



Overview Section: Demographics

The Changing Face of Agriculture in the Rockies

By Zoë Wick

THE 2010 COLORADO COLLEGE STATE OF THE ROCKIES REPORT CARD

Key Findings:

- Over the past 20 years, the average age of farm operators in the U.S. increased by 10 percent, from 52 to 57 years old.
- On average, women growers in the Rockies run farms that are less than half the size of the farms operated by men.
- Between one and six percent of farm operators earn 100 percent of their income from farming.
- In the Rockies, the number of female operators has increased by 257 percent since 1987.

Introduction

Surrounded by bountiful fields of vegetables in an idyllic valley, Beki Javernick is discussing challenges ranging from inexhaustible weeds, to the high cost of becoming certified organic, to debilitating inheritance taxes on her family's farmland. Mid-sentence, she swings her giggling toddler around her nine-months-pregnant belly and over her shoulders without missing a beat. A few decades ago, this would have been a rare sight. One would have been hardpressed to find a woman holding primary or equal responsibility for agricultural labor in most communities. That situation is changing, though, as farm operators become more diverse.

Farm operators in the Rockies are becoming increasingly diverse in terms of race and gender, and are significantly older than farm operators in the past. Furthermore, the 2007 Census of Agriculture depicts new interest in a small but growing agricultural sector characterized by high-quality production and local distribution (a movement described in detail in the section titled "New Food Economy"). These changes highlight the promising growth and challenges to agriculture in the Rockies region. While the number of farms in the Rockies steadily decreased from the mid-1930's to mid-1970's, in recent years the region has seen growth in farm numbers, as shown in Figure 1. As farm operators become increasingly

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diverse in terms of race and gender, and as family farms are threatened by competition from larger farms and urban development, the face of agriculture is changing.

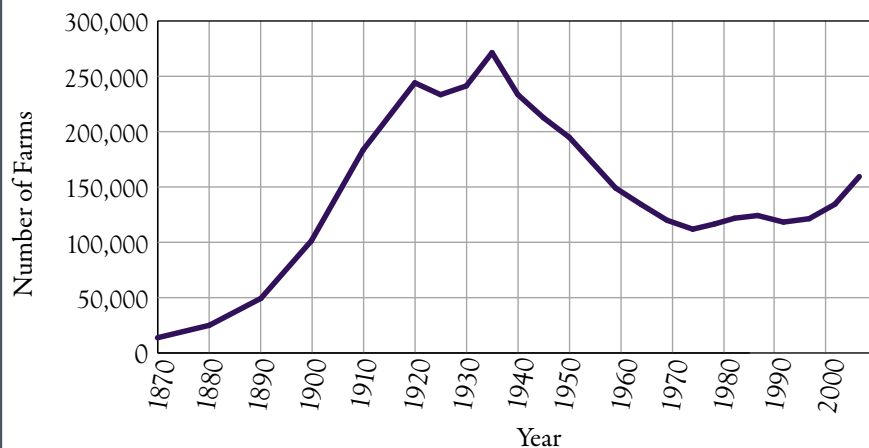
Agricultural Employment in the Rockies

Perhaps the most fundamental change in agriculture has nothing to do with people, but with machines. Advances in technology and the mechanization of production throughout the last century increased the efficiency of agricultural production, reducing labor requirements. Figure 2 shows the trend of decreasing farm employment. In 1969, approximately seven percent of the Rockies' workforce was involved in agriculture, compared to four percent nationwide.¹ Since then, the percentage of workers in agriculture has steadily decreased. Now, both in the U.S. and in the Rockies, agriculture accounts for approximately two to three percent of the workforce. All Rockies states showed a drop in agricultural employment from 2001 to 2007, although some states still have agricultural employment rates that are significantly higher than the national average.² The agricultural employment rate in Montana, for instance, decreased from six percent in 2001 to five percent in 2007, and in Idaho agricultural employment fell from five percent to four percent, but these states were still above the national average. Arizona and Nevada, on the other hand, were below the national average, relying on agriculture for less than one percent of employment.

In addition to declining employment in agriculture, farmers and ranchers are increasingly utilizing off-farm jobs as a second source of income. The 2007 Census of Agriculture reported that both nationally and in the Rockies, 65 percent of farm operators had engaged in off-farm employment at some point during the year.³

Figure 1:
Number of Farms, Rockies Region

Source: Census of Agriculture for the year specified, USDA-NASS, 1870 to 2007



In Colorado, 70 percent of farmers and ranchers reported working away from their farms. Experts attribute the rise in off-farm employment to the need for extra income to maintain a farm as well as to the need for employer-sponsored health care coverage.⁴ Due to the prevalence of self-employment and employment by small businesses in rural areas, rural adults are less likely than adults in urban areas to have health insurance through their employers.⁵ However, Paul Hubbard of the Missoula Community Food and Agriculture Coalition, considered profit to be the primary concern of growers seeking second jobs. Opportunities for off-farm employment, he said, along with direct access to markets, have led new farmers to establish farms near urban centers.⁶

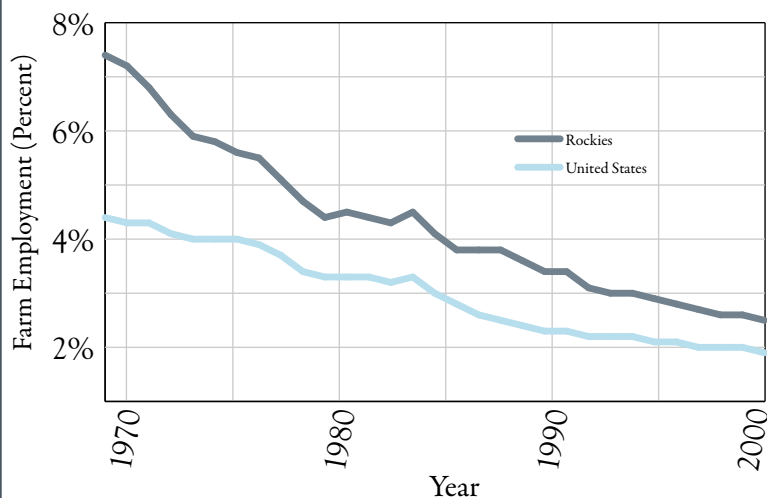
Urban markets and second jobs help provide a cushion, but many farms are threatened by competition from larger farms that continue to consolidate and expand, producing huge quantities of goods at reduced prices. According to Hubbard, the message to farm operators is, "Get big or go home." This sentiment is supported by the 2007 Census of Agriculture data, which show that just four percent of Rockies farms account for 45 percent of agricultural sales.⁷ Additionally, development threatens farms as the market price of land surpasses its agricultural value (as discussed in "Threats to Agricultural Land").

Increase in the Average Age of Farm Operators

Threats to the viability of family farming impact the average age of farmers. As younger generations watch their families' farms struggle in the face of urban development and competition from larger operations, many choose to forgo farming and pursue non-agricultural careers.⁸ Without the next generation to take over the farm, aging growers dreaming of retirement must either sell their property or continue working into their later years. The result has been an increase in the average age of farmers (as shown in Figure 3), a trend that is especially pronounced in the Rockies. Figure 4 illustrates the changes in age

Figure 2:
Farm Employment, U.S. and Rockies Region, 1969 - 2000,
as a Percent of All Full-time and Part-time Employment

Source: Bureau of Economic Analysis, U. S. Department of Commerce, 2009



demographics from 1987 to 2007. Some analysts fear that this trend will lead to loss of agricultural land and increased dependence on foreign food sources.⁹ Whether or not increasing farmer age has implications for food security, it is an important demographic change and illustrates the challenges facing the viability of family farms.

Over the past 20 years, the average age of farm operators in the U.S. increased by 10 percent, from 52 to 57 years old.¹⁰ In the Rockies the average age at the 2007 census was 58 (See Figure 3). The Rockies region now has 114 percent more farmers over the age of 70 than it did in 1987 – a higher increase than in any other region and almost double the national increase of 64 percent. The number of farm operators over 70 grew by 401 percent in Arizona and 148 percent in New Mexico.

The Rockies, however, retained more young farmers than other U.S. regions, although the numbers vary among Rockies states between 1987 and 2007. For instance, while Arizona lost merely two percent of farmers between 25 and 34, Montana lost 63 percent and Nevada lost 61 percent. The Rockies also gained more farm operators between the ages of 45 and 69 than the nation as a whole did. Discrepancies between farmer aging in the Rockies and in the U.S. as a whole are largely due to the Rockies' accelerated population growth compared with the national rate.¹¹ While the Rockies gained more farmers over 70 than the rest of the country, it also gained more middle-aged farmers and lost fewer young farmers, and thus the average age of Rockies farmers remains only slightly higher than the national average.

Figure 3:
Weighted Average Operator Age, Rockies Region

Source: Census of Agriculture for the year specified, USDA-NASS, 1870 to 2007
Note: A regional average age was weighted according to the number of farms in each state.

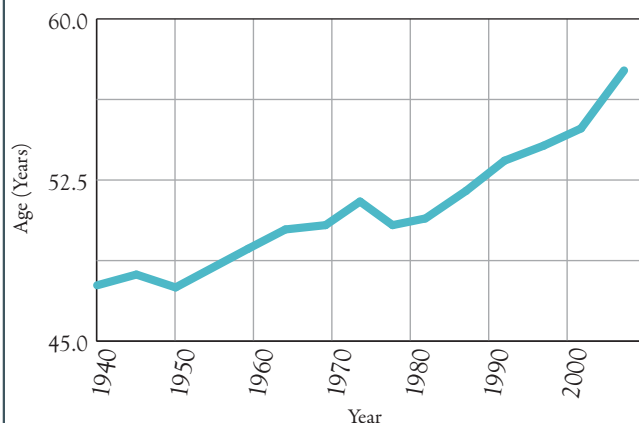


Figure 4:
Age of Rockies Farm Operators by Percent, 1987 and 2007

Source: United States Department of Agriculture, 2007 Census of Agriculture

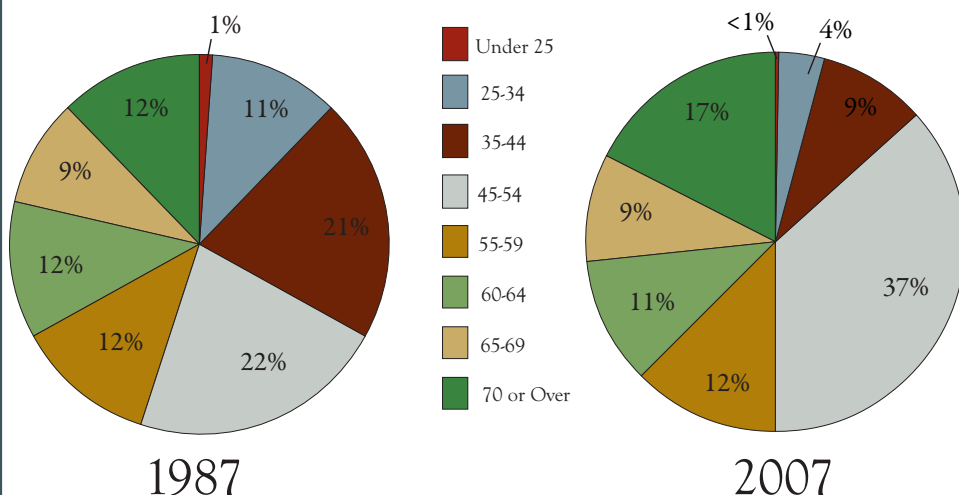


Table 1:
Farm Tenure, by Percent, 1945 and 2007

		United States	Rockies	Arizona	Colorado	Idaho	Montana	Nevada	New Mexico	Utah	Wyoming
1945	Five Years or Less	-	39%	44%	46%	43%	34%	41%	38%	29%	36%
	Between Five and Ten Years	-	18%	18%	17%	19%	18%	18%	16%	19%	19%
	Ten or More Years	-	43%	37%	36%	37%	48%	41%	46%	52%	46%
	Total Farms Reporting	-	208,309	12,815	46,652	40,623	36,973	3,368	29,162	25,899	12,817
2007	Four Years or Less	10%	11%	10%	11%	12%	9%	12%	10%	10%	12%
	Five to Nine Years	16%	17%	17%	18%	17%	15%	18%	15%	16%	17%
	Ten or More Years	74%	73%	73%	71%	71%	76%	70%	76%	74%	70%
	Total Farms Reporting	2,204,792	159,394	15,637	37,054	25,349	29,524	3,131	20,930	16,700	11,069

Source: USDA Census of Agriculture, 1945 and 2007

Note: Some totals may not equal 100% due to rounding. Rockies tenure reflects a weighted average of total farms reporting by state.



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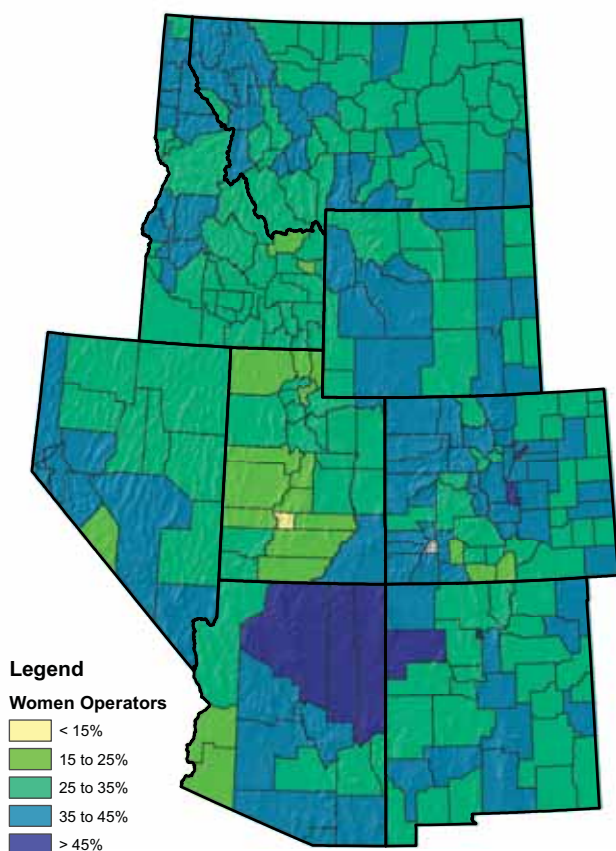
Increase in Longevity of Tenure

The length of time farm operators have been working on their current farm is considerably higher than it was 60 years ago. Although there has been recent growth in beginning farmers and new farms, the movement is still too small to make up for decades of declining numbers. The percentage of Rockies operators who had been on their farms

for less than five years in 1945 (39%) was nearly four times that of new farmers in 2007 (11%), as shown in Table 1.¹² ¹³ These changes reflect both conditions in 1945 that made agriculture more attractive to new farmers and obstacles to starting new farms today.

The Rural Electrification Act of 1936 (REA) was a major incentive for renewed rural living. The REA greatly improved the quality of life in rural areas by providing

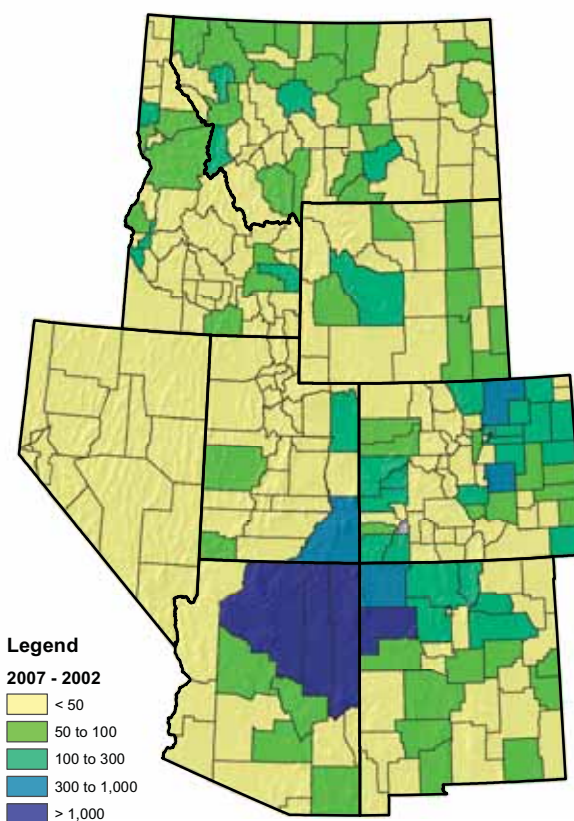
Figure 5: Percent Women Farm Operators, 2007



Note: percentages here reflect total farm operators, not principal operators.

Source: 2007 Census of Agriculture, National Agriculture Statistics Service, U. S. Department of Agriculture

Figure 6: Change in Women Farm Operators by County, 2002 to 2007



Source: 2007 Census of Agriculture, National Agriculture Statistics Service, U. S. Department of Agriculture

low-cost loans for rural groups to bring electricity to their communities.¹⁴ For the first time, farmers and ranchers had access to better heating, sanitation, running water, and food storage. In addition, 1945 marked the beginning of a revolution in agricultural technology, when seed selection and pesticide use began making farms more productive and profitable. The REA and the revolution in agricultural technology were two factors that encouraged the establishment of new farms.

Changes in longevity not only reflect positive conditions in the 1940's, but also indicate current obstacles to beginning farm operators. These challenges, such as urban pressure to sub-divide land and competition from mammoth, consolidated farms, are the same factors that have led to the aging of farmers and the disappearance of midsize farms.

Female Operators on the Rise

The 2007 Census of Agriculture revealed a sizeable increase in the number of female farm operators, a trend that has been accelerating over the past two decades.¹⁵ This movement is especially noteworthy in the Rockies, where the number of female growers has increased at nearly twice the national rate. This change indicates that women are responsible for a significant portion of growth in new farms, and also illustrates a shift in gender roles on farms as women increasingly share in agricultural labor rather than differentiating between agricultural and household tasks.¹⁶

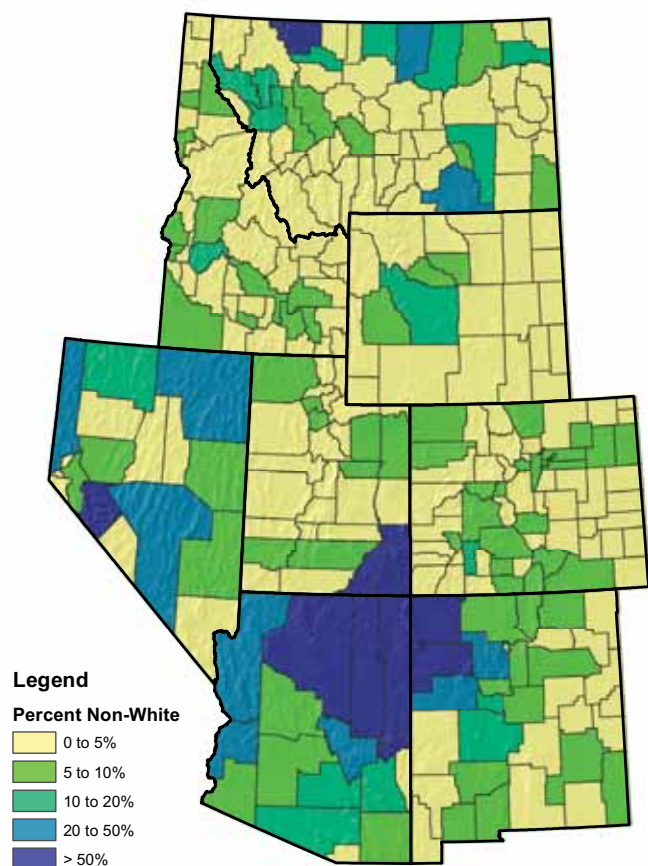
Between 1987 and 2007 the number of female operators in the U.S. increased by 133 percent, while the number of male operators decreased by three percent.¹⁷ As shown in Figures 5 and 6, the areas with the most female operators and the greatest rate of increase in female operators were counties within the Navajo Nation, which spans northeastern Arizona and parts of Utah and New Mexico. In the Rockies, women have joined the ranks of farm operators at a much faster rate than in the U.S. as a whole, growing by 257 percent since 1987, as depicted in Figure 7.

The sex of farm operators is related to other characteristics of agriculture. Women operators in the Rockies less frequently grow grain, other crops (including hay, tobacco, cotton, and sugarcane), or raise beef cattle.¹⁸ They more often run other livestock and aquaculture operations. On average, women growers in the Rockies run farms that are less than half the size of the farms operated by men,²⁰ suggesting that women play a key role in the proliferation of new, small farms (see Figure 8).

Increasing Racial and Ethnic Diversity

While there is a long history of Latino and American Indian farm operators in the Rockies (discussed in Historical Portrait of Latinos in Southwest Agriculture and Historical Portrait of Native Americans in Southwest Agriculture),

Figure 9: Percent Non-White Farm Operators in the Rockies, 2007



Source: 2007 Census of Agriculture, National Agriculture Statistics Service, U. S. Department of Agriculture

Figure 7:
Number of Female Farm Operators in the Rockies, 1987 - 2007

Source: USDA Census of Agriculture, 2007

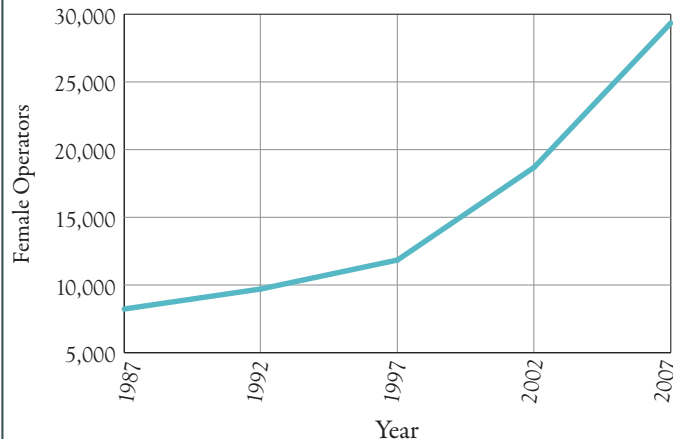


Figure 8:
Average Farm Size by Sex, Rockies Region, 2007

Source: USDA Census of Agriculture, 2007



racial and ethnic diversity among farmers both in the U.S. and in the Rockies has increased in recent years. Table 2 shows the percentage of non-White farm operators in the Rockies by State, while Figure 9 depicts the geographical disparity in proportion of non-White farm operators by county. The number of

Latino farm operators (who may be of any race) increased more than any other group, but American Indian, Asian, African American, and operators of more than one race also increased.²¹ Especially in New Mexico, Colorado, and Arizona, much of the increase in numbers of Latino operators may be attributed to a rise in Latino immigration.²² The 2007 Census of Agriculture suggests that aspects of agriculture such as location, farm size, organization, farm type, and percent of income earned from agriculture vary by race.

The demographics of race and ethnicity vary by state in the Rockies. Colorado, Montana, and Idaho have the highest numbers of White and Asian American farm operators, while New Mexico, Colorado, and Arizona are home to the most Latino and African American operators.²³ Arizona, New Mexico, and Montana have the most growers of American Indian descent.

Similarly, race and ethnicity are related to farm size (see Figure 10). Farm operators in most racial and ethnic minority categories often farm between 10 and 49 acres, but American Indians overwhelmingly operate between one and nine acres, and there are more Whites who farm over 500 acres than who farm 10 to 49 acres.²⁴ Farms between 180 and 499 acres were least prevalent, consistent with the “loss of the middle” (farms between 50 and 500 acres) trend in farm organization.

Analysis of farm income categories in Figure 11 reveals a similar pattern. Roughly half of American Indians, 40 percent of African Americans, a third of Latinos and Pacific Islanders, and a quarter of White and Asian American operators make less than \$1,000 annually from farm income.²⁵ Farms with incomes of \$50,000 or more include 27 percent of farms run by Asian Americans and 23 percent of farms operated by White farmers. Farms that make between \$25,000

and \$49,000 are the least common for all groups except African American operators, for whom farms making \$5,000 to \$9,999 are the least common.²⁶

The proportion of income derived directly from farming varies somewhat by race as well, although differences

Table 2:
Number of Farms by Race or Ethnicity, 2007

	United States	Rockies	Arizona	Colorado	Idaho	Montana	Nevada	New Mexico	Utah	Wyoming
White	2,114,325	143,306	7,187	36,677	25,121	28,203	2,760	16,452	16,034	10,872
Latino	55,570	11,987	1,006	2,182	788	297	222	6,861	409	222
American Indian	34,706	18,300	8,545	934	445	1,993	438	4,854	753	338
Asian American	11,214	650	73	205	121	90	16	48	70	27
African American	30,599	270	49	79	21	18	5	82	10	6
Pacific Islander	1,356	193	17	72	36	21	7	28	1	11

Source: USDA Census of Agriculture, 2007

Figure 10:

Farm Size by Race or Ethnicity, Rockies Region, 2007

Source: USDA Census of Agriculture, 2007

Note: Some charts do not equal 100% due to rounding

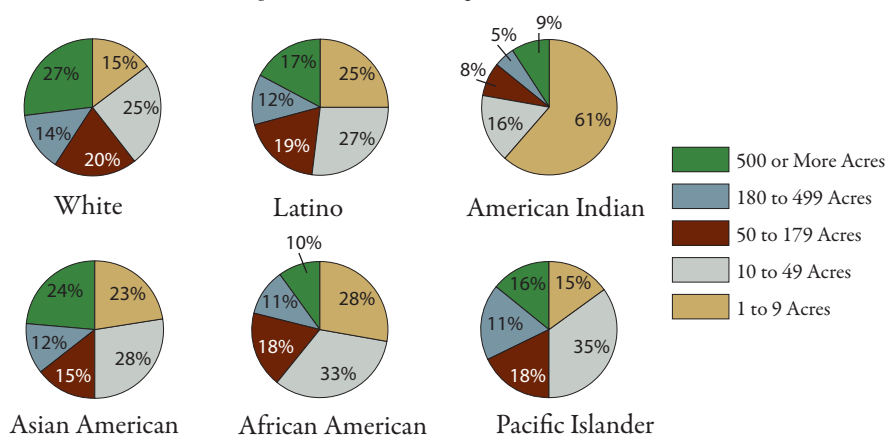


Figure 11:

Farm Income Categories by Race or Ethnicity, Rockies Region, 2007

Source: USDA Census of Agriculture, 2007

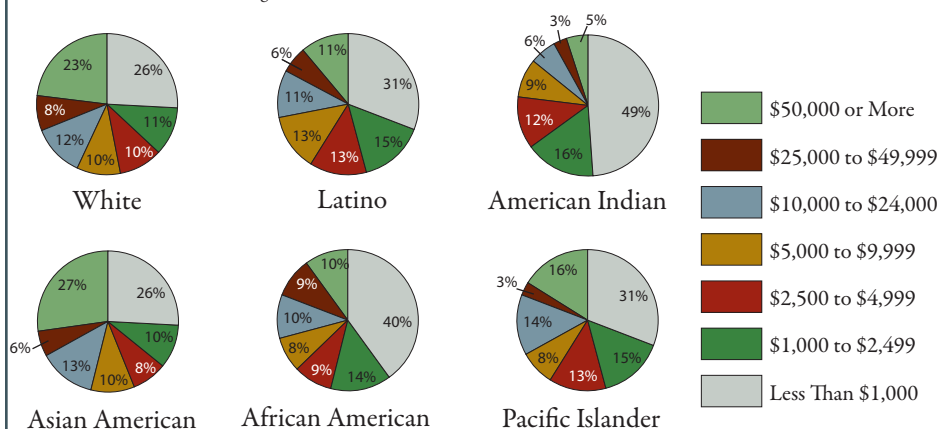
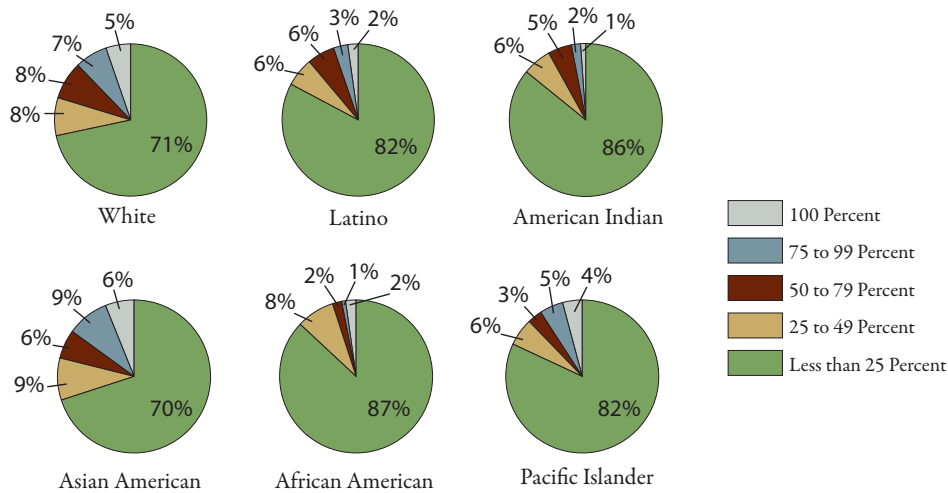


Figure 12:

Percent of Income from Farming Operations by Race or Ethnicity, Rockies Region, 2007

Source: USDA Census of Agriculture, 2007

Note: Some charts do not equal 100% due to rounding



between racial and ethnic groups are less pronounced in this category than in other farm categories (see Figure 12). As a whole, farm operators overwhelmingly earn less than 25 percent of their income from agriculture.²⁷ This category describes 70 percent of Asian American operators, 71 percent of White operators, 82 percent of Latino and Pacific Islander operators, 86 percent of American Indian operators, and 87 percent of African American operators. Varying slightly by racial or ethnic group, between one and six percent of farm operators earn 100 percent of their income from farming.

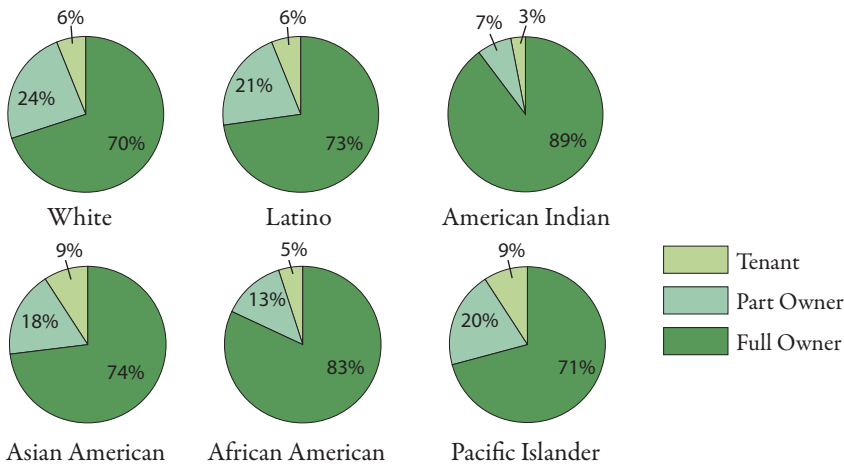
Most farmers and ranchers in the Rockies are full owners of their farmland, although, again as

Figure 13:

Farm Ownership Status by Race or Ethnicity, Rockies Region, 2007

Source: USDA Census of Agriculture, 2007

Note: Some charts do not equal 100% due to rounding



shown in Figure 13, there is some variation by race.²⁸ American Indian operators top the list, with 89 percent full owners. Asian American and Pacific Islander operators have the highest rates of tenancy.

In the Rockies, three production categories dominate agriculture: beef cattle, other crops (which includes hay, cotton, tobacco, and sugarcane), and animal aquaculture and other livestock. Some production categories can be differentiated by race, however.²⁹ For instance Figure 14 shows American Indian operators raise more sheep and goats and grow more vegetables, while White farmers tend to grow more grain. Latino, African American, and Asian American farmers share the bulk of fruit and nut production.

An examination of race and ethnicity among farm operators reveals differences between groups on various farm qualities. The growing diversity of farm operators reflects shifts in the population as a whole, as well as changing circumstances in the industry of agriculture.

Conclusion

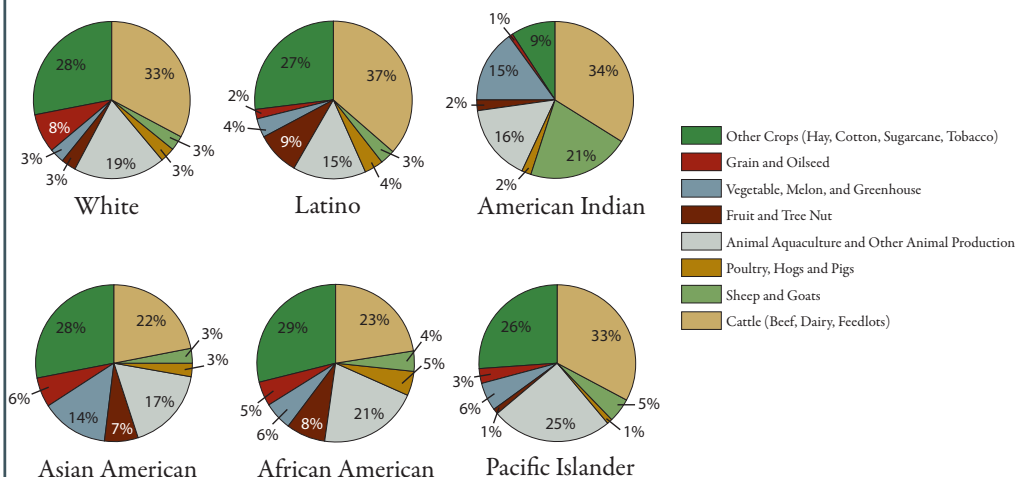
The growing numbers of non-White and female operators illustrate a broadened interest in agriculture. This interest is also reflected in the increasing prevalence of new, small farms near urban centers. Simultaneously,

Figure 14:

Production Trends by Race or Ethnicity, Rockies Region, 2007

Source: USDA Census of Agriculture

Note: Some charts may not equal 100% due to rounding



the increased average age of farmers suggests that many farms have not, and perhaps will not, be passed on to the younger generation. Changes in the demographics of farm operators reveal new opportunities and potential obstacles to agriculture in the Rockies.

Case Study: Hired Farm Workers

By Zoë Wick

Introduction

In the hot New Mexico sun, dozens of workers kneel in an onion field clipping bulbs with a precise blur of motion, moving down the rows at an impressive pace. Many have worked at this farm with their families every summer since they were children. As a result, they work quickly and skillfully, and are indispensable to onion production at Chile River Farm.

Hired farm workers are only a small segment of the population, but are invaluable to crop production and the U.S. food economy. Recent controversy over immigration reform has drawn new attention to farm workers, both because agriculture is one of the main industries where recent immigrants seek employment and because agricultural employers rely on migrant labor for 42 percent of their workforce.³⁰

Hired farm workers differ from the general U.S. workforce in terms of the challenges they face and their demographics. As shown in Table 3, compared to the U.S. workforce as a whole, hired farm workers are more likely to be Latino, foreign born, young, living in poverty, and impacted by health problems.³¹

Figure 15:

Hired Farm Labor as a Percent of Total Farm Expenses, 2007

Source: USDA Census of Agriculture, 2007

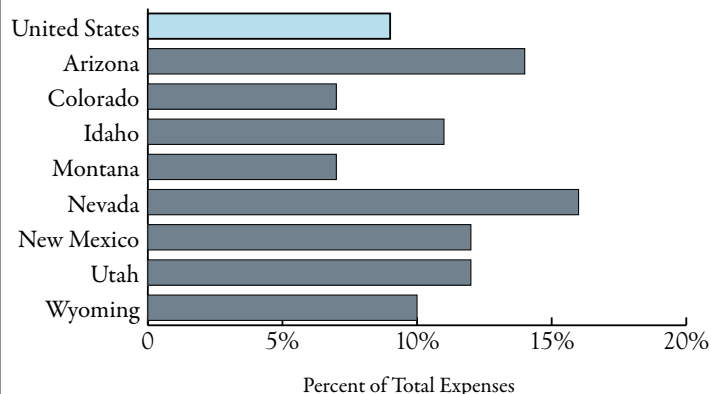
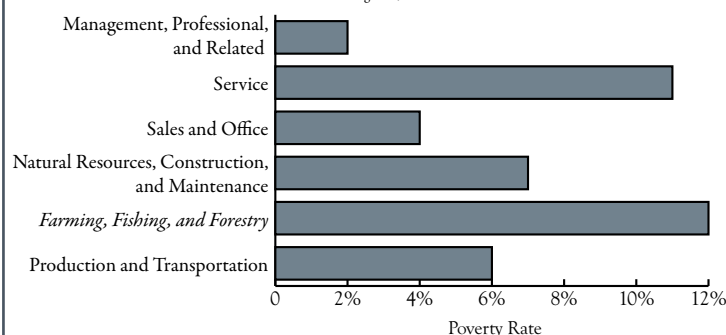


Figure 16:

Percent of Workforce in Poverty by Occupation, 2007

Source: Bureau of Labor Statistics: Profile of the Working Poor, 2007



Prevalence

Hired farm workers account for less than one percent of all U.S. wage and salary workers, but make up 30 percent of farm workers (the remaining 70 percent are paid or unpaid family members).³² Farms growing labor-intensive products such as vegetables, horticultural products, fruits, and nuts are the most likely to hire workers, and the associated labor costs make up 30 to 40 percent of total farm expenses.³³ When all agricultural sectors are included, hired farm labor accounts for only nine percent of farm expenses nationwide.³⁴ In six Rockies states, the percentage is two to seven percent higher than the national average (see Figure 15). Considering magnitudes among Rockies states (see Table 4), Idaho, Colorado, and Arizona utilize the most hired farm workers in the region.³⁵ Maricopa County, Arizona, employs the highest number of hired farm workers in the Rockies, although this partially reflects the county's large total population. Of the top 10 Rockies counties for hired farm workers, Gooding County, Idaho, has the highest number of hired farm workers per capita (see Table 5).

Foreign-Born and Unauthorized Farm Workers

Statistics on place of birth for agricultural workers (see Table 6) show foreign-born individuals are twice as likely as those born in the U.S. to be employed in agriculture, forestry, fishing, or hunting.³⁶ This difference is largely due to Mexican-born workers, who are six times more likely than all other groups to work in agriculture.

Table 3:
Farm Worker Demographics, United States, 2006

	Farm Workers	All Wage and Salary Workers
Percent Male	81%	52%
Median Age	34	40
Percent Latino	43%	14%
Percent Foreign-Born	42%	16%
Percent with U.S. Citizenship	62%	91%
Percent With Less Than 9th Grade Education	30%	4%
Percent with Some College Education	21%	58%

Source: USDA-ERS using data from the U.S. Census Bureau, 2006 Current Population Survey Earnings File

Note: Farm Workers are defined here as hired farm laborers. These data include full-time and part-time workers.

Foreign-Born Farm Workers: Filling Employer Need?

Since the agriculture industry employs so many migrants, farm labor has become a major topic in immigration law debates. Employers argue that they rely on migrant labor because there are not enough Americans willing to do the hard physical work, and because cheap labor is necessary in order to compete in global markets.⁴⁰ However, some economists, such as George Borjas, have contended that immigrant workers are hurting the job prospects and wages of Americans, especially poor Americans without high school degrees.⁴¹ In recent years, there have been heightened efforts to enforce caps on worker visas and raid companies suspected of hiring unauthorized individuals, prompting outcries from employers as well as immigrants' rights groups.

In 2004 the federal government began enforcing an annual cap of 66,000 H-2B seasonal work visas, a limit which was already in place but had been consistently exceeded.⁴² H-2B visas allow employers legally to bring in temporary workers from outside the U.S. once they have attempted to recruit American workers.⁴³ Colorado alone generally uses more than a quarter of the 66,000 H-2B visas.⁴⁴

Growers contend that with the strict enforcement, they cannot find enough workers to harvest their crops. Jon Post, an Arizona cotton farmer, wanted to hire several hundred people to harvest his field when one of his machines broke down, but could not find more than 50 workers even after vigorous recruitment efforts.⁴⁵ He explained,

We as Americans, we don't feel like that's work that we should have to be doing anymore... You can't just say, 'I want them to close the border because they're gonna compete with me for my job.' Honestly, they're not competing for your job! I need them to produce things for you. If I don't have available workers to produce things, then the cost goes up. It's a real serious issue.



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In fact, many growers warn that the labor shortage could force them to downsize or go out of business.⁴⁶ Groups such as Colorado Employers for Immigration Reform and the Arizona Farm Bureau⁴⁷ are pushing Congress for immigration laws that would allow them to bring more workers into the country legally.⁴⁸

However, the framework recommended by two major labor organizations diverges considerably from growers' requests. In April 2009, the AFL-CIO and Change to Win released a unified framework for immigration reform. Their proposal supports

a path for current unauthorized workers to become legal, recommends strict enforcement of the border, and opposes any major program to bring more workers into the country.⁴⁹ This policy, they say, would give currently unauthorized workers more bargaining power and increase their ability to switch jobs, ultimately raising the wages of all farm workers.

According to the United States Department of Agriculture, however, both granting legal status to workers currently here and imposing strict limits on numbers of new immigrants could contribute to a shortage of agricultural workers.⁵⁰

Table 4:
Number of Hired Farmworkers, 2007

Division or State	Number of Workers
United States	2,636,509
Rockies	193,978
Arizona	28,754
Colorado	39,915
Idaho	46,934
Montana	22,377
Nevada	4,428
New Mexico	22,996
Utah	19,748
Wyoming	9,826

Source: USDA Census of Agriculture, 2007

Table 5:
Number of Hired Farmworkers,
Top Ten Rockies Counties, 2007

County	Number of Farmworkers	Ratio of Hired Farmworkers to County Residents
Maricopa AZ	10,628	1/365
Weld CO	6,915	1/35
Dona Ana NM	4,867	1/47
Yuma AZ	4,737	1/40
Canyon ID	4,685	1/49
Bingham ID	4,264	1/10
Pinal AZ	3,675	1/82
Cassia ID	3,377	1/6
Utah UT	3,243	1/158
Gooding ID	2,836	1/5

Source: USDA Census of Agriculture, 2007

The foreign-born population is quickly increasing in the Rockies. Table 7 shows that from 2000 to 2007, growth in the foreign-born population ranged from 26 to 58 percent in every Rockies state except Montana, which saw a nine percent decrease.³⁷

The Pew Hispanic Center has estimated that 11.9 million foreign-born people in the United States are unauthorized.³⁸ According to this estimate, unauthorized immigrants account for four percent of the population and five percent of the workforce. In Arizona and Nevada, it is estimated that over 10 percent of the workforce is unauthorized. For the agricultural workforce, the

percentage of unauthorized workers is much higher than in any other industry in the U.S. The National Agricultural Workers Survey found that half of crop workers in the U.S. are unauthorized.³⁹ (See p. 64 on Foreign-born workers).

Wages

Farm workers, especially those tending crops, are paid less than employees in other low-skill jobs, as shown in Table 8. Including the wages of managers and supervisors, who make up 28 percent of all hired farm workers, the average agricultural wage in 2006 was \$9.87 per hour.⁵¹ The median for non-supervisory wages was considerably less, at \$6.25 per hour. According to the USDA Economic Research Service, the relatively low wages of farm workers can be partially explained by a lack of alternative employment options for unauthorized workers. Hired farm workers who migrate to work sites from U.S. and foreign homes earn even less than workers who are settled in the U.S.⁵² In addition to having lower wages, migrant workers are also less likely to have health insurance and to have fewer work weeks compared to settled workers.⁵³

Poverty, Unemployment, and Use of Social Services

Farm workers are also at a higher risk of poverty than workers in any other occupation. As shown in Figure 16, in 2007, 12 percent of people working in farming, fishing, and forestry occupations were in poverty.⁵⁴ Unemployment is a major concern for hired farm workers as well, as their unemployment rate is double the average for all occupation

categories except the “other farming, fishing, and forestry” category.⁵⁵ (See Figure 17). The risk of unemployment is especially pertinent to crop farm workers due to the seasonal nature of their work.

Given their higher rates of poverty, it is not surprising that farm workers use some social services (such as WIC, food stamps, Medicaid, and free school lunch) at a higher rate than the average for all wage and salary workers.⁵⁶ As depicted in Figure 18,

use of social services by farm workers differs by legal status. Authorized workers use social services more than unauthorized workers, who tend to avoid contact with government agencies. Among authorized workers, non-citizens, who have higher rates of poverty, use more social services than citizens do.

Health Issues

Contact with chemicals, exposure to harsh weather conditions, and use of dangerous tools and machinery render farm labor among the most hazardous occupations. Agriculture, forestry, fishing, and hunting occupations had

Table 6:
Employment in Agriculture, Forestry, Fishing, and Hunting, by Place of Birth, United States, 2007

Place of Birth	Population Employed in Agriculture	Percent of Each Total Population
United States (Native Born)	1,976,894	1%
Foreign Born	644,796	2%
- Mexico	546,945	6%
- Southeast Asia	27,208	<1%
- Caribbean	7,617	<1%
- Central America	30,733	1%
- South America	6,306	<1%
- Middle East	1,339	<1%
- Other	24,648	<1%

Source: Pew Hispanic Center, 2008

Table 7: Foreign-Born Population in Rockies States, 2007

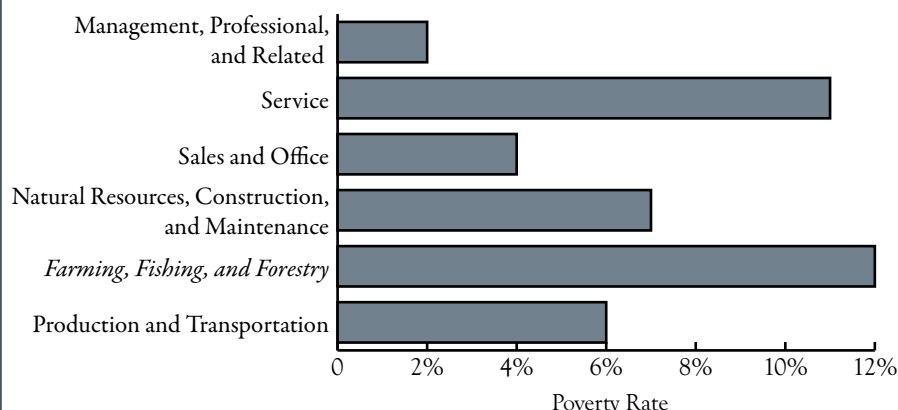
	Rockies	Arizona	Colorado	Idaho	Montana	Nevada	New Mexico	Utah	Wyoming
Foreign-Born Population, 2007	2,501,597	997,387	485,922	82,366	15,027	501,248	188,354	214,733	16,560
Percent Change from 2000-2007	41%	51%	31%	29%	-9%	58%	26%	36%	34%

Source: Pew Hispanic Center, 2008

Figure 16:

Percent of Workforce in Poverty by Occupation, 2007

Source: Bureau of Labor Statistics: Profile of the Working Poor, 2007



higher rates of fatal occupational injuries than any other industry in 2006, at 30 fatal injuries per 100,000 workers.⁵⁷ The rate for farmers and ranchers was 37 deaths per 100,000 workers, while the rate for miscellaneous agricultural workers was 22 deaths. (See Figure 19) Agriculture,

forestry, fishing, and hunting occupations also had higher rates of nonfatal injuries than all other industries except construction, transportation, and warehousing.⁵⁸

Obstacles to receiving health care heighten the health concerns for farm workers and differ by the legal status of workers.⁵⁹ As depicted in Figure 20, 14 percent of workers who are U.S. citizens reported facing obstacles to health care, while the rate is three times higher among unauthorized workers.

Conclusion

Hired farm workers face low wages, high unemployment, poverty, and obstacles to health care. Additionally, because 42 percent of hired farm workers are foreign born, the industry is at the center of immigration policy debates and will be among the first industries to experience the impact of policy change.

Figure 17:
Unemployment Rates by Occupation

Source: USDA-ERS using data from the U.S. Census Bureau, 2006 Current Population Survey Earnings File

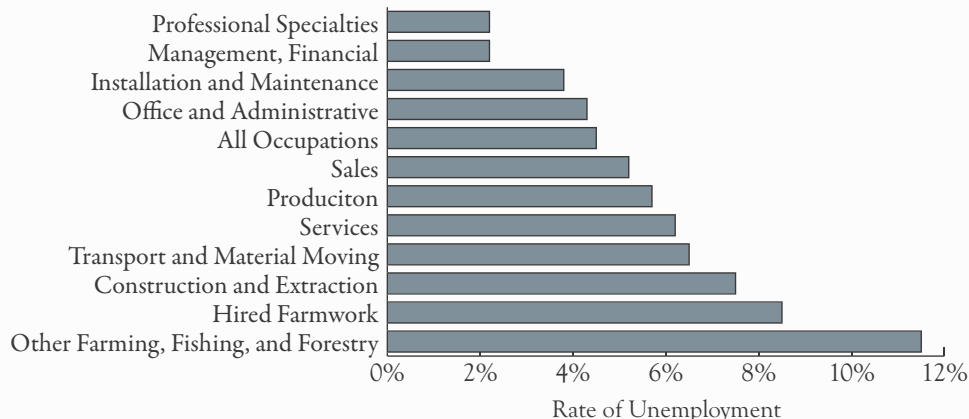


Figure 18:

Use of Social Services Among Farm Workers, by Legal Status

Source: USDA - ERS using combined National Agriculture Worker Survey data, 2004-2006. The survey asks if farmworkers or anyone in their family received benefits within the past two years. NAWS does not survey hired livestock farmworkers.

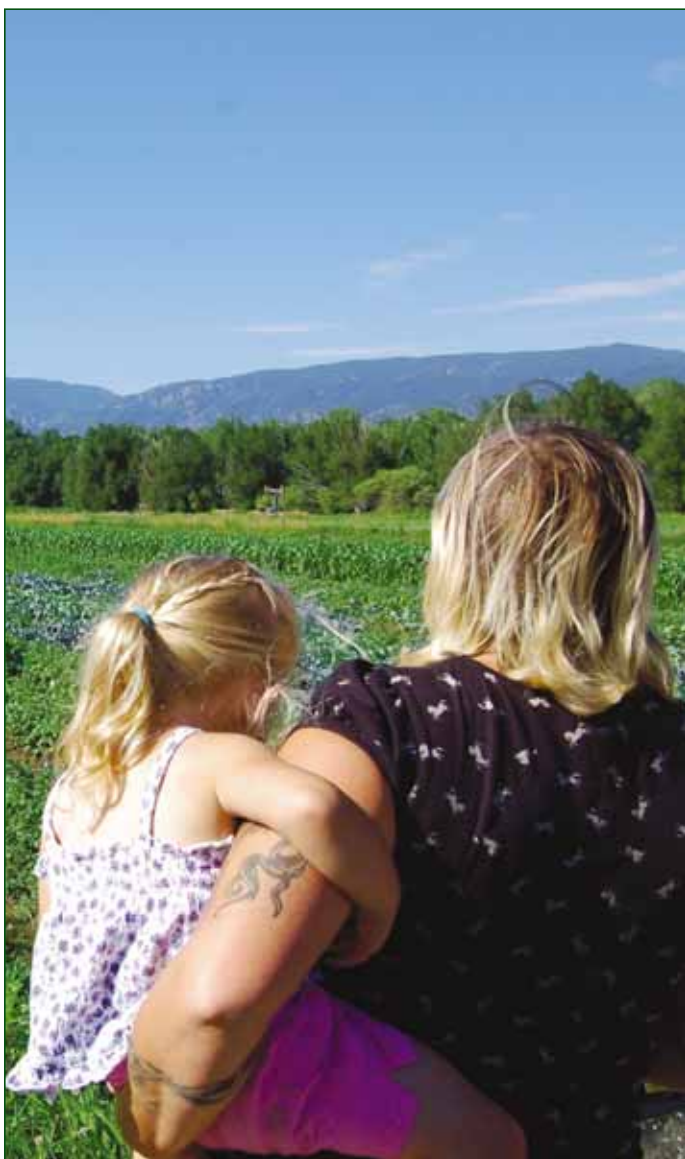
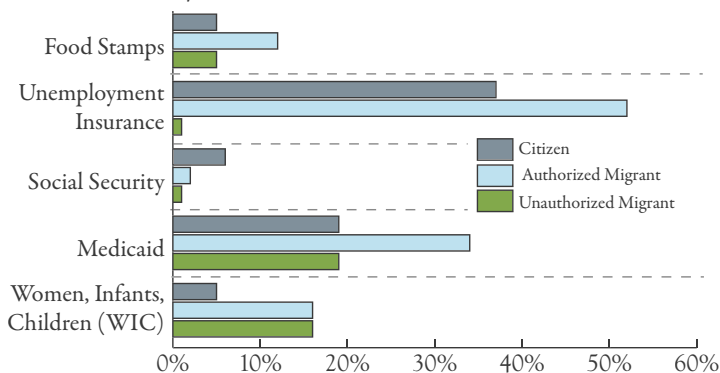


Figure 19:

Fatal Occupational Injury Rate per 100,000 Workers, United States, 2007

Source: United States Department of Labor, Bureau of Labor Statistics, 2007 Census of Fatal Occupational Injuries, 2009.
 Note: Categories in italics are subcategories of Agriculture, Forestry, Fishing, and Hunting.

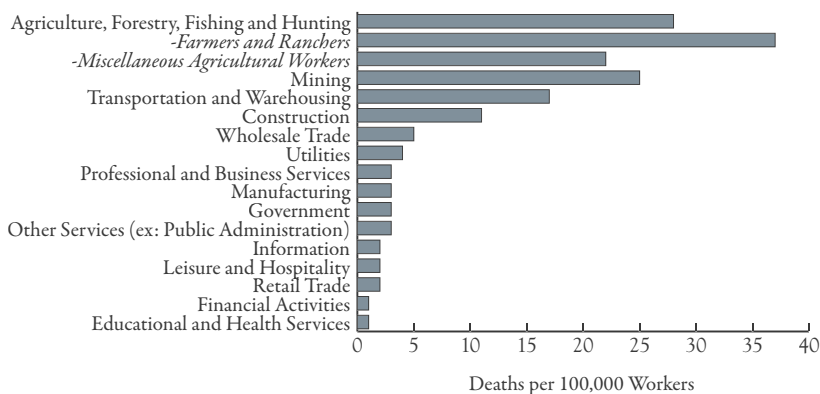


Figure 20:

Crop Farmworkers Reporting Obstacles to Health Care by Legal Status

Source: National Agricultural Workers Survey, United States Department of Labor, 2006

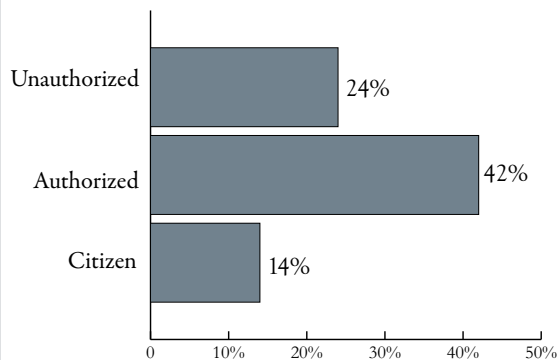


Table 8:

Median Weekly Earnings, Select Low-Skill Occupations, 2006

Occupation	Median weekly earnings (dollars)
Dishwasher	\$320
Crop Farmworker	\$350
Maid	\$360
Groundskeeper	\$400
Janitor	\$420
Livestock Farmworker	\$425
All Low-Skilled	\$480
Security Guard	\$480
Material Mover	\$480
Construction Worker	\$520

Note: Weekly earnings include wages, bonuses, overtime pay, tips, and other forms of monetary compensation.

Source: ERS analysis of annual averages from 2006 Current Population Survey Earnings File



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Historical Portrait of American Indians and Latinos in Southwest Agriculture

By Zoë Wick

Introduction

Though the number of American Indian farm operations has recently increased, American Indian agriculture in the Rockies is by no means a new phenomenon. On the contrary, native peoples have been cultivating land in the Southwest for as many as 4,000 years.⁶⁰ Historically, the Pueblo and Navajo, two major American Indian groups in the region, practiced drastically different forms of agriculture. These agricultural differences largely defined how they were viewed and treated by colonizing powers. While impacted to varying degrees, both the Pueblo and Navajo faced threats to

agriculture due to European colonization of the Southwest. Native population numbers and the viability of American Indian agriculture diminished due to foreign disease, slavery, genocide, internal warfare, and intermarriage, and from displacement from their lands by Spain, Mexico, and the U.S.

Pueblo Agriculture

The Pueblo are composed of numerous tribes, but are generally considered to be sedentary and peaceful people whose subsistence, culture, and religion have been intertwined with agriculture for thousands of years. The Ancient Pueblo Peoples (often referred to as the Anasazi, although this term is no longer preferred) began cultivating land in the Four Corners region where Colorado, New Mexico, Arizona, and Utah now intersect.⁶¹ Although they hunted and gathered to supplement their diets, agriculture was their main form of subsistence. Pueblo crops included corn, which they grew by 1,500 BC, and squash and beans, which they added by 500 BC. Approximately 200 years later, cotton came to the Southwest via Mexico.⁶² Tribes in the Southwest employed sophisticated farming methods prior to contact with Europeans.⁶³ Archaeologists have dated irrigation canals in the Southwest to as early as 130 AD. By 1,000 AD, Pueblo people were building terraces to create more level and fertile soil, and check dams to slow and spread water runoff. Advanced and dependable water sources, along with greater security offered by larger villages, encouraged farmers to experiment with new varieties of crops.⁶⁴ By the middle of the sixteenth century, Pueblo people were also growing tobacco and raising domesticated turkeys.

When Spanish conquistadors came to the Southwest in the late 1500’s, they were impressed by the Pueblo’s sophisticated agricultural practices and sedentary society, which in their eyes differentiated the Pueblo from other native tribes.⁶⁵ The Spanish, as well as the Mexicans and Americans who followed, equated agriculture with “civilization” and generally crafted policies that were friendlier to Pueblo people than to other American Indians. For instance, the Spanish Laws of Settlement of 1573 prohibited harming of the homes or land improvements of natives, and the *Recopilación di Leyes de los Reynos de las Indias*, passed in 1681, attempted to prevent settlers from encroaching on Pueblo land. However, despite the Spanish government’s stated intent to protect native peoples, the northern frontier was remote and policies were not enforced. There were violent conflicts between the Spanish and

Table 9:
Pueblo Agricultural Statistics, 1900 and 1936

	Population	Acres Farmed	Acres Per Person
1900	7,883	18,379	2.3
1936	12,005	15,645	1.3

Source; Vlasich, James. Pueblo Indian Agriculture. University of New Mexico Press. 2005.

Using data from county-level surveys of Pueblos.



Curtis, Edward. Library of Congress. Pueblo winnowing wheat.

the Pueblo, including one occasion in which Juan de Onate led a group of Spaniards in brutally defeating the Acoma Pueblo, killing 800 and mutilating hundreds more. It was also common for Spaniards to force tribe members into slavery.⁶⁶ In addition, Spanish settlers frequently squatted on Pueblo land or diverted water resources away from Pueblo farms, threatening the Pueblo's ability to feed themselves and leading to seemingly endless conflicts over land and water rights.

When Mexico won independence in 1821, settlement in the Southwest continued to create land and water disputes. In response to the Pueblo's agricultural lifestyle and willingness to help settlers fend off attacks from other tribes (such as Apache, Ute, Navajo, and Comanche), the Mexican government granted the Pueblo citizenship but excluded other native peoples.⁶⁷ However, even the rights of citizenship could not protect the Pueblo from encroachment.

Since the Pueblo were citizens of Mexico at the time of the Mexican-American War and were therefore protected under the Treaty of Guadalupe Hidalgo, they were exempt from U.S. programs such as Indian Removal and General Allotment (explained below) that proved disastrous for other tribes.⁶⁸ However, U.S. annexation of the Southwest led to further Anglo and Latino settlement along the Rio Grande and an increase in land and water conflicts. To resolve conflicts and make room for new settlers, the U.S. government aimed to modernize Pueblo agriculture so that land was used more efficiently. The U.S. also hoped to push the Pueblo beyond subsistence farming, encouraging them to assimilate to American capitalist society. However, the Pueblo had long resisted new agricultural practices that conflicted with their cultural traditions. Their form of agriculture had changed little since contact with Europeans, save the introduction of a few new crops. Only after increased pressures due to overcrowding, the Great Depression, and World War II did the Pueblo agree to participate in New Deal modernization programs. While New Deal programs helped the Pueblo use their shrinking land and water resources more efficiently, these programs also led to the decline of agriculture as the major occupation of the tribes, just as modern techniques requiring less manpower led to the decline of agricultural employment in America as a whole. (See Table 9)

While the Pueblo endured land and water scarcity as well as violent attacks due to European colonization, their sedentary customs and agricultural accomplishments allowed them to evade some of the harshest European actions.

Navajo Agriculture

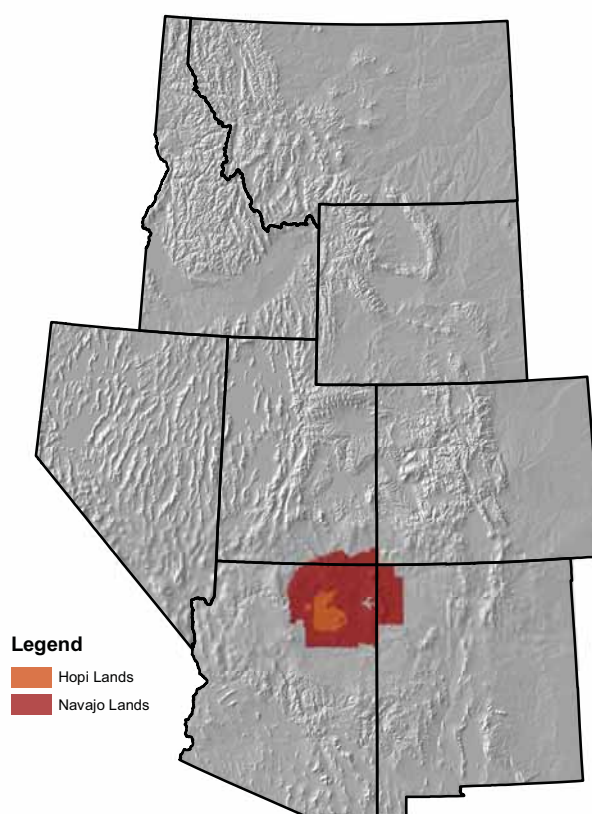
The Navajo Nation covers 27,000 square miles in northeast Arizona, southeast Utah, and northwest New Mexico, and with a population of 250,000 is the largest tribe in the U.S. today⁶⁹ (See Figure 21). In comparison to the Pueblo, the Navajo were historically much more nomadic and obtained more of their food from hunting and gathering. They also, however, grew some crops and, once the Spanish introduced new livestock to the Southwest, raised animals as well. European perceptions of Navajo people as non-

agricultural contributed to colonizers' dismissal of the tribe as "uncivilized." Spanish, Mexican, and American governments tended to view the tribe as a nuisance, raiding nearby farms and taking up valuable land that could be better utilized by new settlers. This perception was largely unfounded, as Navajo were often accomplished farmers and ranchers, but nevertheless was used to justify harsh and violent policies.

Navajo people are descendants of Apacheans, who migrated to the Southwest sometime between 1100 AD and 1400 AD.⁷⁰ Navajo society emerged as a distinct culture during the 1400's, and tribe members grew corn, fruit, and other crops. When the Spanish came to the area in the sixteenth century, they introduced horses, sheep, cattle, and goats to the region. The Navajo adopted these livestock into their culture, relying on sheep for meat and wool and becoming accomplished equestrians. Successful grazing of livestock, however, required that they expand into new territories, often putting them in conflict with other American Indians as well as with Spanish, Mexican, and American settlers.

Navajo were targeted more than any other native group for the Spanish slave trade.⁷¹ Tribe members frequently retaliated for kidnappings by raiding Spanish communities, taking livestock and other valuable items. These raids earned the Navajo a reputation as troublesome, and the Spanish launched numerous military campaigns against the tribe throughout the seventeenth and eighteenth

Figure 21: Navajo and Hopi Tribal Lands



Source: National Atlas of the United States, U. S. Geological Survey, 2006

centuries. Many Navajo were killed and captured, and their crops were often destroyed.

Although Navajo came into conflict with Spanish and Mexican forces on numerous occasions, their way of life was impacted far more by American forces.⁷² As American colonization pushed westward and fertile land no longer seemed infinite, settlers increasingly felt that native peoples wasted land and stood in the way of progress. The rhetoric of government officials often omitted the agricultural accomplishments of Navajo and other tribes, portraying the groups as uncivilized and in need of government intervention. Josiah Gregg, 1840's author of *Commerce of the Prairie*, observed that Navajo "cultivate all the different grains and vegetables to be found in New Mexico," and also noted their "extensive herds of horses, mules, cattle, sheep, and goats of their own raising which are generally celebrated as being much superior to those of the Mexicans."⁷³ However, others such as Colonel John Macrae Washington insisted that native peoples needed to be pushed off their land and onto smaller reservations in order to "change from their present roving habits to the pursuit of agriculture, from the savage state to that of civilization."⁷⁴ The more self-serving motives behind Indian removal may be better portrayed by another government official who proclaimed, "By the subjugation and colonization of the Navajo tribe we gain for civilization their whole country, which is much larger than the state of

Ohio, and, besides being the best pastoral region between the two oceans, is said to abound in the precious as well as the useful metals."⁷⁵

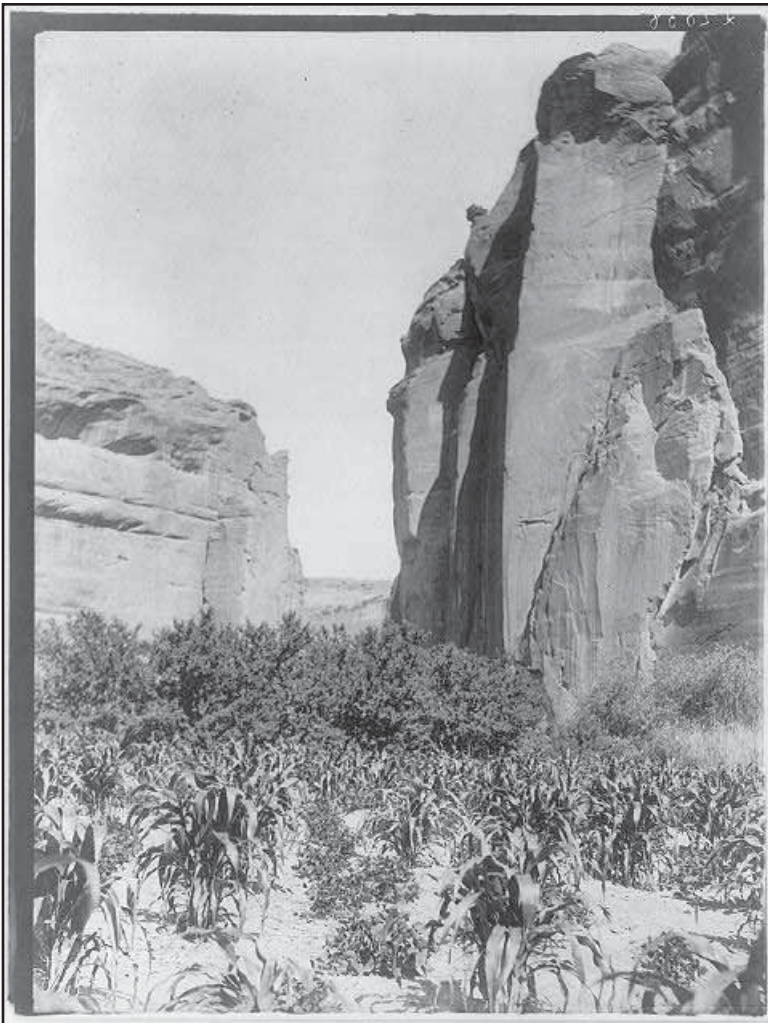
Starting in the 1830's, the Jackson administration passed a series of Indian Removal Acts, relocating eastern tribes to areas west of the Mississippi River and pushing western tribes onto smaller, less fertile tracts of land.⁷⁶ While this program was theoretically voluntary, there was a great deal of corruption and harassment among government officials and settlers who ruthlessly pressured tribes to comply.⁷⁷ For the Navajo, removal took the form of the Long Walk, in which U.S. officials forced the tribe to march hundreds of miles southeast to barren Fort Sumner and murdered the weak, elderly, and pregnant who fell behind.⁷⁸ The Long Walk was not only devastating to Navajo people, but was also an attack on Navajo agriculture. While the tribe was taken to a barren land, U.S. soldiers destroyed Navajo farms, demolishing wells, burning corn fields, and decimating peach orchards. Finally in 1868, Navajo leaders were triumphant in negotiating a treaty allowing them to return to a portion of their previous territory, although their land was greatly reduced.

Navajo agriculture underwent another transformation with the General Allotment Act of 1887, which gave the government power to divide communal reservation lands into individual plots.⁷⁹ The government's stated goal was to encourage private farming among American Indians as a more efficient and dependable alternative to hunting, and while this goal appeared to be sincere among some, there were also numerous land speculators who hoped to personally benefit from the legislation.⁸⁰ The results were disastrous for most tribes. Reservations were divided into plots of 160 acres that were given to each household, along with an additional communal plot. However, this left the vast majority of reservation land remaining, and this "surplus land" was open for settlers to buy at cheap prices.

In addition, 160 acres proved to be inadequate for herding livestock, preventing Navajo from practicing their traditional form of agriculture. The government held the land tracts in trust for 25 years to prevent American Indians from selling land and encourage them to adopt new forms of agriculture, but the program failed to provide sufficient resources and education.⁸¹ Many Navajo chose to lease and eventually sell their land to non-Indians, further diminishing Navajo territory.⁸² Ultimately, the General Allotment Act resulted in the transfer of large tracts of land to White farmers and a considerable decline in American Indian agriculture by 1930.⁸³

Modern Times

Today, the majority of reservation land in the U.S. is utilized by non-Indians. With the decline of agricultural trading economies and the onset of capitalist economies on reservations, many tribes found themselves without traditional safety nets and with scarce employment opportunities.⁸⁴ These pressures left them vulnerable to exploitation by outside forces. In addition to the sale of land



Curtis, Edward, 1906. Library of Congress. Navajo corn.

tracts to White farmers, reservations have become targets for power plants and toxic waste sites. This is especially true of Southwest reservations, where arid conditions are attractive to owners of hazardous and nuclear waste.

In response to these obstacles, many Pueblo and Navajo individuals have become involved in activist movements that started during the 1960's and have achieved notable successes. For instance, Navajo and Hopi peoples demonstrated against coal mining and power plants, and in 1970 the Taos Pueblo became the first tribe to successfully recover traditional lands.⁸⁵ Their recovery of 48,000 acres inspired other tribes to work toward land recovery as well. Consequently, tribal landholdings in the U.S. increased from 51 million acres in the 1960's to 58 million acres in 2005, an increase of 15 percent. In addition, Southwest American Indians such as Terrol Johnson have started programs to restore tribal health and nutrition by returning reservation land to agricultural uses.⁸⁶ Similar programs may be responsible for some of the recent growth in the number of American Indian farm operators.

Agricultural practices contributed to outside perceptions of the Pueblo as civilized and the Navajo as uncivilized, impacting the severity of policies directed at the two groups. Both tribes, however, experienced extreme hardships as a result of European colonization of the Southwest. One of the most significant ways in which European colonization negatively impacted the tribes was through the reduction of tribal land and the corresponding demise of American Indian agriculture. The restoration of American Indian agriculture may prove to be an effective method of tribal revitalization.

Latinos

Although Latinos are found at the core of this country's rural life, they remain marginal to the nostalgic imagery and historical narratives of rural America. When their presence is noted, there is a tendency to downplay its continuity and to portray Latinos as 'aliens,' 'transients,' 'illegals,' and otherwise peripheral to the communities where they have settled.

-Lourdes Gouveia, 2005⁸⁷

Every week, journalists report increased immigration and rapid growth in the U.S. Latino population, especially in the Southwest. These reports sometimes convey Latino culture as a new influence in the region. In reality, though, Latinos were farming and ranching in the Southwest long before Anglos arrived, and many Latino families have centuries-old histories in the Southwest.

Latino settlement in the Southwest began in 1598 when Don Juan de Onate led 400 settlers of Spanish, Mexican, and Mestizo (Spanish and American Indian) heritage to New Mexico.⁸⁸ Their journey established the first European-made trail in North America, *El Camino Real de Tierra Adentro*, or

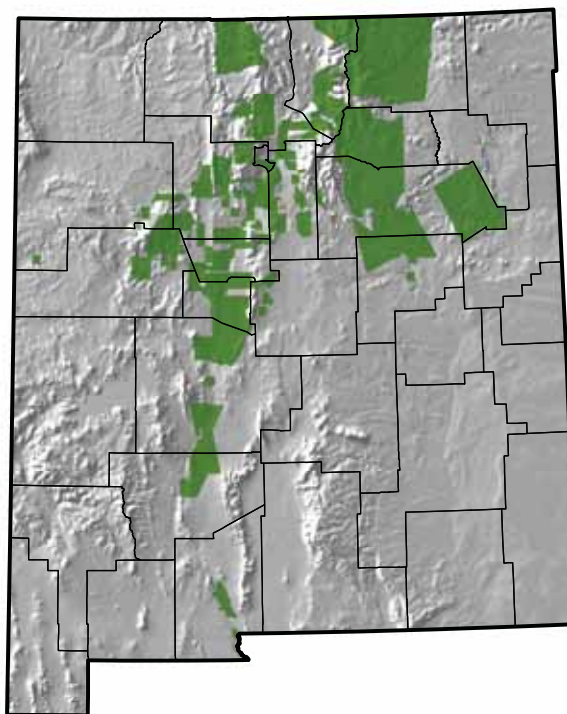
the Royal Road to the Interior Lands, connecting Mexico City and Santa Fe. *El Camino Real* became an important route for colonization, trade, and connection with the Spanish Empire.⁸⁹

Once in the New Mexico region, the settlers grazed livestock and grew corn, wheat, and other grains on land granted to them by the Spanish (and later, Mexican)



Lee, Russell, 1940. Library of Congress. Spanish-American Farmer, NM

Figure 22: Spanish and Mexican Land Grants Confirmed by the U. S. Congress, New Mexico



Source: Bureau of Land Management, New Mexico State Office, 2000

government.⁹⁰ While wealthy settlers generally applied for individual land grants, farmers often petitioned as groups and were awarded small private titles alongside a large communal parcel of land. Within these group settlements, approximately 90 percent of land was community-owned and was used by town members for grazing livestock, fishing, hunting, gathering fruit, and collecting firewood and building materials.⁹¹ Communal land was especially important in the arid climates of New Mexico and southern Colorado because it enabled cooperation among families, making it possible for them to maintain complex irrigation systems.⁹² In addition, the settlers cooperated to defend their land from American Indian tribes. In providing enough land for successful livestock grazing and encouraging cooperation among settlers, communal land was essential to the survival of small farmers.

When Mexico won its independence from Spain in 1821, the government encouraged further settling in its northern border territories in an attempt to secure the border against encroachment by the U.S. and France. By the middle of the nineteenth century, nearly 80,000 people of Mexican descent lived in the Southwest.⁹³

From 1846 to 1848 the U.S. and Mexico fought in the Mexican-American War, which ended when Mexico ceded New Mexico, Colorado, California, Utah, Arizona, and Nevada to the United States in the Treaty of Guadalupe Hidalgo. The treaty guaranteed that people living in the transferred territories would retain their property rights.⁹⁴ Communal land, however, did not easily fit into the framework of U.S. law. The land grant approval process was excruciatingly slow. By 1886, 205 land title claims had been filed in New Mexico, but Congress had approved only 46, and 146 had not been acted on.⁹⁵ (See Figure 22). Through both misunderstanding and manipulation on the part of

government officials and land speculators, ownership of much communal land was transferred to individuals rather than preserved for community use.⁹⁶ Even when land titles were granted to the rightful heirs, the communal land area was often dramatically reduced.⁹⁷ This greatly diminished the viability of agriculture for the Latino community in the Southwest, especially for the poor, who were disproportionately impacted by the loss of communal land. Even today, historic and current landowners are disputing land rights in areas of the Southwest such as Tierra Amarilla, New Mexico, and La Sierra, Colorado.⁹⁸

From 2002 to 2007 there was a 10 percent increase in the number of Latino farm operators in the U.S., a trend that was especially pronounced in the Southwest. However, this growth is just one chapter in the long and rich history of Latino farmers in the Southwest.

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