The Changing Population Profile of the Great Plains [1]

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The redistribution of population in the Great Plains has dramatically transformed the region's landscape. The many rural towns and villages that once dotted the region are vanishing. These communities which flourished as trade centers for agriculture are depopulating as generations of young families move to the larger cities. In contrast, the few metropolitan centers in the region are enjoying continuous growth and even sprouting bedroom communities. Decades of selective rural-to-urban migration have distorted the age distribution in many counties, creating high proportions of elderly and dwindling numbers of youth.

Population change in the Great Plains has followed a very consistent pattern over the last half century. Although the boundaries of the Great Plains can be debated (see Bogue and Beale, 1961; Johnson and Bouzaher, 1995), the dominate flow of people is clearly from rural-to-urban. Researchers largely attribute this pronounced movement to agricultural restructuring brought on by technological advancements. What makes population dynamics in the Great Plains both interesting and alarming is its hidden complexity. From a regional or even state perspective, the data indicate sustained population growth. Yet from a county perspective the region is dominated by population loss. For example, all 12 states in the region increased their population during the past decade and the region as a whole expanded by 6.7 million people or 17 percent. In fact, the population in the region has nearly doubled since 1950. Hidden in these aggregate regional totals, however, is a very different picture of population redistribution. More than 85 percent of the region's population growth during the past decade occurred in

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metropolitan counties which account for only 19 percent of all counties in the region. In contrast, rural counties comprise over one-third of all counties in the Great Plains and their population base has declined by over one-fifth since 1950. The purpose of this article is to explore this contradiction and to provide context to the population changes that have occurred in the Great Plains.

What is the Great Plains?

There are a variety of definitions of the Great Plains. Typically, the territory included in most definitions reaches from Montana to Minnesota and down to New Mexico and Texas. These definitions most frequently are framed within an ecological or agricultural context. For example, the boundaries used by the U.S. Department of Agriculture are county based and include those counties in the territory having lower and more erratic rainfall, less timber, and less suitability for corn, cotton, or other crops without irrigation or periodic fallowing of land (Bouge and Beale, 1961). Since the purpose of this study is to provide context for policy making, including those at the Federal level, I will use a very broad definition. It encompasses the entire 12-state area with its 1,009 counties; approximately 42 percent of all U.S. land area outside of Alaska and Hawaii.

Residential Consolidation

One of the aspects of the Great Plains that is striking is its wide expanses of very sparsely population land. The Census reports that nearly 45.5 million people lived in the 12-state region of the Great Plains in April of 2000 (Table 1). This figure greatly distorts the actual distribution of population in the region and highlights the need for placing residential change in context. What is unique about the Great Plains is that its population is very concentrated. First, from a

statewide perspective, nearly 46 percent of the population in the 12-state region reside in Texas followed by another 11 percent who live in Minnesota (Table 1). In contrast, the region's four smallest populated states (i.e., Wyoming, North Dakota, South Dakota, and Montana) account for a combined total of slightly over 6 percent of the population in the Great Plains. Texas also captures nearly 55 percent of the region's metropolitan population (Table 1). However, the non-metropolitan population, especially those living in rural counties, is much less concentrated. As noted in Table 1, with the exception of Wyoming, Oklahoma, and New Mexico, the region's rural population is fairly evenly divided among states.

Table 1. Population Distribution by State in the Great Plains by County Type: 2000

States in the Great Plains	All Counties		Population as a Percent of 12-State Total				
				Non-Metropolitan Counties*			
	Population	Percent of 12-State Total	Metropolitan Counties	Total	Urban	Less Urban	Rural
Colorado	4,301,261	9.5	10.8	6.2	3.5	6.6	9.5
Iowa	2,926,324	6.4	4.1	12.3	12.5	12.5	10.8
Kansas	2,688,418	5.9	4.7	9.0	13.0	6.8	11.2
Minnesota	4,919,479	10.8	10.7	11.2	6.1	13.3	11.0
Montana	902,195	2.0	0.6	5.3	9.9	3.1	6.3
Nebraska	1,711,263	3.8	2.8	6.2	8.2	4.4	10.7
New Mexico	1,819,046	4.0	3.2	6.0	14.1	3.6	2.0
North Dakota	642,200	1.4	0.9	2.7	1.8	1.8	8.7
Oklahoma	3,450,654	7.6	6.5	10.4	10.6	12.0	3.1
South Dakota	754,844	1.7	0.8	3.8	1.1	3.2	11.0
Texas	20,851,820	45.9	54.6	24.2	17.1	29.6	14.3
Wyoming	493,782	1.1	0.5	2.7	2.1	3.2	1.4
TOTAL	45,461,286	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Bureau of the Census

* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

Another way to illustrate the concentration of population in the region is by refocusing our attention to counties as the unit of analysis. Table 2 provides a breakdown of the distribution of counties into metropolitan and non-metropolitan groupings. What is noteworthy is that only 142 of the region's 1,009 counties (14 percent) are classified as metropolitan.[2] However, these 142 counties account for over 71 percent of the total population in the region or nearly 32.5 million people. The remaining 13 million Great Plains residents are distributed among the 867 non-metropolitan counties. To gain a better appreciation of the sparsity of much of the region, I have further divided the non-metropolitan counties in three subdivisions. This categorization was originally developed by Calvin Beale at the Economic Research Service of the U.S. Department of Agriculture and has come to be known as the Beale codes.[3] Non-metropolitan counties are subdivided in this scheme by size of urban place. "Urban" non-metropolitan counties have a city of at least 20,000 people, "less urban" non-metropolitan counties are counties that have a city between 2,500 and 20,000 people, and "rural" non-metropolitan counties are those counties without a city of at least 2,500 people. As shown in Table 2, more than one-third of the counties in the Great Plains lack a city of at least 2,500 people. These very

[2] *Metropolitan Counties* are defined as those counties included in Metropolitan Areas (MA). The general concept of an MA is one of a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. Each MA must contain either a place with a minimum population of 50,000 or a Census Bureau-defined urbanized area and a total MA population of at least 100,000. An MA comprises one or more central counties. An MA also may include one or more outlying counties that have close economic and social relationships with the central county. An outlying county must have a specified level of commuting to the central counties and also must meet certain standards regarding metropolitan character, such as population density, urban population and population growth.

[3] **1993 Beale Codes (Rural-Urban Continuum Codes)**: These codes, published by the U.S. Department of Agriculture, Economic Research Service, form a classification scheme that distinguishes metropolitan counties by size, and non-metropolitan counties by degree of urbanization and proximity to metro areas. All U.S. counties and county equivalents are grouped according to the official metro status announced by the Office of Management and Budget (OMB) in June 1993, when the current population and commuting criteria were first applied to results of the 1990 Census of Population. New Rural-Urban Continuum Codes based on the 2000 Census are not expected to be available until 2003. For more information, visit the following URL: http://www.ers.usda.gov/Briefing/Rurality/.

sparsely populated counties represent nearly 72 percent of the counties in North Dakota, 68 percent of the counties in South Dakota, and over 54 percent of the counties in Montana and Nebraska.

Table 2. Number of Counties by State in the Great Plains by County Type: 2000

States in the Great Plains	Total Counties	Metropolitan Counties		Non-Metropolitan Counties*							
				Total		Urban		Less Urban		Rural	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Colorado	63	10	15.9	53	84.1	1	1.6	24	38.1	28	44.4
Iowa	99	10	10.1	89	89.9	9	9.1	60	60.6	20	20.2
Kansas	105	9	8.6	96	91.4	10	9.5	40	38.1	46	43.8
Minnesota	87	18	20.7	69	79.3	4	4.6	45	51.7	20	23.0
Montana	56	2	3.6	54	96.4	5	8.9	19	33.9	30	53.6
Nebraska	93	6	6.5	87	93.5	7	7.5	28	30.1	52	55.9
New Mexico	33	6	18.2	27	81.8	7	21.2	13	39.4	7	21.2
North Dakota	53	4	7.5	49	92.5	1	1.9	10	18.9	38	71.7
Oklahoma	77	14	18.2	63	81.8	7	9.1	45	58.4	11	14.3
South Dakota	66	3	4.5	63	95.5	1	1.5	17	25.8	45	68.2
Texas	254	58	22.8	196	77.2	12	4.7	127	50.0	57	22.4
Wyoming	23	2	8.7	21	91.3	2	8.7	15	65.2	4	17.4
TOTAL	1,009	142	14.1	867	85.9	66	6.5	443	43.9	358	35.5

Source: U.S. Bureau of the Census

* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

Historical Perspective

A review of population change in the Great Plains over the last half century illustrates how residential growth has been confined largely to metropolitan areas. A review of Table 3 reveals that the region nearly doubled its population during the last half century expanding from 23 million to nearly 45.5 million people. However, the bulk of the growth occurred in metropolitan counties which expanded by 182 percent and accounted for 92 percent of the 21 million new people to the region. Moreover, metropolitan growth in the region was sustained

over each decade. Non-metropolitan areas, on the other hand, increased by only 14 percent over the past 50 years and in a sporadic fashion (Table 3). During the 1950s and 1960s, the region's non-metropolitan population actually declined before rebounding briefly in the 1970s. Population losses were posted again during the 1980s with a modest turnaround starting again in the 1990s.

Table 3. Population and Population Change in the Great Plains by County Type: 1950-2000

Year	All Counties	Metropolitan Counties	Non-Metropolitan Counties*			
			Total	Urban	Less Urban	Rural
Population:						
1950	22,937,101	11,519,486	11,417,615	2,181,363	6,885,014	2,351,238
1960	26,690,557	15,401,303	11,289,254	2,502,613	6,691,865	2,094,776
1970	29,647,276	18,627,554	11,019,722	2,629,331	6,519,961	1,870,430
1980	34,970,287	22,839,309	12,130,978	2,983,069	7,254,571	1,893,338
1990	38,736,776	26,698,025	12,038,751	3,044,336	7,226,040	1,768,375
2000	45,461,286	32,429,884	13,031,402	3,305,226	7,875,080	1,851,096
Population Change 1950-2000:						
Numeric	22,524,185	20,910,398	1,613,787	1,123,863	990,066	-500,142
Percent	98.2	181.5	14.1	51.5	14.4	-21.3

Source: U.S. Bureau of the Census

* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

Closer inspection of Table 3 reveals that non-metropolitan counties with larger cities (i.e., above 20,000 people) actually sustained population growth each decade since 1950. The 66 urban counties in the region grew by nearly 52 percent adding 1.1 million people to the Great Plains population base. In contrast, the region's 443 less urban counties had modest growth (14 percent) while the remaining 358 rural counties actually lost over a half million people (Table 3).

This hidden pattern of population redistribution is disturbing when placed in context. Metropolitan counties represent only 14.1 percent of all counties in the region but account for 92

percent of the total residential growth between 1950 and 2000. When you combine the 142 metropolitan counties with the 66 non-metropolitan counties containing large urban centers you find that almost all of the region's aggregate population growth since 1950 was concentrated in less than 21 percent of the region's counties. In contrast, nearly eight of ten counties in the Great Plains struggled to survive. In total, 553 of the region's 1,009 counties (55 percent) had a smaller population base in the year 2000 then they did in 1950. Thus, the aggregate population totals are misleading because they suggest that the entire region is growing when in fact the majority of the counties in the region have declined.

Another way to explore historical population change in the region is by grouping counties together by their growth history. Table 4 presents a breakdown of Great Plains counties by pattern of growth. In general, the dominant historical population trend was a mixture of growth and decline. Two-thirds of the counties in the region had some period of growth between 1950 and 2000 but less than 15 percent of the counties posted continuous population gains. What is striking, however, is the fact that nearly one in five counties consistently declined since 1950. All of the 193 continuous-decline counties were non-metropolitan and three of four of these counties were rural. The areas dominated by persistent decline were in the Dakotas, northern Kansas, and north Texas. The most recent ranking of the 3,142 counties in the U.S. shows that between 1990 and 2000, two-thirds of the 50 counties posting the greatest proportional losses were from the Great Plains.

Residential consolidation occurred for decades in and around the region's largest cities. As shown in Table 4, 62 percent of the metropolitan counties in the region sustained continuous population growth since 1950 while the remaining 38 percent had a mixed growth record. Non-

metropolitan counties with large urban centers had a similar impressive growth history with nearly one-third sustaining constant expansion and the rest enjoying mixed growth. In contrast, less than 2 percent of the rural non-metropolitan counties and 8 percent of the less urban non-metropolitan counties continuously grew since 1950.

Table 4. Growth Patterns in the Great Plains by County Type: 1950 to 2000

Growth Patterns: 1950 to 2000	Total Counties		Metropolitan Counties		Non-Metropolitan Counties*					
					Urban population 20,000 or more		Urban population 2,500 to 19,999		Rural population less than 2,500	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Continuous Growth	150	14.9	88	62.0	21	31.8	36	8.1	5	1.4
Mixed Growth (Growth & Decline)	666	66.0	54	38.0	45	68.2	357	80.6	210	58.7
Continuous Decline	193	19.1	0	0.0	0	0.0	50	11.3	143	39.9
TOTAL	1,009	100.0	142	100.0	66	100.0	443	100.0	358	100.0

Source: U.S. Bureau of the Census, decennial census counts and estimates from the Federal-State Cooperative for Population Estimates.

* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

The complexity of population change in the region is most striking when one explores statewide differences. This level of analysis also exposes a drawback of the broader definition of the Great Plains which includes all counties in the 12-state region. Statewide analysis reveals that the ecological makeup of counties can vary distinctly from the dominant regional pattern. The states of Colorado and New Mexico offer an excellent example. A significant portion of the rural counties in these states run counter to the change pattern described above. Nearly one-third of Colorado's residential expansion during the past decade, which exceeded 1 million people, occurred in rural counties (Table 5). Similarly, nearly 20 percent of New Mexico's growth between 1990 and 2000 was accounted for by rural counties. Unlike the rest of the rural territory in the Great Plains, these rural counties are non-agricultural and represent scenic amenities (e.g., mountains, lakes, streams) which are attracting people. A similar situation exists in other Great

Plains states such as the lakes counties of Minnesota or the mountains vistas of western Montana and Wyoming. Thus, it is important to remember that even within states, rural areas are not homogeneous.

Table 5. Change in Population by State in the Great Plains by County Type: 1990 to 2000

States in the Great Plains	Change in Population for All Counties		Percent Change in Population				
			Metropolitan Counties	Non-Metropolitan Counties*			
	Numeric	Percent		Total	Urban	Less Urban	Rural
Colorado	1,006,867	30.6	30.0	33.2	24.8	31.6	44.7
Iowa	149,569	5.4	10.5	1.5	1.7	1.9	-1.0
Kansas	210,844	8.5	14.1	2.0	3.1	2.3	-1.1
Minnesota	544,380	12.4	15.0	6.7	6.8	6.9	6.1
Montana	103,130	12.9	9.7	13.9	21.7	7.6	7.9
Nebraska	132,878	8.4	14.3	2.6	7.2	3.3	-4.3
New Mexico	303,977	20.1	23.0	16.4	13.7	19.4	31.1
North Dakota	3,400	0.5	10.3	-6.1	1.5	-5.0	-9.5
Oklahoma	305,069	9.7	12.2	6.0	3.6	7.7	-4.8
South Dakota	58,840	8.5	18.3	3.9	-0.3	7.2	0.7
Texas	3,865,310	22.8	24.9	12.0	11.8	12.1	11.8
Wyoming	40,194	8.9	10.2	8.3	0.0	10.6	10.9
TOTAL	6,724,458	17.4	21.5	8.2	8.6	9.0	4.7

Source: U.S. Bureau of the Census

* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

Causes of Consolidation

Most researchers agree that a primary cause of the population redistribution in the Great Plains is economic restructuring (Leistritz and Ekstrom, 1986). Much of the region is still dominated by agriculture with a significant portion of non-metropolitan counties classified as farm-dependent. Farm-dependent counties are those in which at least 20 percent of the total labor and proprietor income is derived from farming (Hady and Ross, 1990). Technological advances in agriculture have dramatically increased both production and efficiency. As a result,

farmers and ranchers can operate greater amounts of land thereby reducing the need for labor. Evidence of this is widespread. Beale (1993) for example, reported that agricultural output per hour of farm work rose 1,300 percent between 1940 and 1989. In the past four decades, productivity has more than doubled per acre (Albrecht and Murdock, 1990). These dramatic changes push average farm size up while displacing farm families. In North Dakota, for example, the average farm size in 1940 was roughly 500 acres with approximately 86,000 farms. Currently there are fewer then 30,000 farms and the average operation now exceeds 1,300 acres. Exacerbating the problem is a spilled-over effect in neighboring farm communities. The displacement of farm families translates into shrinking markets for business owners, due to fewer demands for services, and further reductions in employment opportunities.

Farm population losses during the last half century have been overwhelming. This is best put into perspective by considering that in 1940 those living on farms in the United States topped 30 million, or one fourth of the nation's population. Latest estimates from the Bureau of the Census indicate that the farm population has dropped below 5 million people or 2 percent of the resident population.

Consequences of Population Redistribution in the Great Plains

There are several significant consequences associated with the population shifts within the region in addition to the loss of people. One of the latent and more serious consequences is the increase in number of naturally declining counties. Migration is very age-selective. Most of the people relocating tend to be in their twenties or thirties and the predominate direction in movement is from rural to urban areas (Table 6). During the past decade, nearly two-thirds of the rural counties in the region had net out-migration losses. In contrast, 77 percent of the

metropolitan counties had net in-migration during the same time period. This means there was a net exchange of youth and young families from the rural counties to the metropolitan centers. Since this trend has been occurring over decades, the result is a deficit of young adults and young families in the rural areas. This deficit translates into a corresponding reduction in rural children because young couples are the very age group who have children. An imbalance in the age structure, caused by the out-migration of young adults, leads to natural decline; when more people die in a county than are born. Counties that are naturally declining

Table 6. Components of Change in the Great Plains by County Type: 1990 to 1999

1990 to 1999 Components of Change	Total Number of Counties	Number of Counties as Percent of Total Counties in Great Plains				
		Metropolitan Counties	Non-Metropolitan Counties*			
			Total	Urban	Less Urban	Rural
Population:						
Increase	578	95.8	51.0	66.7	62.3	34.1
Decrease	431	4.2	49.0	33.3	37.7	65.9
No Change	0	0.0	0.0	0.0	0.0	0.0
Total	1,009	100.0	100.0	100.0	100.0	100.0
Natural Change:						
Increase	651	99.3	58.8	95.5	66.1	43.0
Decrease	356	0.7	40.9	4.5	33.9	56.4
No Change	2	0.0	0.2	0.0	0.0	0.6
Total	1,009	100.0	100.0	100.0	100.0	100.0
Net-Migration:						
Increase	495	76.8	44.5	34.8	54.0	34.6
Decrease	512	23.2	55.2	65.2	46.0	64.8
No Change	2	0.0	0.2	0.0	0.0	0.6
Total	1,009	100.0	100.0	100.0	100.0	100.0

Source: U.S. Bureau of the Census, Federal-State Cooperative for Population Estimates

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are extremely vulnerable because they can not off-set any out-migration that occurs. As a result, these counties are in double jeopardy; population loss due to both net out-migration and natural decline due to more deaths than births. As noted in Table 5, an astounding 56 percent of the rural counties in the Great Plains are naturally declining. In addition, over one-third of the less urban non-metropolitan counties are in the same situation. In contrast, less than 1 percent of the metropolitan counties have more deaths than births.

This dramatic trend highlights the fragile nature of the rural Great Plains. Indeed, the future viability of many rural Great Plains counties is not optimistic. In order to break the downward cycle of population loss, very aggressive economic development policies will need to be undertaken aimed at dramatically enhancing employment potential.

Another consequence, which is related to the selective nature of migration, is a change in the region's age profile. As noted earlier, the most mobile residents tend to be in their early or mid-career stages. Decades of selective out-migration of this age group greatly distorts the overall age structure of a county by decreasing the number of youth and enlarging the proportion of elderly. As shown in Table 7, the age profile has changed dramatically between metropolitan and non-metropolitan counties in the Great Plains. The proportion of pre-school age children (i.e, ages 0 to 4) declined in the region's non-metropolitan counties by nearly 5 percent between 1990 and 2000, while it increased by nearly 9 percent in metropolitan counties. Losses in rural counties were 12 percent, three time greater than the aggregate losses for all non-metropolitan counties.

Table 7. Change in the Distribution of Population by Age in the Great Plains by County Type: 1990 to 2000

Age Cohort	Change in Population for All Counties		Percent Change in Population				
				Non-Metropolitan Counties*			
	Numeric	Percent	Metropolitan Counties	Total	Urban	Less Urban	Rural
All Ages	6,724,510	17.4	21.5	8.2	8.6	9.0	4.7
Pre-School (Ages 0 to 4)	259,427	8.6	13.8	-4.5	-2.1	-3.7	-12.0
School Age (Ages 5 to 19)	1,559,061	17.6	23.0	5.9	6.8	6.1	3.6
Entry Labor Pool (Ages 20-34)	69,885	0.7	3.5	-7.2	-5.7	-6.2	-15.1
Prime Labor Pool (Ages 35-54)	3,612,02937	37.6	40.8	30.1	28.2	31.1	29.2
Pre-Retirement (Ages 55-64)	586,224	18.9	23.8	10.3	10.9	11.4	5.2
Elderly (Ages 65 Years and Older)	637,884	14.1	21.5	4.2	8.1	4.1	-0.2
Elderly (Ages 85 Years and Older)	160,983	32.5	40.7	23.3	28.5	23.2	17.9

Source: U.S. Bureau of the Census, Federal-State Cooperative for Population Estimates
* Non-metropolitan counties are classified into three sub-types: urban non-metropolitan counties are counties with a city of at least 20,000 people, less urban non-metropolitan counties are counties with a city between 2,500 and 20,000 people, and rural non-metropolitan counties are those counties without a city of at least 2,500 people.

This situation has serious implications for rural school districts which, for the most part, have been declining. In North Dakota, K-12 enrollment declines are expected to top 3 percent annually for the foreseeable future. This equates to an overall loss of over one-fifth of the current student body within ten years.

Equally challenging are the losses among those in the entry labor pool (i.e., ages 20-34). Similar to the youth population, non-metropolitan counties in the Great Plains have witnessed a dramatic decline in young adults (Table 7). During the past decade, the proportion of young adults between the ages of 20 and 34 declined by more than 7 percent in the non-metropolitan counties of the region. The losses in the rural counties were twice that level topping 15 percent. In contrast, the metropolitan counties enjoyed an 4 percent increase in their entry labor pool.

This situation also has serious consequences for the viability of the non-metropolitan counties in the Great Plains. The business community makes key decisions based on available labor. Losses, especially in the entry labor pool, send very negative signals to potential

employers and business leaders. Equally important is the fact that these young adults are the very core who can naturally grow the population through child bearing.

At the other end of the age spectrum there is an equally interesting and potentially serious consequence. The proportion of elderly, especially older seniors, is expanding in almost all counties. What is unexpected, for most observers, is the proportion of seniors in the Great Plains is above national levels. For example, the proportion of seniors (age 65 and over) in the 876 non-metropolitan counties of the Great Plains was 15.4 percent. Nationally, seniors represented less than 13 percent of the total population. More surprisingly, the proportion of seniors in the 358 rural counties of the Great Plains topped 18 percent. A more intriguing situation is the relative proportion of older seniors in the Great Plains, also which exceeds the national average. Five of the top six states in the nation with the highest proportion of seniors above the age of 85 are upper Great Plains states. This imbalance has serious implication for counties. Older seniors will be requiring needed services from housing to health care, which may be difficult to provide for already economically vulnerable rural counties.

Finally, the economic cost of migration is compelling. One way of exploring the fiscal consequences of migration is by examining the net income exchange between movers to and from a county. This can be accomplished by analyzing the county-to-county flow data from the Internal Revenue Service (IRS). These data match tax returns of filers between years and report aggregate income for movers and nonmovers. Confidentiality is maintained through thresholds that require a minimum number of returns before the data are released for any specific county-to-county flow. Table 8 reports the net income exchange for Great Plains states for the last three years of the 1990s. What is noteworthy is the magnitude of income gains and losses between

states. For example, between 1998 and 1999, North Dakota lost over $100 million due to the net exchange of income between movers to and from the state. In fact, 91 percent of the counties in the state had net income losses during that time period because of migration. In contrast, Colorado gained over $1 billion in income during the same time period due to migration. However, not all of Colorado's counties enjoyed the wealth brought on by movers. Over one-third of the counties in Colorado had net income losses due to migration.

Table 8. Income Movement Patterns as a Result of Migration in the Great Plains States: 1995-96 to 1998-99

States in the Great Plains	1995-1996			1996-1997			1997-1998			1998-1999		
	Percent of Counties			Percent of Counties			Percent of Counties			Percent of Counties		
	With Net Income In-Flow	With Net Income Out-Flow	Net Income Flow ($1,000)	With Net Income In-Flow	With Net Income Out-Flow	Net Income Flow ($1,000)	With Net Income In-Flow	With Net Income Out-Flow	Net Income Flow ($1,000)	With Net Income In-Flow	With Net Income Out-Flow	Net Income Flow ($1,000)
CO	74.6	25.4	772,535	74.6	25.4	849,434	68.3	31.7	895,407	65.1	34.9	1,038,036
IA	35.4	64.6	-153,170	28.3	71.7	-219,780	29.3	70.7	-217,749	19.2	80.8	-241,878
KS	42.9	57.1	-131,184	33.3	66.7	-127,282	25.7	74.3	-35,347	21.9	78.1	-222,780
MN	54.0	46.0	-29,759	39.1	60.9	-257,227	40.2	59.8	-320,259	43.7	56.3	-170,228
MT	55.4	44.6	102,099	46.4	53.6	32,949	35.7	64.3	52,484	39.3	60.7	66,199
NE	35.5	60.2	-23,046	21.5	73.1	-127,714	23.7	74.2	-193,984	16.1	80.6	-243,617
NM	63.6	36.4	64,288	45.5	54.5	-42,132	51.5	45.5	-94,586	48.5	51.5	-162,809
ND	17.0	79.2	-38,450	11.3	84.9	-73,050	9.4	84.9	-97,070	9.4	90.6	-100,391
OK	55.8	44.2	26,344	53.2	46.8	-41,649	50.6	49.4	-92,900	46.8	53.2	-209,146
SD	40.9	59.1	14,395	22.7	77.3	-20,315	13.6	86.4	-29,401	28.6	71.2	39,574
TX	59.8	39.4	838,926	51.2	47.6	984,958	50.0	48.4	1,249,470	46.5	52.4	1,059,149
WY	73.9	26.1	36,304	60.9	39.1	67,051	43.5	56.5	57,997	47.8	52.2	135,309
Total	50.2	49.0	1,479,282	40.7	58.3	1,067,173	38.0	61.1	1,414,326	36.0	63.4	1,316,371

Source: Internal Revenue Service, Sample Flow Files

Strategies for the Future

If history is an accurate guide, then the future of the Great Plains it directly tied to its ability to adapt to technology. Adhering to the current course without intervention can only result in a continuation of the past. This means that farm-dependent counties in the region will

continue to decline under the weight of technological advances. Correspondingly, rural communities directly tied to agriculture will continue to decline as their businesses lose market share and their employment opportunities shrink. In contrast, rural communities that are linked to natural amenities will grow as aging babyboomers search for scenic retirement environments. Likewise, larger urban service centers and metropolitan areas will continue to be magnets attracting residents leaving the farms and hinterlands.

Policymakers and planners must be bold in their actions and innovative in their solutions if current trends are to be altered. There are at least three major challenges they face. The first is how to prioritize programs and initiatives. At the heart of this debate is how to determine community viability. Stabler (1992) suggests an appropriate starting point is by reevaluating our basic assumptions. His position is that few rural communities are capable of expansion or stabilization. Therefore, programs or initiatives should be targeted in order to concentrate scare resources. This form of rural community triage has found some success in Great Britain (Daniels and Lapping 1987). An alternative approach argues that viability is found in community collaboration (Korsching et.al. 1992; Shepard 1993). The basic assumption is that one can combine small communities, regardless of their individual potential, into larger regional markets. Thus, success can be found through cooperative ventures that nurture and promote collaboration among differing levels of governments (e.g., towns, townships, counties) or organizations that focus on interdependence.

A second fundamental challenge that must be addressed is community identity. Most towns in the Great Plains began as self-sufficient and autonomous entities. Residents gained a sense of community identity or belonging through social interactions within their towns (Hobbs

1992). The strength of these bonds is best illustrated through sporting events where residents solidly support their local teams and the memory of long past contests are frequently relived through conversations. However, the meaning of community continues to be transformed, especially in the new information age which emphasizes interdependence rather than independence. Historical notions of community, based on city boundaries, may no longer be appropriate. This is best illustrated by school consolidations which have altered the meaning of community even from the perspective of a sports team. Unfortunately, community identity remains one of the greatest hurdles to cooperative community ventures. Issues of local pride and jealousy can easily undermine the best cooperative strategies (Schaffer 1992).

Finally, leaders and policymakers need to more aggressively explore policies that advance the development of information technologies especially in rural areas. Technology offers the opportunity to overcome many of the obstacles that rural areas face. For example, information-based jobs may be one alternative for economic development in remote non-metropolitan areas (Powers 1992). Interactive video or other forms of immediate response broadcast may offer effective solutions to issues from education to health delivery for remote rural areas. Similarly, data and resource sharing via computer technologies may allow small rural firms and businesses to be more competitive both in terms of keeping abreast of new advances as well as expanding their reach to distant markets. Regardless of approach or perspective, the survival of much of the Great Plains rests in our ability to effect change.

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