

Socio-Economic Assessment of the Upper Feather River Watershed

Integrated Watershed Resource Management

Upper Feather River Watershed Socioeconomic Assessment



Sierra Institute
for Community and Environment

Jonathan Kusel, Andrew Spieth, and Brooke Huffman

For further information
Please contact Jonathan Kusel

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I. Introduction

The Upper Feather River Watershed is located in the Northern Sierra Nevada of California and encompasses Plumas County and small portions of Butte, Lassen, and Sierra Counties. This report focuses on Plumas County, as it comprises the majority of the area and population in the watershed region. Census-designated places in the watershed include the communities of Chester, Graeagle, Greenville, Loyalton, Magalia, Portola, Quincy, Westwood, and Yankee Hill. Each of these communities are described in this report drawing from quantitative data from the U.S. Census and American Communities Survey, California Department of Education, California Employment Development Department, and the Unified Plumas School District. This report provides an overview of current social and economic conditions as well as trends over time.

The Sierra Institute for Community and Environment has worked in the field of socioeconomic assessment, specializing in rural communities, since the mid-1990's, and the Sierra Nevada Ecosystem Project (see Doak and Kusel 1996). Based on a review of the literature and previous socioeconomic assessments conducted in forested landscapes and watersheds, key indicators and measures were identified and included in this report to provide an overview of community conditions. The conditions include data on demographic characteristics, education, economic vitality and income and poverty, and public health.

One of the most significant challenges for understanding socioeconomic conditions in rural communities is that comprehensive data are not commonly collected for areas with low populations. Regularly collected data are typically available only at the county level and often do not accurately reflect conditions in communities. Little or no secondary socioeconomic data is collected based on watershed boundaries. Due to data availability, the unit of analysis, or level of data presented, varies and therefore will be clearly identified in the descriptive statistics and analysis throughout this report.

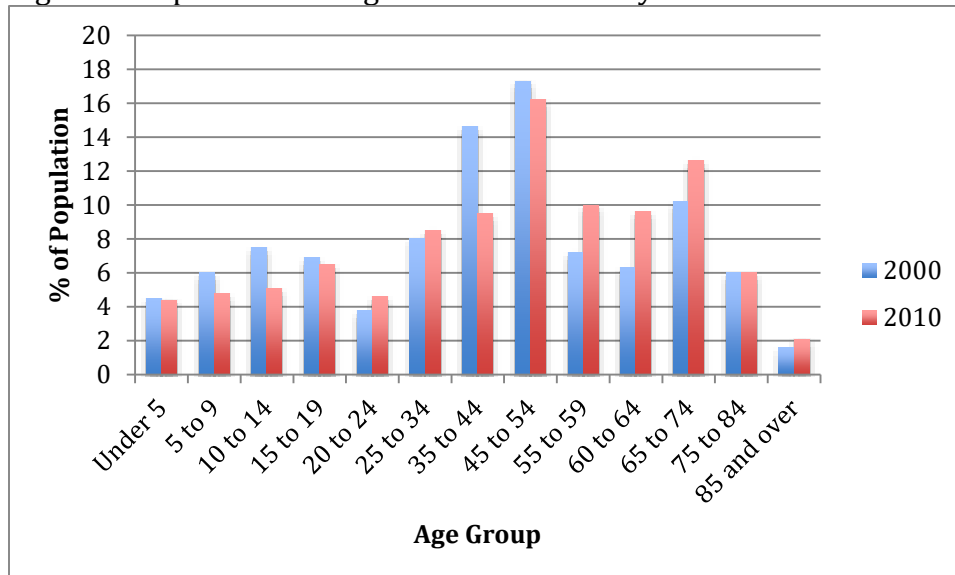
The report begins with an overview of socioeconomic conditions in Plumas County followed by discussion of community specific social and economic measures for the census-designated places in the greater watershed area. The next section of the report presents education data including school closures, enrollment, and participation in the federal Free and Reduced-Price Meal program in Plumas County. The report concludes with remarks on the effectiveness of California's Disadvantaged Communities assessment tool and the overall socioeconomic conditions of communities in the Upper Feather River Watershed.

II. Socioeconomic Conditions in Plumas County

The total population of the county is 20,007 residents. The population of Plumas County decreased slightly since 2000, from 20,824 residents. During this time period the county saw a more than 22% decrease in the number of those aged 5 to 9 years old as well as a 34% decrease in those aged 10 to 14. The number of those aged 25 to 34 remained relatively constant while the age group 35 to 44 declined by

34%. There were increases in all of the age groups over 45 years with the exception of those aged 75 to 84. Most notably, those aged 65 to 74 increased by nearly 19% and those aged 60 to 64 years increased by over 46%. The figure below depicts population changes for all age groups since the year 2000.

Figure 1: Population Changes in Plumas County between 2000 and 2010



Data: 2000 and 2010 U.S. Census

Population density is one factor in the rurality of place. In general, the lower the density the more rural a place tends to be. The State of California, with a population of more than 37.2 million people and a total land area of 163,694.74 square miles, has a population density of approximately 239 people per square mile of land area. Communities in Plumas County have population densities that range from as low as 0.77 people per square mile in the Feather River Canyon area to as high as 14.07 people per square mile in the Graeagle area. The table below shows population density by community area in Plumas County.

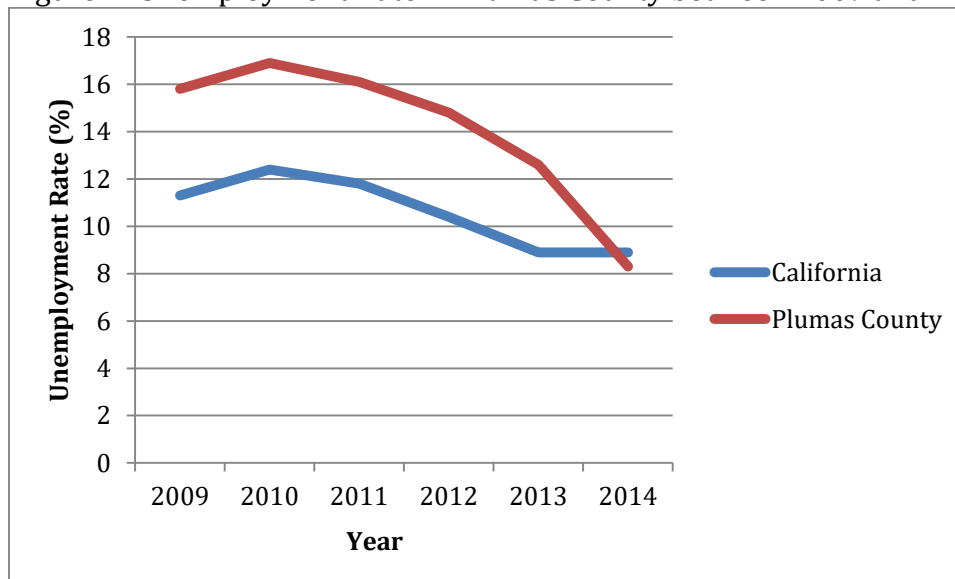
Table 1: Population and Housing Density in Plumas County by Community Area

Community	Population	Housing Units	Total Area (sq. miles)	Population Density
Chester area	3957	4759	470.22	8.42
Feather River Canyon area	184	182	238.94	0.77
Graeagle area	1844	2211	131.09	14.07
Greenville area	2601	1504	467.47	5.56
Portola area	4760	2941	662.79	7.18
Quincy area	6661	3969	642.91	10.36

Data: 2012 American Communities Survey. Population density is calculated by dividing the total population by the number of square miles

The economic conditions of Plumas County show declining unemployment and small changes in employment by industry since 2000. In 2009, average annual unemployment in the county was 15.8% and increased to 16.9% the following year. Unemployment has slowly declined since 2010, falling to its lowest level in the six-year period in August of 2014 to 8.3%. Unemployment in Plumas County has been, on average, three points higher than that of the overall state average during the five-year period beginning in 2009. Most recently, however, unemployment in the county has fallen to slightly below the state unemployment rate, shown in the figure below.

Figure 2: Unemployment Rate in Plumas County between 2009 and 2014*

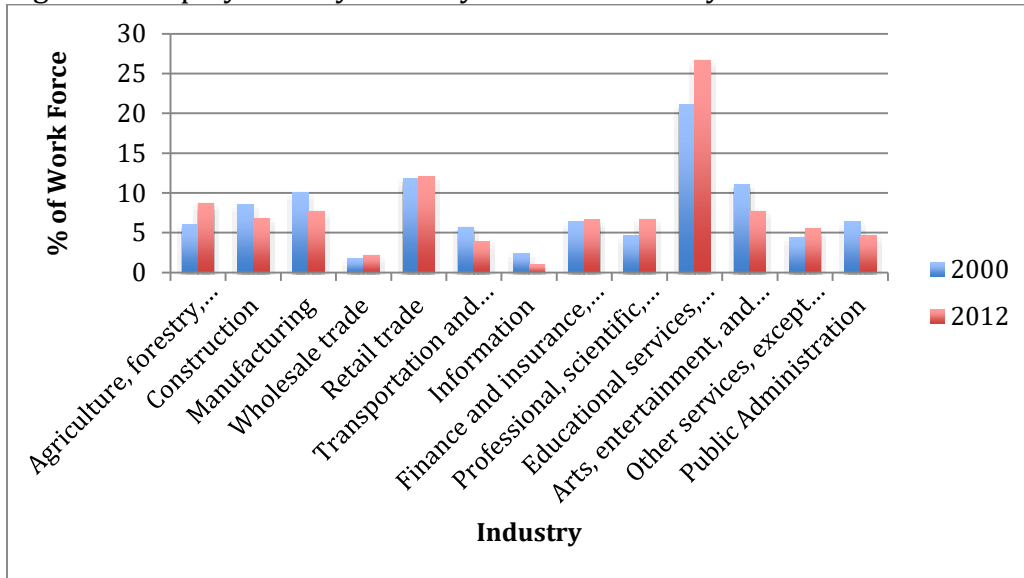


Data: California Employment Development Department

*Data are shown as annual average unemployment rates of working adults aged 16 years and over. The data presented for 2014 are for the month of August of that year.

The largest employment sectors by industry in Plumas County are educational services; retail trade; and agriculture, forestry, fishing and hunting, and mining. Educational services encompass more than one quarter of all employed accounting for 26.7% total employment. Retail trade is the second largest category in terms the number of employed persons at 12%, and agriculture, forestry, fishing and hunting, and mining represent 8.7% of those employed. Manufacturing and arts, entertainment, and recreation, and accommodation and food services both make up 7.7% of all employed persons in the county. The following graph depicts employment by industry for Plumas County.

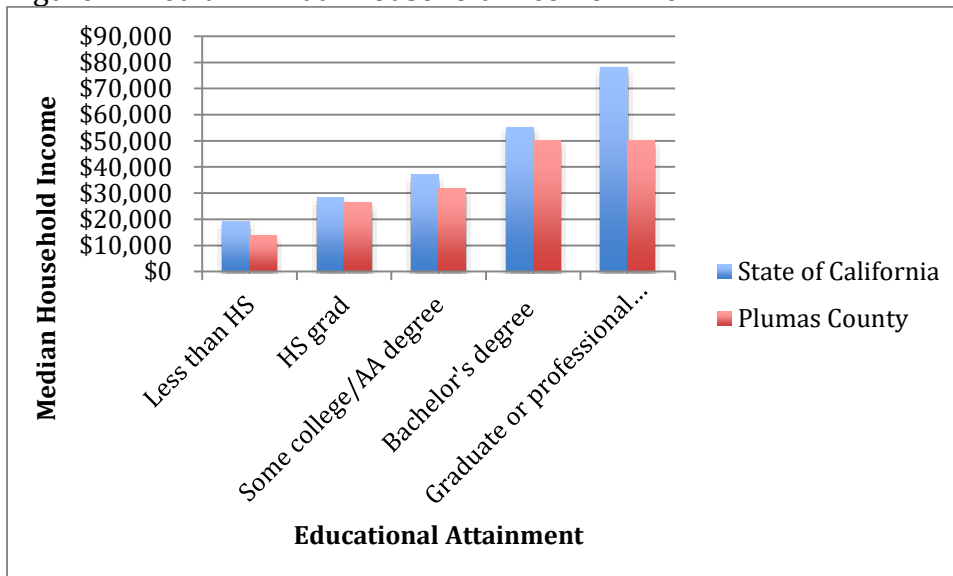
Figure 3: Employment by Industry in Plumas County in 2000 and 2012



Data: 2000 U.S. Census and the American Communities Survey 2012

Median household income in the State of California is \$61,400, which is significantly higher than that in Plumas County of \$45,358. Median income by education level is shown in the figure below. At all education levels the median income is below the state average with the largest difference at the graduate of professional degree level. Whereas there is a premium for graduate-level education across the state with an annual median income of \$78,277, in Plumas County the median income at that education level is \$50,050.

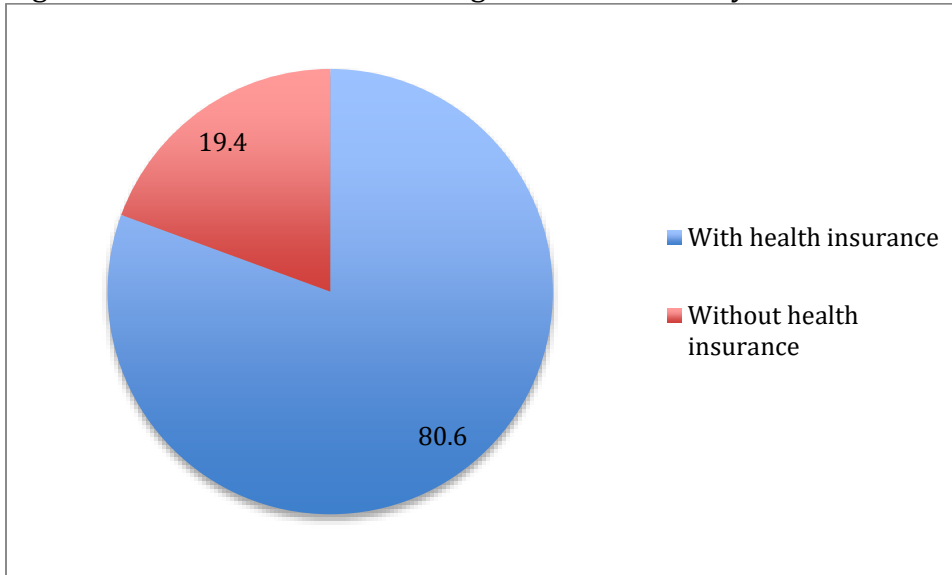
Figure 4: Median Annual Household Income in 2012



Data: 2012 American Communities Survey

Although health insurance coverage rates are likely to change as a result of the passage of the Affordable Care Act, insurance coverage is an important indicator of socioeconomic well-being. More than 80% of Plumas County residents carry health insurance coverage, as shown in the figure below. This is slightly lower than the State of California as a whole, which has an 82.2% health insurance coverage rate.

Figure 5: Health Insurance Coverage of Plumas County Residents in 2012



Data: 2012 American Communities Survey

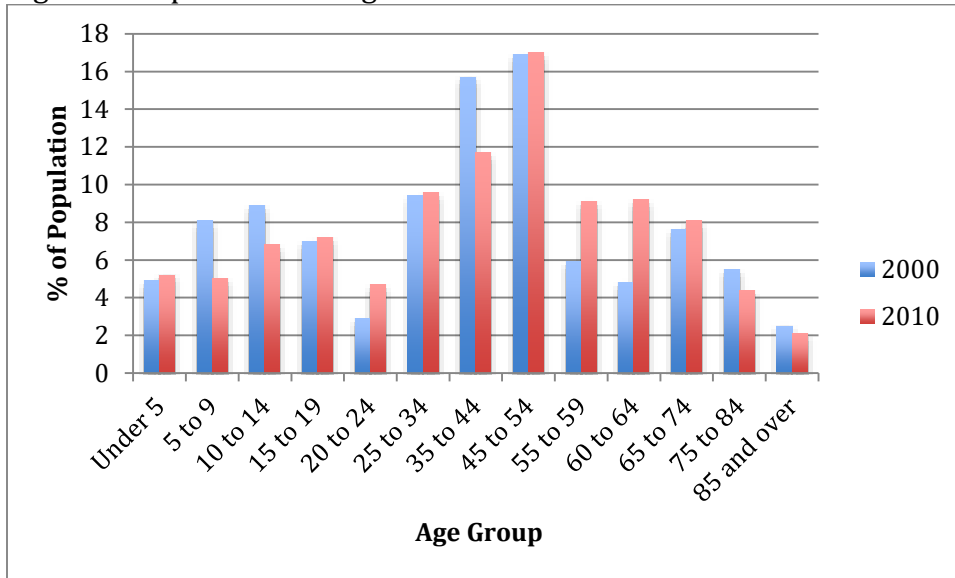
III. Communities of the Upper Feather River Watershed

The next section highlights community characteristics and findings from an analysis of data from the U.S. Census Bureau, California Department of Education, and California Employment Development Department. The communities discussed in the next section include Chester, Graeagle, Greenville, Loyalton, Magalia, Portola, Quincy, Westwood, and Yankee Hill.

Community Profile: Chester, California

Chester is located near Lake Almanor, a large reservoir in the Upper Feather River watershed. Chester has a population of 2,144, which is a slight decrease from the total population in 2000 of 2,316 people. In the ten-year period there were notable increases in those aged 20 to 24 and those aged 55 to 64, which increased by 47% and 58% respectively. The number of children aged 5 to 9 decreased by 42% and the number of those aged 35 to 44 decreased by 30%. Population changes for all age groups are shown in the figure below.

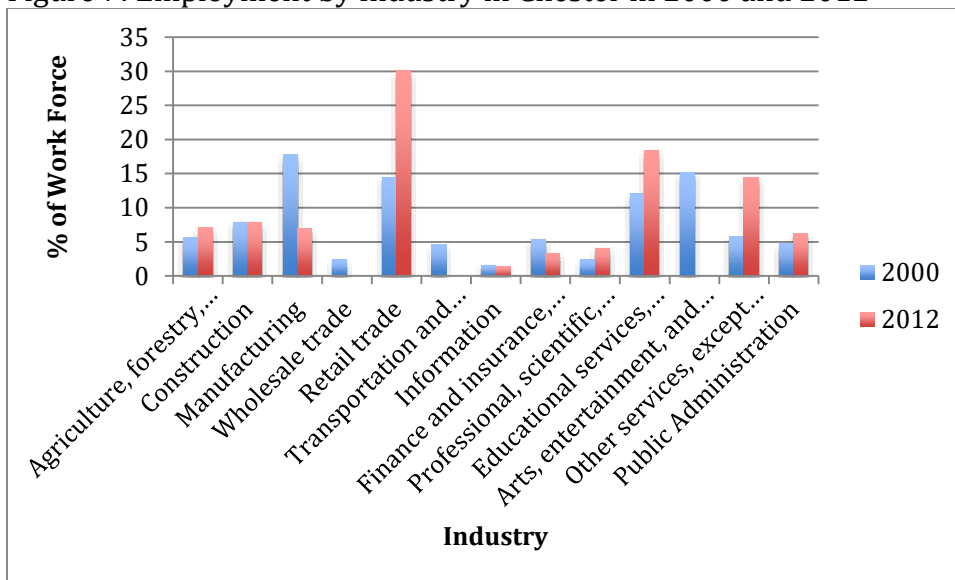
Figure 6: Population Changes in Chester between 2000 and 2010



Data: 2000 and 2010 U.S. Census

Annual unemployment in Chester is lower than the county unemployment rate in each year between 2009 and 2014. The highest unemployment rate during this time period was in 2010 at 11.3%, and the lowest is the August 2014 data, which show a 5.4% unemployment rate in Chester. Retail trade is the largest single employer by industry in Chester, followed by the educational services, health care, and social assistance category. Each of these categories makes up 30.1% and 18.4% of total employment respectively. Also, of particular note, there was a 75% decrease in the number of individuals working in manufacturing in Chester between 2000 and 2012.

Figure 7: Employment by Industry in Chester in 2000 and 2012

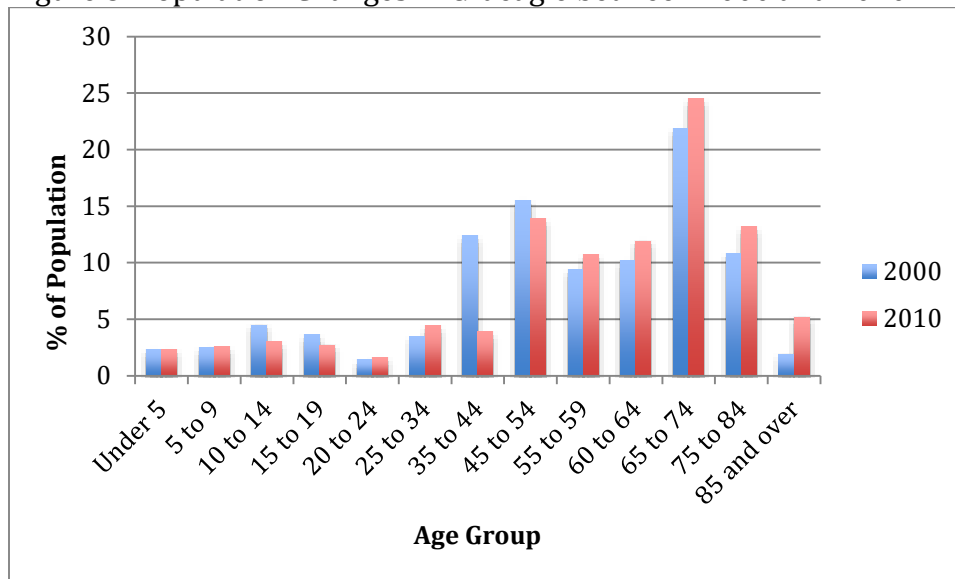


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Graeagle, California

Graeagle is located near the Southern edge of Plumas County on Highway 89. The community has a permanent population of 737 residents, which is a decrease from the 831 persons who called Graeagle home in 2000. The population by age group figure below shows that those living in Graeagle are, on average, older than their counterparts in other parts of the county. The age groups younger than 35 to 44 years of age each make up less than 5% of the overall population, and those individuals aged 44 years and younger make up only 20% of the total population. Those aged 65 to 74 years make up nearly 25% of the total population. Changes in all groups between 2000 and 2010 are shown below.

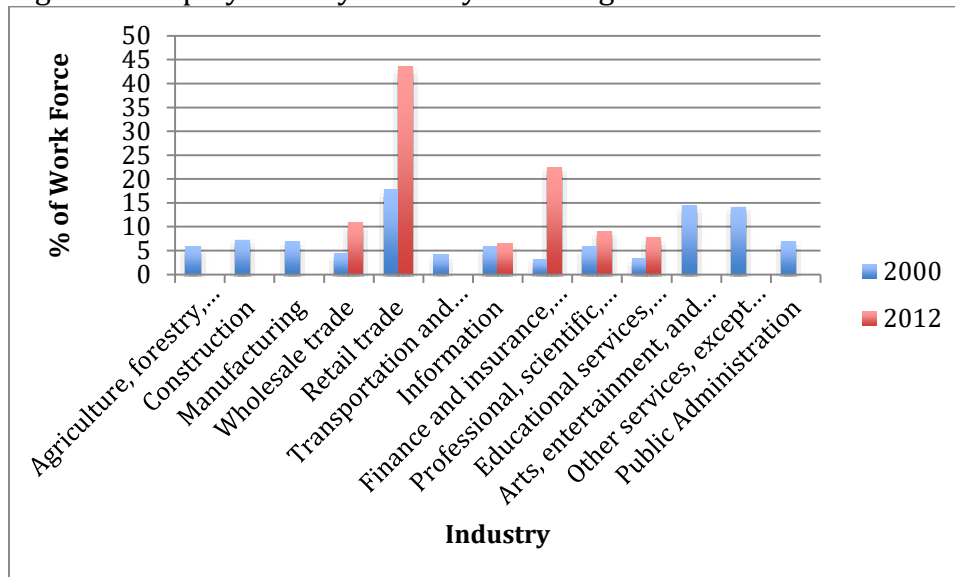
Figure 8: Population Changes in Graeagle between 2000 and 2010



Data: 2000 and 2010 U.S. Census

Unemployment rates in Graeagle between 2009 and 2012 averaged 14.4%, then in 2013 unemployment fell to 11.5% and as of August 2014 that rate is 7.5%. In 2000, there were 320 working age individuals (those aged over 16 years) in Graeagle, and today there are 156 individuals considered of working age that reside there. The figure below shows changes in employment by industry between 2000 and 2012, and although a number of categories show considerable changes as a percentage of overall employment it is important to keep in mind that the data sample is small. For example, the number of individuals working in retail trade, by far the largest individual employment sector in Graeagle, increased from 17.8% of total employment in 2000 to 43.6%, that is the equivalent of a change from 57 workers in 2000 to 68 workers in 2012. The following graph shows changes in employment by industry between 2000 and 2012.

Figure 9: Employment by Industry in Graeagle in 2000 and 2012

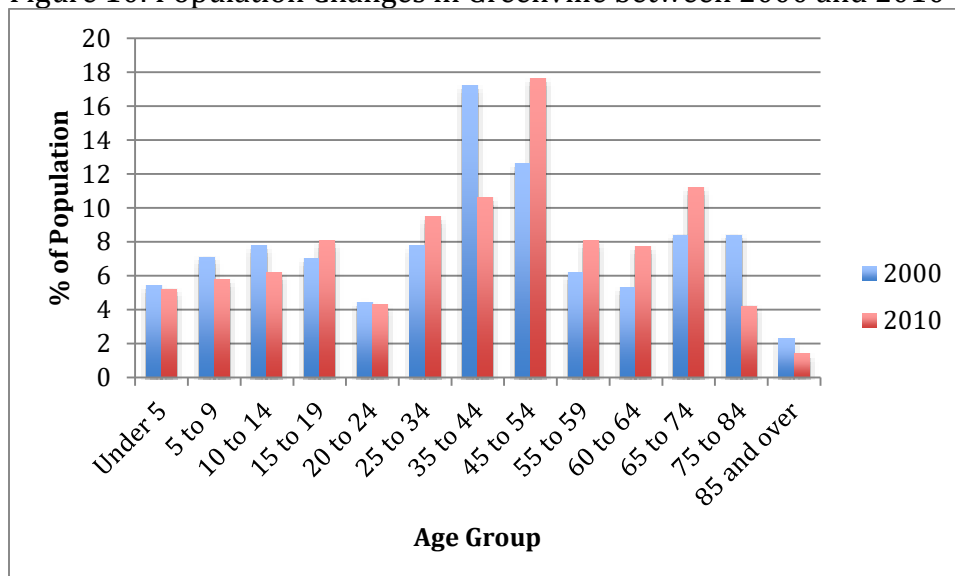


Data: U.S. Census 2000 and American Communities Survey 2012

Community Profile: Greenville, California

Greenville has a population of 1,129 people, which is a slight decrease from the population in 2000 of 1,160. The population by age group as a percentage of total population has been consistent since 2000 with the exception of those aged 35 to 44, 45 to 54, and 65 to 74; shown below. There was a 39% decrease in those aged 35 to 44 since 2000 and the number of those aged 45 to 54 and 65 to 74 increased by 36% and 28% respectively.

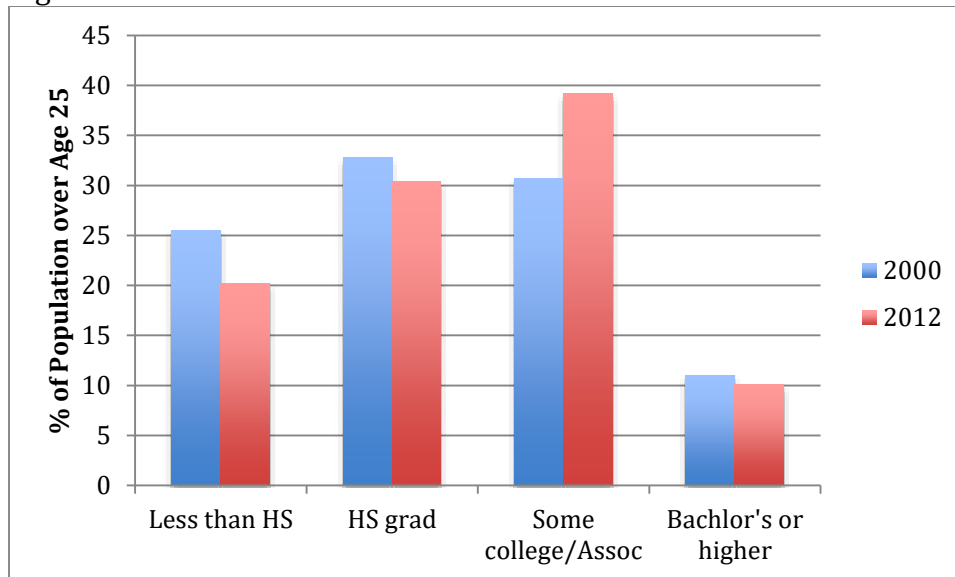
Figure 10: Population Changes in Greenville between 2000 and 2010



Data: 2000 and 2010 U.S. Census

Educational attainment in Greenville is the lowest of the communities in Plumas County included in this report. Approximately one in every five residents over 25 years of age has not completed high school or passed a high school equivalency test. This is slightly worse than the state average of 19%, and considerably worse than the Plumas County average of 9.8%. Only one in every ten Greenville residents over 25 years of age holds a bachelor's degree or higher, which is three times lower than the state average. Educational attainment in Greenville for the years 2000 and 2012 is shown in the figure below.

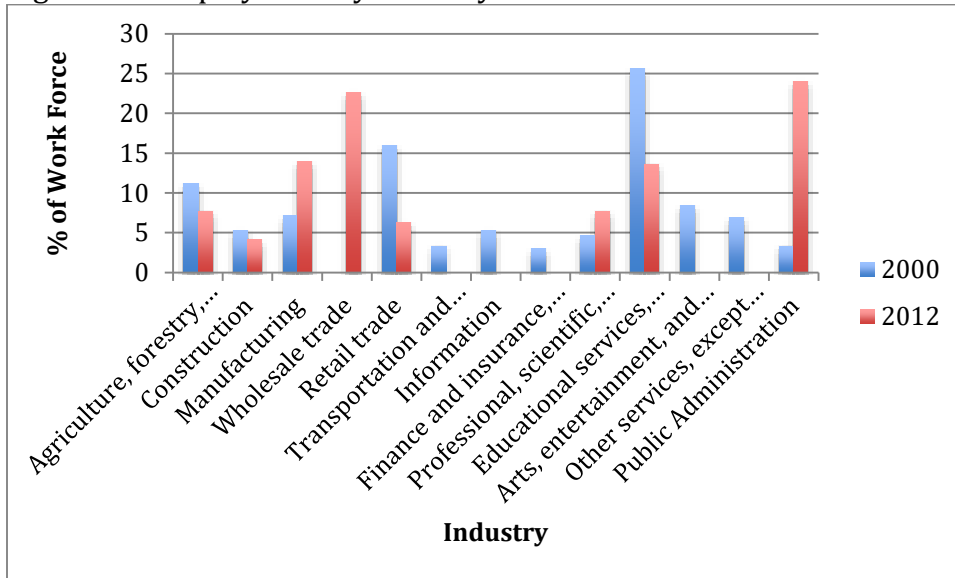
Figure 11: Educational Attainment in Greenville in 2000 and 2012



Data: U.S. Census 2000 and 2012 American Communities Survey

Of the communities in Plumas County included in this report, Greenville maintains the highest annual unemployment rates, lowest levels of health insurance coverage, and the second lowest median household income. The figure below depicts employment by industry in Greenville in 2000 and 2012 and shows nearly a quarter of all workers are employed in public administration and 22.6% of workers employed in wholesale trade. Manufacturing and educational services, and health care and social assistance represent the third and fourth largest employment sectors with 14% and 13.6% of all those employed, respectively.

Figure 12: Employment by Industry in Greenville in 2000 and 2012

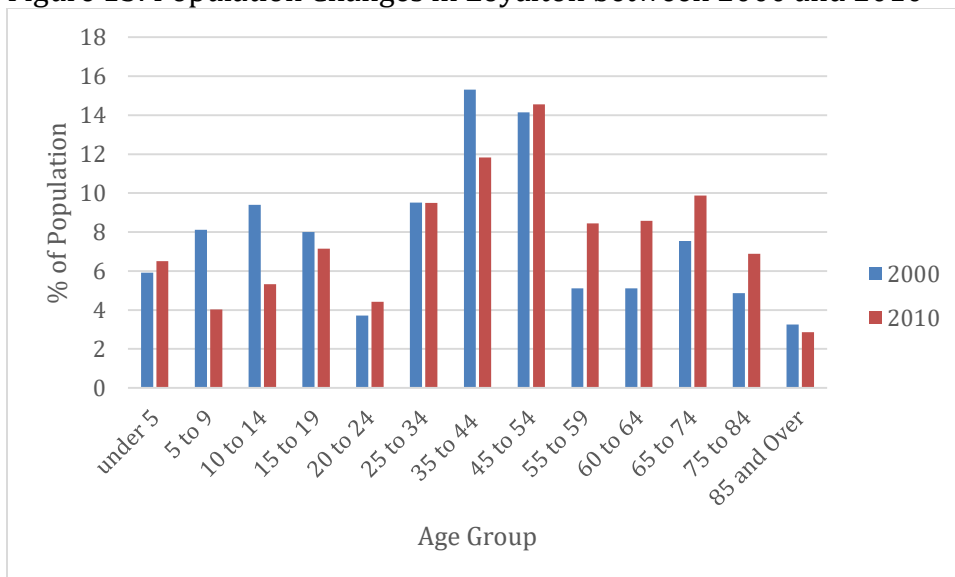


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Loyalton, California

Loyalton is a small community of 840 residents, found in the southeast corner of the watershed boundary in Sierra County. The population has only slightly decreased from its population of 862 in 2000. Age groups 45 and above now comprise the majority of the population. Most notably, ages 55 to 59, 60 to 64, and 75 to 84 have seen significant growth since 2000, with 66%, 68%, and 41% increases respectively. In contrast, the 5 to 9 and 10 to 14 age groups have each declined by over 40%. Changes in all groups between 2000 and 2010 are shown below.

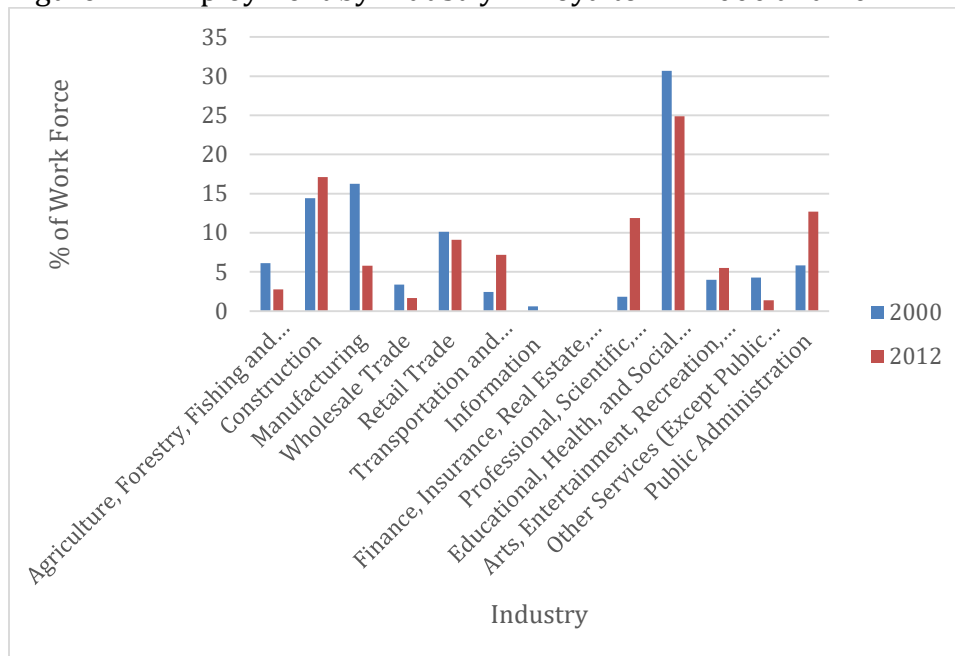
Figure 13: Population Changes in Loyalton between 2000 and 2010



Data: 2000 and 2010 U.S. Census

In 2012, educational, health, and social services was clearly Loyalton's largest industry, employing 1 in 4 workers. Construction accounts for 17% of employment, and is followed by public administration, which has doubled in size since 2000 to now employ 13% of the work force. Of particular note, the professional, scientific, management, administrative, and waste management industry grew by 10 employees. Manufacturing and "other services" sectors both decreased by over 60%. The graph below shows changes in employment by industry between 2000 and 2012.

Figure 14: Employment by Industry in Loyalton in 2000 and 2012

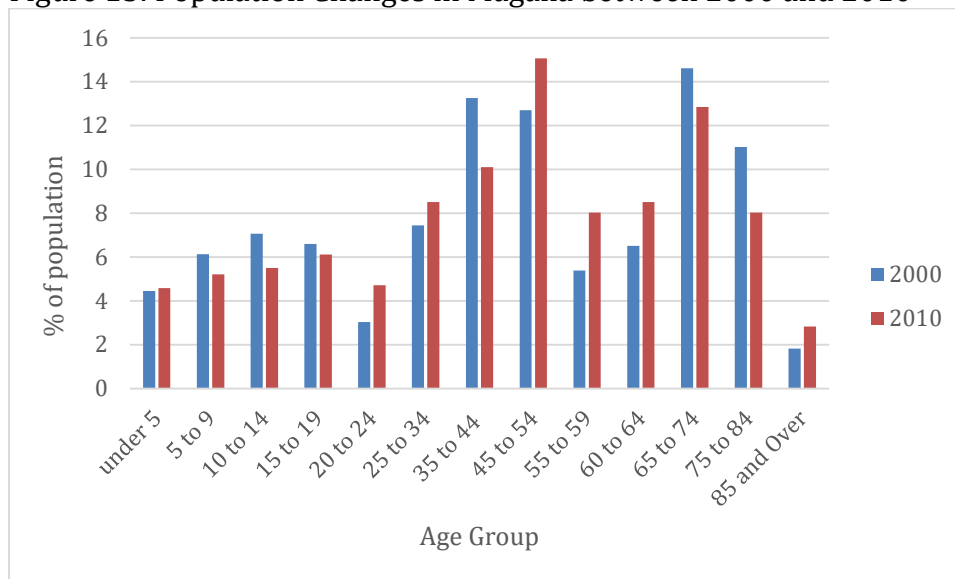


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Magalia, California

Magalia is located in the northeast region of Butte County, nested in the foothills of the Sierra Nevada. As of 2010, Magalia maintained a population of 11,310, a 7% increase from its population of 10,569 in 2000. The 20 to 24, 55 to 59, and 85 and over age groups experienced the most significant percentage increases relative to the total population. Despite the net population increase, a number of age groups experienced decline: 10 to 14 (-22%); 35 to 44 (-24%); and 75 to 84 (-27%). Overall, the age distribution of the population remained relatively consistent during this time period. Population changes in all age groups between 2000 and 2010 are shown in the following graph.

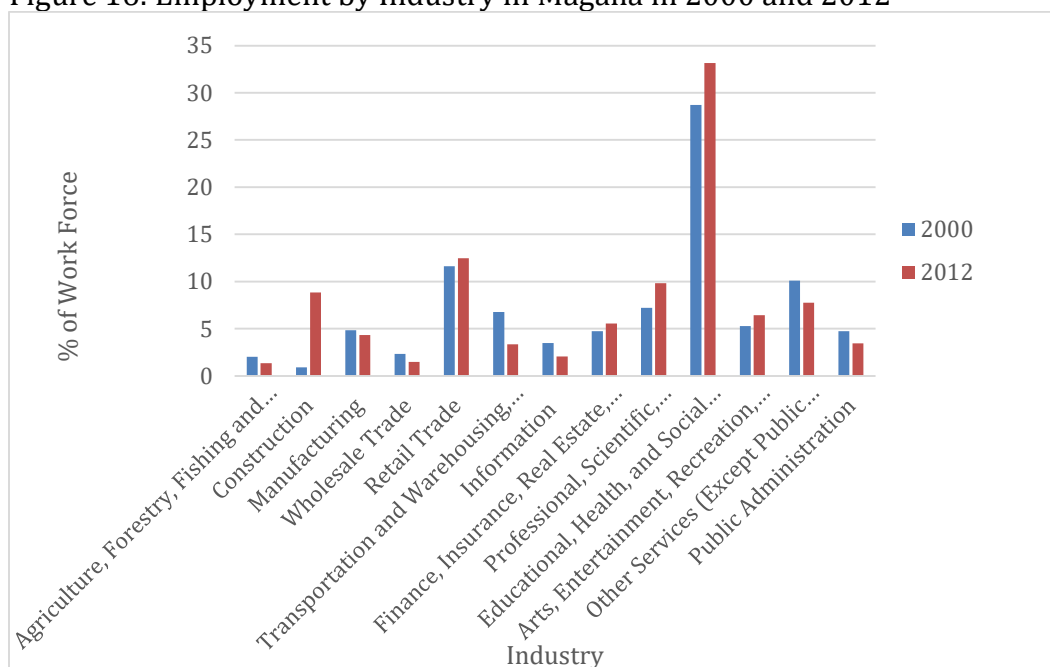
Figure 15: Population Changes in Magalia between 2000 and 2010



Data: 2000 and 2010 U.S. Census

As shown in the figure below, the single largest employer by industry in Magalia is educational, health, and social services, which employs roughly 1 in 3 residents. In 2012, the following industries grew to each employ roughly 10% of the work force: retail trade; construction; and professional, scientific, management, administrative, and waste management. Between 2000 and 2012, significant decreases in employment were observed in the information (-41%), and technology, warehousing, and utilities industry categories (-51%).

Figure 16: Employment by Industry in Magalia in 2000 and 2012

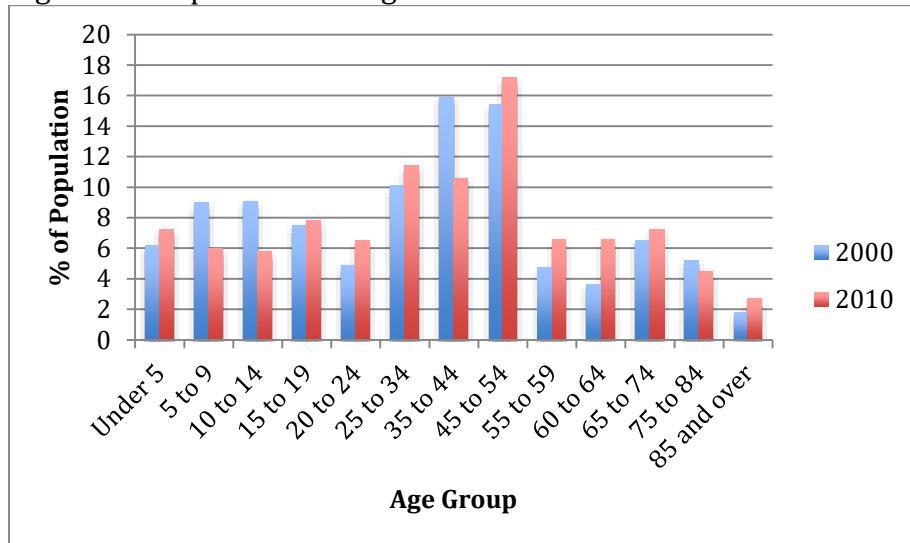


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Portola, California

Portola is the only incorporated city in Plumas County, and maintains a population of 2,104 residents. The population of Portola fell slightly since 2000, when the U.S. Census reported 2,227 people living there. Since 2000 the community has seen a 38% decrease in those aged 5 to 14 as well as a 37% decline in the number of adults aged 35 to 44. Decreases in those population age groups suggest that there are more than one-third fewer young families in the community now than at the beginning of the millennium. Between 2000 and 2012 there was growth in all age groups over 45 years of age, with the exception of those aged 75 to 84, which decreased by approximately 17% from 116 individuals to 96.

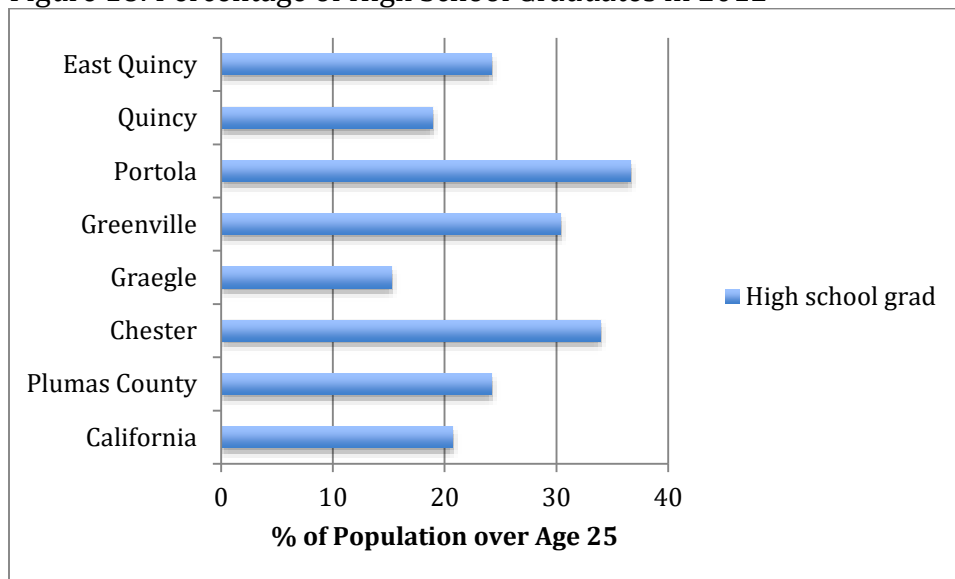
Figure 17: Population Changes in Portola between 2000 and 2010



Data: 2000 and 2010 U.S. Census

Residents of Portola have an educational attainment level that is largely consistent with educational attainment in Plumas County as a whole. However, there are slightly more residents who hold a high school diploma with no college education, as shown in the figure below, and fewer residents that hold a Bachelor's or advanced degree. In Portola, 11.6% residents hold a Bachelor's or advanced degree, while 23% of Plumas County residents have achieved that level of education.

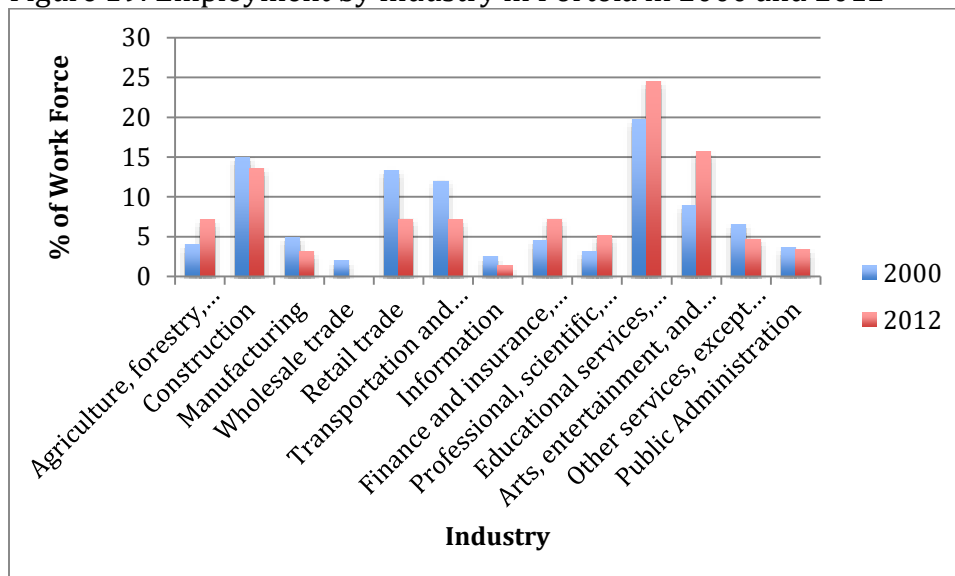
Figure 18: Percentage of High School Graduates in 2012



Data: 2012 American Communities Survey

Employment data for Portola, shown in the figure below, show that nearly one in every four working age adults is employed in educational services, healthcare, or social assistance. This is due in part, to the presence of Eastern Plumas Health Care, which is the largest of the three health care facilities in Plumas County. The second largest employment sector by industry is arts, entertainment, and recreation, and accommodation and food services, accounting for 15.7% of those employed. Construction is the third largest industry in Portola and employment in this sector is only slightly lower than in 2000, at 13.5% of total employment.

Figure 19: Employment by Industry in Portola in 2000 and 2012

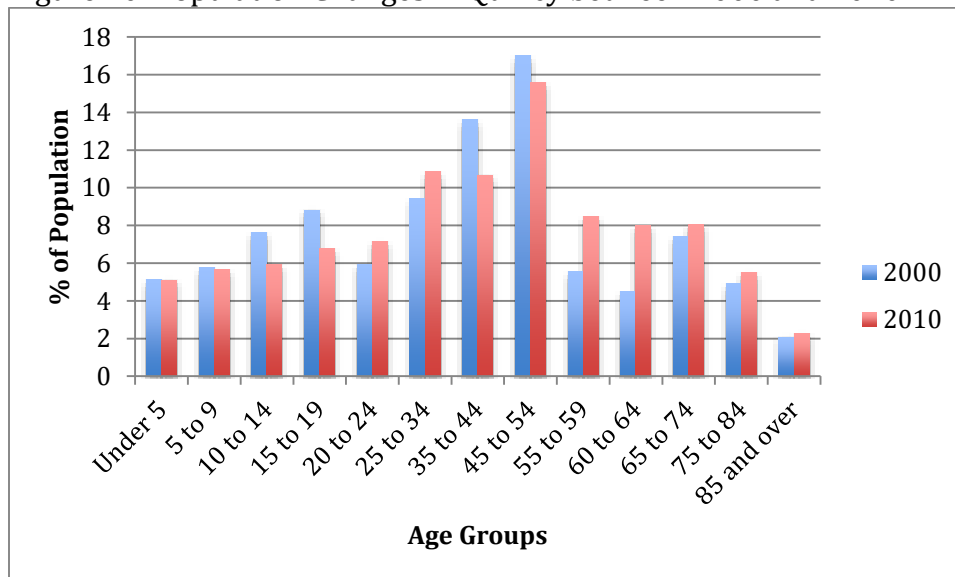


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Quincy, California

Quincy is the seat of Plumas County. At the time of the most recent Census in 2010, 4,217 people called Quincy home, which is a small decrease from the 4,277 residents recorded in the year 2000. Since 2000, the population of Quincy has become slightly older, with fewer children and young adults below the age of 20. During the same time period there was also a 29% decrease in the number of people aged 35 to 44, and 50% and 76% increases in those aged 55 to 59 and those aged 60 to 64, respectively. The figure below shows changes in all age groups as a percentage of total population in Quincy for the years 2000 and 2010.

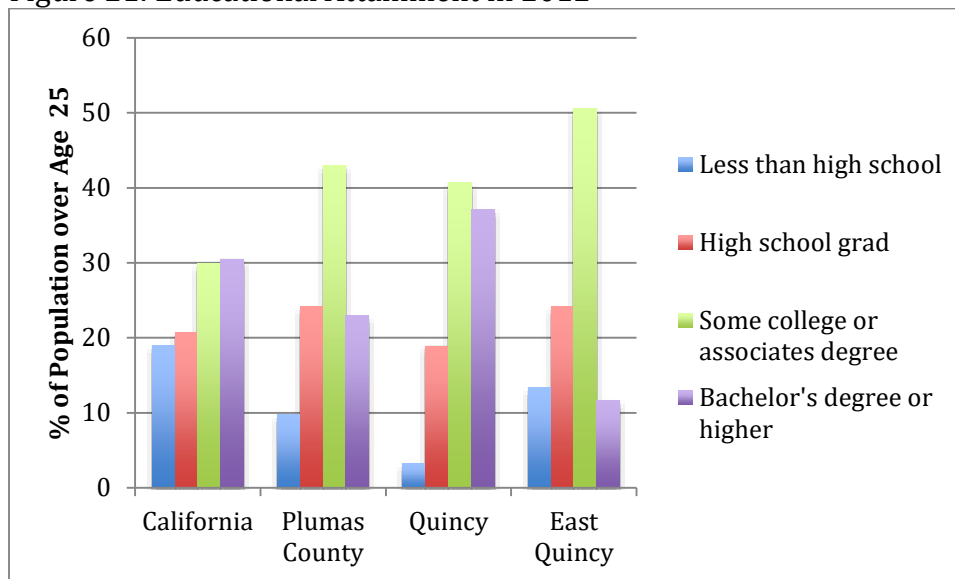
Figure 20: Population Changes in Quincy between 2000 and 2010



Data: U.S. Census 2000 and 2010

The U.S. Census Bureau collects data for both Quincy and East Quincy and reports that information as separate census-designated places. Educational attainment data for Quincy and East Quincy show very different levels of education between the two places. Quincy boasts the most-educated residents, while East Quincy has more residents with some college or an associate's degree and fewer residents with a Bachelor's or advanced degree than the average for Plumas County. Only 3.2% of adults over 25 years of age have not completed high school, which is considerably less than the State of California average of 19% and lower than the Plumas County average of 9.8%. Quincy also has the highest percentage of its adult population holding a Bachelor's or advanced degree, with 37.1% of the population having achieved that mark.

Figure 21: Educational Attainment in 2012

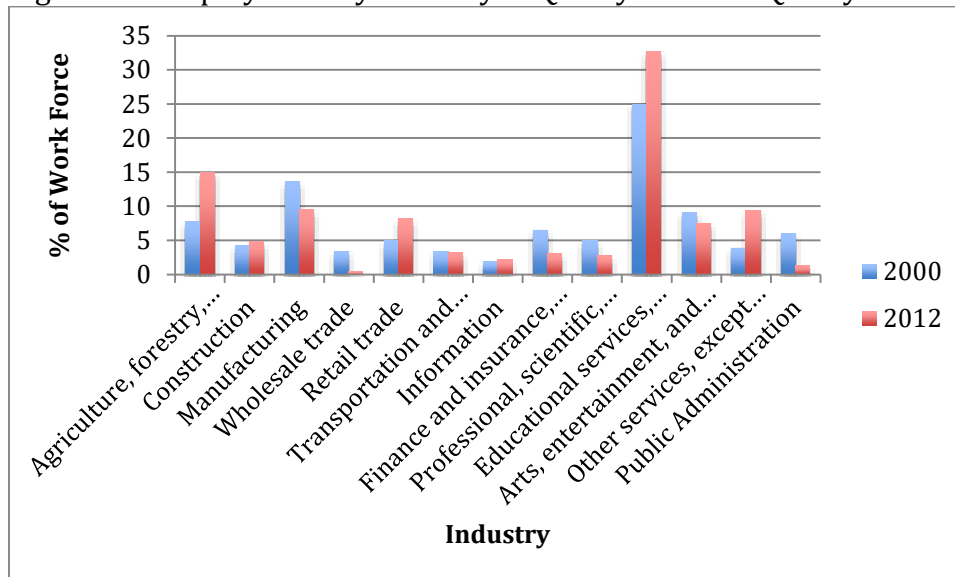


Data: 2012 American Communities Survey

The high level of educational attainment found in Quincy, however, has not exempted the community from the effects of 2008-2009 housing market crash and subsequent economic depression. The unemployment rate between 2009 and 2012 in Quincy was 14.9% and the average unemployment rate during the same time period in East Quincy was 16.9%. In 2013, the annual average unemployment rate in Quincy fell to 11.7% and in East Quincy dropped to 13.5%. The 2014 data suggest continued improvement with 7.8% and 8.9% unemployment in Quincy and East Quincy, respectively.

Employment by industry data for Quincy and East Quincy show that nearly one in every three working adults is employed in educational services, healthcare, or social assistance. This category made up 25% of total employment in 2000. The number of those working in the agriculture, forestry, fishing and hunting, and mining industry nearly doubled between 2000 and 2012, increasing from 7.7% of total employment to 14.9%. Also of note, is a 28% decline in the number of those employed in manufacturing, which fell from 256 in the year 2000 to 184 workers.

Figure 22: Employment by Industry in Quincy and East Quincy in 2000 and 2012

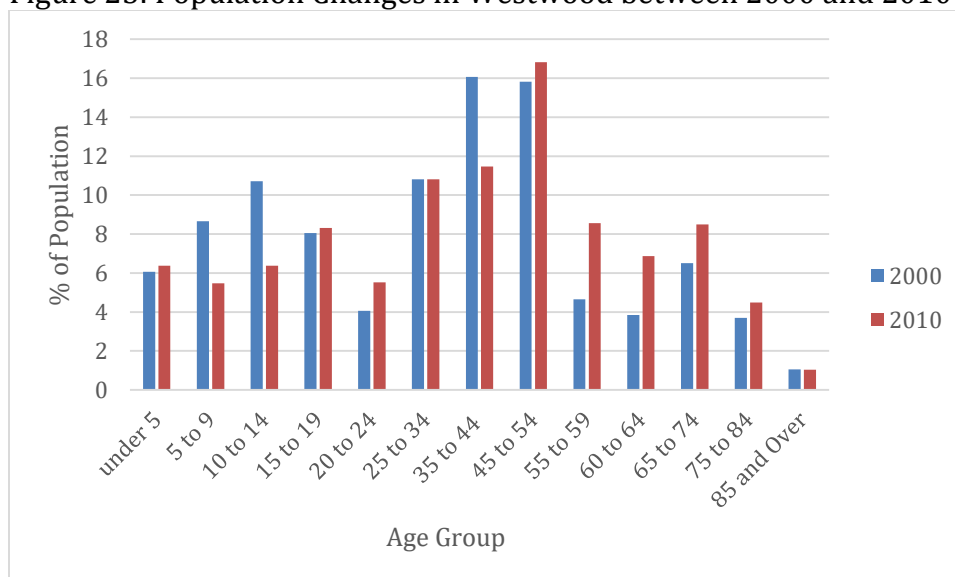


Data: U.S. Census 2000 and 2012 American Communities Survey

Community Profile: Westwood, California

Westwood is located in the very southwest corner of Lassen County, near Lake Almanor. Its population has decreased by nearly 18%, from 1,998 residents in 2000 to 1,647 in 2010. The 5 to 9 and 10 to 14 age groups have dramatically declined, by 37% and 40% respectively. However, as shown in figure 23, all groups above age 45 have experienced growth during the decade. Notably, the percentage of the population ages 55 to 59 has increased 84% and ages 60 to 64 has increased 78%.

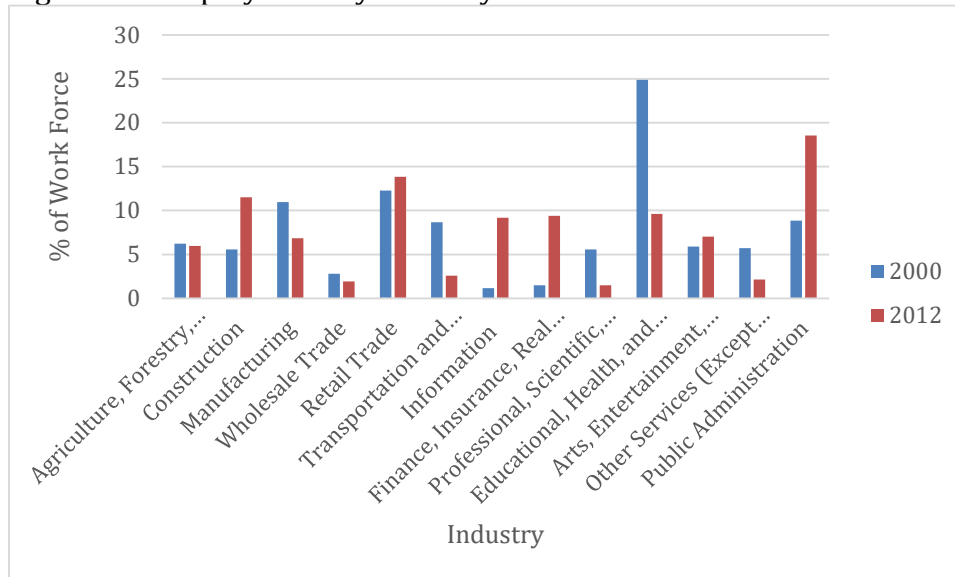
Figure 23: Population Changes in Westwood between 2000 and 2010



Data: 2000 and 2010 U.S. Census

In 2012, public administration contained the largest portion of the work force, employing 19 individuals. This industry doubled in size since the 2000 census. The percentage of the population employed by the construction, information, and finance, insurance, and real estate industries has also increased dramatically since 2000. The only sector that experienced decline during the time period was educational, health, and social services, which lost over 100 jobs. The graph below shows changes in employment by industry between 2000 and 2012.

Figure 24: Employment by Industry in Westwood in 2000 and 2012



Community Profile: Yankee Hill, California

Yankee Hill is a community of 266 residents located on the western border of the Upper Feather River Watershed boundary in Butte County. Due to its small size, the availability of population and employment data are limited.

Between 2000 and 2010, the percentage of the population aged 0 to 4 increased by 500%, aged 5 to 17 decreased by nearly 50%, aged 18 to 64 remained constant, and aged 65 and older increased by 63%. Note that due to the small numbers, small changes in the population can cause percentage change to appear extreme.

Yankee Hill's employment by industry data was only available for 2012, but showed "other services" as the largest employer (18 workers). Retail trade, wholesale trade, and educational, health, and social services categories each contained 8 workers. No one in the community worked in: transportation, warehousing, utilities; information; arts, entertainment, recreation, accommodation, and food services; and finance, insurance, real estate, rental, and leasing.

IV. Education and Free and Reduced-Price Meal Participation

This section of the report provides an overview of kindergarten through twelfth grade (K-12) institutions in Plumas County. School closure information is presented first and followed by enrollment and student eligibility data for the federal Free and Reduced-Price Meal (FRPM) program. The section ends with a presentation of data regarding participation rates in the FRPM program.

The California Department of Education data show nearly twenty schools opening in the early 1980's in Plumas County. This was likely correlated to the influx of population at that time, in large part due to a number of living-wage jobs for woods and mill workers, who brought their families to the area. Since that time, the forest products industry has greatly declined along with the number of schools in the county has declined. The table below shows school closures in the Plumas Unified School District since 2000, not including community and day schools and adult education facilities. In total, three elementary schools, a middle school, and two high schools have shut their doors since 2000. The high schools were unique opportunity schools; their closure reflects the consolidation of and reduced services for students in these communities.

Table 2: Plumas County School Closings Since 2000

School Name	Community	Open Date	Close Date
Portola Elementary	Portola	July 1, 1980	April 13, 2000
Sierra High	Quincy	July 1, 1980	June 30, 2004
Indian Valley High	Greenville	July 1, 1980	June 30, 2004
Feather River Middle	Portola	September 3, 1991	July 1, 2004
Pioneer Elementary	Quincy	July 1, 1980	July 1, 2004
Taylorville Elementary	Taylorville	July 1, 1980	June 15, 2012

Data: California Department of Education, accessed October 20, 2014. Note that community and day schools and adult education facilities that closed since 2000 are not included.

In the 2013-2014 school year there were nine different elementary, junior and senior, or charter schools operated by the Plumas Unified School District as well as two continuation schools and three community day and adult education opportunity schools. The table below displays information on the nine aforementioned schools including the grades served, students and enrolled, and percentage of the student population that is eligible for the Free and Reduced-Price Meal (FRPM) program, also known as the National School Lunch Program. FRPM is an important tool for understanding socioeconomic conditions affecting local families with children. The program provides free meals to children attending public schools whose families have incomes no more than 130% of poverty level (\$30,615 for a family of four during the 2013-2014 school year) or a reduced-price meal for children from households with incomes between 130% and 180% of the poverty level. Children from families with a parent that is laid off from work and foster children also qualify for free and reduced-price meals, although foster children tend to make up a very

small percentage of total FRPM participation. The table below shows the percentage of students at each of the schools in Plumas Unified School District that are eligible to receive a free or reduced-price meal.

Table 3: Plumas Unified School District Information, 2013-2014 Academic Year

School Name	Grades	Enrollment	FRPM Eligible
Plumas Charter	K-12	217	62.7%
Chester Junior- Senior High	7-12	189	46.6%
Greenville Junior-Senior High	7-12	102	62.7%
Portola Junior-Senior High	7-12	239	52.7%
Quincy Junior-Senior High	7-12	325	35.1%
Chester Elementary	K-6	204	58.8%
Indian Valley Elementary	K-6	148	65.5%
Quincy Elementary	K-6	350	50.6%
C. Roy Carmichael Elementary	K-6	344	65.1%

Data: California Department of Education, accessed October 20, 2014.

Participation in FRPM is calculated not based on those eligible, but by the number of free and reduced-price meals served divided by the total number of meals served. For example, in the 2013-2014 academic year, the Plumas Unified School District served 133,215 meals. Free meals were provided 89,023 times and 14,957 meals were reduced-price. So, although the percentage of students eligible for Free and Reduced-Price Meals is approximately 50-60% in any given school, more than 78% of all meals served qualified for reimbursement under the FRPM program. Ostensibly, children who can afford to, bring their own lunch more often, resulting in a higher percentage of meals qualifying as FRPM than the percentage of students eligible for FRPM. The table below shows FRPM participation rates for the 2013-2014 school year.

Table 4: Plumas Unified School District FRPM Participation, 2013-2014

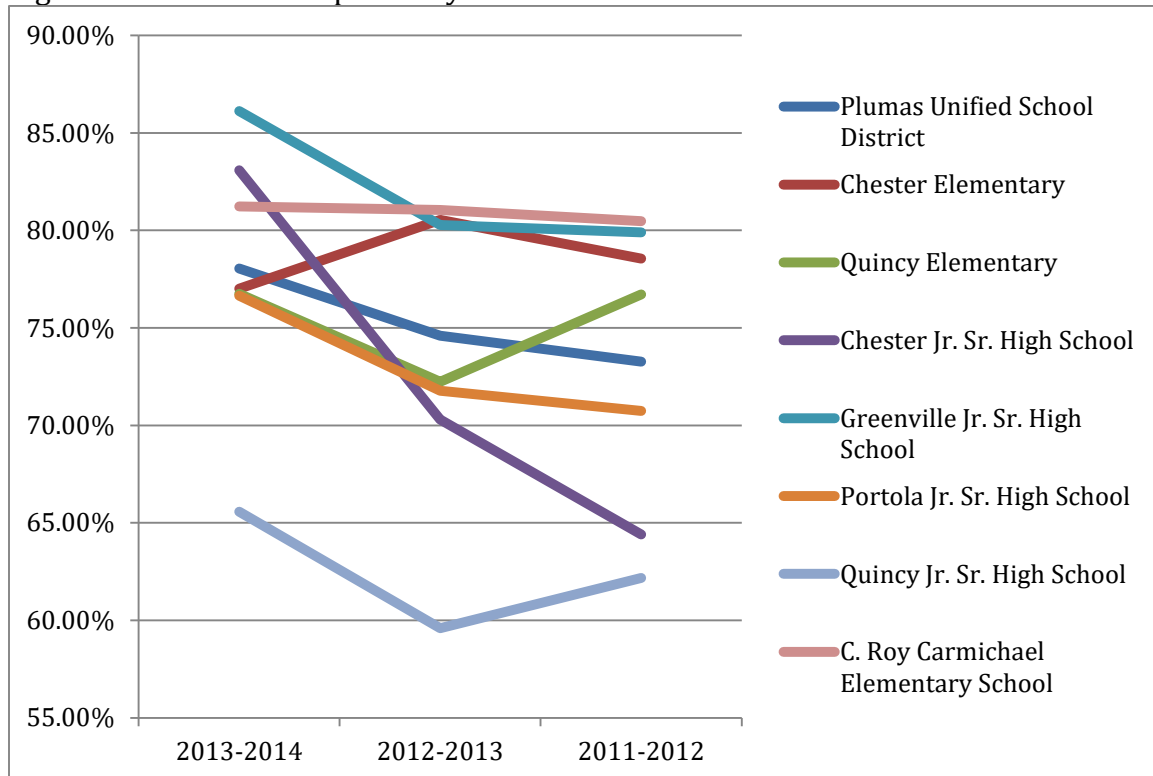
School Name	Grades	Enrollment	FRPM Participation
Chester Junior-Senior High	7-12	189	83.1%
Greenville Junior-Senior High	7-12	102	86.1%
Portola Junior-Senior High	7-12	239	76.7%
Quincy Junior-Senior High	7-12	325	65.6%
Chester Elementary	K-6	204	77.0%
Indian Valley Elementary	K-6	148	Not available
Quincy Elementary	K-6	350	76.8%
C. Roy Carmichael Elementary	K-6	344	81.2%

Data: Plumas Unified School District, provided October 16, 2014. Note that FRPM participation data for Plumas Charter School is not available.

Participation rates have varied over the three-year period beginning in the 2011-2012 academic year. The figure below shows that each of the schools in Plumas Unified School District has seen an increase in participation in the federal school meal

program since that time with the exception of Chester Elementary. However, the junior-senior high school in that community, Chester High, had an FRPM participation level of 64.4% in 2011-2012 and that has risen to 83.1% in the 2013-2014 academic year.

Figure 25: FRPM Participation by School in Plumas Unified School District



Data: Plumas Unified School District, provided October 16, 2014.

V. A Review of California's Disadvantaged Communities Assessment

California's Department of Water Resources defines Disadvantaged Communities (DAC) as "only those [census geographies] with an annual median household income (MHI) that is less than 80% of the statewide annual MHI." Proposition 1 2016 Integrated Regional Water Management (IRWM) Guidelines are designed to ensure the participation of DACs in IRWM planning efforts.¹ The Department of Water Resources (DWR) is making special funding available for proposals that involve DACs in the IRWM planning process.

Using the US Census American Community Survey 5-year estimate 2009-2013, California's MHI is \$61,094. Hence, the DAC threshold is \$48,875. In the Upper Feather River Watershed, 20 census designated places qualify as disadvantaged

¹ IRWM Proposition 1 DAC Involvement
http://www.water.ca.gov/irwm/grants/p1_dac_involvement.cfm

communities. Of these communities, exactly half also qualify as severely disadvantaged, or having a MHI of less than 60% of California's MHI. See Appendix 1. for a complete table of all census designated places in the watershed and their DAC status, unemployment rates, poverty rates, current population, and MHI.

Although Sierra Institute recognizes some strengths of DWR's DAC tool, such as its ability to work at small geographic scales and its inclusion of all census designated places, we believe it has major limitations. The following are a few weaknesses we have identified with the methodology:

1. Disadvantaged is defined as those places with a MHI that is less than 80 percent of the statewide MHI. However, there are areas in which income levels are low but incredibly, that may be by choice. In an analysis conducted as a part of the Sierra Nevada Ecosystem Project, many skiers and ski resort employees ("ski bums") in Tahoe, California inhabited an area that looked dreadful based on income, yet this same area had one of the highest mean education levels of any community in the entire Sierra region. Conversely, Kings Beach in the Tahoe area, which also showed a very low income level, was much worse off than the ski resort area due to a high percentage of children in families receiving public assistance income, families doubling and tripling up in homes and apartments because of their high cost, and unemployment. Relying on a single measure to determine "disadvantaged" is problematic.
2. The data relies on U.S. Census collected data. These data are based on samples; the smaller the area, the less reliable the numbers. Many of the communities in the Upper Feather River Watershed have very small population sizes, and therefore less reliable data.
3. As we approach the end of the decade, Census numbers are more out of date and may not reflect more recent downtowns or issues in a local area. This is not to say that these data should be discarded, for they are still comprehensive. However, it is important to utilize the most recent and best available data in analyses.

Moving forward, we recommend that DWR incorporate additional measures of community wellbeing into its assessment and understanding of disadvantaged communities. Such measures could include unemployment, persons below the poverty level, school closings, and students participating in the Free or Reduced-price Meal Program. All of these data are accessible through the US Census or the State of California Department of Education.

VI. Conclusion

The Upper Feather River Watershed, encompassing Plumas County, includes the census-designated communities of Chester, Graegle, Greenville, Loyalton, Magalia, Portola, Quincy, Westwood, and Yankee Hill. Although numerous other rural towns

dot this watershed there is not reliable data available for them at a meaningful scale. The data presented show that many of these communities suffered from the 2008-2009 housing market crash and the Great Recession. Although recovery has been slow, many communities are gradually returning to the level of economic activity prior to 2008. It is important to note that since 2000, the county has suffered the loss of a number of young families. This is a problem that pervades rural communities across America and in the context of Plumas County, will likely require the restoration of more living-wage jobs in order to attract and retain working-age adults and their children.

Appendix 1. Upper Feather River Watershed's Census Designated Places and Socioeconomic Measurements

DAC= Disadvantaged Communities EDA= Economically Distressed Area MHI= Median Household Income ACS = American Community Survey		CA State MHI 2013		\$61,094	DAC status	< 80% of CA MHI	48,875			
					Severe DAC status	< 60% CA MHI	36,656			
					EDA status	< 85% of CA MHI	51,930			
		* = no data, unknown, or too small of a sample size								
County	Census Designated Place	US Census 2010 Total Population	2013 ACS 5-Year Population Estimate	2013 ACS 5-Year Estimate % Unemployment	% Below Poverty Level (people in last 12 mo)	2013 ACS 5-Year Estimate: MHI Data	% of CA MHI 2013	Disadvantaged Community Status		
								Severe DAC (<60% CA MHI)	DAC (<80% CA MHI)	EDA qualifier (<85% CA MHI)
Butte	Berry Creek	1424	1232	7.6	16.7	39219	64	no	yes	yes
Butte	Butte Valley	899	768	7.6	23.9	52333	86	no	no	no
Butte	Cherokee	69	85	0	0	82875	136	no	no	no
Butte	Clipper Mills	142	0	*	*	*	*	*	*	*
Butte	Concow	710	423	4.6	17.3	29886	49	yes	yes	yes
Butte	Forbestown	320	486	0	12.6	63851	105	no	no	no
Butte	Kelly Ridge	2544	2420	9.6	5.2	39130	64	no	yes	yes
Butte	Magalia	11310	11513	10	16.8	38612	63	no	yes	yes
Butte	Oroville East	8280	8900	6	13.8	54180	89	no	no	no
Butte	Paradise	153	248	3.8	2	*	*	*	*	*
Butte	Robinson Mill	80	85	28.6	*	*	*	*	*	*
Butte	Stirling City	295	179	0	13.4	86838	142	no	no	no
Butte	Yankee Hill	333	266	5.7	28.9	35469	58	yes	yes	yes
Lassen	Clear Creek	169	192	31.4	32.8	*	*	*	*	*
Lassen	Westwood	1647	1582	15.1	23.7	28158	46	yes	yes	yes
Plumas	Almanor	0	10	0	0	*	*	*	*	*
Plumas	Beckwourth	432	362	3.9	0	52794	86	no	no	no
Plumas	Belden	22	52	0	100	*	*	*	*	*

Plumas	Blairsdan	39	26	0	30.8	*	*	*	*	*
Plumas	Bucks Lake	10	0	*	*	*	*	*	*	*
Plumas	Canyondam	31	0	0	*	*	*	*	*	*
Plumas	Caribou	0	0	0	*	*	*	*	*	*
Plumas	Chester	2144	1908	10.1	11.7	40,331	66	no	yes	yes
Plumas	Chilcoot-Vinton	454	233	27.5	15.5	47,607	78	no	yes	yes
Plumas	Clio	66	35	0	45.7	25,250	41	*	*	*
Plumas	Crescent Mills	196	233	0	0	31413	51	yes	yes	yes
Plumas	C-Road	150	170	35.7	0	75208	123	no	no	no
Plumas	Cromberg	261	135	36.3	25.9	31111	51	yes	yes	yes
Plumas	Delleker	705	824	2.1	8.7	33750	55	yes	yes	yes
Plumas	East Quincy	2489	2560	7.9	26.3	45417	74	no	yes	yes
Plumas	East Shore	156	217	0	5.1	149643	245	no	no	no
Plumas	Gold Mountain	80	25	0	0	*	*	*	*	*
Plumas	Graeagle	737	548	8.4	2.6	42688	70	no	yes	yes
Plumas	Greenhorn	236	124	4.8	8.1	55184	90	no	no	no
Plumas	Greenville	1129	922	9.6	20.7	30129	49	yes	yes	yes
Plumas	Hamilton Branch	537	749	11.4	11.1	62422	102	no	no	no
Plumas	Indian Falls	54	35	0	82.9	*	*	*	*	*
Plumas	Iron Horse	297	498	10.4	0	61031	100	no	no	no
Plumas	Janesville	1408	1562	7.1	8.9	72865	119	no	no	no
Plumas	Johnsville	20	8	0	0	*	*	*	*	*
Plumas	Keddie	66	73	0	0	82833	136	no	no	no
Plumas	La Porte	26	13	0	100	*	*	*	*	*
Plumas	Lake Almanor Country Club	419	604	0	*	85068	139	no	no	no
Plumas	Lake Almanor Peninsula	356	482	0	12.8	46667	76	no	yes	yes
Plumas	Lake Almanor West	270	298	0	9.7	113750	186	no	no	no

Plumas	Lake Davis	45	38	0	26.3	*	*	*	*	*
Plumas	Little Grass Valley	2	19	0	0	*	*	*	*	*
Plumas	Mabie	161	0	*	*	*	*	*	*	*
Plumas	Meadow Valley	464	399	9.4	8.8	63698	104	no	no	no
Plumas	Mohawk Vista	159	89	10	27	57721	94	no	no	no
Plumas	Paxton	14	0	*	*	*	*	*	*	*
Plumas	Plumas Eureka	339	252	16.3	0	85341	140	no	no	no
Plumas	Portola	2104	2880	17.4	18.7	34942	57	yes	yes	yes
Plumas	Prattville	33	23	30.4	0	*	*	*	*	*
Plumas	Quincy	1728	1442	5.7	21.1	44447	73	no	yes	yes
Plumas	Spring Garden	16	0	*	*	*	*	*	*	*
Plumas	Storrie	4	0	*	*	*	*	*	*	*
Plumas	Taylorsville	140	169	0	0	52417	86	no	no	no
Plumas	Tobin	12	11	0	100	*	*	*	*	*
Plumas	Twain	82	21	0	0	*	*	*	*	*
Plumas	Valley Ranch	109	62	0	40.3	115795	190	no	no	no
Plumas	Warner Valley	2	5	0	0	*	*	*	*	*
Plumas	Whitehawk	113	31	0	0	*	*	*	*	*
Sierra	Calpine	205	180	0	18.3	17472	29	yes	yes	yes
Sierra	Loyalton	769	840	3.2	9.4	45333	74	no	yes	yes
Sierra	Sattley	49	59	0	0	*	*	*	*	*
Sierra	Sierra Brooks	478	312	5.8	0	32685	54	yes	yes	yes
Sierra	Sierraville	200	105	4.8	88.6	*	*	*	*	*