A Socioeconomic Atlas for



Blue Ridge Parkway and its Region

2003

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by

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Acknowledgments

We would like to express our appreciation to the staff of Blue Ridge Parkway, especially Daniel Brown and Laura Rotegard, for their enthusiasm and support throughout this project. We are also grateful to Warren Brown, Jeff Reinbold, and the General Management Planning Team at the Parkway.

About this Atlas

The National Park Service (NPS) initiated a project to develop atlases of regional socioeconomic trends. Four pilot atlases were completed for Harpers Ferry National Historical Park, Joshua Tree National Park, Mount Rainier National Park, and Wilson's Creek National Battlefield. In this next phase of the project, the potential to link these atlases to park planning, e.g., updating the General Management Plan (GMP), is being explored. For more information about the atlas series, contact: Jean McKendry, Ph.D., National Park Service, 1849 C Street NW (3127), Washington DC 20240 (jean_mckendry@partner.nps.gov).

Preface

Protection of the National Park System requires active and scientifically informed management. If park resources – both natural and cultural – are to be protected for future generations, the NPS must develop efficient ways to monitor the condition and trends of natural and human systems. Such monitoring must provide usable knowledge that managers can apply to the preservation of resources. And the NPS must share this information with surrounding communities, stakeholders and partners, to help them make important choices about their future.

Because of these reasons and more, the NPS has embarked on a significant initiative – the Natural Resource Challenge. This atlas is one component in that effort. It is a tool for park managers, planners, community leaders, and others to use in addressing the challenge of preserving the natural and cultural resources of Blue Ridge Parkway. Part of that challenge involves understanding conditions outside park boundaries – conditions which can have significant impacts on park resources. Systematic study and monitoring of regional conditions involves, to a large degree, investigation of human activities. This atlas focuses on such human activities, characterizing them in terms of standardized measures known as socioeconomic indicators.

The atlas can currently serve as an aid to management and planning, as a training tool, and as a means to facilitate public participation. It can be of long-term benefit by establishing baseline data for monitoring changing conditions and trends in the region. Through these and other potential uses, the atlas supports the critical goal of improving park management through a greater reliance on usable scientific knowledge, and contributes to meeting the Natural Resource Challenge.

Gary E. Machlis
Visiting Senior Scientist
National Park Service

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Introduction

The purpose of this atlas is to provide park managers, planners, community leaders, and others with a better understanding of changing human activities and socioeconomic conditions in the region surrounding Blue Ridge Parkway. Change in human activities and socioeconomic conditions outside a park's boundaries can create complex park management challenges. Information about regional trends and conditions is needed in order to manage and conserve park resources – both natural and cultural – more effectively. This atlas provides such information in a series of maps, complemented by tables, other graphics, and explanatory text.

Maps are effective ways of conveying information. A map can highlight geographical patterns in data by showing the relationship between *what* is happening and *where* it is happening. For example, a map that shows a park's road network and also shows the locations of traffic accidents may indicate that certain sections of park roadway are particularly hazardous. Or a map that plots where park visitors come from might show that the park is popular with residents from a particular part of the region or the nation.

The maps in this atlas combine *contextual* information (such as boundary lines, roads, and key towns) with *thematic* information (such as demographic or economic statistics). This combination of contextual and thematic information helps the reader observe general trends inherent in the distribution of data. For example, a map that shows the population growth rate for each county in the park region may reveal that all of the highest growth rates are concentrated in counties south of the park.

Each map is designed to allow for easy comparison, so readers can see how conditions and trends in their own counties compare with those in other counties and relate to larger regional patterns. The consistent map design allows readers to make useful comparisons among two or more maps. For example, comparing maps of federal expenditures per person and poverty rates might reveal that federal expenditures tend to be higher in a region's poorer counties.

There are many potential uses for this atlas. For example, park managers can share the atlas with new park staff, regional staff, the media, or policy makers as a way of orienting them to the basic facts about the region. Planners can use the atlas to examine emerging trends outside the park and to prioritize actions to mitigate any anticipated adverse impacts on park resources. Local and regional leaders can consult the atlas to develop environmental policies that support park management goals while remaining responsive to local needs. Researchers can use the atlas to design studies that have practical benefit to park and ecosystem management. Additional uses are discussed in the atlas' concluding section, pages 78 - 79. Regardless of how it is used, the atlas can serve as a useful reference tool that adds to the body of usable scientific knowledge about Blue Ridge Parkway and its surrounding region.

Socioeconomic Indicators: Valuable Management Tools

The Relevance of Human Activities to Park Resource Management

The management of park resources always requires attention to human behavior and activities. Protection of a threatened archaeological site can mean educating visitors about the Antiquities Act. Controlling non-native plant species can require close collaboration with park neighbors and volunteers. Preservation of scenic values can depend upon the monitoring of emissions from electrical generation plants several states away.

While there is an on-going and healthy debate about how to address this "human factor" in park management, a consensus has emerged about three basic principles:

- people are part of park ecosystems, and their needs and activities must be considered in management plans;
- park managers should be concerned with short and long-term trends, as well as the local, regional and national consequences of actions; and
- where appropriate, decisions about park resources should be made collaboratively, including federal agencies, local governments, and citizens in the process.

Managing parks in accordance with these principles requires careful planning, for people have many competing needs. Careful planning requires an accurate and objective assessment of current conditions as well as on-going trends. Hence, understanding the social, cultural, and economic characteristics of the park region is crucial for successful park management.

The Value of Socioeconomic Indicators

One approach to understanding social, cultural, and economic conditions and trends is to use *socioeconomic indicators*. Socioeconomic indicators are regularly collected economic or social statistics that describe or predict changes and trends in the general state of society. For example, the consumer price index (CPI) keeps track of changes in the price of a typical group of consumer goods. The CPI is used to monitor inflation, to compare the cost-of-living in one region of the country to another, and to support economic policy-making. Socioeconomic indicators can address historical trends, present conditions, or future projections.

An integrated set of socioeconomic indicators can be effective in presenting the "basic facts" about the people of a region. Such basic facts are important to park management, and can be used in many ways: assessing the potential impact of government policies, developing sound resource management strategies, designing effective interpretive programs, increasing public involvement in the planning process, and so forth. Like measures of water quality or wildlife populations, socioeconomic indicators enable managers and citizens to make scientifically informed decisions concerning public resources.

The Integrated Set of Indicators

The indicators in this atlas are not simply a collection of various statistics displayed in maps, but an integrated set of indicators organized around broad areas of human activity that are of particular relevance to park management. The selection of a broad range of relevant indicators is important because the dynamics of human interaction on a regional scale are complex. For example, the growth of a new industry can influence a rise in immigration, which in turn can influence other human activities such as housing development. While industry, immigration, and housing are categorically different indicators, each one could be important for a park manager trying to anticipate growth issues that might impact park visitation or ecological systems.

The integrated set of indicators displayed in this atlas encompasses six general categories:

- *General population* indicators measure how many people live in a given area, where those people are concentrated, their ages, patterns of migration, and so forth. General population indicators provide a profile of the people who are neighbors to the park and potential partners in park management.

- *Economy and commerce* indicators measure the flow and distribution of money, materials, and labor. Economy and commerce indicators provide an overview of the interdependent economic relationships among people, businesses, industries, and government with the park region.

- *Social and cultural* indicators measure aspects of personal and group identity such as cultural origin, political and religious beliefs, health, and language. Social and cultural indicators provide insights into the varying perceptions and expectations that people bring with them when they go to their place of work, participate in a public meeting, or visit a park interpretive site.

- *Recreation and tourism* indicators measure activities specifically related to the provision of accommodations, entertainment, and personal services. Recreation and tourism indicators provide a way to analyze the economic role that travelers, vacationers, and other recreationists play in the region surrounding the park, which is itself closely linked to the recreation/tourism sector.

- *Administration and government* indicators measure the structure, resources, and actions of government organizations. Administration and government indicators provide an orientation to the role of government – local, state, and federal – in the park region.

- *Land use* indicators measure the interactions between people and terrestrial resources such as land, water supply, and vegetation. Land use indicators provide a way to gauge the impact of human activities such as farming, forestry, and urban development upon ecosystems within the park region.

Selecting Specific Indicators

Drawing from the six general categories of socioeconomic indicators described above, a menu of 75 socioeconomic indicators was developed. Each indicator was determined to be readily available and mappable at the county level. From this menu, 17 *core indicators* were selected that would be common to all atlases published in this series. The core indicators provide information useful to all park managers. Incorporating these core indicators throughout the series of atlases enables park managers to make comparisons among parks in different regions of the country. Blue Ridge Parkway staff chose additional indicators from the menu described above. Park staff selected these indicators to customize the atlas so that it would target information relevant to their particular management needs. Figure 1 shows the six general categories and the specific indicators included in this atlas; for each category, indicators are listed in the order they appear in the atlas.

The maps in this atlas are based on county-level data wherever possible. County-level data have several advantages. Good quality data are available at this scale, consistently collected at regular intervals, and comparable across all U.S. counties. Also, counties are stable geographic units for monitoring trends, as little change in county boundaries occurs over time. Finally, as administrative and political units, counties significantly influence environmental change and can be important partners in park management.

Technical Notes

Appendix 1 provides the data sources for the indicators presented in this atlas. Appendix 2 provides technical information on the design of the maps. Appendix 3 includes endnotes and text that provide additional information on the measurement of selected indicators.

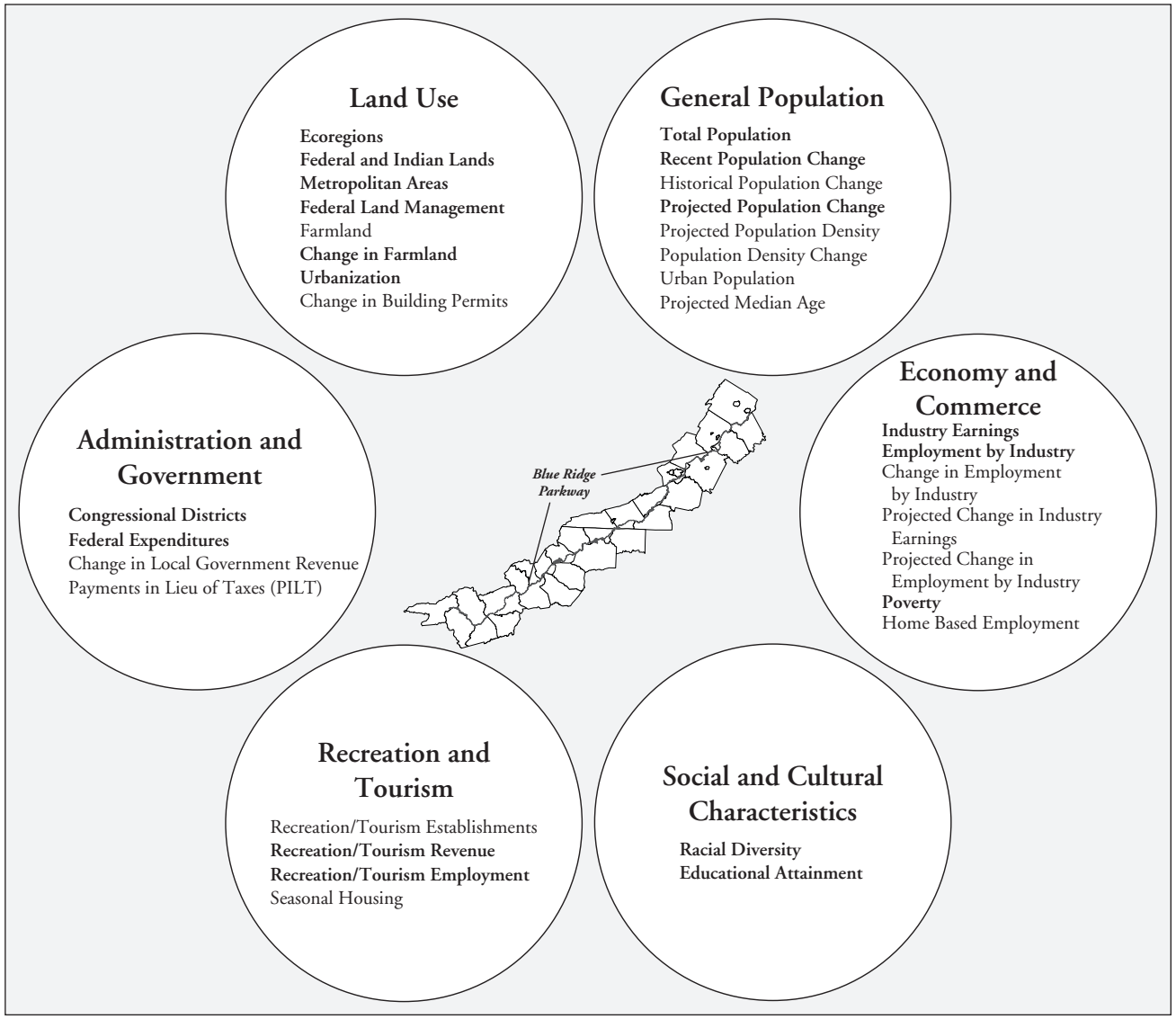


Figure 1. Indicators Included in this Atlas

core indicator additional indicator

The Region

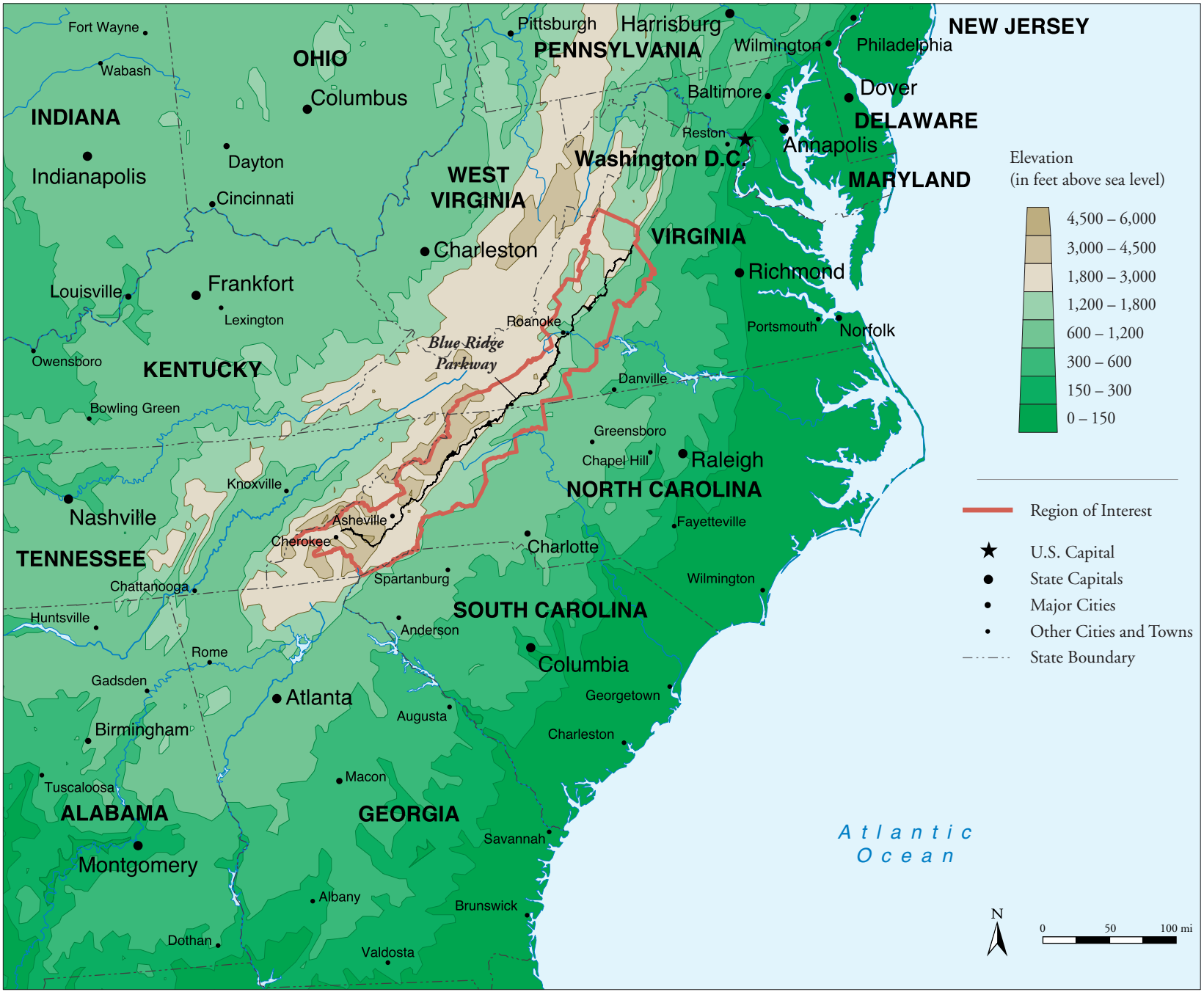
In selecting the boundaries of the region of interest covered by this atlas, Blue Ridge Parkway staff and GMP team were asked to define the geographic area that has the most significant impact on the park's management. Because the atlas relies on county-level socioeconomic data, the region of interest was restricted to entire counties, rather than parts of counties. The region thus selected includes 12 counties in southwestern Virginia and 17 counties in western North Carolina. The map on the facing page depicts the region in its larger context.

Blue Ridge Parkway passes through a total of 29 counties in Virginia and North Carolina and through, or close to, eight independent cities in Virginia. The north end is approximately 90 miles west of Richmond, VA and the south end is approximately 160 miles northeast of Atlanta, GA. The Blue Ridge Parkway covers five different mountain ranges, all of which are part of the greater Appalachian mountain range system. The north end of the Parkway starts along the Blue Ridge Mountains (average elevation of 3,000 feet) at Rock Fish Gap. It continues south, and near Mount Mitchell State Park turns westward over the Black Mountains and the Craggies, before descending near Asheville, NC. The final leg of the Parkway climbs to elevations of over 6,000 feet in the Balsam Mountains before ending in the Great Smoky Mountains National Park near Cherokee, North Carolina.

The region is notable for its rich history. The counties that surround the Blue Ridge Parkway have long been home to Native Americans. The Monacan, Saponi, and Tutelo Indians in western Virginia and the Cherokee Indians of North Carolina were the dominant tribes in this region. During the 19th century the region was home to many homestead farms and pioneer industry. Cabins dating to this period can be seen in many places along the parkway. Examples of early industry can be found in exhibits on the Irish Creek Railway, a short stretch of reconstructed narrow-gauge railroad track, and the James River and Kanawha Canal.

The economies of North Carolina and Virginia are very diversified. They are primarily composed of strong manufacturing and service sectors, although agriculture is the traditional industrial sector. Important crops for both North Carolina and Virginia include tobacco, sweet potatoes, corn, soybeans, and peanuts. Chicken and hog production are also major sources of revenue. The Appalachian Mountains provide many valuable resources for this region. North Carolina leads the nation in the production of feldspar, mica, and lithium. Coal is Virginia's largest mineral resource. Textiles, furniture, and chemical production make up the manufacturing sector for this region. A growing high tech service sector can be found in Northern Virginia and the Research Triangle Complex near Chapel Hill North Carolina. The Research Triangle Complex also provides North Carolina with some federal government employment. Federal government employment is stronger in Virginia where "beltway suburbs" like Reston provide tens of thousands of people jobs in nearby Washington DC. Virginia is also home to several major military installations.

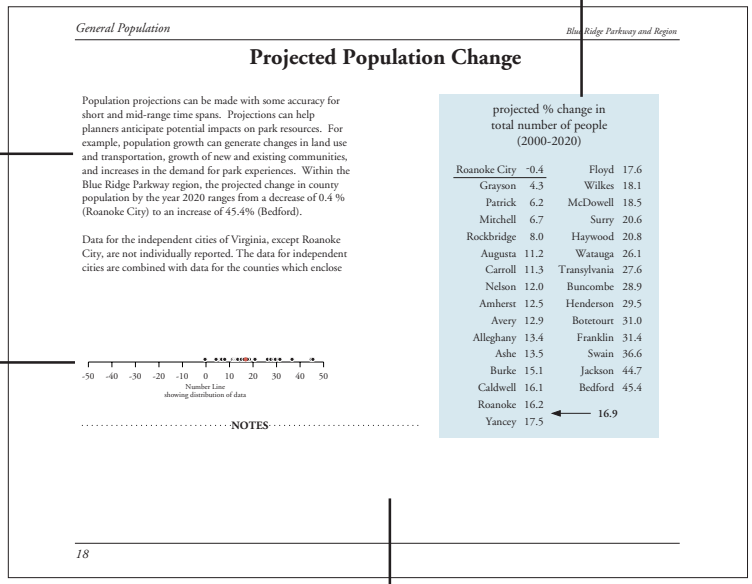
In addition to the Blue Ridge Parkway, this region contains several additional national park units, including Shenandoah NP, Booker T. Washington NHP, Carl Sandburg Home NHP, and Great Smoky Mountains NP.


Fort Wayne
Wabash
OHIO
Columbus
INDIANA
Indianapolis
Dayton
Cincinnati
Pittsburgh
Harrisburg
PENNSYLVANIA
Wilmington
Philadelphia
NEW JERSEY
Baltimore
Dover
DELAWARE
Reston
Annapolis
Washington D.C.
MARYLAND
WEST VIRGINIA
Charleston
VIRGINIA
Richmond
Louisville
Frankfort
Lexington
Roanoke
Portsmouth
Norfolk
Blue Ridge Parkway
Owensboro
KENTUCKY
Danville
Bowling Green
Greensboro
Chapel Hill
Raleigh
Knoxville
NORTH CAROLINA
Nashville
Asheville
Fayetteville
Cherokee
Charlotte
TENNESSEE
Spartanburg
Wilmington
Chattanooga
SOUTH CAROLINA
Huntsville
Anderson
Rome
Columbia
Gadsden
Atlanta
Georgetown
Augusta
Birmingham
Charleston
Macon
Tuscaloosa
ALABAMA
GEORGIA
Savannah
Montgomery
Albany
Brunswick
Dothan
Valdosta
Atlantic Ocean
Elevation
(in feet above sea level)
4,500 – 6,000
3,000 – 4,500
1,800 – 3,000
1,200 – 1,800
600 – 1,200
300 – 600
150 – 300
0 – 150
Region of Interest
U.S. Capital
State Capitals
Major Cities
Other Cities and Towns
State Boundary
N
0
50
100 mi

Using the Socioeconomic Indicators and Maps

The socioeconomic indicators for the Blue Ridge Parkway region of interest are presented in a series of maps. Best available county-level data are presented for each indicator. The following information is provided for each indicator:

- a brief description of the socioeconomic indicator and an observation about the spatial variation in the data as displayed on the map.
- a table that shows the data and relative rank for each county. The median value is highlighted in **bold**. The table allows the reader to look up and compare specific indicator values for each county.
- a map legend describing how the indicator is measured, the year that the data were gathered, and the range of values for each quintile grouping.
- the name of the general category to which this particular indicator belongs (such as general population or land use). The same base color is used for all indicators in the same general category.



General Population — *Blue Ridge Parkway and Region*

Projected Population Change

Population projections can be made with some accuracy for short and mid-range time spans. Projections can help planners anticipate potential impacts on park resources. For example, population growth can generate changes in land use and transportation, growth of new and existing communities, and increases in the demand for park experiences. Within the Blue Ridge Parkway region, the projected change in county population by the year 2020 ranges from a decrease of 0.4 % (Roanoke City) to an increase of 45.4% (Bedford).

Data for the independent cities of Virginia, except Roanoke City, are not individually reported. The data for independent cities are combined with data for the counties which enclose

-50 -40 -30 -20 -10 0 10 20 30 40 50

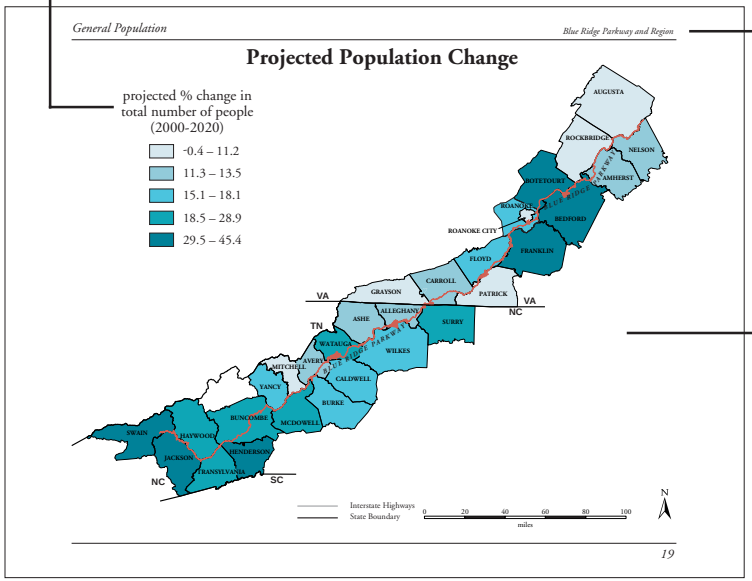
Number Line showing distribution of data

NOTES

projected % change in total number of people (2000-2020)

Roanoke City	-0.4	Floyd	17.6
Grayson	4.3	Wilkes	18.1
Patrick	6.2	McDowell	18.5
Mitchell	6.7	Surry	20.6
Rockbridge	8.0	Haywood	20.8
Augusta	11.2	Watauga	26.1
Carroll	11.3	Transylvania	27.6
Nelson	12.0	Buncombe	28.9
Amherst	12.5	Henderson	29.5
Avery	12.9	Botetourt	31.0
Alleghany	13.4	Franklin	31.4
Ashe	13.5	Swain	36.6
Burke	15.1	Jackson	44.7
Caldwell	16.1	Bedford	45.4
Roanoke	16.2		
Yancey	17.5		16.9

18



General Population — *Blue Ridge Parkway and Region*

Projected Population Change

projected % change in total number of people (2000-2020)

-0.4 – 11.2
11.3 – 13.5
15.1 – 18.1
18.5 – 28.9
29.5 – 45.4

Interstate Highways
State Boundary
0 20 40 60 80 100 miles
N

19

- a number line that shows the distribution of values for the indicator, useful in understanding patterns in the data. The median value is represented by a **red** dot.
- a section for notes. Atlas users can add their own observations about each indicator, and note questions for further analysis.
- a map that displays general trends inherent in the data. For most indicators, counties are grouped into five classes that correspond to five sub-ranges of data values. These groups are called *quintiles*. The highest-ranked quintile receives the darkest shading. For more information on quintile classification, see Appendix 2, page 84.

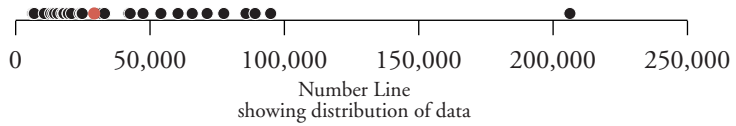
Data for independent cities in Virginia are reported separately from data for the counties which enclose them; these data are included directly in the classification applied to the maps, distribution of values in the number lines, and calculation of median values. However, the data table lists these values separately.

The Socioeconomic Indicators



Total Population

Population size is one of the most important influences on the character of human activities in a place, and a key influence on resource use. People bring labor, knowledge, and economic activity to a place. At the same time, they generate demand for natural resources, goods and services ranging from food to recreational opportunities. Within the Blue Ridge Parkway region, county population (2000) ranges from 6,299 (Bedford City) to 206,330 (Buncombe).[1]



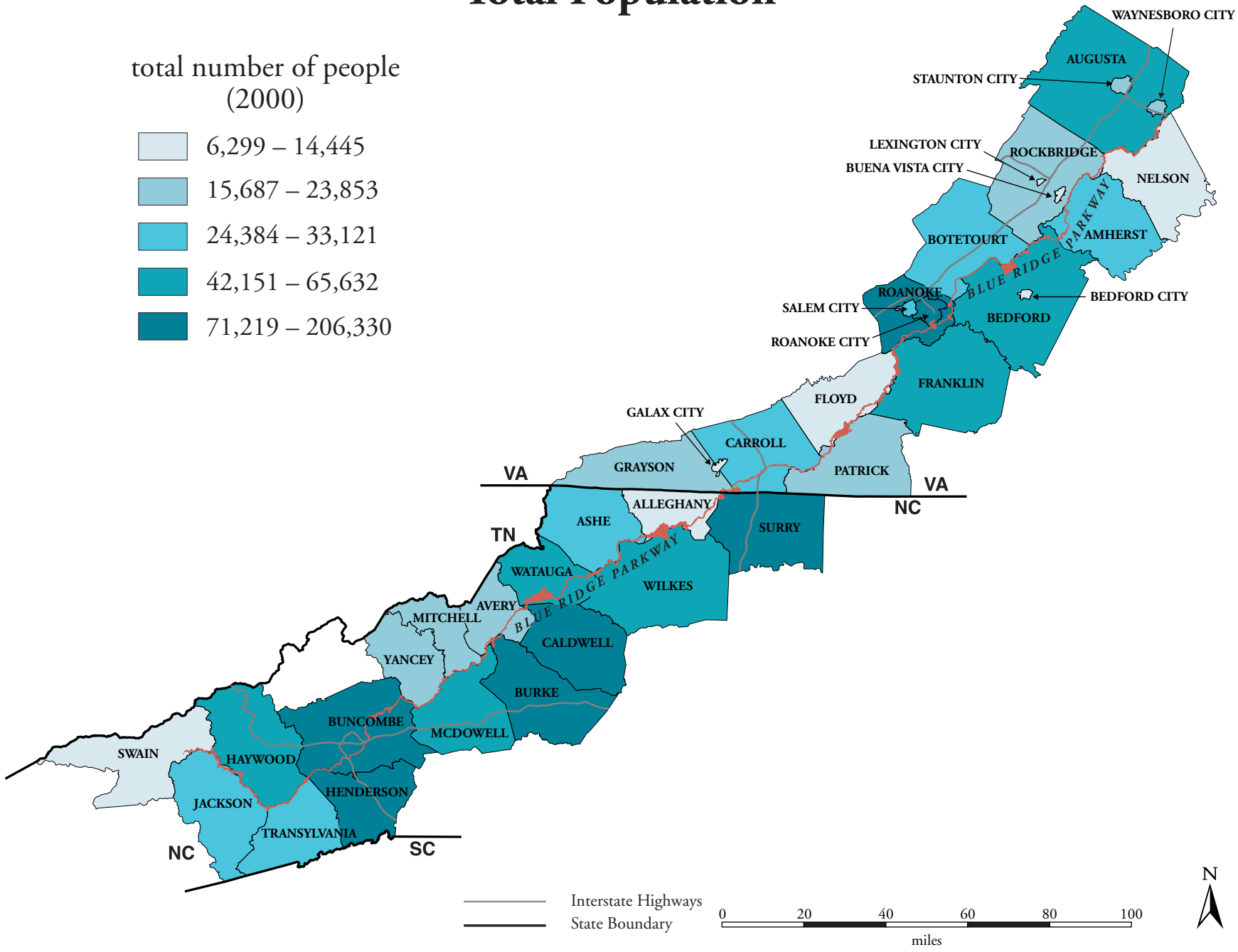
Number Line
showing distribution of data

NOTES

total number of people (2000)

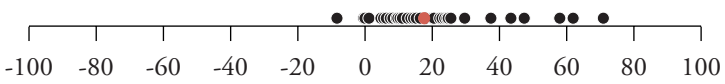
Alleghany	10,677	Haywood	54,033
Swain	12,968	Bedford	60,371
Floyd	13,874	Augusta	65,615
Nelson	14,445	Wilkes	65,632
Mitchell	15,687	Surry	71,219
Avery	17,167	Caldwell	77,415
Yancey	17,774	Roanoke	85,778
Grayson	17,917	Burke	89,148
Patrick	19,407	Henderson	89,173
Rockbridge	20,808	Buncombe	206,330
Ashe	24,384	Bedford City	6,299
Carroll	**29,245**	Buena Vista City	6,349
Transylvania	29,334	Galax City	6,837
Botetourt	30,496	Lexington City	6,867
Amherst	31,894	Waynesboro City	19,520
Jackson	33,121	Staunton City	23,853
McDowell	42,151	Salem City	24,747
Watauga	42,695	Roanoke City	94,911
Franklin	47,286		

Total Population



Historical Population Change

Population change is due to birth, deaths, and migration. Trends in historical population change (1970-1990) provide a context from which to view recent population change (1990-2000). The direction and rate of population change are important socioeconomic trends. For example, population growth increases the size of the economy and can generate changes in land use that affect natural ecosystems. Within the Blue Ridge Parkway region, county growth rates (1970-1990) ranged from a decrease of 8.4% (Lexington City) to an increase of 70.8% (Bedford).



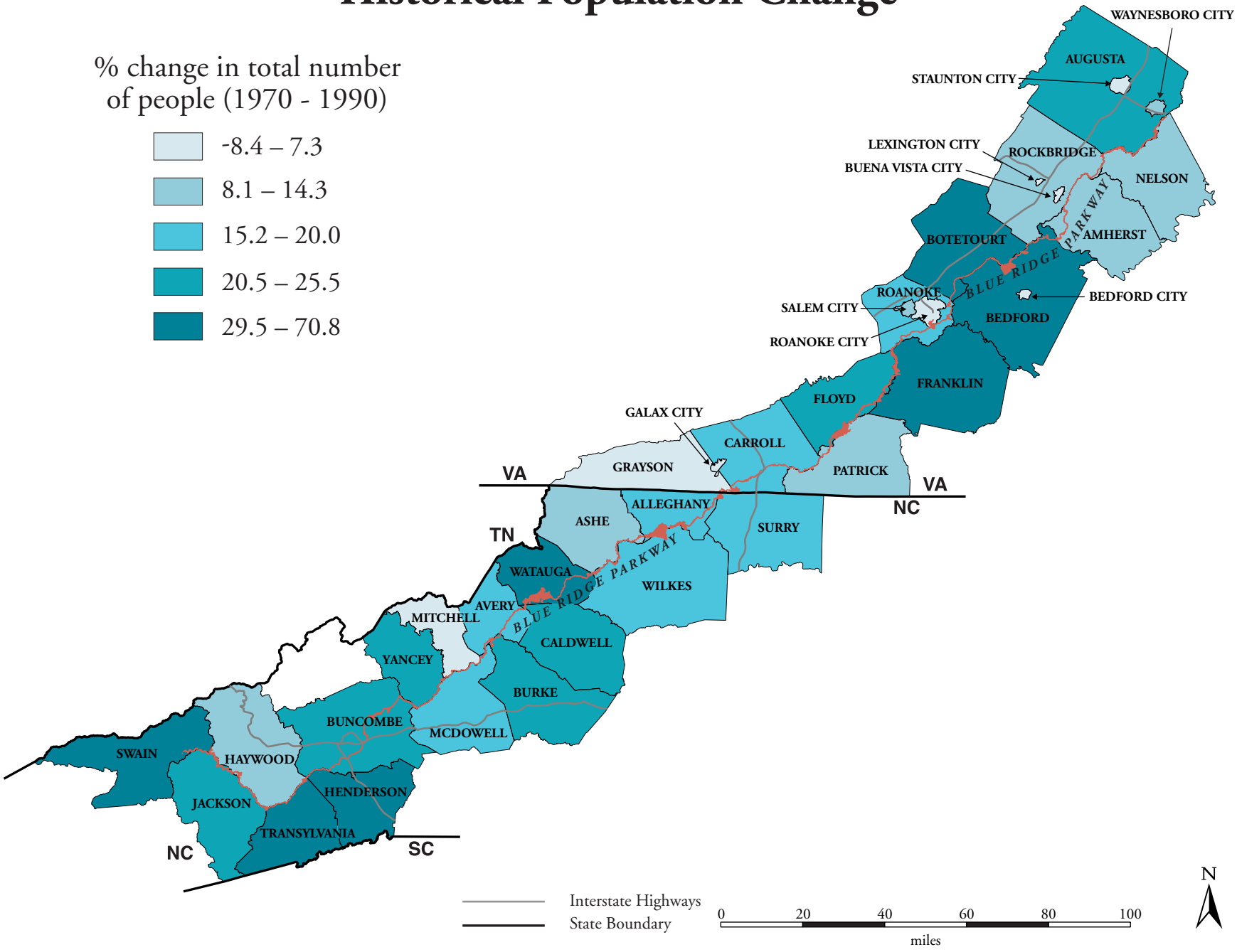
Number Line
showing distribution of data

NOTES

% change in total number of people (1970 - 1990)

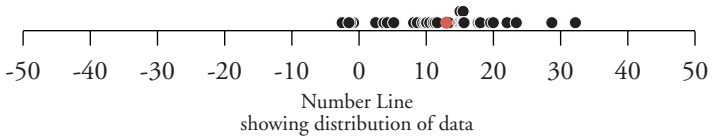
Grayson	5.4	Jackson	24.3
Mitchell	7.3	Caldwell	24.7
Nelson	9.2	Burke	25.5
Amherst	9.6	Transylvania	29.5
Rockbridge	10.3	Botetourt	37.4
Haywood	12.5	Swain	43.3
Ashe	13.5	Franklin	47.3
Patrick	14.3	Watauga	57.9
Carroll	15.2	Henderson	61.9
McDowell	16.4	Bedford	70.8
Avery	**17.5**	Lexington City	-8.4
Roanoke	17.8	Buena Vista City	-0.3
Alleghany	17.9	Staunton City	-0.2
Wilkes	19.9	Bedford City	1.0
Surry	20.0	Roanoke City	4.6
Buncombe	20.5	Galax City	6.2
Yancey	22.1	Salem City	8.1
Floyd	22.8	Waynesboro City	11.0
Augusta	23.6		

Historical Population Change



Recent Population Change

Measuring recent population change provides an indication of the extent to which population change is influencing current local or regional priorities. For example, population growth changes the tax base, adds new voters, and can increase demand for services ranging from schools to transportation to outdoor recreation. Within the Blue Ridge Parkway region, the recent change in county population (1990-2000) ranges from a decrease of 2.5% (Staunton City) to an increase of 32.2% (Bedford).



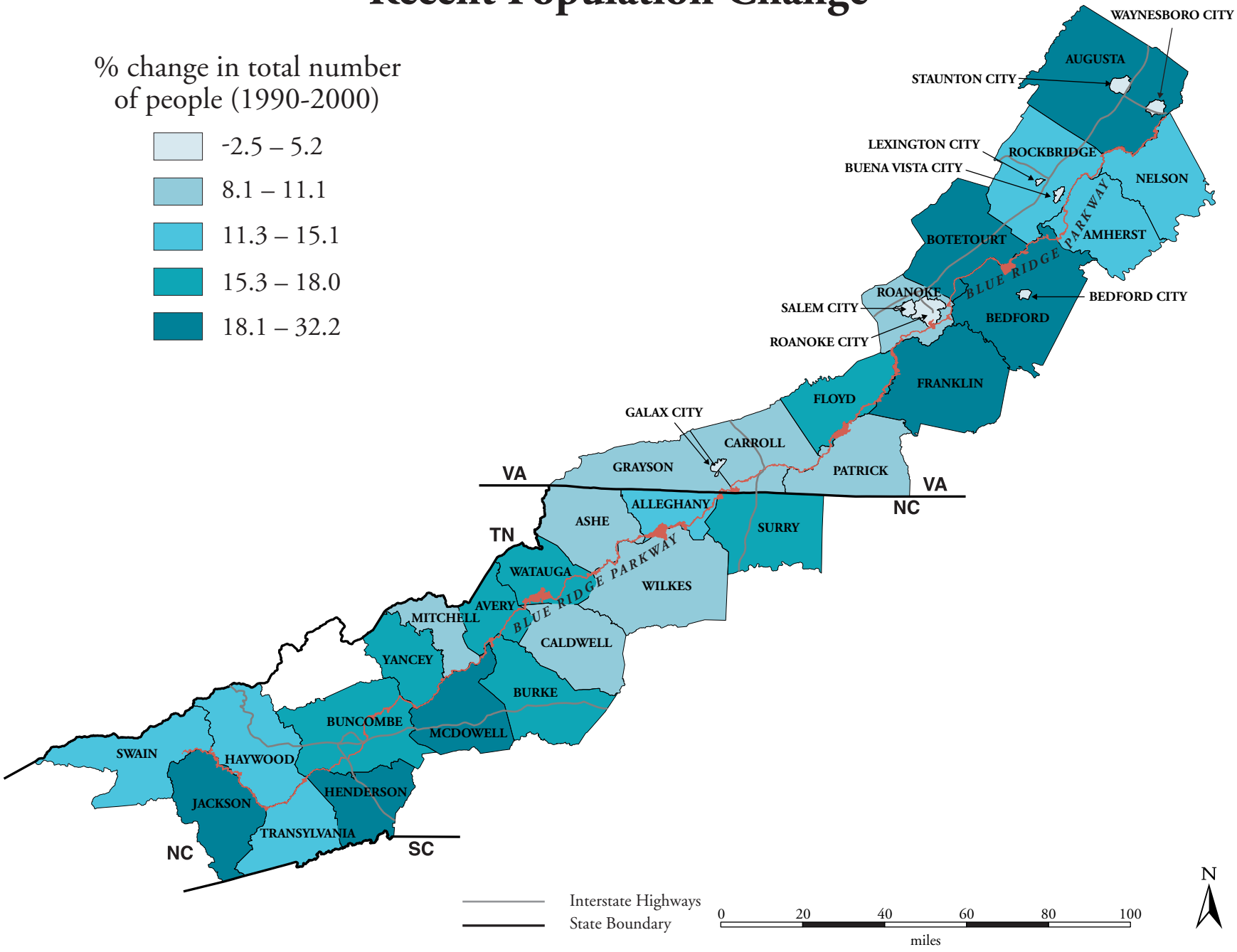
Number Line
showing distribution of data

NOTES

% change in total number of people (1990-2000)

Roanoke	8.1	Floyd	15.6
Mitchell	8.7	Burke	17.7
Caldwell	9.5	Buncombe	18.0
Ashe	9.8	McDowell	18.1
Carroll	10.0	Franklin	19.6
Grayson	10.1	Augusta	20.0
Wilkes	10.5	Botetourt	22.0
Patrick	11.1	Jackson	23.4
Alleghany	11.3	Henderson	28.7
Amherst	11.6	Bedford	32.2
Nelson	**13.0**	Staunton City	-2.5
Rockbridge	13.4	Roanoke City	-1.5
Transylvania	14.9	Lexington City	-1.3
Swain	15.1	Buena Vista City	-0.9
Haywood	15.1	Galax City	2.5
Yancey	15.3	Bedford City	3.7
Surry	15.4	Salem City	4.2
Avery	15.5	Waynesboro City	5.2
Watauga	15.5		

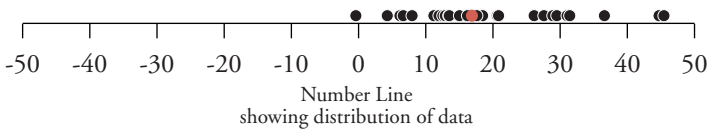
Recent Population Change



Projected Population Change

Population projections can be made with some accuracy for short and mid-range time spans. Projections can help planners anticipate potential impacts on park resources. For example, population growth can generate changes in land use and transportation, growth of new and existing communities, and increases in the demand for park experiences. Within the Blue Ridge Parkway region, the projected change in county population by the year 2020 ranges from a decrease of 0.4 % (Roanoke City) to an increase of 45.4% (Bedford)[2].

Data for the independent cities of Virginia, except Roanoke City, are not individually reported in this data set. The data for independent cities are combined with data for the counties which enclose them.



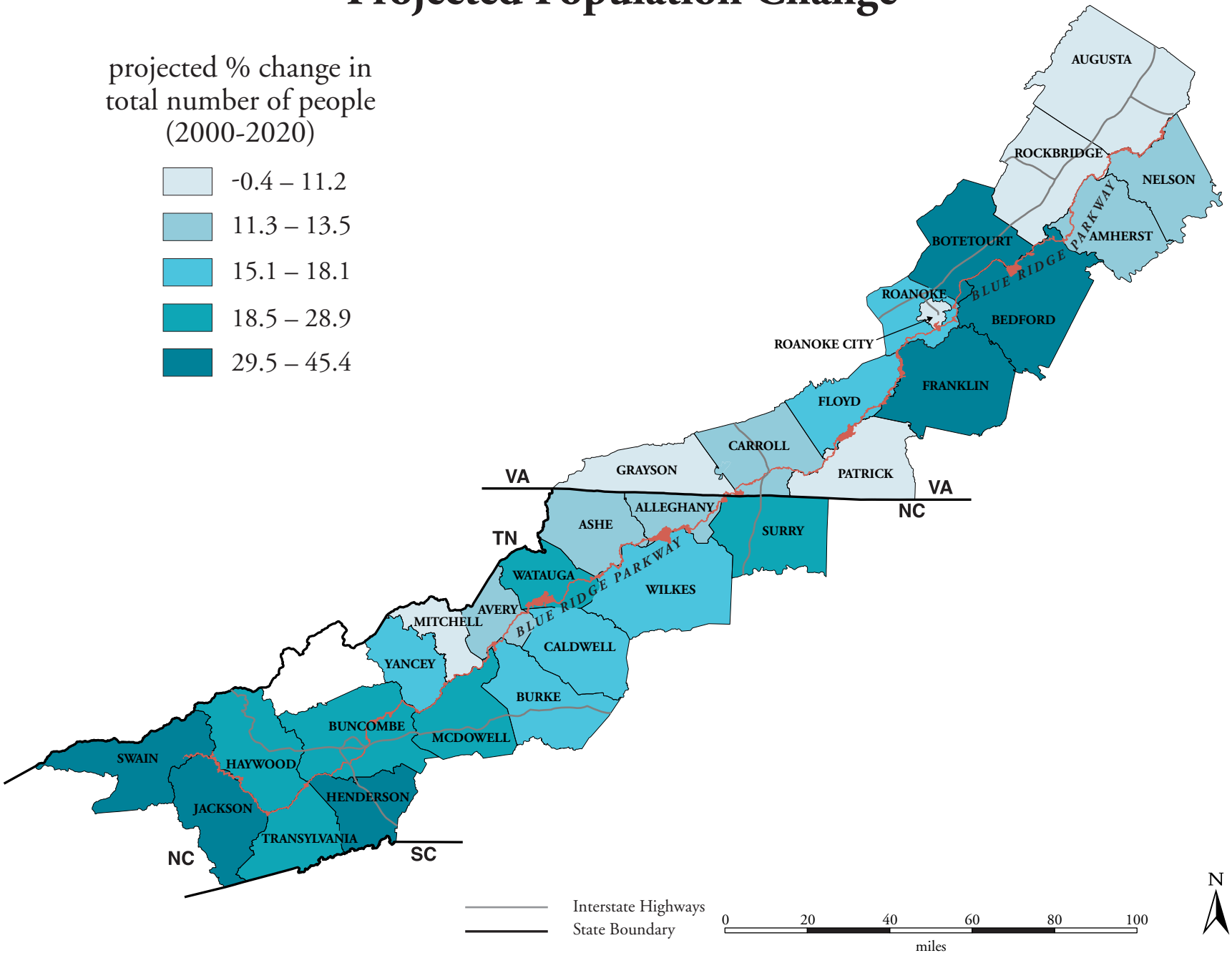
Number Line
showing distribution of data

NOTES

projected % change in
total number of people
(2000-2020)

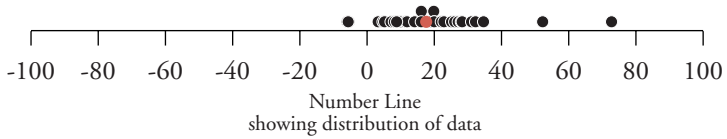
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Grayson	4.3	Wilkes	18.1
Patrick	6.2	McDowell	18.5
Mitchell	6.7	Surry	20.6
Rockbridge	8.0	Haywood	20.8
Augusta	11.2	Watauga	26.1
Carroll	11.3	Transylvania	27.6
Nelson	12.0	Buncombe	28.9
Amherst	12.5	Henderson	29.5
Avery	12.9	Botetourt	31.0
Alleghany	13.4	Franklin	31.4
Ashe	13.5	Swain	36.6
Burke	15.1	Jackson	44.7
Caldwell	16.1	Bedford	45.4
Roanoke	16.2		
Yancey	17.5	←	**16.9**

Projected Population Change



Population Density Change

Population density change is an alternate means of stating the rate of population growth or decline. Population density change depicted here over a mid-range period of time (1980-2000) can be compared with recent population change (1990-2000), as depicted on pages 16 - 17, to determine whether the rate of change has remained steady, decreased, or increased in recent years. Steady or decelerating population growth can allow government and institutions to anticipate and plan for needs in advance. Accelerating population growth can place stress on government and institutions, which must to respond rapidly to changes in civic life, industry, infrastructure, and the use of land and resources. Within the Blue Ridge Parkway region, the change in county population density (1980-2000) ranges from a decrease of 5.8% (Lexington City) to an increase of 72.8% (Bedford).[3]



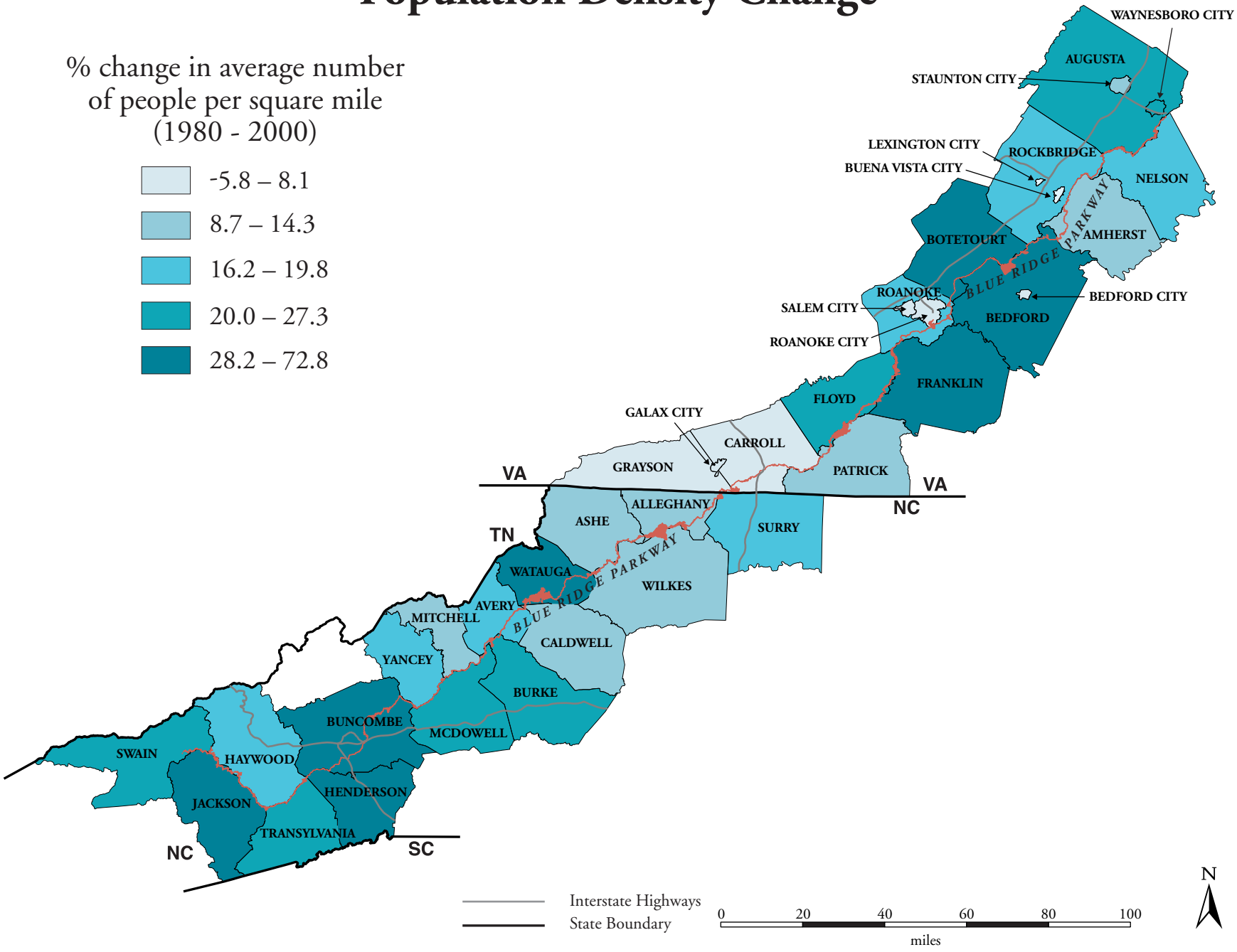
Number Line
showing distribution of data

NOTES

% change in average number of people per square mile (1980-2000)

Carroll	7.2	Burke	23.0
Grayson	8.1	Transylvania	25.3
Mitchell	8.7	Swain	26.1
Ashe	9.2	Buncombe	28.2
Amherst	9.5	Jackson	28.3
Patrick	10.0	Botetourt	31.1
Alleghany	11.4	Franklin	32.3
Wilkes	11.9	Watauga	34.8
Caldwell	14.3	Henderson	52.2
Rockbridge	16.2	Bedford	72.8
Haywood	16.2	Lexington City	-5.8
Roanoke	**17.6**	Buena Vista City	-5.5
Nelson	18.4	Roanoke City	-5.3
Yancey	19.0	Salem City	3.3
Avery	19.1	Galax City	4.8
Surry	19.8	Bedford City	5.1
McDowell	20.0	Staunton City	9.1
Floyd	20.0	Waynesboro City	27.3
Augusta	22.1		

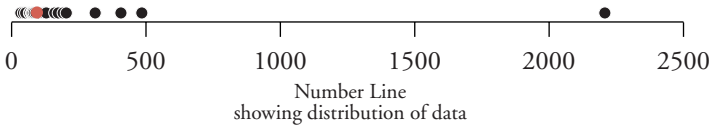
Population Density Change



Projected Population Density

Population density projections are based on population projections. Future regional variations in county population density suggest variations in how counties will approach decisions about natural resource-related issues such as transportation, zoning, and water supply. Significantly increased population density can generate rising land costs as well as increased demand for open space to be used for recreation or conservation. Within the Blue Ridge Parkway region, projected county population density for the year 2020 ranges from 33.5 people per square mile (Swain) to 2206.3 people per square mile (Roanoke City).

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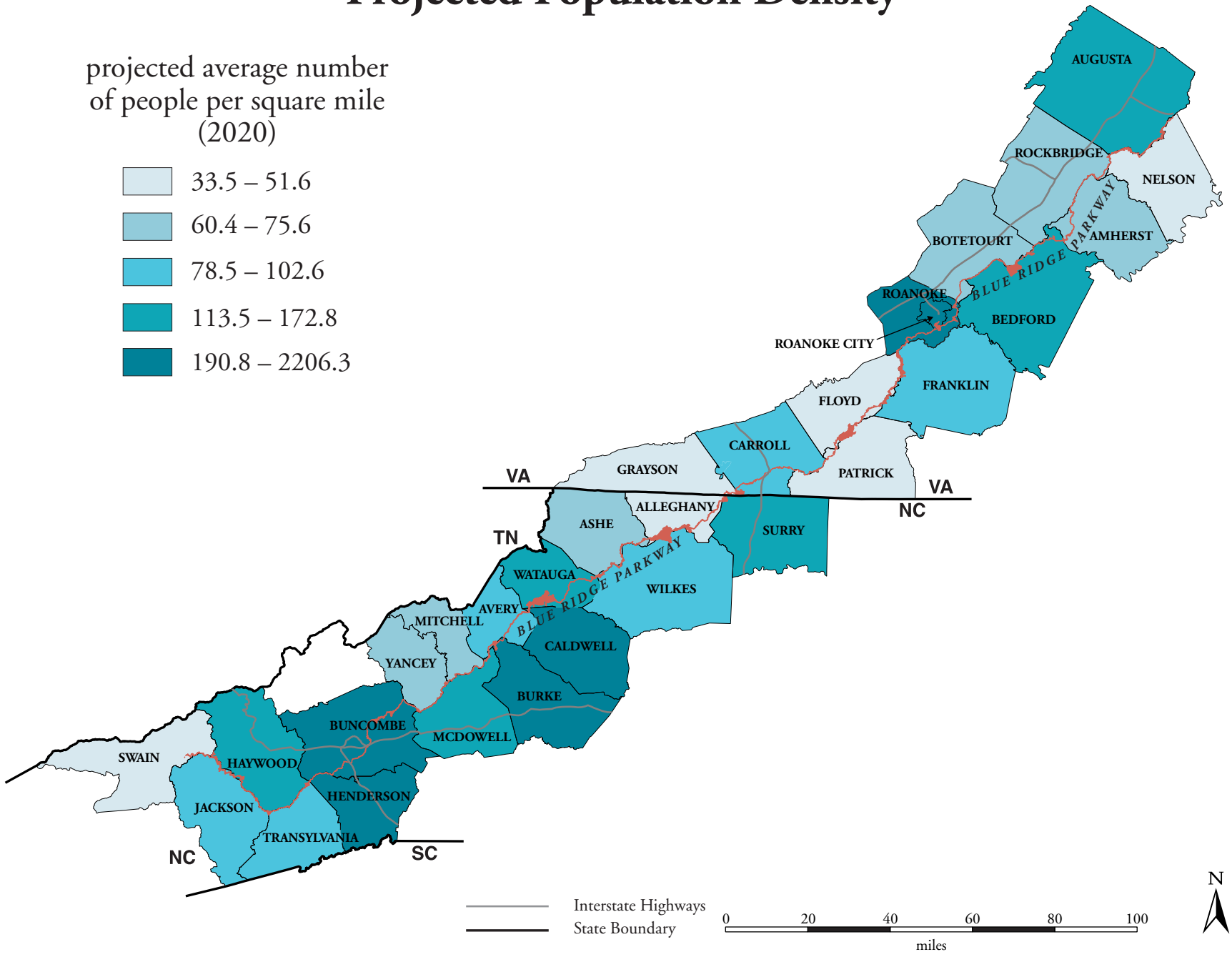
Number Line
showing distribution of data

projected average number of people per square mile (2020)

Swain	33.5	Transylvania	99.2
Nelson	34.3	Wilkes	102.6
Grayson	42.3	McDowell	113.5
Patrick	42.7	Haywood	118.2
Floyd	42.8	Augusta	121.0
Alleghany	51.6	Bedford	128.1
Rockbridge	60.4	Surry	160.5
Ashe	64.9	Watauga	172.8
Yancey	66.8	Caldwell	190.8
Botetourt	74.0	Burke	203.1
Mitchell	75.5	Henderson	310.2
Amherst	75.6	Buncombe	406.6
Avery	78.5	Roanoke	485.5
Carroll	83.0	Roanoke City	2206.3
Franklin	90.1		
Jackson	98.1	←	**94.1**

NOTES

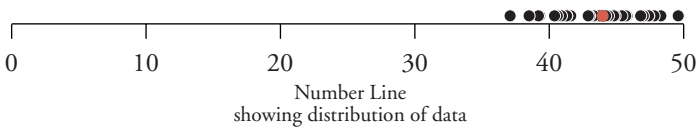
Projected Population Density



Projected Median Age

Median age expresses the age of a "typical" county resident for whom half the population is older and half is younger. Just as age is an important influence on individual behavior, the median age of a county's population can influence its character in many ways. For example, a relatively young county population might place a higher priority on schools, while a relatively old county population might place a higher priority on health care. Within the Blue Ridge Parkway region, projections for median age in the year 2020 range from 37.1 (Burke) to 49.6 (Transylvania).

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Number Line
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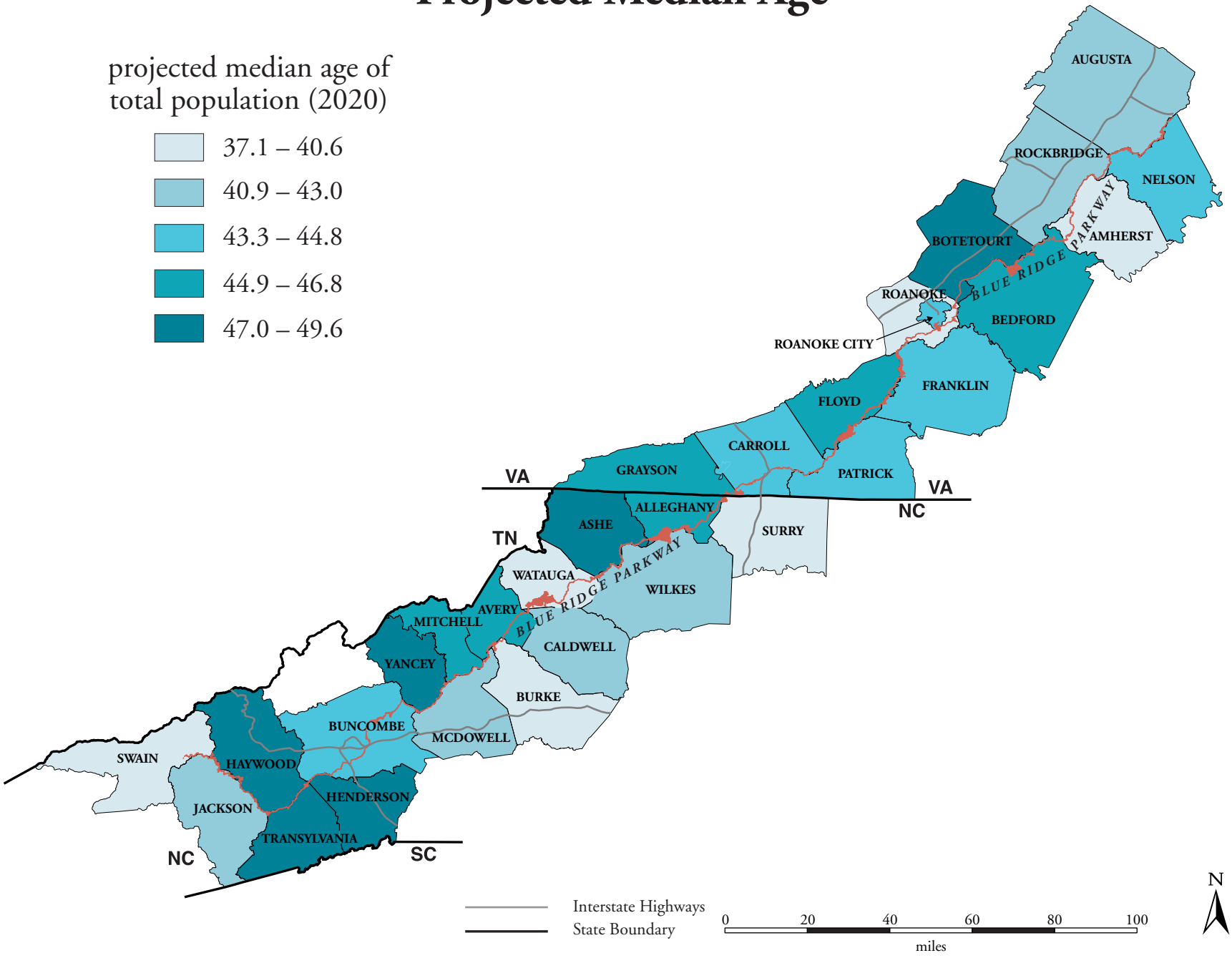
projected median age of total population (2020)

Burke	37.1	Franklin	44.8
Surry	38.5	Bedford	44.9
Roanoke	39.2	Mitchell	45.4
Swain	39.3	Avery	45.7
Amherst	40.4	Alleghany	45.7
Watauga	40.6	Floyd	45.8
Wilkes	40.9	Grayson	46.8
Jackson	41.3	Yancey	47.0
Rockbrigde	41.3	Henderson	47.4
Caldwell	41.6	Haywood	47.4
McDowell	42.9	Botetourt	47.8
Augusta	43.0	Ashe	48.3
Carroll	43.3	Transylvania	49.6
Buncombe	43.8	Roanoke City	43.7
Nelson	44.2		
Patrick	44.4		

44.0

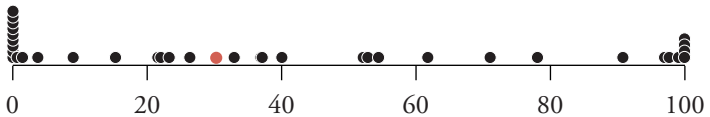
NOTES

Projected Median Age



Urban Population

The relative percentage of urban dwellers within counties in the park region can be significant in addressing regional issues related to park management. Urban dwellers may have easier access to schools, stores, and medical service. They may also benefit from a greater array of public services such as water utilities and municipal police protection. These and many other differences can tend to generate varying urban and rural strategies for dealing with issues such as taxation, development, and environmental protection. Within the Blue Ridge Parkway region, the percentage of the county population living in urban areas (2000) ranges from 0% (Alleghany, Ashe, Avery, Floyd, Mitchell, Nelson, Patrick, Swain, Yancey) to 100% (Bedford City).[5]



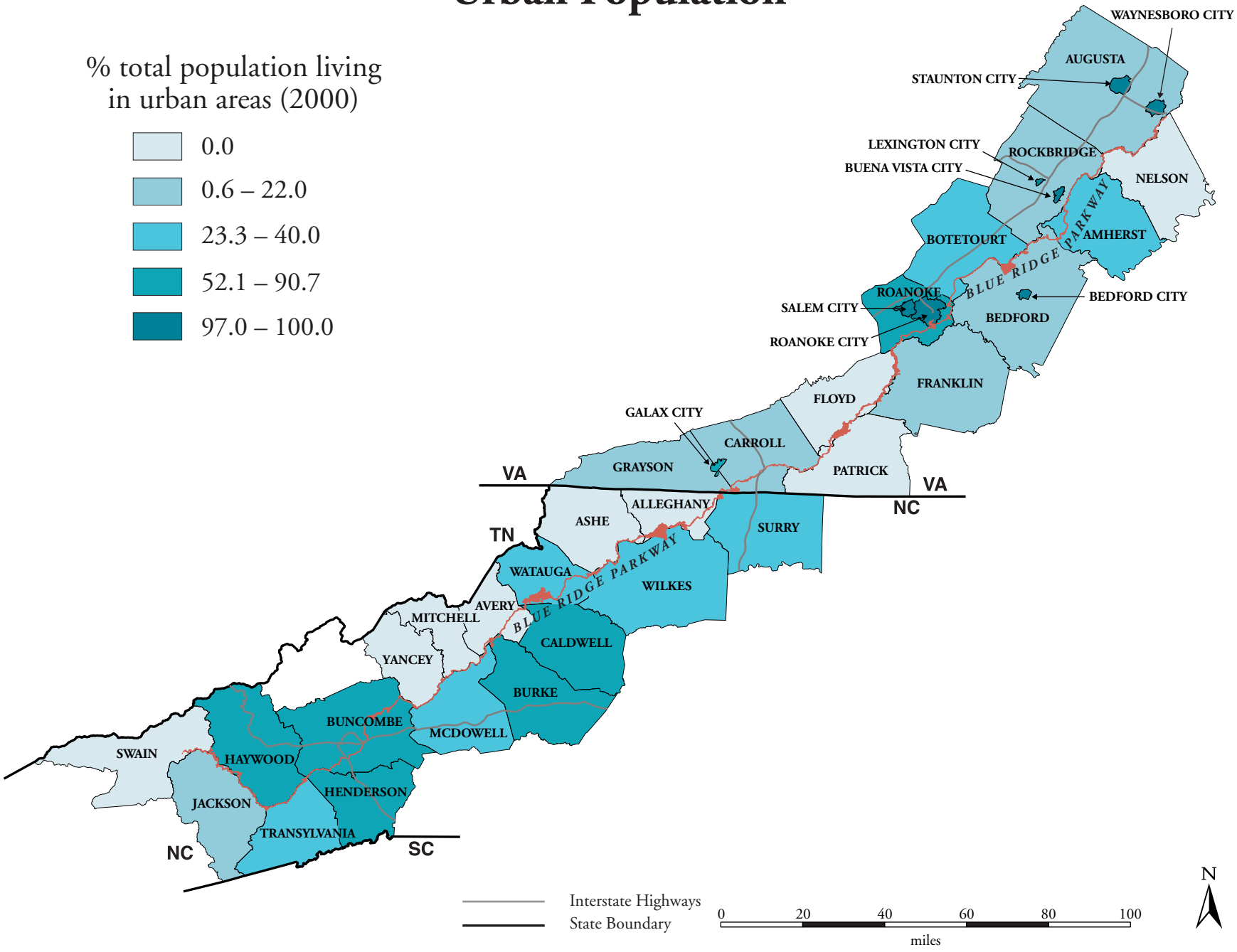
Number Line
showing distribution of data

NOTES

% total population living in urban areas (2000)

Alleghany	0.0	Botetourt	32.9
Ashe	0.0	Amherst	36.9
Avery	0.0	Transylvania	37.1
Mitchell	0.0	Watauga	40.0
Swain	0.0	Haywood	52.1
Yancey	0.0	Henderson	52.8
Floyd	0.0	Burke	54.4
Nelson	0.0	Caldwell	61.7
Patrick	0.0	Buncombe	71.0
Grayson	0.6	Roanoke	78.0
Carroll	1.4	Galax City	90.7
Rockbridge	3.7	Buena Vista City	97.0
Franklin	9.0	Waynesboro City	97.7
Bedford	15.3	Staunton City	99.1
Jackson	21.6	Lexington City	100.0
Augusta	22.0	Roanoke City	100.0
McDowell	23.3	Salem City	100.0
Wilkes	26.3	Bedford City	100.0
Surry	**30.2**		

Urban Population



Industry Earnings

Industry earnings are indicative of the overall size of a local economy as well as the relative importance of each major industrial sector within that economy. The diversity of economic activities in the region presents an array of challenges to park management. For example, relatively mobile industries such as light manufacturing or financial services may be concerned with land costs and tax rates, whereas natural resource dependent industries such as farming or mining may be concerned with land use regulations and other environmental policies. Within the Blue Ridge Parkway region (1999), the leading sector of earnings in 18 counties and Roanoke City is sales and services.

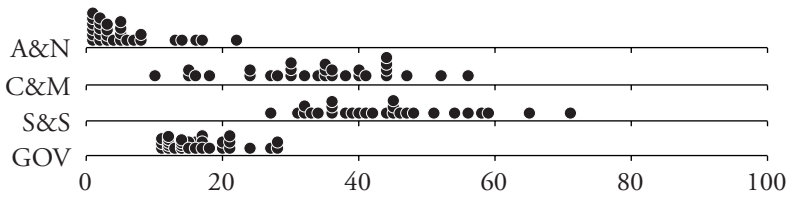
Data for the independent cities of Virginia, except Roanoke City, are not individually reported. The data for independent cities are combined with data for the counties which enclose them.[6]

% total earnings by industrial category (1999)

	A&N	C&M	S&S	GOV		A&N	C&M	S&S	GOV
Alleghany	22	35	32	11	Henderson	7	35	45	12
Amherst	1	35	36	28	Jackson	5	15	51	28
Ashe	16	40	32	12	McDowell	5	56	27	12
Augusta	2	34	47	17	Mitchell	13	30	39	18
Avery	17	24	46	14	Nelson	6	18	59	17
Bedford	1	40	45	14	Patrick	2	47	38	13
Botetourt	5	36	44	15	Roanoke	1	28	56	16
Buncombe	2	24	58	16	Rockbridge	1	30	48	21
Burke	3	44	31	21	Surry	8	44	36	12
Caldwell	3	52	34	11	Swain	1	10	65	24
Carroll	2	41	42	15	Transylvania	3	44	41	11
Floyd	7	27	46	20	Watauga	3	15	54	27
Franklin	2	44	40	14	Wilkes	8	30	48	14
Grayson	5	38	36	21	Yancey	14	36	33	17
Haywood	4	32	45	20	Roanoke City	1	16	71	12

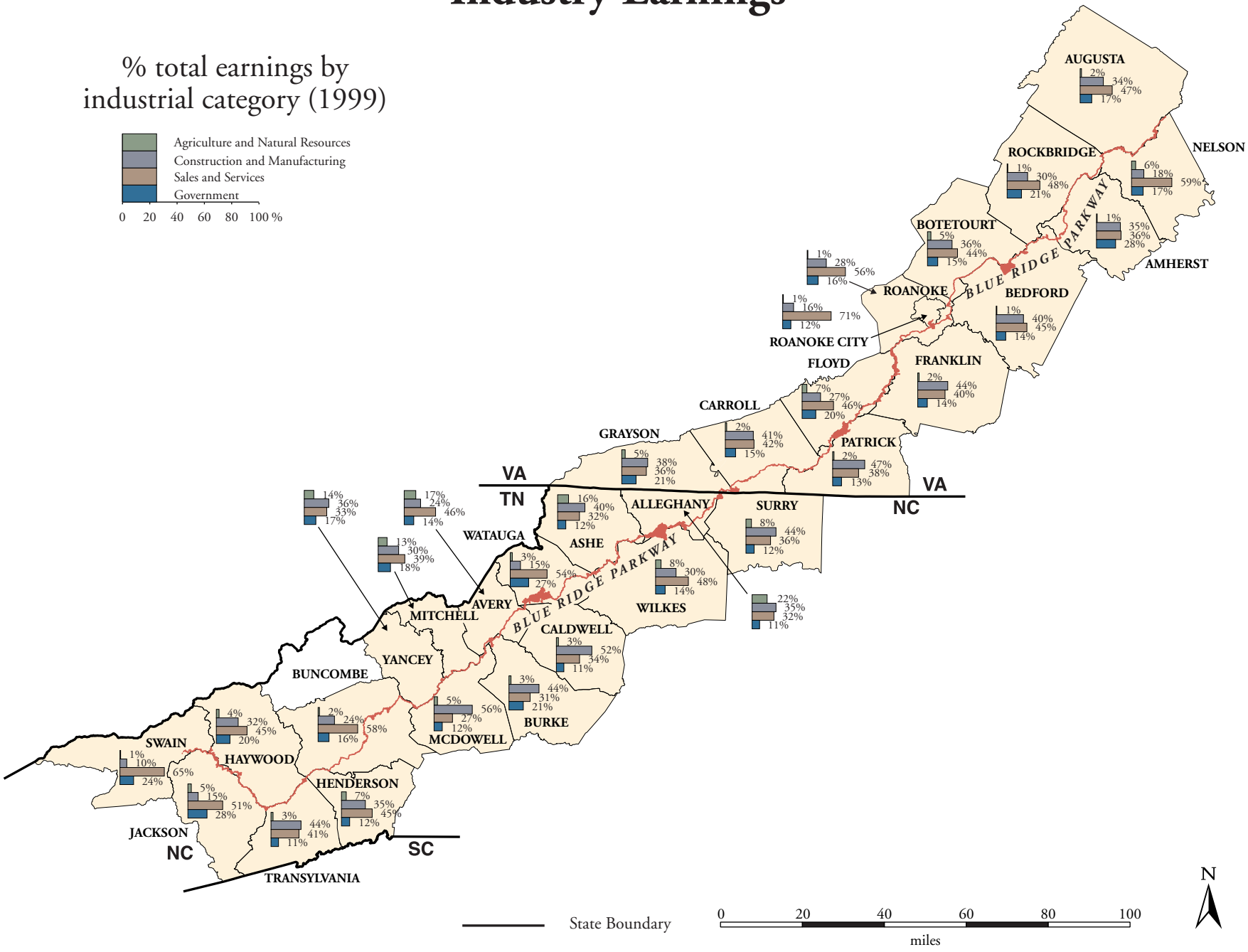
A&N = Agriculture and Natural Resources
C&M = Construction and Manufacturing
S&S = Sales and Services
GOV = Government

Percentages may not add to one hundred due to rounding.



Number Line
showing distribution of data

Industry Earnings



Employment by Industry

One indicator of the way a particular county's job market is structured is the percentage of workers employed in each of the four major industrial sectors. This employment distribution is indicative of the kinds of skills, knowledge, and concerns that are most prevalent among workers. Occupational patterns can influence people's priorities and actions with regard to parks and resource protection. For example, construction workers might welcome the prospect of rapid growth, whereas government workers such as teachers and police might worry that rapid growth would stress existing government resources. Within the Blue Ridge Parkway region (1999), the leading sector of employment in 27 counties and Roanoke City is sales and services. Construction and manufacturing is the leading sector in Caldwell and McDowell counties.

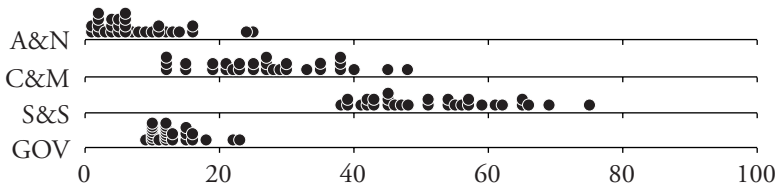
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% employment by industrial category (1999)

	A&N	C&M	S&S	GOV		A&N	C&M	S&S	GOV
Alleghany	16	35	39	9	Henderson	5	28	57	11
Amherst	5	23	48	23	Jackson	4	12	62	22
Ashe	16	33	42	10	McDowell	2	48	38	12
Augusta	6	25	54	15	Mitchell	11	27	46	16
Avery	12	19	59	11	Nelson	13	15	61	11
Bedford	8	27	54	11	Patrick	11	38	41	10
Botetourt	10	27	51	12	Roanoke	1	21	66	12
Buncombe	2	21	65	12	Rockbridge	6	23	55	15
Burke	2	38	42	18	Surry	6	40	45	10
Caldwell	2	45	43	10	Swain	3	12	69	16
Carroll	7	38	43	12	Transylvania	4	30	56	10
Floyd	25	19	45	12	Watauga	4	12	65	19
Franklin	9	35	47	10	Wilkes	6	30	51	13
Grayson	24	25	39	13	Yancey	14	29	45	12
Haywood	5	22	57	15	Roanoke City	1	15	75	10

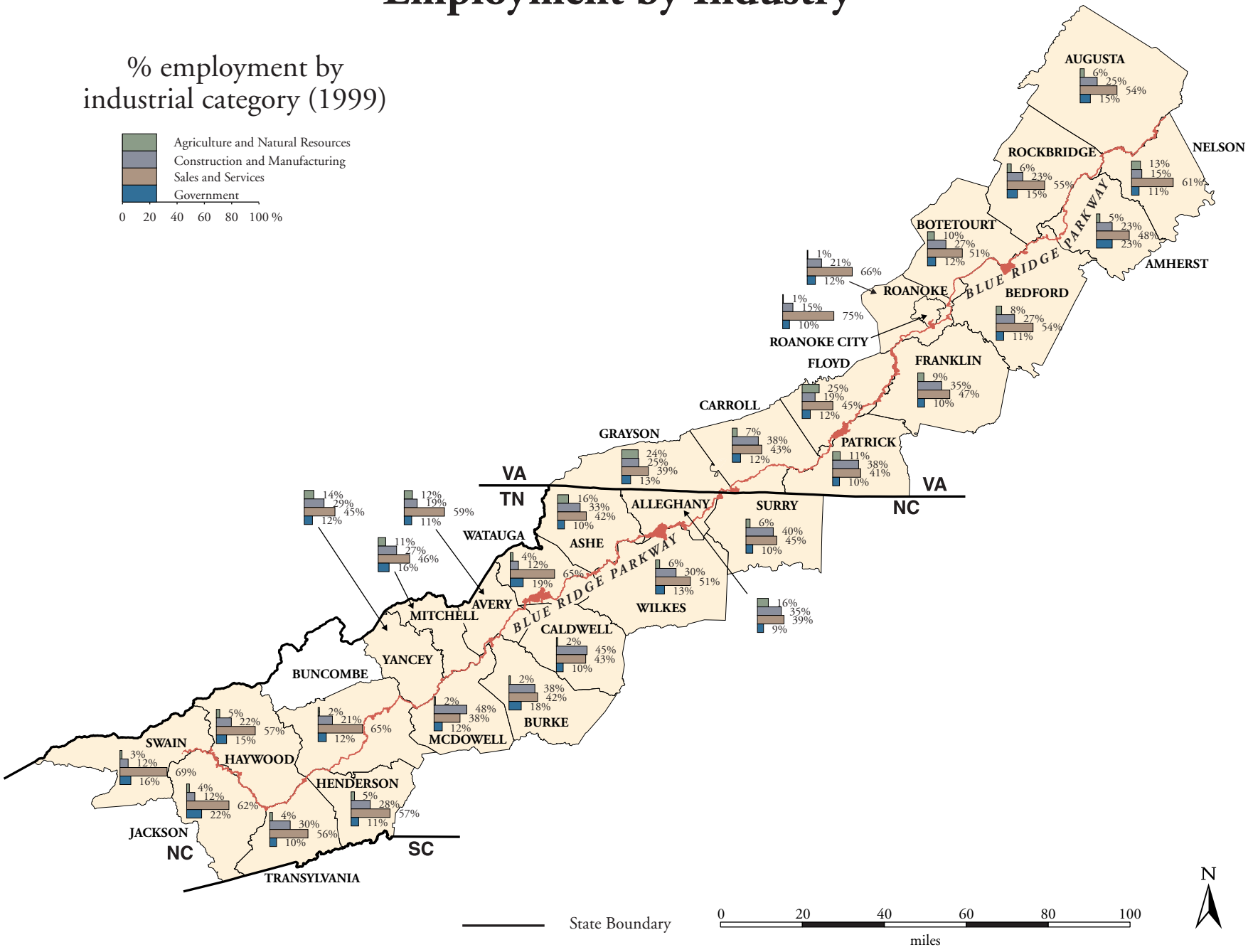
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Number Line
showing distribution of data

Employment by Industry



Change in Employment by Industry

Jobs are of critical importance to individuals, families, and communities. Change in the proportion of people employed by various industries within an economy can create a cascading set of impacts. A declining industry's displacement of workers whose skills are in less demand can generate stress among households and communities. A growing industry's demand for new sets of skills can influence migration patterns and educational priorities. Local and regional political decisions, including those that impact park management goals, often place priority on protecting existing jobs or attracting new employment opportunities. Within the Blue Ridge Parkway region (1990-1999), counties varied not only in the relative rates of growth for each industry but also in the overall pace of employment growth.

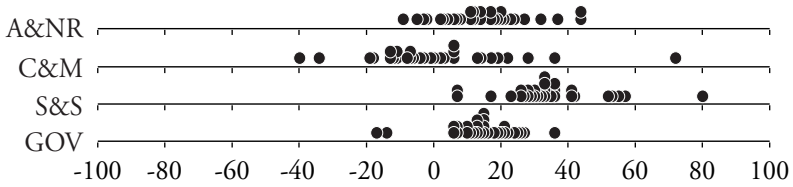
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% change in employment by industrial category (1990-1999)

	A&N	C&M	S&S	GOV		A&N	C&M	S&S	GOV
Alleghany	20	36	30	-14	Henderson	12	17	36	21
Amherst	17	28	7	-17	Jackson	27	-11	80	11
Ashe	19	2	26	22	McDowell	17	6	33	36
Augusta	23	-7	23	6	Mitchell	18	-13	33	16
Avery	44	19	28	25	Nelson	3	6	42	10
Bedford	12	14	53	18	Patrick	-9	-4	17	6
Botetourt	11	72	41	27	Roanoke	37	-13	7	7
Buncombe	14	-1	36	13	Rockbridge	11	3	26	10
Burke	20	-12	30	13	Surry	4	-3	32	26
Caldwell	21	0	33	19	Swain	44	-40	31	15
Carroll	8	-6	27	15	Transylvania	32	-7	28	12
Floyd	14	-18	55	24	Watauga	6	22	41	15
Franklin	-3	6	52	21	Wilkes	2	-8	35	15
Grayson	7	-34	33	14	Yancey	-2	-19	57	20
Haywood	-5	-11	36	13	Roanoke City	24	13	29	7

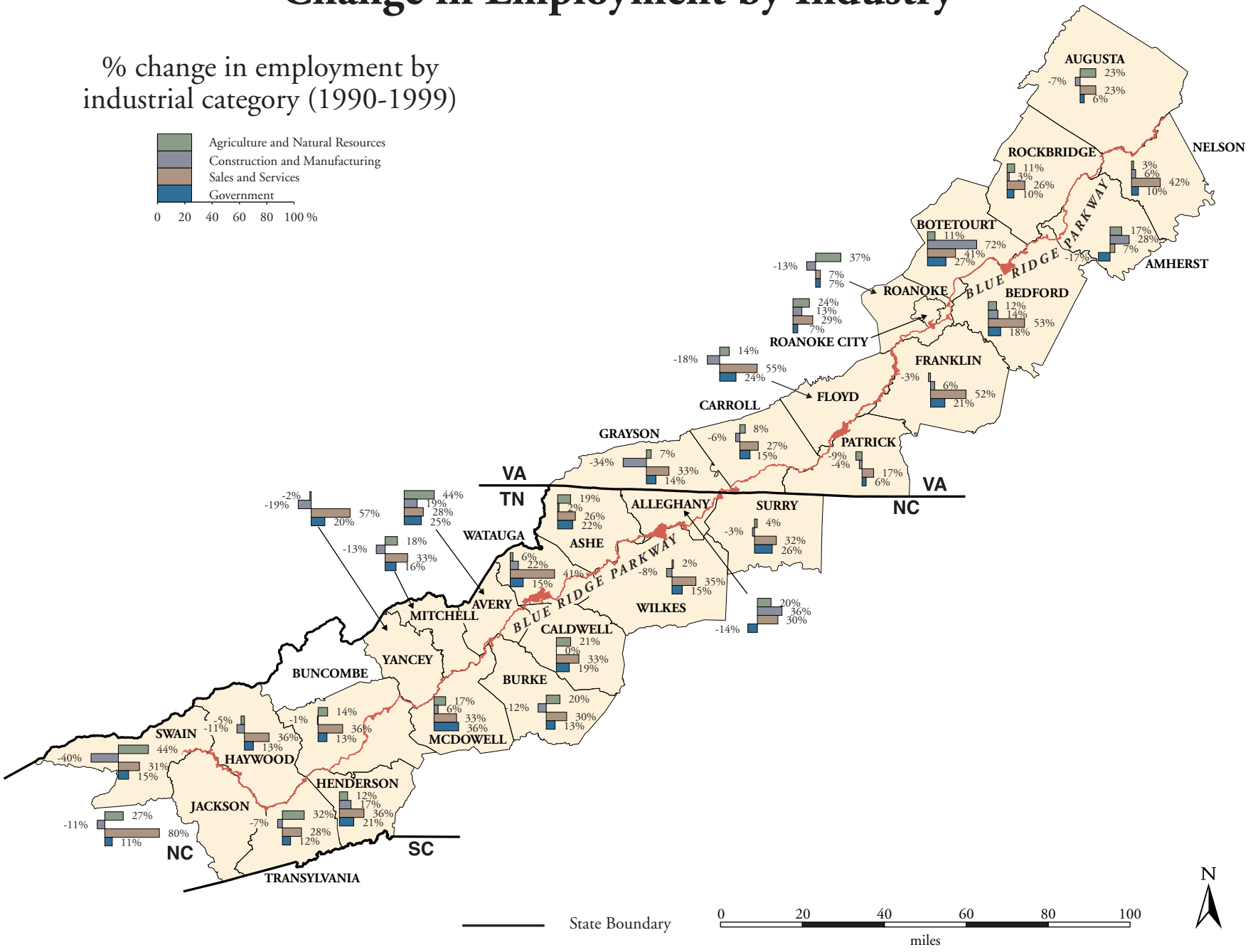
A&N = Agriculture and Natural Resources
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Percentages may not add to one hundred due to rounding.



Number Line
showing distribution of data

Change in Employment by Industry



Projected Change in Industry Earnings

Projected change in industry earnings may be indicative of the overall continued growth or decline of a local economy as well as a prediction of the relative importance of each major industrial sector within that economy. The diversity of economic activities in the region presents an array of challenges to park management. For example, relatively mobile industries such as light manufacturing or financial services may be concerned with land costs and tax rates, whereas natural resource dependent industries such as farming or mining may be concerned with land use regulations and other environmental policies. Within the Blue Ridge Parkway region (2000-2020), all counties show an increase in earnings in all industrial categories, with the largest projected increases generally in sales and service.

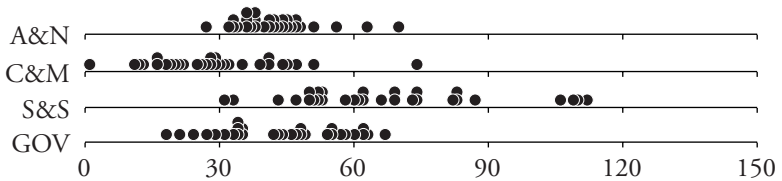
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% projected change in earnings
by industrial category (2000-2020)

	A&N	C&M	S&S	GOV		A&N	C&M	S&S	GOV
Alleghany	45	45	109	55	Henderson	41	51	66	46
Amherst	45	47	52	24	Jackson	47	41	106	34
Ashe	36	39	62	58	McDowell	42	29	58	62
Augusta	36	16	43	33	Mitchell	56	18	61	67
Avery	63	21	83	60	Nelson	44	30	110	18
Bedford	44	44	112	62	Patrick	43	41	31	31
Botetourt	40	74	74	47	Roanoke	38	32	87	44
Buncombe	46	27	73	34	Rockbridge	32	29	53	42
Burke	70	16	62	21	Surry	37	28	60	54
Caldwell	36	28	50	55	Swain	33	13	82	29
Carroll	42	20	52	49	Transylvania	38	22	47	35
Floyd	38	19	69	43	Watauga	51	25	74	63
Franklin	34	35	83	57	Wilkes	27	26	50	48
Grayson	41	1	53	34	Yancey	48	31	51	48
Haywood	47	11	69	27	Roanoke City	33	12	33	35

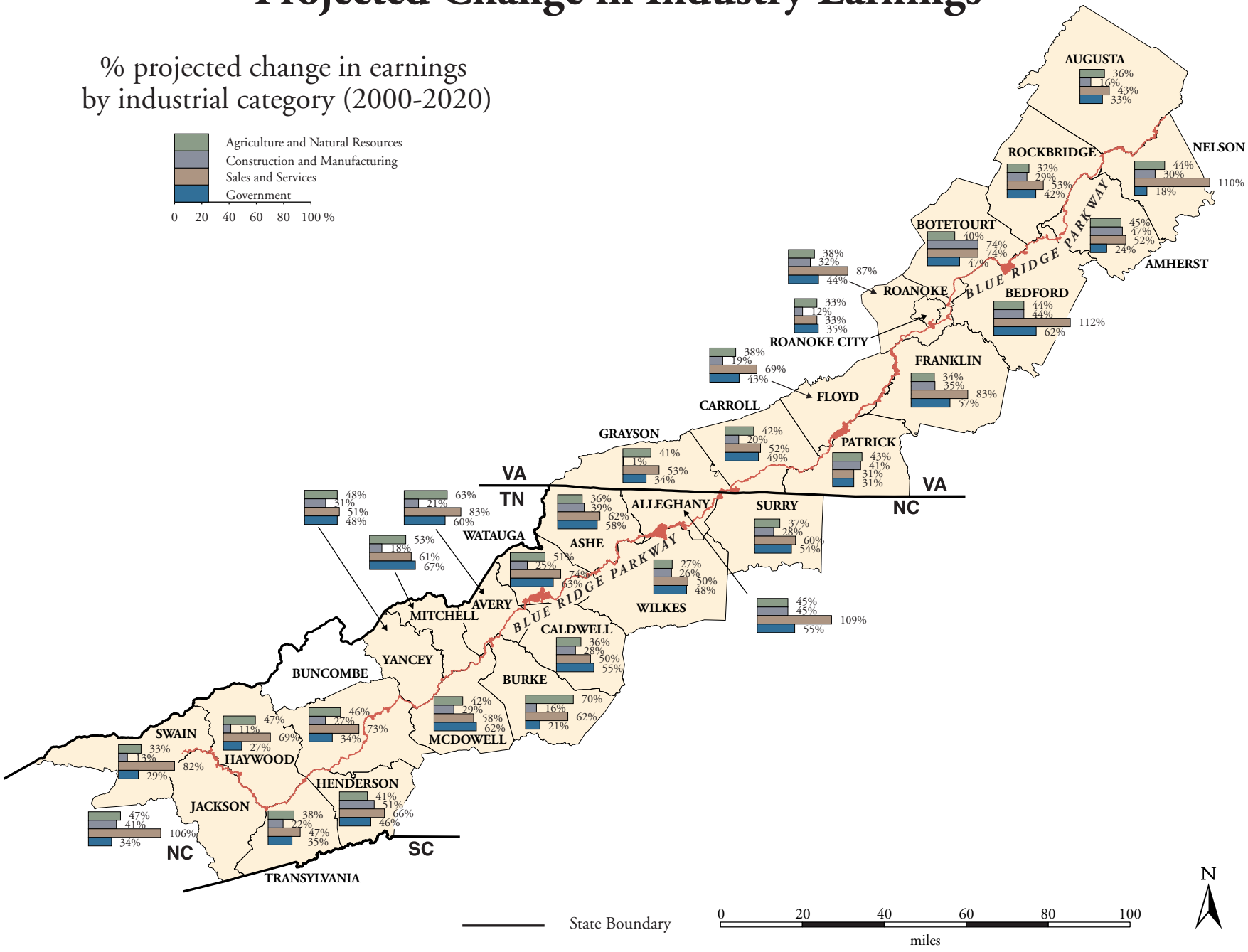
A&N = Agriculture and Natural Resources
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GOV = Government

Percentages may not add to one hundred due to rounding.



Number Line
showing distribution of data

Projected Change in Industry Earnings



Projected Change in Employment by Industry

Jobs in the four industrial sectors are in a constant state of flux. A projected decline or increase in a certain industrial sector may show which skills could be in demand at a future date. This could lead to a change in migration patterns in the counties around the park as people respond to changing employment trends. Within the Blue Ridge Parkway region (2000-2020), counties varied in the relative rates of growth for each industry with modest declines in employment predicted for the agriculture and natural resources and construction and manufacturing sectors.

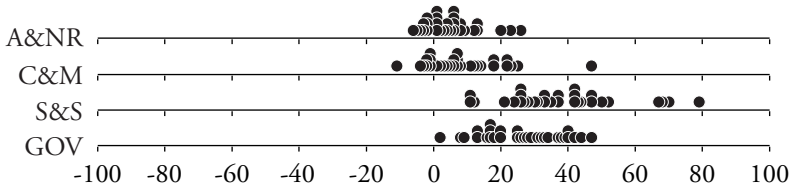
Data for the independent cities of Virginia, except Roanoke City, are not individually reported. The data for independent cities are combined with data for the counties which enclose them.[10]

% projected change in employment
by industrial category (2000-2020)

	A&N	C&M	S&S	GOV		A&N	C&M	S&S	GOV
Alleghany	4	18	79	33	Henderson	6	25	37	28
Amherst	1	22	28	9	Jackson	8	22	67	17
Ashe	1	18	35	40	McDowell	6	6	30	44
Augusta	5	-2	21	17	Mitchell	26	-1	31	47
Avery	23	3	47	40	Nelson	-2	11	68	2
Bedford	2	23	70	39	Patrick	-5	14	11	13
Botetourt	6	47	43	26	Roanoke	13	7	47	27
Buncombe	8	6	44	20	Rockbridge	-3	8	27	25
Burke	20	-4	33	8	Surry	-3	7	37	34
Caldwell	12	5	26	38	Swain	4	-2	50	18
Carroll	1	-1	24	31	Transylvania	9	2	11	20
Floyd	-2	1	42	25	Watauga	6	7	42	42
Franklin	-6	13	52	37	Wilkes	-4	4	33	29
Grayson	-2	-11	26	17	Yancey	3	12	26	32
Haywood	1	-1	42	13	Roanoke City	13	-3	12	16

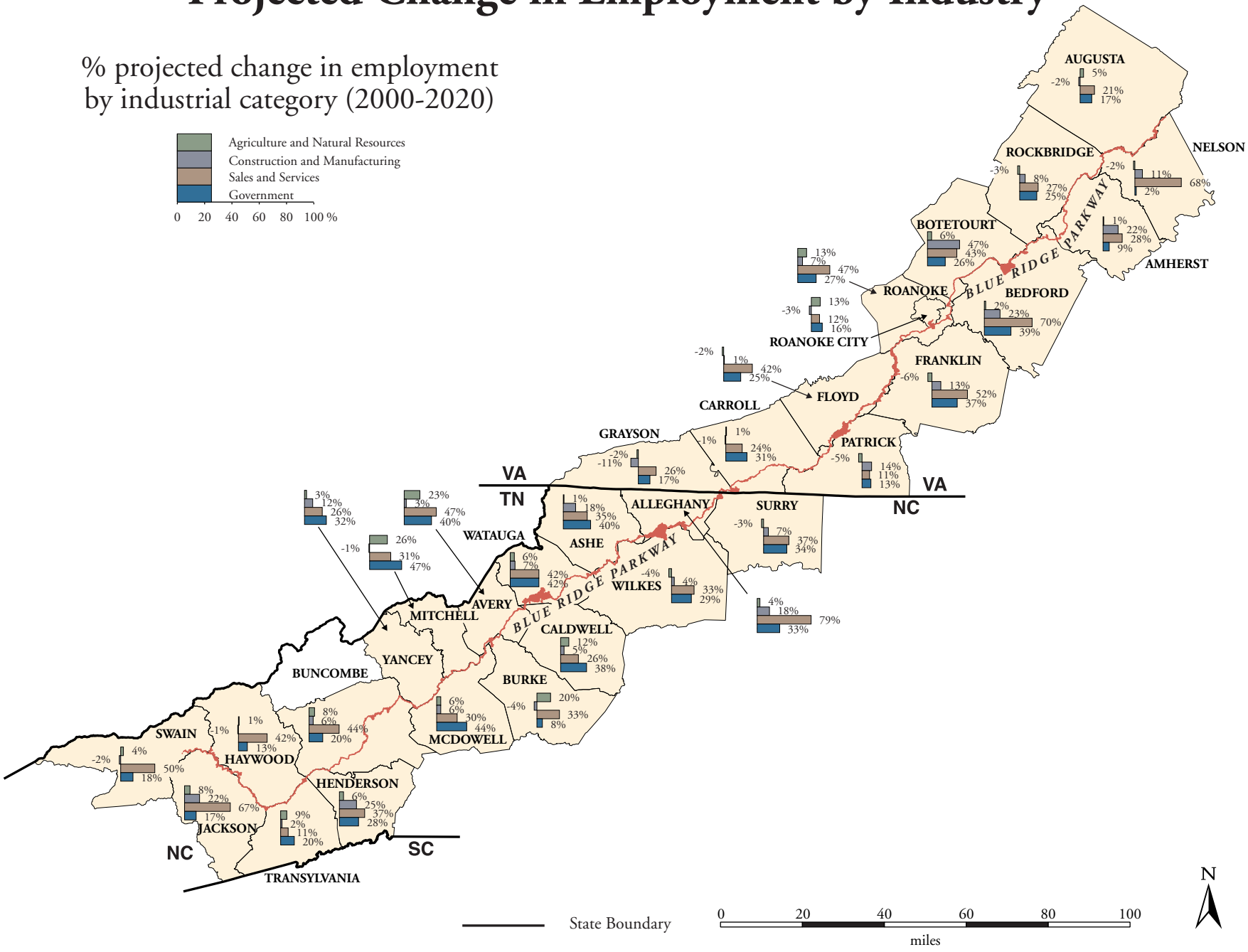
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GOV = Government

Percentages may not add to one hundred due to rounding.



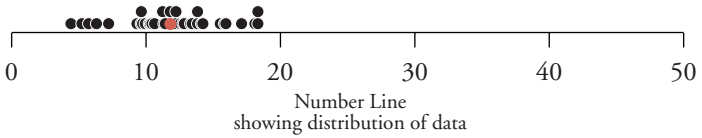
Number Line
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Projected Change in Employment by Industry



Poverty

Poverty is officially defined as the condition of living in a household with income below the federally-determined poverty threshold ($16,700 in 1999). The extent of poverty can be measured as the percentage of the total population living below that threshold. Those living in poverty can face such difficulties as finding adequate housing and health care, getting enough food, and reaching job sites and government services, including parks. The level of poverty in the park region necessarily becomes significant to park management decisions and priorities. Within the Blue Ridge Parkway region, the incidence of poverty (1999) ranges from 4.4% (Roanoke) to 18.3% (Bedford City).[11]



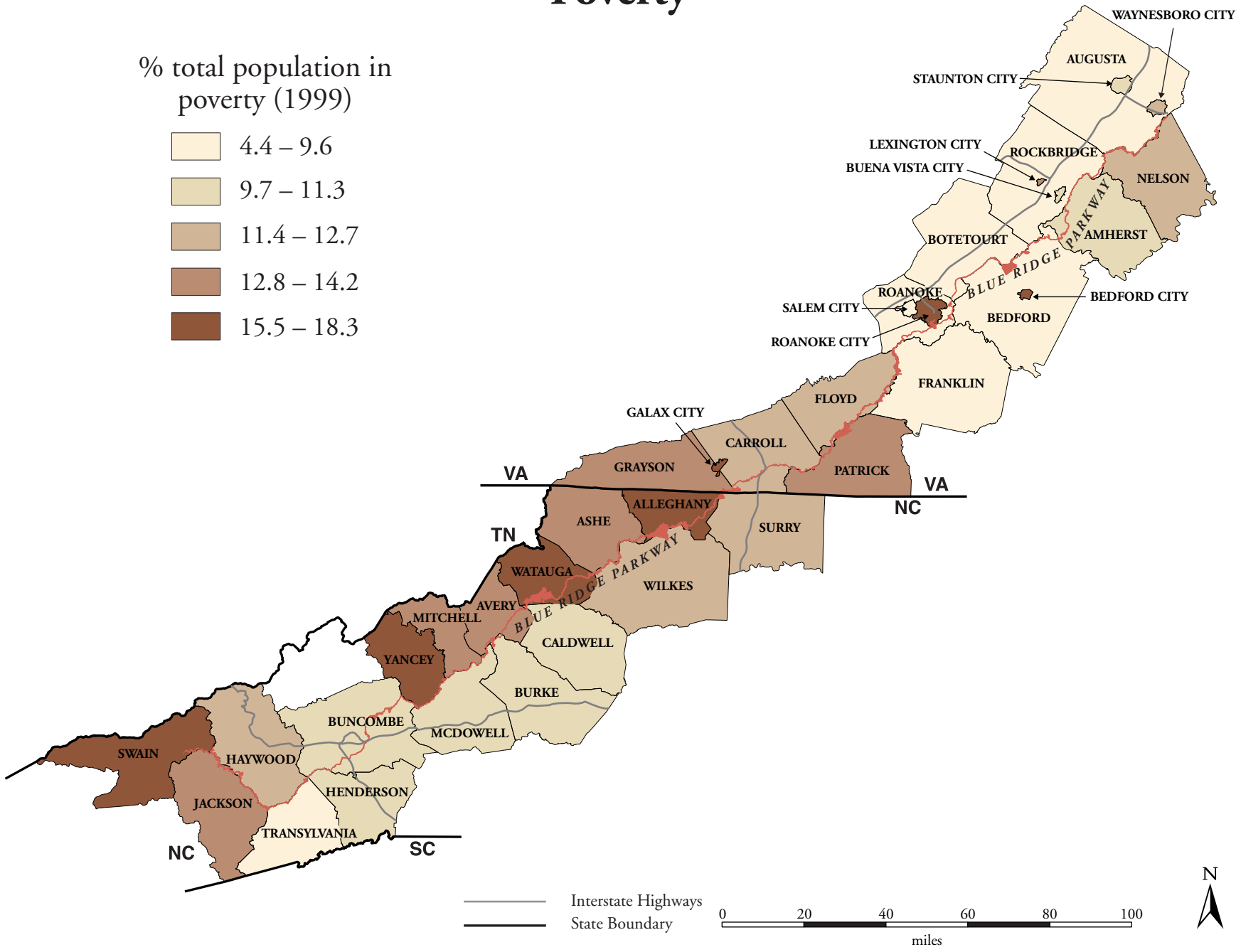
Number Line
showing distribution of data

NOTES

% total population in poverty (1999)

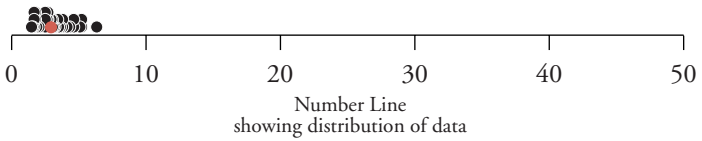
Roanoke	4.4	Grayson	12.8
Botetourt	5.2	Patrick	13.3
Augusta	5.7	Ashe	13.4
Bedford	7.2	Avery	13.8
Transylvania	9.3	Mitchell	13.8
Rockbridge	9.6	Jackson	14.1
Franklin	9.6	Yancey	15.8
Henderson	9.7	Watauga	15.9
Amherst	10.2	Alleghany	17.1
Burke	10.3	Swain	18.1
Caldwell	10.6	Salem City	6.3
Buncombe	11.2	Buena Vista City	9.9
McDowell	11.3	Staunton City	10.4
Haywood	11.4	Waynesboro City	12.7
Wilkes	11.8	Lexington City	14.2
Floyd	**11.8**	Roanoke City	15.5
Nelson	12.2	Galax City	18.3
Surry	12.2	Bedford City	18.3
Carroll	12.5		

Poverty


% total population in poverty (1999)
4.4 – 9.6
9.7 – 11.3
11.4 – 12.7
12.8 – 14.2
15.5 – 18.3
WAYNESBORO CITY
AUGUSTA
STAUNTON CITY
LEXINGTON CITY
ROCKBRIDGE
BUENA VISTA CITY
NELSON
BOTETOURT
AMHERST
BLUE RIDGE PARKWAY
ROANOKE
BEDFORD CITY
SALEM CITY
BEDFORD
ROANOKE CITY
FRANKLIN
FLOYD
GALAX CITY
CARROLL
VA
GRAYSON
PATRICK
VA
NC
ALLEGHANY
ASHE
SURRY
TN
WATAUGA
WILKES
AVERY
MITCHELL
BLUE RIDGE PARKWAY
CALDWELL
YANCEY
BURKE
BUNCOMBE
MCDOWELL
SWAIN
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA
NC
SC
Interstate Highways
State Boundary
0
20
40
60
80
100
miles
N

Home Based Employment

Since the mid-1980s the Census Bureau has been keeping track of home based employment. The percentage of people who choose to work at home has increased during this period. The increased use of the internet and other telecommunication technologies allows not only owners of small businesses and other self-employed individuals, but also certain employees from larger businesses, to work at home. Within the Blue Ridge Parkway region (2000), the percentage of the employed labor force working at home ranges from 1.5% (Surry) to 6.3% (Franklin).



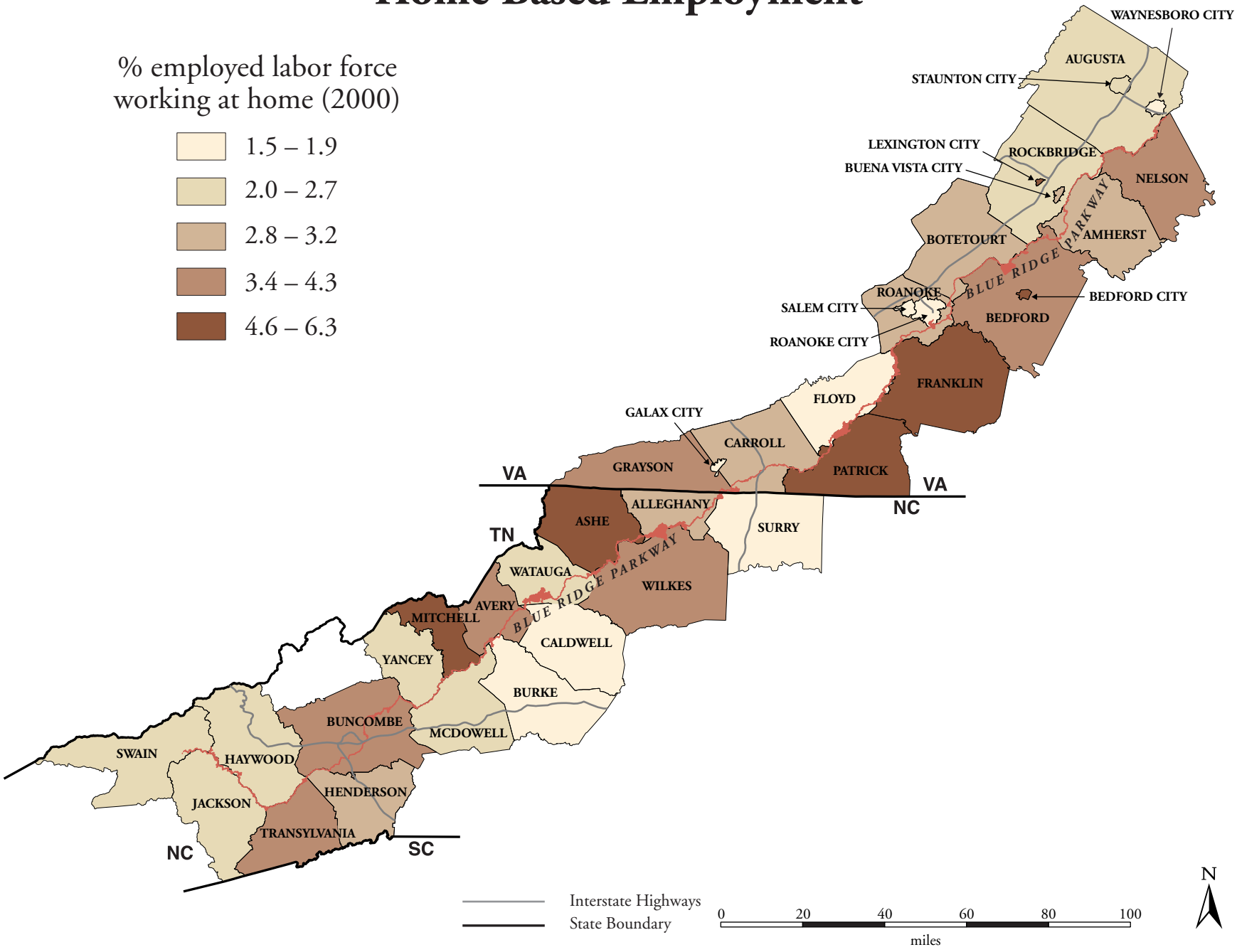
Number Line
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NOTES

% employed labor force working at home (2000)

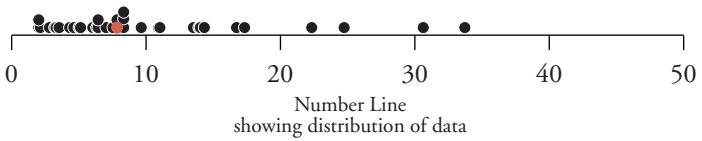
Surry	1.5	Transylvania	3.5
Caldwell	1.7	Bedford	3.6
Burke	1.7	Buncombe	3.8
Floyd	1.8	Avery	3.8
McDowell	2.0	Wilkes	4.1
Yancey	2.5	Nelson	4.3
Swain	2.5	Mitchell	4.6
Augusta	2.5	Ashe	5.2
Watauga	2.7	Patrick	5.2
Rockbridge	2.7	Franklin	6.3
Jackson	2.7	Salem City	1.6
Haywood	2.7	Galax City	1.7
Amherst	**2.9**	Waynesboro City	1.8
Roanoke	2.9	Roanoke City	1.9
Botetourt	3.0	Staunton City	2.6
Alleghany	3.0	Buena Vista City	2.8
Carroll	3.1	Bedford City	4.6
Henderson	3.2	Lexington City	5.1
Grayson	3.4		

Home Based Employment



Racial Diversity

Racial diversity is measured as the percentage of the population who identify themselves as belonging to minorities. In the current U.S. context, "minority" is defined as non-White (Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or More Races). Interactions among people are often influenced by racial identity. Hence, it makes sense for institutions ranging from retailers to police to parks to consider regional racial diversity when recruiting and training staff, when designing public information and educational materials, and when soliciting public involvement in decision-making. Within the Blue Ridge Parkway region, the percentage of minorities (2000) ranges from 2% (Yancy) to 33.7% (Swain).[12]



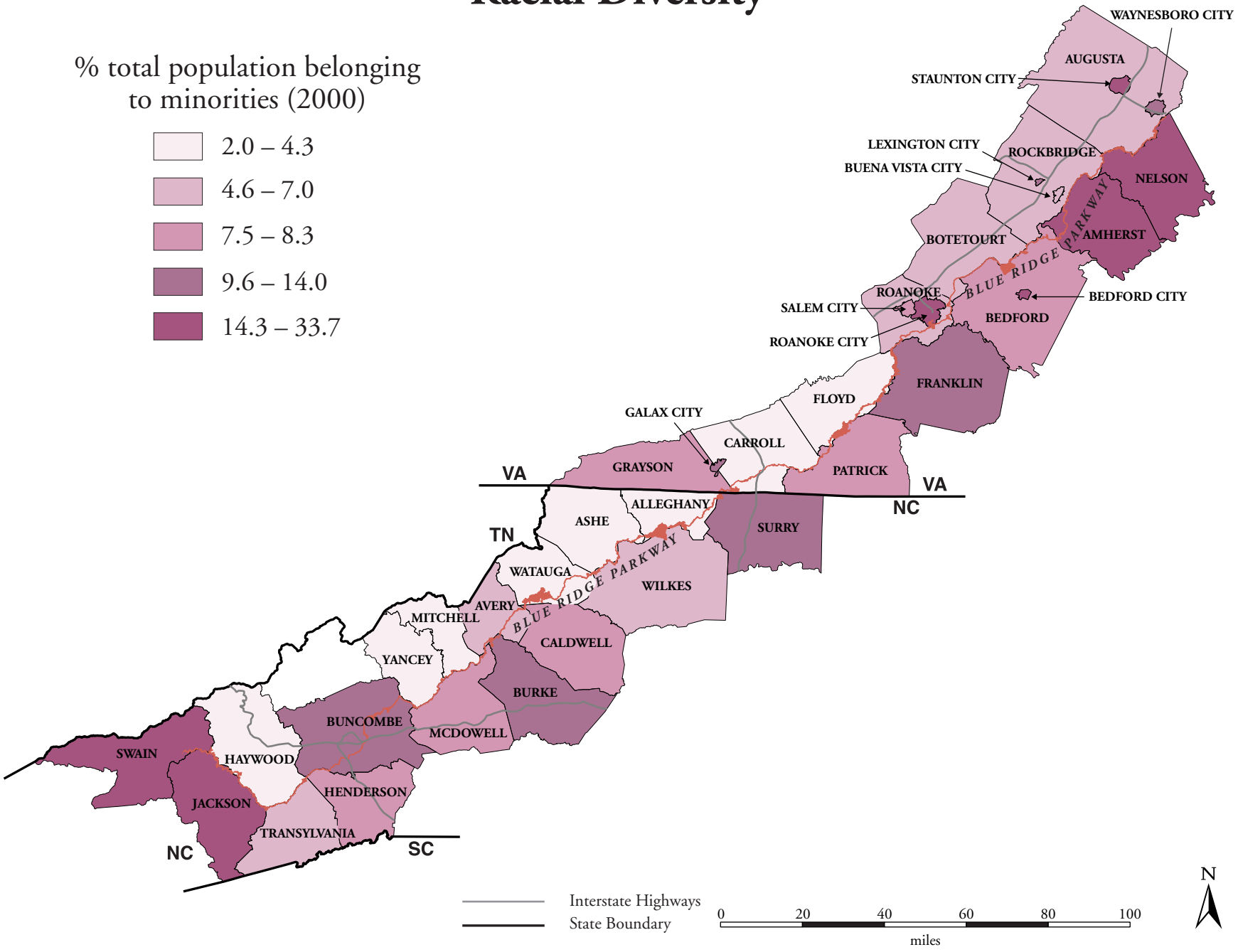
Number Line
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NOTES

% total population belonging to minorities (2000)

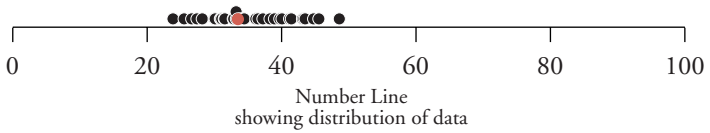
Yancey	2.0	Caldwell	8.3
Carroll	2.0	Grayson	8.3
Mitchell	2.1	Surry	9.6
Ashe	2.8	Buncombe	10.9
Haywood	3.2	Franklin	11.0
Floyd	3.3	Burke	14.0
Watauga	3.5	Jackson	14.3
Alleghany	4.3	Nelson	17.3
Rockbridge	4.6	Amherst	22.3
Augusta	5.0	Swain	33.7
Botetourt	5.1	Buena Vista City	6.4
Avery	6.0	Salem City	8.1
Transylvania	6.3	Waynesboro City	13.5
Roanoke	6.4	Galax City	13.9
Wilkes	7.0	Lexington City	14.0
Henderson	7.5	Staunton City	16.7
Bedford	7.8	Bedford City	24.7
McDowell	**7.8**	Roanoke City	30.6
Patrick	8.3		

Racial Diversity



Educational Attainment

Educational attainment indicators measure the average amount of formal education that a county's residents have received. One indicator of educational attainment is the percentage of adults who have attended or graduated from college. Educational attainment influences many aspects of life, such as how much money people earn, what they do for recreation, where they get their information, and how they participate in civic life. With regard to park management, the educational attainment of the general public is an important consideration in activities, such as marketing, public participation processes, and the design of interpretive programs. Within the Blue Ridge Parkway region, the percentage of adults with some college education (2000) ranges from 23.9% (Grayson) to 48.6% (Roanoke).[13]



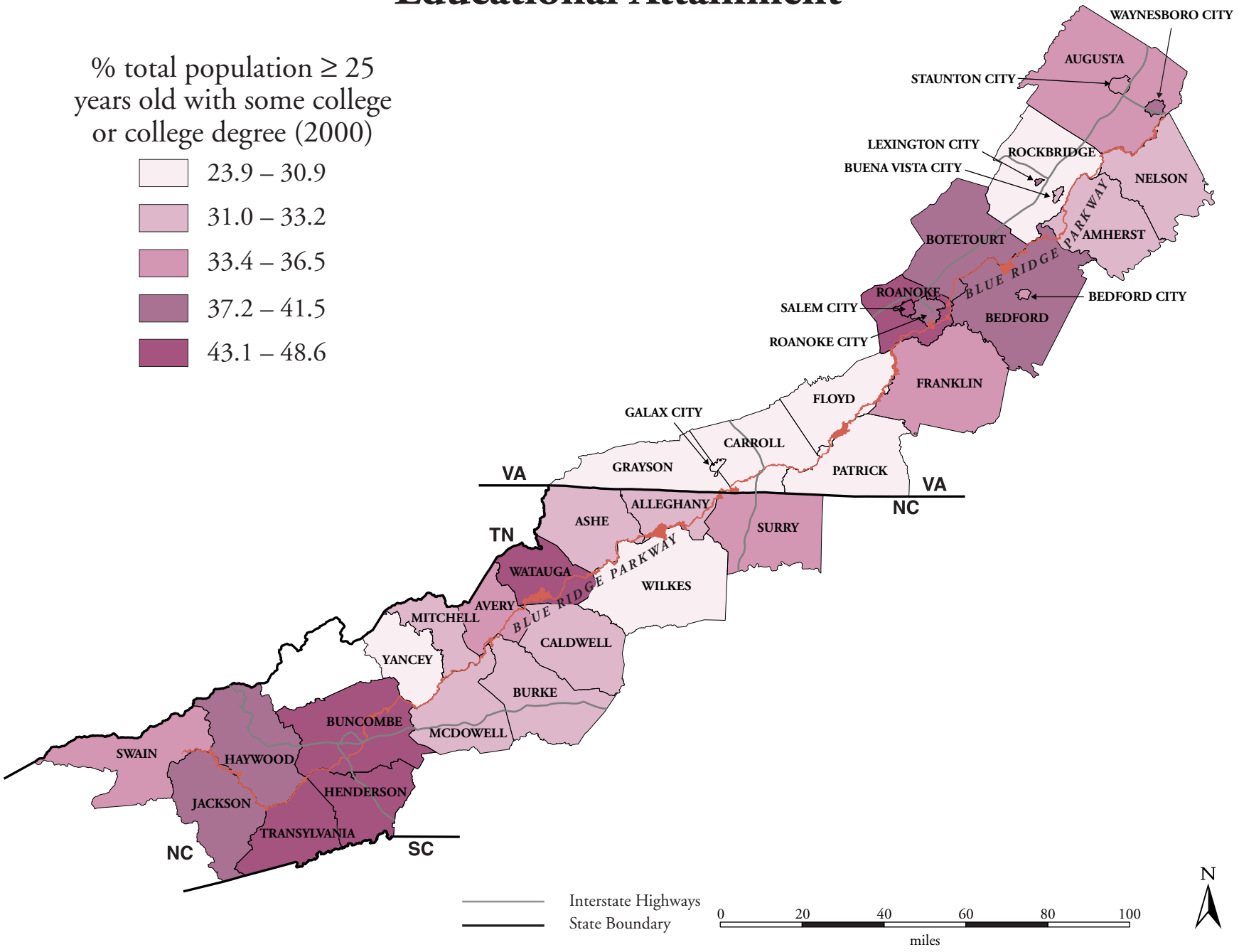
Number Line
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NOTES

% total population ≥ 25 years old with some college or college degree (2000)

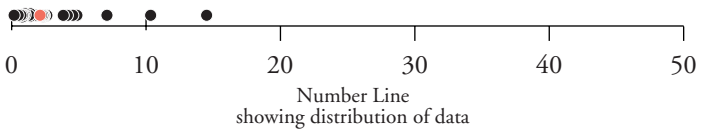
Grayson	23.9	Swain	36.2
Patrick	25.5	Haywood	39.7
Carroll	26.7	Bedford	40.1
Floyd	27.4	Botetourt	41.2
Yancey	30.0	Jackson	41.5
Rockbridge	30.1	Watauga	43.3
Wilkes	30.9	Transylvania	43.5
Caldwell	31.0	Buncombe	44.7
Ashe	31.4	Henderson	45.5
Mitchell	31.4	Roanoke	48.6
McDowell	31.5	Galax City	28.2
Alleghany	32.8	Buena Vista City	31.1
Amherst	32.9	Bedford City	33.9
Nelson	33.2	Staunton City	36.5
Burke	33.2	Waynesboro City	37.2
Augusta	33.4	Lexington City	38.3
Avery	**33.5**	Roanoke City	39.0
Surry	34.3	Salem City	43.1
Franklin	34.5		

Educational Attainment



Recreation and Tourism Establishments

The recreation and tourism industry is composed of two categories: arts, entertainment and recreation sector (ranging from museums and concerts, to sporting events and amusement parks) and accommodation subsector (ranging from hotels to campsites). Recreation and tourism indicators measure the size of the recreation and tourism industry as a share of the overall sales and services sector of the economy. The size of that share is a broad indicator of a county's economic reliance on recreation and tourism. Recreation and tourism establishments can be proponents of actions that enhance their area's attractiveness as a visitor destination (such as transportation improvements, protection of scenic or cultural landmarks, or marketing campaigns). Recreation and tourism establishments also can be vulnerable to, and thus wary of, actions, policies, or chance events that could affect business, such as visitor use restrictions, fires, or economic downturns. Within the Blue Ridge Parkway region, the percentage of total establishments in arts, entertainment, recreation and accommodation (2000) ranges from 1.0% (Bedford City) to 15.1% (Swain).[14]



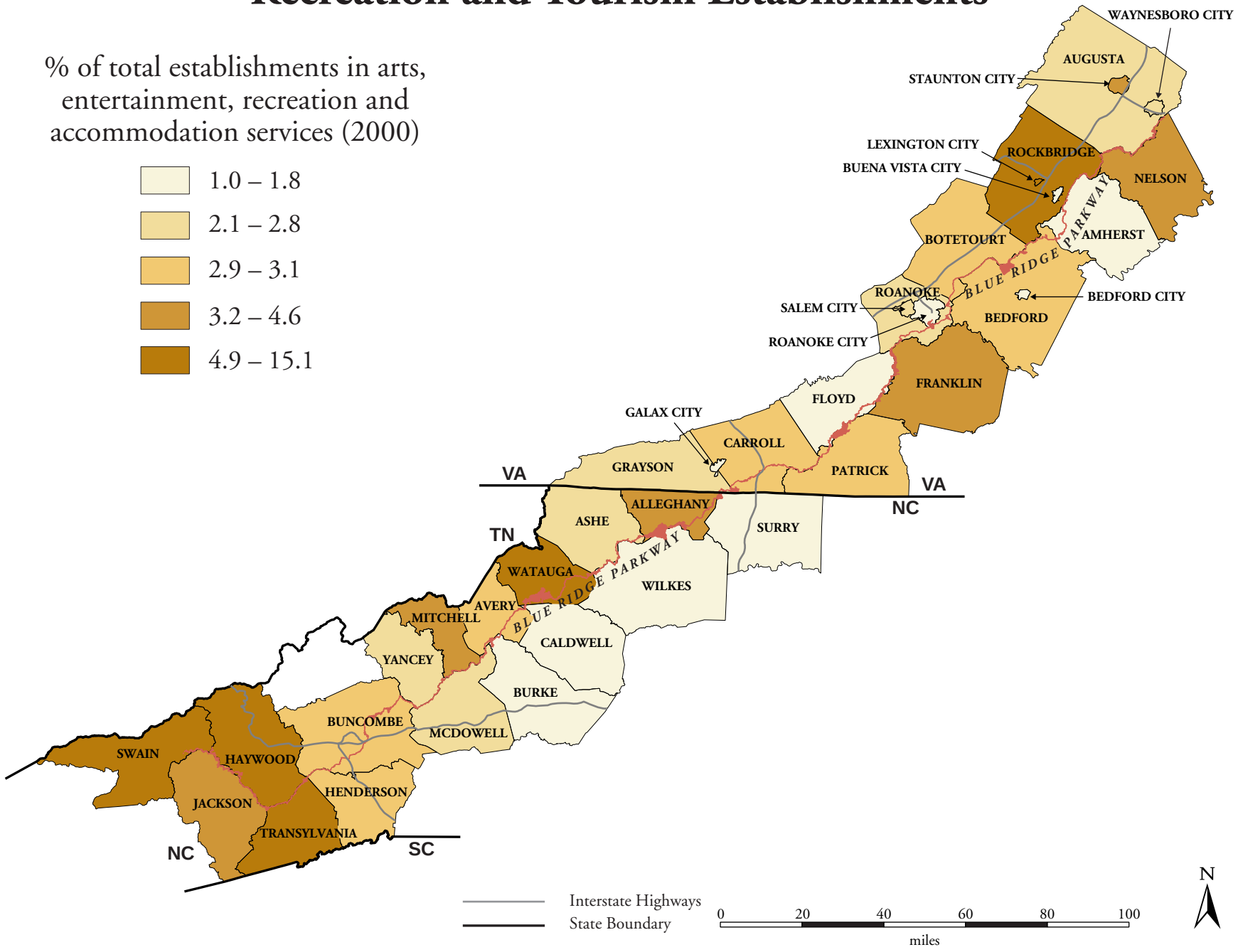
Number Line
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NOTES

% of total establishments in arts, entertainment, recreation and accommodation services (2000)

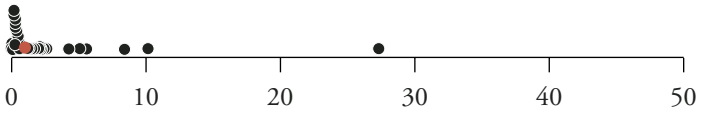
Burke	1.3	Alleghany	3.2
Floyd	1.6	Franklin	3.2
Wilkes	1.6	Nelson	3.4
Caldwell	1.7	Mitchell	3.4
Amherst	1.8	Jackson	4.6
Surry	1.8	Transylvania	4.9
Ashe	2.1	Watauga	5.3
Grayson	2.2	Haywood	5.6
Augusta	2.2	Rockbridge	11.0
Yancey	2.6	Swain	15.1
McDowell	2.7	Bedford City	1.0
Roanoke	2.8	Galax City	1.5
Patrick	**2.9**	Buena Vista City	1.6
Henderson	3.0	Roanoke City	1.8
Carroll	3.1	Salem City	2.2
Bedford	3.1	Waynesboro City	2.8
Avery	3.1	Staunton City	3.2
Botetourt	3.1	Lexington City	7.8
Buncombe	3.1		

Recreation and Tourism Establishments



Recreation and Tourism Revenue

Recreation and tourism revenue is a key indicator of the economic importance of recreation and tourism to a county. Recreation and tourism revenue can be expressed as a percentage of total sales and service receipts. Recreation and tourism establishments can occupy an important position within a county economy because they attract visitor dollars from elsewhere. Secondary economic benefits are realized when these dollars are re-spent within the local economy or deposited in banks, where they provide capital to other businesses. Within the Blue Ridge Parkway region, the percentage of total sales from arts, entertainment, recreation and accommodation services (1997) ranges from 0.1% (Amherst) to 27.5% (Swain) with no data reported for Floyd and Patrick counties and Bedford and Galax cities.[15]



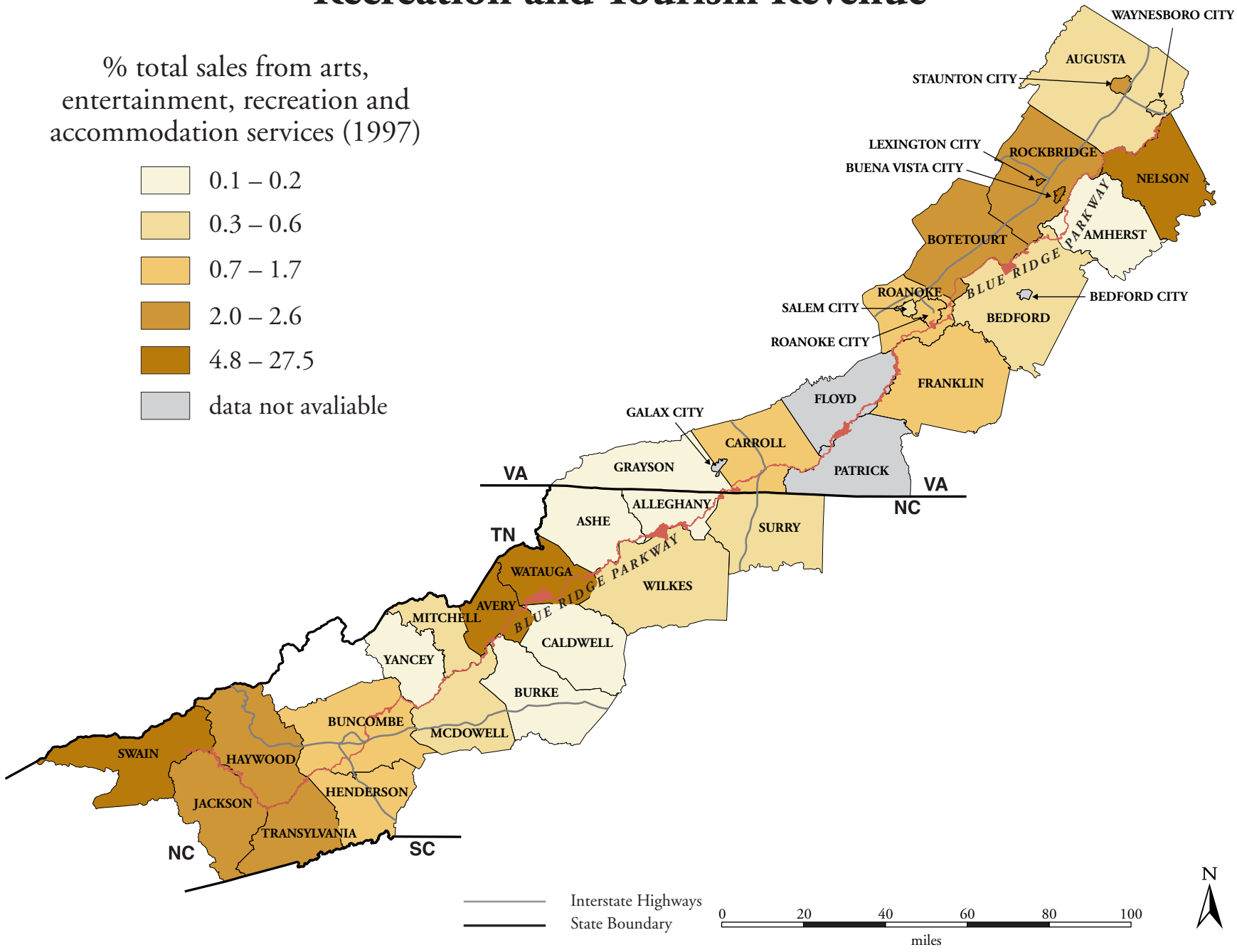
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NOTES

% total sales from arts, entertainment, recreation and accommodation services (1997)

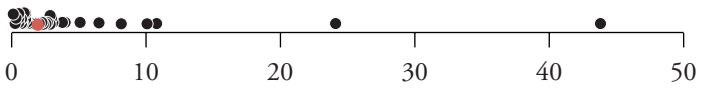
Amherst	0.1	Transylvania	2.1
Ashe	0.1	Rockbridge	2.2
Caldwell	0.1	Botetourt	2.4
Grayson	0.2	Jackson	2.6
Yancey	0.2	Watauga	4.8
Alleghany	0.2	Nelson	6.1
Burke	0.2	Avery	8.1
Surry	0.3	Swain	27.5
Wilkes	0.3	Floyd	NA
Bedford	0.5	Patrick	NA
McDowell	0.5	Salem City	0.3
Augusta	0.6	Waynesboro City	0.4
Mitchell	0.6	Roanoke City	**1.0**
Franklin	0.7	Staunton City	2.1
Carroll	1.2	Lexington City	5.6
Roanoke	1.3	Buena Vista City	10.6
Henderson	1.5	Beford City	NA
Buncombe	1.7	Galax City	NA
Haywood	2.0		

Recreation and Tourism Revenue



Recreation and Tourism Employment

The significance of the recreation/tourism industry to a county economy can be indicated by the percentage of county workers that it employs. Workers counted as recreation and tourism employees include country club managers, blackjack dealers, campground employees, fishing guides, motel attendants, and other providers of recreation services. A high level of recreation/tourism employment may mean that residents have more disposable income or that the area attracts visitors or vacationers. Within the Blue Ridge Parkway region, the percentage of total paid employees in arts, entertainment, recreation and accommodation services (2000) ranges from 0.7% (Surry) to 43.9% (Swain).[16]



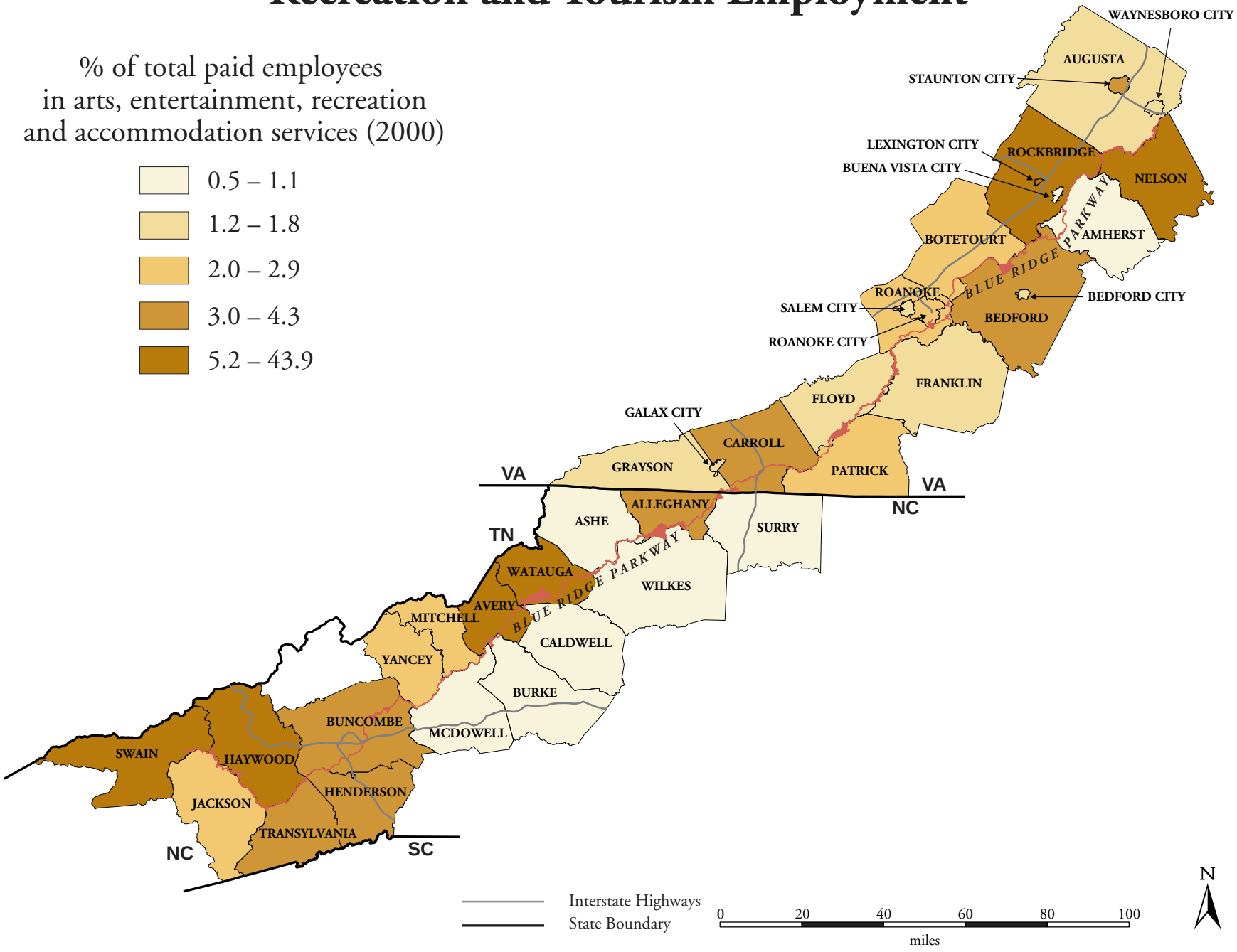
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NOTES

% of total paid employees in arts, entertainment, recreation and accommodation services (2000)

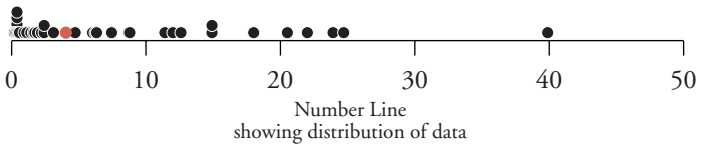
Surry	0.7	Bedford	3.2
Wilkes	0.8	Henderson	3.4
Amherst	0.9	Transylvania	4.1
Burke	0.9	Buncombe	4.3
Caldwell	0.9	Haywood	5.2
McDowell	1.1	Avery	8.8
Ashe	1.1	Watauga	10.3
Franklin	1.2	Rockbridge	11.0
Floyd	1.2	Nelson	24.5
Grayson	1.4	Swain	43.9
Augusta	1.8	Buena Vista City	0.5
Patrick	2.0	Bedford City	1.3
Yancey	2.2	Salem City	1.4
Mitchell	2.4	Galax City	1.5
Botetourt	2.6	Waynesboro City	1.6
Jackson	2.7	Roanoke City	**2.3**
Roanoke	2.9	Staunton City	3.3
Carroll	3.0	Lexington City	5.9
Alleghany	3.2		

Recreation and Tourism Employment



Seasonal Housing

Seasonal, recreational, and occasional use housing units are those intended for occupancy only during certain seasons of the year and are found primarily in resort areas. A park with a large number of seasonal housing units located near its boundaries can be considered a "destination park." Such parks attract people who can afford to travel a considerable distance and spend a few days in or near the park. Within the Blue Ridge Parkway region the percentage of total housing units classified for season, recreational, or occasional use (2000) ranges from 0.2% (Waynesboro City) to 39.9% (Avery).[17]



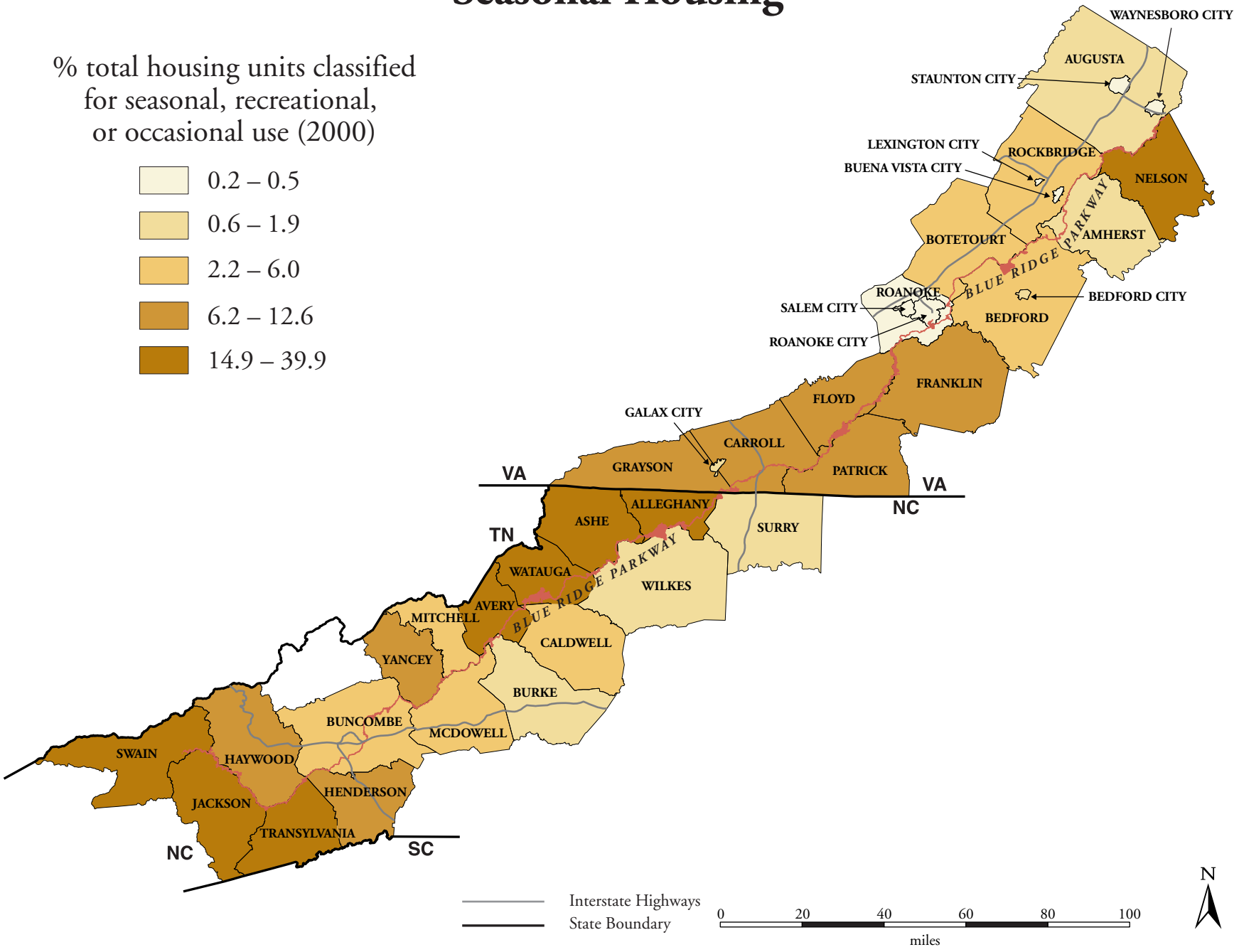
Number Line
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NOTES

% total housing units classified for seasonal, recreational, or occasional use (2000)

Roanoke	0.4	Grayson	12.0
Surry	1.1	Yancey	12.6
Amherst	1.4	Ashe	14.9
Burke	1.6	Transylvania	14.9
Augusta	1.7	Swain	18.0
Wilkes	1.9	Alleghany	20.5
Buncombe	2.2	Watauga	22.0
Caldwell	2.4	Jackson	23.9
Botetourt	2.4	Nelson	24.7
McDowell	3.1	Avery	39.9
Rockbridge	**4.0**	Waynesboro City	0.2
Bedford	4.7	Buena Vista City	0.3
Mitchell	6.0	Staunton City	0.4
Floyd	6.2	Roanoke City	0.4
Henderson	6.3	Salem City	0.4
Patrick	7.4	Lexington City	0.5
Haywood	8.7	Bedford City	0.6
Carroll	8.8	Galax City	0.9
Franklin	11.4		

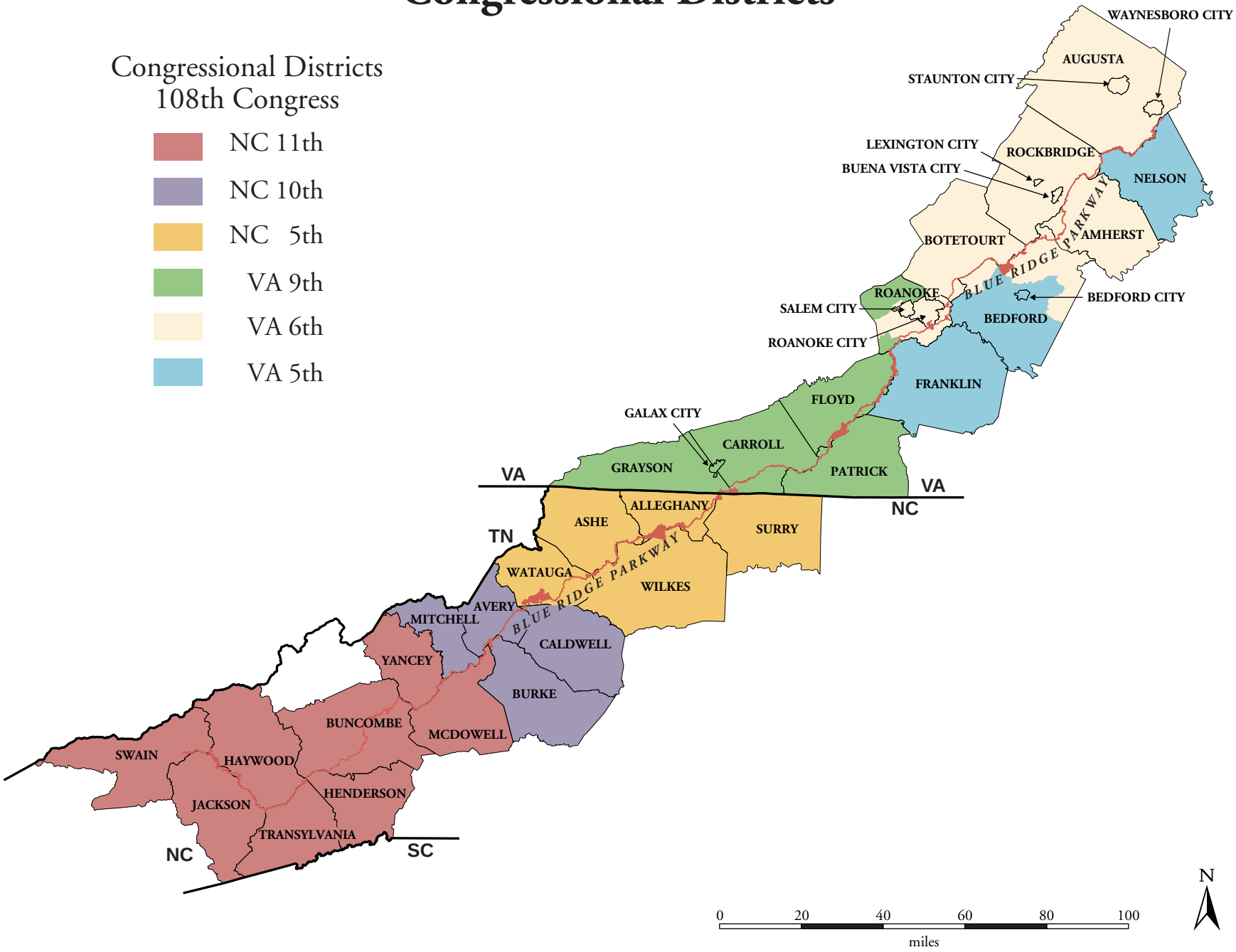
Seasonal Housing



Congressional Districts

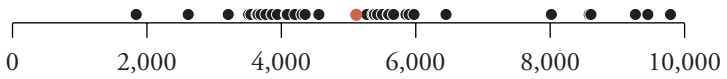
Congressional districts form a key layer in the political structure of the Blue Ridge Parkway region. These districts, roughly equivalent in population, are defined by state legislatures based on the national census and redrawn every ten years. Members of Congress are key points of access for citizens seeking to influence federal-level policies and programs, including those related to federal lands such as national parks and national forests. The Blue Ridge Parkway region includes portions of six Congressional districts, based on the 2000 Census.

Congressional Districts



Federal Expenditures

The importance of the federal government to a county economy can be indicated by the amount of federal expenditures in the county. These expenditures can be a key source of dollars flowing into the county economy (in contrast, taxes and fees are an outflow of dollars). Federal spending can influence the park region through such wide-ranging initiatives as agricultural subsidies, social programs, military bases, and national parks. Within the Blue Ridge Parkway region, federal expenditures per person (2001) range from $1,837 (Roanoke) to $9,791 (Bedford City).[18]



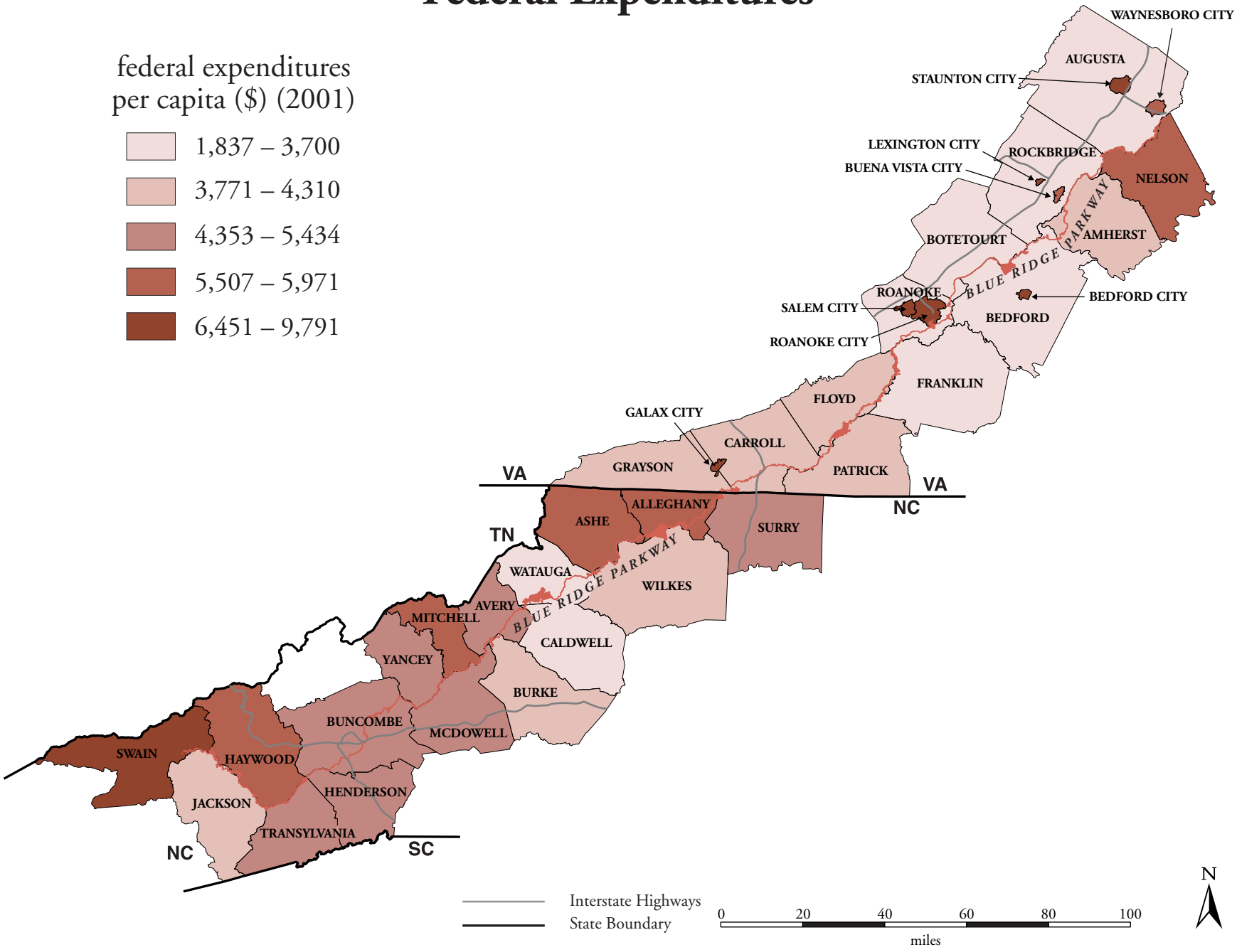
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NOTES

federal expenditures per capita ($) (2001)

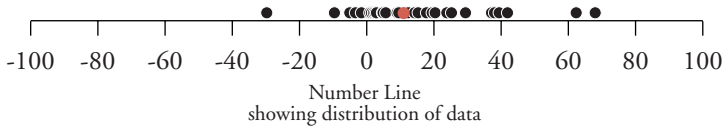
Roanoke	1,837	Yancey	5,273
Augusta	2,614	Avery	5,368
Watauga	3,206	Transylvania	5,386
Franklin	3,512	Buncombe	5,434
Rockbridge	3,548	Haywood	5,589
Bedford	3,639	Ashe	5,670
Caldwell	3,650	Alleghany	5,854
Botetourt	3,700	Mitchell	5,902
Amherst	3,771	Nelson	5,971
Floyd	3,866	Swain	8,016
Burke	3,867	Waynesboro City	5,507
Carroll	3,945	Buena Vista City	5,594
Jackson	4,078	Staunton City	6,451
Grayson	4,090	Lexington City	8,582
Wilkes	4,203	Roanoke City	8,604
Patrick	4,310	Galax City	9,269
McDowell	4,353	Salem City	9,453
Surry	4,557	Bedford City	9,791
Henderson	**5,114**		

Federal Expenditures



Change in Local Government Revenue

Local government revenue, received through county taxes, state and federal fiscal aid, and other miscellaneous county service charges, provide benefits for local communities and businesses and may change over time. Increases or decreases in revenue may reflect broad economic shifts affecting receipts from local tax collection as well as transfers from the state and federal governments. Such changes may impact local and regional fiscal priorities and expectations about the role of government in local responses to resource management challenges. Within the Blue Ridge Parkway region, change in local government revenue (1987-1997) ranges from a decrease of 29.7% (Swain) to an increase of 67.9% (Rockbridge), with no data reported for Bedford, Buena Vista, Galax, Lexington, Roanoke, Salem, Staunton, and Waynesboro cities.



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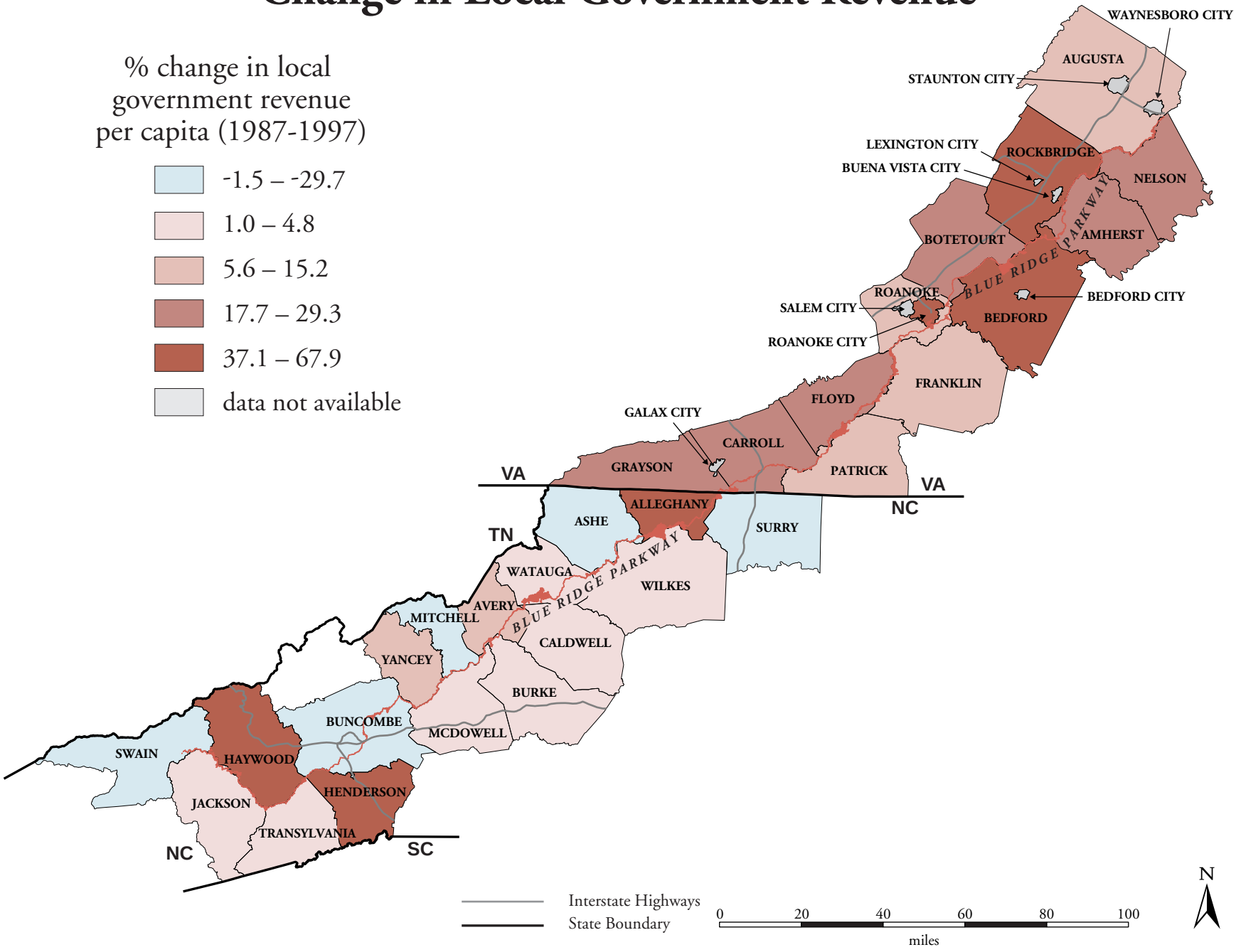
NOTES

% change in local government revenue per capita (1987-1997)

Swain	-29.7	Franklin	14.1
Surry	-9.6	Roanoke	15.2
Buncombe	-5.0	Carroll	17.7
Ashe	-3.3	Grayson	19.4
Mitchell	-1.5	Floyd	20.3
McDowell	1.0	Nelson	23.8
Watauga	1.4	Amherst	25.2
Caldwell	1.9	Botetourt	29.3
Burke	2.4	Bedford	37.1
Wilkes	2.8	Alleghany	38.0
Transylvania	4.6	Roanoke City	39.3
Jackson	4.8	Haywood	41.8
Avery	5.6	Henderson	62.3
Augusta	9.0	Rockbridge	67.9
Patrick	9.5		
Yancey	12.4	←	**11.0**

1987 dollars were adjusted for inflation prior to calculating % change.

Change in Local Government Revenue



Payments in Lieu of Taxes

Payments in lieu of taxes are measured as the total dollars transferred to counties by the federal government as part of the PILT Program (Payments-In-Lieu-of-Taxes) administered by the Bureau of Land Management. PILT payments are calculated according to a formula that includes population and the amount of federal land within an affected county. They have a direct impact on the park region as revenue for county governments. As counties use this revenue for capital projects or service provisions, the tax burden on local residents is effectively reduced. Indirectly, PILT payments are an indication of the federal government's presence, visibility, and perhaps influence within counties in the park region. Within the Blue Ridge Parkway region, payments in lieu of taxes (2000) range from $1,040 (Surry) to $270,767 (Swain), with no data reported for the independent cities of Virginia.



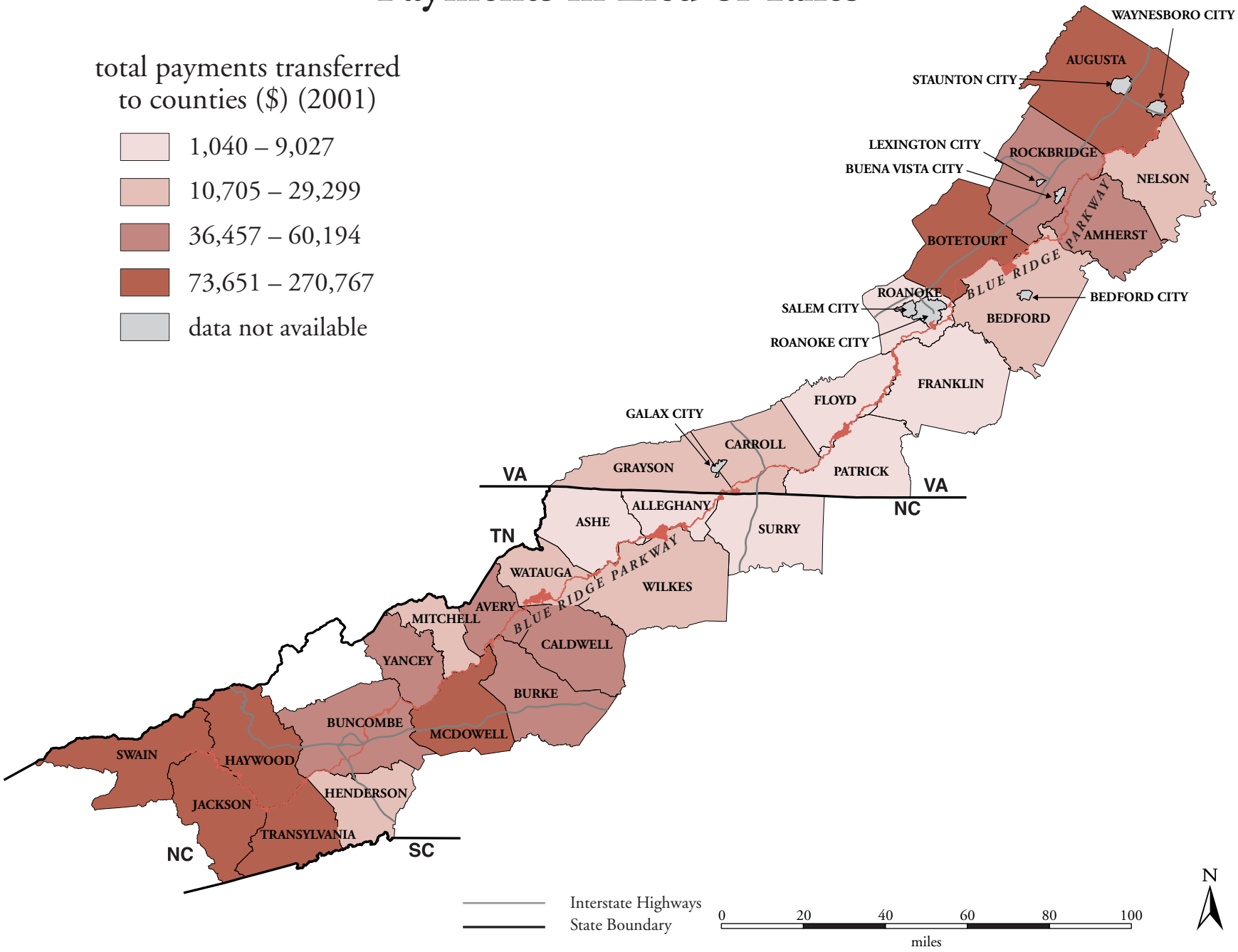
Number Line
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total payments transferred to counties ($) (2001)

Surry	1,040	Avery	36,457
Ashe	2,142	Buncombe	38,313
Floyd	5,226	Amherst	41,143
Alleghany	6,643	Yancey	43,910
Roanoke	8,102	Burke	55,006
Franklin	8,193	Caldwell	55,857
Patrick	9,027	Rockbridge	60,194
Watauga	10,705	Botetourt	73,651
Wilkes	10,774	McDowell	76,951
Carroll	11,365	Jackson	90,215
Henderson	19,830	Transylvania	100,531
Mitchell	21,491	Haywood	147,236
Nelson	23,093	Augusta	189,341
Bedford	23,460	Swain	270,767
Grayson	**29,299**		

NOTES

Payments in Lieu of Taxes



Ecoregions

Ecoregions are areas in which similar climate, landforms, and soil exist and support similar communities of vegetation and animals. People affect natural systems within an ecoregion through such activities as agriculture, development, the creation of protected areas, hunting, and the introduction of non-native species. Natural resource protection efforts throughout an ecoregion may share many of the same approaches and techniques, since these efforts often focus on maintaining or restoring similar communities of indigenous animals and plants. Hence, many challenges of resource protection can be fruitfully addressed at the ecoregional level. The Blue Ridge Parkway region includes parts of two ecoregion divisions; a large portion of the counties are classified as part of the Hot Continental Regime Mountain division. While the eastern most portions of five counties in Virginia (Amherst, Bedford, Franklin, Nelson, and Patrick) and four counties in North Carolina (Burke, Caldwell, Surry, and Wilkes) are classified as part of the Subtropical division.

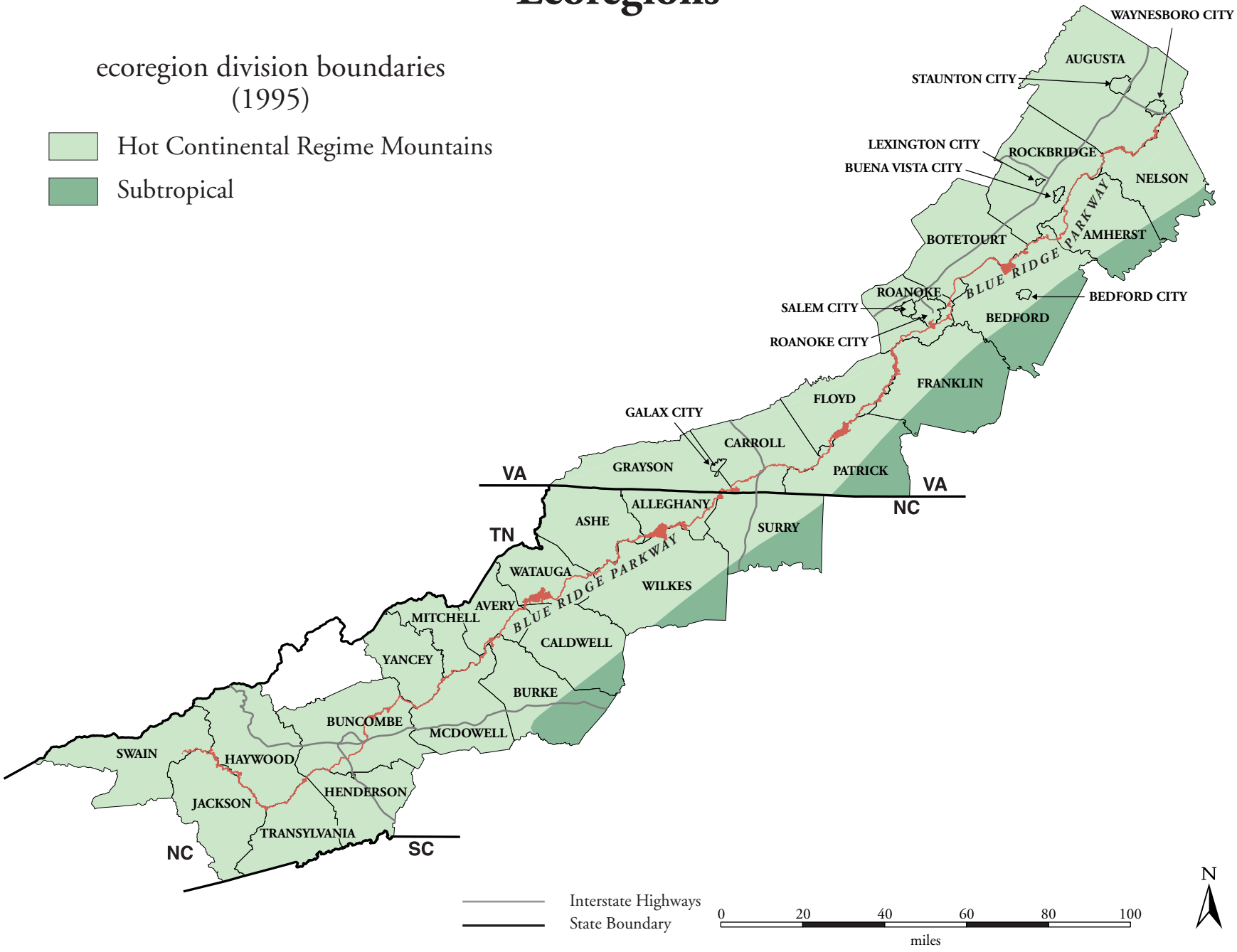
Bailey's Ecoregions

Ecoregions are ecosystems of regional extent, differentiated according to a hierarchical scheme which uses climate and vegetation as indicators of the extent of each unit. Ecoregional classifications were developed by Robert Bailey of the U.S. Forest Service, U.S. Department of Agriculture (Bailey, Robert G. 1995. Description of the ecoregions of the United States (2nd edition). Misc. Pub. No. 1391, Map scale 1:7,500,000. Following are abridged descriptions of the two ecoregions which overlay the Blue Ridge Parkway region.

Hot Continental Regime Mountains – climate is temperate, with distinct summer and winter, and all areas are subject to frost. Precipitation is distributed throughout the year, large snow accumulation occurs in the winter. Typically composed of an oak-pine forest mix. Chestnut was once abundant here, but a blight has eliminated it as a canopy tree.

Subtropical – hot summers with high humidity and mild winters, but frost still occurs nearly every winter. Precipitation is distributed evenly throughout the year, a peak occurring during midsummer or early spring in the form of thunderstorms. Summer droughts can occur, snow falls rarely and melts almost immediately. Typically composed of broadleaf deciduous and needleleaf evergreen trees.

Ecoregions

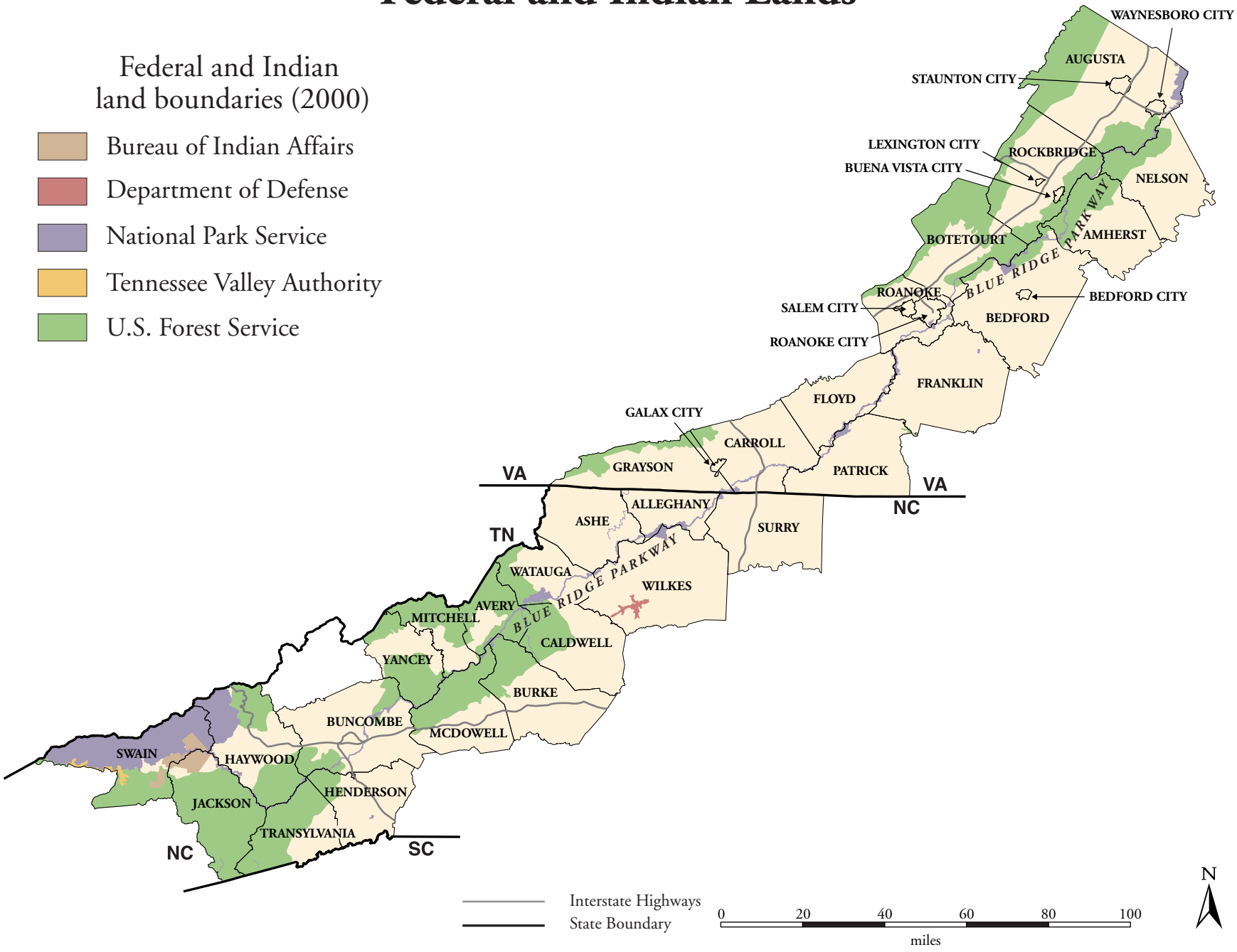

ecoregion division boundaries
(1995)
Hot Continental Regime Mountains
Subtropical
WAYNESBORO CITY
AUGUSTA
STAUNTON CITY
LEXINGTON CITY
BUENA VISTA CITY
ROCKBRIDGE
NELSON
BOTETOURT
AMHERST
BLUE RIDGE PARKWAY
ROANOKE
BEDFORD CITY
SALEM CITY
BEDFORD
ROANOKE CITY
FRANKLIN
FLOYD
GALAX CITY
CARROLL
VA
GRAYSON
PATRICK
VA
NC
ALLEGHANY
ASHE
SURRY
TN
WATAUGA
WILKES
AVERY
MITCHELL
BLUE RIDGE PARKWAY
CALDWELL
YANCEY
BURKE
BUNCOMBE
MCDOWELL
SWAIN
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA
NC
SC
Interstate Highways
State Boundary
0 20 40 60 80 100
miles
N

Federal and Indian Lands

National park units, administered by the National Park Service are part of a larger system of public lands. Other federal agencies that administer public lands within the region are: the Bureau of Indian Affairs, the Bureau of Land Management, the Department of Defense, the Forest Service, and the Tennessee Valley Authority. Public lands administered by one agency often share boundaries with public lands administered by other agencies. Knowledge of the broader pattern of public land management regimes can help park managers to collaboratively plan natural resource protection efforts. [19]

NOTES

Federal and Indian Lands

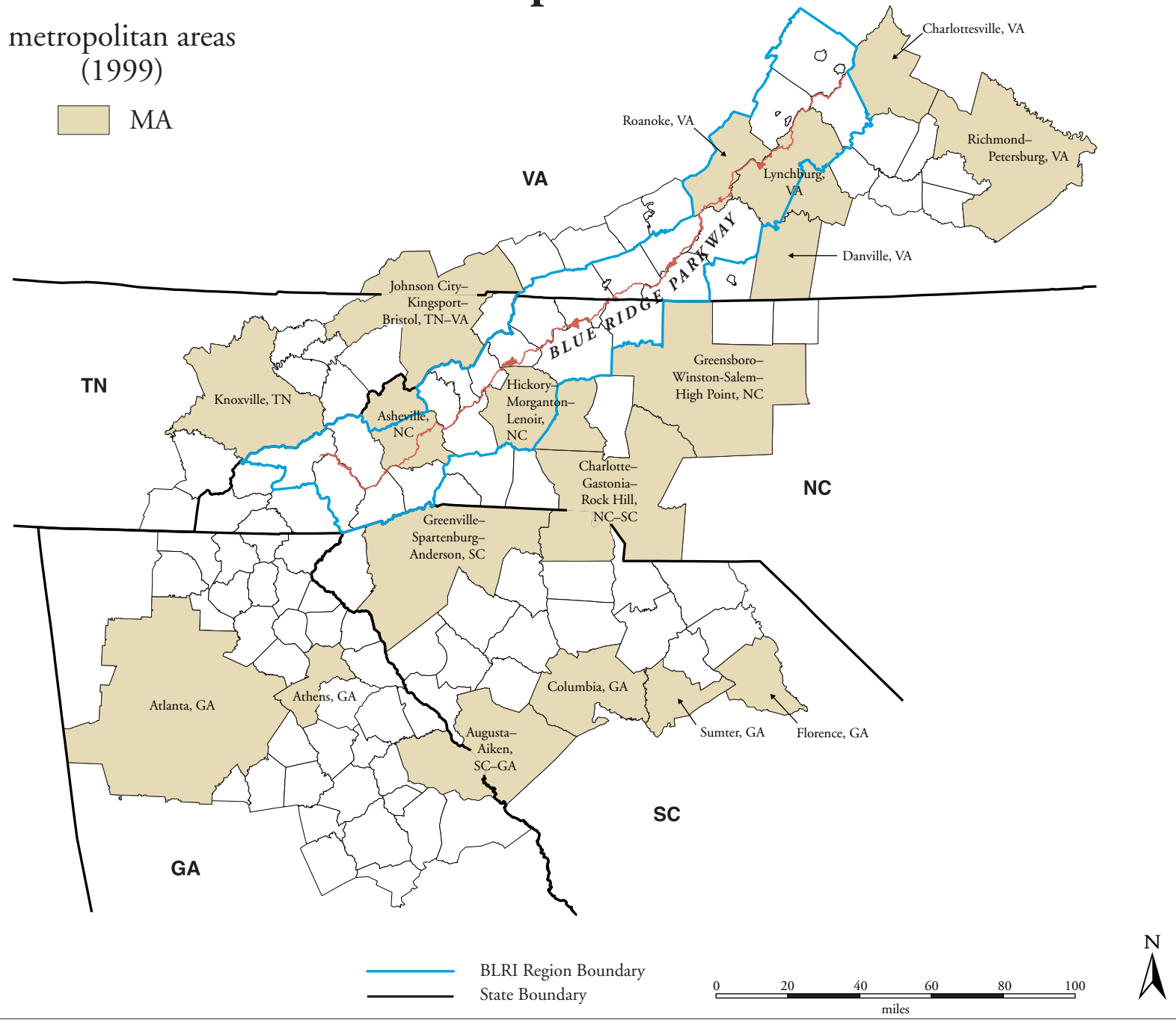


Metropolitan Areas

Metropolitan areas are densely populated urban areas. The Census defines a metropolitan area (MA) as having a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus. Some MAs are defined around two or more population nuclei. Each MA must contain either a place with a minimum population of 50,000 or a U.S. Census Bureau defined urbanized area and a total MA population of at least 100,000. The following map of the southeastern U.S. displays 18 metropolitan areas that surround the Blue Ridge Parkway region of interest.[20]

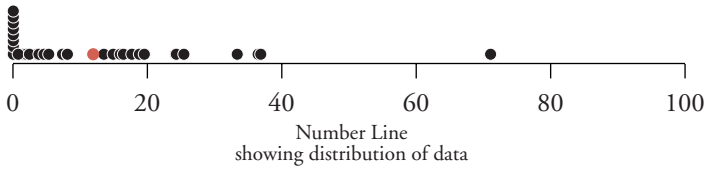
NOTES

Metropolitan Areas



Federal Land Management

One indicator of the federal government's role in regional resource management is the amount of land under federal management. This amount can be measured as a percentage of the total land area in each county. Stewardship of private land is carried out through a combination of regulation, market forces, and voluntary action. In contrast, stewardship of public land is carried out through direct implementation of agency policies. Thus the variation in public versus private land management across the park region can significantly influence the design and implementation of resource protection strategies. Within the Blue Ridge Parkway region, land under federal management (2001) ranges from 0% (Bedford City) to 71% (Swain).[21]



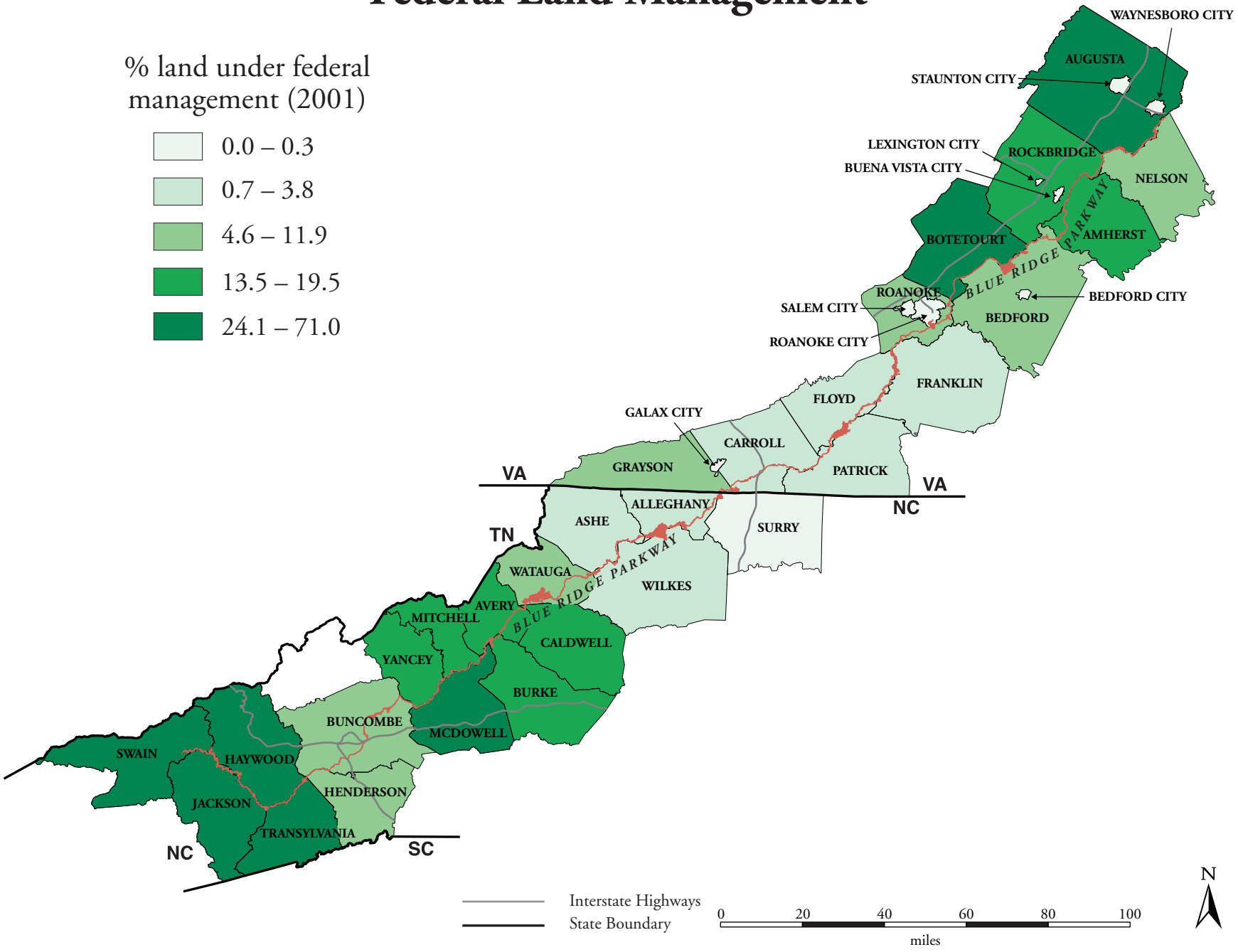
Number Line
showing distribution of data

NOTES

% land under federal management (2001)

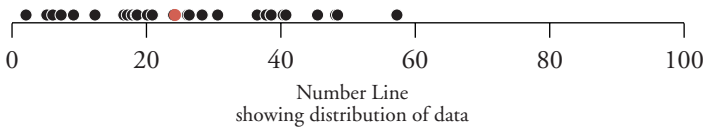
Surry	0.3	Rockbridge	17.7
Ashe	0.7	Avery	18.8
Floyd	1.6	Yancey	19.5
Franklin	1.6	McDowell	24.1
Wilkes	2.0	Botetourt	24.3
Patrick	2.5	Jackson	25.4
Carroll	3.5	Augusta	33.3
Alleghany	3.8	Haywood	36.5
Watauga	4.6	Transylvania	36.8
Roanoke	4.9	Swain	71.0
Bedford	**5.3**	Bedford City	0
Henderson	7.3	Buena Vista City	0
Buncombe	8.1	Galax City	0
Nelson	8.1	Lexington City	0
Grayson	11.9	Roanoke City	0
Mitchell	13.5	Salem City	0
Burke	14.9	Staunton City	0
Amherst	15.9	Waynesboro City	0
Caldwell	16.4		

Federal Land Management



Farmland

The relative importance of farming within a county can be indicated by the percentage of the county's total land area that is classified as farmland. Farming includes crop cultivation as well as pasturing and grazing of livestock. Because damaged or degraded natural resources present a long-term threat to the health and profitability of farming, farm operators are potentially key partners in local and regional resource protection issues. Park management can require close coordination with area farmers on many issues, such as control of nonnative species, species reintroduction, preservation of scenic values, allocation of scarce water supplies, or management of agricultural runoff. Within the Blue Ridge Parkway region, the percentage of total county land area classified as farmland (1997) ranges from 2% (Swain) to 57.2% (Alleghany), with no data reported for the independent cities of Virginia.[22]



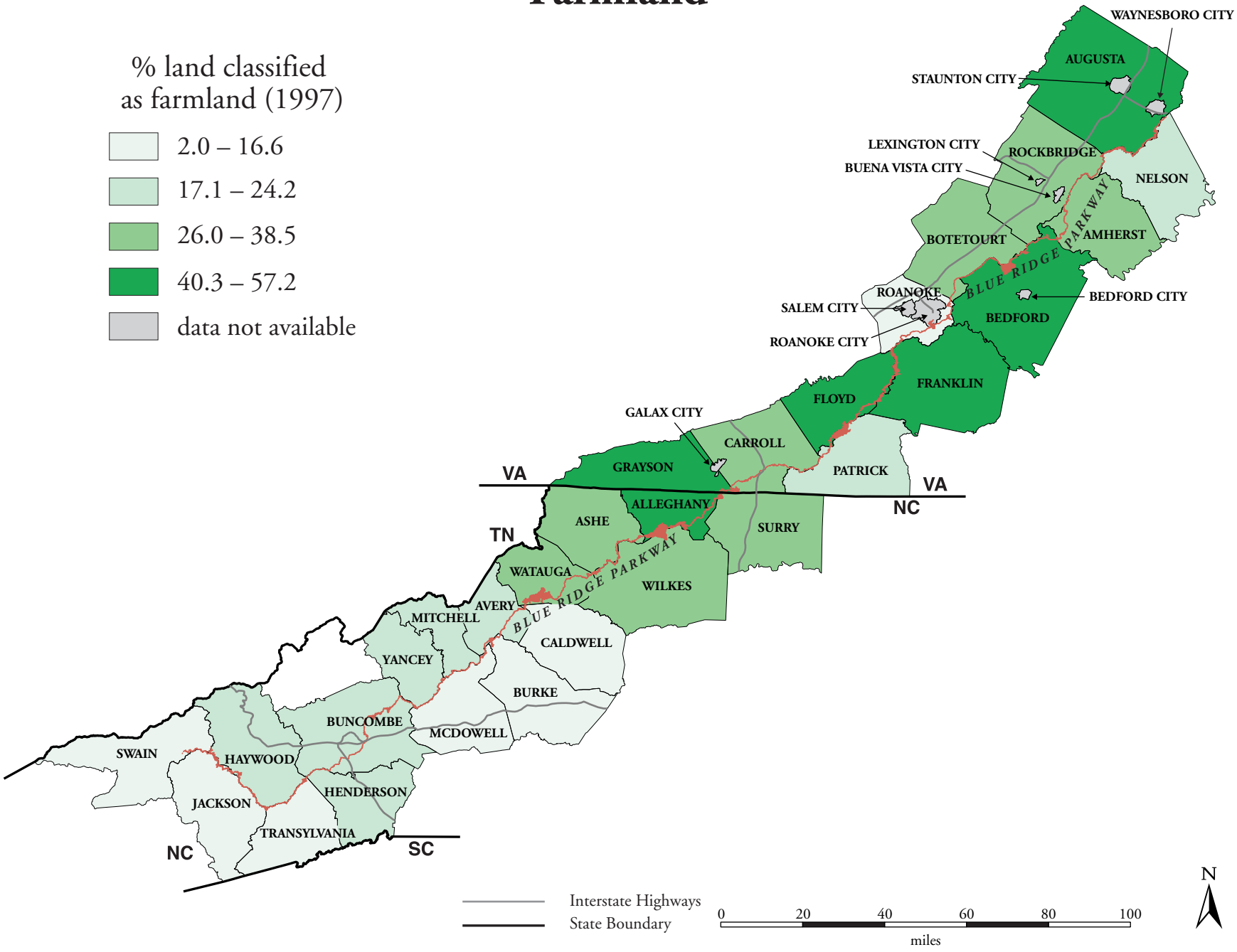
Number Line
showing distribution of data

NOTES

% land classified as farmland (1997)

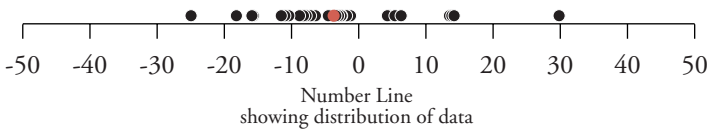
Swain	2.0	Botetourt	26.0
Transylvania	5.2	Wilkes	26.3
Jackson	6.0	Watauga	28.2
McDowell	7.3	Amherst	30.5
Burke	9.1	Rockbridge	36.5
Caldwell	12.3	Surry	37.8
Roanoke	16.6	Carroll	38.5
Avery	17.1	Ashe	38.5
Mitchell	17.8	Bedford	40.3
Haywood	18.4	Franklin	40.7
Henderson	18.6	Augusta	45.4
Yancey	20.1	Grayson	48.1
Buncombe	20.8	Floyd	48.4
Patrick	24.0	Alleghany	57.2
Nelson	**24.2**		

Farmland


% land classified as farmland (1997)
2.0 – 16.6
17.1 – 24.2
26.0 – 38.5
40.3 – 57.2
data not available
WAYNESBORO CITY
AUGUSTA
STAUNTON CITY
LEXINGTON CITY
BUENA VISTA CITY
ROCKBRIDGE
NELSON
BOTETOURT
AMHERST
BLUE RIDGE PARKWAY
ROANOKE
SALEM CITY
ROANOKE CITY
BEDFORD
BEDFORD CITY
FRANKLIN
FLOYD
GALAX CITY
CARROLL
GRAYSON
PATRICK
VA
NC
ALLEGHANY
ASHE
SURRY
TN
WATAUGA
WILKES
AVERY
MITCHELL
YANCEY
CALDWELL
BURKE
BUNCOMBE
MCDOWELL
SWAIN
HAYWOOD
HENDERSON
JACKSON
TRANSYLVANIA
NC
SC
Interstate Highways
State Boundary
0 20 40 60 80 100
miles
N

Change in Farmland

Changes in the amount of farmland provide an indication of economic and land use trends among counties in the park region. Land can be converted to farming because of increased demand for agricultural products or because new technology, business practices, or government programs make farming profitable. Land can be taken out of farming due to soil depletion, competition from other growers elsewhere, loss of labor, or conversion of land to other (often urban) uses. Within the Blue Ridge Parkway region (1987-1997), the change in the amount of farmland ranged from a decrease of 24.9% (Henderson) to an increase of 29.8% (Avery), with no data reported for the independent cities of Virginia.[23]



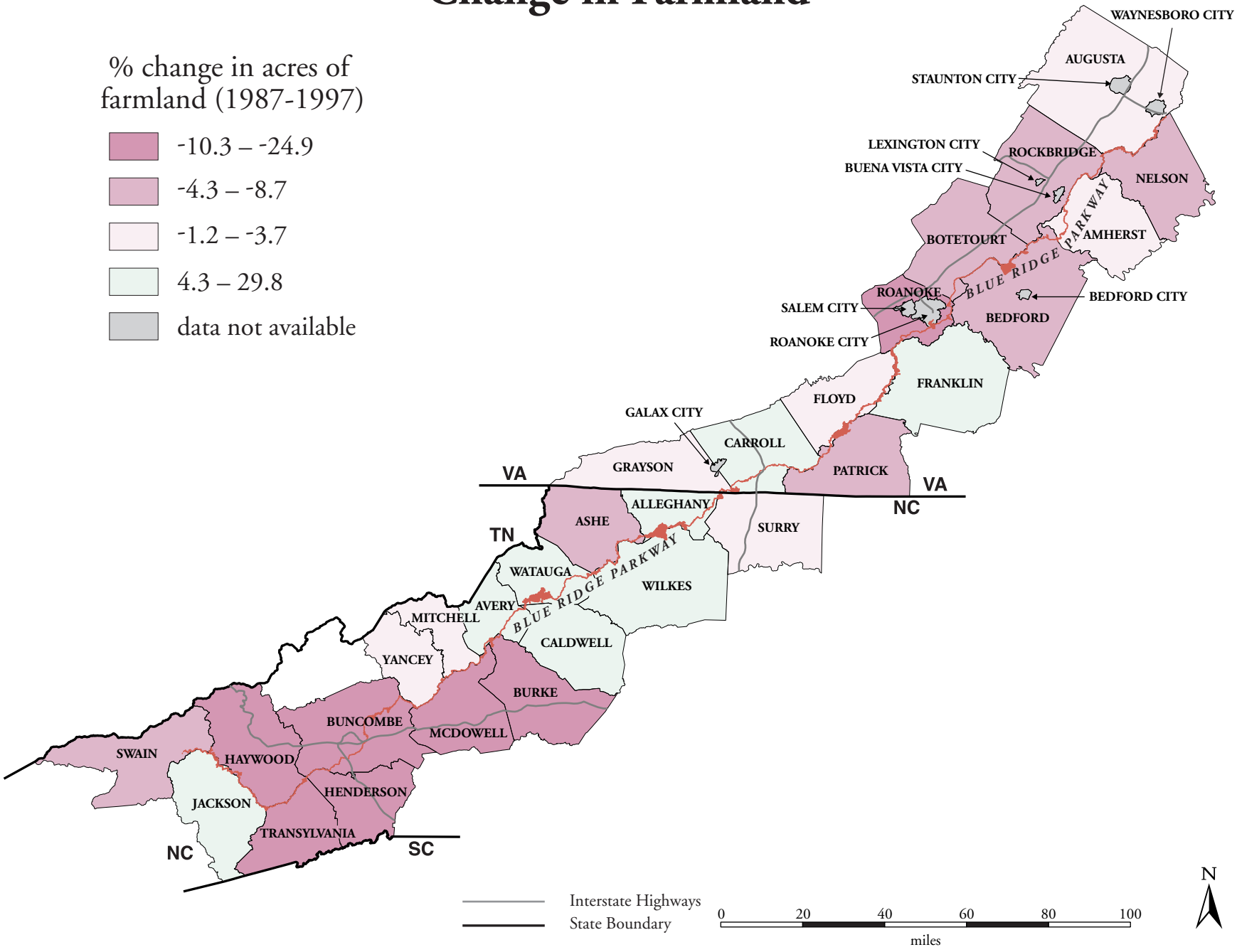
Number Line
showing distribution of data

% change in acres of farmland (1982-1997)

Henderson	-24.9	Augusta	-3.4
Haywood	-18.1	Yancey	-3.0
Buncombe	-15.9	Grayson	-2.6
Burke	-15.7	Surry	-2.5
Transylvania	-11.5	Mitchell	-1.8
McDowell	-10.9	Amherst	-1.2
Roanoke	-10.3	Watauga	4.3
Swain	-8.7	Jackson	4.5
Patrick	-8.1	Caldwell	5.4
Ashe	-7.8	Carroll	6.3
Botetourt	-7.2	Franklin	13.5
Nelson	-6.4	Wilke	13.8
Bedford	-4.5	Alleghany	14.3
Rockbridge	-4.3	Avery	29.8
Floyd	**-3.7**		

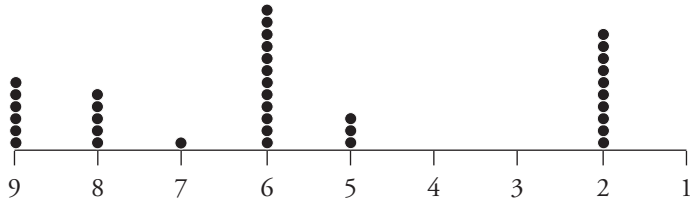
NOTES

Change in Farmland



Urbanization

Urbanization is a measurement of the degree to which land has been developed as towns and cities. The political and economic priorities of more urbanized counties tend to differ from those of less urbanized counties. The concentration of people in towns, cities, and large metropolitan areas creates opportunities for cooperative efforts (such as municipal water systems, public transportation, and a host of non-governmental organizations) but also can increase the incidence of problems such as congestion, air pollution, and habitat fragmentation. The Economic Research Service classifies counties' degree of urbanization along a continuum ranging from completely rural (high numbers) to large metropolitan (low numbers). Within the Blue Ridge Parkway region (1997), six counties are classified as totally rural, while 10 are classified as small metropolitan areas.[24]



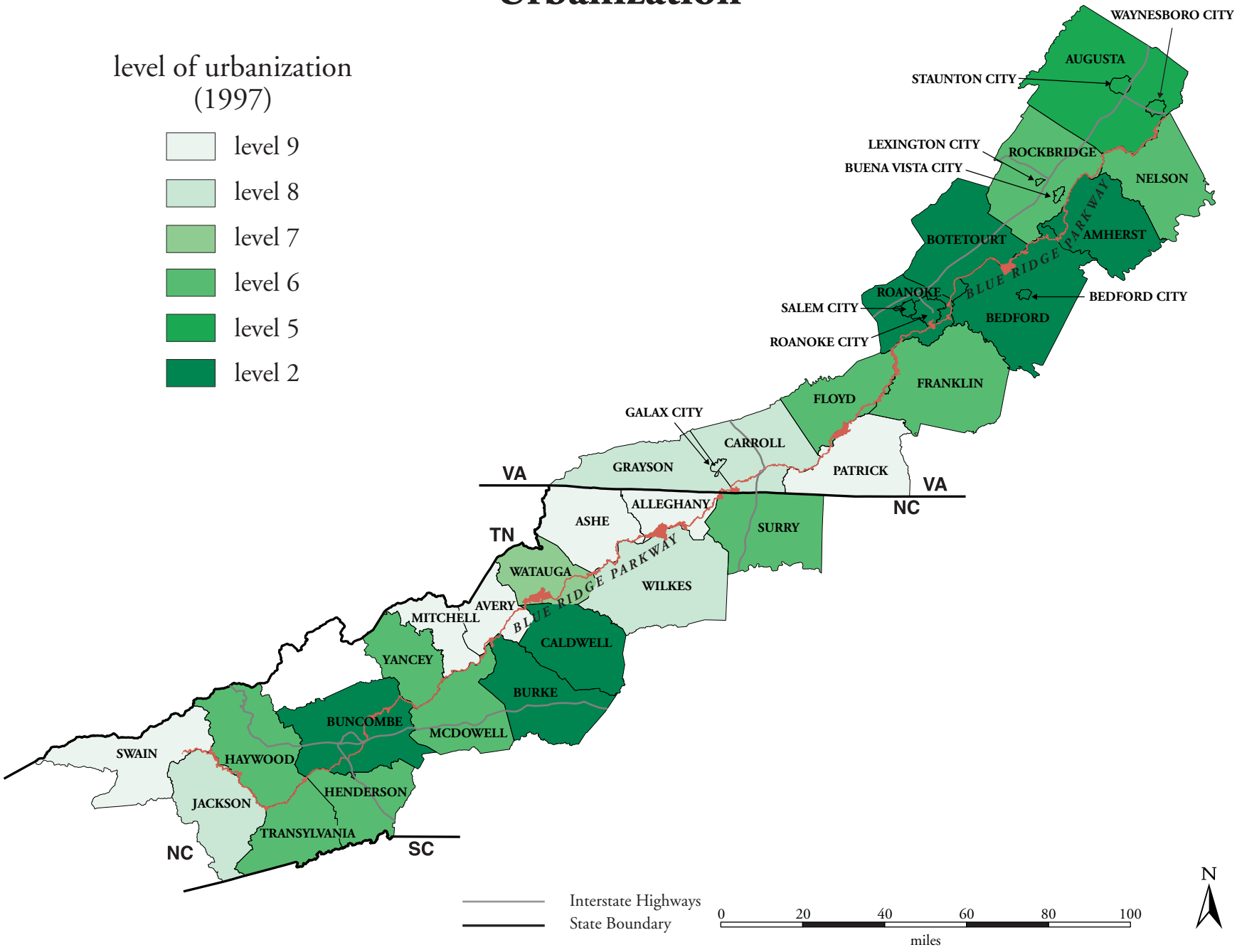
Number Line
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NOTES

level of urbanization
(1997)

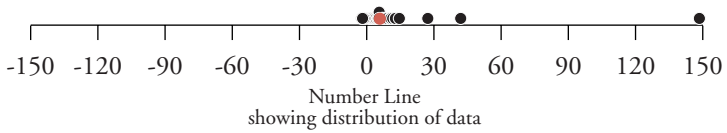
Alleghany	9	Nelson	6
Ashe	9	Rockbridge	6
Avery	9	Augusta	5
Mitchell	9	Buncombe	2
Swain	9	Burke	2
Patrick	9	Caldwell	2
Jackson	8	Amherst	2
Wilkes	8	Bedford	2
Carroll	8	Botetourt	2
Grayson	8	Roanoke	2
Watauga	7	Galax City	8
Haywood	6	Buena Vista City	6
Henderson	6	Lexington City	6
McDowell	6	Staunton City	5
Surry	6	Waynesboro City	5
Transylvania	6	Bedford City	2
Yancey	6	Roanoke City	2
Floyd	6	Salem City	2
Franklin	6		

Urbanization



Change in Building Permits

One indicator of growth in a local economy is the annual change in the number of building permits issued for new privately-owned housing units. Growth in the number of building permits directly implies an accelerating demand for construction labor, supplies, and services. It indirectly implies that families are growing, or that industries or are moving into an area and expanding economic output. Rapid growth can generate new political priorities (such as greater demand for roads and schools) and can increase land values. Growth also alters the human impact within the ecosystem through effects such as increased water consumption, loss of cropland or habitat, or greater valuation of open space. Within the Blue Ridge Parkway region, the average change in the number of building permits issued annually (1990-2000) ranges from a decrease of 2.1% (Amherst) to an increase of 148.4% (Yancey).[25]



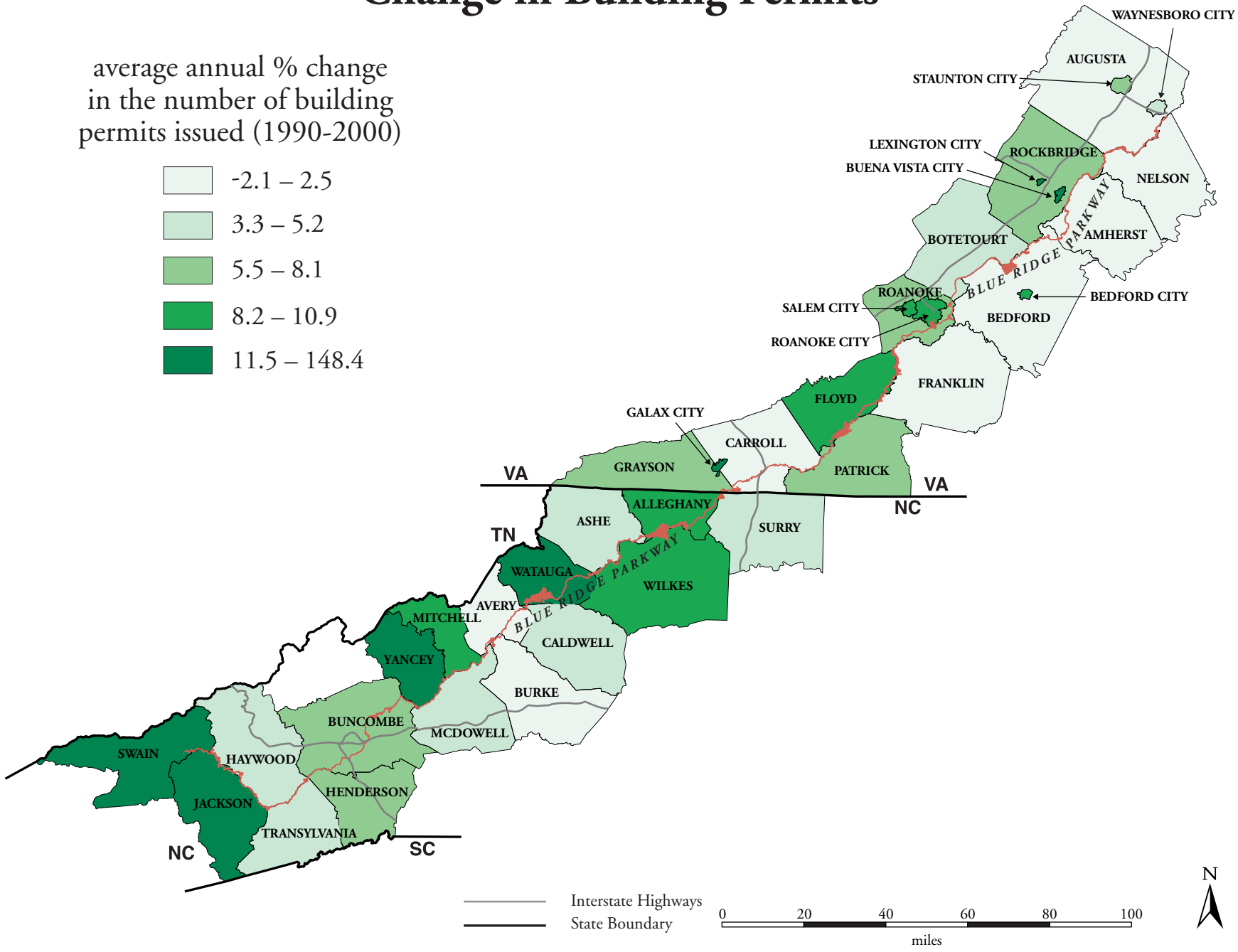
Number Line
showing distribution of data

NOTES

average annual % change in the number of building permits issued (1990-2000)

Amherst	-2.1	Roanoke	6.9
Nelson	-1.9	Patrick	8.1
Augusta	-1.2	Alleghany	8.2
Avery	-0.8	Floyd	8.3
Franklin	1.2	Mitchell	9.0
Carroll	1.5	Wilkes	10.2
Bedford	2.4	Swain	12.6
Burke	2.5	Watauga	12.8
McDowell	3.3	Jackson	14.4
Transylvania	3.4	Yancey	148.4
Surry	4.0	Waynesboro City	3.5
Caldwell	4.2	Staunton City	7.3
Haywood	4.7	Roanoke City	8.7
Botetourt	5.1	Bedford City	9.1
Ashe	5.2	Salem City	10.9
Henderson	5.5	Lexington City	11.5
Grayson	5.5	Buena Vista City	27.3
Rockbridge	**5.7**	Galax City	42.1
Buncombe	6.8		

Change in Building Permits



Conclusion: Using This Atlas for Park Management

A national park functions as part of a regional human ecosystem. A natural ecosystem can be understood in terms of factors such as flora, fauna, rainfall, temperature, elevation, and soil. Similarly, a *human ecosystem* can be understood in terms of factors such as population, commerce, social and cultural practices, politics, and land use patterns.

The regional human ecosystem, like the natural ecosystem, strongly influences the long-term health of the park's natural and cultural resources. Just as a park may be concerned with upstream activities outside its boundaries yet inside its watershed, parks are also concerned with human activities taking place outside their boundaries yet inside their region. Thus, knowledge of natural and human conditions external to a park is as essential to park management as knowledge of internal natural and cultural conditions.

This atlas focuses on human activities and features in the region surrounding Blue Ridge Parkway. Five primary applications for this atlas as a tool for park management are:

- monitoring activities and analyzing trends that could have short or long-term impacts on the park,
- making comparative studies, both within the region and between regions,
- assessing potential social impacts of management decisions,
- supporting collaborative decision-making and public participation, and
- educating park staff and other stakeholders about regional socioeconomic trends.

Monitoring activities and analyzing trends. The standardized data sources and presentation format of this atlas allow it to serve as a baseline for long-term monitoring of human conditions and trends that impact the park, such as immigration, economic shifts, or changes in the level of poverty. These human conditions and trends can have significant implications for park planning and management. For example, the atlas can be consulted to determine trends in the prevalence of English language ability among regional residents. This information could be important in designing interpretive and public participation programs that can increase access to and advocacy on behalf of the park. The atlas can be used to gain knowledge about the overall structure of and local variations in the regional economy. This information could be important to developing a strong collaborative working relationship with regional business leaders. The atlas can be examined to recognize trends in land use. This information could support proactive planning to mitigate potential impacts of development such as habitat fragmentation, degradation of air or water quality, or intrusions upon historic settings and/or scenic values.

Comparative studies. This atlas can support comparative studies of two kinds. First, the atlas can be used to compare counties within the region. By displaying the range of values for a particular indicator or a set of indicators, the atlas can help identify specific counties where it may be desirable to take (or *avoid* taking) certain management actions because of the potential impact on the human ecosystem. Second, the atlas can be used to make comparisons with other park regions. Potential management actions can be evaluated in terms of how effective they have been for another park unit where similar regional socioeconomic factors are involved.

Social impact assessment. Federal law and NPS planning directives require that park managers evaluate the social impacts of potential management actions. The socioeconomic indicators displayed in this atlas can make an important contribution to such social impact assessments. For example, the maps displayed here could be used to help understand the impacts of various park management plans and provide context for assessments at smaller scales, such as local communities.

Collaborative decision-making. In developing general management plans, park staff are directed to "consider the park holistically … as part of the surrounding region" and to conduct planning "as part of cooperative regional planning whenever possible" (Director's Order 1998-2, par. 3.3.1.2). Tools such as this atlas can support the goal of applying a regional perspective to park planning and management. Distribution of this atlas to citizens, elected officials, educators, business and service groups, resource managers, and others can strengthen their ability to effectively participate in park management activities and decision-making. Maps that present facts in a standardized format can be particularly helpful for establishing common ground on which to decide upon management priorities, especially for decisions that affect both the park and the adjacent region.

Education and orientation. The atlas can be used to orient new park staff, as well as central office staff, to some of the basic facts about human activities in the park's region of interest. It can also serve as a tool for sharing information about socioeconomic trends with the public, gateway communities, media, and Congress.

In conclusion, effective park management requires a clear understanding of human activities in the surrounding region that can impact park resources and operations. By providing the "basic facts" about such activities, this atlas can help managers, citizens, and others better provide for the preservation and enjoyment of Blue Ridge Parkway.

Appendices

Appendix 1: Data Sources for Indicators

The data sources used to obtain the measures for the socioeconomic indicators are listed below. The indicators listed on the left correspond to the titles of the maps in the atlas. The measure corresponds to the legends used in the maps and the ranked data tables.

INDICATOR	MEASURE	DATA SOURCE
General Population		
*Total Population	total number of people (2000)	U.S. Department of Commerce, Census Bureau, http://www.census.gov/population/www/cen2000/tablist.html
Historical Population Change	% change in total number of people (1970-1990)	U.S. Department of Commerce, Census Bureau, http://quickfacts.census.gov/qfd/
*Recent Population Change	% change in total number of people (1990-2000)	U.S. Department of Commerce, Census Bureau, http://www.census.gov/population/www/cen2000/tablist.html
*Projected Population Change	projected % change in total number of people (2000-2020)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
Population Density Change	% change in average number of people per square mile (1980-2000)	2) U.S. Department of Commerce, Census Bureau, http://quickfacts.census.gov/qfd/
Projected Population Density	projected average number of people per square mile (2020)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
Projected Median Age	projected median age of total population (2020)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com

Appendix 1: Data Sources for Indicators (continued)

INDICATOR	MEASURE	DATA SOURCE
Urban Population	% total population living in urban areas (2000)	U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov
Economy and Commerce		
*Industry Earnings	% total earnings by industrial category (1999)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
*Employment by Industry	% employment by industrial category (1999)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
Change in Employment by Industry	% change in employment by industrial category (1990-1999)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
Projected Change in Industry Earnings	% projected change in earnings by industrial category (2000-2020)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
Projected Change in Employment by Industry	% projected change in employment by industrial category (2000-2020)	Woods & Poole Economics, Inc. 2002 Complete Economic and Demographic Data Source (CEDDS) on CD-ROM. Washington, DC. Woods & Poole Economics, Inc. provides long-term socioeconomic data projections at the state and local levels, in both hardcopy and electronic format. http://www.woodsandpoole.com
*Poverty	% total population in poverty (1999)	1) U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov 2) U.S. Department of Commerce, Census Bureau, http://eire.census.gov/popest/data/counties/tables/CO-EST2001-12.php

Appendix 1: Data Sources for Indicators (continued)

INDICATOR	MEASURE	DATA SOURCE
Home Based Employment	% employed labor force working at home (2000)	U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov/
Social and Cultural Characteristics		
*Racial Diversity	% total population belonging to minorities (2000)	U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov/
*Educational Attainment	% total population 25 years old and over with some college or college degree (2000)	U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov/
Recreation and Tourism		
Recreation and Tourism Establishments	% total establishments in arts entertainment, recreation, and accommodation services (2000)	U.S. Department of Commerce, Census Bureau, http://censtats.census.gov/cbpnaic/cbpnaic.shtml
*Recreation and Tourism Revenue	% total sales from arts, entertainment, recreation, and accommodation services (1997)	U.S. Department of Commerce, Census Bureau, http://www.census.gov/epcd/www/econ97.html
*Recreation and Tourism Employment	% total paid employees in arts, entertainment, recreation, and accommodation services (2000)	U.S. Department of Commerce, Census Bureau, http://censtats.census.gov/cbpnaic/cbpnaic.shtml
Seasonal Housing	% total housing units classified for seasonal, recreational, or occasional use (2000)	U.S. Department of Commerce, Census Bureau, http://factfinder.census.gov/
Administration and Government		
*Congressional Districts	Congressional districts (108th Congress)	1) U.S. Department of Commerce, Census Bureau, http://www.census.gov/geo/www/cob/cd108.html 2) U.S. Department of the Interior, National Atlas of the United States, http://nationalatlas.gov/atlasftp.html
*Federal Expenditures	federal expenditures per capita ($) (2001)	U.S. Department of Commerce, Census Bureau, http://www.census.gov/prod/www/abs/cffr.html
Change in Local Government Revenue	% change in local government revenue per capita (1987-1997)	1) U.S. Department of Commerce, Census Bureau, http://www.census.gov/govs/www/cog.html

Appendix 1: Data Sources for Indicators (continued)

INDICATOR	MEASURE	DATA SOURCE
Payments in Lieu of Taxes	total payments transferred to counties (2001)	U.S. Department of the Interior, Bureau of Land Management. Payment In Lieu of Taxes, Fiscal Year 2001. Washington, DC.
Land Use		
*Ecoregions	ecoregion division boundaries (1995)	1) USDA Forest Service, Inventory and Monitoring Institute, http://www.fs.fed.us/land/ecosysmgmt/ecoreg1_home.html 2) Bailey, Robert G. (1995). Description of the Ecoregions of the United States (2nd ed.). Misc. Pub. No. 1391, USDA Forest Service, 108 pp.
*Federal and Indian Lands	federal and Indian land boundaries (2000)	U.S. Department of the Interior, National Atlas of the United States, http://www.nationalatlas.gov/atlasftp.html
*Metropolitan Areas	metropolitan area boundaries (1999)	U.S. Department of Commerce, Census Bureau, http://www.census.gov/geo/www/cob/ma1999.html
*Federal Land Management	% land under federal management (2001)	U.S. Department of the Interior, Bureau of Land Management. Payment In Lieu of Taxes, Fiscal Year 2001. Washington, DC.
Farmland	% land classified as farmland (1997)	1) USDA National Agricultural Statistics Service. Census of Agriculture 1997, http://www.nass.usda.gov/census/ 2) U.S. Department of Commerce, Census Bureau, http://quickfacts.census.gov/qfd/index.html
*Change in Farmland	% change in acres of farmland (1987-1997)	USDA National Agricultural Statistics Service. Census of Agriculture 1997, http://www.nass.usda.gov/census/
*Urbanization	level of urbanization (1997)	U.S. Department of Agriculture, Economic Research Service, http://usda.mannlib.cornell.edu/data-sets/rural/97002/
Change in Building Permits	average annual % change in number of building permits issued (1990-2000)	1) U.S. Department of Commerce, Census Bureau, http://quickfacts.census.gov/qfd/ 2) U.S. Department of Commerce, Census Bureau, Residential Construction Branch, http://www.census.gov/const/www/permitsindex.html

** Denotes a core indicator, common to all atlases in this series. Additional indicators were selected by park managers to include information specific to their particular management needs.*

Appendix 2: Technical Notes on Map Design

Selection of Base Map Data – The regional base map used to map socioeconomic indicators on the preceding pages includes state and county boundaries, interstate highways, major cities, and other selected cities and towns. The roads, cities, and towns are included to provide readers with a few familiar points of reference. It should be emphasized that this is not a general purpose atlas of the region, for it focuses only on socioeconomic indicators.

Choropleth Mapping – For most of the maps, data are grouped by quintiles which vary in shading from light to dark (for low to high values). This shading technique, known as choropleth mapping, is usually applied to ratio data; population density, infant deaths per 1,000 live births, and median income are examples. Maps that display total amounts (such as total population) often use other approaches, such as proportional symbols. For clarity, ease of use, and consistent design, choropleth mapping is used for most of the social indicator data.

Quintile Classification – The choice of a *quintile* classification of the data means that for most maps, counties were divided into five classes. Rather than focusing on the actual numerical value of the indicator for each county, the quintile approach emphasizes the variation in data values among counties. The legend accompanying the map allows the reader to see the actual magnitude of variation among the counties for that indicator. Quintiles make it easy for the reader to make intuitive comparisons among counties; the darkest shaded counties are in the "top fifth," the lightest shaded counties are in the "bottom fifth," and so forth. Quintiles also facilitate comparisons between maps in the atlas ("this county ranks in the bottom quintile on all three of these indicators").

Two notes: (1) Whenever the number of counties cannot be evenly divided by five, the convention for this atlas series is to reduce the size of the highest quintile first, then the next quintile if needed, then the third quintile if needed. Hence thirty-seven counties would be divided into groups of 7, 7, 7, 8, and 8, with the first group of 7 having the highest data values/darkest shading. (2) Counties with identical data values are grouped in the same quintile, even if this results in quintiles of unequal size.

Note on Political Boundaries – The regional base map depicts the formally defined political boundaries of states and counties.

Map Sources – The context map at the beginning of the atlas was generated from Cartesia Software, 1998, MapArt Geopolitical Deluxe – USA (Lambertville, NJ; http://www.mapresources.com). The standard region map used throughout the atlas was generated from U.S. Census Bureau shapefiles. Contextual information (roads and cities) was obtained from the U.S. Geological Survey (http://www.nationalatlas.gov).

Production – Indicator data for the atlas were compiled in Microsoft Excel 98. These were linked to U.S. Census shapefiles using ArcView GIS 3.1. The GIS files were imported into Adobe Illustrator 8.0, with the Avenza MAPublisher 3.5 plug-in, for final map design. Text was prepared in Microsoft Word 98. The final atlas layout (text, maps, graphics) was completed using Adobe PageMaker 6.5.

Appendix 3: Technical Notes on Measurement of Selected Indicators

[1] Persons enumerated in the census were counted as inhabitants of their usual place of residence, which generally means the place where a person lives and sleeps most of the time. This place is not necessarily the same as the legal residence, voting residence, or domicile. In the vast majority of cases, however, the use of these different bases of classification would produce substantially the same statistics, although appreciable differences may exist for a few areas.

[2] For an explanation of Woods & Poole's projection methods see page 11 in the Woods and Poole Technical Documentation manual.

[3] **Population density** is measured as the average number of people per square mile. This number is calculated by dividing the total number of people by the total area per county. In counties with federal lands, excluding these areas from the calculation of population density would result in a higher population density.

[4] see note above on population density.

[5] **Urban population** is measured as the percentage of the total population living in urban areas. An urban area includes all territory, population, and housing units in urbanized areas and in places of 2,500 or more persons outside urbanized areas. An urbanized area has a population concentration of at least 50,000 inhabitants, and generally consists of a central city and the surrounding, closely settled, contiguous territory having a density of at least 1,000 persons per square mile.

The complete criteria are available from the Chief, Geography Division, U.S. Bureau of the Census, Washington, DC 20233.

[6] Economic activity is categorized as belonging to one of four **industry categories**: agriculture/natural resources, construction/manufacturing, sales/services, and government. Individual workers, regardless of their specific job responsibilities, are classified according to the category their overall company or organization belongs to. Thus, while accounting is considered a "service" activity, an accountant for a mining company would be counted as working in "agriculture/natural resources." "Government" includes all federal government workers and all state/local employees, such as teachers, police, firefighters, etc. Even though government jobs may involve construction, natural resource management, or provision of services, they are still counted as belonging to the "government" category.

[7] see note above on industry categories.

[8] see note above on industry categories.

[9] see note above on industry categories.

[10] see note above on industry categories.

[11] **Poverty** is measured as the percentage of the total population living below the poverty level (1999). The poverty level is defined as earnings of $16,700 or less for a family of four persons. Poverty thresholds are applied on a national basis and are not adjusted for regional, state, or local variations in the cost of living.

[12] **Racial diversity** is defined for this measure as the percentage of the population that classifies themselves as being non-White. Diversity by this definition does not necessarily measure the degree of "variety" in the population. For example, a hypothetical county with a 90% Asian population would be considered as being more "diverse" than a county in which each of the six major ethnic groups constituted 10% of the population (in the latter case, diversity would be measured as 60%). The Hispanic or Latino origin category was not included in this measure because persons of Hispanic or Latino origin may be of any race (including White).

[13] For the census, persons are classified according to the highest level of school completed or the highest degree received. The question included instructions to report the level of the previous grade attended or the highest degree received for persons currently enrolled in school.

[14] **Recreation and Tourism** is composted of the arts, entertainment, and recreation sector and the accommodation subsector. Both are part of the North American Industry Classification System (NAICS). For a complete definition of these NAICS categories please consult the following URL (http://www.census.gov/epcd/www/naics.html).

[15] see note above on recreation and tourism.

[16] see note above on recreation and tourism.

[17] Housing unit is a house, apartment, mobile home or trailer, group of rooms, or single room occupied or, if vacant,

intended for occupancy as separate living quarters. Seasonal, recreational, or occasional use refers to vacant units used, or intended for use, only in certain seasons or for weekend or other occasional use throughout the year. A housing unit is vacant if no one is living in it at the time of enumeration, unless its occupants are only temporarily absent. Units temporarily occupied at the time of enumeration entirely by persons who have a usual residence elsewhere are also classified as vacant.

[18] **Federal expenditures** include expenditures, or obligation for, direct payments for individuals, procurement, grants, salaries and wages, direct loans, and guaranteed loans and insurance. Grant awards are reported by county of the initial recipient; thus if the initial recipient is the state government, the county in which the state capital is located is reported as having "received' that "pass-through" grant, even though the monies are subsequently distributed to other local governments.

[19] The U.S. Geological Survey produces the **Federal and Indian Lands** map layer. This map layer does not include any federally and Indian held land that has an areal extent smaller than 640 acres (though a separate map layer for these lands is in preparation). For more information and metadata, consult the following URL (http://www.nationalatlas.gov/fedlandsm.html).

[20] Certain MAs are defined around two or more nuclei. Each MA must contain either a place with a minimum population of 50,000 or a U.S. Census Bureau-defined urbanized area and a total MA population of at least 100,000. For a complete definition, consult the following URL (http://www.census.gov/geo/www/cob/ma_metadata.html).

[21] Federal lands include all tax-exempt federal lands administered by the Bureau of Land Management (BLM), the National Park Service, the U.S. Fish and Wildlife Service, the U.S. Forest Service, federal water projects, and some military installations. The BLM calculates the amount of federal land within counties in order to administer the federal government's payments-in-lieu-of-taxes (PILT) program.

[22] **Farmland** consists primarily of agricultural land used for crops, pasture, or grazing. It also includes woodland and wasteland that is part of a farm operator's total operation.

[23] see note above on farmland.

[24] The Economic Research Service classifies counties according to their level of urbanization. The classification consists of nine mutually-exclusive codes:

METROPOLITAN COUNTIES

1) Counties in large metropolitan areas of 1 million or more residents
2) Counties in small metropolitan areas of less than 1 million residents

NONMETROPOLITAN COUNTIES

Adjacent to a large metro area and

3) contains all or part of its own city of 10,000 or more residents
4) does not contain any part of a city of 10,000 or more residents

Adjacent to a small metro area and

5) contains all or part of its own city of 10,000 or more residents
6) does not contain any part of a city of 10,000 or more residents

Not adjacent to a metro area and

7) contains all or part of its own city of 10,000 or more residents
8) contains all or part of its own town of 2,500 to 9,999 residents
9) totally rural, does not contain any part of a town of 2,500 or more residents

[25] The issuing of **building permits** for privately-owned housing units does not necessarily imply that a community is growing, since any community will experience an ongoing replacement of aging houses and buildings. Also, a catastrophic event such as a major storm or fire can generate a short-term surge in the number of building permits issued. Thus a better indicator of growth is the average annual change in the number of building permits issued over a ten-year period. Changes in local codes or enforcement can also affect the number of building permits issued. This measure includes data about new housing units intended for occupancy and maintained by the occupants. It excludes hotels, motels, and group residential structures such as nursing homes and college dormitories. All public housing and nonresidential buildings are also excluded. For a complete definition, consult the following URL (http://www.census.gov/const/www/newresconstdoc.html).

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Reprinted: 10/2003


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