

Corn and Corndogs: New Developments in Rural Classifications and Locale Boundaries

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Overview

Why examine rural definitions used by educational programs?

- Shared understanding of rural conditions depends on shared definitions
- Widely used in educational research/analysis
- Critical feature for educational program administration/eligibility

The purpose of this presentation is to:

- Briefly review definitions used by primary rural education programs.
- Discuss effects of different definitions:
 - Distribution of urban/rural schools and school districts?
 - Variation by state/region?
 - Intra-district variation (e.g., rural schools in urban districts)?
- Introduce new rural data resources

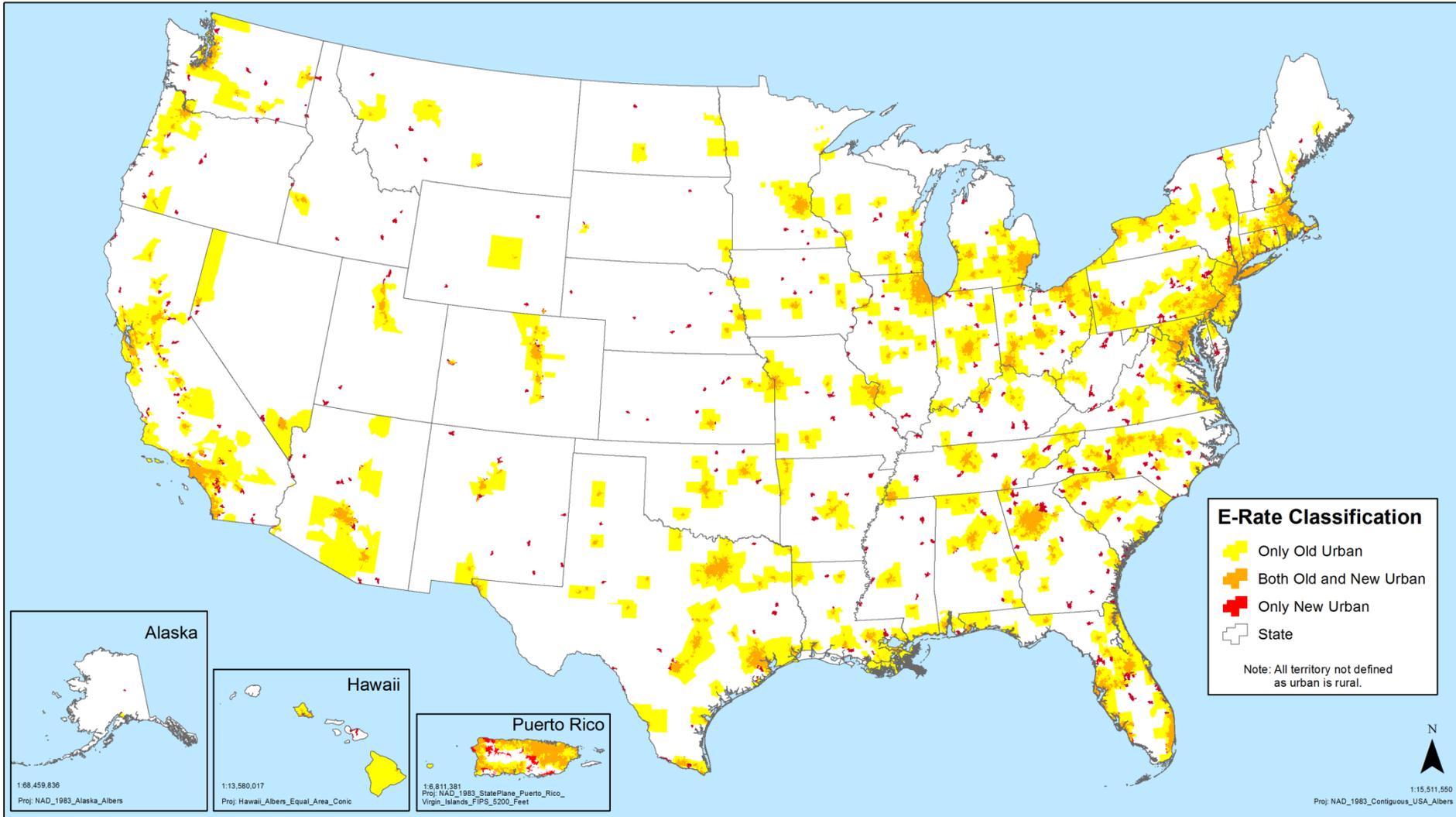
Program Background: REAP

- Rural Education Achievement Program
- Authorized in 2001 at part of NCLB
- Relied on geographic classifications (locale codes) in use at NCES in 2000
- Two-part program:
 - Small Rural Schools Achievement Program (SRSA): Rural-only,
 - Rural Low-income Schools Program (RLIS): Rural and Small Town
- Rural identified as '7' or '8' depending on location relative to metro areas
- NCES updated locale framework in 2006
 - Integrate updated geographic criteria adopted by OMB and Census Bureau
 - Improve analytic utility of locale data for educational programs/research
- REAP unable to adopt updated criteria due to statutory limitation
- LEA is rural if **all** schools are rural (for SRSA eligibility)

Program Background: E-Rate

- FCC program authorized by Telecommunications Act of 1996
- Provides discounts to help schools/libraries purchase services and equipment
- Additional discount for rural location to help bridge the digital divide
- Rural areas originally defined based on modified metropolitan areas
- Geographic data and criteria needed to define rural were irregularly updated
- FCC overhauled E-RATE program in 2014 with two key changes for rural
- Change#1: Replaced metro-based criteria with urban-based criteria
 - Rural = Census-defined rural territory + urban cores with population < 25,000
- Change#2: Replaced school-based eligibility with LEA-based eligibility
- LEA is rural if **majority** of schools are rural

FIGURE 1. URBAN AND RURAL AREAS OF THE US - OLD AND NEW DEFINITIONS



Program Background: NCEES Locales

- General geographic indicator of school location
- Includes basic types and sub-types:
 - City: Large, Midsize, Small
 - Suburban: Large, Midsize, Small
 - Town: Fringe, Distant, Remote
 - Rural: Fringe, Distant, Remote
- Criteria rely on Census geography
- Applied to public, private, and post-secondary schools.
- Used for survey design, research, reporting, program administration, etc.
- LEA locale assignment based on enrollment-weighted school assignments
- LEA is rural if majority of students attend rural schools

FIGURE 1. NCES LOCALE CLASSIFICATIONS

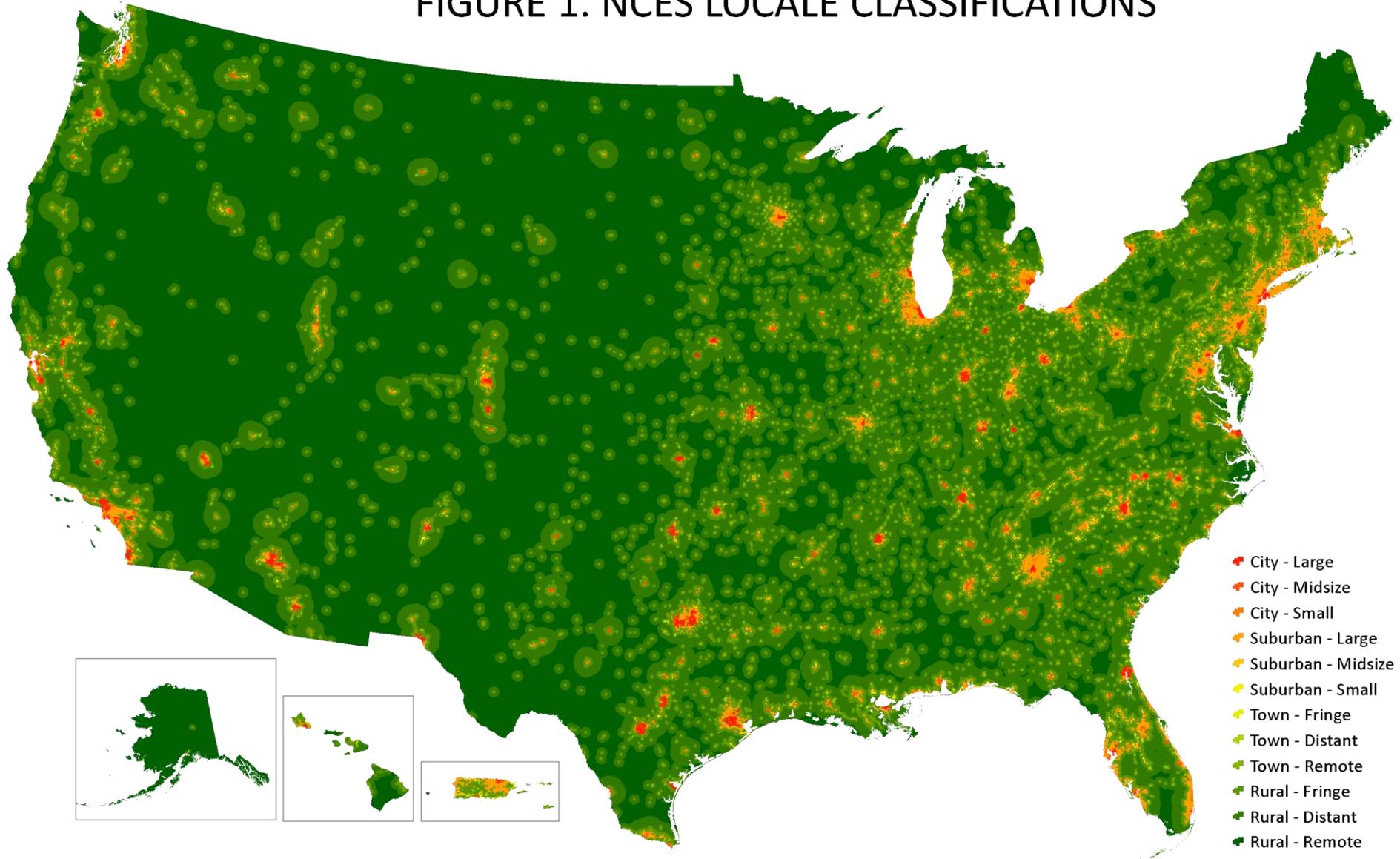


Table 1. Federal Education Program Rural Classifications and Criteria

REAP Classifications	
<i>Rural, Outside Metropolitan Area (7)</i>	Any incorporated place, Census-designated place, or non-place territory not within a metropolitan area and defined as rural by the Census Bureau.
<i>Rural, Inside Metropolitan Area (8)</i>	Any incorporated place, Census-designated place, or non-place territory within a metropolitan area and defined as rural by the Census Bureau.
E-Rate Classifications	
<i>Rural</i>	All territory outside of Census Urbanized Areas and outside of Urban Clusters with a population or 25,000 or more.
NCES Classifications	
<i>Rural-Fringe (41)</i>	Census-defined rural territory that is less than or equal to 5 miles from an Urbanized Area, as well as rural territory that is less than or equal to 2.5 miles from an Urban Cluster.
<i>Rural-Distant (42)</i>	Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an Urbanized Area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an Urban Cluster.
<i>Rural-Remote (43)</i>	Census-defined rural territory that is more than 25 miles from an Urbanized Area and is also more than 10 miles from an Urban Cluster.

Research Questions

- How does the distribution of urban and rural schools and school districts compare across programs (REAP, E-Rate, NCES)?
- How many rural schools are located in rural districts? How many are not located in rural districts?
- Do geographic differences in program criteria affect all states equally, or are some states more affected than others?

Methods and Data

- Compared school locations with urban/rural boundaries defined by programs
- Created shapefile of school locations (2013-2014 CCD)
- Constructed shapefile of E-Rate urban/rural areas (2014 TIGER/Line)
 - Joined Urban Clusters with 2010 Census population counts to identify areas < 25,000
- Constructed REAP locale boundaries (2014 TIGER/Line)
- Constructed NCES locale boundaries (2014 TIGER/Line)
- Joined school points to REAP, NCES, and E-Rate locale boundaries, and assigned program-specific urban/rural values.
- Aggregated school results to LEA and applied program criteria to create program-specific urban/rural assignments for LEAs.
- Used SAS, ArcGIS, and Excel to compare, review, and summarize

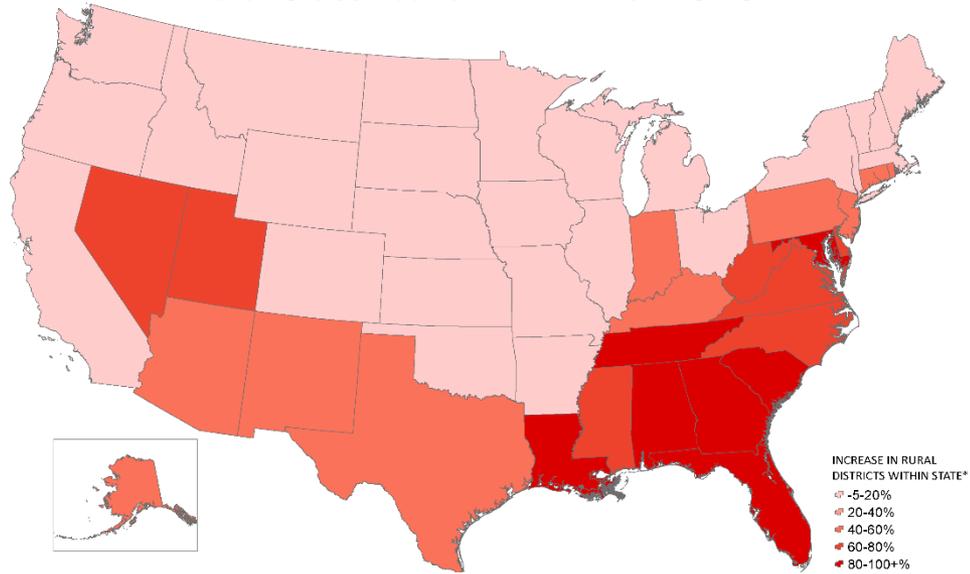
Results: National-level

- Total rural schools:
 - E-Rate – 38%
 - NCES & REAP – 27%
- Total rural LEAs:
 - E-Rate – 58%
 - NCES – 45%
 - REAP – 39%
- Substituting E-Rate geo criteria increased REAP rural LEAs by 49%
- Rural schools included in rural LEAs:
 - E-Rate – 87%
 - NCES – 78%
 - REAP – 60%

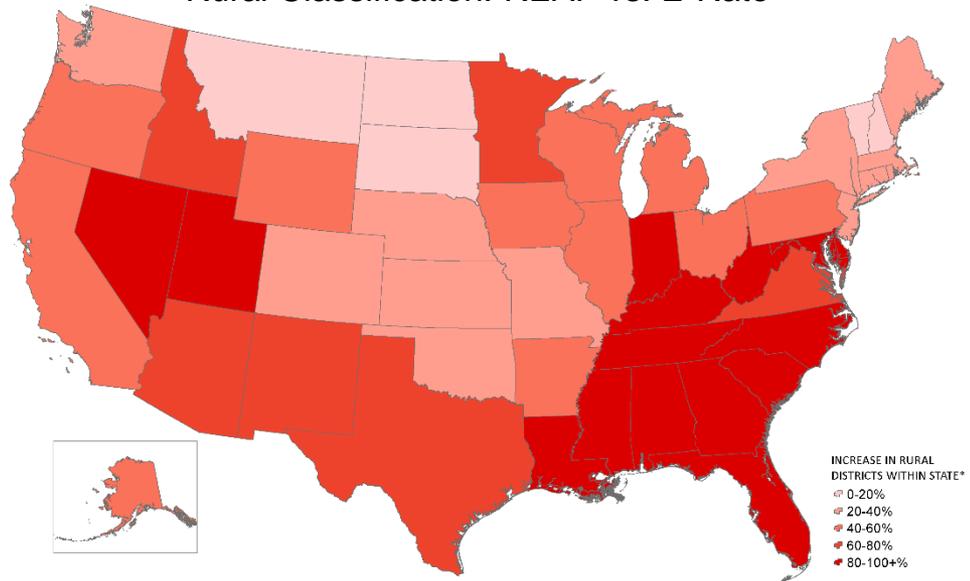
Results: State-level

- Finding: Different definitions substantially affect district classification
- REAP criteria are more constrained than NCES and E-Rate criteria
- Substituting E-Rate criteria into REAP increases LEA eligibility
 - More than 100% in 13 states.
 - More than 50% in half of all states
- Finding: Different definitions have regional effects
- REAP criteria impact large, geographically heterogeneous LEAs
- Almost all states that increase by 100% or more are county-based states

Rural Classification: REAP vs. NCES



Rural Classification: REAP vs. E-Rate



Regional variation

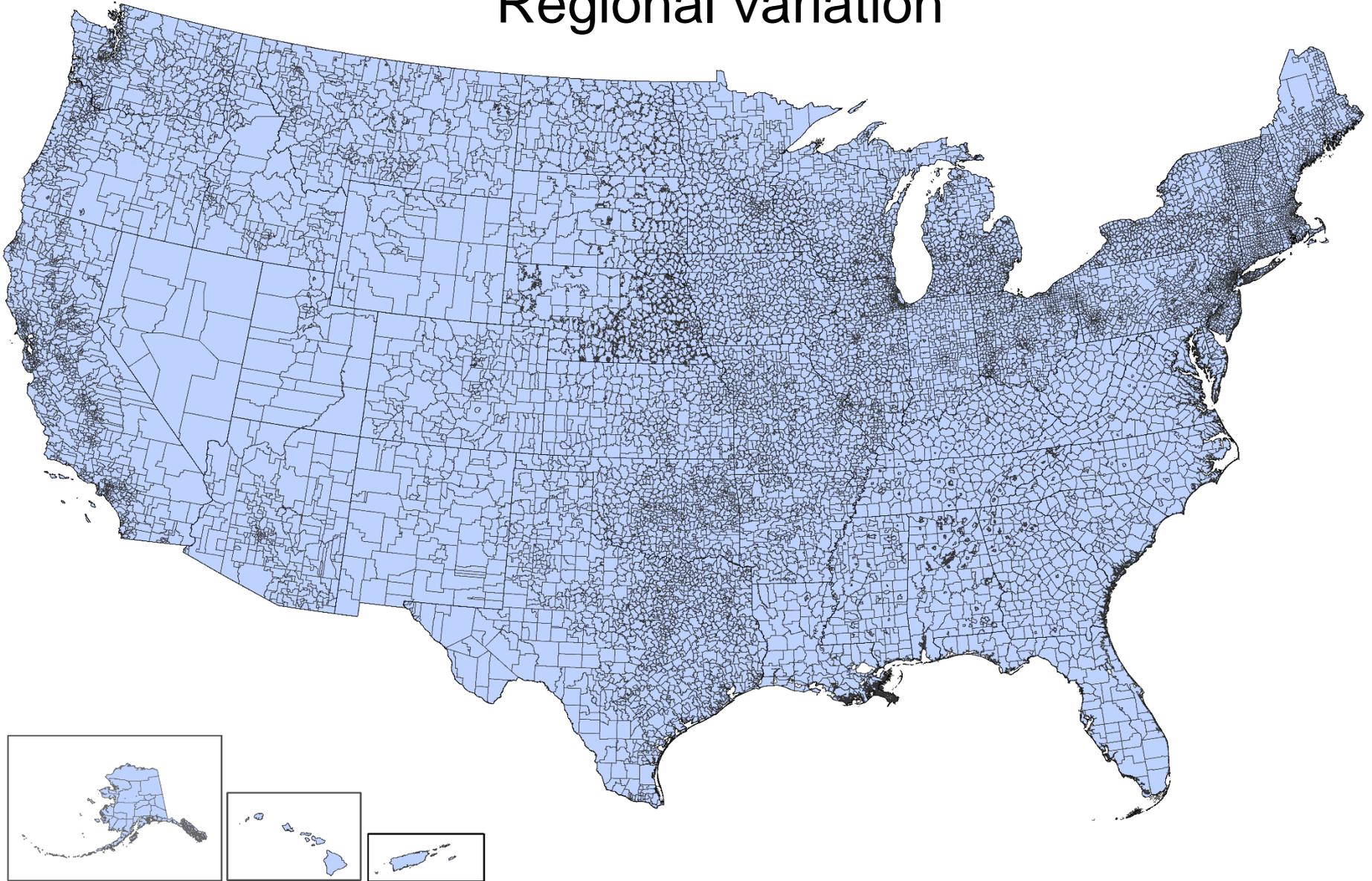


FIGURE 4. DISTRIBUTION OF RURAL SCHOOL DISTRICTS - REAP

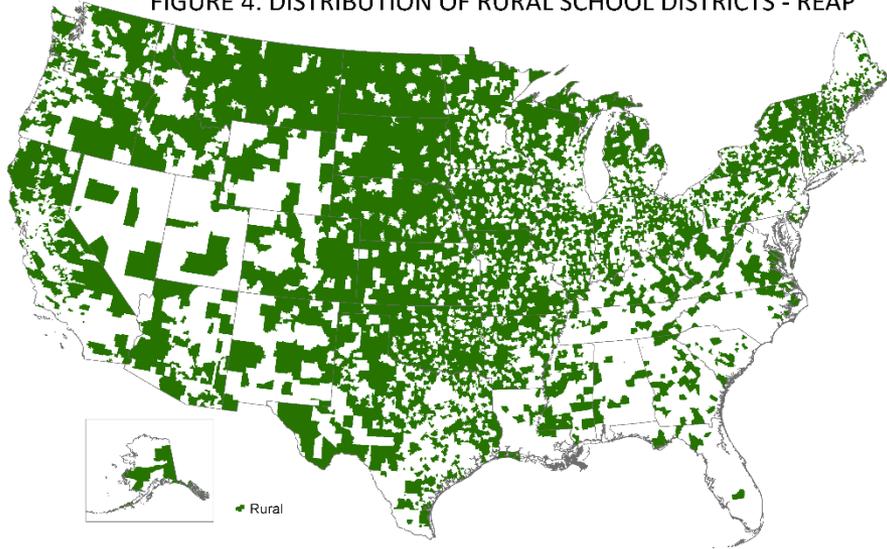


FIGURE 5. DISTRIBUTION OF RURAL SCHOOL DISTRICTS - NCS

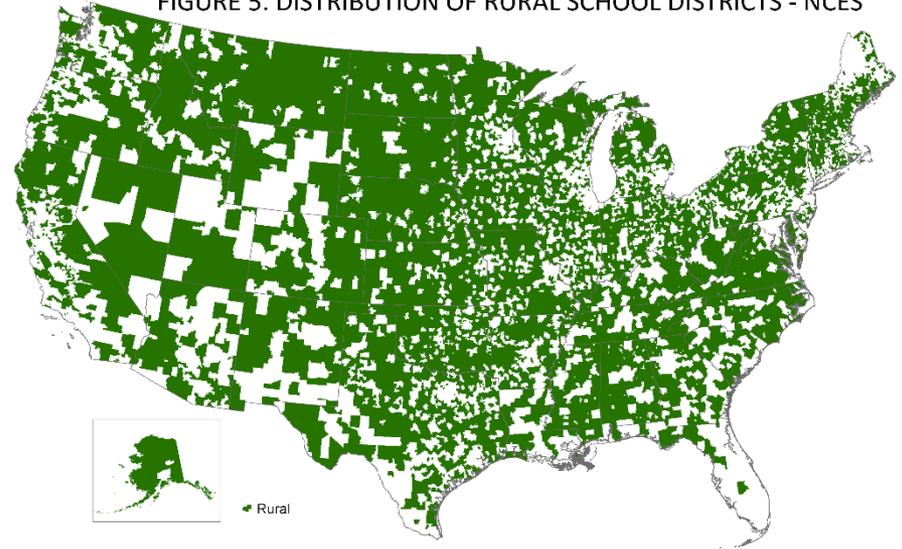
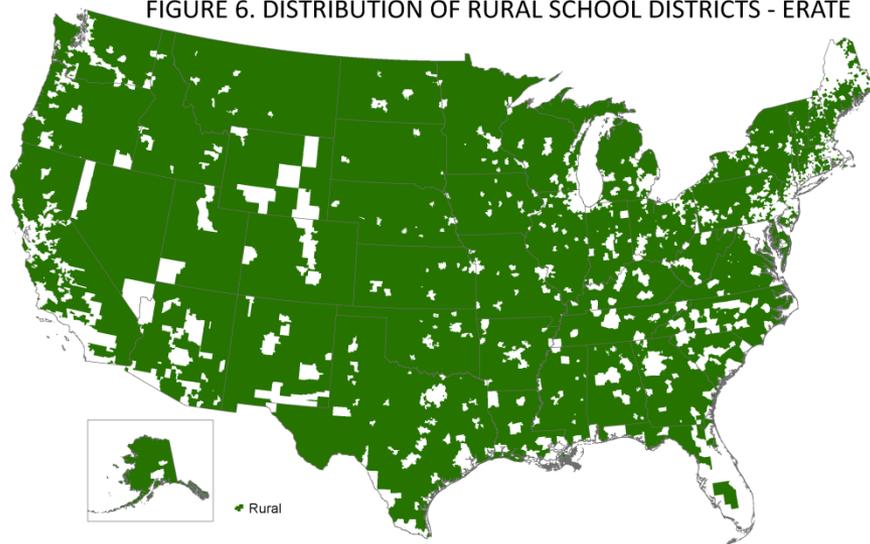


FIGURE 6. DISTRIBUTION OF RURAL SCHOOL DISTRICTS - ERATE



Locale Boundaries and Code Look-up

- Part of NCES Education Demographic and Geographic Estimates (EDGE)
- Plan to provide annually updated NCES and REAP locale boundary layers
- Based on Census Bureau TIGER/Line boundaries
- Zipped shapefile format for easy download and use
- Includes files for U.S. and for individual states
- Plan to include NCES and REAP locale boundaries on MapED
- Identify locale assignment based on address query



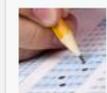
map.ed



How are States Performing?

State performance comparison over time that displays if public school students performed below, at, or above Proficient in Reading and Mathematics.

[View Story](#)



Assessment

Math Reading



Demographic

Age Language Race Ancestry Place of Birth Sex



Economic

Income Poverty



Employment

Commuting Status Occupation



Housing

Costs Rent Structure Mortgage Residence Value

NCES Locales NEW

[Map](#)

ACS

American Community Survey

[Info](#) [Map](#)

CCD

Common Core of Data

[Info](#) [Map](#)

IPEDS

Integrated Postsecondary Education Data System

[Info](#) [Map](#)

NAEP

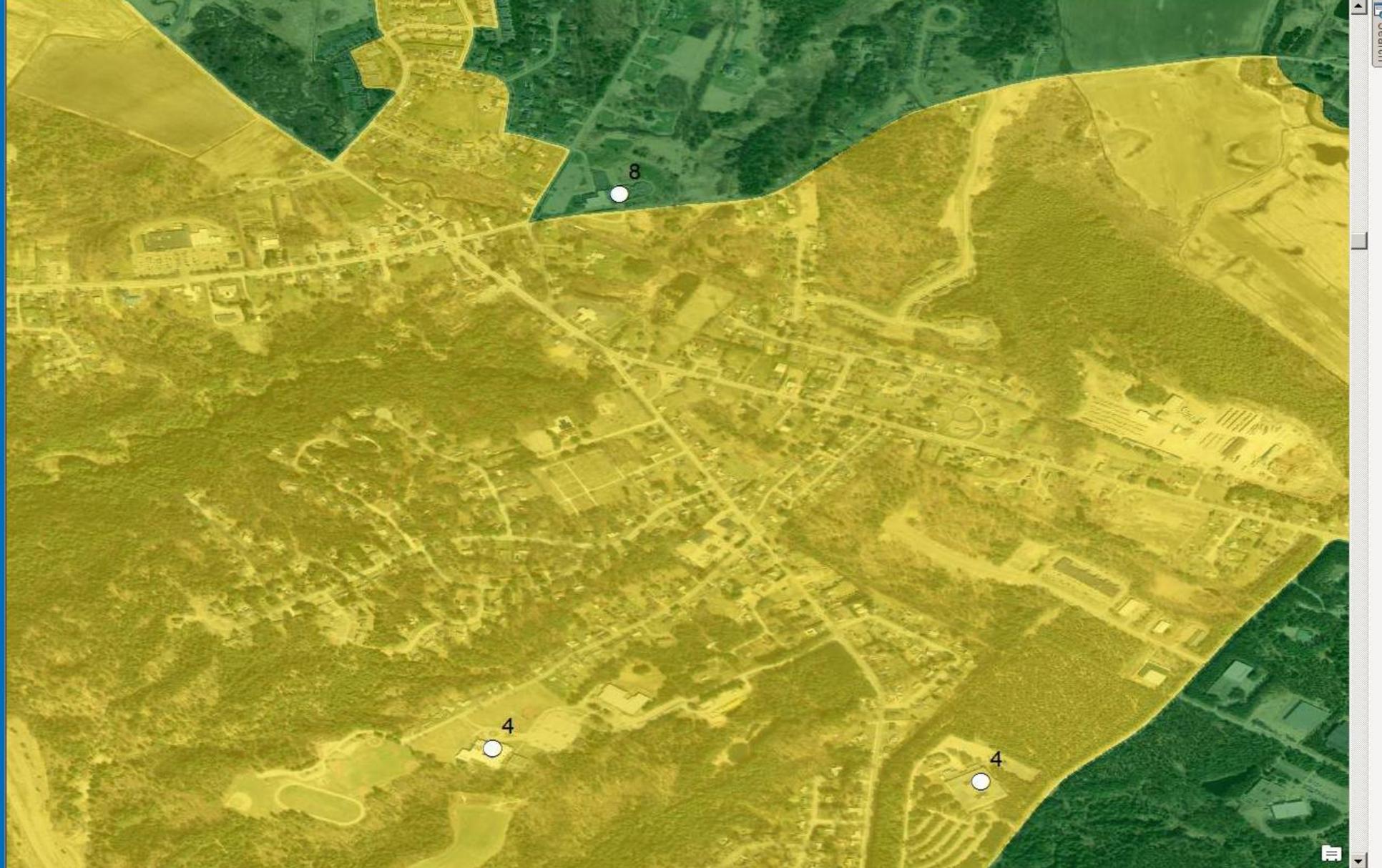
National Assessment of Educational Progress

Story Maps

Data Maps



Legend



Education Demographic a x

nces.ed.gov/programs/edge/geographicDistrictBoundary.aspx

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Demographic Data

Geographic Data

- School District Boundaries
- School District Geographic Relationship Files
- Locale Boundaries
- School Attendance Boundary Survey (SABS)

Map Viewers

School District Boundaries

School Districts are geographic entities and single purpose governmental units that operate schools and provide public educational services at the local level. The Census Bureau collects school district boundaries to develop annual estimates of children in poverty to help the U.S. Department of Education determine the annual allocation of Title I funding to states and school districts. NCES also uses the school district boundaries to develop a broad collection of district-level demographic estimates from the Census Bureau's American Community Survey. The Census Bureau updates school district boundaries, names, local education agency codes, grade ranges, and school district levels biennially based on information provided by state education officials.

Data

Census Geography Year	School Year Represented	Layers by District Type	Single Composite File
2014	2013-2014	(145 MB)	(143 MB)
2013	2011-2012	(145 MB)	(143 MB)
2012	2011-2012	(141 MB)	(138 MB)
2011	2009-2010	(141 MB)	(137 MB)
2010	2009-2010	(142 MB)	(138 MB)

Universe

The U.S. has more than 13,000 geographically defined public school districts. These include districts that are administratively and fiscally independent of any other government, as well as public school systems that lack sufficient autonomy to be counted as separate governments and are classified as a dependent agency of some other government—a county, municipal, township, or state. Most public school systems are Unified districts that operate regular, special, and/or vocational programs for children in Prekindergarten through 12th grade.

The Census Bureau's school district universe is a subset of the larger NCES CCD Local Education Agency (LEA) universe. The Census collection is limited to regular districts that are geographically defined, and it excludes "non-operating" districts and "educational service agencies" that are part of the CCD LEA universe. These districts primarily exist to collect and transfer tax revenue to other school systems that actually provide the education services, or to provide regional special education services, vocational education programs, or financial services for member districts.

<http://nces.ed.gov/programs/edge/geographic.aspx>

Conclusions

- Rural definitions matter
- Be cautious with rural comparisons
- Different programs have different objectives that help explain differences
- Geographic data resources will be available to help soon

Questions and Contact

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Education Demographic and Geographic Estimates

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Table 2. Percent Distribution of Urban and Rural Schools and Districts by Program

	Total	REAP				NCES				E-Rate			
		Rural		Urban		Rural		Urban		Rural		Urban	
		Total	%										
Schools	104,535	27,878	26.67	76,657	73.33	28,539	27.30	75,996	72.70	40,029	38.29	64,506	61.71
Rural Schools in Rural Districts		16,633	59.66			22,370	78.38			34,893	87.17		
Rural Schools in Non-Rural Districts		11,245	40.34			6,169	21.62			5,136	12.83		
Districts	17,645	6,826	38.69	10,819	61.31	7,968	45.16	9,677	54.84	10,149	57.52	7,496	42.48