

# Understanding the Gradients of “Rural”

A guide to the various  
definitions of “rural” and  
their implications for states

## We will:

- Explore the various definitions of rural
- See how states “measure up” against these definitions
- Condense the definitions into four lenses which we will use to observe differing degrees of rurality among states
- Find out about next steps:
  - Crosswalking the degrees of rurality with degrees of poverty between and within states
  - Comparing degrees of rurality and poverty with educational outcomes
  - Suggesting policy considerations for each type of rural context

# Definitions of “Urban/Rural”

- U.S. Census definition
- Office of Management and Budget (OMB) core based statistical areas
- Economic Research Service’s (ERS) Rural Urban Continuum Codes National Center for Education Statistics’ (NCES) Urban-centric Locale Codes
- Rural Urban Commuting Area (RUCA) codes
- Rural-Urban Density Typology (Isserman)
- Index of Relative Rurality (Waldorf)
- National Center for Frontier Communities (NCFC) definition of “Frontier”

# Defining Rural: U.S. Census Bureau Definitions

## **"Urban" -**

- a contiguous area of census blocks or block groups with a population density of at least 1,000 people / sq mile and surrounding census blocks that have an overall density of at least 500 people /sq mile.

## **Urbanized area (UA) -**

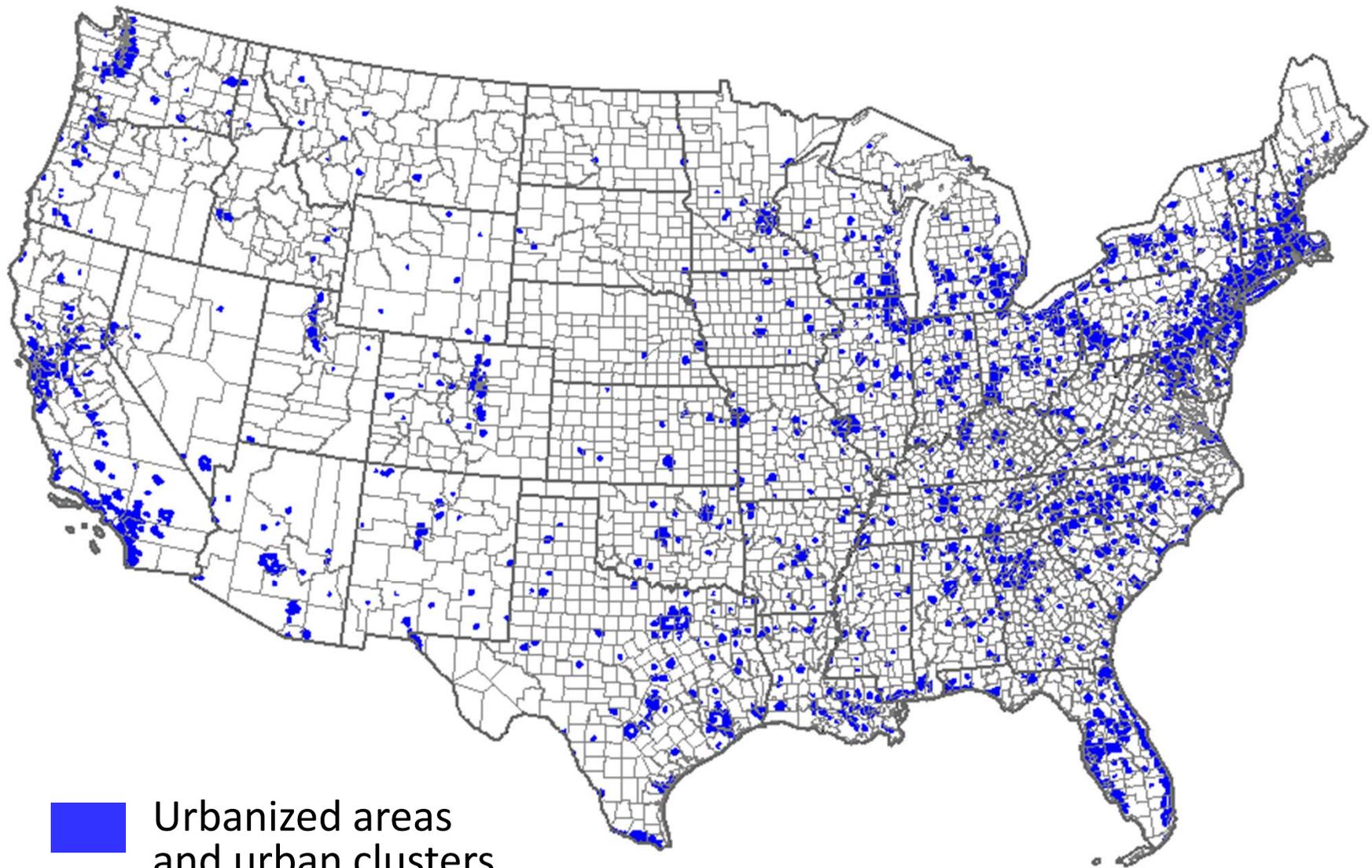
- areas with population of 50,000 or more

## **Urban cluster (UC) -**

- clusters of between 2,500 - 50,000 population

## **Rural area -**

- All areas outside of urbanized areas and urban clusters



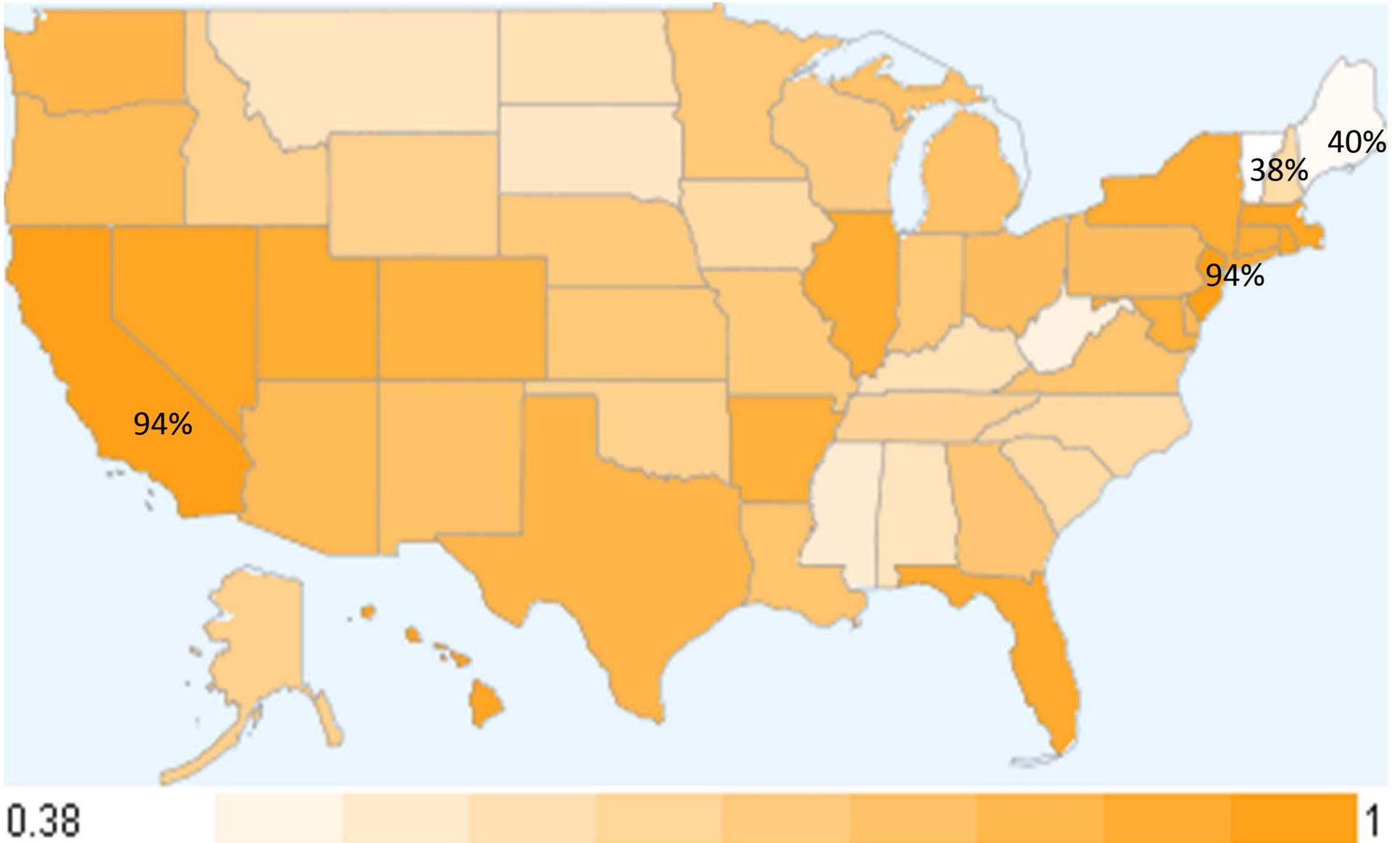
Urbanized areas  
and urban clusters

Source: U.S. Census Bureau, (2000).

<http://ims2.missouri.edu/website/racmaps/>



# % population urbanized, by state



# Defining Rural:

Office of Management and Budget (OMB)

## **Metropolitan statistical area -**

- a city of 50,000 or more population, or
- a Census Bureau defined urbanized area of at least 50,000 population, provided that the component county/counties of the metropolitan statistical area have a total population of at least 100,000.

## **Rural area -**

- "Nonmetropolitan" – all areas outside of metropolitan areas.

Nonmetropolitan areas are further classified into the following groups:

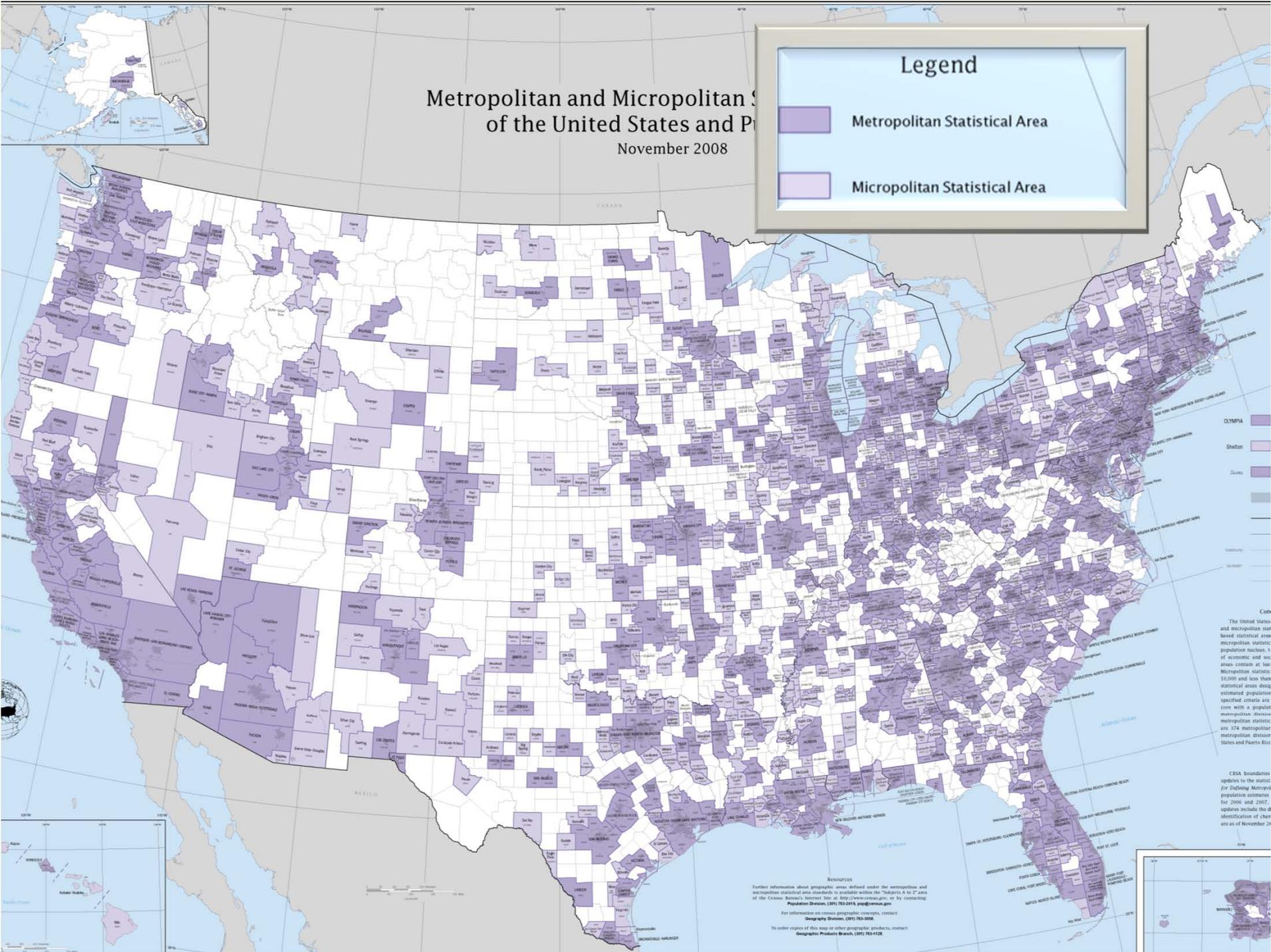
- **Micropolitan statistical area** – must have at least one urban cluster of between 10,000 - 50,000 population.
- **Non-core county** – all others

# Metropolitan and Micropolitan Statistical Areas of the United States and Puerto Rico

November 2008

### Legend

- Metropolitan Statistical Area
- Micropolitan Statistical Area



**Credits**  
The United States and micropolitan statistical areas designated as core with a population of 10,000 and less than 50,000 are 374 micropolitan statistical areas and 374 micropolitan statistical areas and Puerto Rico.

CBSA boundaries updates to the status for defining Metropolitan population estimates for 2006 and 2007, updates include the identification of core areas as of November 23

**RESOURCES**  
Further information about geographic areas defined under the metropolitan and micropolitan statistical area standards is available within the "Subjects A to Z" area of the Census Bureau's Internet Site at <http://www.census.gov>, or by contacting:  
Population Division, (202) 783-2415, [pop@censo.gov](mailto:pop@censo.gov)

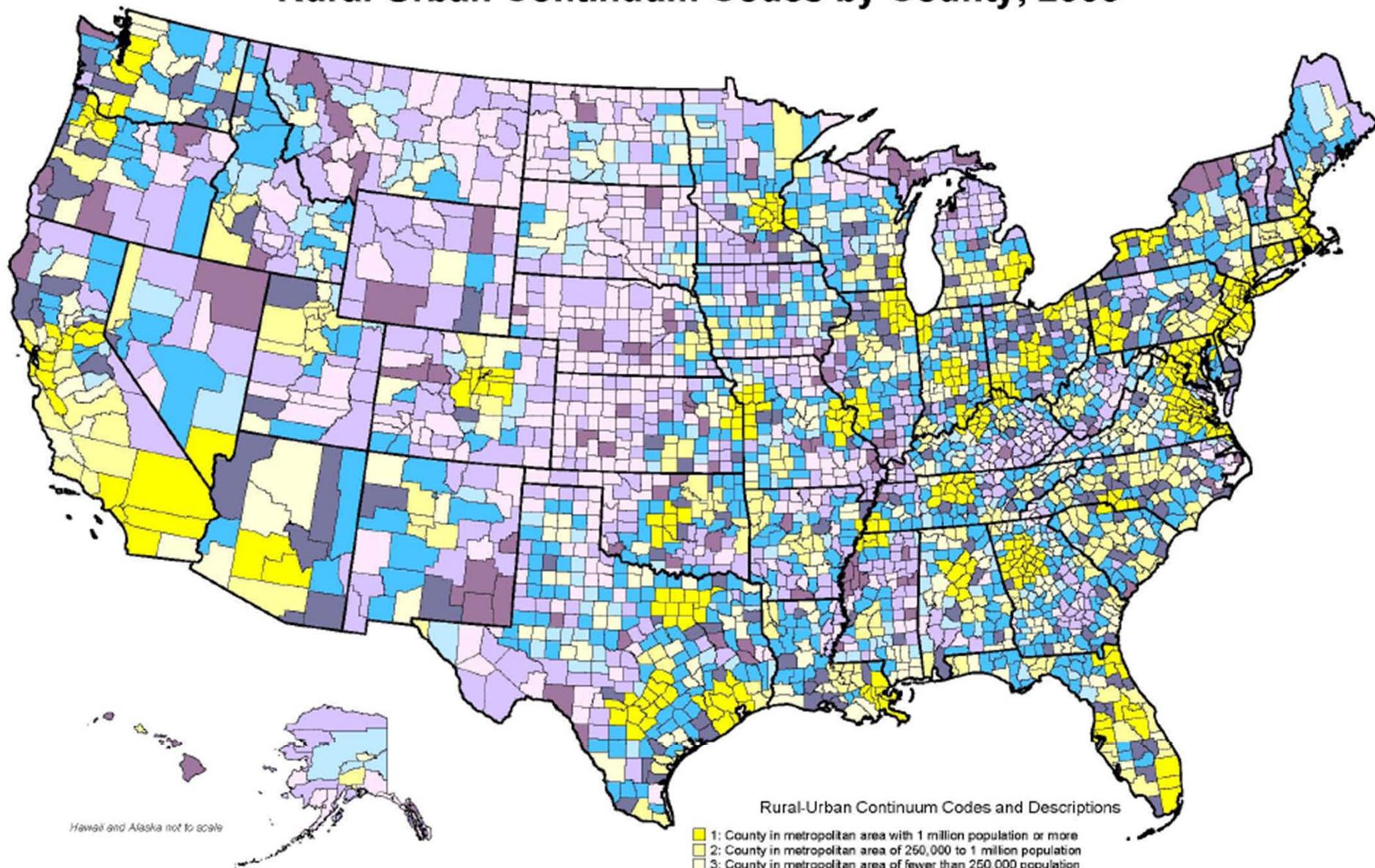
For information on census geographic concepts, contact:  
Geographic Division, (202) 783-3066

To order copies of this map or other geographic products, contact:  
Geographic Products Branch, (202) 783-4128

# Defining Rural: Rural Urban Continuum Codes

- Divides metropolitan, micropolitan, and non-core areas into a total of nine categories according to their size and proximity to metropolitan areas

## Rural-Urban Continuum Codes by County, 2003



### Rural-Urban Continuum Codes and Descriptions

- 1: County in metropolitan area with 1 million population or more
- 2: County in metropolitan area of 250,000 to 1 million population
- 3: County in metropolitan area of fewer than 250,000 population
- 4: Nonmetro county with urban pop. of 20,000 or more, adjacent to metro area
- 5: Nonmetro county with urban pop. of 20,000 or more, not adjacent to metro area
- 6: Nonmetro county with urban pop. of 2,500-19,999, adjacent to metro area
- 7: Nonmetro county with urban pop. of 2,500-19,999, not adjacent to metro area
- 8: Nonmetro county less than 2,500 urban population, adj. to metro area
- 9: Nonmetro county less than 2,500 urban population, not adj. to metro area

Sources: County Boundaries - U.S. Census Bureau, 2000. Rural-Urban Continuum Codes - Economic Research Service, US Department of Agriculture, 2003.

Prepared by the North Carolina Rural Health Research and Policy Analysis Center, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

# Defining Rural: NCES' Urban-Centric Locale Codes

- Uses Common Core Data to assign locales to one of four major categories (urban, suburban, small town, and rural) based on population size, and to additional sub-categories based on proximity to Census-defined urbanized areas.
- Schools receive locale codes in accordance with their location
- Districts assume the locale code of the schools at which the majority of the district's students are enrolled.

# Defining Rural: Rural Urban Commuting Area

- Classifies U.S. census tracts along an urban-to-rural continuum by accounting for population density, urbanization, and daily commuting.
- Daily commuting figures are based on the size and direction of the primary (largest) and secondary (second-largest) commuting flows.

# Defining Rural:

Rural Urban Commuting Area codes  
(Classified by the University of Washington  
Rural Health Research Center)

## **Urban -**

- metropolitan area (OMB definition)

## **Large rural -**

- OMB micropolitan core with primary flow within a large Urban Cluster (UC) of population 10,000-49,999.
- OMB micropolitan high commuting area: primary flow 30% or more to a large UC
- OMB micropolitan low commuting area: primary flow 10% to 30% to a large UC

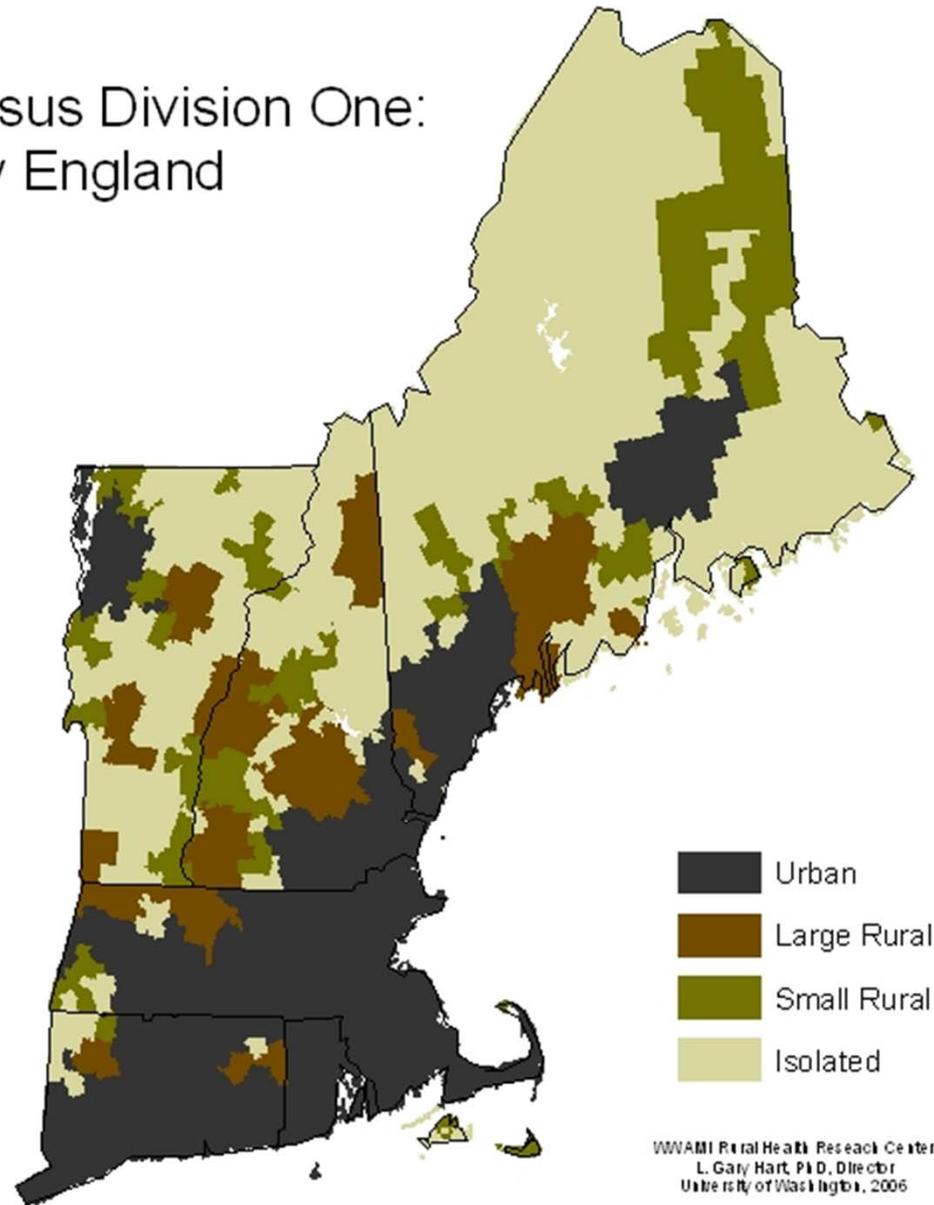
## **Small rural -**

- Small town core: primary flow within a small UC of population 2,500-9,999
- Small town high commuting area: primary flow 30% or more to a small UC
- Small town low commuting area: primary flow 10% through 29% to a small UC

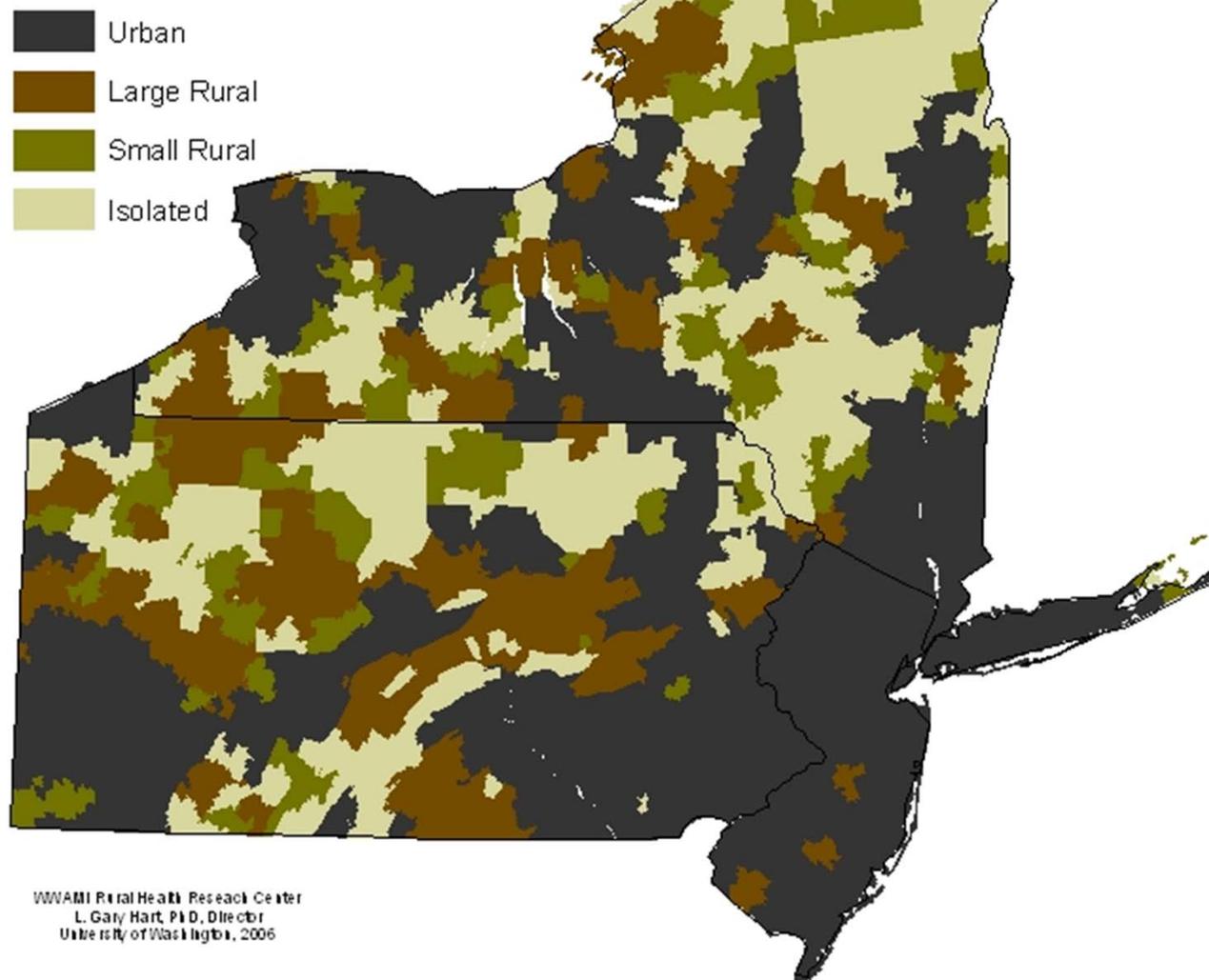
## **Isolated rural -**

- Area with primary flow to a tract outside an urban area or UC (including self)

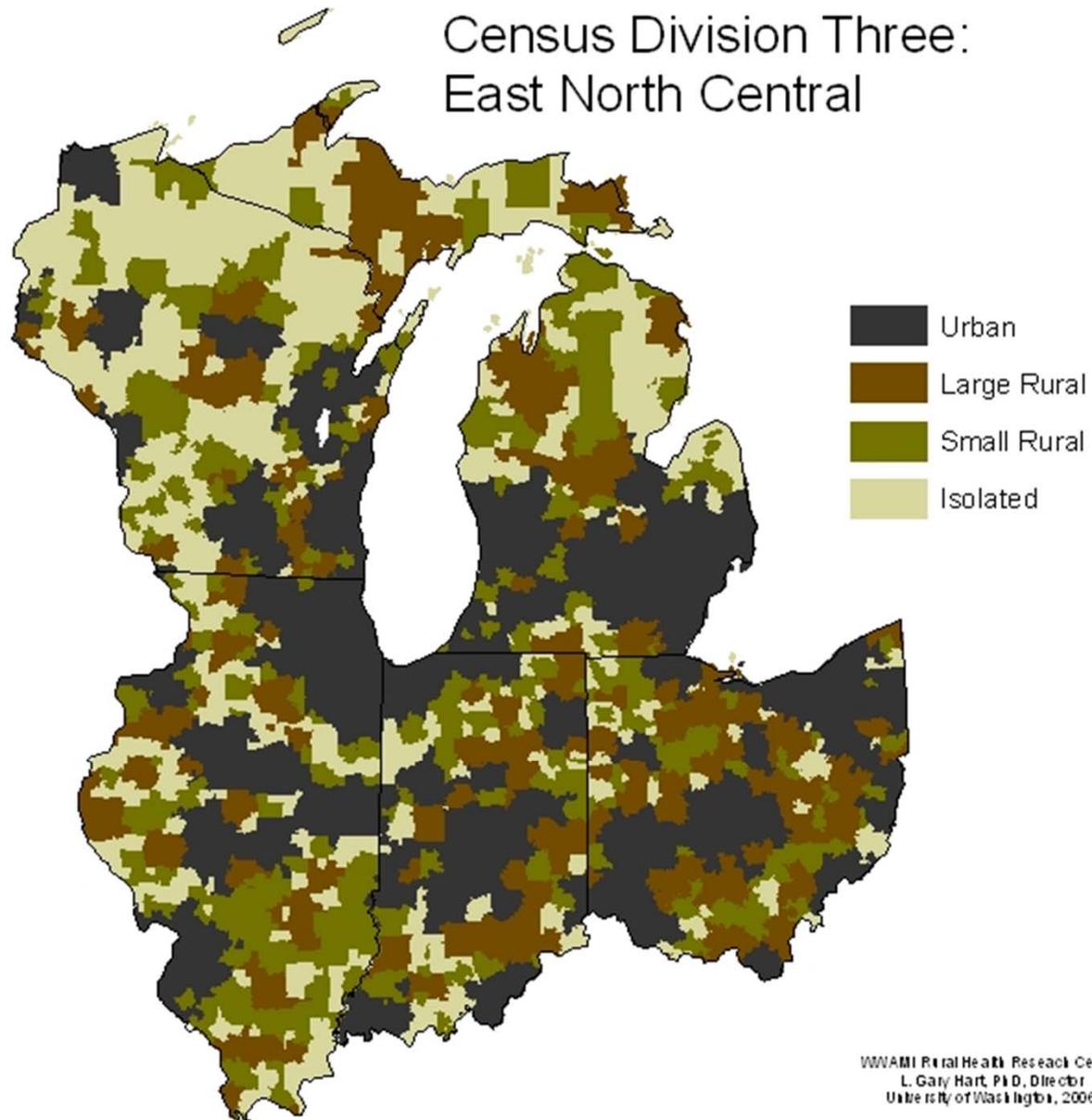
## Census Division One: New England



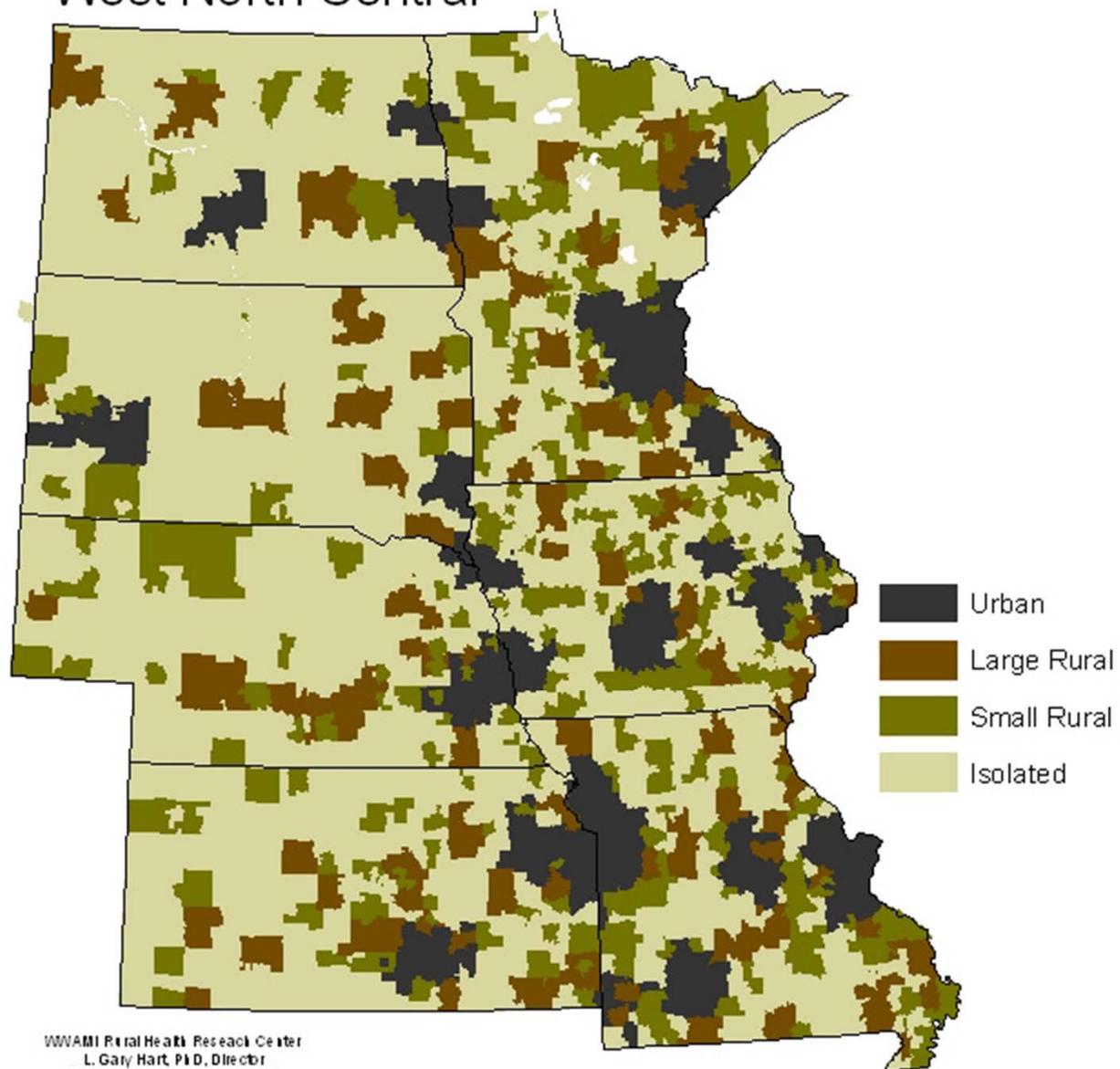
## Census Division Two: Middle Atlantic



## Census Division Three: East North Central

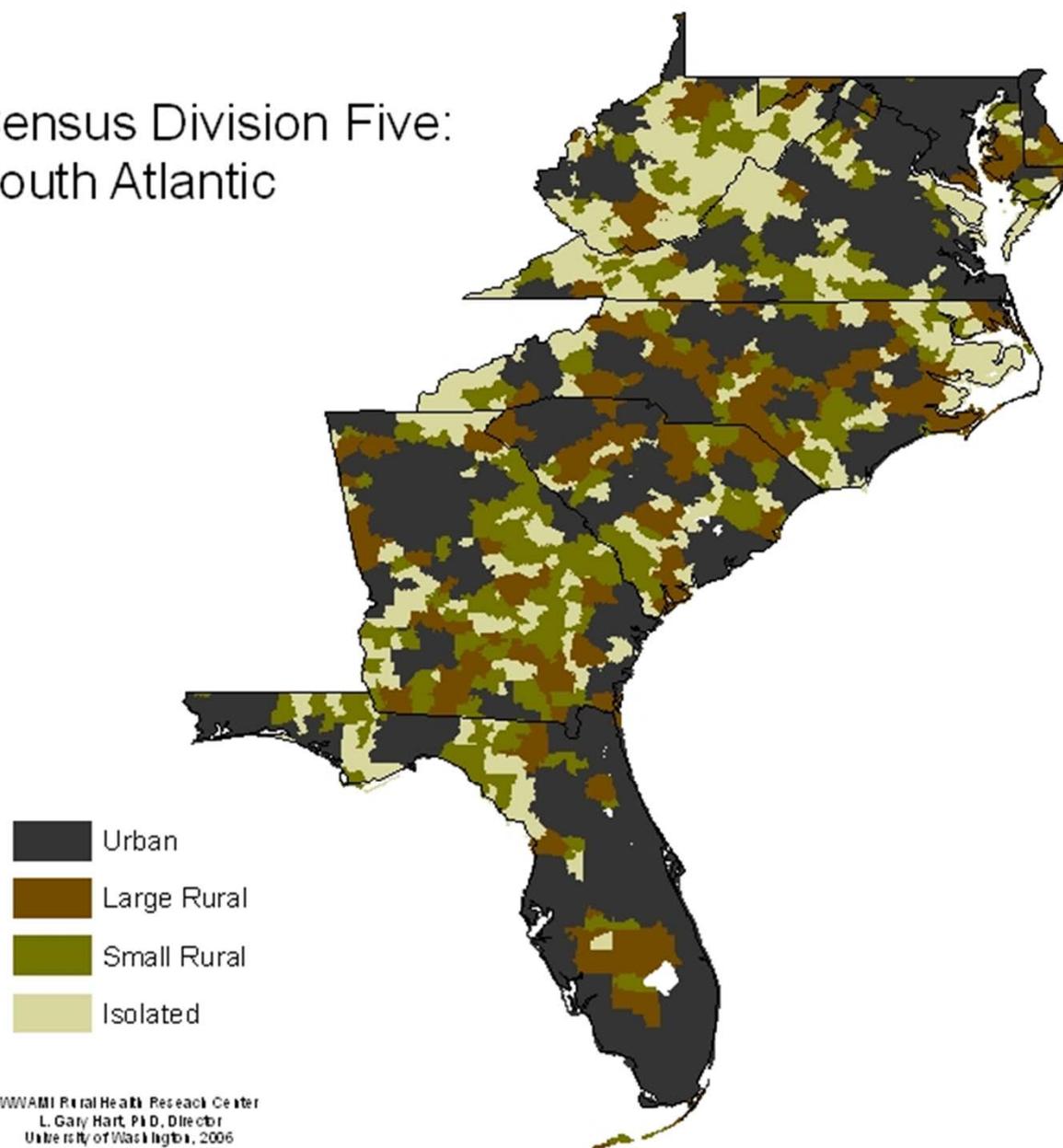


## Census Division Four: West North Central

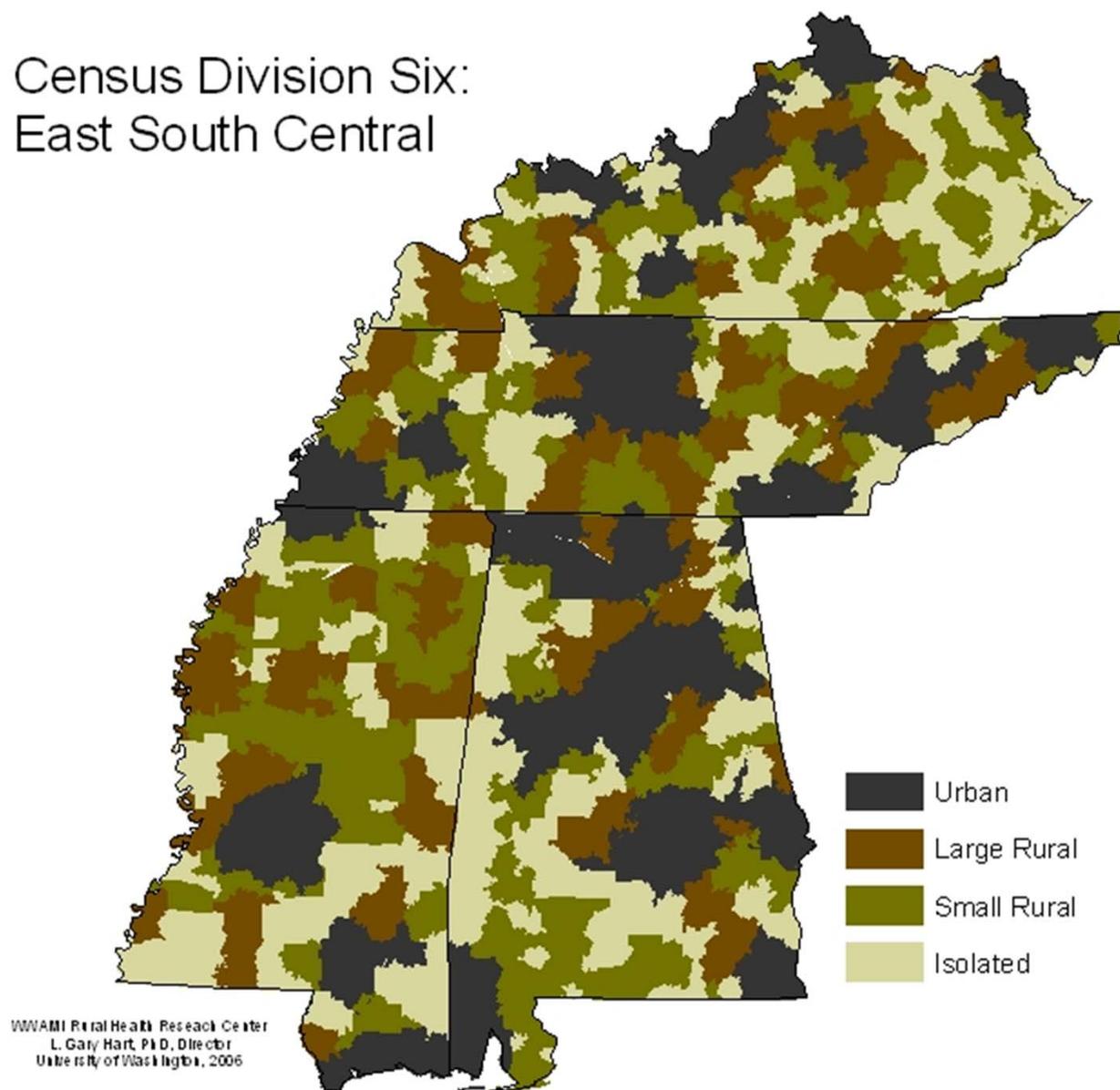


WWAMI Rural Health Research Center  
L. Gary Hart, Ph.D., Director  
University of Washington, 2006

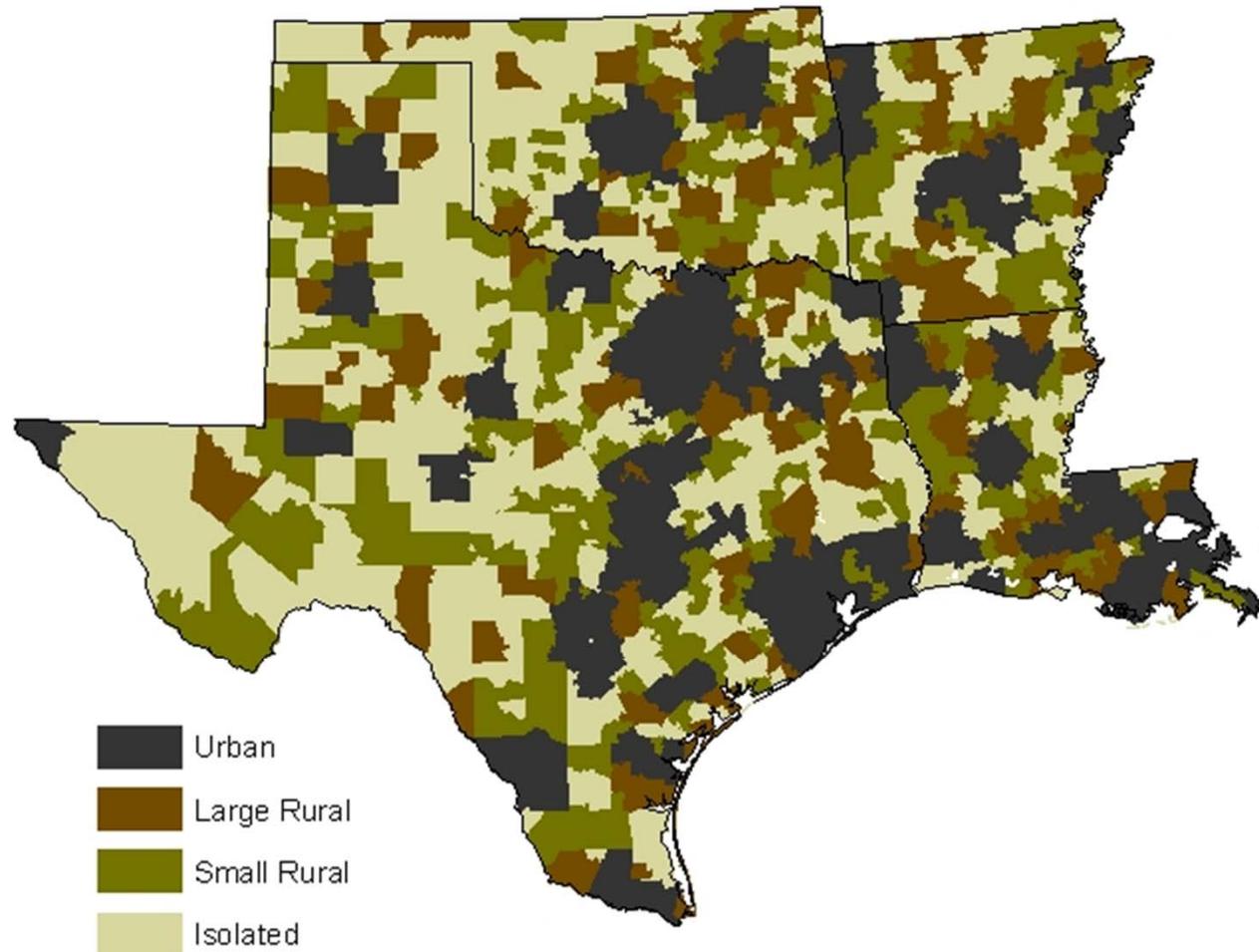
## Census Division Five: South Atlantic



Census Division Six:  
East South Central

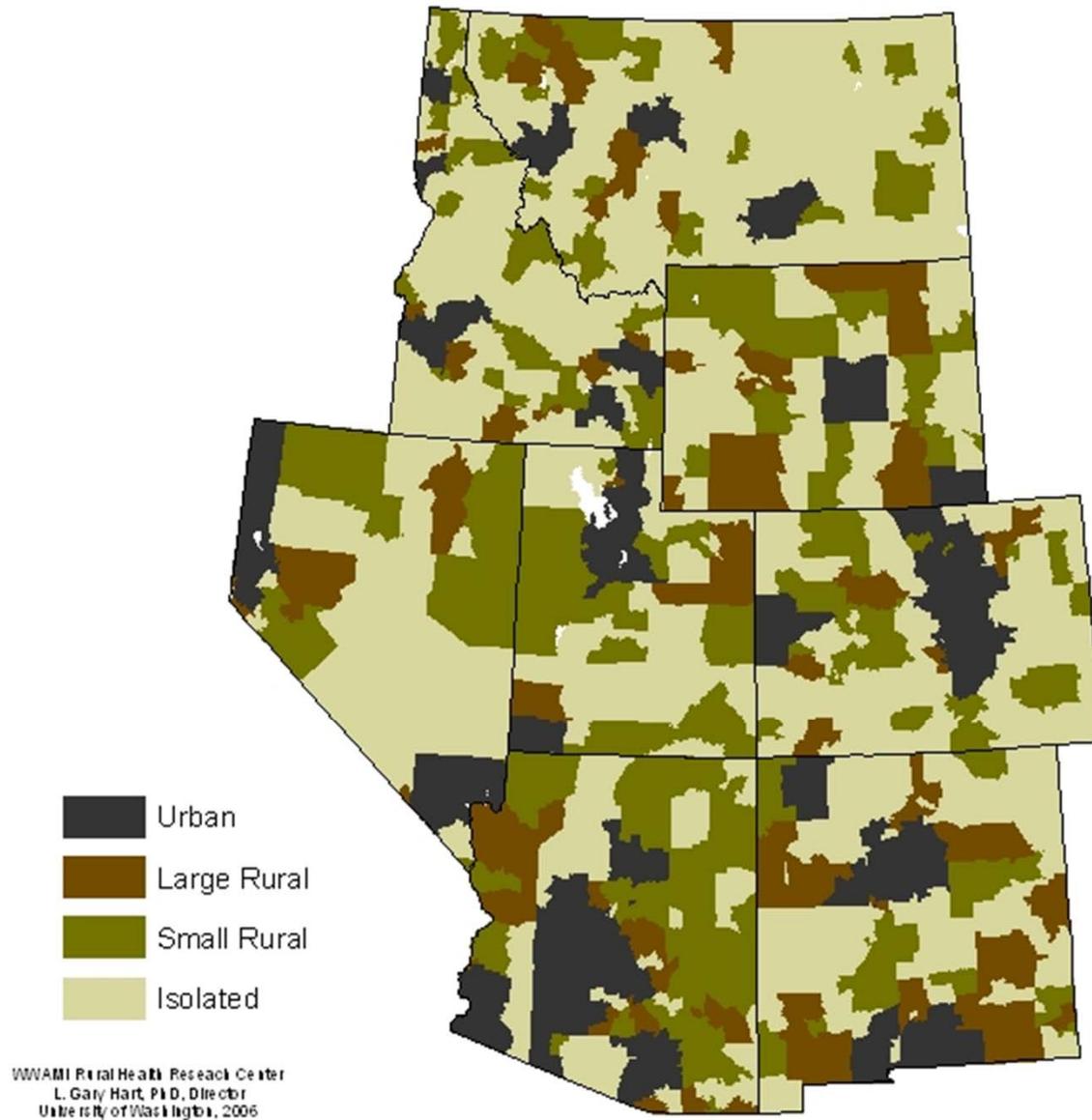


## Census Division Seven: West South Central

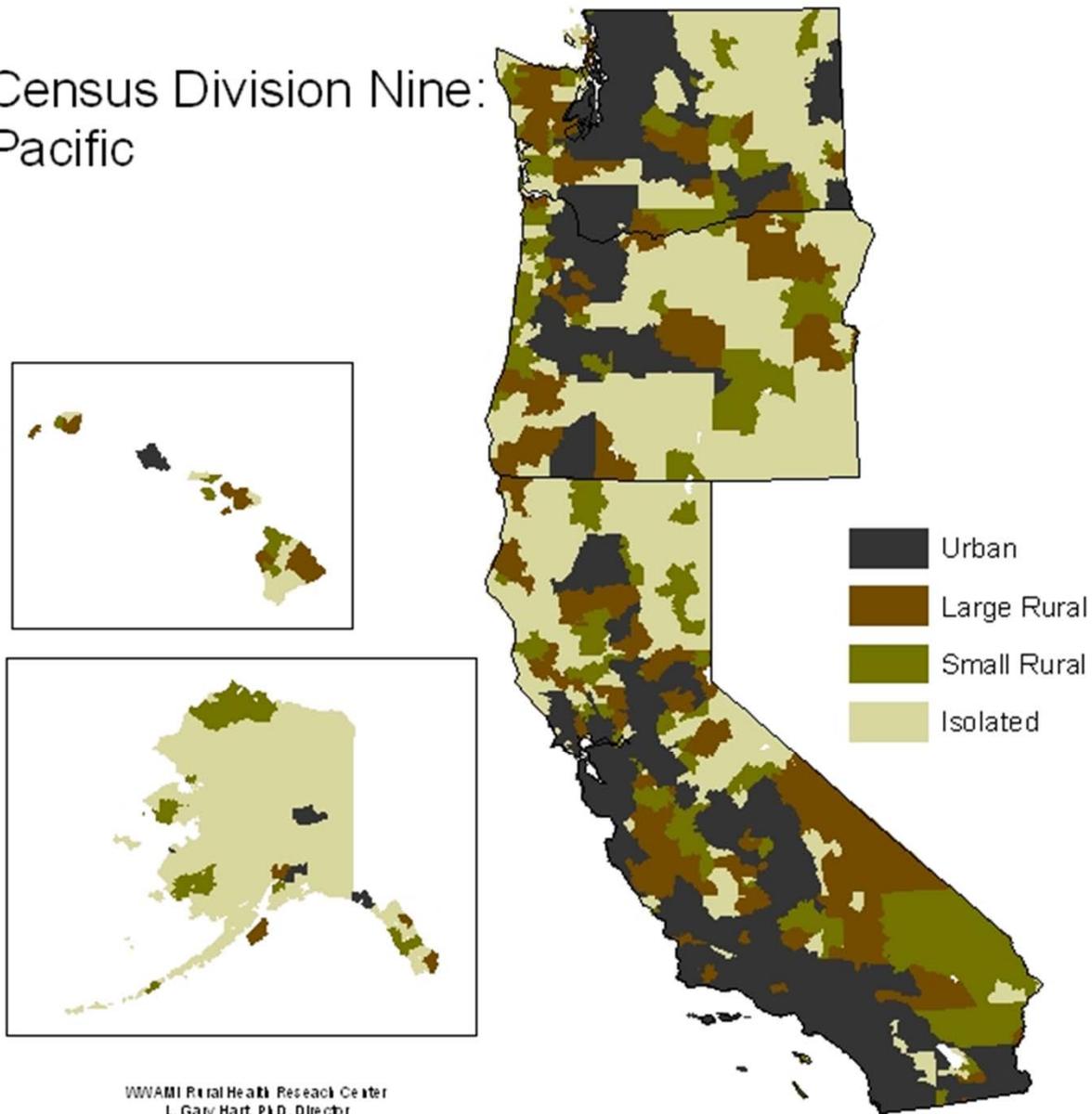


WWAMI Rural Health Research Center  
L. Gary Hart, Ph.D., Director  
University of Washington, 2006

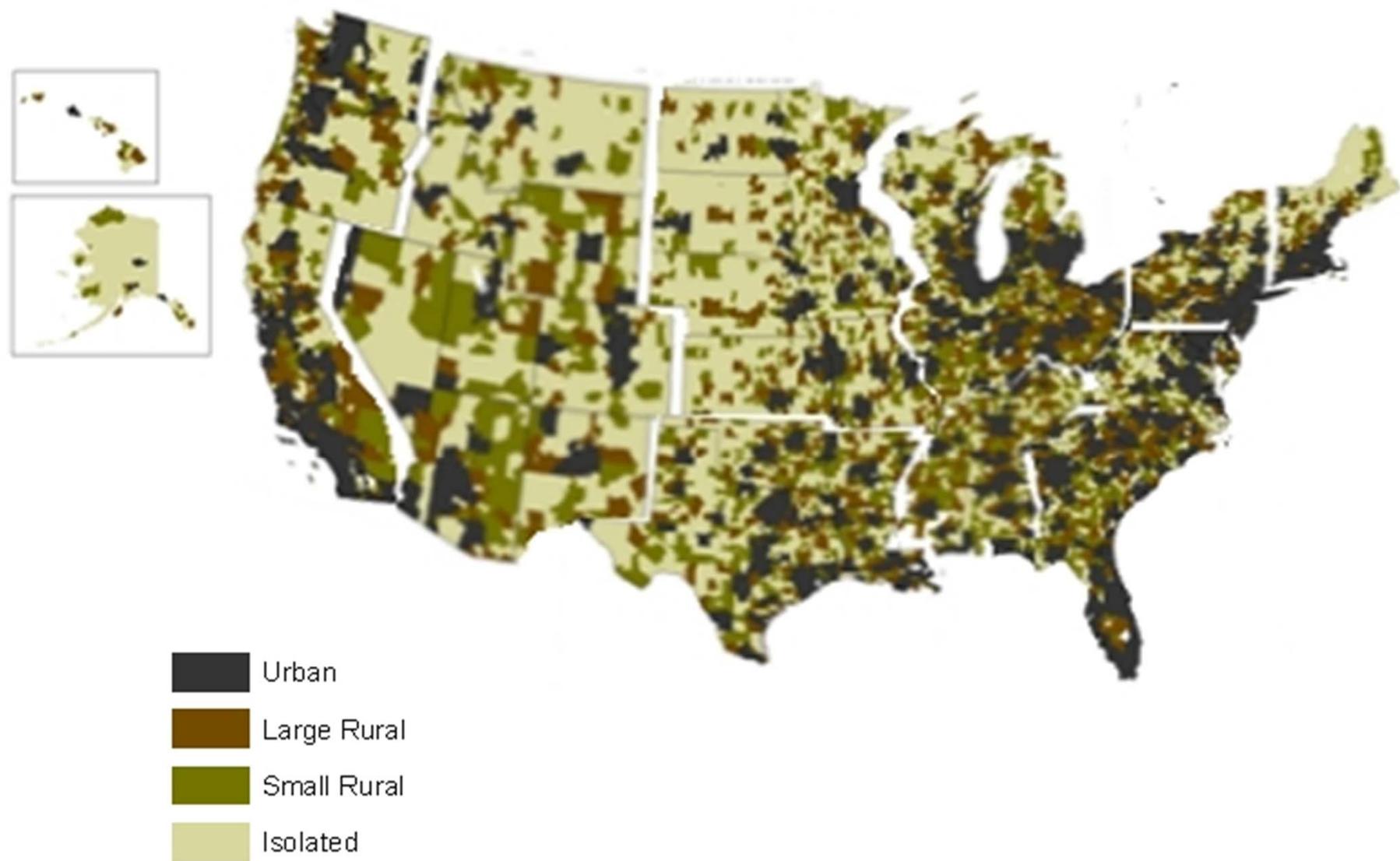
## Census Division Eight: Mountain



## Census Division Nine: Pacific



WWAMI Rural Health Research Center  
L. Gary Hart, Ph.D., Director  
University of Washington, 2006



## Defining Rural: Rural-Urban Density Typology (also called Isserman Rurality)

- Argues that “nonmetropolitan” is not the same as “rural”
- Metropolitan areas often include nearby counties that have low population and low density.

# Defining Rural: Rural-Urban Density Typology

## **Urban county -**

- county with greater than 90% of its population in urban areas and a population density greater than 500 people per square mile.

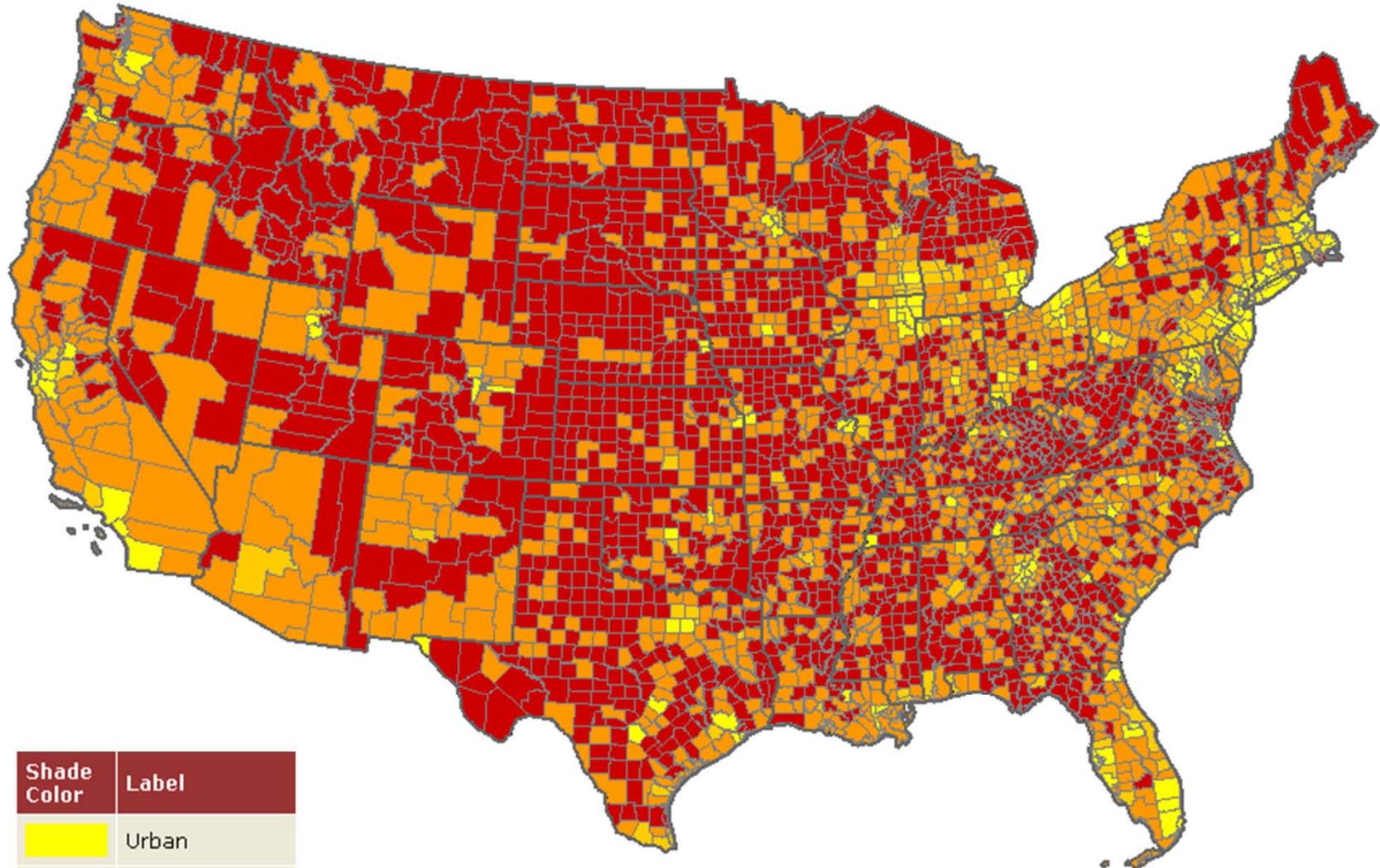
## **Rural county -**

- county with greater than 90% of its population in rural areas or in areas with populations of less than 10,000 people, and a population density less than 500 people per square mile.

## **Mixed urban / mixed rural county -**

- counties where the population distribution and density does not meet the requirements for rural or urban, as defined above.

# Counties defined by Isserman Rurality



Shade Color	Label
Yellow	Urban
Light Orange	Mixed Urban
Orange	Mixed Rural
Red	Rural

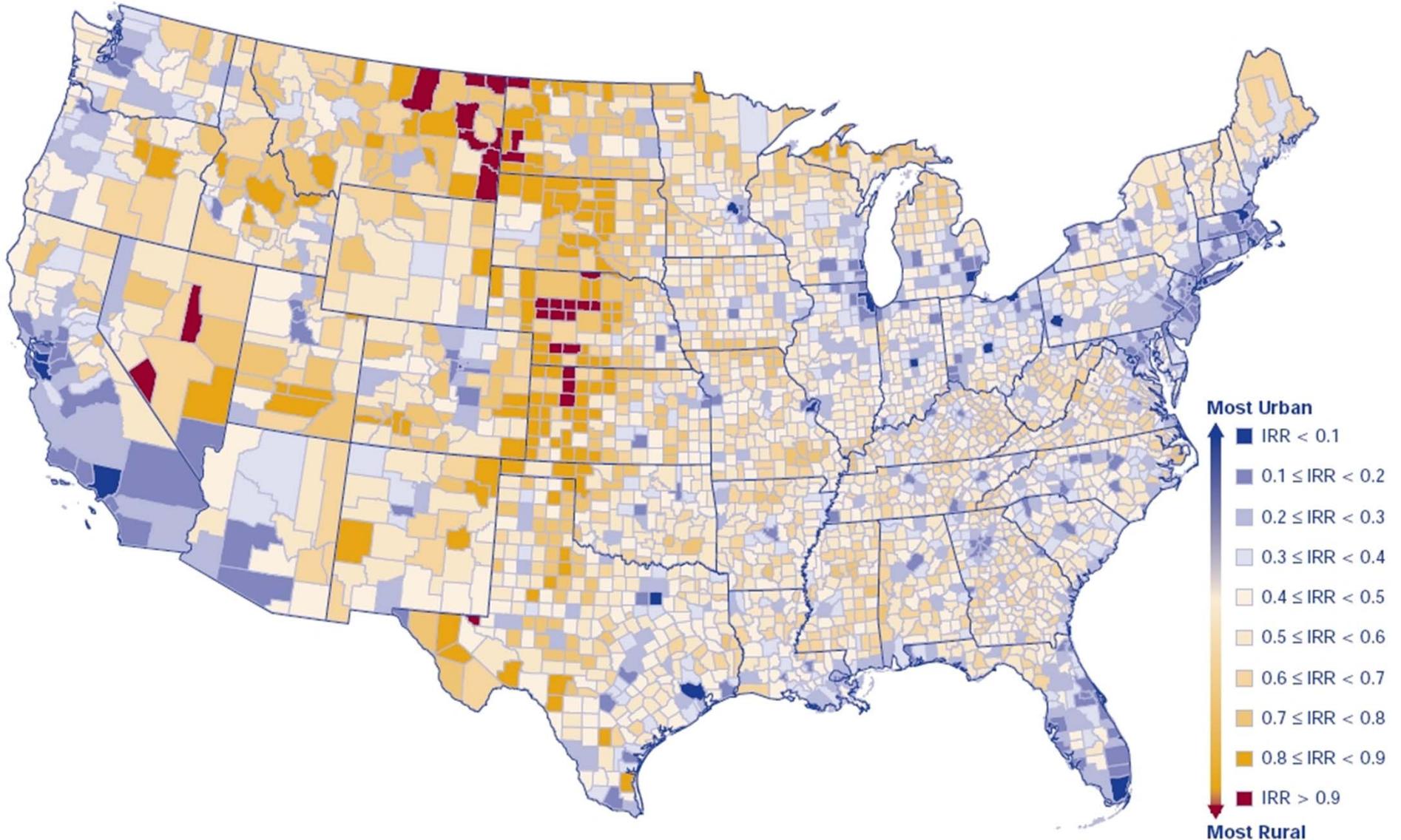


<http://ims2.missouri.edu/website/racmaps/>

# Defining Rural: Index of Relative Rurality (IRR)

- Argues that current rural definitions are threshold metrics, and suffer from separating areas that are similar but that flank either side of the cutoff.
- Proposes a continuous multidimensional measure of rurality that addresses the question "how rural?"
- Averages indices along four dimensions:
  - population size (log)
  - population density (log)
  - % population urban
  - remoteness (distance from metropolitan areas)

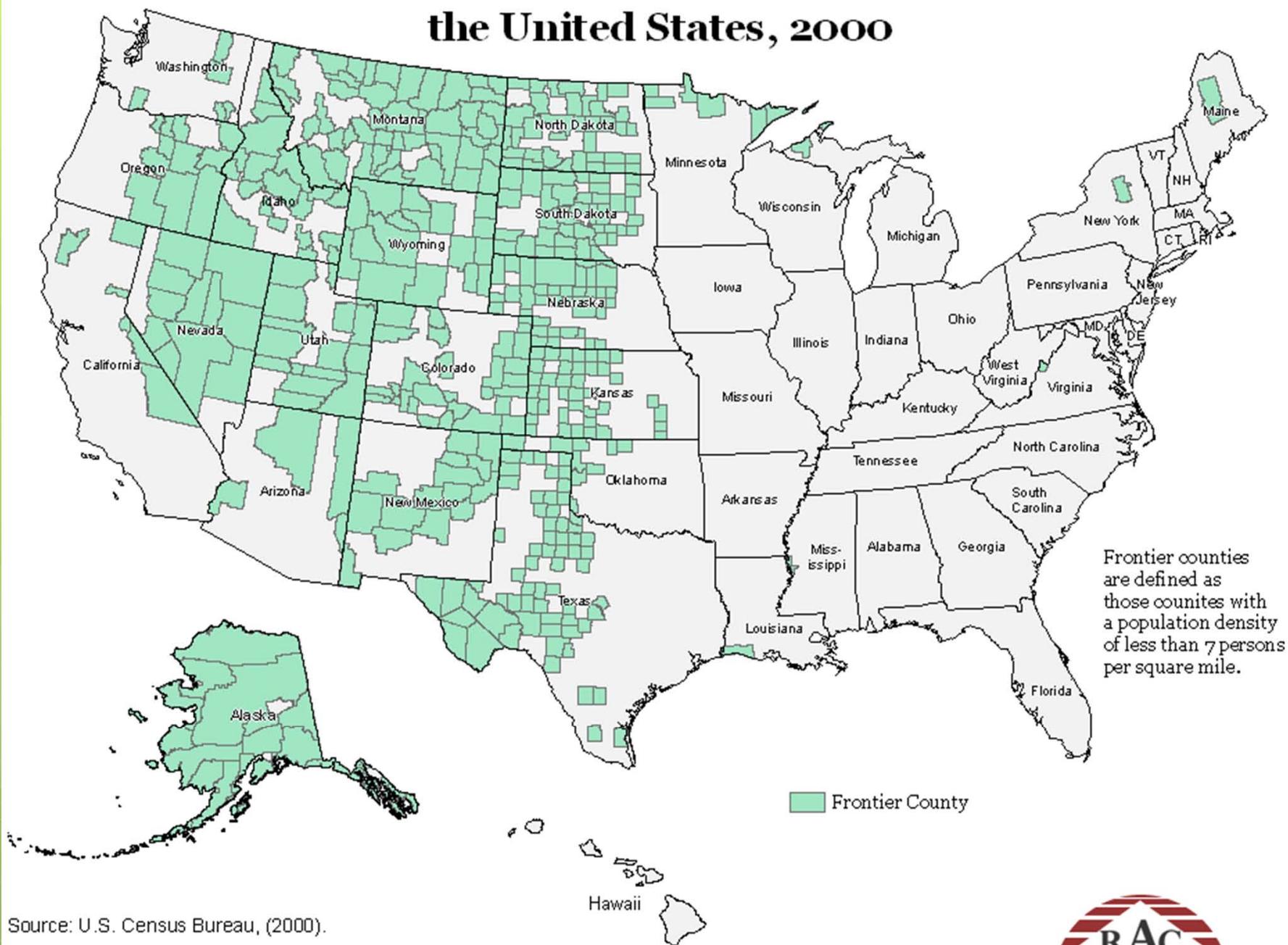
# Index of Relative Rurality



# Defining "Frontier:" U.S. Census Bureau

- Counties with a population density of less than 7 people per square mile.

# Frontier Counties of the United States, 2000



Source: U.S. Census Bureau, (2000).

Note: Alaska and Hawaii not shown to scale

# Defining "Frontier":

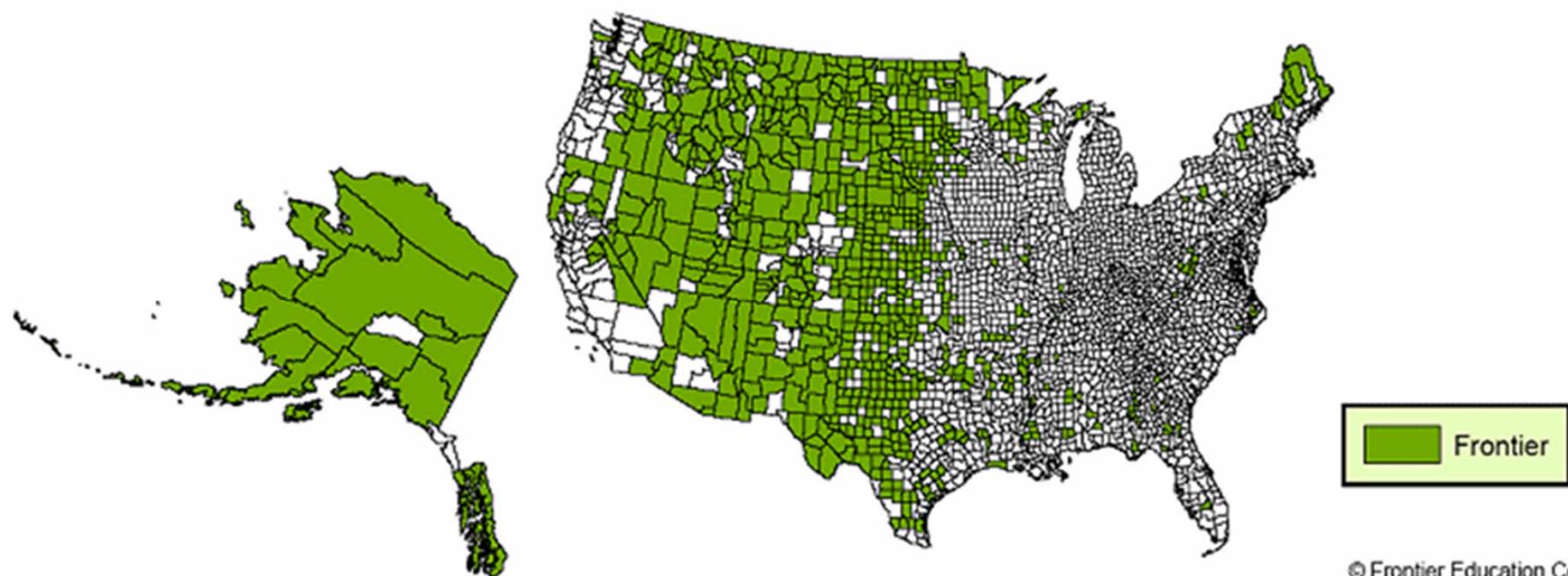
National Center for Frontier Communities

- Consensus definition compiled by the NCFC
- Minimum of 55 points on a matrix that assigns points for the degree of isolation, including density per square mile, distance to nearest service/market, and travel time to service/market

# "Frontier" Consensus Definition Matrix

<b>DENSITY</b> - PERSONS PER SQUARE MILE (PER COUNTY OR PER DEFINED SERVICE AREA WITH JUSTIFICATION)	POINTS
0-12	45
12.1-16	30
16.1-20	20
<b>DISTANCE</b> - IN MILES TO SERVICE/MARKET (STARTING POINT MUST BE RATIONAL, EITHER A SERVICE SITE OR PROPOSED SITE)	
>90 Miles	30
60-90	20
30-60	10
<30	0
<b>TRAVEL TIME</b> - IN MINUTES TO SERVICE/MARKET (USUAL TRAVEL TIME; EXCEPTIONS MUST BE DOCUMENTED [i.e. WEATHER, GEOGRAPHY, SEASONAL])	
>90 Minutes	30
60-90	20
30-60	10
<30	0
<b>TOTAL POINTS ALL CATEGORIES</b>	

## USA Frontier Counties, 2000 Consensus



© Frontier Education Center, 2003

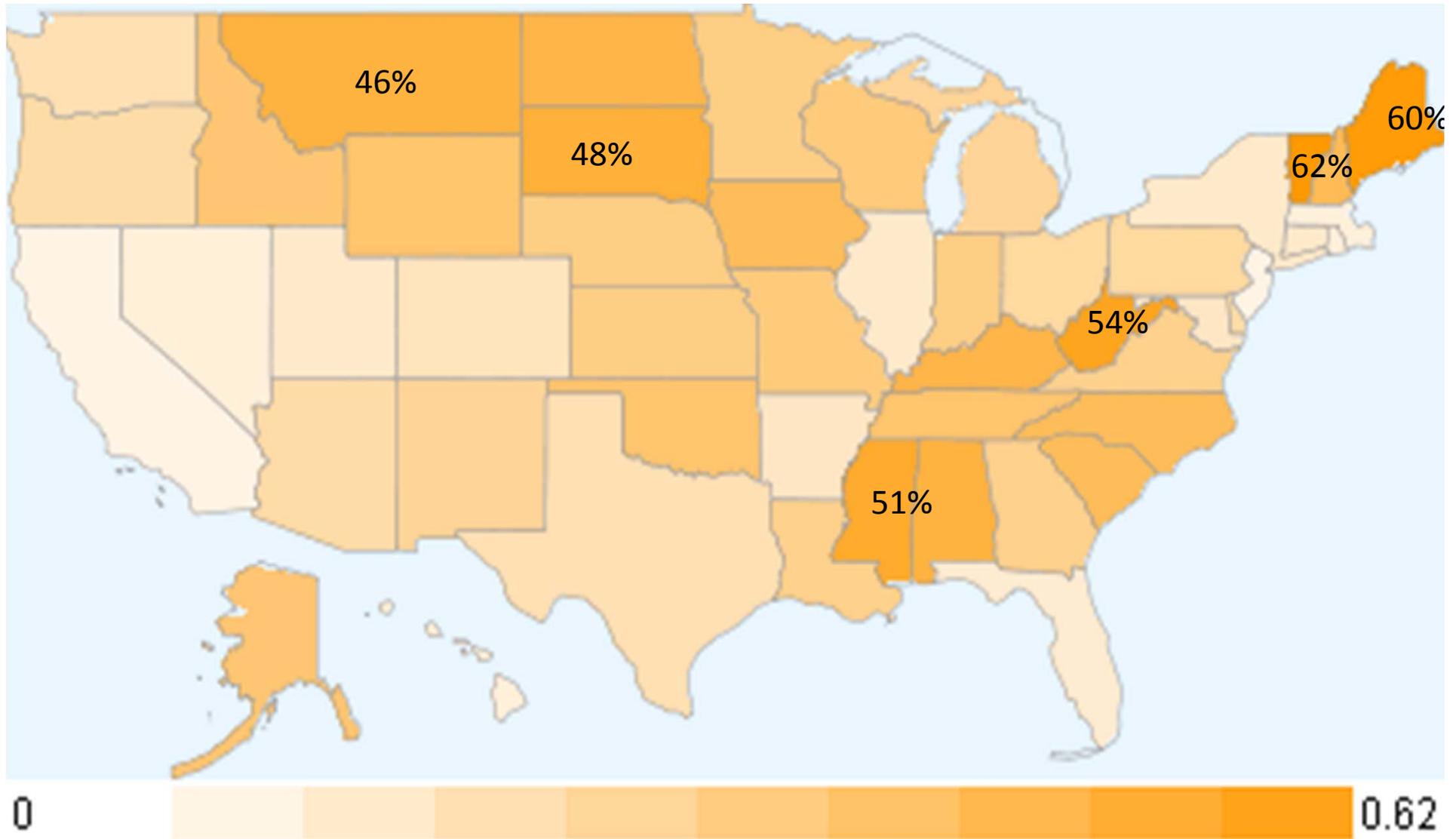


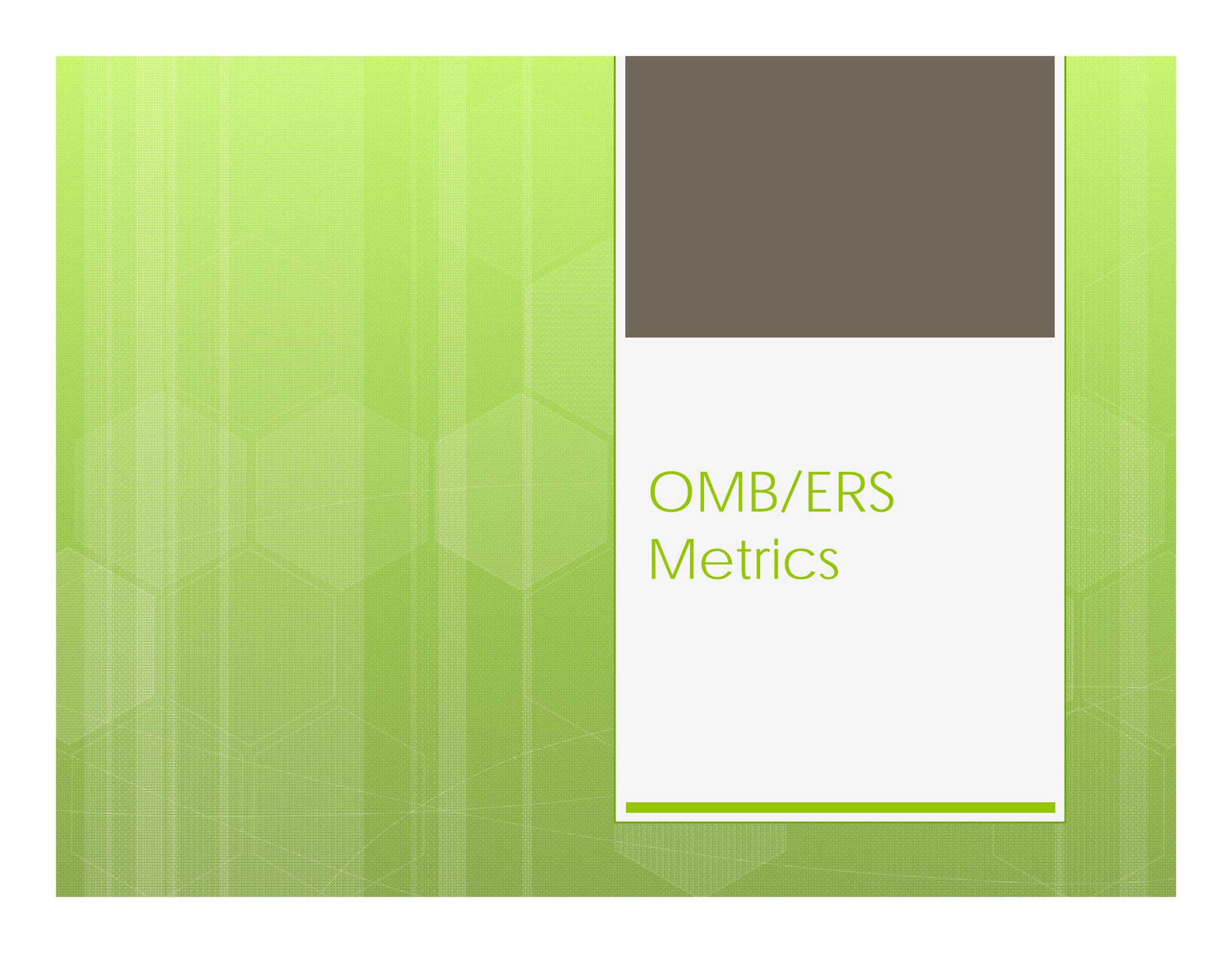
# Measuring States

How states “stack up”  
against the various  
definitions of rural

Data Source: U.S. Census 2000

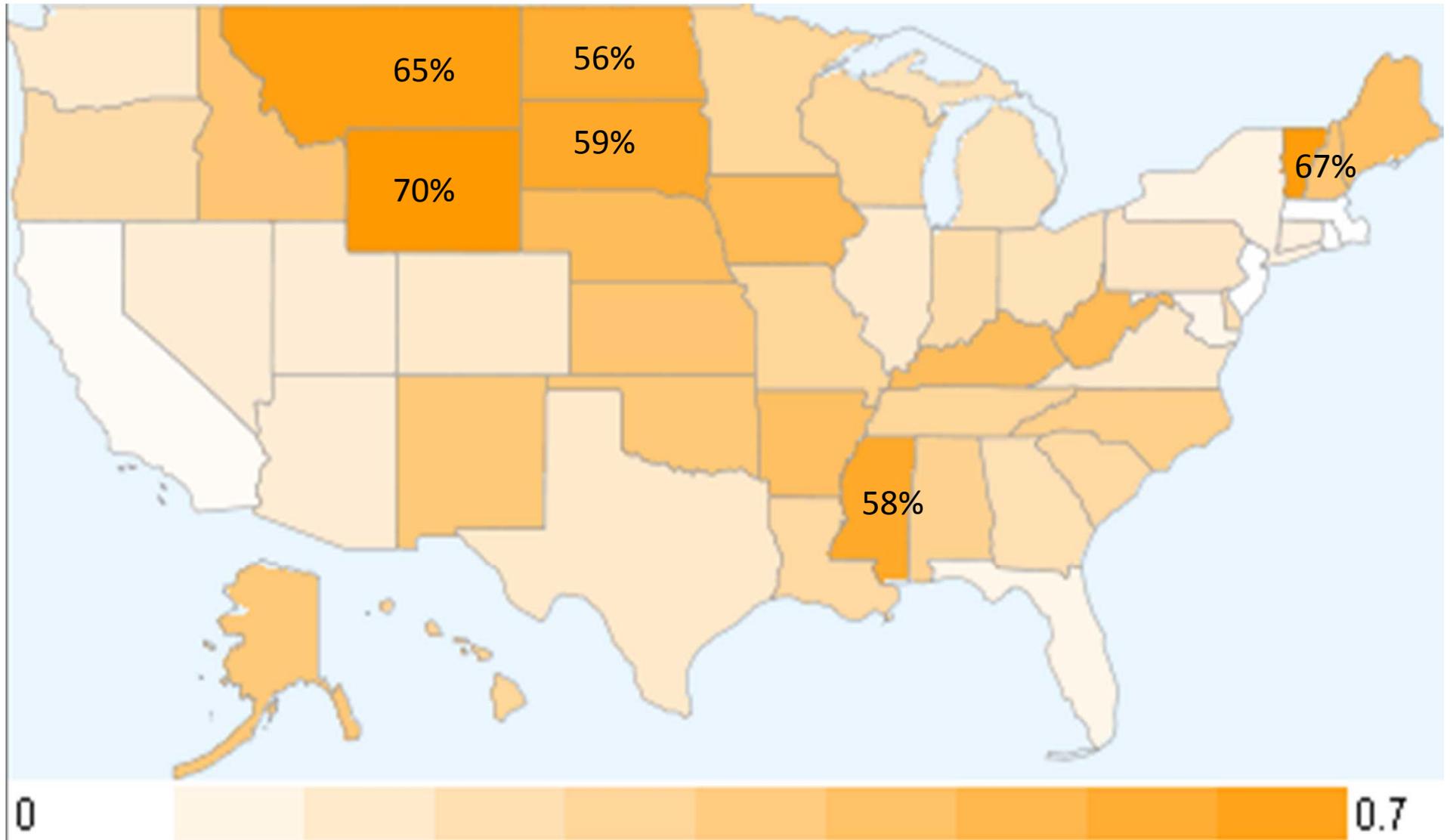
# % Population in rural area (U.S. Census)



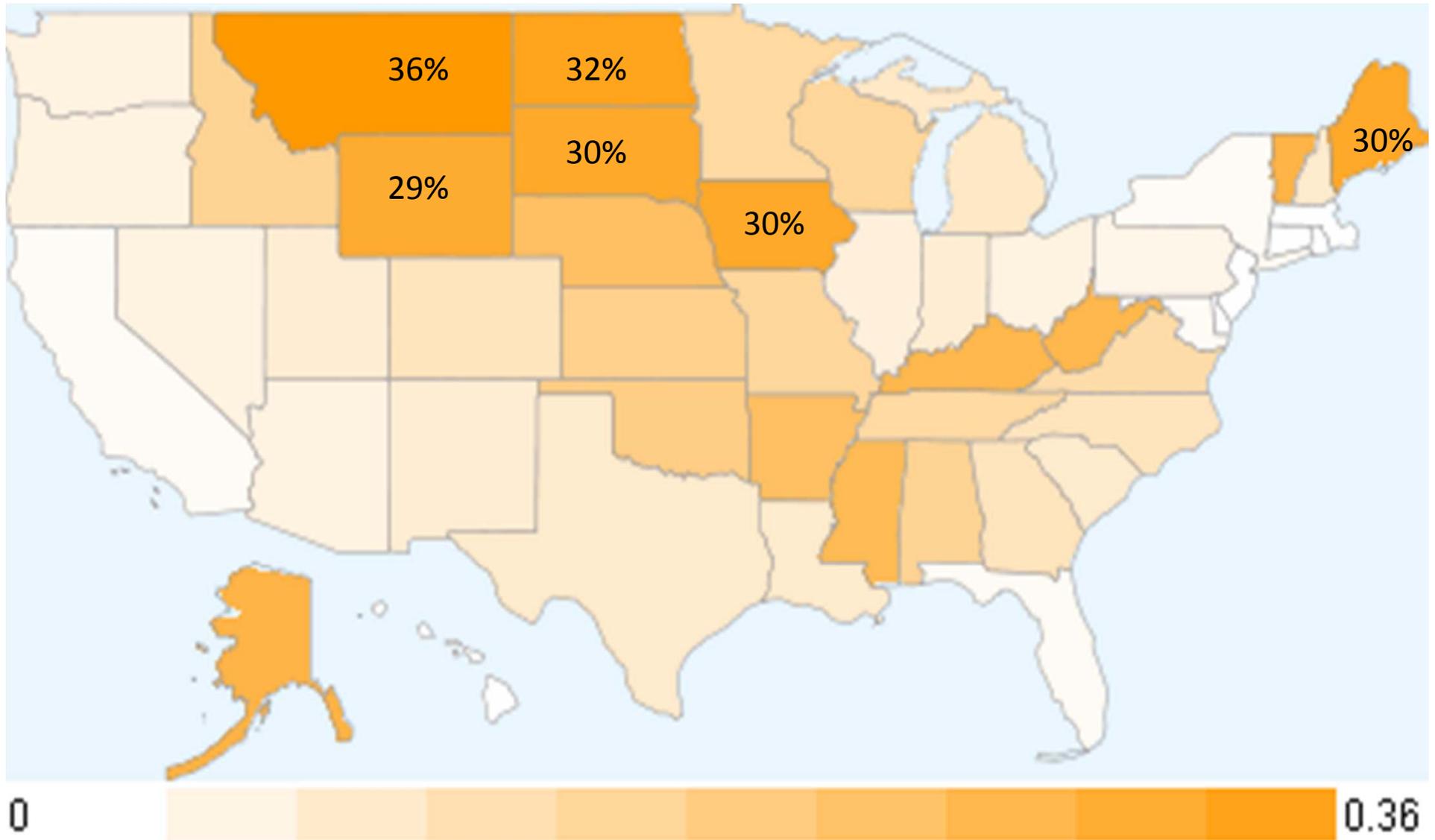
The background of the slide features a repeating pattern of light green hexagons on a slightly darker green textured surface. A white rectangular box is positioned on the right side of the slide, containing the text 'OMB/ERS Metrics'. Above the white box is a solid dark grey rectangular area. A thin, bright green horizontal line is located at the bottom edge of the white box.

OMB/ERS  
Metrics

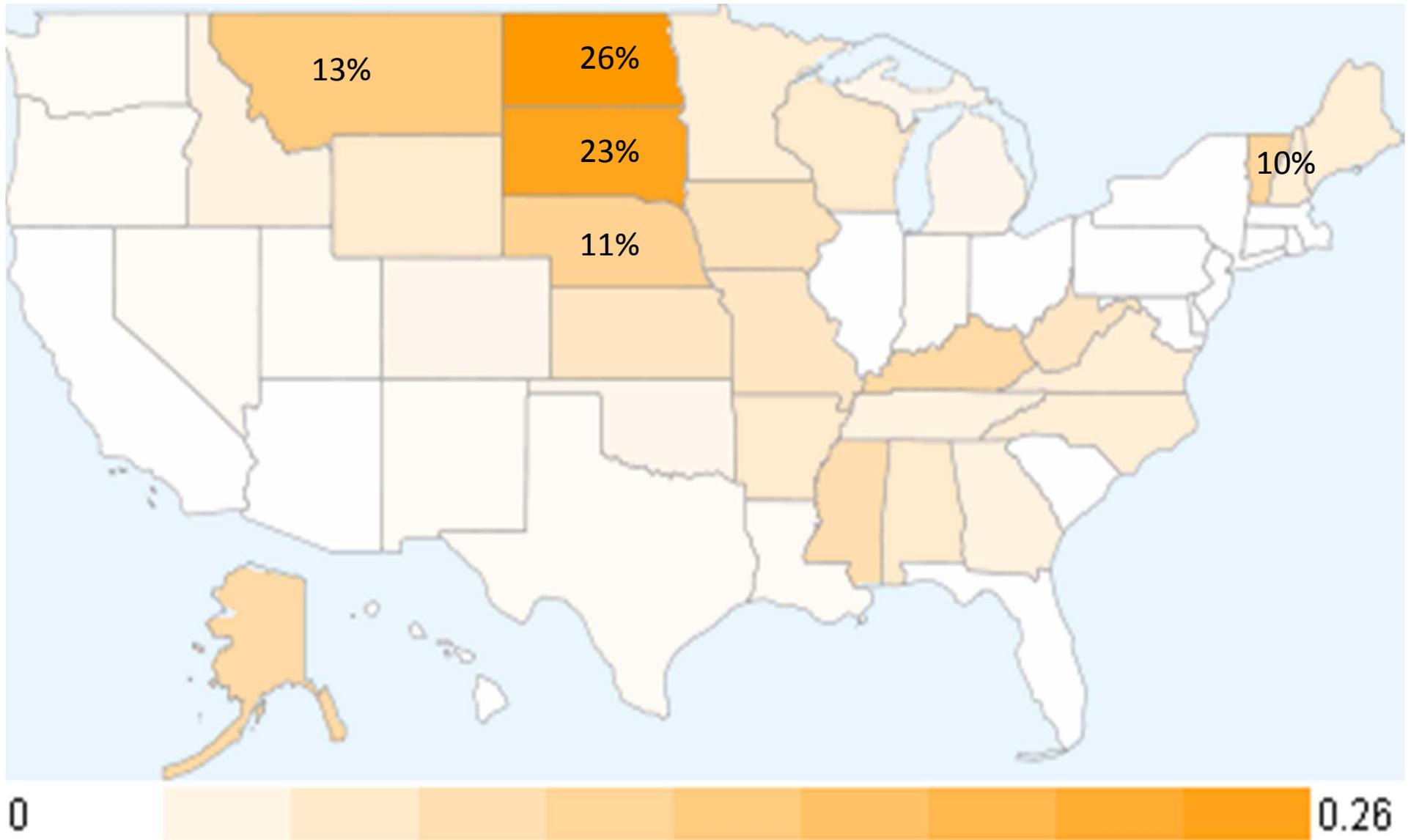
# % Population in nonmetropolitan areas (OMB)



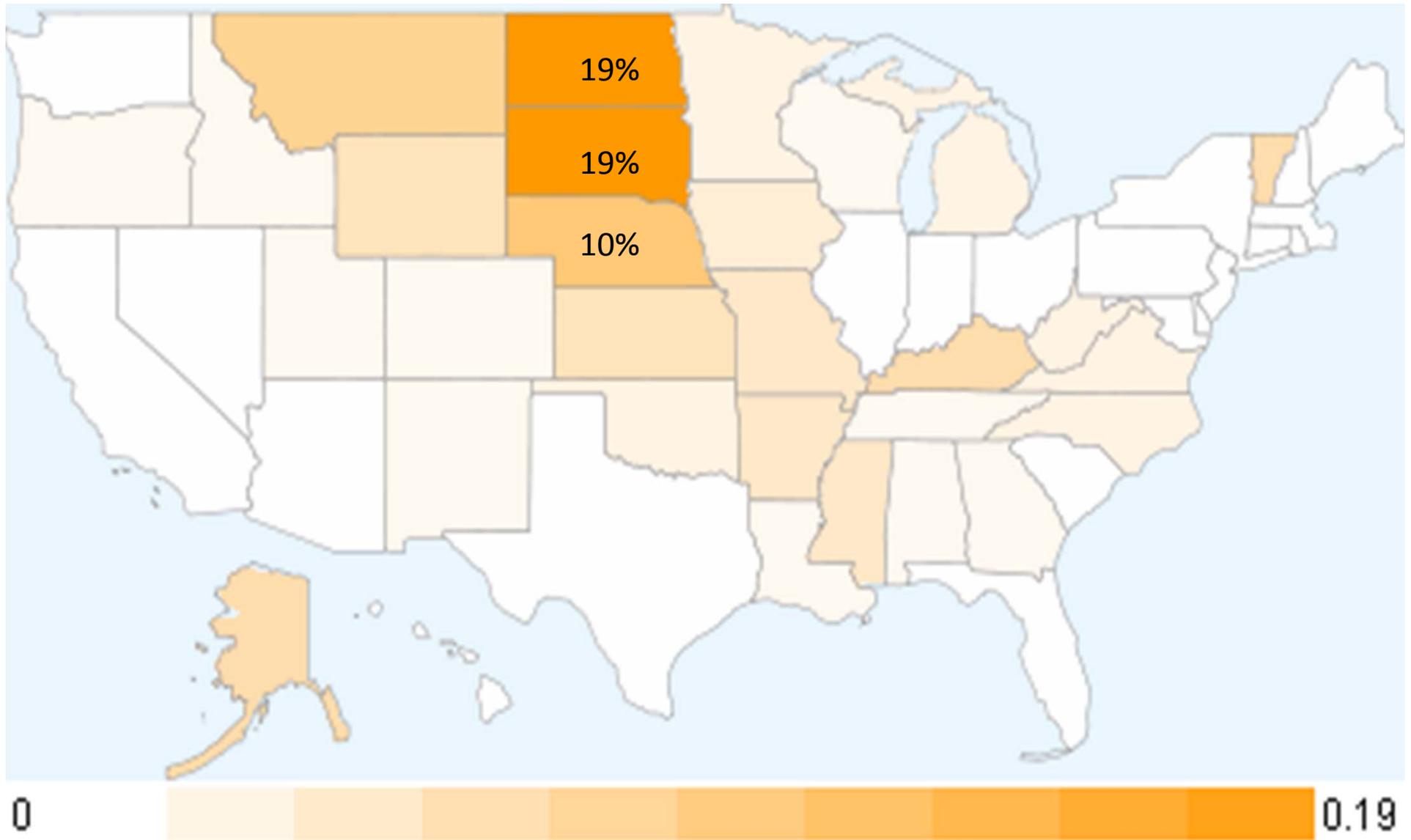
# % Population in nonmetropolitan, noncore areas (OMB)



# % Population in nonmetropolitan, noncore, “completely rural” area (ERS)



% Population in nonmetropolitan, noncore, “completely rural”, nonadjacent area (ERS)

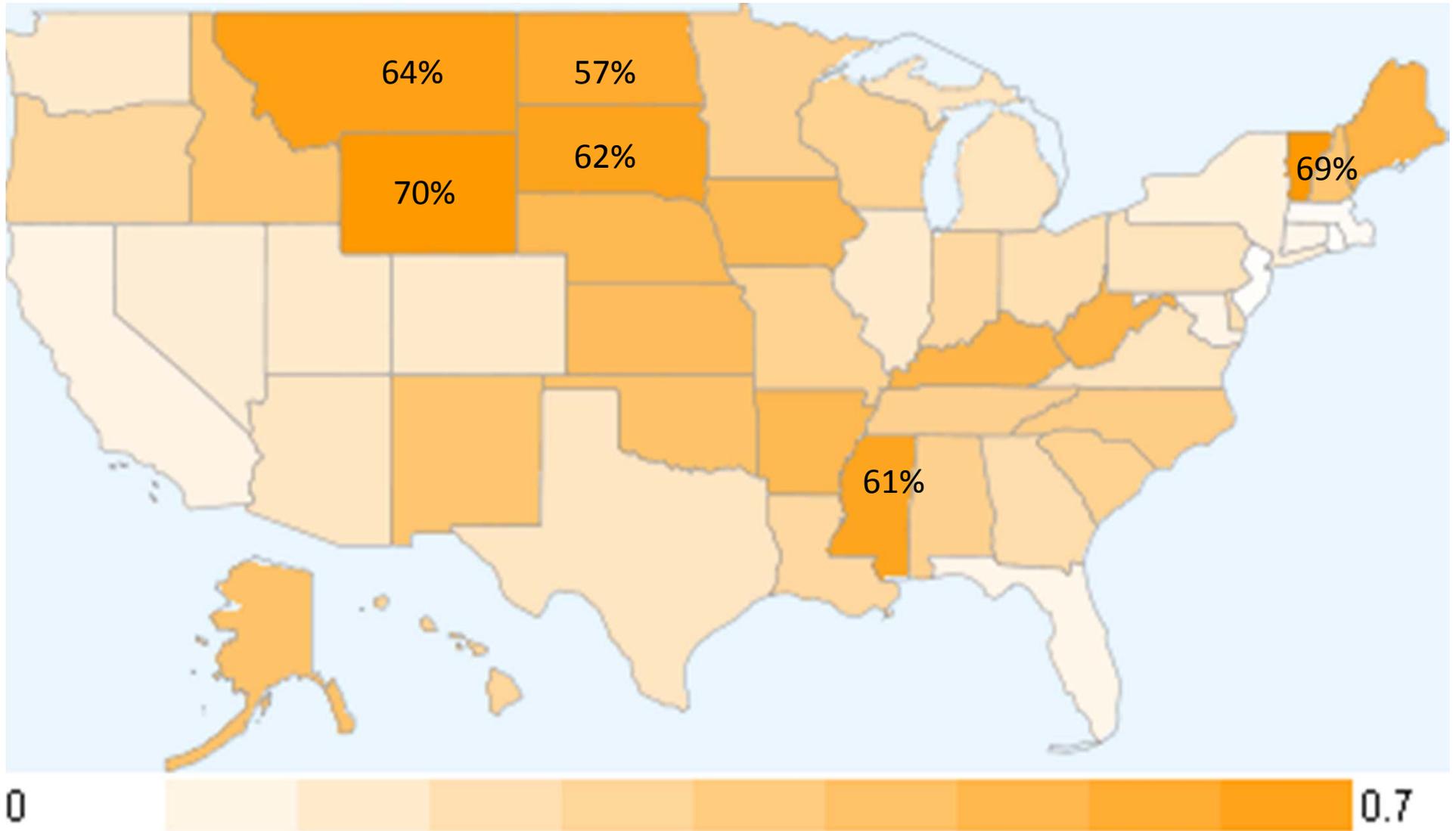




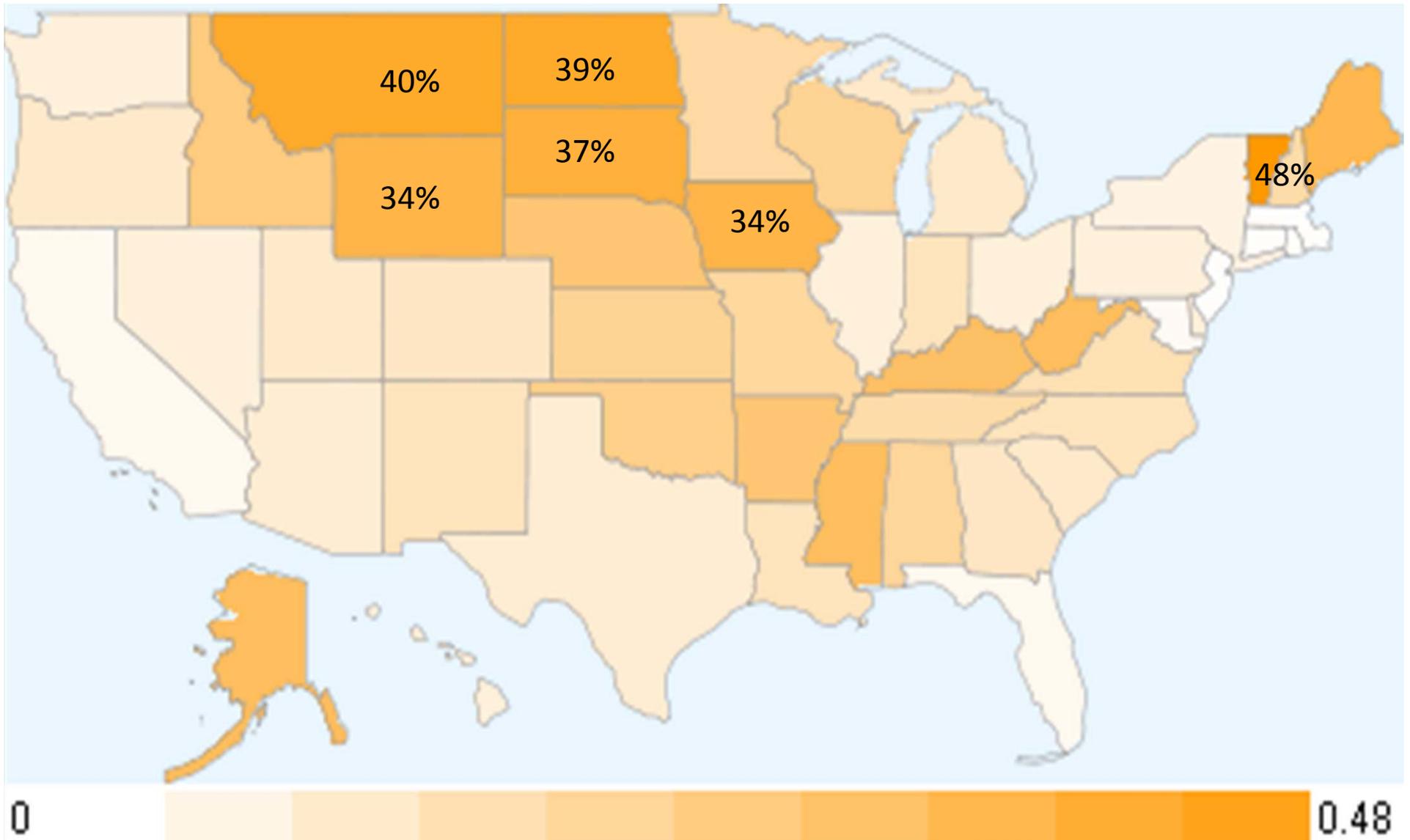
# RUCA Metrics

# % Population in rural areas

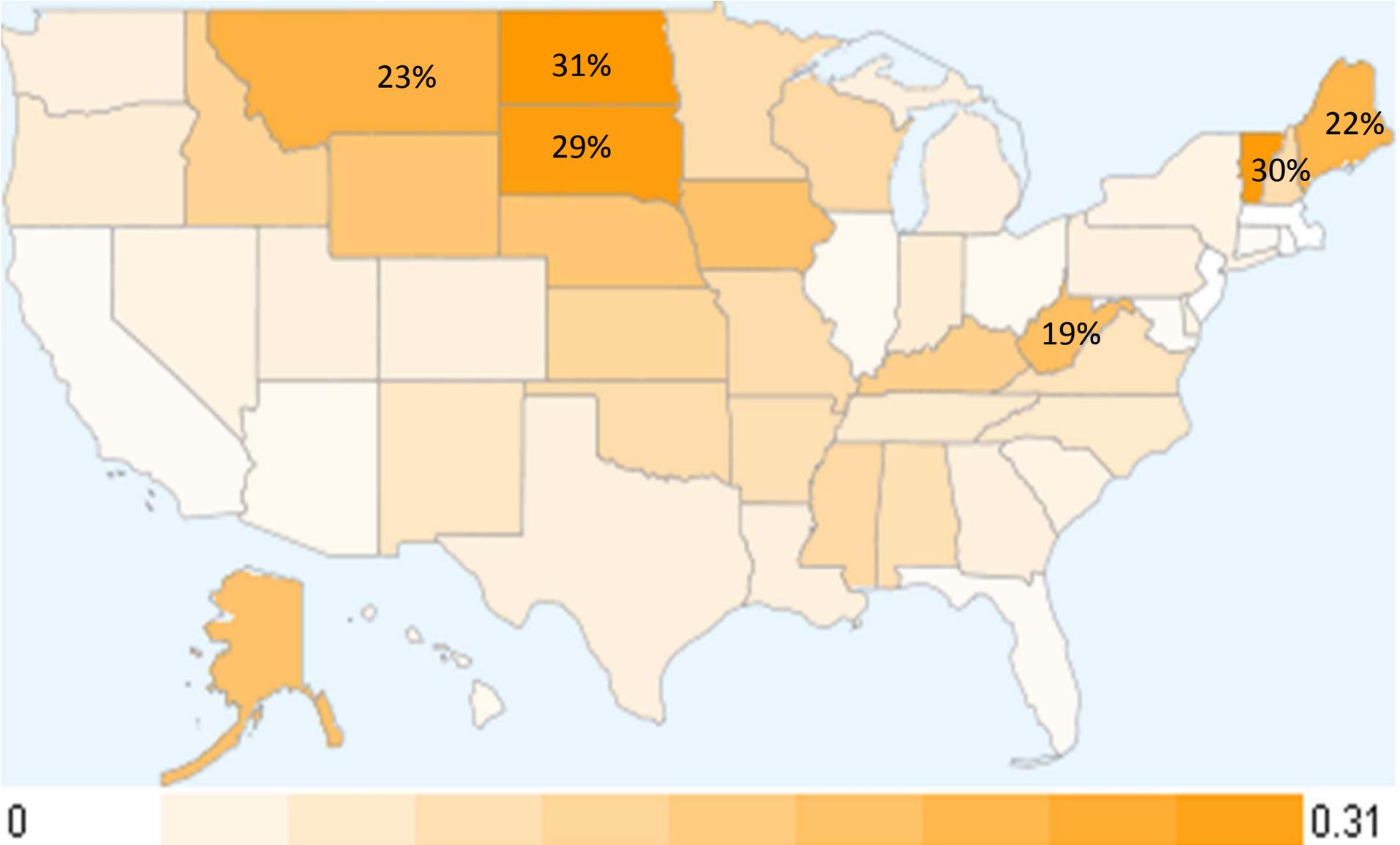
(including large rural, small rural, and rural isolated)  
(RUCA)

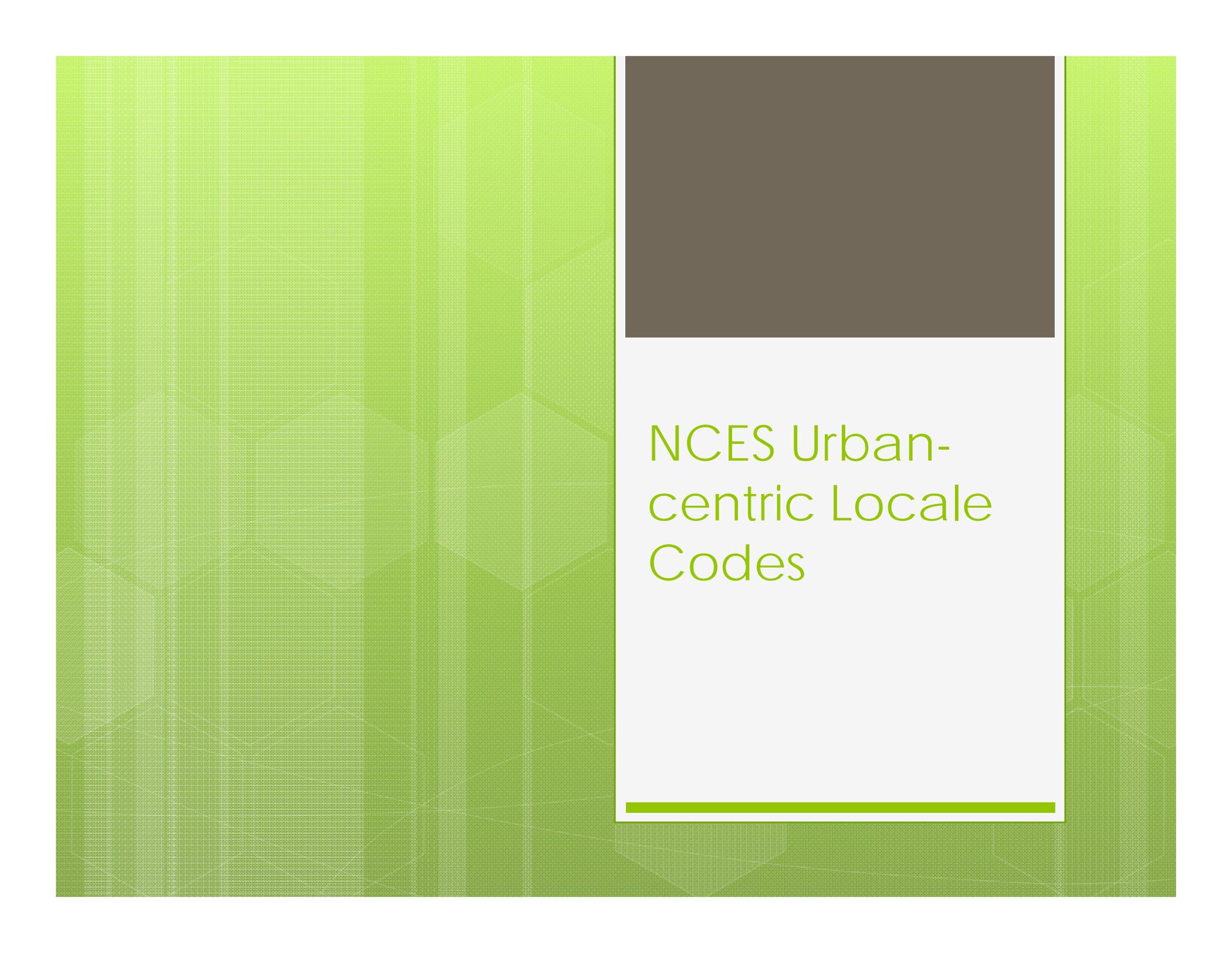


# % Population in small rural and isolated areas (RUCA)



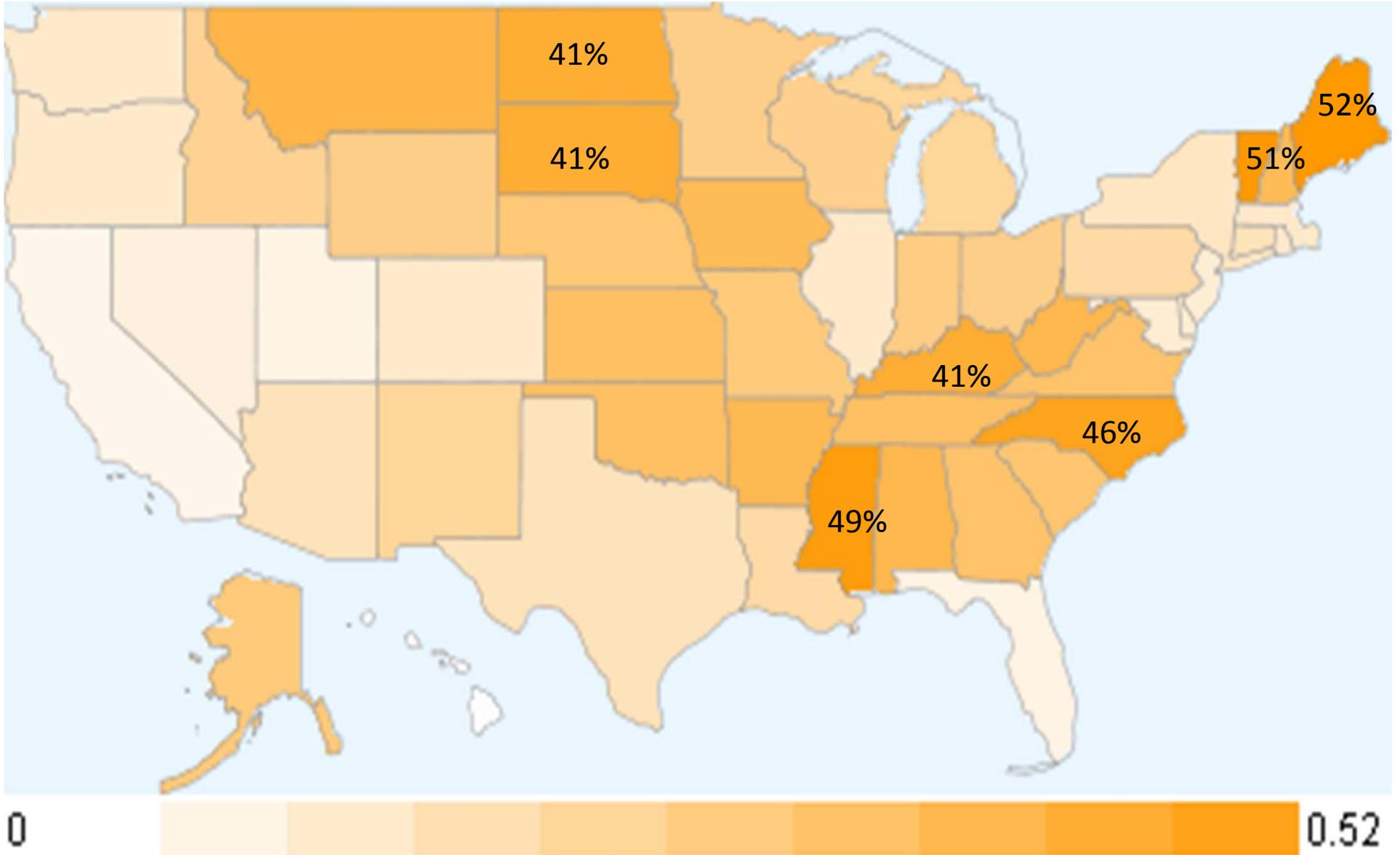
# % Population in rural isolated areas (RUCA)





# NCES Urban- centric Locale Codes

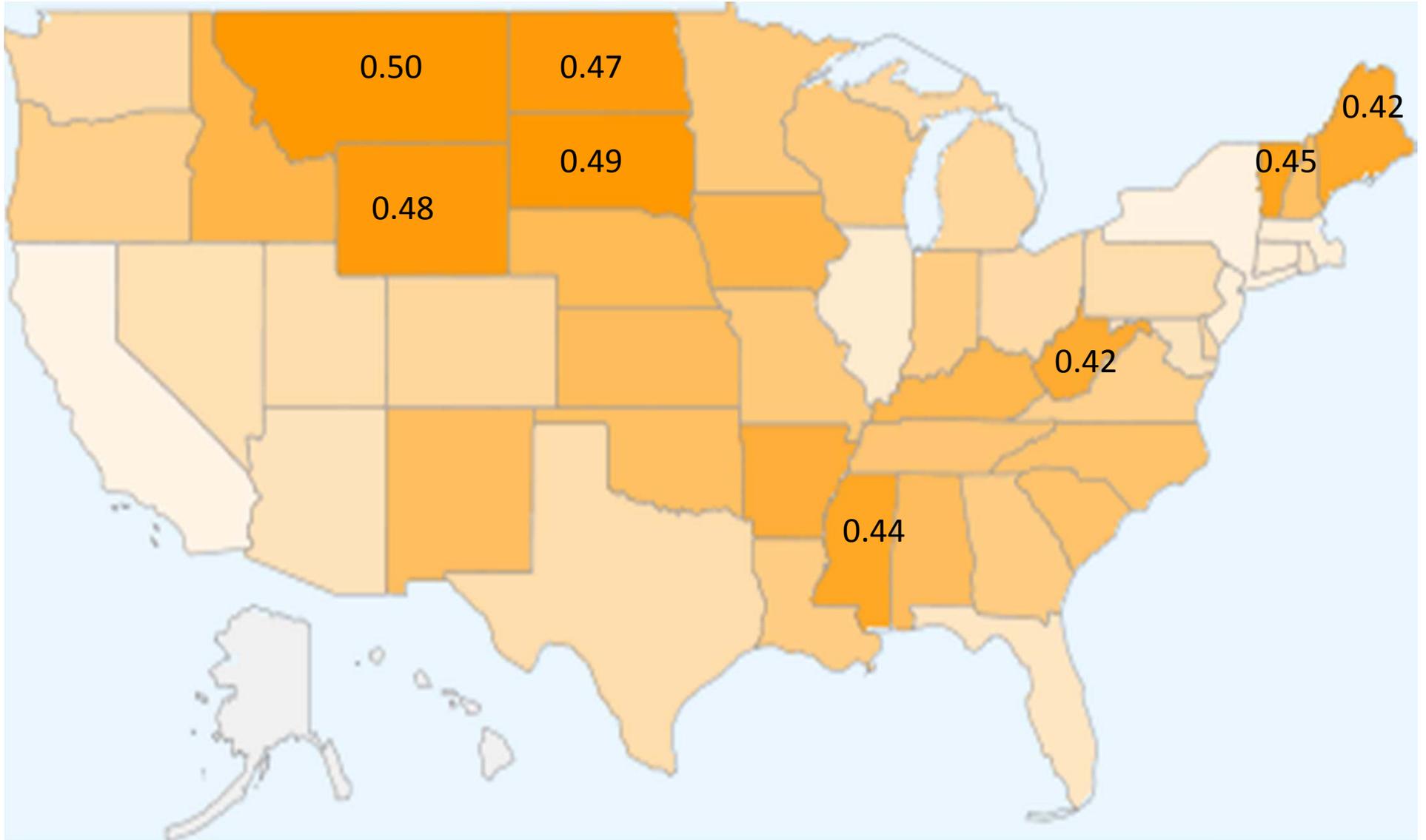
# % Students attending schools in rural districts





# Index of Relative Rurality

# Average IRR weighted by population

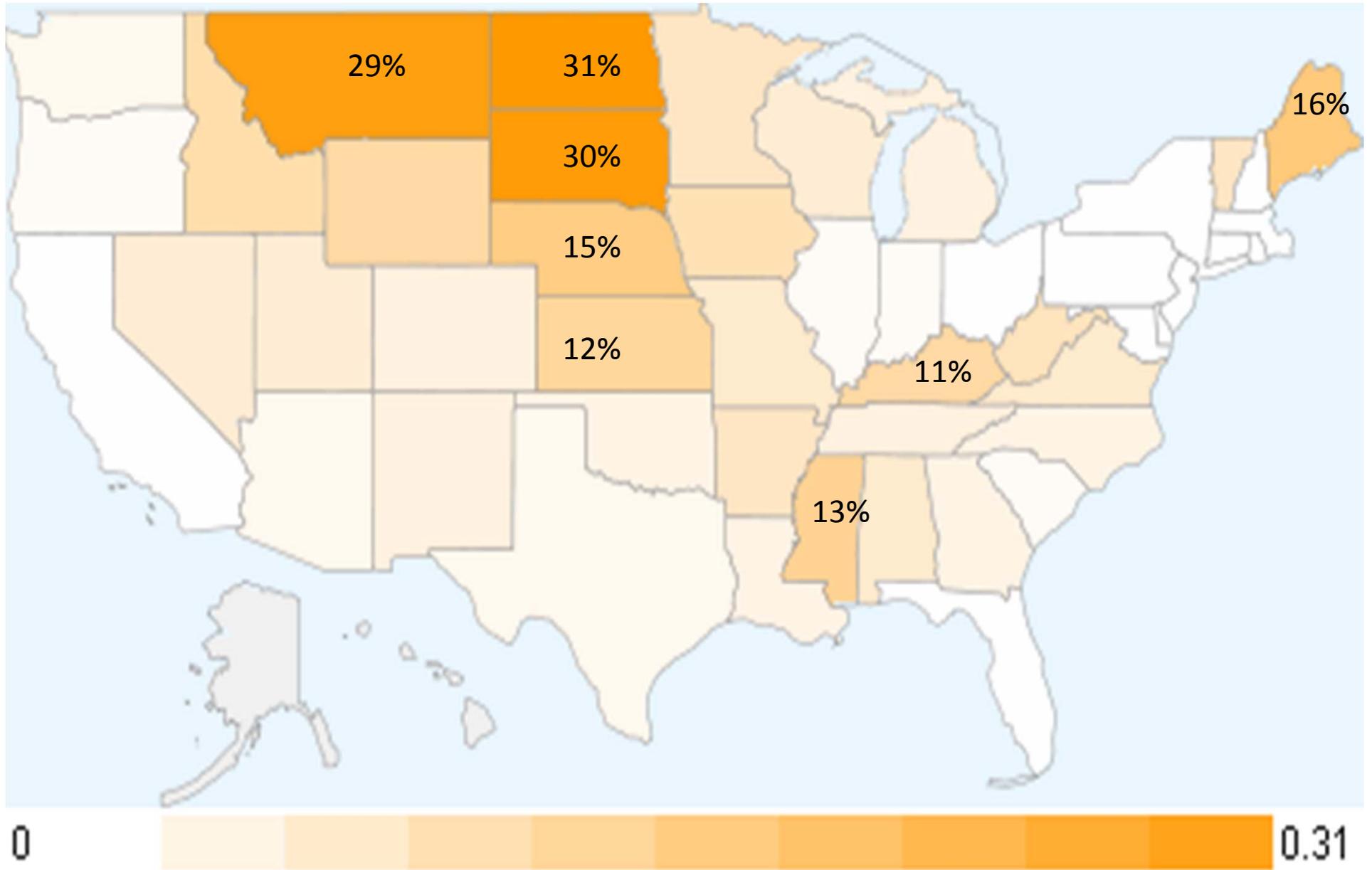


0.14

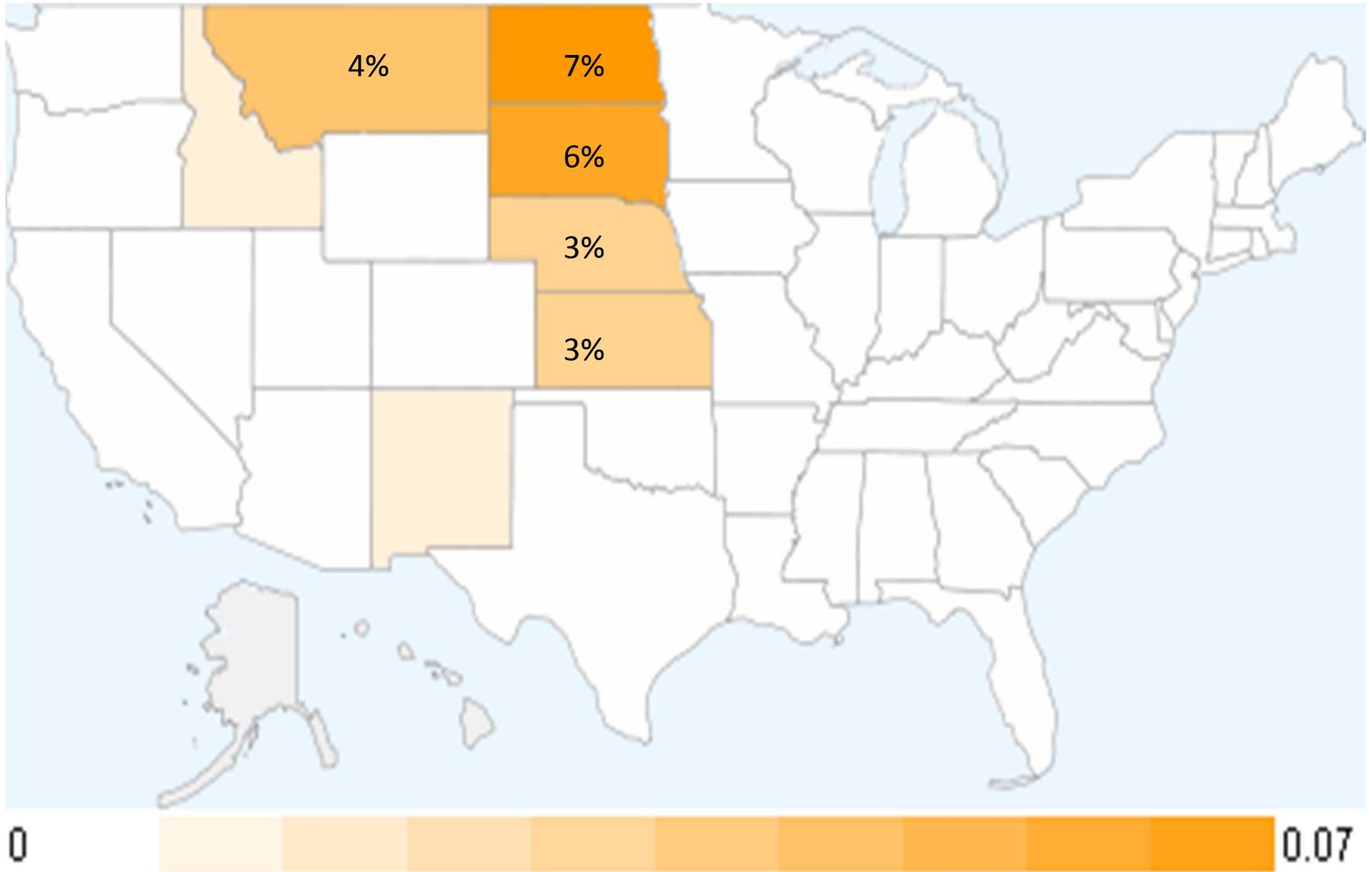


0.5

# % Population in counties with IRR $\geq 0.6$



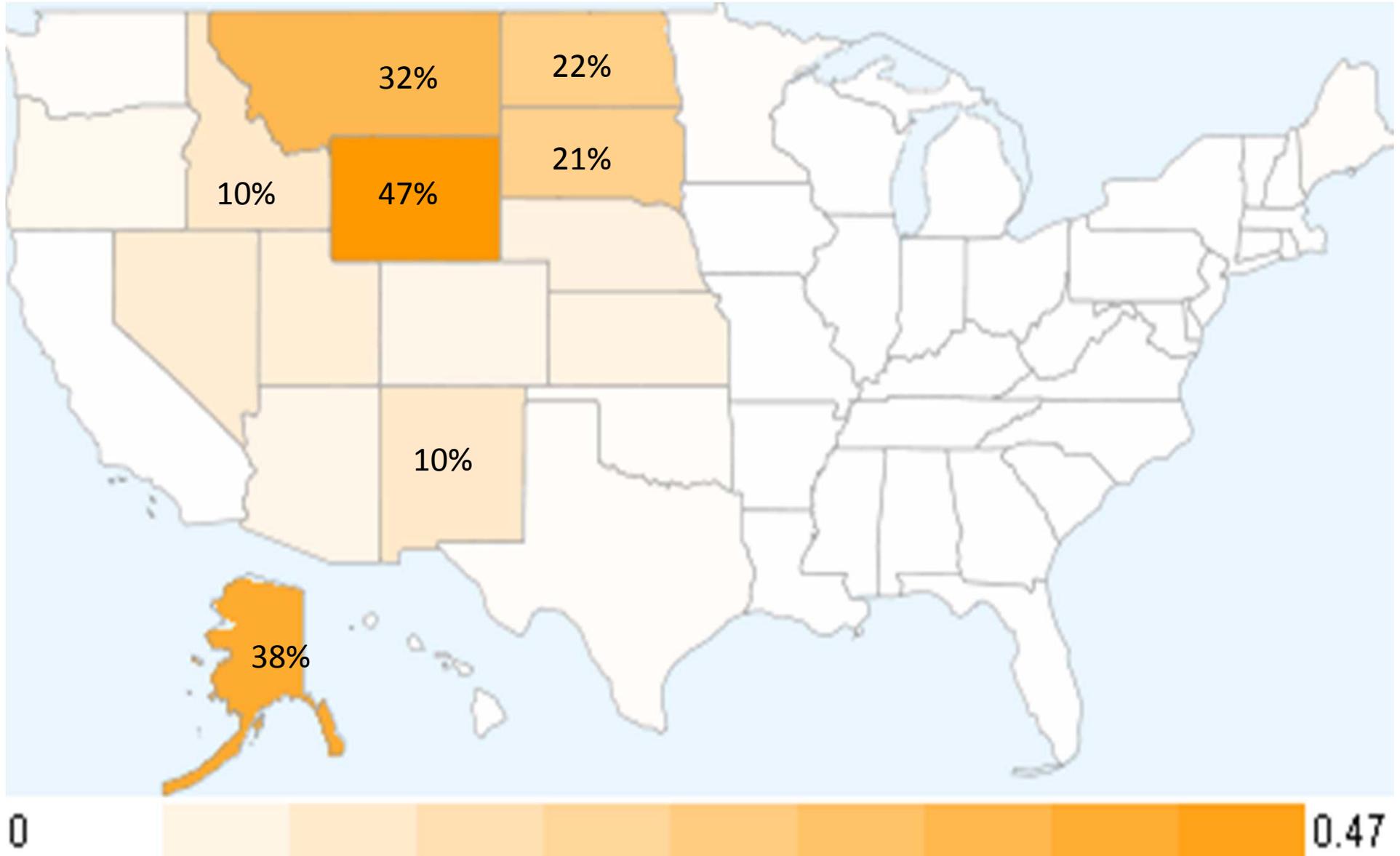
# % Population in counties with IRR $\geq 0.8$



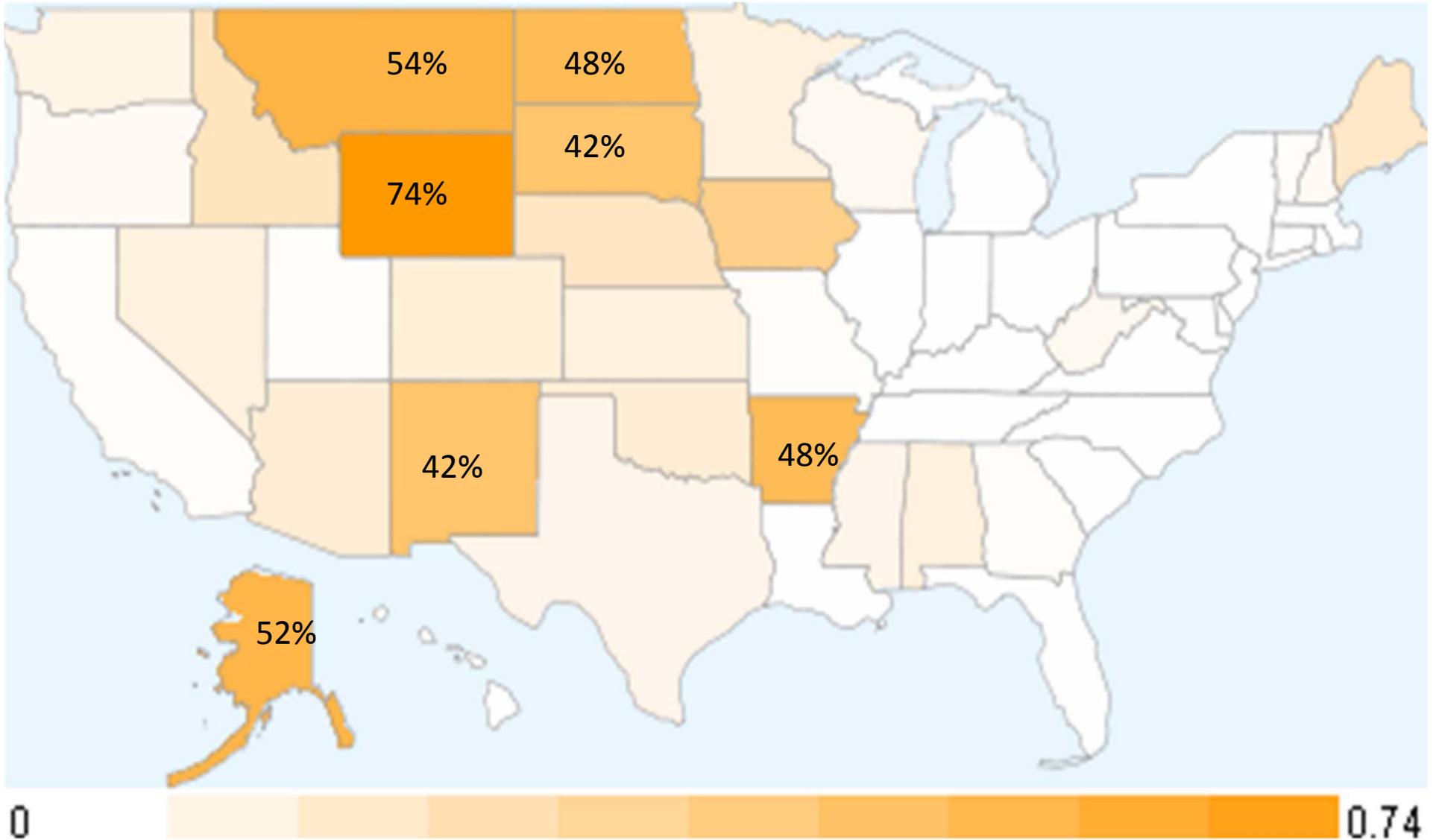


# Frontier Metrics

# % Population in frontier counties (less than 7 people/sq.mi, U.S.Census)



# % Population in Frontier Counties (NCFC consensus matrix)





# Composite Metrics

A classification of rural metrics according to their ability (Fine) or inability (Coarse) to reflect extreme degrees of rurality

### Coarse Metrics

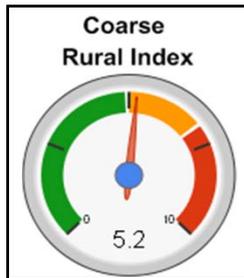
- Urban Areas (U.S. Census Bureau)
- Core Based Statistical Areas (Office of Management and Budget)
- Rural-Urban Density Typology (Isserman)
- Urban-centric Locale Codes (National Center for Education Statistics)

### Fine Metrics

- Rural-Urban Continuum Code (Economic Research Service)
- Urban Influence Codes (ERS)
- Rural Urban Commuting Area Codes (ERS and others)
- Index of Relative Rurality (Waldorf)
- Frontier Consensus Definition (National Center for Frontier Communities)

# Coarse, Fine, Extreme, and Frontier Indices

- From the basic distinction between coarse and fine metrics, four indices were developed to gauge different aspects of rural character:
  - Coarse rural index
  - Fine rural index
  - Extreme rural index
  - Frontier rural index

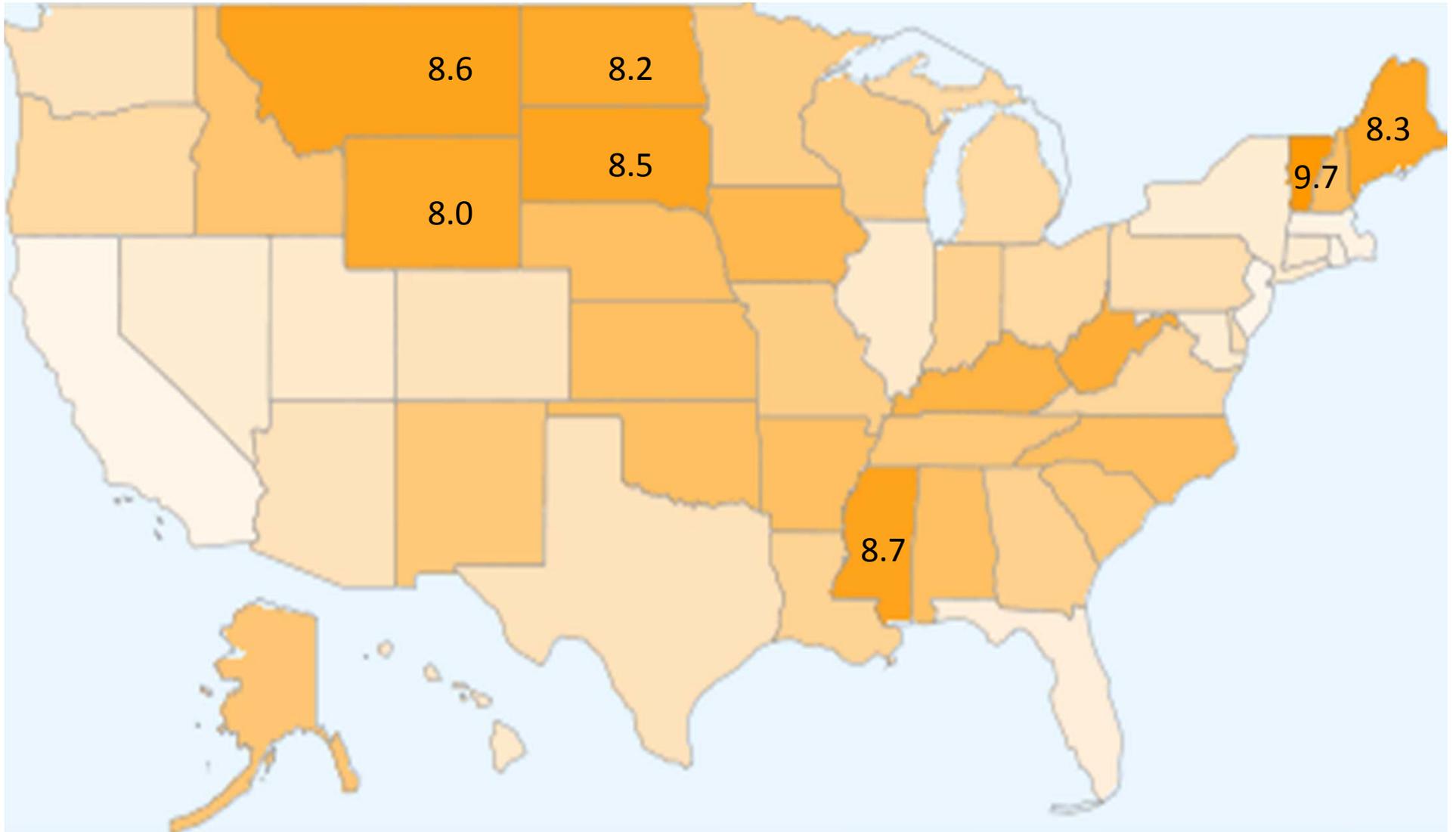


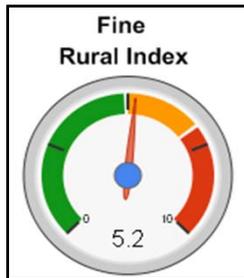
# Coarse Rural Index

An average of indexed scores from the various coarse metrics, as well as the more broad categories included in some fine metrics. The coarse rural index includes in its average:

- Percent of state population in U.S. Census-defined rural areas
- Percent of state population in nonmetropolitan areas, according to the Office of Management and Budget definition
- Percent of state population in census tracts with any of the nonmetropolitan Rural Urban Commuting Area codes.
- Percent of students in the state attending rural schools according to the NCES' Urban-centric Locale Codes
- Weighted average index of relative rurality, computed by multiplying the IRR of each county by its population and averaging across counties.

# Coarse Rural Index



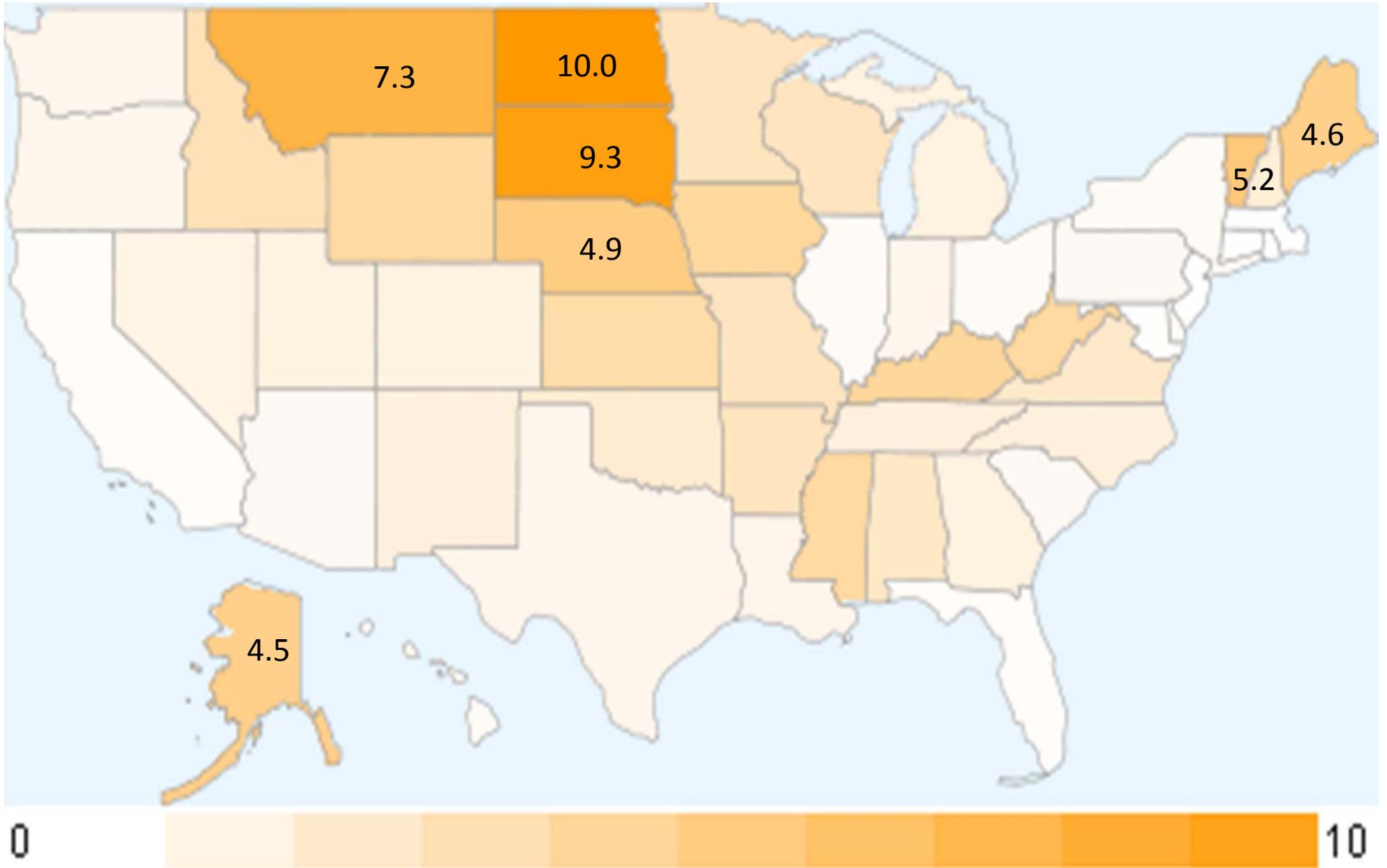


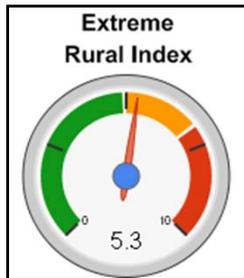
## Fine Rural Index

An average of indexed scores taken from among the fine metrics. Measures were selected for their ability to show a degree of rural isolation beyond the coarse metrics to an extent comparable to each other. The fine rural index includes in its average:

- Percent of state population in "rural isolated" census tracts, as designated by the Rural Urban Commuting Area codes
- Percent of state population in "completely rural" census tracts, as designated by the ERS' Rural-Urban Continuum Codes.
- Percent of state population in counties with an index of relative rurality greater than or equal to 0.6.

# Fine Rural Index



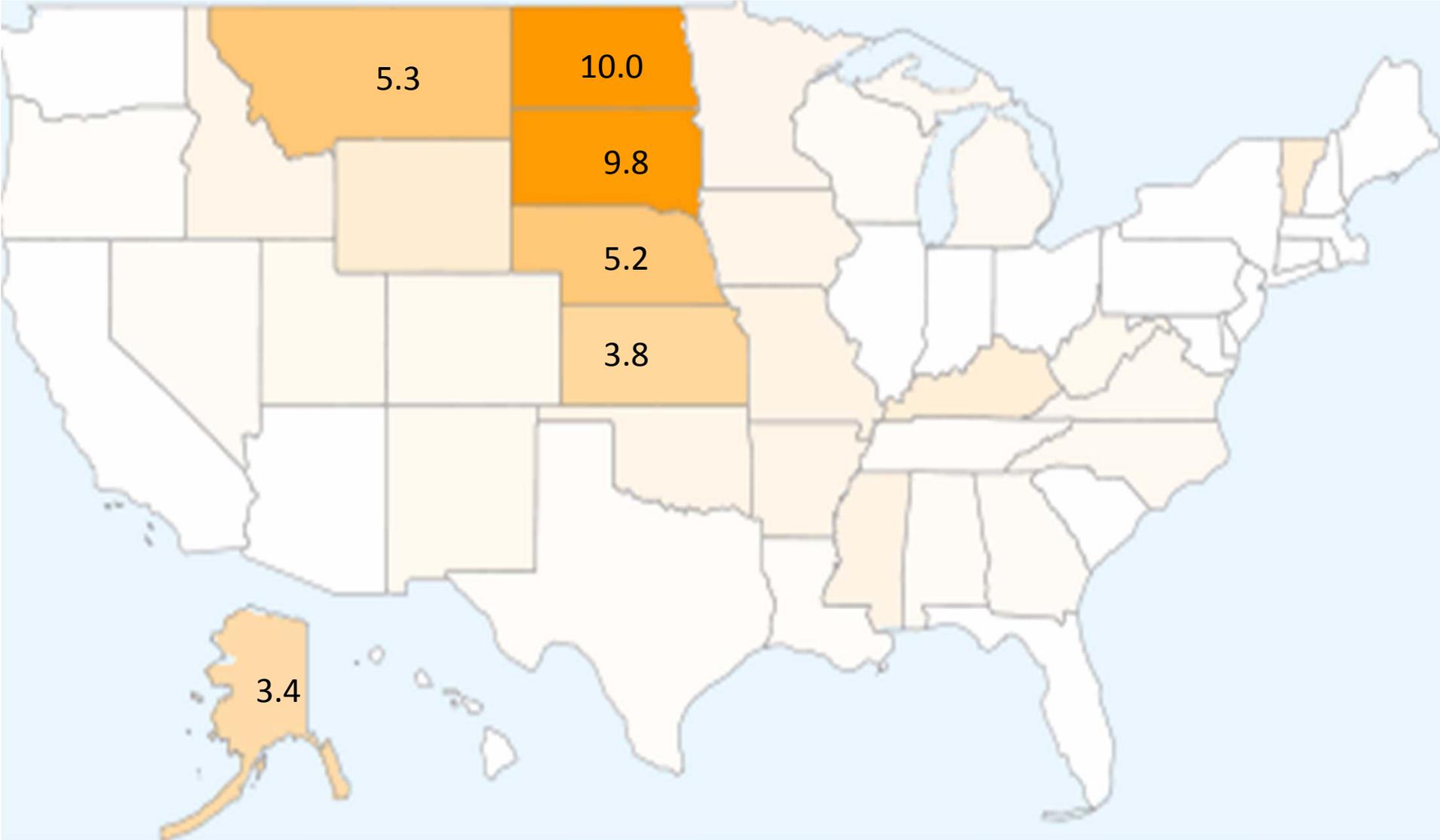


## Extreme Rural Index

An average of indexed scores taken from the most extreme (and exclusive) categories within the fine metrics. The extreme rural index includes in its average:

- Percent of state population that, according to the ERS' Rural-Urban Continuum Codes, resides in "completely rural" counties that are not physically adjacent to a metropolitan area, or that have less than 2% of their labor force commuting to metropolitan centers.
- Percent of state population in counties with an index of relative rurality greater than or equal to 0.8.

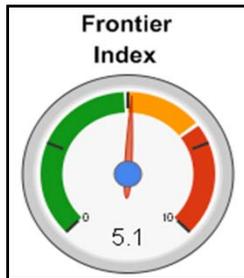
# Extreme Rural Index



0



10

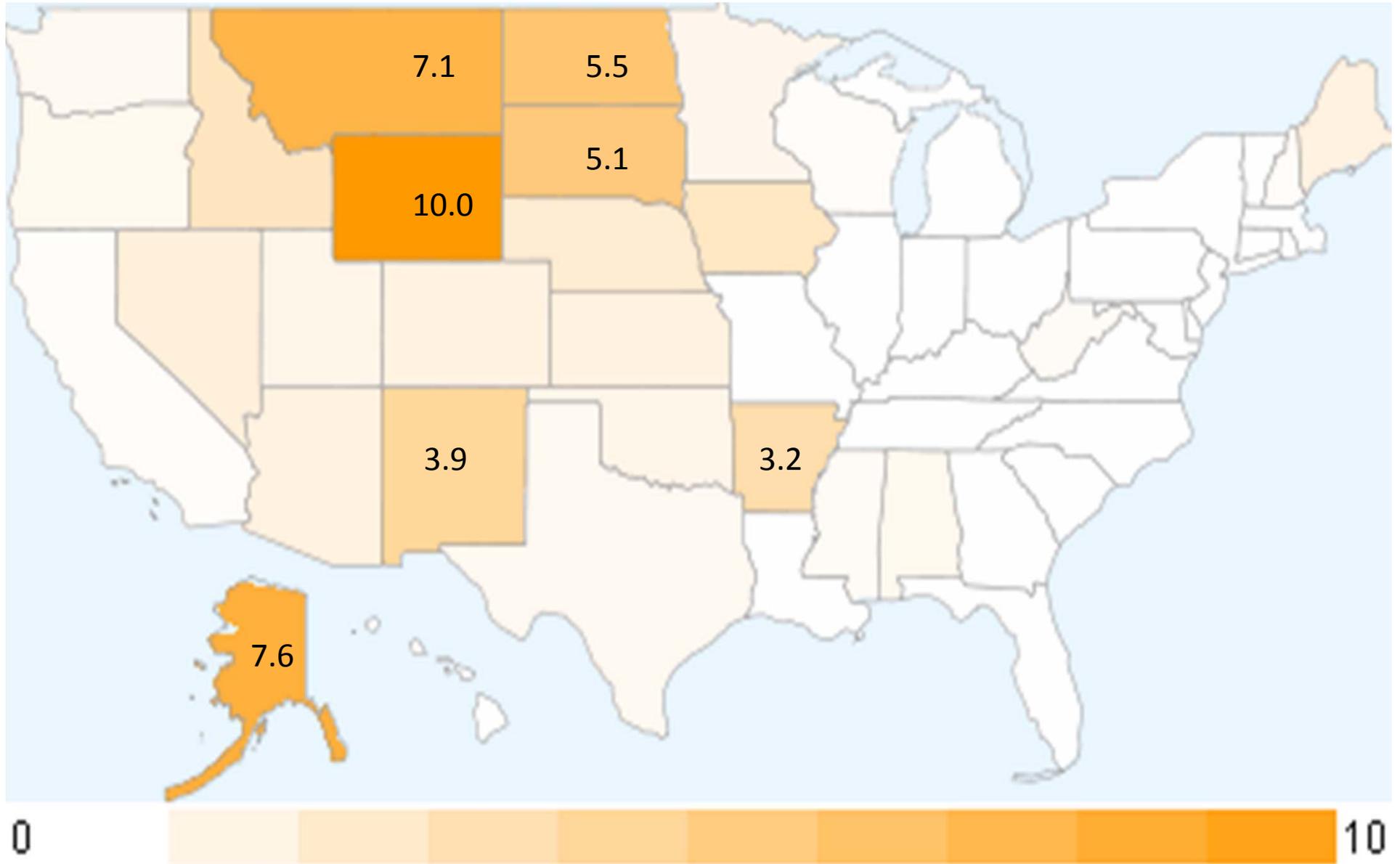


## Frontier Index

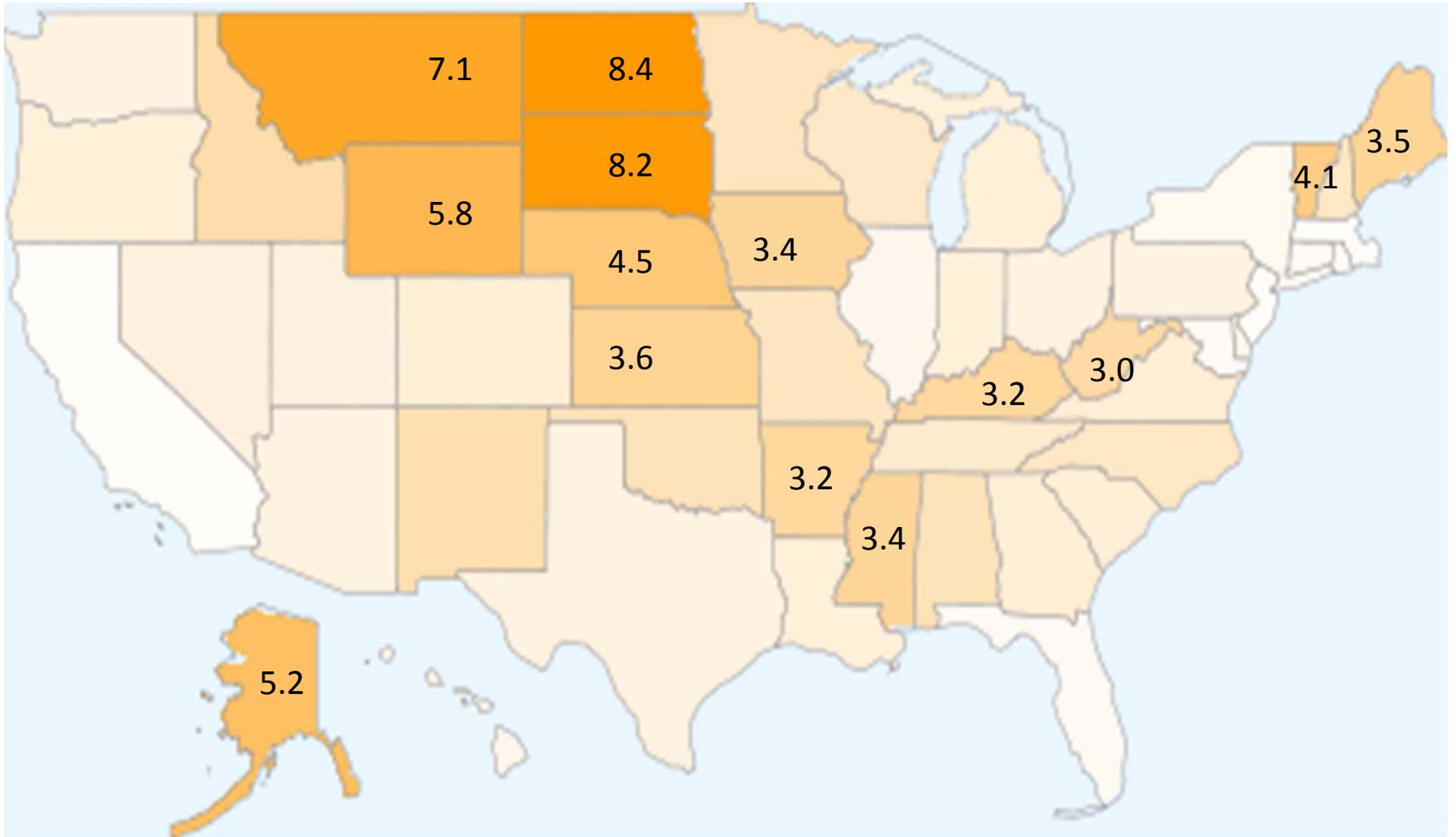
An average of indexed scores taken from the two current definitions of frontier. The frontier index includes in its average:

- Percent of state population in counties with an average population density of less than 7 people per square mile, according to the U.S. Census.
- Percent of state population in frontier counties, according to the National Center for Frontier Communities' Frontier Consensus Definition

# Frontier Index



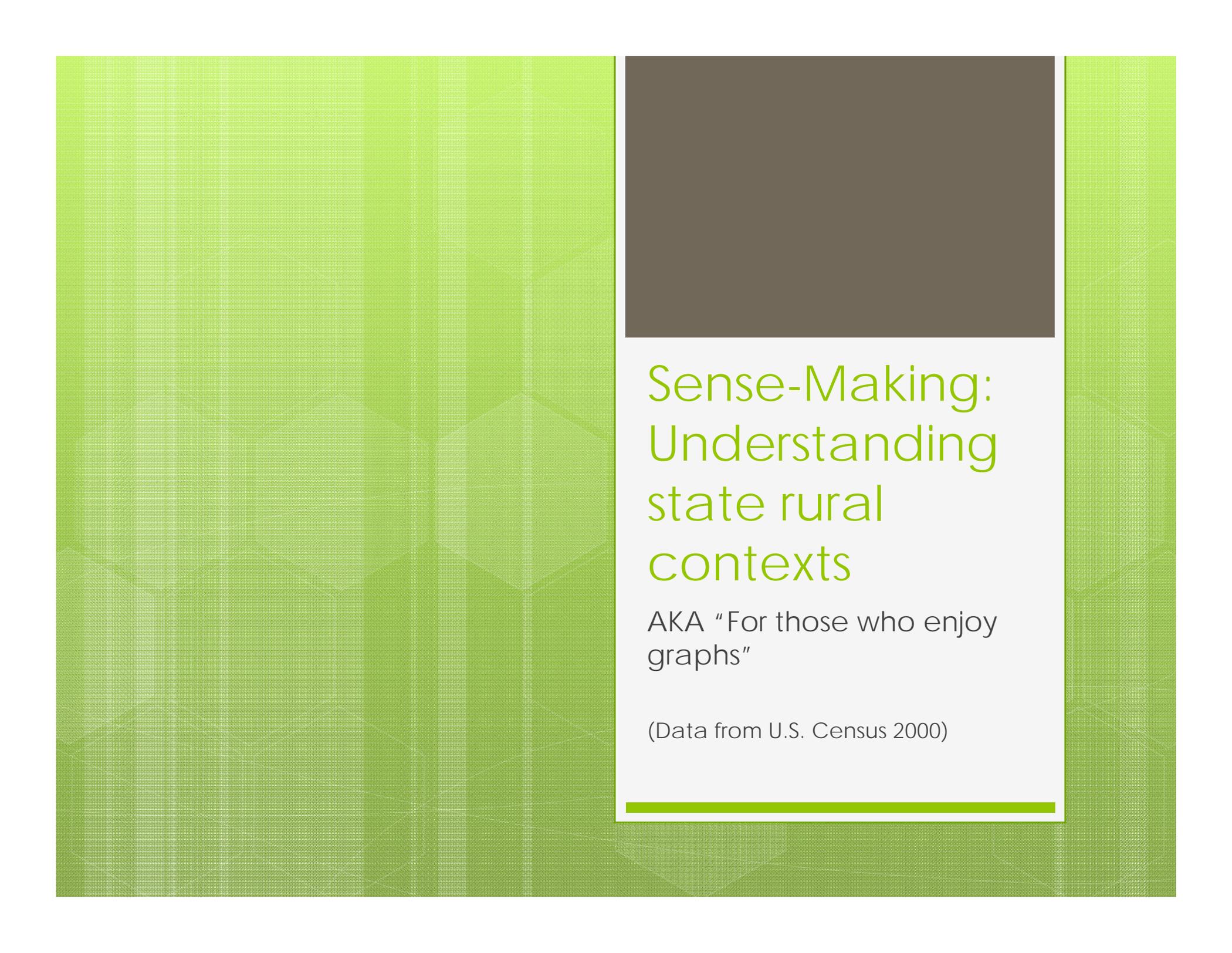
# Composite of Indices



0.1



8.4



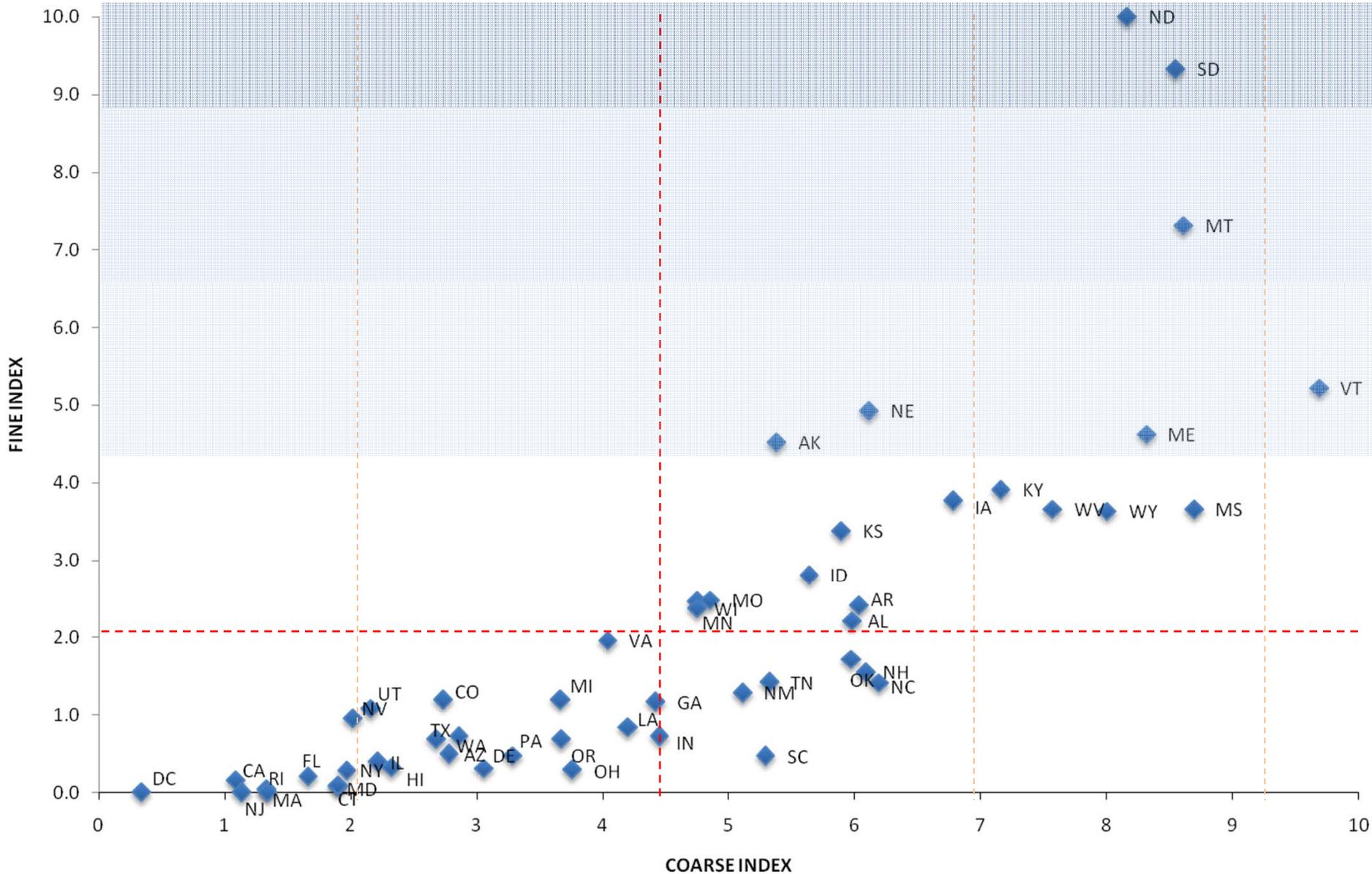
# Sense-Making: Understanding state rural contexts

AKA "For those who enjoy  
graphs"

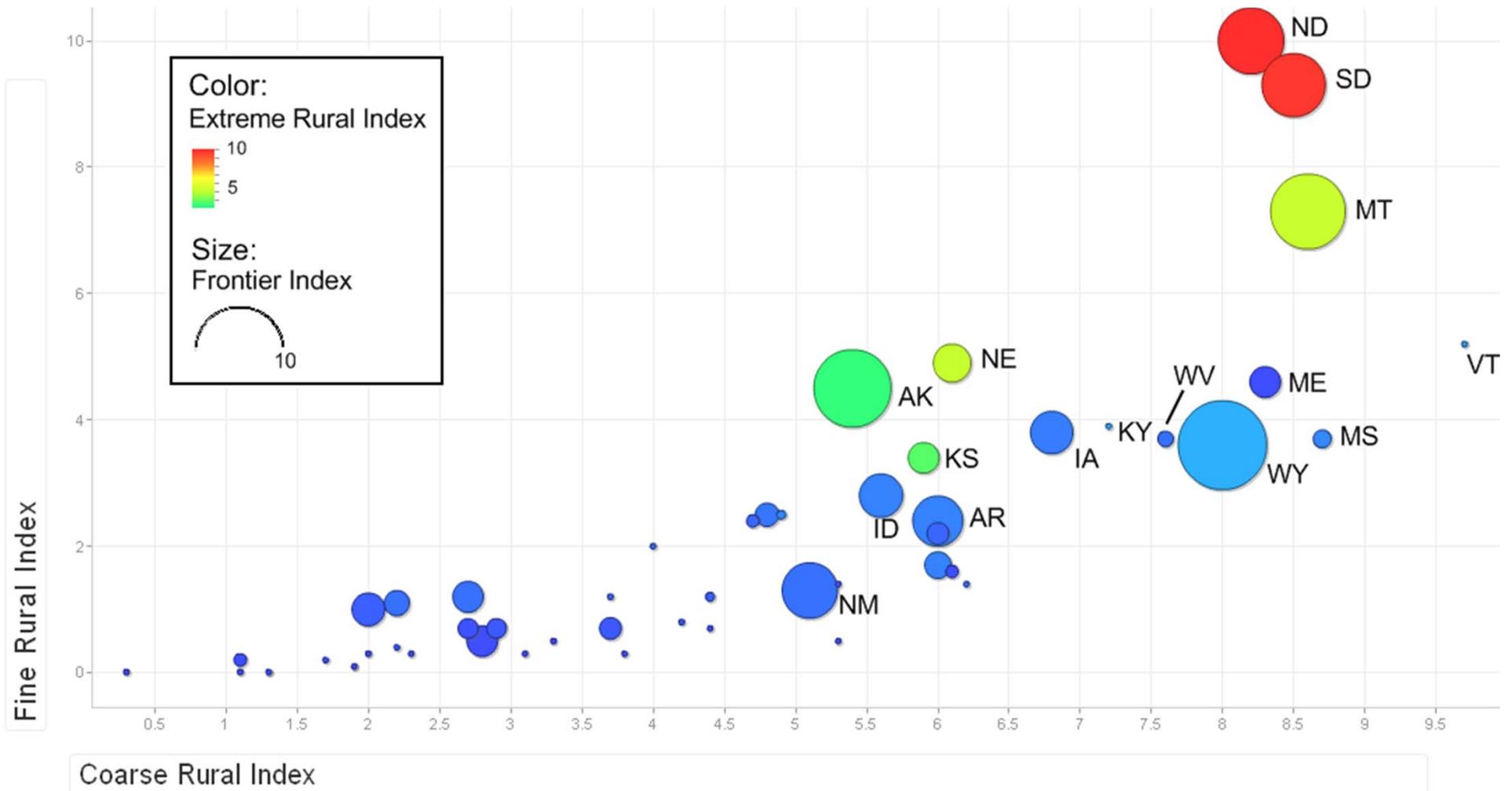
(Data from U.S. Census 2000)

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# State Rural Characteristics: Comparison of coarse and fine metrics



# State Rural Characteristics: Comparison of coarse, fine, extreme, and frontier metrics



State peer groups  
defined by rural character

		% Rural Overall (Coarse Index)		
		Low	Mid	High
Degree of extreme or isolated rurality (Fine, Extreme, and Frontier Indices)	Very isolated/remote rural communities			North Dakota South Dakota Montana
	Mixed of large, small, and isolated rural communities		Nebraska	Maine Vermont
	Most not isolated but some extremely remote communities		Alaska	Wyoming
	Not isolated	<i>All Other States</i>	Alabama Arkansas Idaho Iowa Kansas New Hampshire New Mexico North Carolina Oklahoma South Carolina Tennessee	Kentucky Mississippi West Virginia

# Next Steps

- Crosswalking the degrees of rurality with degrees of poverty
- Comparing degrees of rurality and poverty with educational outcomes
- Suggesting policy considerations for each type of rural context

# Authors

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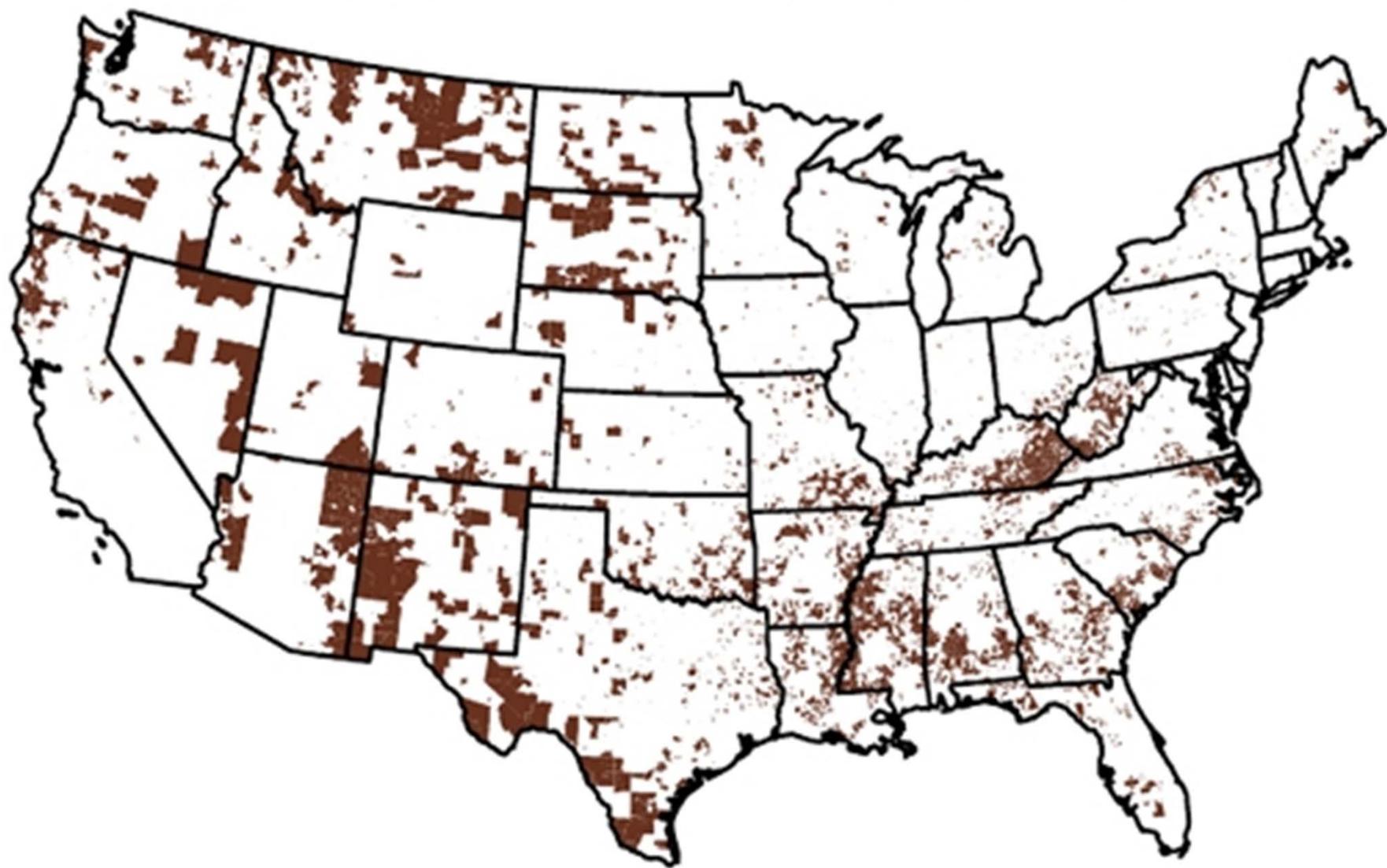
Research, Development, and Dissemination Lead  
Council of Chief State School Officers

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END

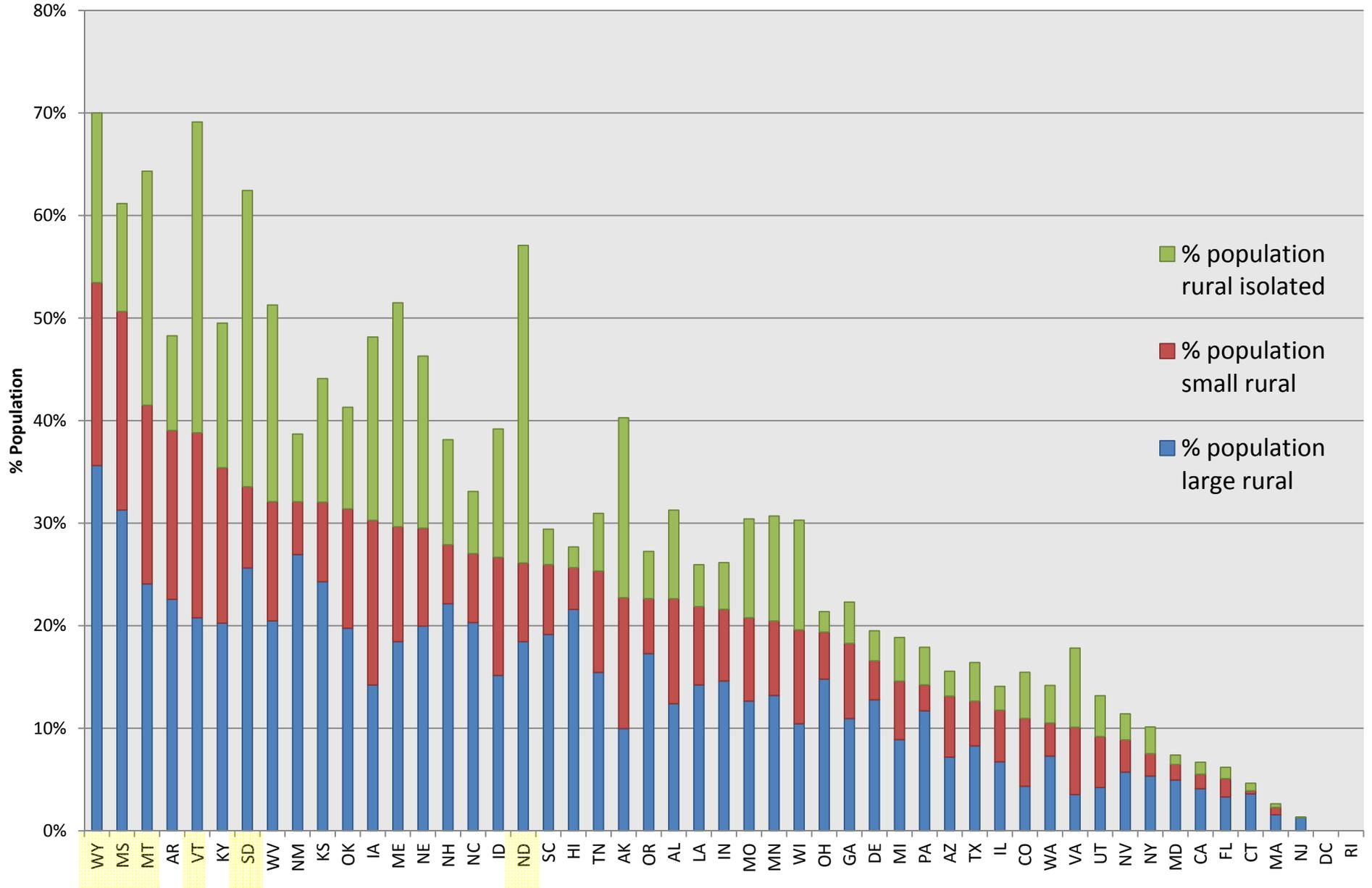
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FIGURE 1: U.S. NONMETRO BLOCK GROUPS WITH POVERTY RATES GREATER THAN 20 PERCENT

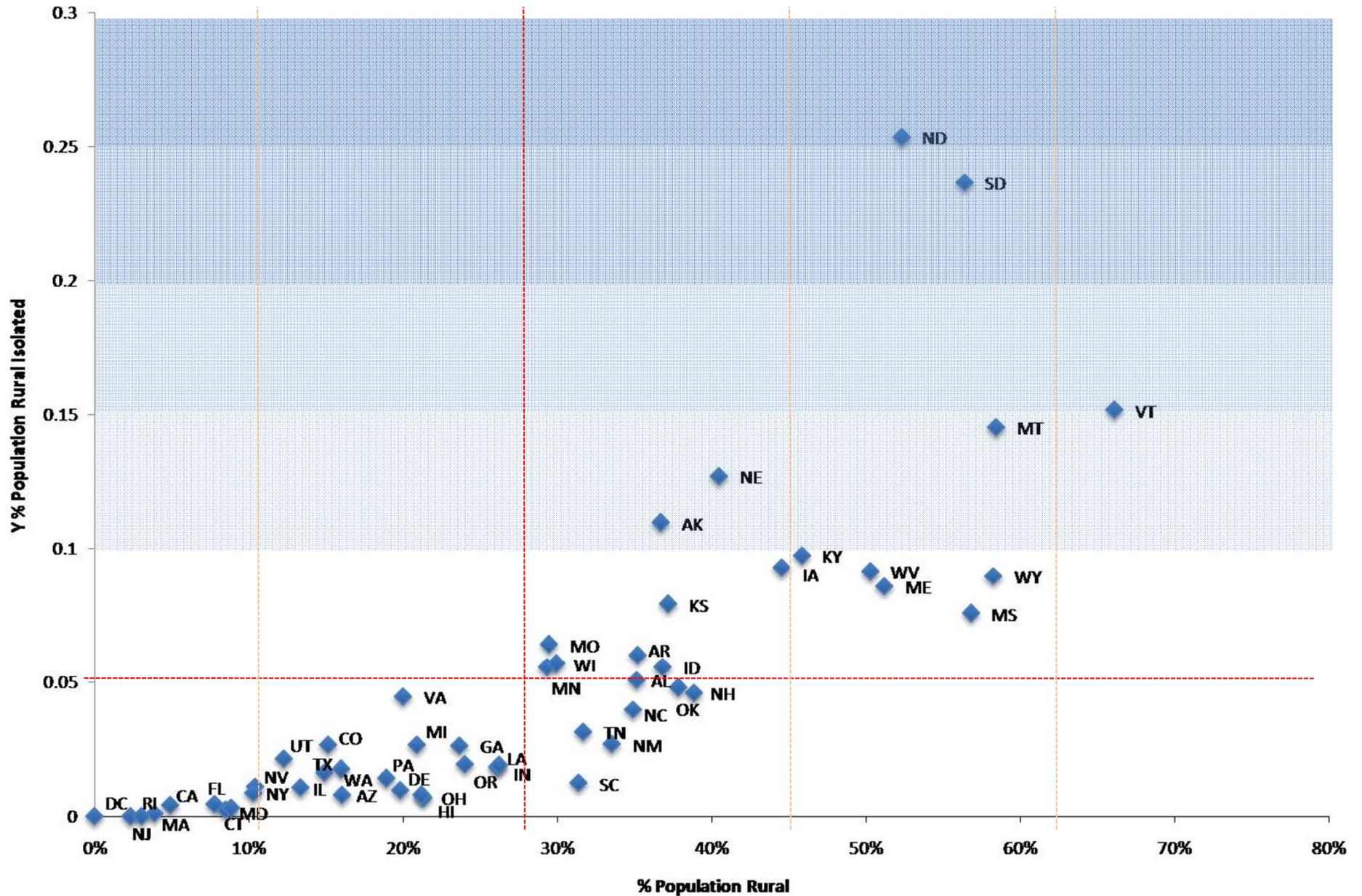


Highest % Rural (broadly defined)	Highest % Small Rural	Highest % Rural Isolated
VT	MT	ND
MS	VT	SD
ME	ND	VT
MT	SD	MT
SD	IA	NE
ND	ME, WY	AK

# State Rural Comparison: % large rural, small rural, and rural isolated (RUCA)



## State Rural Characteristics Comparison: % Population Rural and % Population Rural Isolated (RUCA)



# State Rural Characteristics Comparison: %Population nonmetro, completely rural, and completely rural nonadjacent (OMB/ERS)

