

Population Dynamics of the Great Plains: 1950 to 2007

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Population Estimates and Projections

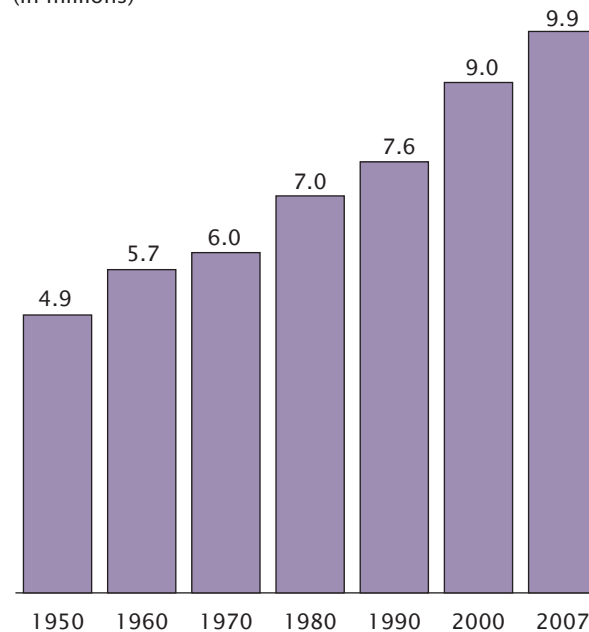
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The Great Plains region of the central United States, a vast area stretching across the country's midsection from the Mexican border to the Canadian border, contains fully 18 percent of the landmass of the lower 48 states and roughly 3 percent of their population. The demographic trends within this region are in some ways distinct from national patterns. In recent U.S. Census Bureau reports on population distribution, age structure, and net migration, county-level maps reveal that the Great Plains contain numerous counties with declining populations, high percentages of their populations aged 65 and older, and net domestic out-migration.¹ While the confluence of these conditions exists in other parts of the country, it occurs in a large expanse of the Great Plains.

¹ Marc J. Perry and Paul J. Mackun, 2001, "Population Change and Distribution, 1990 to 2000," Washington, DC, Census 2000 Brief, C2KBR/01-2, U.S. Census Bureau, available on the Census Bureau's Internet site at <www.census.gov/prod/2001pubs/c2kbr01-2.pdf>; Lisa Hetzel and Annetta Smith, 2001, "The 65 Years and Over Population: 2000," Washington, DC, Census 2000 Brief, C2KBR/01-10, U.S. Census Bureau, available on the Census Bureau's Internet site at <www.census.gov/prod/2001pubs/c2kbr01-10.pdf>; and Marc J. Perry, 2006, "Domestic Net Migration in the United States: 2000 to 2004," Population Estimates and Projections, U.S. Census Bureau, available on the Census Bureau's Internet site at <www.census.gov/prod/2006pubs/p25-1135.pdf>.

Figure 1.
**Population of the Great Plains:
1950 to 2007**

(In millions)



Source: U.S. Census Bureau, Decennial Census of Population: 1950 to 2000; Population Estimates Program: 2007.

This report examines the population dynamics of the Great Plains in the period from 1950 to 2007. Analysis for 1950 to 2000 uses decennial census data; for 2007, the data are from the Census Bureau's Population Estimates Program. Based on patterns of county-level population growth and decline, the report analyzes the demographic components of population change to establish which demographic events (births, deaths, or migration) most strongly affected the population changes. Additionally, the

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report looks at the age and sex structure of the Great Plains population, examining variations between the region's and national patterns.

Delineations of the boundary of the Great Plains vary, ranging from legal entity-based delineations (e.g., counties, states) to those based on physical geography (Rossum and Lavin, 2000). The definition applied in this report is a county-based version of a

physiographic province, which is based on similarities in topography and physiographic history.

POPULATION CHANGE 1950 TO 2007

The Great Plains population has grown steadily in recent decades and more than doubled from 4.9 million people in 1950 to 9.9 million people in 2007 (Figure 1). During this period, the rate of

population growth in the Great Plains was similar to that of the United States, 102 percent compared with 99 percent. The period of largest growth in the Great Plains was between 1990 and 2000, with the addition of 1.4 million people. Since 1950, population growth was at its lowest from 1960 to 1970, with just under a quarter of a million people added to the region.

THE GREAT PLAINS DEFINED

The delineation of the Great Plains region used in this report is derived from a map, "Physical Divisions of the United States," which appeared in *Physiographic Divisions of the United States* (Fenneman and Johnson, 1946) and was digitized in 1988 by the U.S. Geological Survey. The map shows eight U.S. physiographic divisions, which are divided into provinces and then subdivided into sections. A province of the Interior Plains division, the Great Plains consists of ten sections—Missouri Plateau, glaciated; Missouri Plateau, unglaciated; Black Hills; High Plains; Plains Border; Colorado Piedmont; Raton; Pecos Valley; Edwards Plateau; and the Texas Hill section (Central Texas Uplift) (Figure 2). The section names indicate an area more geographically diverse than the Great Plains province name suggests.

To create the Great Plains boundary, the digitized province was superimposed onto a map of U.S. counties. Counties whose geographic centers were within the borders of the Great Plains province were considered part of the region. The boundary of the Great Plains region was then delineated to conform to the outermost borders of the peripheral counties.

For the purposes of this report, the Great Plains is sometimes referred to as a region, not to be confused with a census region.

The Great Plains stretches across parts of ten states—Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming. In 1950, the region consisted of 375 counties, growing to 376 counties in 2001 with the addition of Broomfield County, Colorado (Broomfield County was formed from parts of Adams, Boulder, Jefferson, and Weld Counties on November 15, 2001). The land area of the 376 counties covers 533,100 square miles, or 18 percent of the contiguous U.S. land area.

In 2007, most counties (261 of 376) in the Great Plains had a population size of fewer than 10,000 people (Figure 3). Only 34 counties in the region had more than 50,000 residents. Of the 22 Great Plains counties with populations above 100,000, 21 were located in Colorado or Texas. Yellowstone County, Montana, which contains the city of Billings, was the exception.

The ten states containing Great Plains counties all grew in population size during the 1950 to 2007 period (Table 1). Colorado and Texas

outpaced the population growth in the other states—their population size more than tripled. North Dakota was the only state to gain

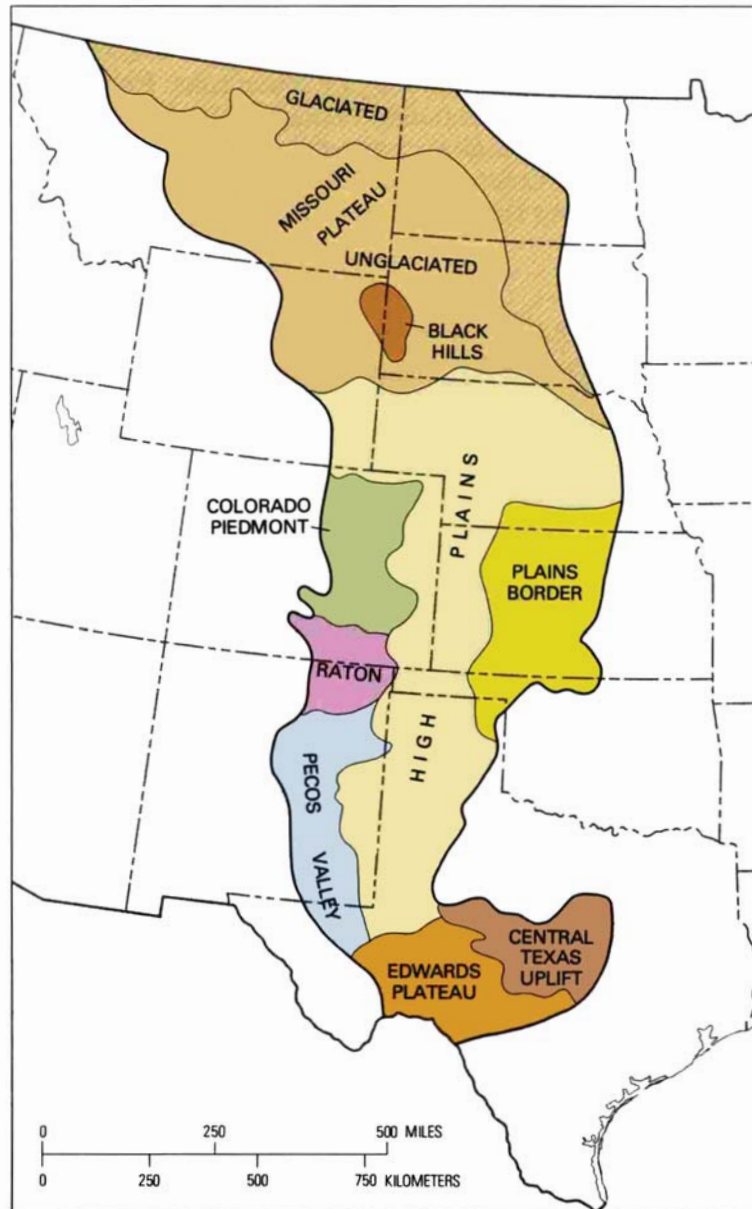
fewer than 100,000 people during the period. It gained roughly 20,000 people, an increase of 3 percent.

Great Plains counties located in Colorado and Texas—one-third of the Great Plains counties—gained 4.8 million people and accounted for 96 percent of the total population growth in the region. Great Plains counties in four states show total population losses, ranging from just under 900 people in Oklahoma to over 45,000 in Nebraska.

The Great Plains region’s share of the ten states’ total population fell from 28 percent in 1950 to 24 percent in 2007 (Table 2). In some states, the decline was more pronounced. For instance, the share of New Mexico’s population in the Great Plains fell 20 percentage points, from 35 percent in 1950 to 15 percent in 2007. Shares remained relatively stable in North Dakota, Oklahoma, and Wyoming. South Dakota was the only state where the Great Plains accounted for an increased share of the population, growing by 1 percentage point.

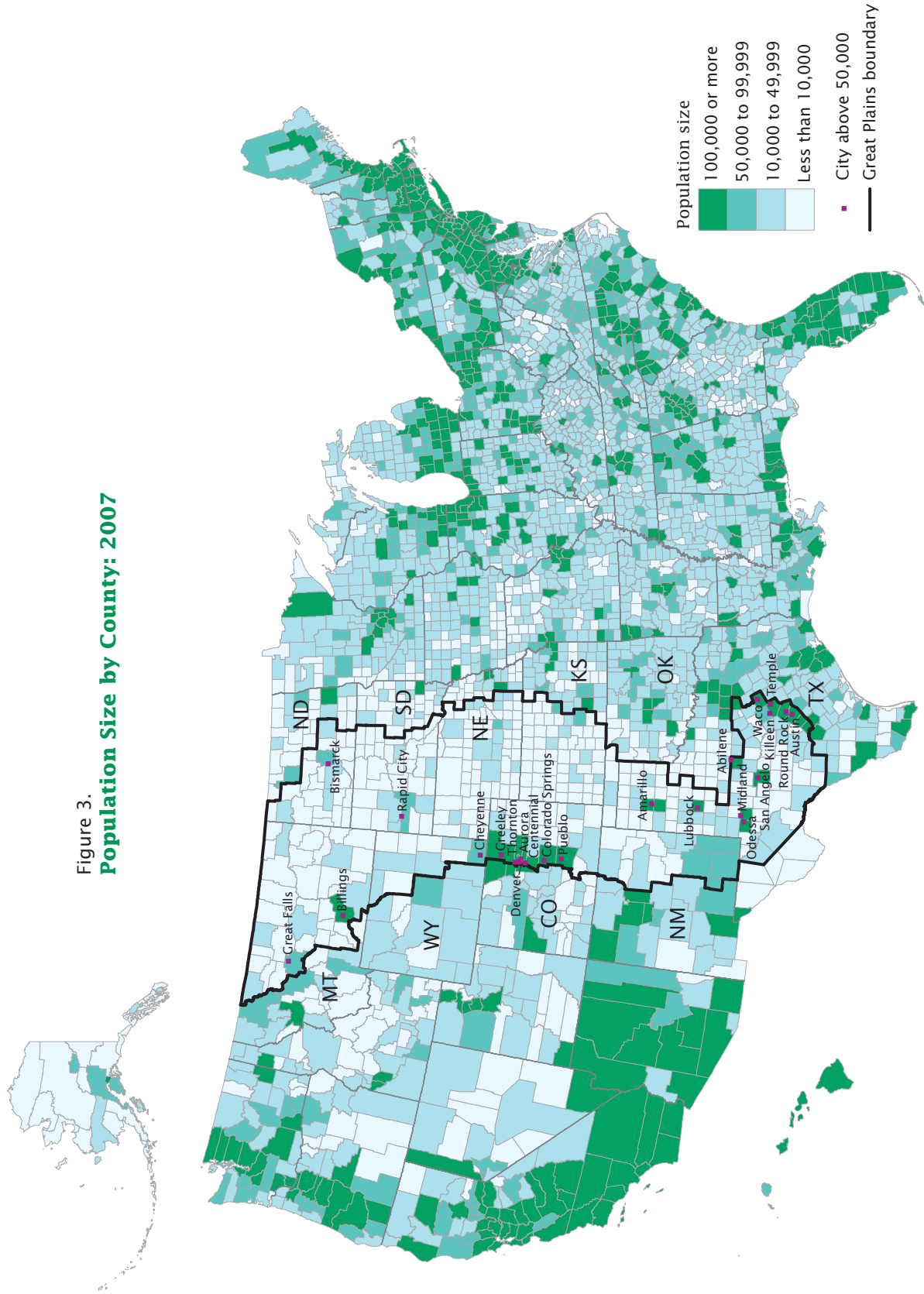
From 1950 to 2007, the share of the total Great Plains population declined in each state except Colorado and Texas; shares for both grew by over 10 percentage points (Table 3). In 1950, nearly a quarter of the Great Plains population lived in the Kansas and Nebraska portions of the region. By 2007, the two states’ share of the Great Plains population dropped by more than half to 11 percent. The share of the Great Plains population in North Dakota and Oklahoma dropped to less than half their 1950 levels.

Figure 2.
Physiographic Sections of the Great Plains Province



Source: Trimble, D., U.S. Geological Survey, Geological Survey Bulletin 1493, 1980.

Figure 3.
Population Size by County: 2007



Source: U.S. Census Bureau, Population Estimates Program: 2007.

Table 1.

Great Plains Population Change by State: 1950 to 2007

Area	Census year						July 1, 2007, estimate	Change, 1950 to 2007	
	1950	1960	1970	1980	1990	2000		Numeric	Percent
Ten state total	17,335,559	20,520,665	23,030,047	27,997,830	31,584,974	37,615,483	41,820,314	24,484,755	141.2
Inside Great Plains . . .	4,891,888	5,747,147	5,996,837	6,996,232	7,579,566	8,962,343	9,897,182	5,005,294	102.3
Outside Great Plains . . .	12,443,671	14,773,518	17,033,210	21,001,598	24,005,408	28,653,140	31,923,132	19,479,461	156.5
Colorado	1,325,089	1,753,947	2,209,596	2,889,735	3,294,394	4,301,261	4,861,515	3,536,426	266.9
Inside Great Plains	931,459	1,237,101	1,470,172	1,775,551	1,988,843	2,602,951	3,048,758	2,117,299	227.3
Outside Great Plains . . .	393,630	516,846	739,424	1,114,184	1,305,551	1,698,310	1,812,757	1,419,127	360.5
Kansas	1,905,299	2,178,611	2,249,071	2,364,236	2,477,574	2,688,418	2,775,997	870,698	45.7
Inside Great Plains	528,612	540,726	519,640	526,657	500,751	516,226	492,169	-36,443	-6.9
Outside Great Plains . . .	1,376,687	1,637,885	1,729,431	1,837,579	1,976,823	2,172,192	2,283,828	907,141	65.9
Montana	591,024	674,767	694,409	786,690	799,065	902,195	957,861	366,837	62.1
Inside Great Plains	314,870	376,425	365,474	393,767	384,116	401,152	404,228	89,358	28.4
Outside Great Plains . . .	276,154	298,342	328,935	392,923	414,949	501,043	553,633	277,479	100.5
Nebraska	1,325,510	1,411,330	1,485,333	1,589,825	1,578,385	1,711,263	1,774,571	449,061	33.9
Inside Great Plains	637,177	615,785	601,805	628,121	592,942	607,874	591,528	-45,649	-7.2
Outside Great Plains . . .	688,333	795,545	883,528	961,704	985,443	1,103,389	1,183,043	494,710	71.9
New Mexico	681,187	951,023	1,017,055	1,303,302	1,515,069	1,819,046	1,969,915	1,288,728	189.2
Inside Great Plains	238,307	282,874	253,490	276,630	286,402	303,167	302,892	64,585	27.1
Outside Great Plains . . .	442,880	668,149	763,565	1,026,672	1,228,667	1,515,879	1,667,023	1,224,143	276.4
North Dakota	619,636	632,446	617,792	652,717	638,800	642,200	639,715	20,079	3.2
Inside Great Plains	231,247	234,986	218,585	242,780	231,813	230,801	230,490	-757	-0.3
Outside Great Plains . . .	388,389	397,460	399,207	409,937	406,987	411,399	409,225	20,836	5.4
Oklahoma	2,233,351	2,328,284	2,559,463	3,025,487	3,145,585	3,450,654	3,617,316	1,383,965	62.0
Inside Great Plains	32,212	31,579	31,930	32,896	29,806	32,674	31,330	-882	-2.7
Outside Great Plains . . .	2,201,139	2,296,705	2,527,533	2,992,591	3,115,779	3,417,980	3,585,986	1,384,847	62.9
South Dakota	652,740	680,514	666,257	690,768	696,004	754,844	796,214	143,474	22.0
Inside Great Plains	229,860	252,239	244,114	263,256	267,638	284,025	290,222	60,362	26.3
Outside Great Plains . . .	422,880	428,275	422,143	427,512	428,366	470,819	505,992	83,112	19.7
Texas	7,711,194	9,579,677	11,198,655	14,225,513	16,986,510	20,851,820	23,904,380	16,193,186	210.0
Inside Great Plains	1,628,087	2,043,086	2,161,796	2,678,388	3,119,079	3,786,198	4,293,980	2,665,893	163.7
Outside Great Plains . . .	6,083,107	7,536,591	9,036,859	11,547,125	13,867,431	17,065,622	19,610,400	13,527,293	222.4
Wyoming	290,529	330,066	332,416	469,557	453,588	493,782	522,830	232,301	80.0
Inside Great Plains	120,057	132,346	129,831	178,186	178,176	197,275	211,585	91,528	76.2
Outside Great Plains . . .	170,472	197,720	202,585	291,371	275,412	296,507	311,245	140,773	82.6

Source: U.S. Census Bureau, Decennial Census of Population: 1950 to 2000; Population Estimates Program: 2007.

Table 2.

Great Plains Share of State Population: 1950 to 2007

Area	Percent of population inside Great Plains							Percentage-point change, 1950 to 2007
	Census year						July 1, 2007, estimate	
	1950	1960	1970	1980	1990	2000		
Ten state total . . .	28.2	28.0	26.0	25.0	24.0	23.8	23.7	-4.6
Colorado	70.3	70.5	66.5	61.4	60.4	60.5	62.7	-7.6
Kansas	27.7	24.8	23.1	22.3	20.2	19.2	21.6	-6.2
Montana	53.3	55.8	52.6	50.1	48.1	44.5	42.2	-11.1
Nebraska	48.1	43.6	40.5	39.5	37.6	35.5	33.3	-14.7
New Mexico	35.0	29.7	24.9	21.2	18.9	16.7	15.4	-19.6
North Dakota	37.3	37.2	35.4	37.2	36.3	35.9	36.0	-1.3
Oklahoma	1.4	1.4	1.2	1.1	0.9	0.9	0.9	-0.6
South Dakota	35.2	37.1	36.6	38.1	38.5	37.6	36.5	1.2
Texas	21.1	21.3	19.3	18.8	18.4	18.2	18.0	-3.2
Wyoming	41.3	40.1	39.1	37.9	39.3	40.0	40.5	-0.9

Source: U.S. Census Bureau, Decennial Census of Population: 1950 to 2000; Population Estimates Program: 2007.

Table 3.

Share of Great Plains Population by State: 1950 to 2007

Area	Percent of population inside state							Percentage-point change, 1950 to 2007
	Census year						July 1, 2007, estimate	
	1950	1960	1970	1980	1990	2000		
Great Plains	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(X)
Colorado	19.0	21.5	24.5	25.4	26.2	29.0	30.8	11.8
Kansas	10.8	9.4	8.7	7.5	6.6	5.8	5.0	-5.8
Montana	6.4	6.5	6.1	5.6	5.1	4.5	4.1	-2.4
Nebraska	13.0	10.7	10.0	9.0	7.8	6.8	6.0	-7.0
New Mexico	4.9	4.9	4.2	4.0	3.8	3.4	3.1	-1.8
North Dakota	4.7	4.1	3.6	3.5	3.1	2.6	2.3	-2.4
Oklahoma	0.7	0.5	0.5	0.5	0.4	0.4	0.3	-0.3
South Dakota	4.7	4.4	4.1	3.8	3.5	3.2	2.9	-1.8
Texas	33.3	35.5	36.0	38.3	41.2	42.2	43.4	10.1
Wyoming	2.5	2.3	2.2	2.5	2.4	2.2	2.1	-0.3

(X) Not applicable.

Source: U.S. Census Bureau, Decennial Census of Population: 1950 to 2000; Population Estimates Program: 2007.

Almost two-thirds (244 of 376) of the counties in the Great Plains lost population between 1950 and 2007 (Figures 4 and 5). The total loss for those 244 counties was roughly 600,000 people. In addition, 69 Great Plains counties lost over 50 percent of their population. The largest decline occurred in Harding County, New Mexico, which lost 76

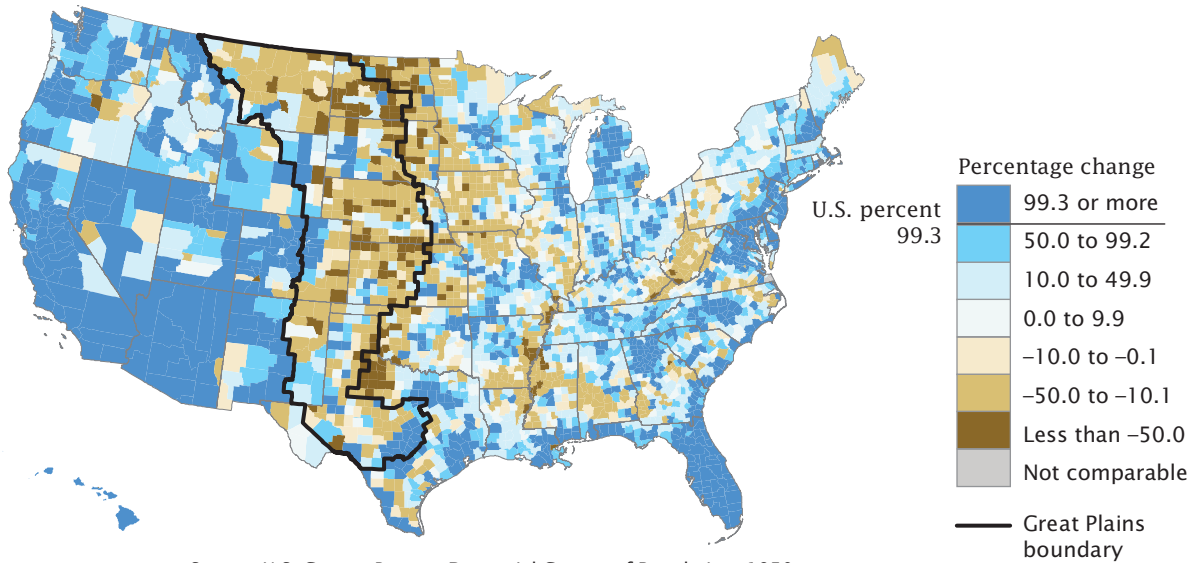
percent of its population between 1950 and 2007.

For the most part, population growth occurred within counties along the periphery of the region in Montana, Wyoming, Colorado, New Mexico, and Texas. Other areas of growth include a corridor of High Plains counties running through the Texas and Oklahoma

panhandles into the southwestern corner of Kansas and a group of counties in and around the Black Hills of South Dakota.

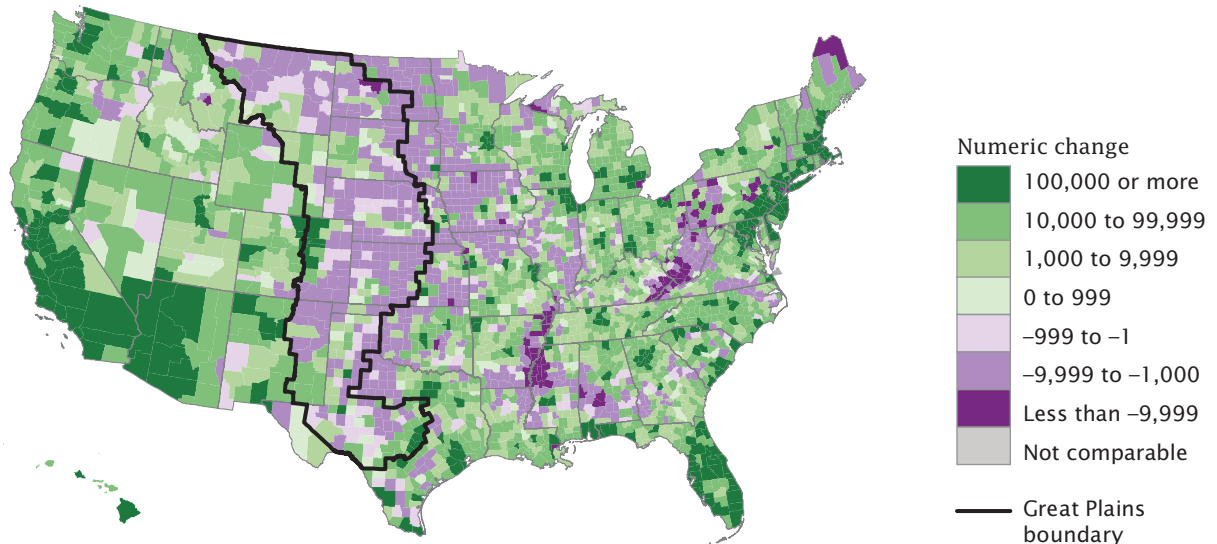
County-level population loss was the norm in the Great Plains portions of most states. Twenty of the 25 Great Plains counties in North Dakota lost population, as did 46 of the 58 Great Plains

Figure 4.
Percent Change in Population by County: 1950 to 2007



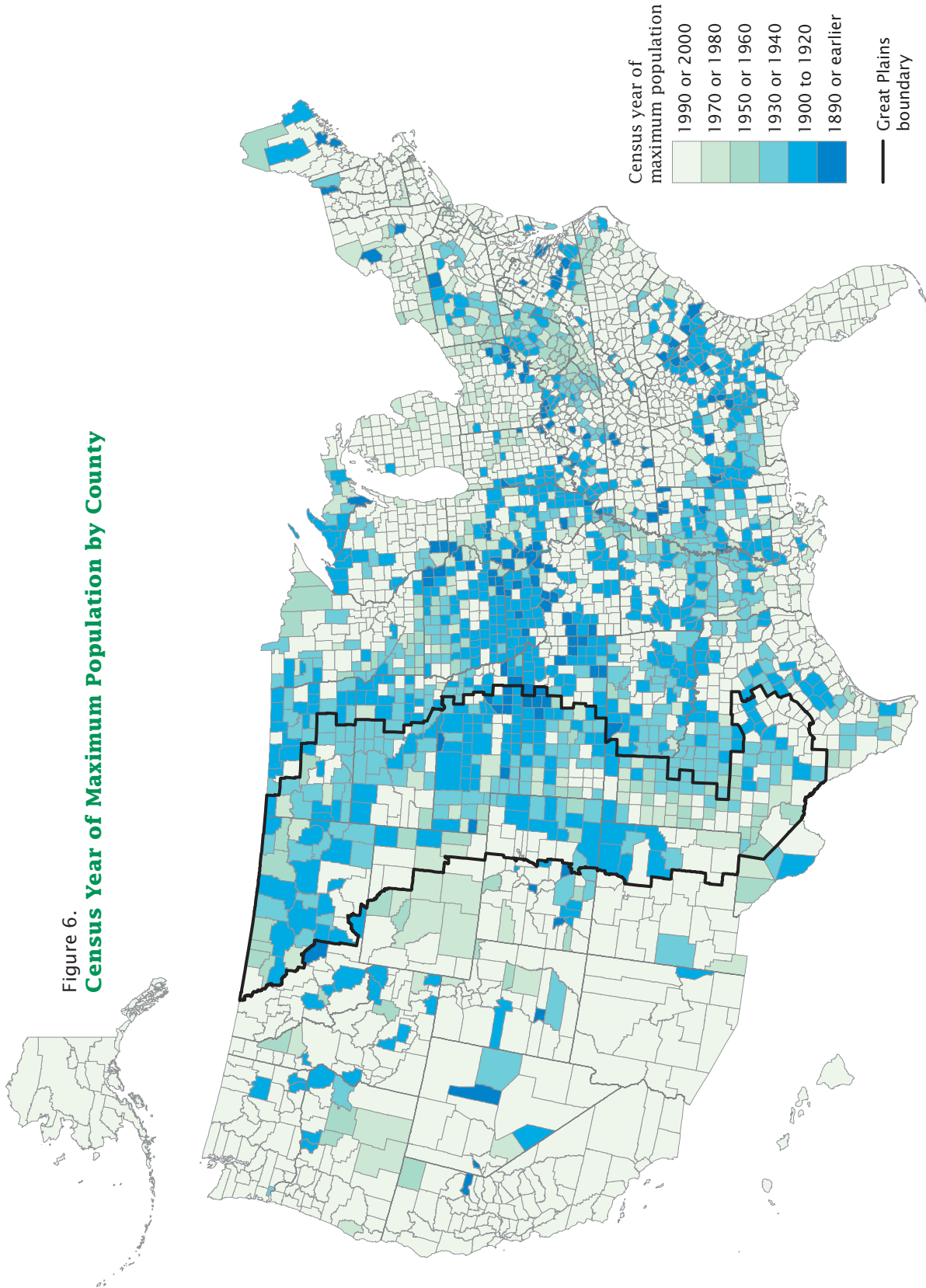
Source: U.S. Census Bureau, Decennial Census of Population: 1950;
 Population Estimates Program: 2007.

Figure 5.
Numeric Change in Population by County: 1950 to 2007



Source: U.S. Census Bureau, Decennial Census of Population: 1950;
 Population Estimates Program: 2007.

Figure 6.
Census Year of Maximum Population by County



Source: Census 2000, SFI; Richard L. Forstall, "Population of States and Counties of the United States: 1790 to 1990," U.S. Census Bureau, Washington, DC, 1996, available at <www.census.gov/population/www/censusdata/hiscendata.html>.

counties in Kansas. In addition, around half of the Great Plains counties in Colorado and Texas, the states that contributed the most to the region's overall population gain, lost population.

CENSUS YEAR OF MAXIMUM POPULATION

For most Great Plains counties, population loss started before 1950. For a majority of counties in and just outside the eastern border of the Great Plains, the census year of maximum population occurred before 1950 and in some cases, before 1900 (Figure 6). Almost 60

percent (217 of 376) of Great Plains counties reached their maximum population before 1950, with most of those peaking between 1900 and 1920. Seventeen of those counties are in core based statistical areas (CBSAs), demonstrating that metro and micro area counties were subject to population decline. (The text box "Core Based Statistical Areas" defines this concept.) The most frequent year of maximum population, for just under 25 percent of Great Plains counties, was 1930. Most Great Plains counties that reached their maximum population during the last half of the twentieth century did so in 2000.

CORE BASED STATISTICAL AREAS

Metropolitan and micropolitan statistical areas—metro and micro areas—are geographic entities defined by the U.S. Office of Management and Budget (OMB) for use by federal statistical agencies in collecting, tabulating, and publishing federal statistics. Metro and micro areas are collectively known as core based statistical areas (CBSAs). A metro area contains a core urban area population of 50,000 or more. A micro area contains a core urban area population of at least 10,000 (but less than 50,000). Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

A metro or micro area's geographic delineation, or list of geographic components at a particular point in time, is referred to as its definition. During the period examined in this report, modifications in statistical area definitions have encompassed new metro areas, changed the definitions of some existing metro areas, and since 2003, identified micro areas. For comparative purposes, this report uses a single set of metro and micro area definitions published by the OMB as of December 2006 (Figure 7). Using a single set of metro and micro area definitions to examine population changes over time can affect the results of analyses.

CORE BASED STATISTICAL AREA STATUS OF GREAT PLAINS COUNTIES

The Great Plains has a higher share of its counties outside CBSAs than does the United States. Almost three-quarters of the counties in the Great Plains are outside CBSAs, compared with just over 43 percent of U.S. counties (Table 4). About 1-in-10 Great Plains counties is located in a metro area, compared with just over 1-in-3 counties in the United States. For micro areas, the shares are more similar, representing about 17 percent of Great Plains counties and 22 percent of counties in the United States.

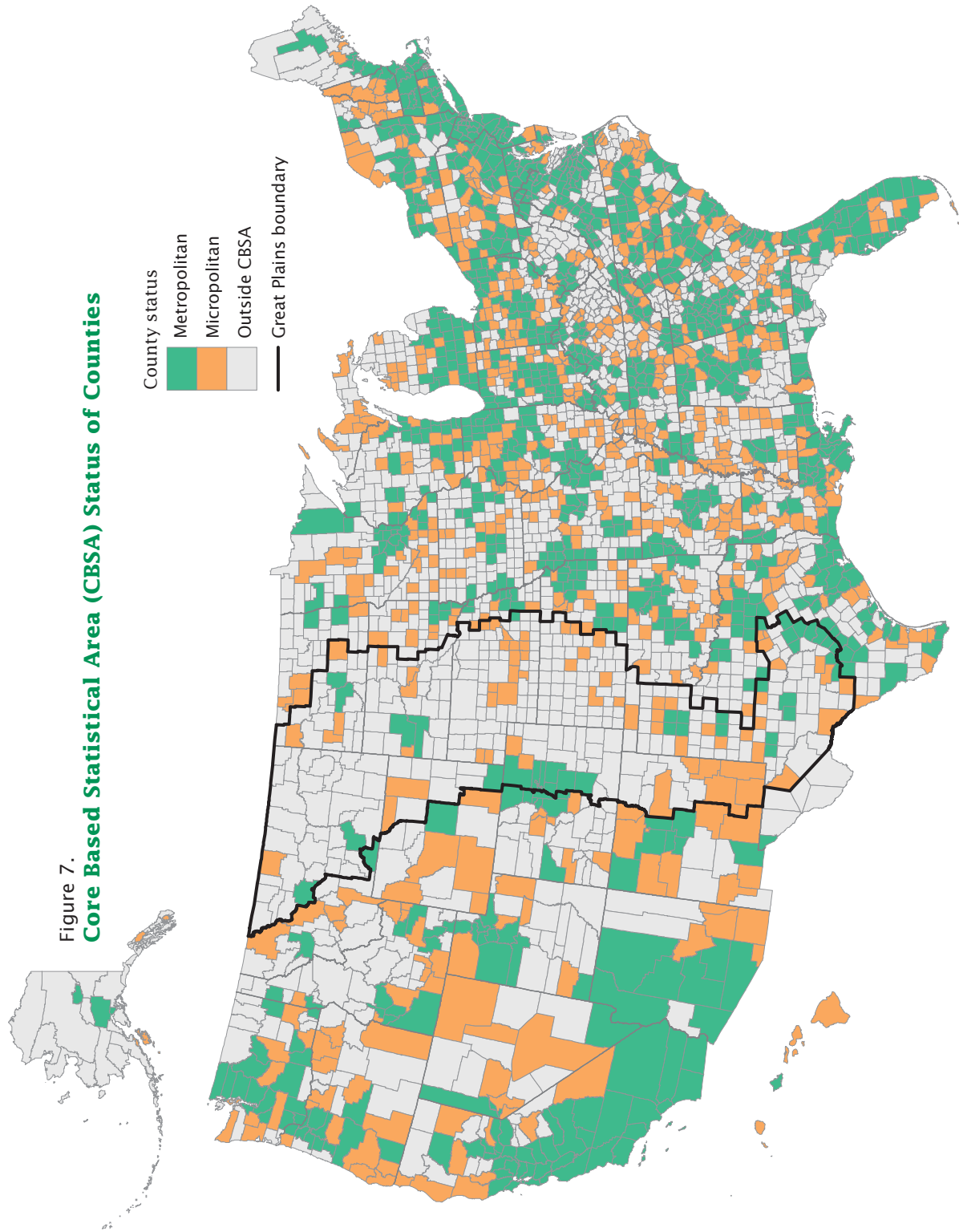
POPULATION TRENDS BY CORE BASED STATISTICAL AREA STATUS

In 2007, just over 68 percent of the Great Plains population resided in metro area counties (Figure 8). While this figure is lower than the 83 percent share for the United States, it is a higher percentage than in 1950, when 39 percent of the Great Plains population was metropolitan.

In 1950, people in the Great Plains were about as likely to live in a metro area (39 percent) as in a county outside any CBSA (38 percent). Since then, while the percentage metro has steadily increased, the percentage living outside any CBSA has dropped to 15 percent. The gap between the percentage metro in the Great Plains and in the United States has narrowed, from 35 percentage points in 1950 to 15 in 2007.

Figure 7.

Core Based Statistical Area (CBSA) Status of Counties



Note: Metropolitan and micropolitan statistical areas defined by the Office of Management and Budget as of December 2006.
Source: U.S. Census Bureau.

Table 4.
Number and Percentage of Counties by Core Based Statistical Area (CBSA) Status: 2007

Area	Number	Percent
United States	3,141	100.0
Inside CBSA	1,785	56.8
Inside metro area	1,092	34.8
Inside micro area	693	22.1
Outside CBSA	1,356	43.2
Inside Great Plains	376	100.0
Inside CBSA	103	27.4
Inside metro area	39	10.4
Inside micro area	64	17.0
Outside CBSA	273	72.6
Outside Great Plains	2,765	100.0
Inside CBSA	1,682	60.8
Inside metro area	1,053	38.1
Inside micro area	629	22.7
Outside CBSA	1,083	39.2

Note: Metropolitan and micropolitan statistical areas defined by the Office of Management and Budget as of December 2006.

Source: U.S. Census Bureau.

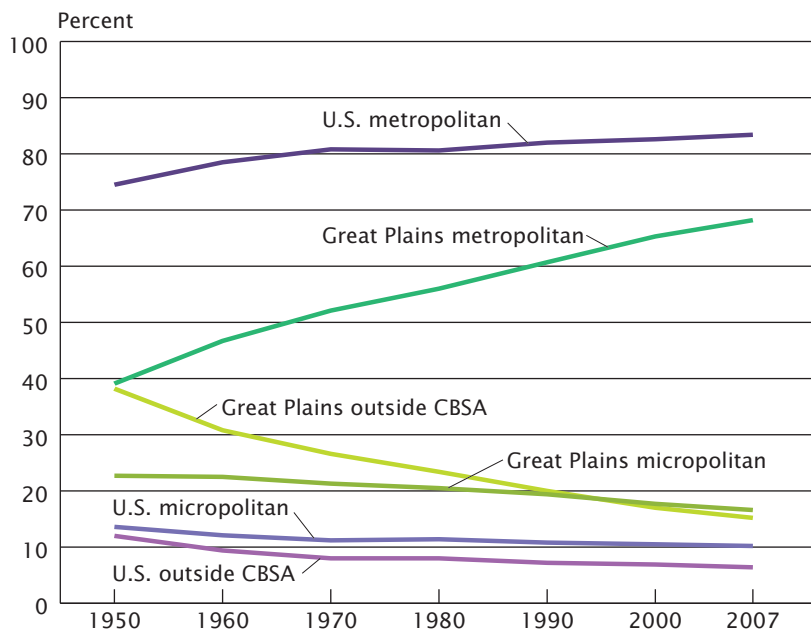
While only 1-in-10 Great Plains counties is in a metro area, the share of the Great Plains population residing in these counties is increasing. Thus, a majority of the Great Plains landscape is outside any CBSA, but the region's population is concentrating within its metro areas.

From 1950 to 2007, the share of the population living in micro areas declined for both the Great Plains and the United States. In addition, the gap between the percentage micro in the Great Plains and in the United States has narrowed, from 9 percentage points in 1950 to 6 in 2007.

DEMOGRAPHIC COMPONENTS OF CHANGE

For counties, population growth and decline during a given time can be attributed to several different processes: (1) natural increase (more births than deaths) or natural decrease (more deaths than births); (2) net domestic migration (the difference between in-migration from elsewhere in the country and out-migration); and (3) net international migration (movement to and from abroad). This section will examine these demographic components of change for the periods 1949–1950 and 2006–2007 at both the state and the county level for the Great Plains.

Figure 8.
Percentage of Population by Core Based Statistical Area (CBSA) Status: 1950 to 2007



Note: Metropolitan and micropolitan statistical areas defined by the Office of Management and Budget as of December 2006. Each year, the sum of the percents metropolitan, micropolitan, and outside CBSA equals 100 for the United States and for the Great Plains.

Source: U.S. Census Bureau, Decennial Census of Population: 1950 through 2000; Population Estimates Program: 2007.

Table 5.

Components of Population Change for Great Plains Counties by State Portion: 1949 to 1950 and 2006 to 2007

Area	Components of change									Population change, 2006 to 2007
	1949 to 1950			2006 to 2007						
	Births	Deaths	Natural increase	Births	Deaths	Natural increase	Net migration			
							Total	Domestic	Inter-national	
Great Plains	128,149	45,857	82,292	155,173	73,323	81,850	97,838	69,641	28,197	179,098
Colorado (part)	24,216	9,444	14,772	50,036	18,286	31,750	33,327	19,786	13,541	65,211
Kansas (part)	12,992	5,116	7,876	6,914	4,943	1,971	-2,997	-4,586	1,589	-1,084
Montana (part)	8,984	3,082	5,902	5,636	3,648	1,988	-70	-113	43	1,862
Nebraska (part)	15,351	6,459	8,892	8,234	6,297	1,937	-3,315	-4,213	898	-1,412
New Mexico (part)	7,502	2,204	5,298	4,821	2,885	1,936	124	-225	349	2,093
North Dakota (part)	6,668	1,910	4,758	2,892	2,140	752	1,143	1,070	73	1,866
Oklahoma (part)	784	266	518	540	227	313	-297	-526	229	-3
South Dakota (part)	6,663	2,285	4,378	4,737	2,419	2,318	-805	-874	69	1,488
Texas (part)	42,069	14,023	28,046	68,409	30,717	37,692	67,892	56,529	11,363	105,052
Wyoming (part)	2,920	1,068	1,852	2,954	1,761	1,193	2,836	2,793	43	4,025

Note: The data are provided only for the individual years, 1949 to 1950 and 2006 to 2007, but they are representative of the demographic patterns seen in other years in their respective periods. Population change includes estimates of the population derived using a residual method. More information on the Population Estimates Program's methodology for producing population estimates for counties is available at <www.census.gov/popest/topics/methodology/2007-st-co-meth.html>.

Source: Federal Security Agency, National Office of Vital Statistics: 1950; U.S. Census Bureau, Population Estimates Program: 2007.

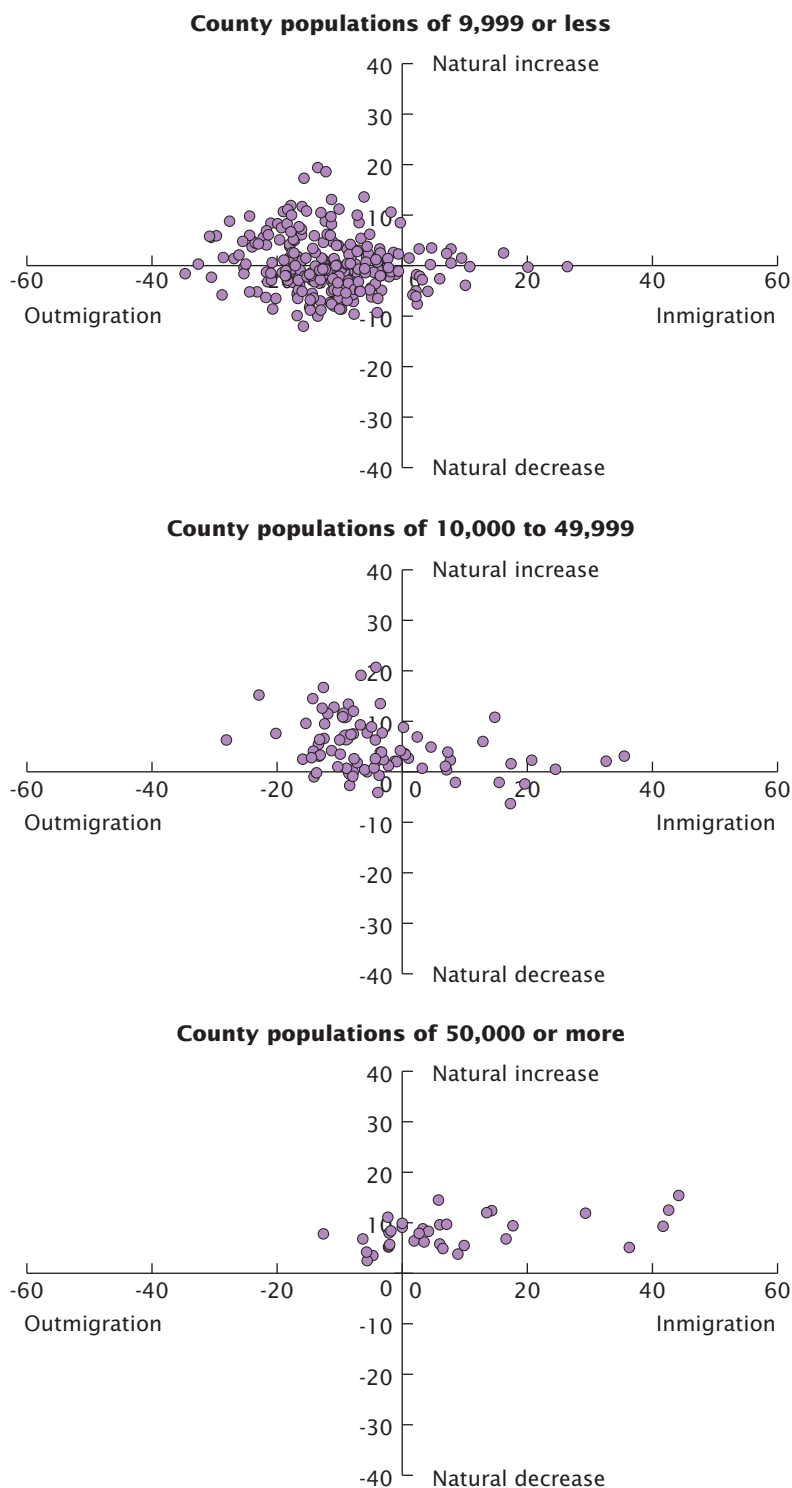
While the total natural increase in the Great Plains was similar in 1949–1950 and 2006–2007, growth in the natural increase in the Great Plains portions of Colorado and Texas was more than offset by a decline of over 27,000 in the natural increase in the Great Plains portions of the other eight states (Table 5). Nebraska (–7,000), Kansas (–5,900), and North Dakota (–4,000) had the largest declines in

natural increase. For North Dakota's Great Plains counties, natural increase dropped from 4,800 in 1949–1950 to 800 in 2006–2007, a decline of 84 percent.

Net domestic migration and net international migration can be summed to create overall net migration. In 2006–2007, the Great Plains had net migration of 97,800. While the Great Plains portions of Texas

(67,900) and Colorado (33,300) had the largest net migration, those in Wyoming (2,830), North Dakota (1,100), and New Mexico (100) also had positive net migration. The Great Plains counties in the other five states experienced net out-migration totaling just over 6,300 people. Overall, 142 Great Plains counties (38 percent) had positive net migration.

Figure 9.
Demographic Components of Change for Great Plains Counties by Population Size Category: 2000 to 2007
 (Average annualized rates per 1,000 people)



Source: U.S. Census Bureau, Population Estimates Program: 2007.

NET MIGRATION AND NATURAL INCREASE BETWEEN 2000 AND 2007

Examination of Great Plains counties by population size revealed strong patterns in the relative contributions of natural increase and net migration to overall population change (Figure 9). Among the smallest counties (those with fewer than 10,000 people), most (239 of 261) had negative net migration, and over 51 percent (133 of 261) had negative net migration *and* natural decrease (the lower left quadrant in the figure). Of the 261 counties, only 9 had both natural increase and positive net migration (the upper right quadrant).

Of the 81 mid-sized counties (those with 10,000 to 49,999 people), most (59 of 81) had negative net migration and 7 had both natural decrease *and* negative net migration. Of the 81 counties, 18 had both natural increase and positive net migration.

All 34 Great Plains counties with populations of 50,000 or more had natural increase, and 23 of the 34 had positive net migration.

While natural increase occurred in all counties with populations of 50,000 or more, it declined as a percentage of the growth in less-populated counties. In all population-size categories, counties with natural increase exhibited comparable rates of increase. Just over 55 percent of counties with a population of fewer than 10,000 people (146 of 261) experienced more deaths than births. Furthermore, the rates of natural decrease are highest in the smallest population-size category. Each population-size category contains counties that experienced outmigration, which, like the rates of natural decrease, are highest in the smallest population-size category.

Table 6.

Population Density for United States and Great Plains Counties by Core Based Statistical Area (CBSA) Status: 1950 to 2007

Area	Population density (persons per square mile of land area)							Change in population density, 1950 to 2007	
	1950	1960	1970	1980	1990	2000	July 1, 2007	Numeric	Percent
United States	42.5	50.7	57.4	64.0	70.3	79.5	85.2	42.7	100.5
Inside CBSA	84.4	103.6	119.3	133.0	147.3	167.3	180.1	95.7	113.3
Inside metro area	124.6	156.9	183.2	203.8	227.5	259.5	280.8	156.2	125.3
Inside micro area	30.7	32.3	33.9	38.4	39.9	43.8	45.3	14.7	47.8
Outside CBSA	9.2	8.5	8.2	9.1	9.0	9.7	9.8	0.6	6.5
 Inside Great Plains	4.4	5.2	5.4	6.3	6.9	8.1	9.0	4.5	102.3
Inside CBSA	21.0	27.6	30.5	37.1	42.1	51.6	58.5	37.6	179.2
Inside metro area	41.3	58.0	67.5	84.7	99.3	126.4	147.6	106.3	257.2
Inside micro area	11.4	13.3	13.1	14.7	15.1	16.3	16.6	5.2	45.9
Outside CBSA	1.9	1.8	1.7	1.7	1.6	1.6	1.5	-0.4	-23.0
 Outside Great Plains	59.8	71.3	81.1	90.3	99.1	112.0	119.9	60.1	100.4
Inside CBSA	90.9	111.4	128.4	142.8	158.0	179.1	192.5	101.6	111.7
Inside metro area	129.2	162.3	189.5	210.3	234.5	266.8	288.1	158.9	123.0
Inside micro area	34.0	35.6	37.5	42.5	44.1	48.5	50.3	16.3	47.9
Outside CBSA	16.0	14.9	14.4	16.2	16.1	17.5	17.6	1.6	9.9

Note: Metropolitan and micropolitan statistical areas defined by the Office of Management and Budget as of December 2006. Density calculations exclude Alaska whose large land area skews national analyses of population density.

Source: U.S. Census Bureau, Decennial Census of Population: 1950 to 2000; Population Estimates Program: 2007.

POPULATION DENSITY

From 1950 to 2007, overall population densities increased at about the same rate in the Great Plains and the United States.² However, changes in population density varied by CBSA status. Metro area counties in the Great Plains more than tripled in density between 1950 and 2007, from 41 people per square mile (ppsm) to 148 ppsm, while those in the United States as a whole (outside Alaska) more than doubled in density from 125 ppsm to 281 ppsm (Table 6). Among micro area counties, those in the Great Plains had population density increases similar to micro area counties in the United States. For outside-CBSA counties, those

² Density calculations exclude Alaska, whose large land area skews national analyses of population density.

in the Great Plains experienced an overall decline in population density of 23 percent. This decrease contrasts with an increase of 7 percent for outside-CBSA counties in the United States, from 9 ppsm to 10 ppsm.

In 1893, after the results of the 1890 census were available, historian Frederick Jackson Turner declared the American frontier “gone” (Turner, 1920). Turner made his declaration after the Census Bureau’s announcement that the frontier was no longer discernible, having been broken up by pockets of settlement throughout the country. While Census Bureau data would continue to chronicle the westward expansion of America’s settled areas, it would no longer reveal a frontier line. In 2007, the average population density in the

Great Plains was 9 ppsm—higher than the standard of 2 ppsm used by the Census Bureau when determining an area as settled.³ However, the average population density for outside-CBSA counties—roughly three-quarters of all Great Plains counties—fell below the historic standard for a settled area.

AGE AND SEX STRUCTURE

The age structure of the U.S. population changed between 1950 and 2007, with the median age climbing from 30.2 years to 36.6 years, an increase of more than 6 years (Table 7).⁴ The median age in the

³ Robert Porter, Henry Gannett, and William Hunt, 1893, “Progress of the Nation, 1790 to 1890,” Washington, DC, U.S. Census Bureau, available on the Census Bureau’s Internet site at <www2.census.gov/prod2/decennial/documents/1890a_v1-02.pdf>.

⁴ For 1950, data by age exclude Alaska and Hawaii.

Table 7.
**Median Age by Core Based Statistical Area (CBSA)
 Status: 1950 and 2007**

Area	Median age (years)		Increase in median age, 1950 to 2007
	1950	2007	
United States	30.2	36.6	6.4
Inside CBSA	30.6	36.4	5.8
Inside metro area	30.9	36.3	5.4
Inside micro area	28.5	37.8	9.3
Outside CBSA	27.6	39.9	12.3
Inside Great Plains	28.5	34.9	6.4
Inside CBSA	28.5	34.0	5.5
Inside metro area	28.8	33.6	4.8
Inside micro area	27.8	36.1	8.3
Outside CBSA	27.6	41.6	14.0
Outside Great Plains	30.2	36.7	6.4
Inside CBSA	30.6	36.5	5.9
Inside metro area	30.9	36.4	5.5
Inside micro area	28.5	37.9	9.4
Outside CBSA	27.6	39.8	12.2

Note: Metropolitan and micropolitan statistical areas defined by the Office of Management and Budget as of December 2006. For 1950, data exclude Alaska and Hawaii.

Source: U.S. Census Bureau, Decennial Census of Population: 1950; Population Estimates Program: 2007.

Great Plains increased in a similar manner, from 28.5 years in 1950 to 34.9 years in 2007. In 1950 and 2007, for both metro areas and micro areas, the median age was higher for the United States than for the Great Plains. In 1950, the median age for outside-CBSA counties was similar for both the United States and the Great Plains; however, by 2007, the median age was higher in the Great Plains.

The increase in median age for both the United States and the Great Plains reflects an aging population. For metro areas and micro areas, the increase in median age was higher in the United States than in the Great Plains. For outside-CBSA counties, the increase in median age was higher for the Great Plains

than the United States, at 14.0 years and 12.3 years, respectively.

In 1950, median ages by CBSA status were fairly similar both nationally and within the Great Plains. Nationally, they ranged from 27.6 years outside CBSA to 30.9 years for metro areas. In the Great Plains, the range was even more narrow: from 27.6 years (outside CBSA) to 28.8 years (metro areas). However, by 2007, while the range in median ages by CBSA status in the United States had edged upward to 3.6 years, the range by CBSA status in the Great Plains had grown to 8 years, from 33.6 years for metro areas to 41.6 years for outside-CBSA.

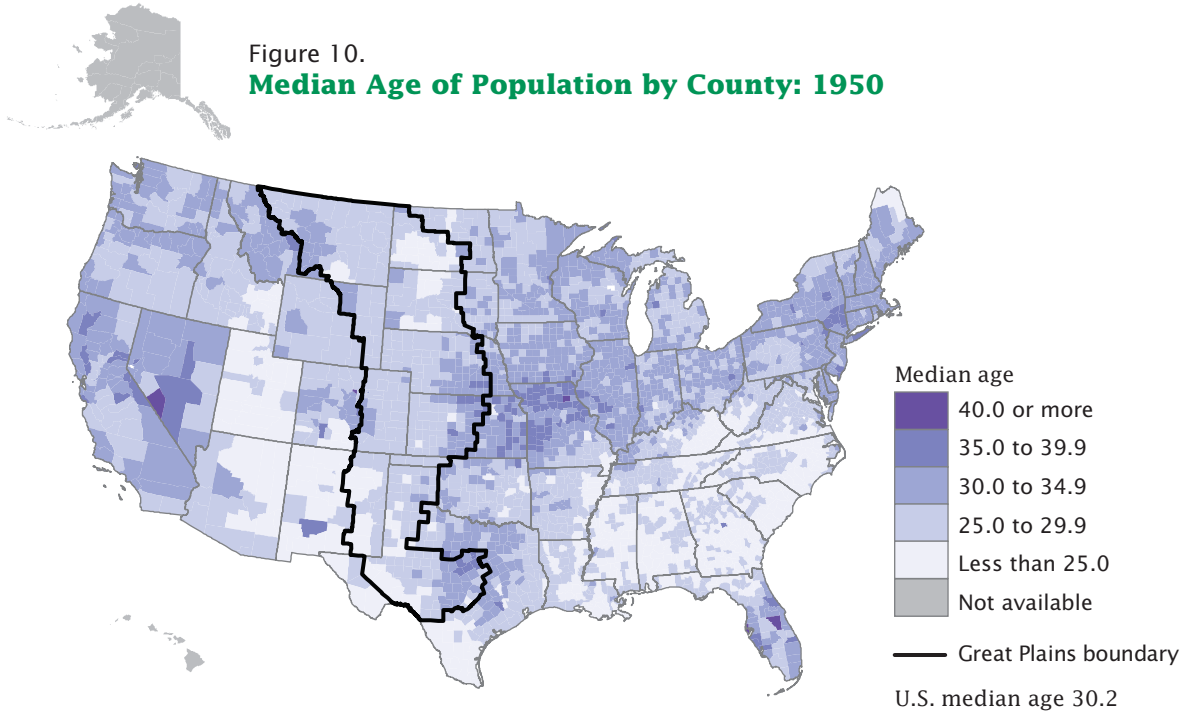
In 1950, the median age in most U.S. counties was under 30 years (Figure 10). By 2007, the median

age of the population in most U.S. counties was 35 years or more (Figure 11). In 1950, almost three-quarters of Great Plains counties had a median age below that of the U.S. median age of 30.2 years. In 2007, in comparison, just over 20 percent of Great Plains counties had median ages below the U.S. median age of 36.6 years, a decline of over 50 percentage points since 1950. Furthermore, in 1950, no Great Plains county had a median age above 37.1 years. By 2007, almost 55 percent of Great Plains counties had a median age of at least 40 years. Of these counties, over 80 percent are located outside CBSAs. One Great Plains county, Sheridan County, North Dakota, had the highest median age in the United States in 2007 at 54.5 years.

In 2007, the Great Plains had a younger overall age structure than that of the United States as a whole (Figure 12). The younger age structure in the Great Plains was the result of a young population residing in metro areas. For both sexes, the Great Plains generally had higher percentages than the United States in most age groups at or below 30 to 34 years and lower percentages in most age groups 35 to 39 years and above.

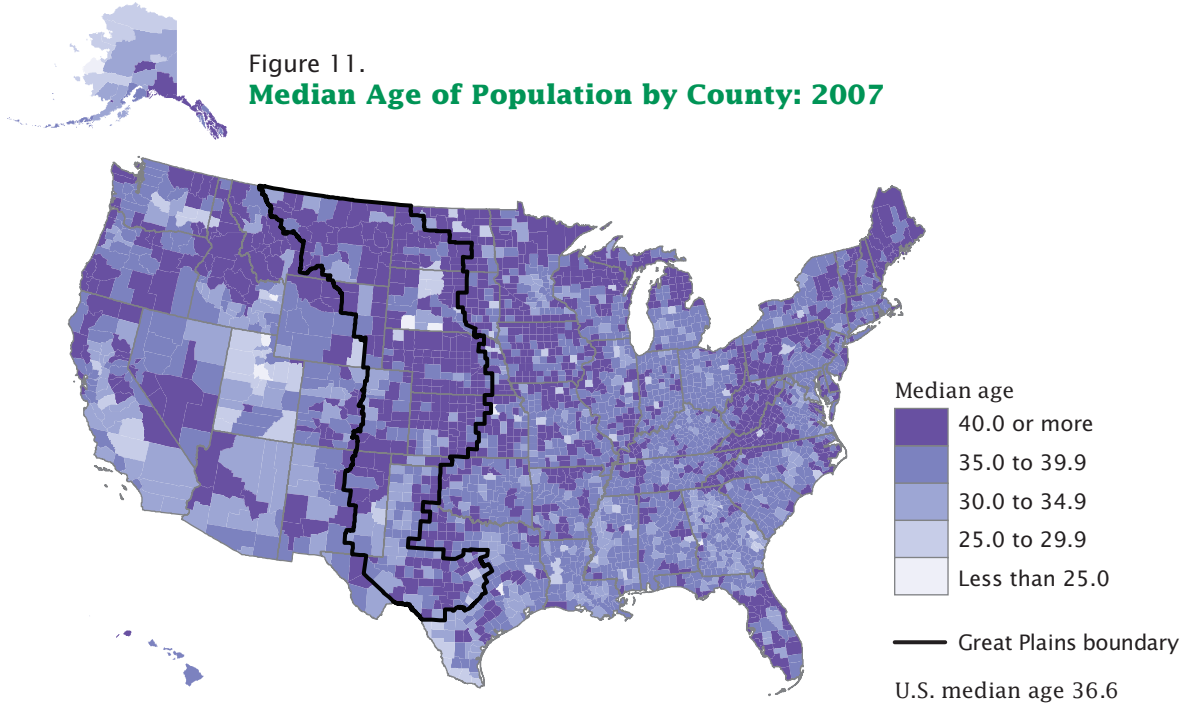
However, for counties outside CBSAs, which account for over 70 percent of the counties but just over 30 percent of the population in the Great Plains, noticeably lower percentages occur in the age groups 25 to 29 years through 40 to 44 years in the Great Plains than in the United States (Figure 13). In addition, outside CBSAs, the Great Plains had higher percentages in age groups 70 to 74 years and above than the United States overall.

Figure 10.
Median Age of Population by County: 1950



Source: U.S. Census Bureau, Decennial Census of Population: 1950.

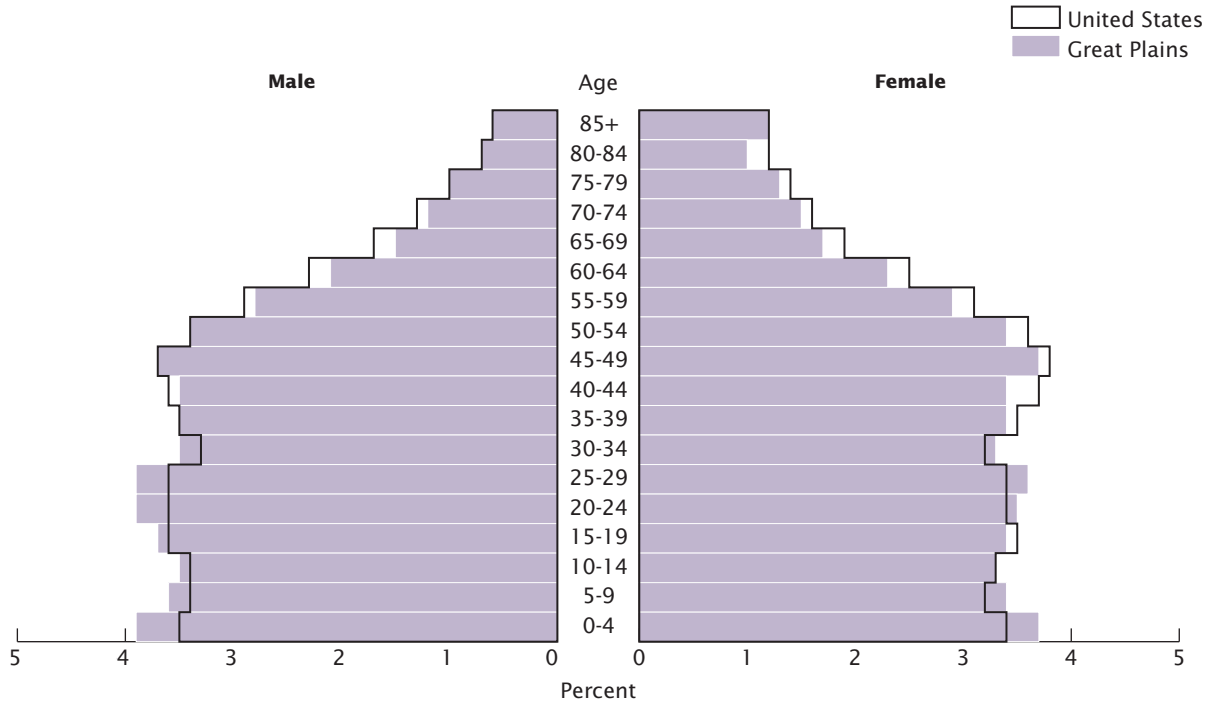
Figure 11.
Median Age of Population by County: 2007



Source: U.S. Census Bureau, Population Estimates Program: 2007.

Figure 12.

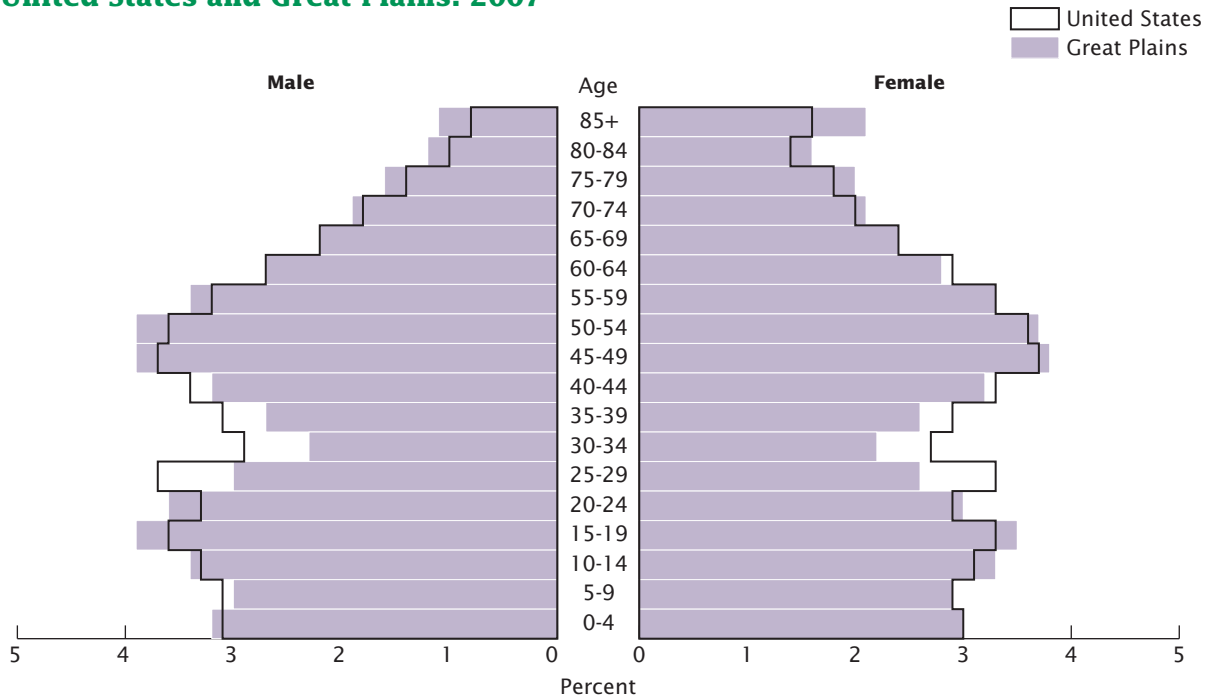
Age-Sex Structure for the United States and Great Plains: 2007



Source: U.S. Census Bureau, Population Estimates Program: 2007.

Figure 13.

Age-Sex Structure for Outside Core Based Statistical Areas (CBSAs) for the United States and Great Plains: 2007

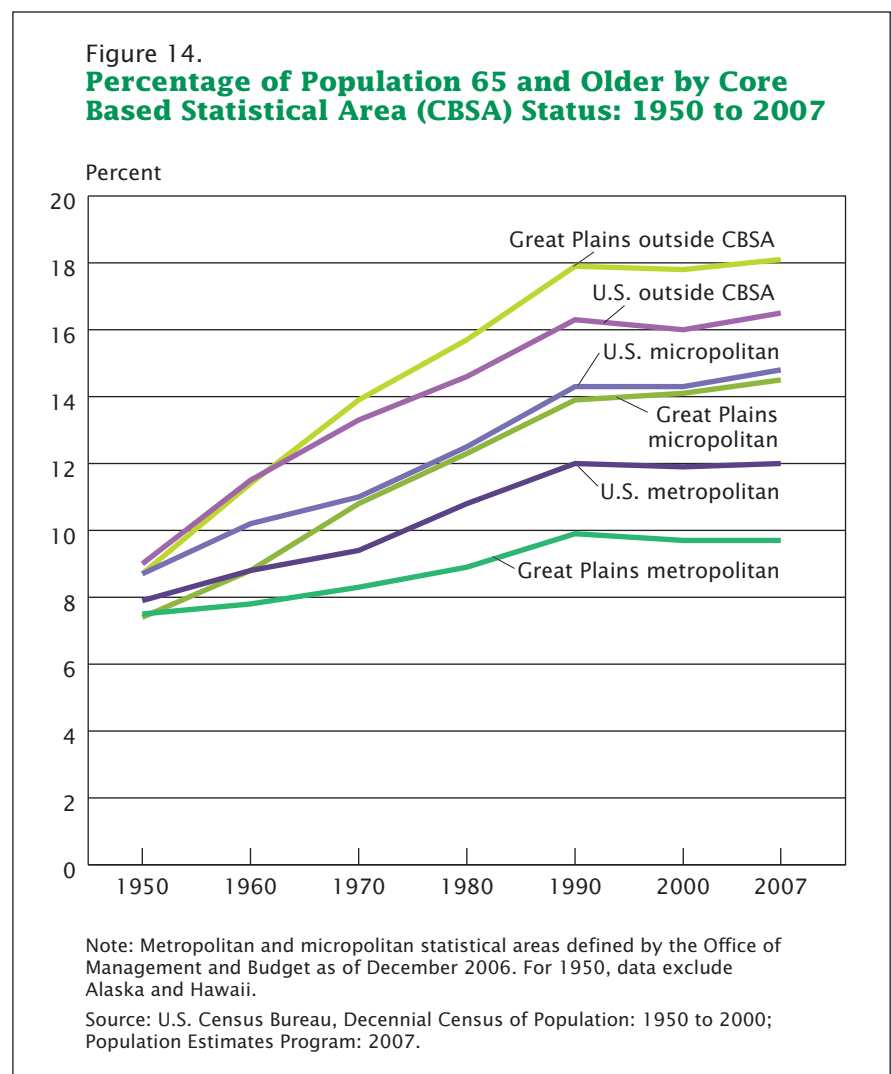


Source: U.S. Census Bureau, Population Estimates Program: 2007.

In 1950, the percentage of the population 65 and older in the Great Plains was similar to that of the United States. Over the next 57 years, the percentage of the population 65 and older grew to 12 percent for the Great Plains and 13 percent for the United States. The percentages seem to have reached a temporary plateau around 1990, most likely due to the lower birth rates associated with the Great Depression of the 1930s.

The distribution of the population 65 and older changed considerably from 1950 to 2007 (Figure 14). In 1950, the percentages of the population 65 and older were similar whether inside or outside a CBSA and inside or outside the Great Plains. By 2007, some gaps had emerged. For example, within the Great Plains, the difference in the percentage of the population 65 and older between metro areas and outside-CBSA areas grew from 1 percentage point in 1950 to 8 percentage points in 2007. In comparison, the corresponding difference in those same areas in the United States was smaller, at 1 percentage point in 1950 and 5 percentage points in 2007.

The gap between the percentage of the population 65 and older in the United States and the Great Plains metro areas also widened, growing from a difference of under 1 percentage point in 1950 to 2 percentage points in 2007. The percentage in the Great Plains remained below the U.S. percentage during this time. The difference in the percentage of the population 65 and older outside CBSAs in the Great Plains and in the United States grew during the 1960s. The percentage in the Great Plains moved from just below the U.S. level in 1950 to 2 percentage points above in 2007.



In 80 percent of the counties in the Great Plains, the percentage of the population 65 and older was higher than the United States average of 13 percent. One Great Plains county, McIntosh County, North Dakota, had the highest percentage of its population 65 and older in the United States in 2007 at 36 percent.

SUMMARY

The demographic history of the Great Plains shows remarkable shifts in population size, distribution, and age structure. While the region's overall growth is keeping pace with that of the United States as a whole, growth is concentrated primarily in metro area counties. In outside-CBSA counties, the population loss

is notable, especially for an already sparsely populated region. Many of the outside-CBSA counties have high median ages and large shares of older people. For many of these counties, deaths exceed births and net out-migration is common.

This report uses aggregates of county-level data for the region, portions of states, and areas inside or outside CBSAs. The summation of these data shows a regional population that is growing and diversifying in ways similar to the United States. However, when examining the data for single counties, the aging of the population and population declines become more pronounced.

The findings of this report indicate that the temporal changes in the demographics of the Great Plains show obvious directionalities with few signs of slowing. Monitoring these population trends, including the demographic components of change, will reveal whether the current patterns continue.

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METHODOLOGY AND SOURCES OF DATA

This report used 100 percent-count decennial census data for the years 1950 through 2000, estimates of the total population for July 1, 2007, and the components

of change for 2000 to 2007. The population universe is the resident population of the United States (50 states and the District of Columbia). Migration from outside the United States, including from Puerto Rico and the U.S. Island Areas (American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands) and by the U.S. population abroad, was treated as international migration. The methodology used by the Census Bureau's Population Estimates Program to produce population estimates for counties is available at <www.census.gov/popest/topics/methodology/2007-st-co-meth.html>. Each component of population change was estimated separately. This report used annualized rates of the components of population change expressed per 1,000 average population. Calculations of population density exclude both the population and land area of Alaska. All derived values were computed using unrounded data. For readability, most whole numbers in the text were rounded to the nearest hundred or thousand, and most decimal numbers were rounded to the nearest whole number. In the tables, whole numbers are unrounded and percents or medians are rounded to the nearest tenth.

ACCURACY AND RELIABILITY OF THE DATA

Potential sources of nonsampling error in the population estimates process include: (1) potential errors (such as differential undercoverage or overcoverage by demographic characteristics) in the enumeration (e.g., Census 2000) that serves as the base of the postcensal estimates; and (2) potential errors in the components of change (such as births, deaths, domestic migration, and net international migration)

used to carry forward the population estimates. Technical documentation for Census 2000 is available at <www.census.gov/prod/cen2000/doc/sf1.pdf>.

FOR MORE INFORMATION

Population estimates at the national, state, county, and city and town levels are produced each year by the Census Bureau's Population Estimates Program and are available at <www.census.gov/popest/estimates.html>. The Population Estimates Program publishes total population estimates each year for the nation, states, counties, and subcounty units (cities and minor civil divisions). For the nation, states, and counties, population estimates also include demographic components of change (births, deaths, and migration) and estimates by age, sex, race, and Hispanic origin. The reference date for population estimates is July 1.

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