



# POPULATION BRIEF

Trends in the Western U.S.

## Land Use and Resources

### A Regional Overview

By Don E. Albrecht

#### Overview

Rural development is the process by which the lives of individuals and families living in rural areas are improved. Effective rural development necessarily involves several components that include 1) good jobs that provide individuals and families the opportunity to earn and maintain a livable income; 2) a chance to complete an education and have lifelong opportunities to learn and improve one's circumstances; 3) and the opportunity to live a reasonably long and healthy life. Communities that effectively meet these conditions are likely to retain existing residents and attract new residents and thus experience population growth.

Additionally, effective rural development means that opportunities to obtain high-quality employment, complete an education, and live a long and healthy life must be available to all residents of the community, rather than only to certain segments of the population.

The first step in advancing an effective rural development program is to carefully assess baseline conditions. In response, the Western Rural Development Center (WRDC) is providing a set of population briefs that provide some of this baseline information. Each population brief will assess one of the components of rural development listed above. This brief examines land use and resources. Each brief will explore overall conditions and then examine the extent to which opportunities are available to all segments of the population by making comparisons on race/ethnicity, gender, family structure or geography. The geographic component will provide comparisons between metropolitan and nonmetropolitan areas and will compare

the west with the remainder of the United States. Further, population briefs for each of the 13 states comprising the western region are developed that provide more detailed information on rural development issues. Data for this population briefs are obtained from the United States Census and the Census of Agriculture conducted by USDA.

#### 19th Century Settlement Influences 21st Century Rural Communities

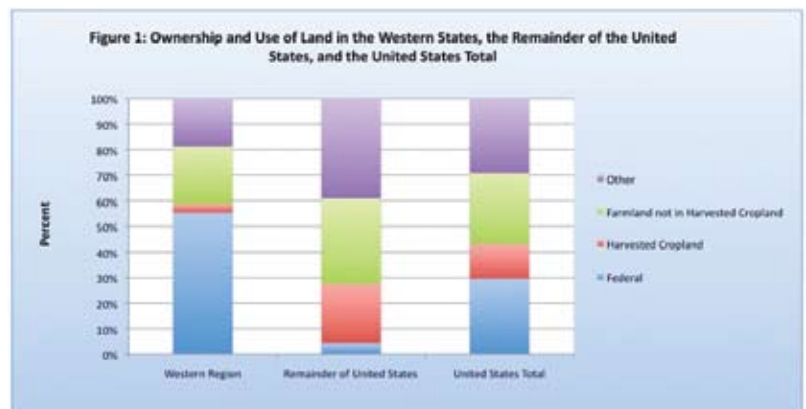
Land ownership and the extent to which various resources are present or absent on that land has major rural development implications. During the westward settlement of this country, individuals and families were looking for places where resources were available that allowed them to earn an economic livelihood. As people moved into the region they searched for locations with soil, water and climate conducive to agricultural production and where traditional resources such as minerals and forests were abundant enough to support extraction industries of these resources. Where these conditions and resources were more readily available, the size of the population that could be supported was larger and life could be lived more abundantly by the inhabitants.

Where the land was too dry or mountainous or the climate too cold for agriculture and where other resources were unavailable, settlement was subsequently limited. Settlers of the American

West were initially drawn to the fertile valleys of California and Oregon and to places where minerals had been discovered. Later, irrigation projects brought agriculture to areas throughout the west that were otherwise too dry. However, vast tracts of western land remained unclaimed and in federal ownership. These nineteenth century patterns have major implications for rural and community development efforts in the twenty-first century.

#### Federal Land

Figure 1 provides an overview and comparison of who owns the land in the region and how land is being used in the west relative to the rest of the country. The critical difference between the west and other regions is the vast amount of land in federal ownership in the 13 western states. More than one-half (55.4 percent) of the land in the western region is federally owned, compared to only 4.5 percent in the rest of the U.S. Conversely, the proportion of the land that is privately owned and used for agriculture is much smaller in the west (25.8 percent) than in the rest of the country (56.4 percent). Finally, a smaller proportion of the land in the west (18.8 percent) is used for other purposes such as urban and residential



development, commercial development, and schools than in the rest of the country (39.1 percent).

The percent of land owned by the federal government for each of the western states and the United States is illustrated in Figure 2. Over 90 percent of Nevada is federally owned, while two-thirds of the land in Alaska, Utah and Idaho, and more than one-half of the land in Arizona, Wyoming and Oregon is in federal ownership. In fact, all 13 states in the Western Region have a higher proportion of their land in federal ownership than any other state. The western state with the least amount of federal land, Hawaii (16.4 percent), has less federally owned land than the District of Columbia (26.3 percent), but more than any nonwestern state.

The majority of federally owned land is managed by one of the four major federal land management agencies. Figure 3 reveals that 42 percent of the federal land

in the west is managed by the Bureau of Land Management, 26.4 percent by the U.S. Forest Service, 13.7 percent by the Fish and Wildlife Service, 11.6 percent by the National Park Service and 6.3 percent by some other agency, such as the Department of Defense. Table 1 (see page 4) provides more detail on the management of federal land for each of the states in the region. Of significance, this table shows that 85 percent of Forest Service land, 91 percent of Park Service land, 89 percent of Fish and Wildlife Service land and 99 percent of BLM land is in the west.

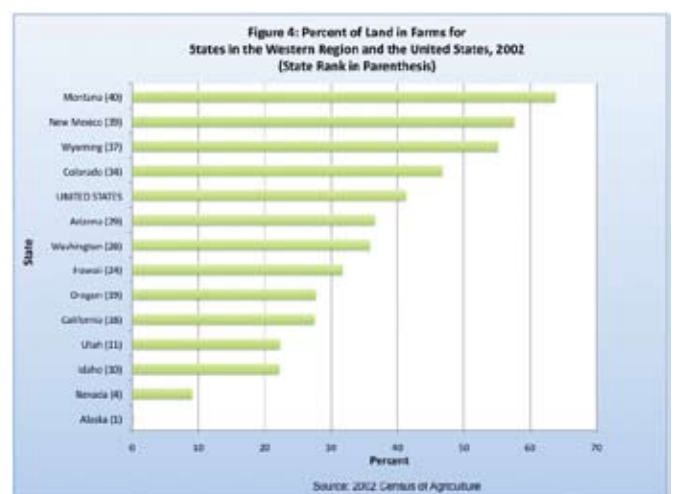
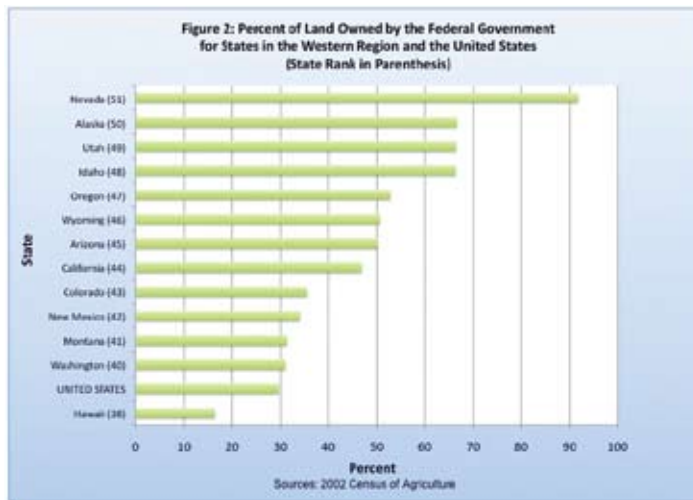
### Farm Land

Despite its vast geographical size, only 25.8 percent of land in the western U.S. is used for agriculture compared to more than one-half (56.4 percent) of the land in the rest of the country, and yet agriculture comprises the second largest use of land in the region. Those states in the west that have the largest proportions of federal land (Nevada, Alaska, Utah, Idaho, Arizona, Wyoming, and Oregon) also tend to have smaller proportions of farm land. Figure 4 illustrates that the four states on the eastern portion of the western region (Montana, New Mexico, Wyoming, and Colorado) have the highest proportion of their land in farms, and it is in the Great Plains portion of these states where the majority of their agricultural

lands are located. Of these western states, Montana has the highest proportion of its land used for agriculture (63.9 percent), while nationally five states (North and South Dakota, Nebraska, Kansas, and Iowa) have more than 85 percent of their land in farms.

An additional difference between agricultural land in the west and in the remainder of the country is that western agricultural land is much more likely to be used for grazing and other purposes, with smaller amounts in harvested cropland. (See Table 2 on page 4 for an overview of the agricultural uses on land in the west.) Only 3.4 percent of the land in the western states is in harvested cropland, compared to 22.4 percent in the remainder of the United States. The proportion of total land in harvested cropland in all 13 western states is less than the national average of 13.3 percent (Figure 5). The western states with the largest proportion of harvested cropland are Washington (11.5 percent), Montana (9.4 percent), California (8.4 percent), and Idaho (8.1 percent). Nationally, three states (Iowa, Illinois and Indiana) have more than 50 percent of their total land in harvested cropland.

The major reason for the general lack of harvested cropland in the west is that crop production in the relatively arid west is extremely dependent on irrigation. To a large extent, if irrigation is not available, crop production does not occur. About 25.5 million acres of farmland are irrigated in the west, which is 46 percent of all of the irrigated land in the United States (Table 2). California, with 8.7 million acres, has



more land irrigated than any other state in the country (Figure 6). California irrigation is used to produce high-value crops, and as a consequence, gross farm sales in California are greater than in any other state. Other western states such as Idaho, Colorado, Montana, Oregon, and Washington, also have relatively large amounts of irrigated acreage. Western irrigation is primarily based on the use of surface water. While nonwestern states with extensive irrigation, such as Nebraska and Texas, are largely dependent on the utilization of groundwater.

### Natural Amenity Resources

During the settlement era, individuals and families were generally seeking areas where traditional natural resources such as potential farmland, minerals and forests were available. The presence or absence of natural amenity resources mattered little. It could be argued that from a rural development perspective, traditional natural resources have declined in importance, while natural amenity resources have greatly increased in importance. The use of labor-saving technology has greatly reduced employment in agriculture and the other natural resources industries. At the same time, computers and the Internet have provided opportunities for more people to live where they prefer, even if that is in a geographically remote location, and still be connected globally to markets and consumers. Consequently, many people are choosing to live in rural areas with the majority of them choosing to live in select, communities known for their natural amenities.

In an attempt to show the importance of natural amenity resources in the west, we examine the relationship between the natural amenity resources and population change in nonmetropolitan counties in the west. To accomplish this goal, we use a natural amenity scale developed by David McGranahan and researchers at the Economic Research Service (ERS) of USDA. This scale attempts to quantify the extent to which counties have the environmental qualities that most people prefer. The scale was calculated by giving points to counties that have relatively warm winters, temperate summers, topographical variation and the presence of water areas (McGranahan, 1999). Utilizing this scale, we took the nonmetropolitan counties in the 13 western states and divided them into quartiles based on their natural amenity scale score. It should be noted that western counties, on average, have amenity scale scores that are significantly higher than average scores for counties in other parts of the country. Figure 7 presents data showing the percent population change from 1980 to 2006 for counties by their natural amenity scale score quartile. It is apparent that there is a strong relationship between natural amenities and population change as those counties with greater natural amenities had much higher rates of population

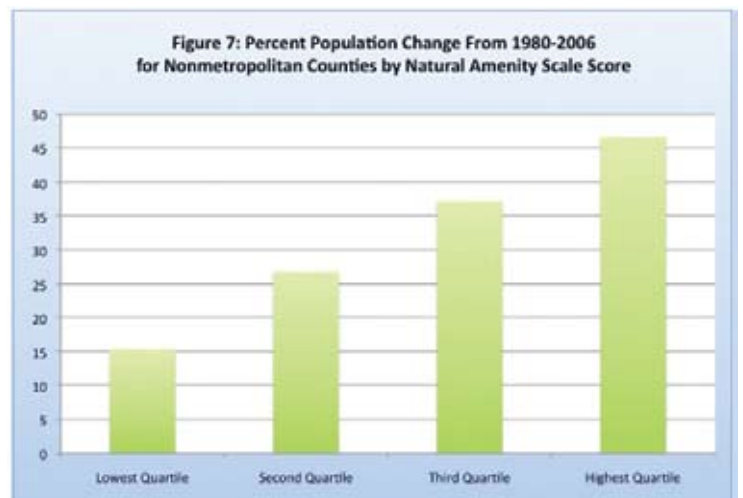
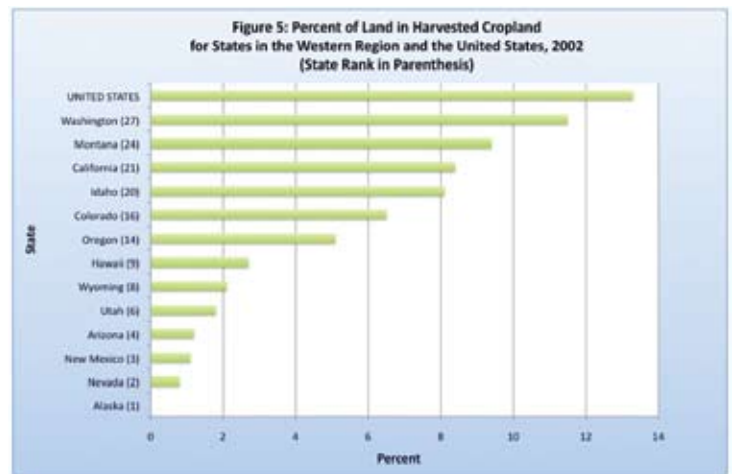
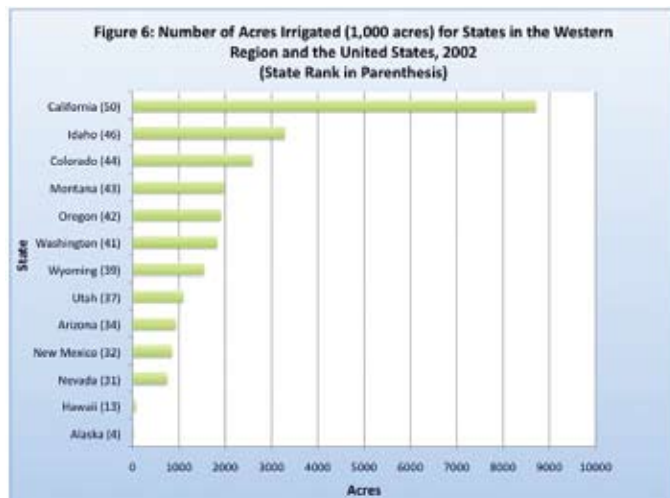
growth. Counties in the lowest quartile grew by an average of 15.3 percent, while counties in the highest quartile increased by an average of 46.6 percent.

### Conclusions

Compared to other parts of the country, the west has much higher proportions of their land in federal ownership and much smaller proportions in farmland. In an era where there is a strong relationship between natural amenities and development, western communities in extremely aesthetic areas, including those managed by the federal government, may be in a very advantageous position to retain and recruit businesses that will preserve their community's natural beauty while also increasing economic opportunities. •

### References

McGranahan, D.A. Natural Amenities Drive Rural Population Change, AER-781, (1999).



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### About the Briefs

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The Population Briefs provide information on the population trends in the western U.S. They are intended to provide both basic information and, when combined with the data tables on the WRDC website, more detailed information for further analysis and application.

The series of Population Briefs will include population trends in the western U.S. related to minorities, natural amenities, education, employment/labor, health, fuel usage, and more. Each topic will include a regional overview and then one brief focused on each of the 13 states in the WRDC's region. The briefs will also include data, where available, related to the population trends in the four western U.S. Territories.

The Population Briefs are available in PDF format on the WRDC website (<http://wrdc.usu.edu>) under 'Publications' and in paper format through the WRDC offices via email to wrdc@usu.edu.

### Data

Data for this series is obtained from the U.S. Census of Population for 1980, 1990, 2000, and, where available, 2006. Data is reported for all persons for whom race/ethnicity was reported.



The Western Rural Development Center (WRDC) is one of four regional centers funded by the United States Department of Agriculture (USDA) Cooperative State Research, Education and Extension Services (CSREES) to strengthen the capacity of local citizens to guide the future of their rural communities. Each of the four Centers link the research and extension capacity of regional land-grant universities with local decision-makers to address a wide range of rural development issues.

The WRDC also receives substantial support from several Utah State University units including Cooperative Extension, the Agricultural Experiment Station and the College of Natural Resources.

### Our commitment to the environment

This publication was printed on a Xerox 700 Digital Press using New Leaf Reincarnation paper that is 100% Recycled, 50% Post-Consumer Waste and processed Chlorine Free.

There is a Population Brief for each of the 13 states in the Western Region, and when available, one brief on each of the four U.S. Territories in the region.

To access the state briefs visit 'Rural Resources' on the WRDC website at <http://wrdc.usu.edu>.

State Briefs are available for:

- Alaska
- Arizona
- California
- Colorado
- Hawaii
- Idaho
- Montana
- Nevada
- New Mexico
- Oregon
- Utah
- Washington
- Wyoming

<http://wrdc.usu.edu>

Table 1: Federal Land for States in the Western Region and the United States (1,000 acres)

State	Total Land Area	Federal Land Management Agencies						Federal Land	Percent Federal
		U.S. Forest Service	National Park Service	Fish & Wildlife Service	Bureau of Land Management	Other			
Alaska	365,482	21,981	51,106	76,774	85,953	8,033	243,847	66.7	
Arizona	72,688	11,262	2,680	1,726	11,652	9,175	36,495	50.2	
California	100,207	20,741	7,559	472	15,128	3,080	46,980	46.9	
Colorado	66,486	14,487	653	85	8,374	0	23,599	35.5	
Hawaii	4,106	0	353	299	0	20	672	16.4	
Idaho	52,933	20,465	761	92	11,847	1,971	35,136	66.4	
Montana	93,271	16,923	1,221	1,328	7,965	1,802	29,239	31.3	
Nevada	70,264	5,835	777	2,390	47,874	7,713	64,589	91.9	
New Mexico	77,766	9,418	379	385	13,363	2,973	26,518	34.1	
Oregon	61,599	15,666	197	573	16,125	0	32,561	52.9	
Utah	52,697	8,180	2,099	112	22,868	1,766	35,025	66.5	
Washington	42,694	9,273	1,914	345	402	1,313	13,247	31.0	
Wyoming	62,343	9,238	2,393	102	18,354	1,445	31,532	50.6	
West Total	1,118,536	163,469	72,092	84,683	259,905	39,291	619,440	55.4	
(Percent)	(49.2)	(84.9)	(91.2)	(88.8)	(99.4)	(90.5)	(92.2)	-	
Remainder of United States	1,152,807	29,042	6,914	10,699	1,552	4,112	52,319	4.5	
(Percent)	(50.8)	(15.1)	(8.8)	(11.2)	(0.6)	(9.5)	(7.8)	-	
Total United States	2,271,343	192,511	79,006	95,382	261,457	43,403	671,759	29.6	
(Percent)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	-	

Table 2: Land in Farms, Harvested Cropland and Irrigated Land in the Western States, Remainder of the United States and United States Total (1,000 acres)

State	Total Land Area	Land in Farms	(Percent)	Harvested Cropland	(Percent of Total Land Harvested)	(Percent of Farm Land Harvested)	Irrigated Land
Alaska	365,482	901	0.2	32	0.0	3.5	3
Arizona	72,688	26,587	36.6	888	1.2	3.3	932
California	100,207	27,589	27.5	8,466	8.4	30.7	8,709
Colorado	66,486	31,093	46.8	4,347	6.5	14.0	2,591
Hawaii	4,106	1,300	31.7	109	2.7	8.4	69
Idaho	52,933	11,767	22.2	4,313	8.1	36.7	3,289
Montana	93,271	59,612	63.9	8,742	9.4	14.7	1,976
Nevada	70,264	6,331	9.0	549	0.8	8.7	747
New Mexico	77,766	44,810	57.6	856	1.1	1.9	845
Oregon	61,599	17,080	27.7	3,119	5.1	18.3	1,908
Utah	52,697	11,731	22.3	961	1.8	8.2	1,091
Washington	42,694	15,318	35.9	4,895	11.5	32.0	1,823
Wyoming	62,343	34,403	55.2	1,299	2.1	3.8	1,542
West Total	1,118,536	288,522	25.8	38,576	3.4	13.4	25,525
(Percent)	(49.2)	(30.8)	-	(12.7)	-	-	(46.1)
Remainder of United States	1,152,807	649,757	56.4	264,121	22.9	40.6	29,786
(Percent)	(50.8)	(69.2)	-	(87.3)	-	-	(53.9)
United States Total	2,271,343	938,279	41.3	302,697	13.3	32.3	55,311
(Percent)	(100.0)	(100.0)	-	(100.0)	-	-	(100.0)

Source: 2002 Census of Agriculture