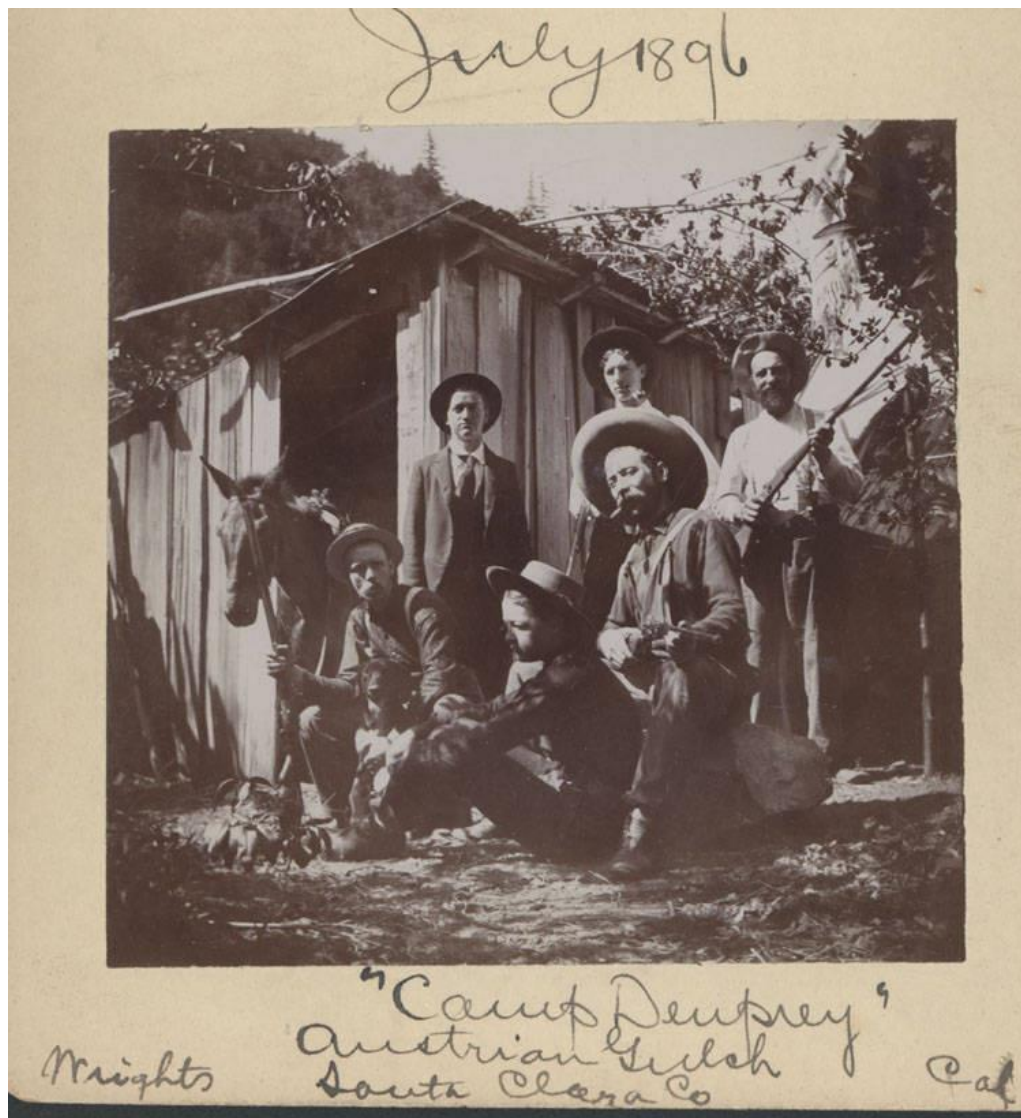


Figure 4. Camp Deuprey, Austrian Gulch, Wright's 1896 (Los Gatos Local History Research Collection)

Sadly, the railroad was only in use for 60 years. The introduction of the automobile also changed the face of the land nearly overnight. The Santa Cruz Turnpike (now called Old Santa Cruz Highway), built upslope of the railroad to the west, was paved in 1915 (Beal, 1991). Communities catering to automobile owners such as Redwood Estates, Chemeketa Park, and Holy City, drew the population closer to the highway, shunting growth at the old railroad stops of Lexington, Alma and Wrights. Highway 17 (then called State Highway 5), which was 5 miles shorter than the Turnpike, put the last nail in the proverbial coffin for the railroad and its associated communities. By 1940, the same year as the new highway was completed, the railroad was decommissioned forever. By that time, the towns of Lexington, Alma, Wrights and other stagecoach and rail communities had already essentially turned into ghost towns (Young, 1979). Twelve years later, construction of the Lexington Reservoir completely inundated the towns of Lexington and Alma as well as a portion of the railway. Austrian Gulch is also inundated by another reservoir called Lake Elsmán.

Project Description

This project maps the historic roads, railways and buildings as shown on the 1919 Los Gatos topographic quadrangle. It shows a landscape that is tied to rail and horse-and-buggy travel before the growing popularity of automobile travel shifted the use of the land westward and upslope. The goal of this project is to show how the human connection to geography has changed from the time of the railroad to the present. This project also serves to predict areas of archaeological sensitivity for historic features related to the rail construction and utilization dating from the late 1870s to 1940, very little of which have visible surviving evidence. Identifying areas where potential archaeological sites may be is a crucial step in preserving our cultural heritage by preventing accidental damage through ground-disturbing projects and development.

Methods

The first step in the process was to decide on a map that was detailed enough to show the features I was interested in digitizing, namely the railroad alignment, and old roads and structures from the former towns such as Alma, Lexington, and Wrights that are no longer on current maps. It was important for the map to predate the 1952 Lexington Reservoir inundation, and preferably before the 1940 disbanding of the rail line.

The USGS Historical Topographic Map Explorer (<https://livingatlas.arcgis.com/topoexplorer/index.html>) provided georeferenced maps of the project area from 1916, 1919, 1940, and 1943 that could be downloaded free of cost. After inspecting all available maps, the Los Gatos 15' TOPO from 1919 was identified as the ideal map to digitize as it clearly showed the railroad and structures from Alma and Lexington and other rail stops. Rather than digitizing the whole quadrangle, I chose to focus on the northwest corner of the map where the rail line and "ghost towns" were located.

I uploaded the georeferenced map into ArcGIS Pro (version 2.5.1) and projected the map into Universal Transverse Mercator World Geodetic System 1984, Zone 10 North. I also uploaded datasets of creeks and water bodies from the Santa Clara County Valley Water Open Data website (<https://data-valleywater.opendata.arcgis.com/>) and a dataset of modern roads from the County of Santa Clara County Open Data Portal (<https://data.sccgov.org>). I created a hillshade layer for the project using Digital Elevation Maps downloaded through National Map (<https://viewer.nationalmap.gov/basic/#/>).

From the georeferenced 1919 topographic map, I digitized roads and railways as lines and structures as points. There were two types of roads illustrated on the 1919 map. The minor roads are symbolized with a smaller dashed line on the maps to distinguish them from the main wagon roads.

Once all features were digitized, I created an archaeological sensitivity polygon to identify areas where railroad-related archaeological deposits may exist. I created a polygon around the structures indicated on the 1919 map to estimate where the former towns of Lexington, Alma, Wright's, Austrian Gulch, Laurel and Glenwood were located. Next, I put a 100-meter buffer around the railway and "ghost towns" to take into account the deposit of potential artifacts in the vicinity of structures and features, and also to account for the uncertainty of digitizing a 100-year old map. Finally, a single polygon for archaeological sensitivity was created through the Merge and Dissolve tools in ArcGIS Pro.

I conducted a field visit to some of the existing tunnels and "ghost towns" to photograph and assess the current condition of some of the historic features and to ground-truth the 1919 georeferenced

topographic map. I used the Avenza application to view the georeferenced map on an iPad to find where features, such as the locations of buildings that are no longer standing, would have been.

Results

The railway, mapped from the southern portion of Los Gatos to its southwest extent on the 1919 topographic map, travels along the Los Gatos Creek drainage until the rail line turns sharply to the southwest through the Wright's Station and Laurel tunnels (Figure 5). Wagon roads parallel the railway, and also traverse the steep hillsides to mountain homesteads (Figure 6).

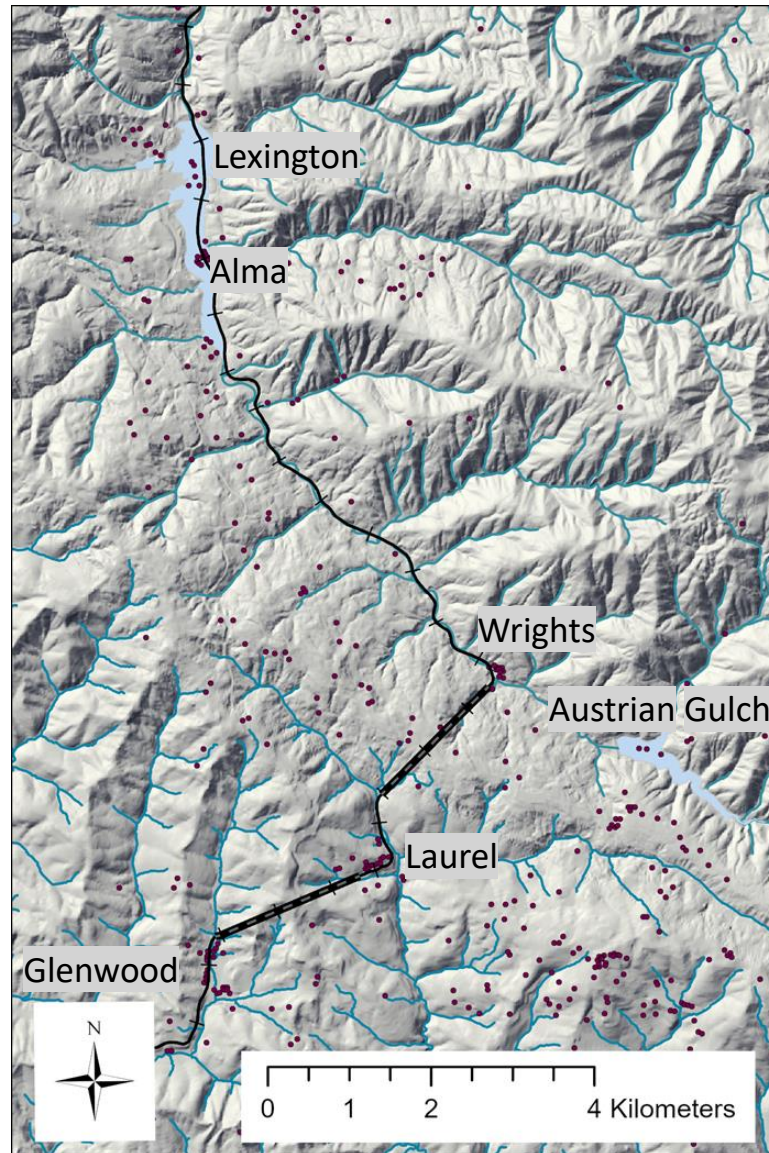


Figure 5. Digitization of the railroad from the 1919 topographic map showing tunnels and structures (S. Brewer)

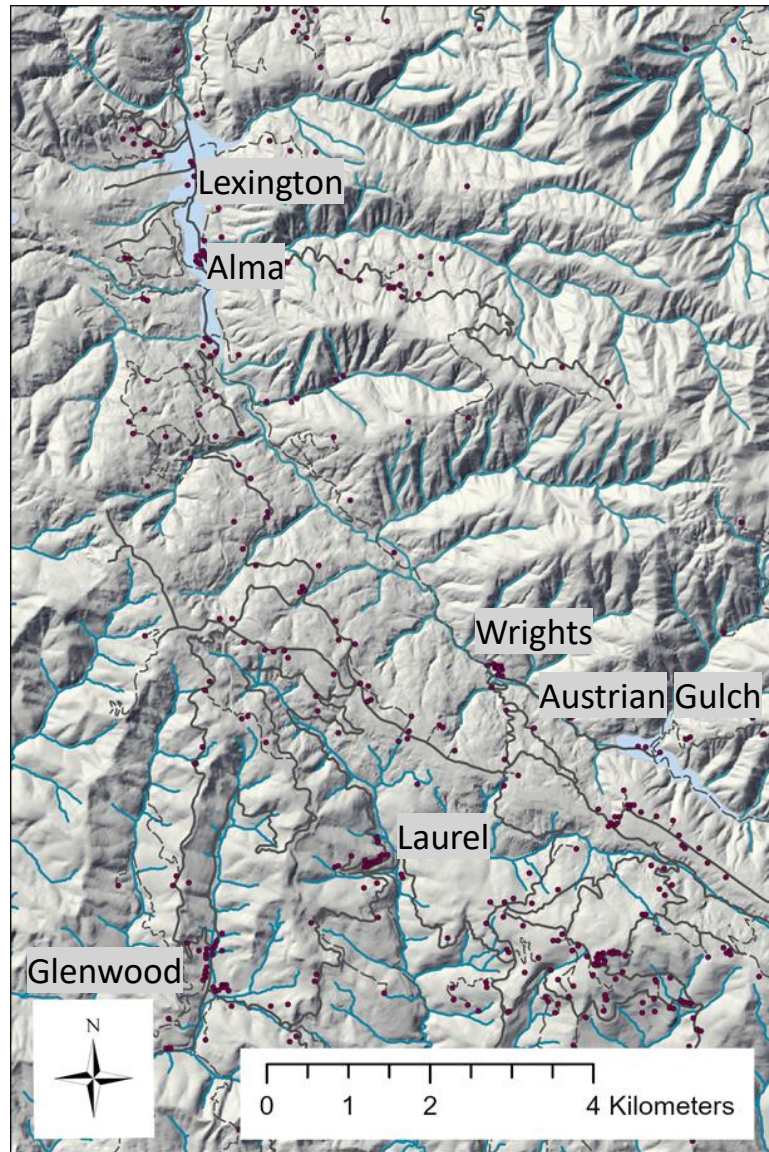


Figure 6. Digitization of wagon roads and structures from the 1919 map (S. Brewer)

Lexington and Alma

The first stops are the Lexington and Alma stations (Figure 5). In 1952, over a decade after Highway 17 was completed and the railway was decommissioned, the Lenihan Dam was constructed, creating the Lexington Reservoir from the accumulation of water from the Los Gatos Creek watershed (Figure 6).

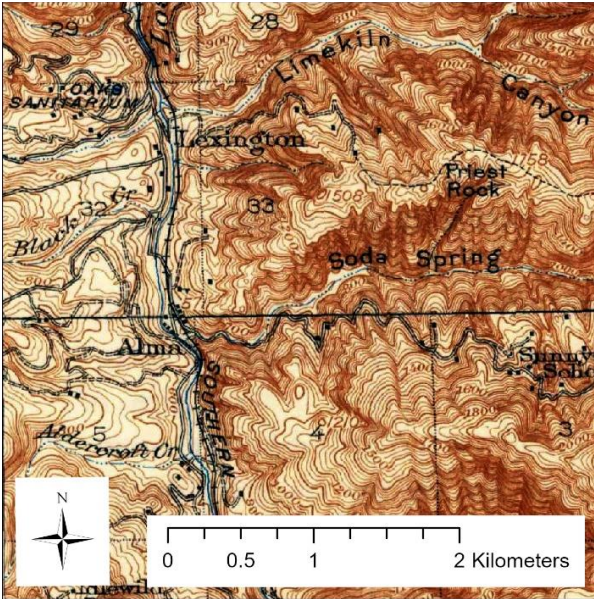


Figure 5. Lexington and Alma (Source 1919 Los Gatos Topographic Quadrangle)

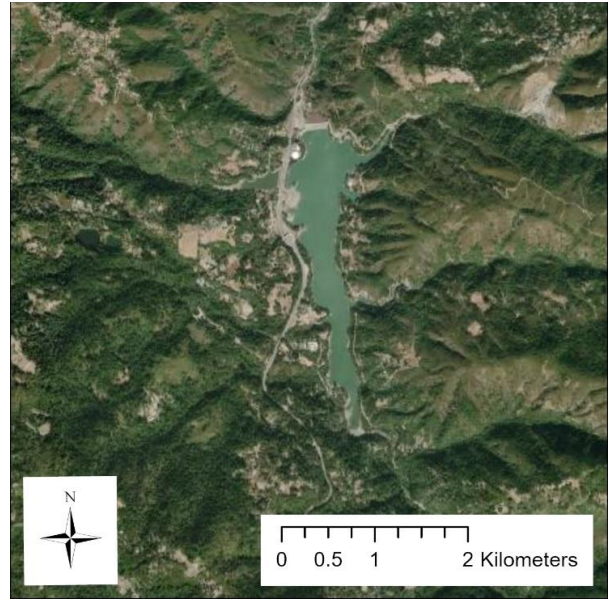


Figure 6. Same area today inundated by the Lexington Reservoir (Source: Esri basemaps)

Figure 7 shows the digitization of the Lexington and Alma area over a hillshade I created from a Digital Elevation Model. I added the polyline for the Highway 17 and Old Santa Cruz Highway (in red) to provide reference for the highways in the 1988 photograph which shows the Lexington and Alma area after the Lexington Reservoir was drained for maintenance (Figure 8; Los Gatos Local History Research Collection). Figure 9 shows Alma how it appeared in 1915 (Los Gatos Local History Research Collection).

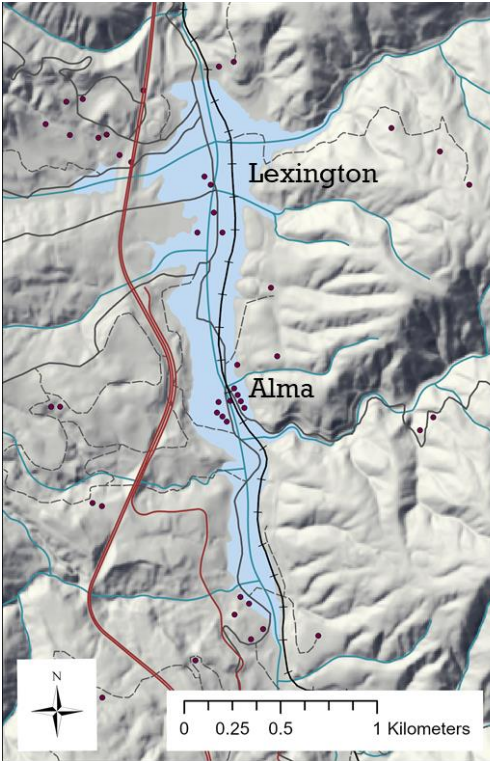


Figure 7. Lexington and Alma (digitized by S. Brewer)

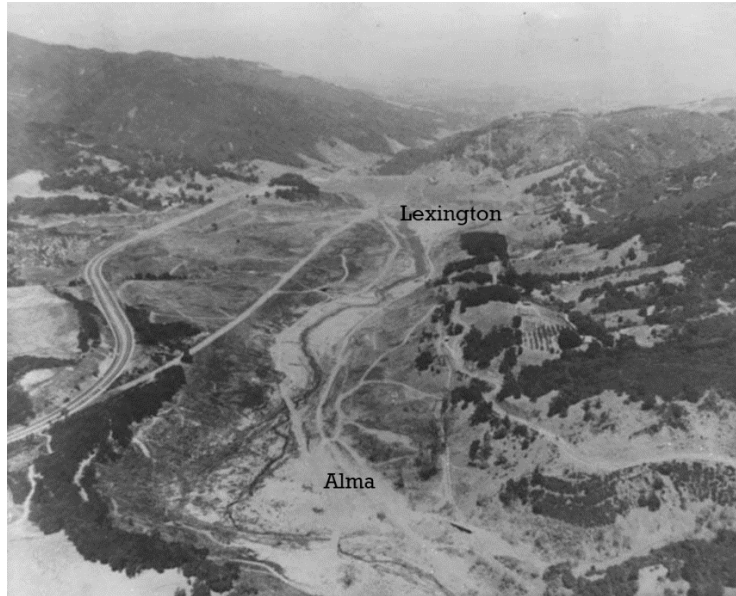


Figure 8. Area of Lexington and Alma after the Lexington Reservoir was drained in 1988 (Los Gatos Historic Research Collection)

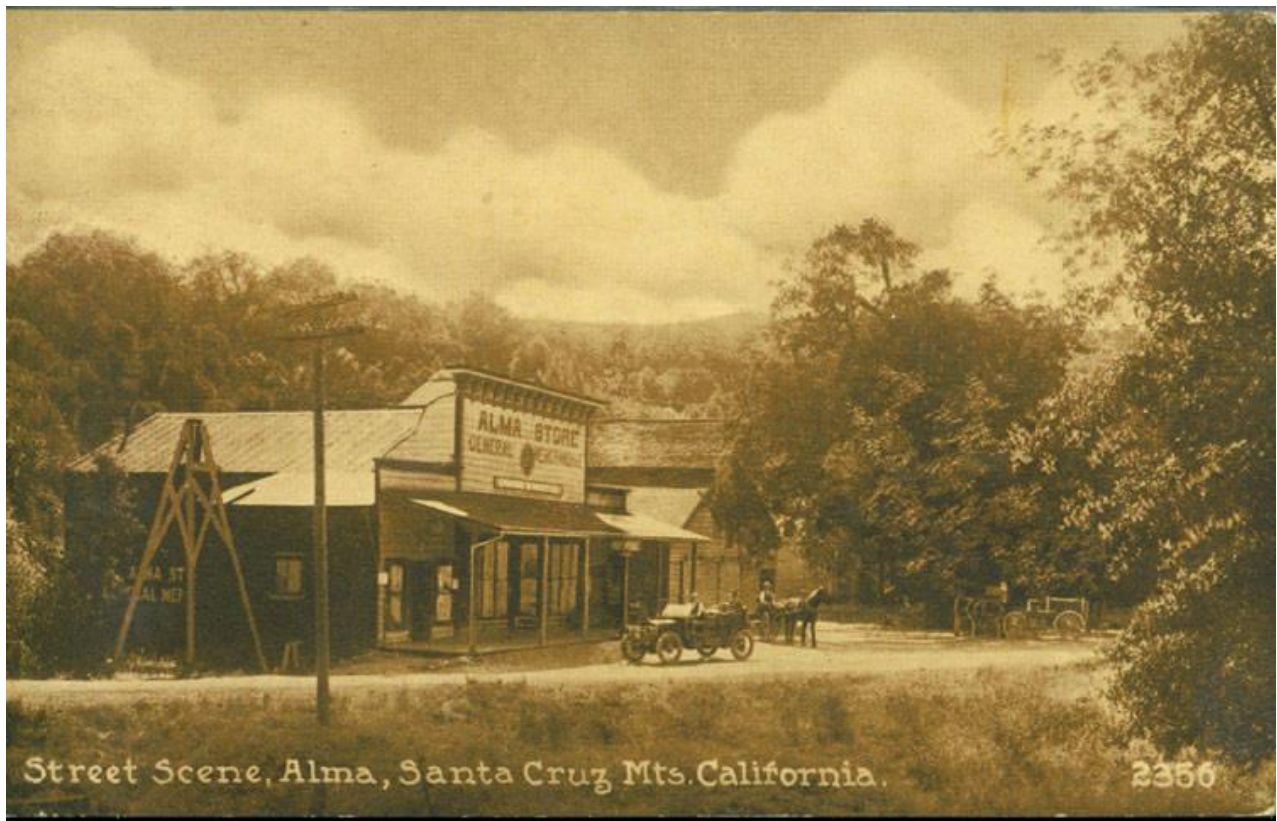


Figure 9. Postcard of Alma from 1915 (Los Gatos Historic Research Collection)

Tunnel Towns: Wright's, Laurel, Glenwood and Austrian Gulch

Temporary boomtowns appeared at locations of tunnel entrances where workers lodged temporarily during the long excavations of the mile-long tunnels. The towns served as railroad stops once the railroad was in operation. The 1919 topographic map shows clusters of buildings at Wrights, Laurel, Glenwood and Austrian Gulch (Figures 10 and 11).

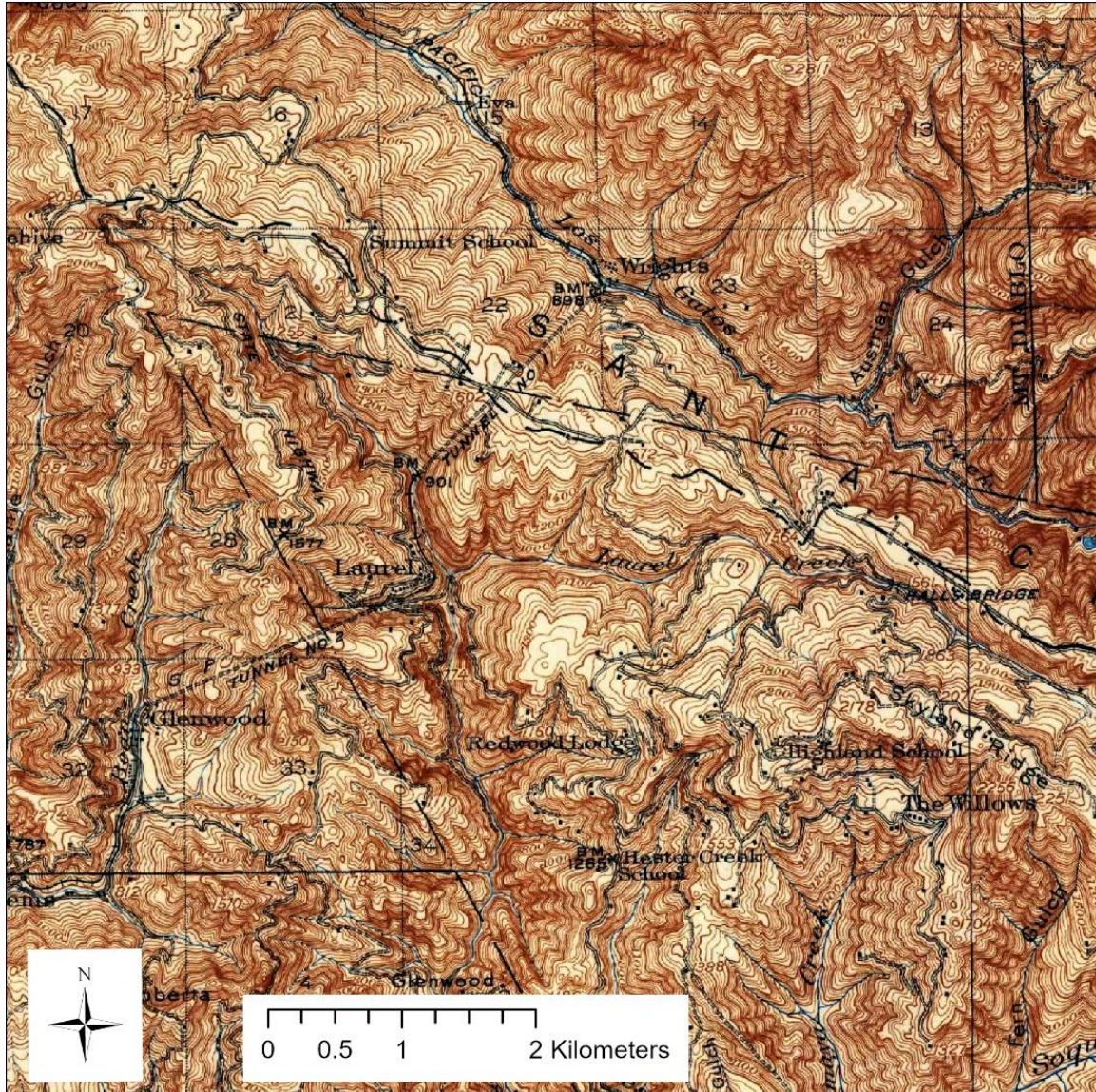


Figure 10. Tunnel Towns (1919 Los Gatos topographic quadrangle)

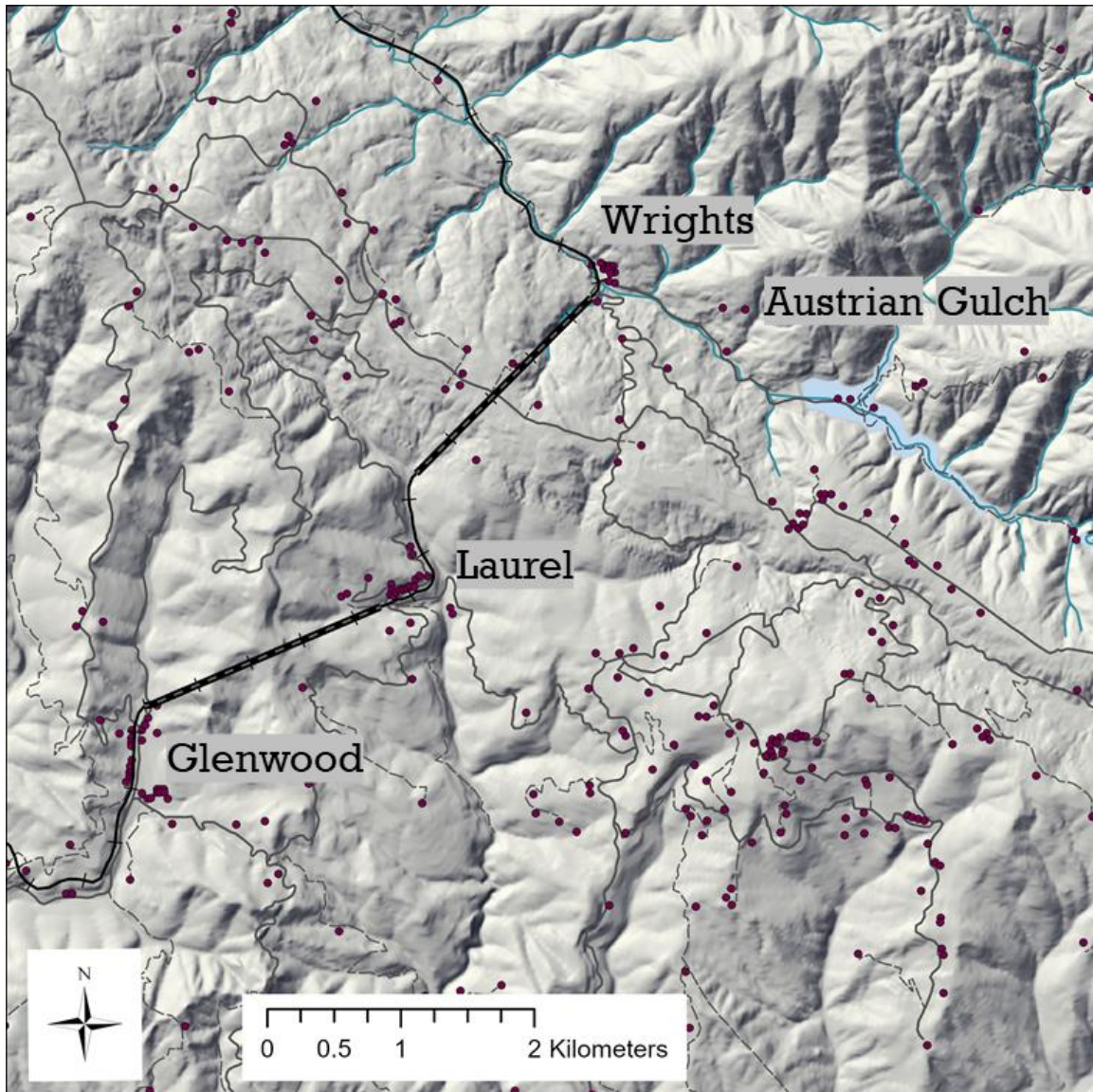


Figure 11. Digitization of the tunnel towns from the 1919 topographic quadrangle (S. Brewer)

Field Visit

On November 26, 2020, I visited the railroad towns of Wrights, Laurel and Glenwood to field-check the 1919 georeferenced map and to view the current conditions. There are no longer any structures at Wrights, which is now owned by the San Jose Water Company (Figures 12 and 13). The San Jose Water Company also owns the area of Austrian Gulch, which is also inundated by a reservoir. Access was prohibited to the former Austrian Gulch area. Figure 14 depicts Laurel tunnel from a 1914 postcard; Figure 15 is Laurel tunnel as it is today. Figure 16 shows Glenwood today.



Figure 12. Wrights tunnel entrance as it stands today (S. Brewer)

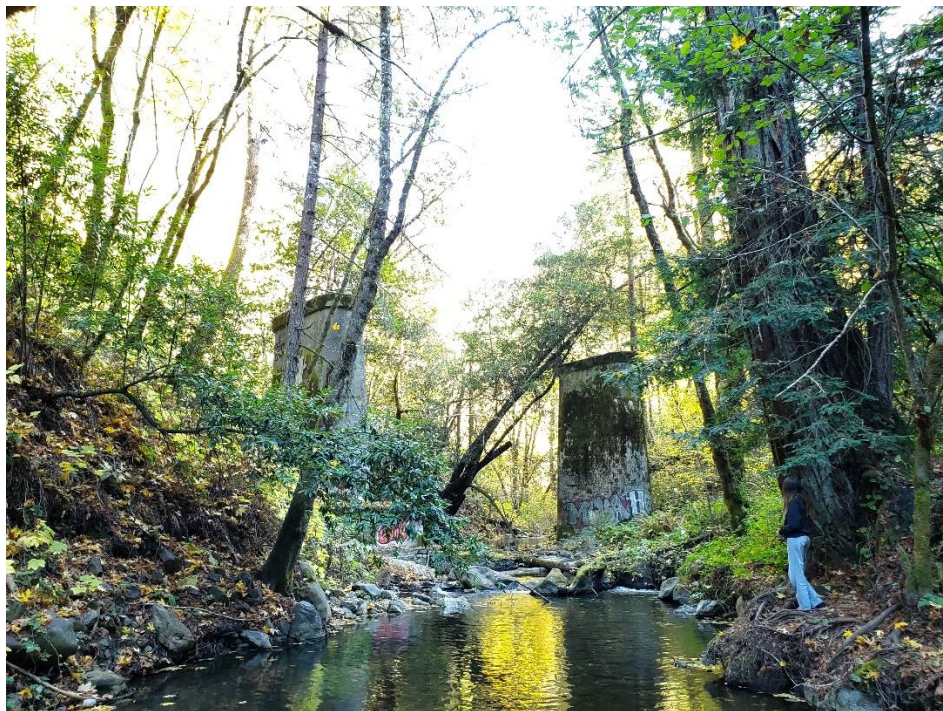


Figure 13. Wrights bridge footing remains (S. Brewer)

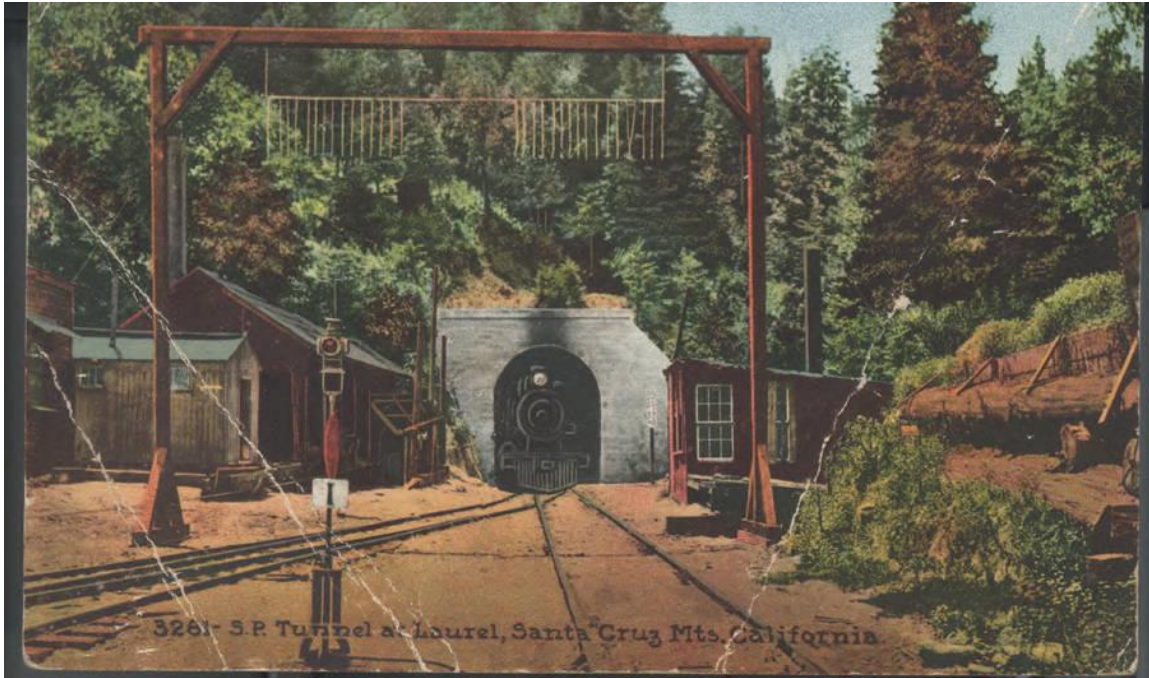


Figure 14. Laurel Tunnel 1914 Postcard (Los Gatos Local History Collection)



Figure 15. Laurel Tunnel today (S. Brewer)



Figure 16. Glenwood today

Historic Sensitivity Mapping

Lastly, I created a polygon for archaeological sensitivity for the historic railway and associated “ghost towns” (Figure 17). This layer, which uses a 100-meter buffer around railroad features and towns, can help archaeologists identify where artifacts and features associated with the historic rail line are likely located so that accidental damage to the resources can be avoided.

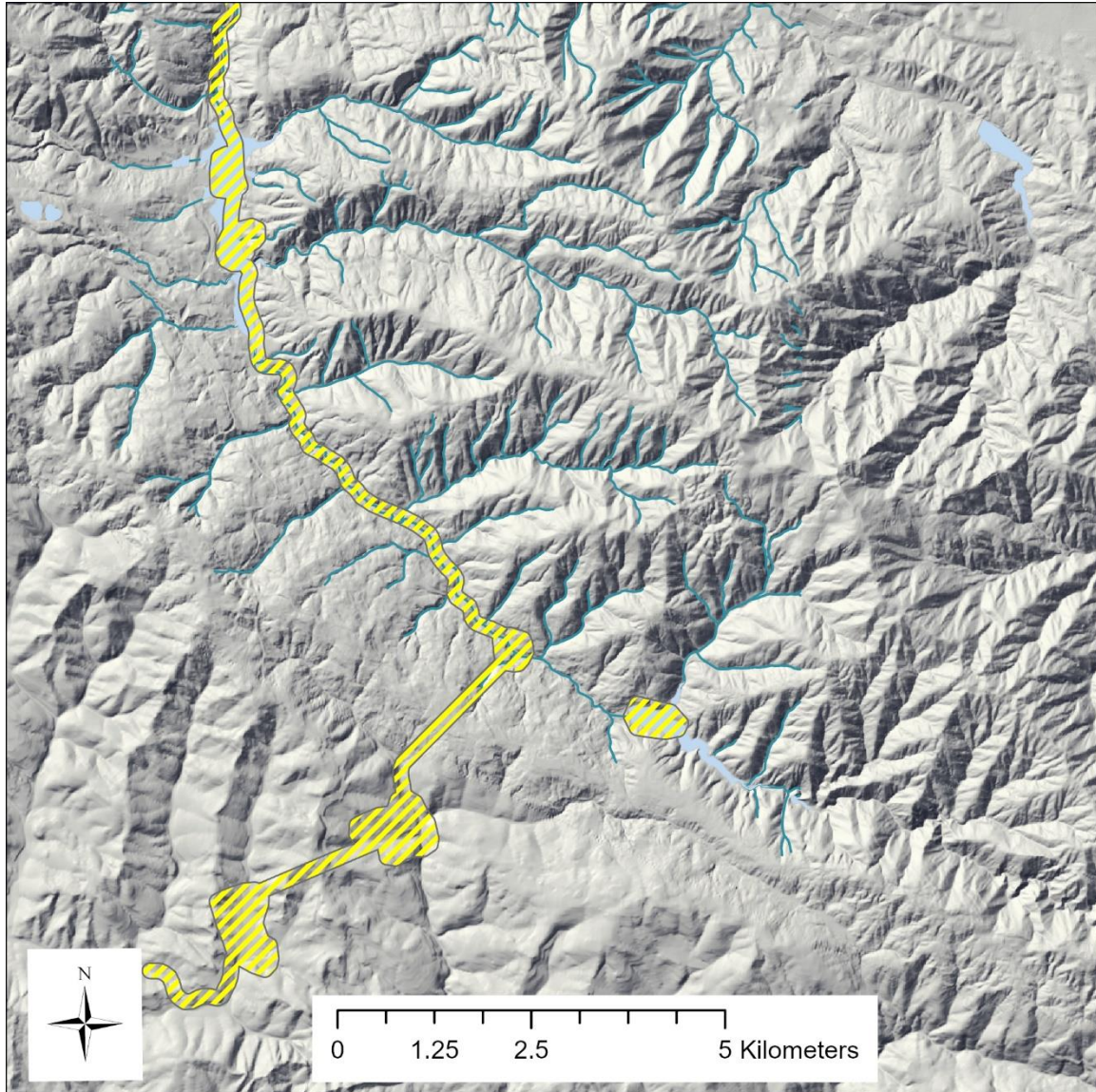


Figure 17. Archaeological sensitivity for historic railroad features from approximately 1878-1940 (S. Brewer)

Conclusion

This study used a georeferenced topographic map from 1919 to digitize historic cultural resources such as railways, roads, and buildings. It also produced a sensitivity map for archaeological resources aged from approximately 1878 to 1940. Identifying archaeological sensitivity for historic sites helps preserve our cultural heritage by incorporating protection or mitigation from proposed projects or development. This project highlighted the change in land use within the Los Gatos Creek drainage from bustling railroad stops in the late 19th century to “ghost towns”, some of which are inundated by reservoirs in the present time. Future work could include a more detailed study of the roads and buildings from the homesteads in the hills or to digitize maps from different dates to compare the results.

Acknowledgments

Special thanks to my field assistant, Lani Brewer, who helped me track town, photograph, and ground-truth historic features and to my friends and family for putting up with my obsession over these railroad-related ghost towns. Also, much appreciation to those at the Los Gatos Local History Collection, who had compiled so many amazing old photographs of the area of research and to James Graham for the opportunity to engage in the development of my GIS skills this semester.

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