

Appendix A

Description of Method and Supporting Tables

Tables ordered by Chapter

Method

The information on rural poor and minority populations presented in the preceding report is cross sectional and descriptive, attempting to present information available on a national basis. Central methodological issues are the definition of rural used, the source of data elements, and the definition of “minority.”

Definition of Rural

In all original analyses prepared for the present report, rural and urban areas are distinguished at the county level, to reflect the most accessible data sources. Rural counties are defined as "non-metropolitan counties" (hereafter, non-metro). Counties are sorted into metropolitan - non-metro classifications based on Office of Management and Budget criteria. Metropolitan counties are those which (a) include incorporated cities with a population of 50,000 or which contain Census-defined urban areas and have a population of 100,000 or which (b) are contiguous to and economically linked with such counties (fringe counties). Non-metro counties include all others that do not meet the preceding definition.

Data Sources

Two principal sources supplied data used in this report. The Bureau of the Census product *USA Counties 1998* was used for economic and some health resource data. This CD-ROM database links a variety of population, social and economic statistics from multiple Federal sources at the county level. At the time this report was compiled, 2000 Census data were not available at the county level. The *Area Resource File* (ARF), February 2000 Release, was the source of data on health professionals and facilities. The ARF is produced under contract for the Health Care Resources and Services Administration.

Definition of Minority

Any study of minority populations must begin by acknowledging that race is an identification within a social category, rather than an objectively determined status. While to some extent visual differences among groups may lend force to self-identification, for many persons of mixed ancestry race is a “choice.” Schulman and associates (1995) assert that “there is no scientifically accepted definition of race or ethnicity, and there is little consistency in the use of these terms in health care research” (p. 181). However, Hahn and Stroup (1994) take an opposite tack, noting what while racial groupings are not “scientifically derived, they have been and continue to be important determinants of health status” (p. 13).

In this report, the racial composition of the non-metro population is based on Census data, which uses respondents’ self-description. In the 1990 Census and the estimates formed from it, there were several racial categories: white, African American, American Indian, Aleut, Eskimo [the preceding three generally grouped Native American / Alaska Native], Asian, and Pacific Islander. Respondents were asked separately whether they were of Hispanic origin. The 2000 Census expanded possible definitions by allowing respondents to choose more than one race category. However, 97.6% of respondents chose only one race to describe themselves (Grieco and Cassidy, 2001)

Figures and Tables Supporting Chapter One

Figure 2-1: Non-metro African American Population, by sex and age

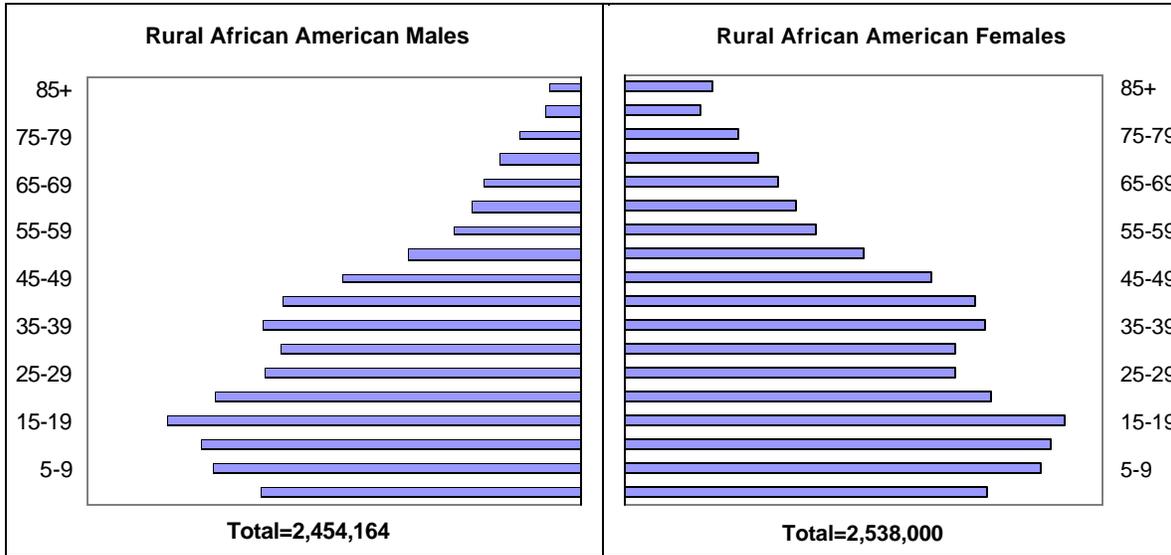


Figure 2-2: Urban African American Population, by sex and age

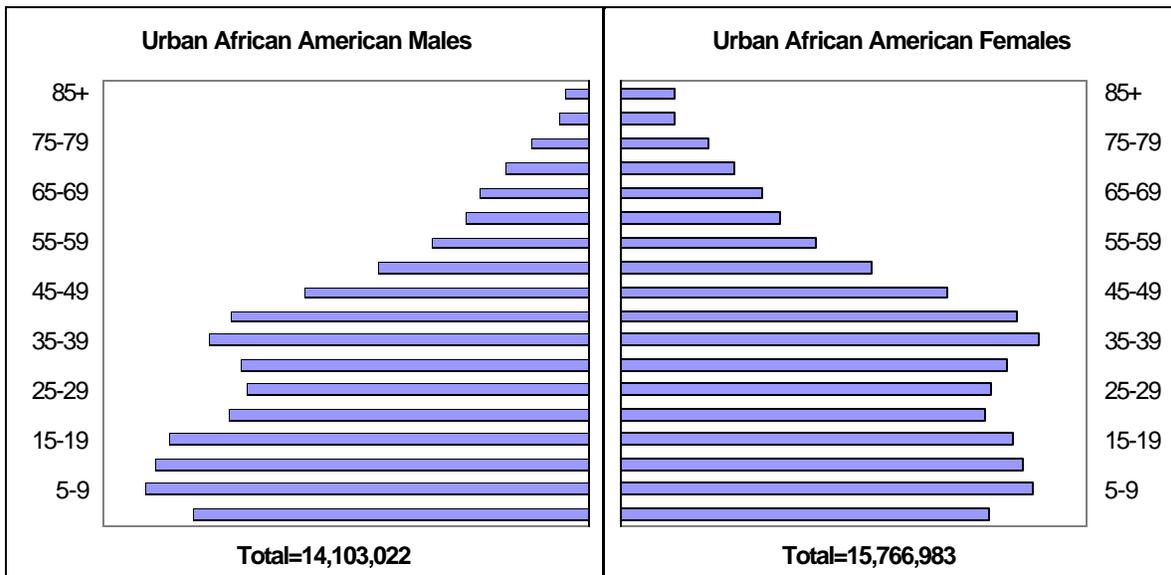


Table 1-1: Percentage of African Americans and Whites living in counties by percent of workforce employed in agriculture

% of the labor force in Agriculture at the county level	% of Non-metro African Americans	% of Non-metro Whites
Lowest Quartile 3.96%	45.75	38.43
Second Quartile 3.97%-6.97%	33.66	31.77
Third Quartile 6.98%-13.61%	17.87	20.40
Highest Quartile 13.62%-66.54%	2.70	9.37

Source: Data for 1990 labor force were obtained from *USA Counties 1998*. A small number of non-metro counties with no work force in agriculture are excluded. 0.024% of non-metro African Americans and 0.028% of non-metro whites live in such counties.

Table 1-2: Percentage of African Americans and Whites living in counties, by quartile rankings for percent of the labor force involved in manufacturing

% of the labor force in Manufacturing at the county level	% of Non-metro African Americans	% of Non-metro Whites
8.29%	6.12	15.52
8.30%-15.83%	20.89	25.37
15.84%-24.54%	29.68	29.22
24.55%-51.69%	43.31	29.89

Source: Data for 1990 labor force was obtained from *USA Counties 1998*. A small number of non-metro counties with no work force in manufacturing are excluded. 0.0001% of non-metro African Americans and 0.0019% of non-metro whites live in such counties.

Table 1-3: Percentage of African Americans and Whites living in counties by percent of labor force in mining

% of the labor force in Mining at the county level	% of Non-metro African Americans	% of Non-metro Whites
0.0%	5.37	2.19
< 0.18%	27.92	24.41
0.18%-0.46%	28.53	28.79
0.47%-1.96%	22.82	23.89
1.97%-39.19%	15.36	20.71

Source: Data from the *USA Counties 1998* for 1990 labor force data.

Figures and Tables Supporting Chapter Two

Figure 2-1. Non-metro Hispanic Population Pyramid

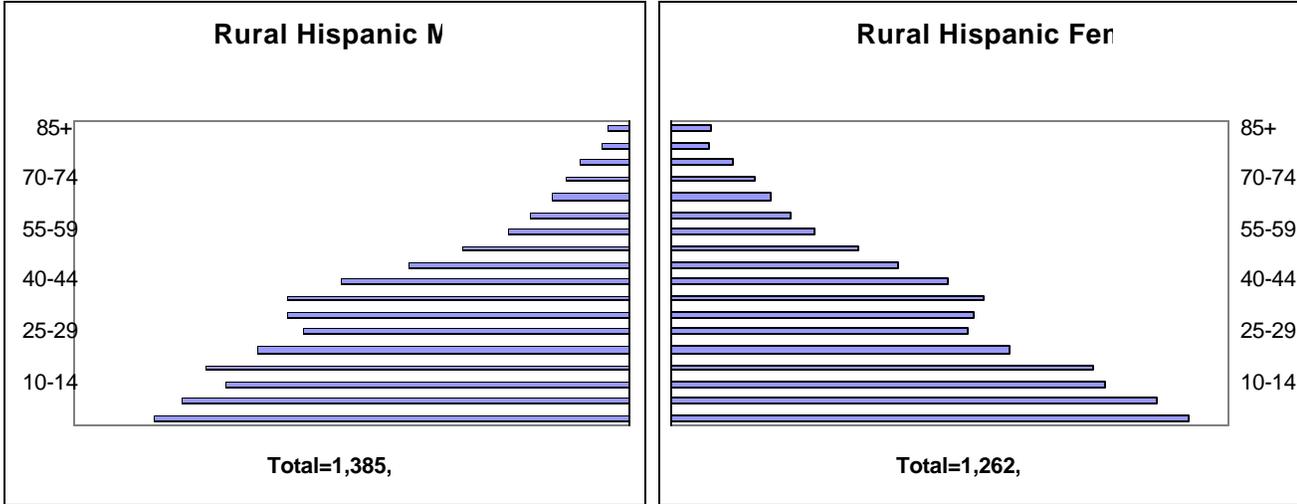


Figure 2-2. Urban Hispanic Population Pyramid

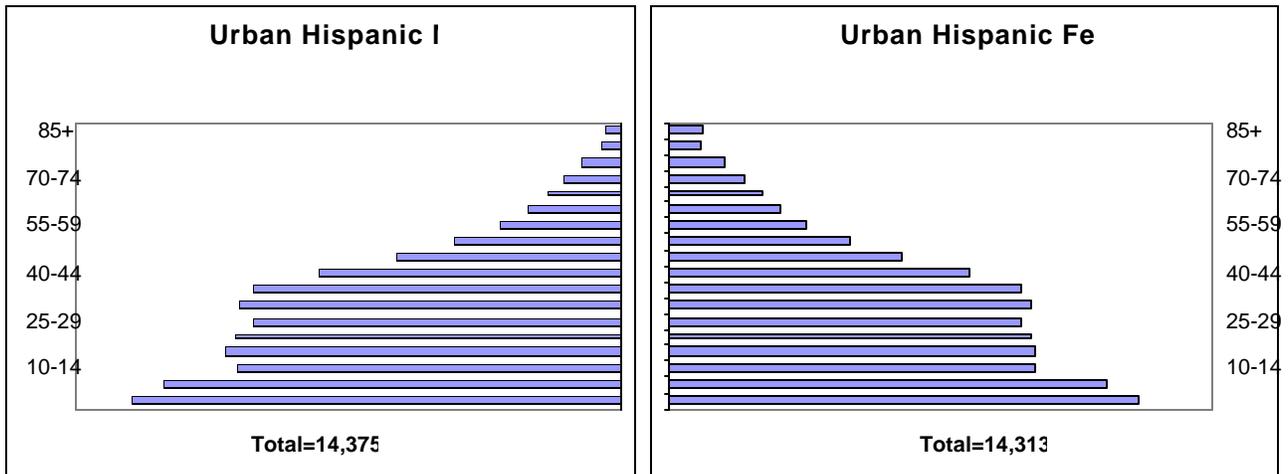


Table 2-1: Distribution of total Hispanic and white population by percent of county workforce employed in agriculture

% of the labor force in Agriculture at the county level	% of Non-metro Hispanics living in these counties	% of Non-metro Whites living in these counties
Lowest Quartile 3.96%	23.39%	38.43%
Second Quartile 3.97%-6.97%	29.12%	31.77%
Third Quartile 6.98%-13.61%	27.50%	20.40%
Highest Quartile 13.62%-66.54%	19.99%	9.37%

Source: Data from the USA Counties 1998 for 1990 labor force. A small number of non-metro counties with no work force in agriculture are excluded. 0.001% of non-metro Hispanics and 0.028% of non-metro whites live in such counties.

Table 2-2: Percentage of Hispanics and whites living in counties, by quartile rankings for percent of the labor force involved in manufacturing

% of the labor force in Manufacturing at the county level	% of Non-metro Hispanics living in these counties	% of Non-metro Whites living in these counties
8.29%	50.03%	15.52%
8.30%-15.83%	27.78%	25.37%
15.84%-24.54%	14.09%	29.22%
24.55%-51.69%	8.09%	29.89%

Source: Data the USA Counties 1998 for 1990 labor force. A small number of non-metro counties with no work force in manufacturing are excluded. 0.0002% of non-metro Hispanics and 0.0019% of non-metro whites live in such counties.

Table 2-3: Percentage of Hispanics and Whites living in counties, by percent of county labor force in mining, 1990

% of the labor force in Mining at the county level	% of Non-metro Hispanics	% of Non-metro Whites
0.0%	0.87	2.19
< 0.18%	18.33	24.41
0.18%-0.46%	17.42	28.79
0.47%-1.96%	33.21	23.89
1.97%-39.19%	30.17	20.71

Tables Supporting Chapter Three

Table 3-1. Percentage of total Native American and white population by percent of workforce employed in agriculture

% of the labor force in Agriculture at the county level	% of Non-metro Native Americans	% of Non-metro Whites
Lowest Quartile 3.96%	44.54	38.43
Second Quartile 3.97%-6.97%	27.13	31.77
Third Quartile 6.98%-13.61%	20.48	20.40
Highest Quartile 13.62%-66.54%	7.84	9.37

Table 3-2: Percentage of Native Americans and whites living in counties, by quartile rankings for percent of the labor force involved in manufacturing

% of the labor force in Manufacturing at the county level	% of Non-metro Native Americans	% of Non-metro Whites
8.29%	47.07	15.52
8.30%-15.83%	25.44	25.37
15.84%-24.54%	14.92	29.22
24.55%-51.69%	12.57	29.89

Source: Data the USA Counties 1998 for 1990 labor force. A small number of non-metro counties with no work force in manufacturing are excluded. 0.01% of Native Americans, and 0.0019% of non-metro whites, live in such counties.

Table 3-3: Percentage of Native Americans and Whites living in counties, by quartile rankings for percent of county labor force in mining, 1990

% of the labor force in Mining at the county level	% of Non-metro Native Americans	% of Non-metro Whites
0.0%	3.00	2.19
< 0.18%	24.26	24.41
0.18%-0.46%	15.71	28.79
0.47%-1.96%	25.92	23.89
1.97%-39.19%	31.12	20.71

Appendix C

Literature Review

Economic Patterns in Non-Metro America

Health resources, health behaviors, health status, and health outcomes among poor and minority populations cannot be understood without addressing the life context of these persons (Forbes and Wainwright, 2001). Non-metro areas, compared to urban regions, have in common sparse populations, but population densities vary significantly between the eastern and western areas of the United States. Non-metro America is characterized by enormous diversity.

General economic diversity and differing non-metro patterns

While the term “rural” brings to mind farm scenes, agriculture actually makes up a relatively small percentage of non-metro land use and non-metro employment. Just 10% of total employment in non-metropolitan areas comes directly from farming and agricultural services (Castle, 1998). Maps C-1 through C-3 illustrate the principal occupations of non-metro county workers. Agriculture is heavily represented in non-metro counties in the Great Plains states (C-1), while manufacturing occupies the Northeast, South and Midwest counties (C-2). Mining is concentrated in mountainous regions in the Appalachian and Western states, with a swathe through Texas (C-3).

Non-metro Industry

Across non-metro counties, the average proportion of the civilian labor force engaged in agriculture was 10.1%, versus 17.1% in manufacturing. Mining, including quarrying and oil extraction, employed 1.97% of the work force. Averages conceal significant variation. As can be seen in Table C -1 (below), a quarter of all non-metro counties have fewer than 4% of their workforce engaged in agriculture. Mining is highly concentrated in a few areas of the United States; only a quarter of all counties have more than 2% of workers engaged in mining.

Table C-1. Percent of non-metro county workforce engaged in specific industries, in quartiles.

Percent of industry placing county in:	Agriculture	Manufacturing	Mining
First quartile	0-3.96%	0-8.29%	0 - 0.18%
Second quartile	3.97-6.97%	8.30-15.83%	0.18-0.46%
Third quartile	6.98-13.61%	15.84-24.54%	0.47-1.96%
Fourth quartile	13.62-66.54%	24.55-51.69%	1.97-39.19%

Source: *USA Counties 1998 CD* for 1990 labor force data.

Unemployment

A distinct spatial division of labor has developed in the United States, such that non-metro areas tend to be the recipients of lower skilled, lower wage jobs (Barkley, 1995). Jobs in non-metro areas are more likely to be seasonal, or have periods of interruptions due to variations

in product demand (Tomaskovic-Devey, 1987). This results in less than full employment. Employment in non-metro areas is less likely to be unionized or to offer pension plans (Erickson 1981).

Unemployment in the non-metro United States is highest in the Mississippi Delta and the Southern belt of states. (See Map C-4.) Using US Census data, the percent unemployed in the labor force for non-metro counties in 1990 was approximately 6.8%. The areas with the highest levels of unemployment were eastern Kentucky, western West Virginia, Mississippi and Louisiana. Each of these regions has counties with between 10-25% unemployment in the labor force. The residents in these counties rely mainly on agriculture and less skilled manufacturing for employment opportunities.

Poverty

Much of the research attention and policy discussion regarding poverty has focused on urban or central city areas (Albrecht, Albrecht and Albrecht, 2000; Brown and Hirschl, 1995). This trend dates back to 1965 with the publication of the Moynihan report, which shifted the emphasis of poverty research and discussion from the South to the central cities of large metropolitan areas (Massey and Eggers, 1990). Several researchers have asserted that rural poverty exceeds that in other parts of the country. Beale (1996 (b)) argues that poverty has typically been more common in small town and non-metro areas than in cities and suburbs. Other studies also assert that non-metro poverty is more extensive and severe than in metropolitan areas (Albrecht, Albrecht and Albrecht, 2000; Hirschl and Brown, 1995; Jensen and Tienda, 1989; Clifford and Lilley, 1993). Non-metro Native Americans, African Americans and Mexican Americans are consistently ranked among the poorest of the poor (Jensen, 1994; Brown and Warner, 1991; Rowland and Lyons, 1989).

Available supports to counteract poverty differ at the state level. Temporary Assistance for Needy Families (TANF), for example, sets benefits at the state level. Review of benefit levels shows that states with low per capita incomes, states in which the poverty population is largely non-metro, and states in which the poverty population is largely minority, generally offer lower TANF benefits per poor child (Nord, 2001). Within an individual state, benefits do not vary across urban / non-metro counties. Nonetheless, these differences affect non-metro minorities more than urban minorities, since non-metro African Americans, Hispanics and Native Americans are likely to live in states that also have low per capita incomes.

African Americans: Poverty is usually associated with the ability of the family head of household to hold jobs. McLaughlin and Sachs (1988) found that the rate of poverty in female-headed households is 32%, while husband-wife households have a poverty rate of 5.6%. In non-metro persistent poverty counties with high African American populations, 31 percent of children living in single-parent households (Beale (b), 1996). Across all non-metro counties, 36.9% of African American children, versus 9.7% of white children, were living in female-headed families. The poverty rate among female-headed African American non-metro families was 60.4%, versus 34.0% among similar white families (1990 data; Effland and Kassel, 1996). Poverty is linked to educational attainment. Among non-metro African American men between the ages of 25 – 34, 32.1% had not graduated from high school, versus 17.4% of non-metro white men; the corresponding values for non-metro women are 27.7% and 14.3% (Effland and Kassel, 1996).

Prior research shows the South, particularly non-metro counties within the South, to be the most poverty-stricken region of the United States. Area poverty is influenced by economic growth in the area, and by the availability of jobs. Brown and Hirschl (1995) analyzed these external factors. They found that the odds of poverty are higher in non-metro areas than in other residential areas. Reflecting human capital theory, they also found that education and work experience help reduce the likelihood of poverty. In this context, the continuing failure of non-metro areas, particularly in the South, to maintain adequate school systems is not encouraging (McGranahan, 2001). Another author has suggested that current non-metro development projects in the South tend to favor those already in power to the detriment of those who do not, perpetuating poorer economic status among minority populations (Zekeri, 1999).

The non-metro African American population disproportionately suffers from poverty. In 225 of the 540 persistent poverty counties (42%), the population contains a high proportion of African Americans (Beale, 1996 b). These counties are located in the old agricultural South (Beale, 1996 b). For example, African American persistent poverty counties found in Alabama, Arkansas Louisiana and Mississippi had average 1990 Census poverty rates of 51.4% for African Americans compared with 15.4% for Whites (Beale, 1996 b).

For African Americans, residential separation and economic well-being have always had a negative relationship. Other minority groups have thrived within “immigrant enclaves” that allowed these groups to pool resources and gave ready access to a market for specialized goods and services (Cromartie and Beale, 1996). The non-metro areas of persistent high poverty dominated by African Americans have several features typically associated with low income, including: early childbearing, low availability of year round work and low levels of educational attainment (Beale, 1996 (b)). The African American residents of these areas are also much less likely to have access to a motor vehicle (Beale, 1996 (b)). Lambert (1988) found that 26% of low-income households did not have a car and that, among persons who did own a car, its average age was 11 years; 25.1% of low-income households lived in non-metro areas. Nationally, 15.9% of African American households, versus 5.0% of white households, were estimated to lack a telephone in 1991 (Schement, 1995). In persistent poverty counties, 29.3% of African American households, versus 6.8% of white households, lack a vehicle (Gibbs, 1996).

Non-metro minorities are especially vulnerable to economic swings. Economic prosperity coupled with reduction of social barriers associated with racial discrimination, resulted in the ratio of white to African American median family income falling from 2.89 in 1959--\$6,131 in 1986 dollars for non-metro African Americans, versus \$17,710 for non-metro whites--to 1.73 in 1979, \$14,964 in 1986 dollars for non-metro African Americans, versus \$25,948 for non-metro whites. During the economic downturn of the 1980's, however, the ratio of white to African American non-metro family income increased to 1.84. During this period, African American income declined more steeply than white family income, \$13,182 in 1986 dollars for non-metro African Americans, versus \$24, 310 for non-metro whites (Jensen and Tienda, 1989). Much of the improvement from 1959 to 1986, Jensen and Tienda (1989) suggest, was attributable to increasing economic returns from multiple earners in non-metro African American families. However, white families derived more benefit from multiple earners than did minority families.

Non-metro Hispanics, like non-metro African Americans, are especially vulnerable to economic swings. One study explicitly examined income change among Mexican Americans between 1959 and 1986. Economic prosperity during the 1960's and 1970's brought Mexican American family incomes closer to those of whites. Between 1959 and 1979, ratio of white to

Mexican median family income falling from 1.73 (\$10,244 in 1986 dollars for non-metro Mexicans, versus \$17,710 for non-metro whites) to 1.47 (\$17,626 in 1986 dollars for non-metro Mexicans, versus \$25,948 for non-metro whites). During the economic downturn of the 1980's, inequality increased. By 1986, the ratio of white to Mexican American family income was greater than it had been during 1959, 1.79 (\$13,560 in 1986 dollars for non-metro Mexican Americans, versus \$24,310 for non-metro whites; all values Jensen and Tienda, 1989).

Referring again to the economic swings noted by Jensen and Tienda (1989), the vulnerability of non-metro Hispanics to future economic downturns is likely to be greater than that of urban residents. Because non-metro Hispanics are disproportionately present in counties with few manufacturing jobs, the ability of these residents to find alternative employment is likely to be limited. Urban migration is a likely result. Further, non-metro Hispanics tend to lack educational capital. Among Mexican-American Hispanics, 50.3% of the men between 25 and 34, and 41.5% of women the same age, have less than a high school education (Effland and Kassel, 1996). For comparative purposes, 17.4% of non-metro white men and 32.1% of non-metro African American men had less than a high school education, with values for non-metro white women and non-metro African American women at 14.3% and 27.7%, respectively (Effland and Kassel, 1996).

Native Americans: Economic prosperity during the 1970's resulted in the ratio of white to Native American median family income falling from 2.02 in 1959--\$8,751 in 1986 dollars for non-metro Native Americans, versus \$17,710 for non-metro whites--to 1.40 in 1979, \$18,564 in 1986 dollars for non-metro Native Americans, versus \$25,948 for non-metro whites. During the economic downturn of the 1980's, however, the ratio of white to Native American family income increased to 1.84 as Native American income declined more steeply than white family income, \$13,182 in 1986 dollars for non-metro Native Americans, versus \$24,310 for non-metro whites (Jensen and Tienda, 1989).

Should the economy of the United States as a whole experience a downturn during the first decade of the 2000's, as some anticipate, the greater swings experienced by non-metro minority populations in the past suggest that these populations would again be disproportionately affected. In addition, changes to the safety net structure, such as limitations to the duration of assistance through Temporary Assistance to Needy Families, may force non-metro residents to leave locations with few job Non-metro Native Americans are vulnerable to economic change, a problem heightened by tensions between the communal orientation of some Native American cultures and the individualistic, wage-oriented majority society (Pickering, 2000).

Persistent Poverty

The USDA classifies counties as persistent poverty counties in instances when poverty levels have been at 20% or more of the population for the years 1960, 1970, 1980 and 1990. This included 540 counties, most of which are in the Southeast, Appalachia and the Southwest, and also Native American reservations scattered throughout the rest of the country (Beale, 1996 b). For all of the persistent poverty counties, the average rate of poverty was 29% in 1990, compared to 14% for all non-metro counties (Beale, 1996 b). These counties are notable for their lack of manufacturing employment, lack of skilled labor, lower levels of education than other non-metro counties, and their continuing loss of residents. The unemployment rate remains significantly higher than the national average, and where jobs do exist, the wages are typically only enough to survive, not enough to get out of poverty. Another factor that

contributes to the problems in persistent poverty counties is remoteness; over half of these counties are not adjacent to an urban center. This allows residents limited access to the benefits of the urbanized area, including education, employment, medical care, financial institutions and cultural opportunities.

Non-metro poverty among children is associated with African American status. While 13.2% of all children living in non-metro areas are African American, 25.4% of all poor children, and 30.9% of children receiving Temporary Aid to Needy Families, are African American (Rogers and Dagata, 2000).

Availability of Employment

Non-metro communities have a higher prevalence of working poor than metropolitan areas, and this tends to be particularly the case among non-metropolitan minorities (Jensen, 1994). For the working poor, findings indicate that the cause is not a lack of desire to work, but of poor infrastructure and work opportunities. The opportunities that do exist are not substantial enough to bring the families out of poverty (Kim, 1998).

Along with higher prevalence of working poor, there is also the problem of continued job losses that plague much of non-metro America (Barkley, 1995). The problems of underemployment are connected to both minority and non-metro status (Jensen, 1994). Non-metro workers are more likely to be in occupations characterized by low wages, poor benefits, little chance for upward mobility and a high chance of being moved offshore. This is particularly the case for non-metro Native Americans, African Americans, and Mexican Americans (Jensen, 1994).

Health Services Infrastructure

Health services infrastructure refers to the degree to which a community has adequate resources to meet the health and medical needs of its residents. Non-metro areas tend to be lacking in many aspects of health services infrastructure. Smaller non-metro communities are less likely to have a hospital than are larger non-metro communities (Ricketts, 1999). People living in non-metro areas are four times more likely to live in a health professions shortage area (HPSA) than persons in metropolitan areas (North Carolina Rural Health Research Program, 2000). The appropriate ratio of primary care physicians to patients is considered to be 1:2,000; in non-metro areas the average is 1:3,500 (Center for Health Policy, 2000). Thus, non-metro residents are more likely to be without a regular source of health care and are less likely to seek care (Blank et al., 1996). Lack of privacy in small towns may lead individuals to reject preventive services associated with “embarrassing conditions” (Strickland and Strickland, 1996).

In 1990, 20.5% of non-metropolitan counties did not have any mental health services (National Rural Health Association, 1999). Among non-metro hospitals, 18.6% offer emergency psychiatric services, compared with 37.4% of metropolitan hospitals (National Rural Health Association, 1999). The lack of mental health and substance abuse infrastructure means that residents in non-metro areas often go untreated (National Rural Health Association, 1999).

Access to health care is worse among non-metro minority populations, even in comparison to urban minority populations (Mueller et al., 1998). Non-metro minorities are among the most medically understudied and underserved of all population groups in the United States (Williams et al., 1994; Brathwaite and Taylor, 1992). High percentage African American counties in the non-metro South have substantially lower levels of public infrastructure, such as

hospitals and medical facilities, than other counties in the region, placing minorities at greater risk of unavailability of services (Brown and Warner, 1991). Minority, poor, and non-metro residents are less likely to receive preventive health screenings than are non-minority, non-poor, and urban individuals (Department of Health and Human Services, 1991).

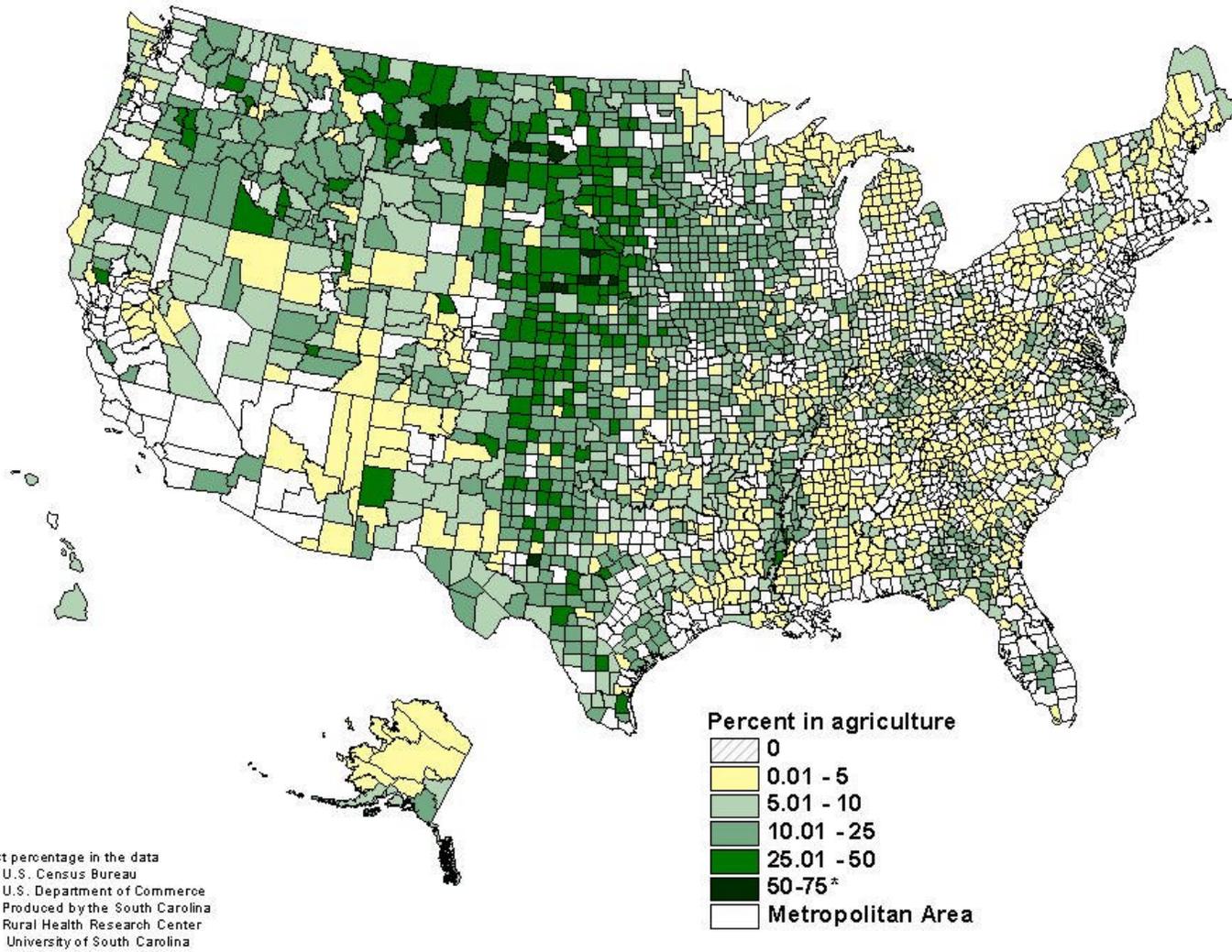
Table C-2. Non-metro Counties, by the racial/ethnic group accounting for the majority of the county population and whether the county is whole or in part a Health Professions Shortage Area.

Racial/Ethnic Group	Counties in which indicated group is majority of population	HPSAs within majority counties	% HPSA
African American	89	75	84.3
Hispanic	44	37	84.1
White	2,174	1,409	64.8
Asian /Pacific Islander	4	2	50.0
Native American	24	16	66.7

Source: Area Resource File

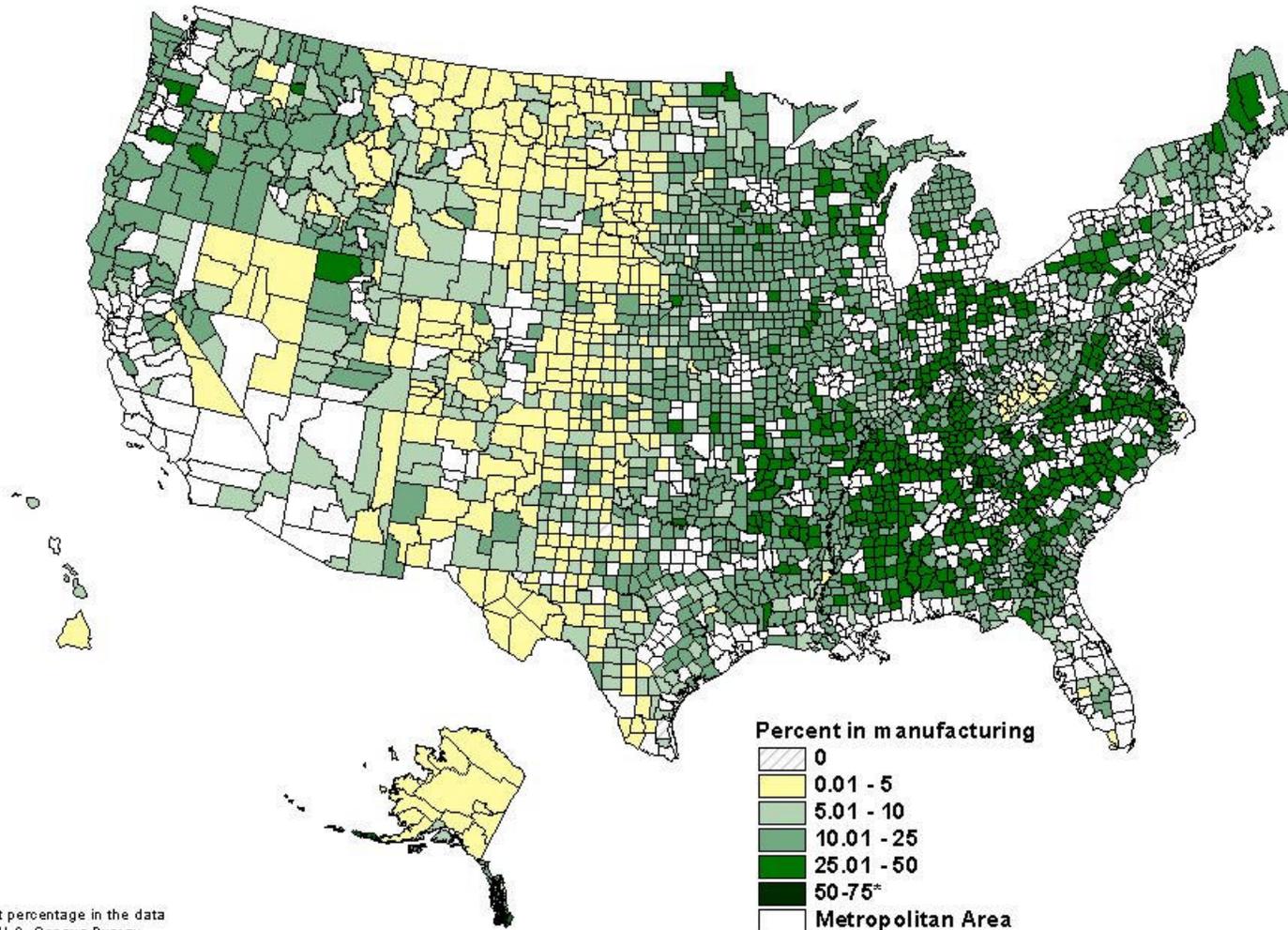
Map C-1.

Percent of each county's civilian labor force in agriculture related jobs, 1990



Map C-2

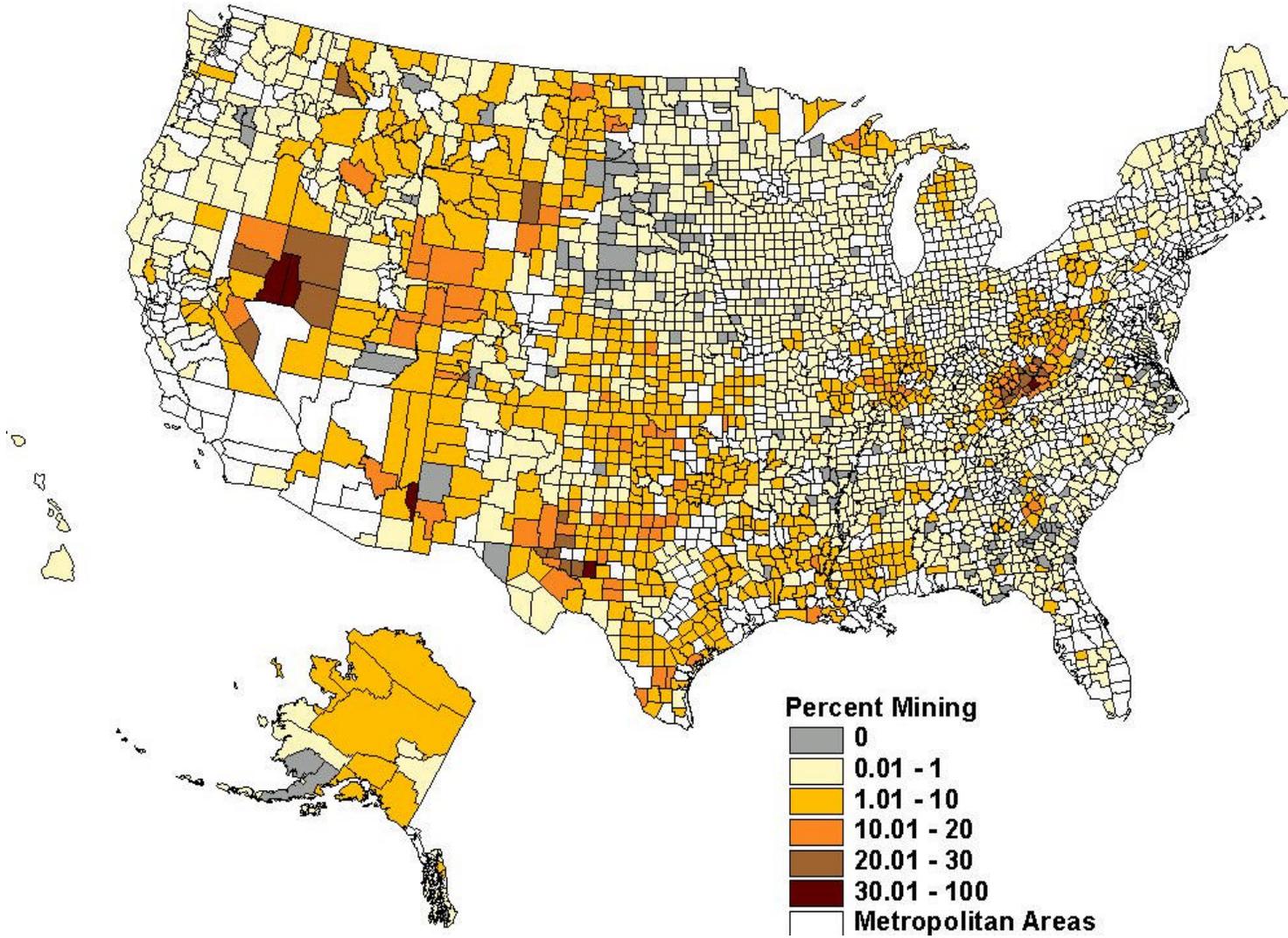
Percent of each county's civilian labor force in manufacturing related jobs, 1990



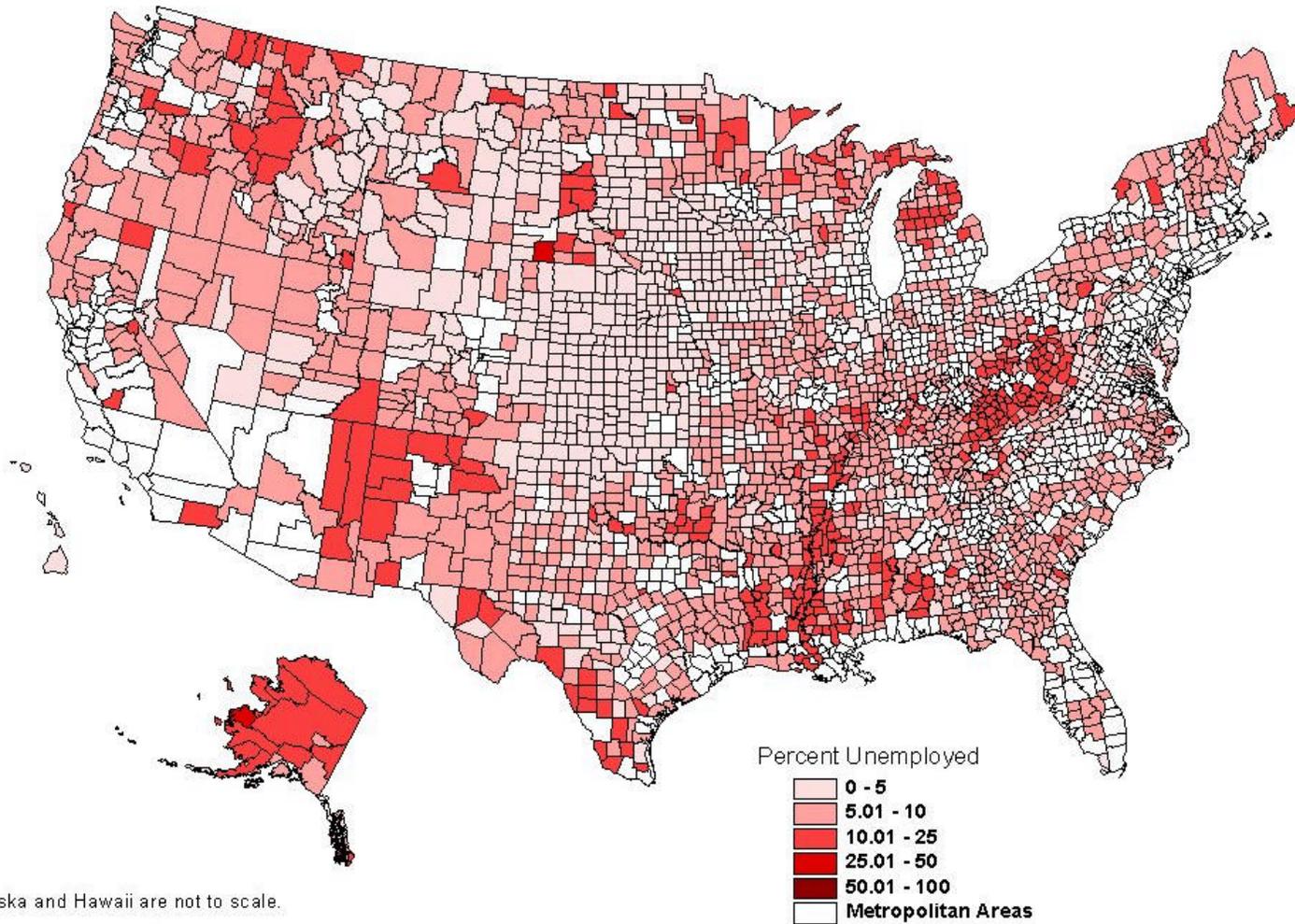
* Highest percentage in the data
Source: U.S. Census Bureau
U.S. Department of Commerce
Produced by the South Carolina
Rural Health Research Center
University of South Carolina

Map C-3.

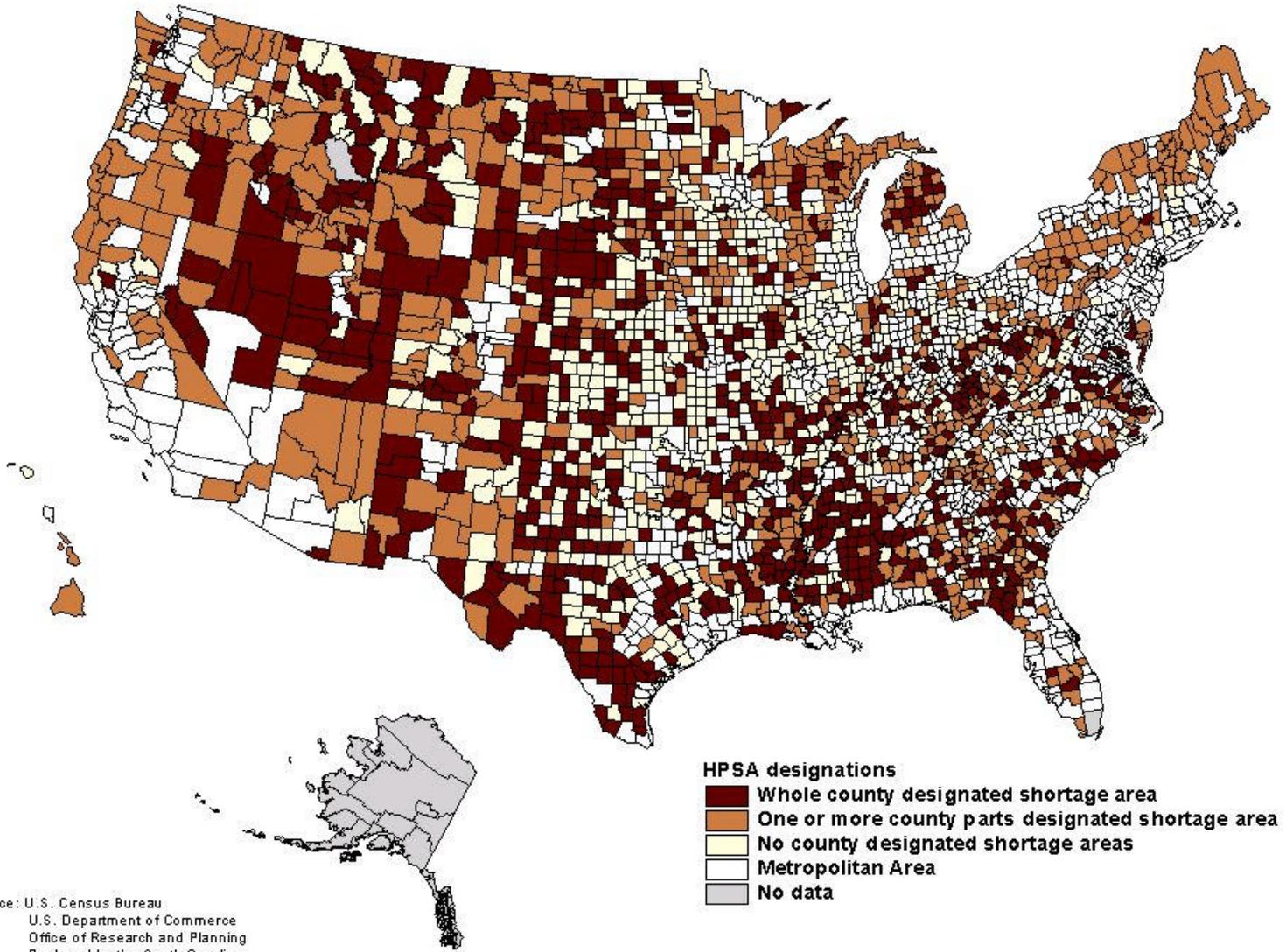
Percentage of the labor force involved in Mining, 1990



Percentage of the Rural Labor Force that is Unemployed, 1990



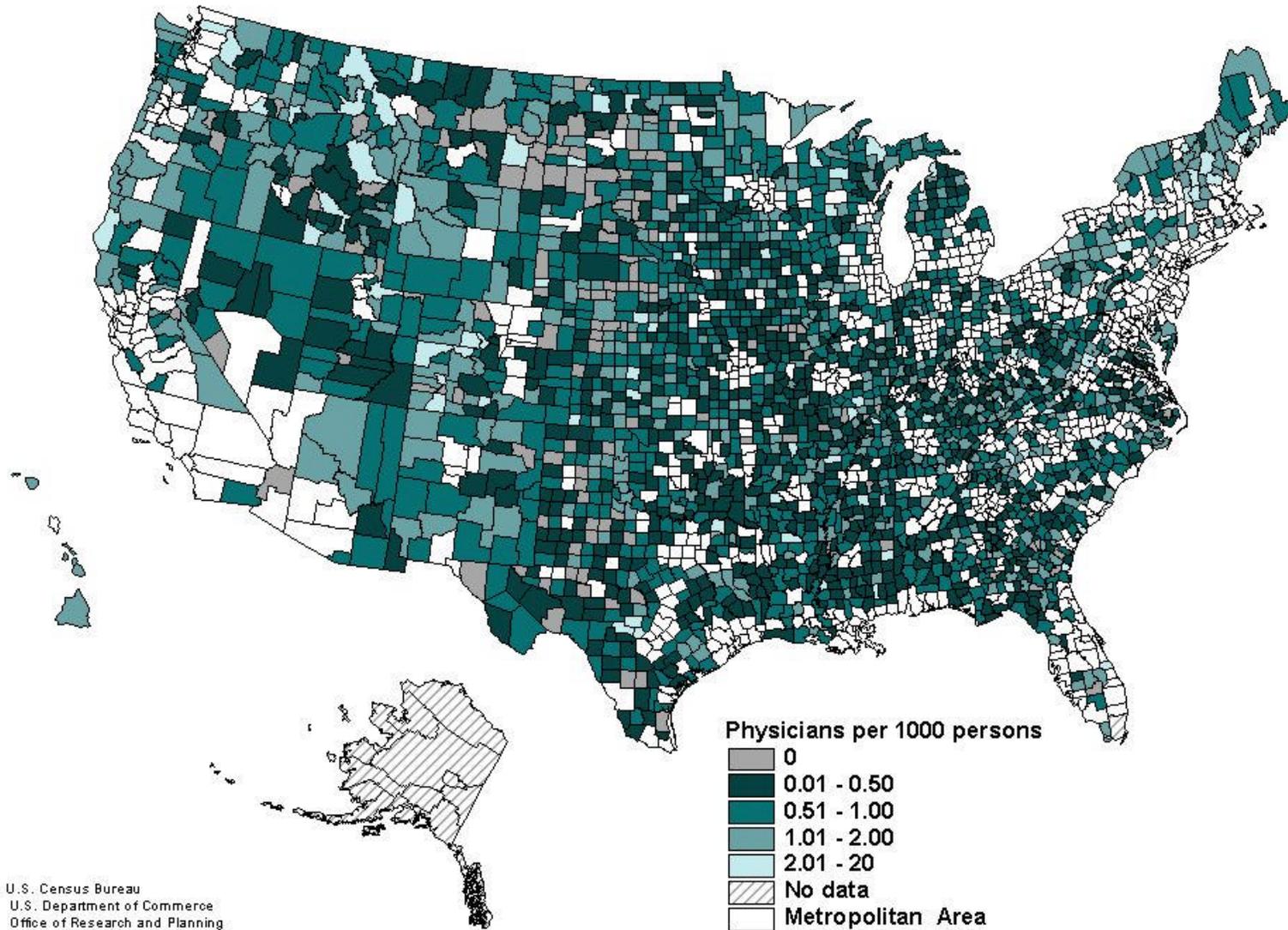
HPSA designations for rural counties of the U.S., 1998



Source: U.S. Census Bureau
U.S. Department of Commerce
Office of Research and Planning
Produced by the South Carolina
Rural Health Research Center
University of South Carolina

Map C-6

Number of physicians per 1000 persons in rural counties of the U.S., 1998



Source: U.S. Census Bureau
U.S. Department of Commerce
Office of Research and Planning
Produced by the South Carolina
Rural Health Research Center
University of South Carolina

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