

# Indicators of Community Well-being from the American Community Survey

Presented to the  
NOAA Social Indicators Workshop

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# Outline

- Background on the ACS
- Using ACS Estimates
- Other Data Tips
- Data Quality and Survey Improvements

# What is the ACS?

A large, continuous survey that:

- samples approximately 3.54 million resident addresses per year (about 290,000 per month)
- produces statistics on a wide range of topics
- produces estimates for small areas and small population groups

The image shows the front cover of the American Community Survey questionnaire booklet. At the top left is the United States Census Bureau logo. The title "THE American Community Survey" is prominently displayed. A green box contains the text: "This booklet shows the content of the American Community Survey questionnaire." Below this, there are instructions: "Please complete this form and return it as soon as possible after receiving it in the mail." A "Start Here" section is highlighted in green, containing a numbered list of steps: 1. "Return your mail to the Census Bureau" (with a box for the return address), 2. "Check the return address and telephone number of the person who is filling out the form for their school, job or home if a parent." (with a box for the return address), 3. "This form asks for information about the people who are living or staying at the address on the mailing label and about the house, apartment, or mobile home located at the address of the mailing label." (with a box for the return address), 4. "This form asks for information about the house, apartment, or mobile home located at the address of the mailing label." (with a box for the return address). At the bottom, there is a barcode and the text "U.S. CENSUS BUREAU" and "2008-2010".

# 2010 Census and ACS

## 2010 Census:

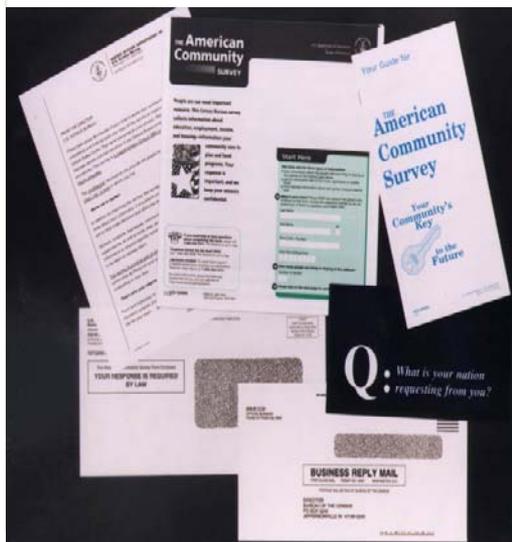
- Everyone in the U.S.
- U.S. population count
- Demographic characteristics only
- Every 10 years

## ACS:

- 3.54 million addresses/year
- Estimates of the population and housing characteristics
- Demographic, social, economic and housing characteristics
- Every year

# Data Collection

Mail



Telephone



Personal Visit



# ACS Content: Population

- SOCIAL
  - Ancestry
  - Citizenship & Year of Entry
  - Disability Status
  - Educational Attainment
  - Health Insurance
  - Grandparents
  - Fertility
  - Language
  - Marital Status & History
  - Place of Birth
  - Migration
  - Relationship
  - School Enrollment
  - Veteran Status
- ECONOMIC
  - Employment & Work Status
  - Income & Earnings
  - Industry & Occupation
  - Class of Worker
  - Commuting
  - Poverty Status
  - SNAP Receipt
- DEMOGRAPHIC
  - Age & Sex
  - Race & Hispanic Origin

# ACS Content: Housing

- Age of Householder
- House Heating Fuel
- Household Size
- Kitchen Facilities
- Occupancy and Vacancy
- Owner Statistics
- Plumbing Facilities
- Race of Householder
- Renter Statistics
- Rooms and Bedrooms
- Telephone Service
- Tenure
- Units in Structure
- Value of Home
- Vehicles Available
- Year Householder Moved Into Unit
- Year Structure Build

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# ACS Period Estimates

Period Estimate	Describes the average characteristics from...
2006-2010 ACS 5-year	January 1, 2006 to December 31, 2010
2008-2010 ACS 3-year	January 1, 2008 to December 31, 2010
2010 ACS 1-year	January 1, 2010 to December 31, 2010

# Population thresholds for ACS estimates

	Population of 65,000 or more	Population of 20,000 or more	Less than 20,000
5-year estimates	X	X	X
3-year estimates	X	X	
1-year estimates	X		

# ACS Data Products

- Data and Narrative Profiles
- Comparison Profiles
- Selected Population Profiles
- Ranking Tables
- Subject Tables
- Detailed Tables
- Geographic Comparison Tables
- Thematic Maps
- Summary Files
- Public Use Microdata Sample (PUMS) File

The screenshot shows the website's navigation menu on the left, including sections for DATA SETS (Decennial Census, American Community Survey, Puerto Rico Community Survey, Annual Population Estimates, Economic Census, Annual Economic Surveys), DOWNLOAD CENTER, MAPS, TOOLS AND REFERENCES, and a sidebar with links for Download Center and 1996-2004 data via FTP. The main content area displays a list of data products for 2009 and 2008. For 2009, it lists '2005-2009 American Community Survey 5-Year Estimates' and '2007-2009 American Community Survey 3-Year Estimates'. For 2008, it lists '2009 American Community Survey 1-Year Estimates' and '2006-2008 American Community Survey 3-Year Estimates'. Each product entry includes a brief description, collection years, and availability for small geographic areas. A '2009 American Community Survey 1-Year Estimates' entry features a 'Select from the following:' dropdown menu with options like Data Profiles, Comparison Profiles, Selected Population Profiles, Ranking Tables, Subject Tables, Detailed Tables, Geographic Comparison Tables, Thematic Maps, Reference Maps, Custom Table, Enter a table number, List all tables, List all maps, Download PUMS data, and About this data set. The page also includes links for '2009 Quick Guide | Errata Notes', 'Explain Table and Map Formats', and 'Explain 1-year vs. 3-year vs. 5-year estimates'.

# 1, 3, or 5-Year Estimate?

## Use 5-year estimates

- for block groups, tracts and areas with populations below 20,000
- for small population groups
- when precision is important
- for certain comparisons across geographic areas

## Use 1-year estimates

- for larger areas and population groups
- for characteristics with small margins of error
- when currency is important
- comparing year-to-year change

# Guidance on Making Comparisons

- Don't mix series: compare...
  - 1-year to 1-year
  - 3-year to 3-year
- Don't use overlapping estimates to measure change:
  - Compare nonoverlapping
    - 2005-2007 ACS 3-year to 2008-2010 ACS 3-year
- Visit “Comparison Guidance” on ACS website
  - [http://www.census.gov/acs/www/guidance\\_for\\_data\\_users/comparing\\_data/](http://www.census.gov/acs/www/guidance_for_data_users/comparing_data/)

# Comparison Profiles

Selected Economic Characteristics	2009 Estimate	2008 Estimate	2009 - 2008 Statistical Significance	2007 Estimate	2009 - 2007 Statistical Significance	2006 Estimate	2009 - 2006 Statistical Significance
<b>EMPLOYMENT STATUS</b>							
<b>Population 16 years and over</b>	<b>241,002,178</b>	<b>238,761,849</b>	*	<b>236,416,572</b>	*	<b>234,243,963</b>	*
In labor force	65.3%	65.8%	*	64.8%	*	65.0%	*
Civilian labor force	64.7%	65.3%	*	64.4%	*	64.5%	*
Employed	58.3%	61.2%	*	60.3%	*	60.4%	*
Unemployed	6.4%	4.2%	*	4.1%	*	4.1%	*
Armed Forces	0.5%	0.5%	*	0.4%	*	0.4%	*
Not in labor force	34.7%	34.2%	*	35.2%	*	35.0%	*
<b>Civilian labor force</b>	<b>156,044,453</b>	<b>155,950,067</b>		<b>152,211,303</b>	*	<b>151,203,992</b>	*
Percent Unemployed	9.9%	6.4%	*	6.3%	*	6.4%	*
<b>Females 16 years and over</b>							
<b>Females 16 years and over</b>	<b>123,417,091</b>	<b>122,340,276</b>	*	<b>121,166,623</b>	*	<b>120,141,345</b>	*
In labor force	59.8%	60.0%	*	58.6%	*	58.7%	*
Civilian labor force	59.7%	59.9%	*	58.5%	*	58.6%	*
Employed	54.3%	56.2%	*	54.8%	*	54.8%	*
<b>Own children under 6 years</b>							
<b>Own children under 6 years</b>	<b>24,308,646</b>	<b>23,963,885</b>	*	<b>23,480,451</b>	*	<b>23,210,775</b>	*
All parents in family in labor force	64.4%	64.2%		61.7%	*	61.6%	*
<b>Own children 6 to 17 years</b>							
<b>Own children 6 to 17 years</b>	<b>46,642,970</b>	<b>46,400,064</b>	*	<b>45,995,823</b>	*	<b>45,942,524</b>	*
All parents in family in labor force	71.7%	71.8%		70.0%	*	69.7%	*
<b>COMMUTING TO WORK</b>							
<b>Workers 16 years and over</b>	<b>138,591,804</b>	<b>143,775,328</b>	*	<b>139,259,684</b>	*	<b>138,265,905</b>	*
Car, truck, or van -- drove alone	76.1%	75.5%	*	76.1%		76.0%	*
Car, truck, or van -- carpoled	10.0%	10.7%	*	10.4%	*	10.7%	*
Public transportation (excluding taxicab)	5.0%	5.0%		4.9%	*	4.8%	*
Walked	2.9%	2.8%		2.8%		2.9%	
Other means	1.7%	1.8%	*	1.7%		1.7%	*
Worked at home	4.3%	4.1%	*	4.1%	*	3.9%	*
Mean travel time to work (minutes)	25.1	25.4	*	25.3	*	25.0	*

# Geographic Comparison Tables



## Maryland -- County

GCT2301. Percent of People 16 to 64 Years Who Are in the Labor Force (Including Armed Forces)

Universe: Population 16 to 64 years ?

Data Set: 2005-2009 American Community Survey 5-Year Estimates

Survey: American Community Survey

NOTE. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see [Survey Methodology](#).

Geographic area	Percent	Margin of Error
<b>Maryland</b>	78.3	+/-0.2
<b>COUNTY</b>		
Allegany County	66.2	+/-1.8
Anne Arundel County	78.0	+/-0.9
Baltimore County	79.1	+/-0.5
Calvert County	79.5	+/-1.2
Caroline County	78.0	+/-2.3
Carroll County	78.3	+/-1.0
Cecil County	77.5	+/-1.6
Charles County	81.0	+/-0.9
Dorchester County	78.3	+/-2.3
Frederick County	81.3	+/-0.7
Garrett County	76.4	+/-1.6
Harford County	80.9	+/-0.7
Howard County	80.4	+/-0.7
Kent County	78.3	+/-3.1
Montgomery County	80.9	+/-0.4
Prince George's County	80.5	+/-0.4
Queen Anne's County	79.5	+/-1.5
St. Mary's County	78.4	+/-1.5
Somerset County	52.5	+/-6.5
Talbot County	79.5	+/-2.1
Washington County	75.8	+/-1.2
Wicomico County	77.5	+/-1.3
Worcester County	77.3	+/-1.7
Baltimore city	70.7	+/-0.5

Source: U.S. Census Bureau, 2005-2009 American Community Survey

# Detailed Tables

[B24080. SEX BY CLASS OF WORKER FOR THE CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER - Universe: CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER](#)

Data Set: [2005-2009 American Community Survey 5-Year Estimates](#)

Survey: American Community Survey

NOTE. Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the [official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties](#).

For information on confidentiality protection, sampling error, nonsampling error, and definitions, see [Survey Methodology](#).

	United States	
	Estimate	Margin of Error
Total:	141,303,145	+/-91,866
Male:	75,040,563	+/-52,447
Private for-profit wage and salary workers:	56,487,561	+/-41,063
Employee of private company workers	52,787,609	+/-44,100
Self-employed in own incorporated business workers	3,699,952	+/-14,996
Private not-for-profit wage and salary workers	3,651,055	+/-20,852
Local government workers	4,350,752	+/-25,445
State government workers	2,605,838	+/-17,441
Federal government workers	2,009,914	+/-12,534
Self-employed in own not incorporated business workers	5,811,297	+/-17,131
Unpaid family workers	124,146	+/-2,508
Female:	66,262,582	+/-50,437
Private for-profit wage and salary workers:	43,867,259	+/-58,464
Employee of private company workers	42,459,259	+/-60,879
Self-employed in own incorporated business workers	1,408,000	+/-9,069
Private not-for-profit wage and salary workers	7,020,443	+/-32,659
Local government workers	6,546,289	+/-34,265
State government workers	3,570,237	+/-20,307
Federal government workers	1,557,081	+/-10,455
Self-employed in own not incorporated business workers	3,544,240	+/-11,249
Unpaid family workers	157,033	+/-2,236

Source: U.S. Census Bureau, 2005-2009 American Community Survey

# Public Use Microdata Samples (PUMS)

- Individual-level data on about 1 percent of the population – subsample of ACS records
- Allows users to create their own estimates
- Selected variables have more detailed groups: language spoken at home
- Geographic restriction- Public Use Microdata Areas (PUMA)

# 5-Year Estimates are Available for All Counties, Places, and Census Tracts

	Percentage with Published ACS Estimates		
	1-Year	3-Year	5-Year
United States	100	100	100
State, DC, Puerto Rico	100	100	100
County or equivalent	25	59	100
Place (incorporated places and census designated places)	2	8	100
Unified School District	7	26	100
Census Tract	0	0	100

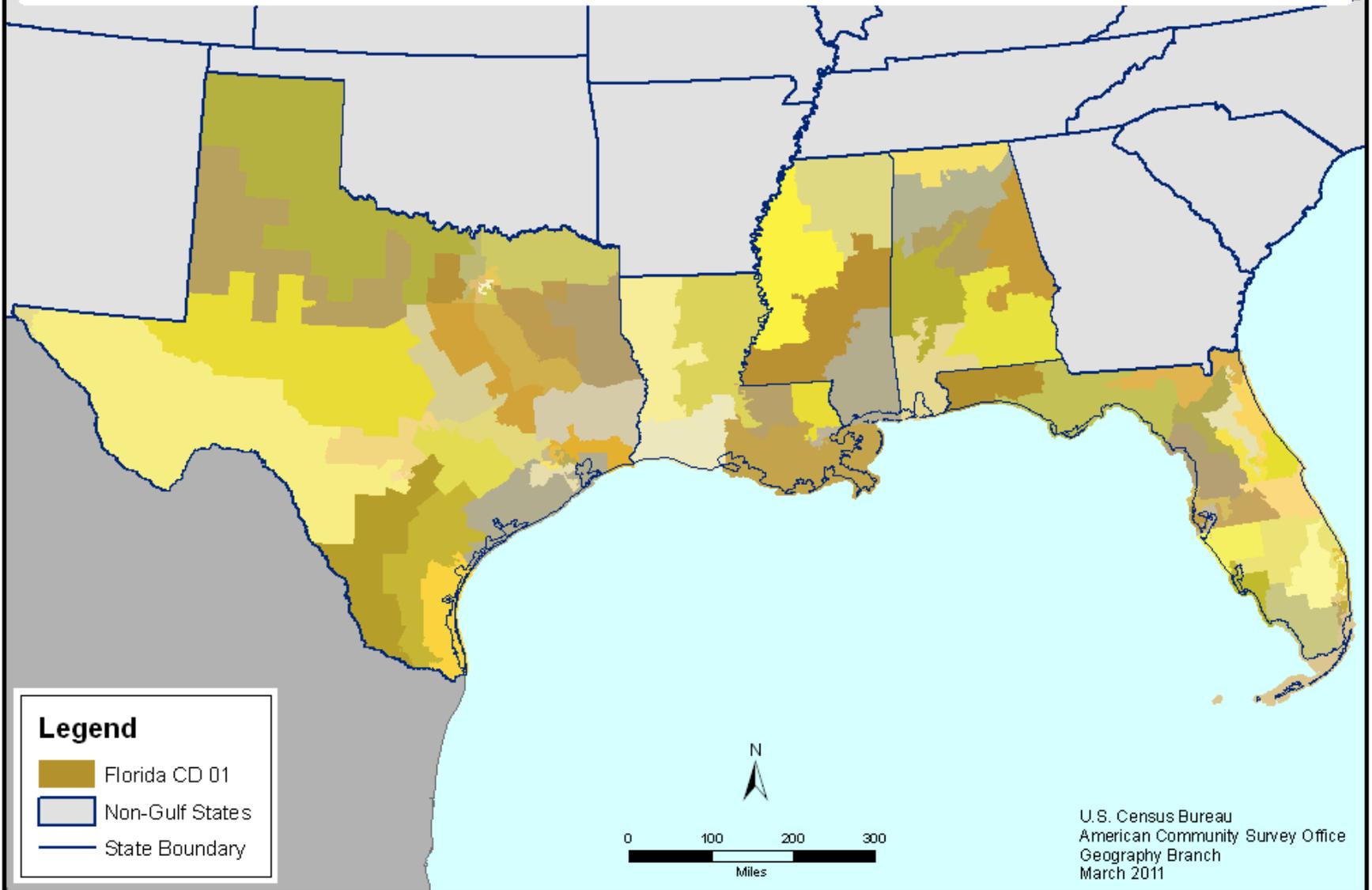
# Outline

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- **Other Data Tips**
- Data Quality and Survey Improvements

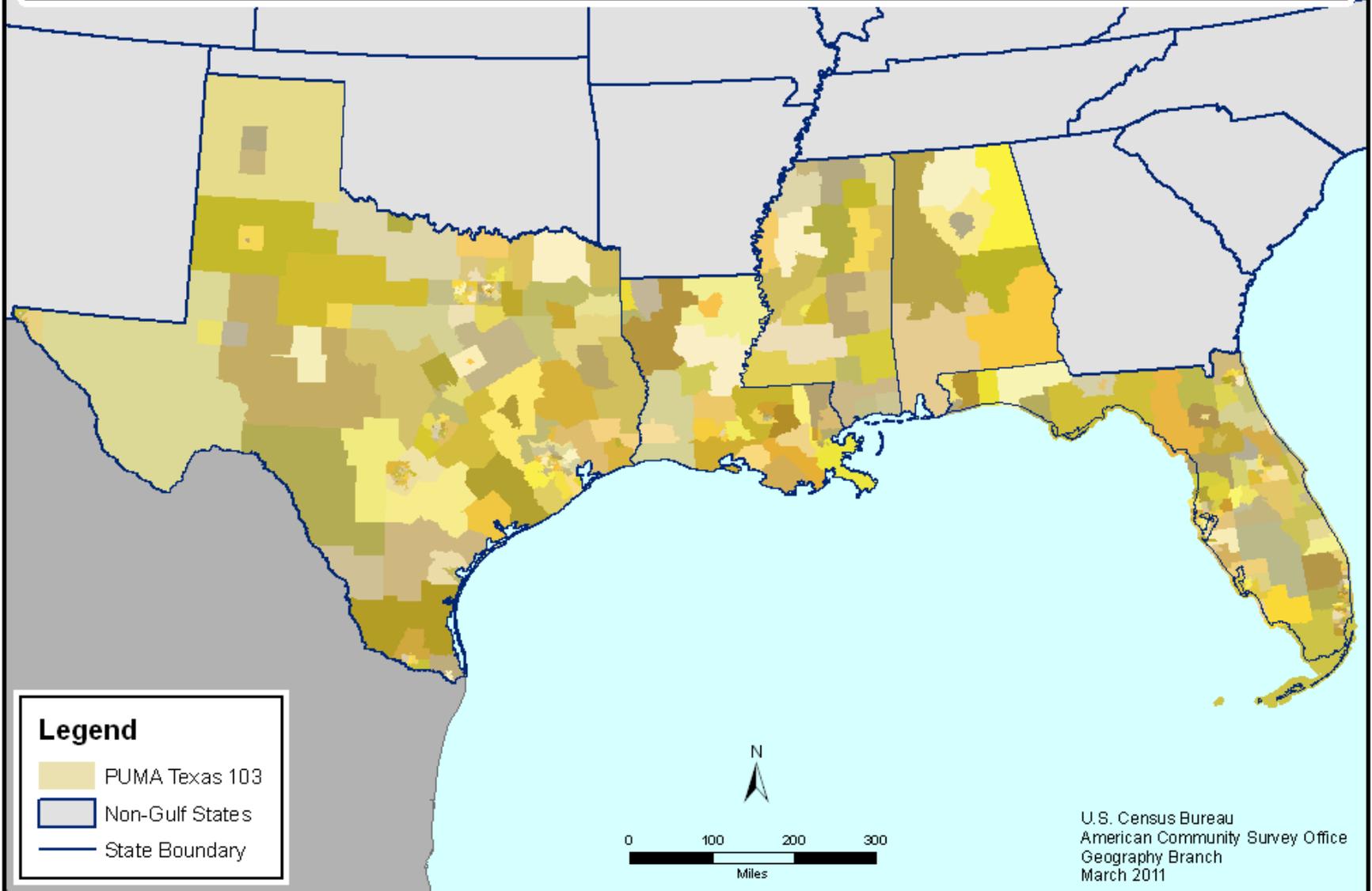
# Additional Measures of Well-Being

- Ratio of Income to Poverty
- Ability to Speak English
- Linguistic Isolation
- Household/Family Type
- Per Capita Income
- Income Inequality
- Public Assistance Receipt
- Number of Workers in the Household/Family
- Hours and Weeks Worked
- Medicare Coverage
- Medicaid Coverage
- Occupants per Room
- Selected Monthly Owner Costs
- SMOC as Percentage of Income
- Ratio of Home Value to Income
- Gross Rent
- Rent as Percentage of Income
- Population in Group Quarters

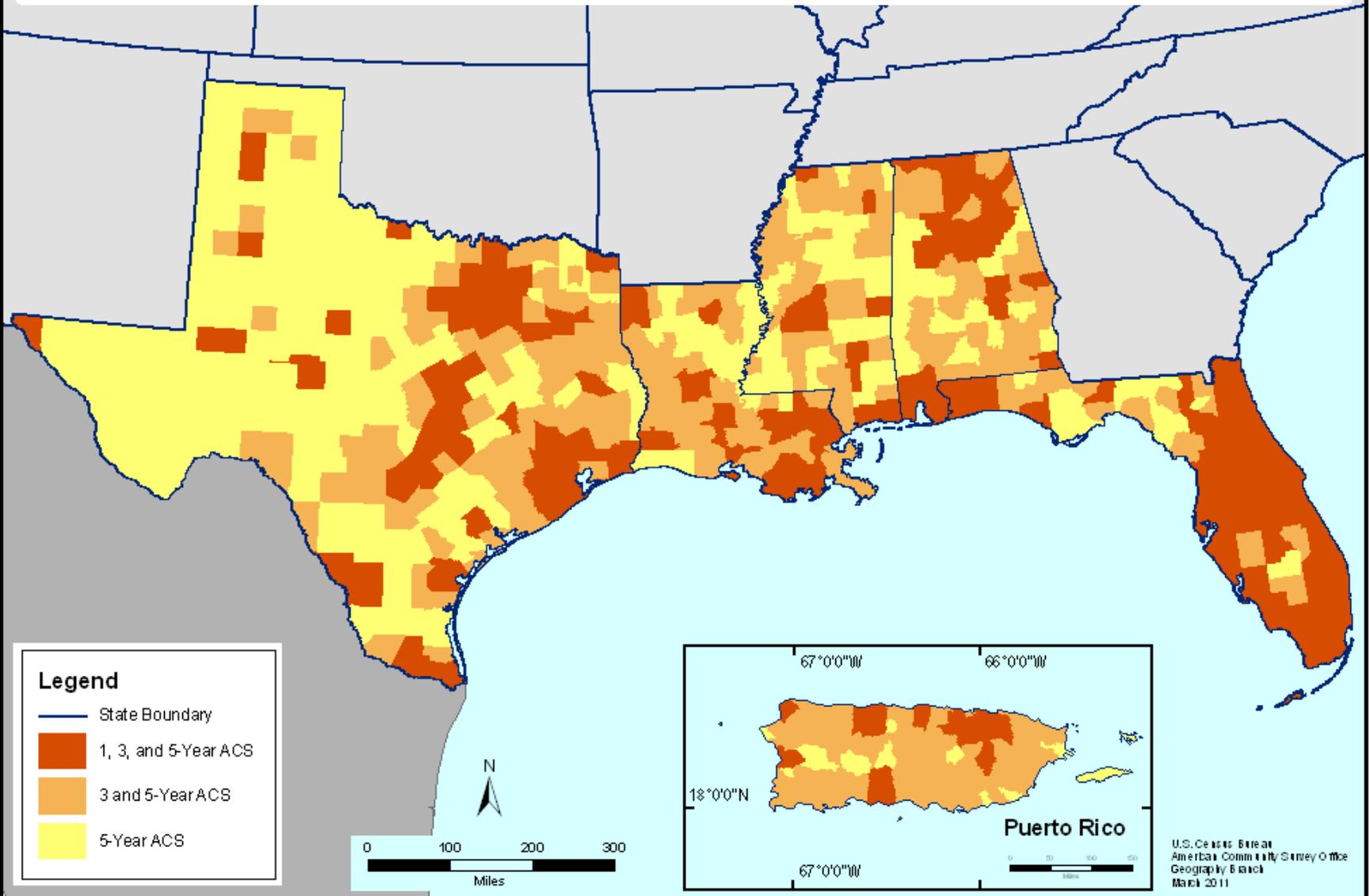
# Gulf State 111th Congressional Districts



## Gulf State Public Use Microdata Areas (PUMAs)



# ACS Estimate Type Availability by County: Gulf States and Puerto Rico



# When the Data You Want are Not Available in the Standard Products

- Custom Tabulations
- Public Use Microdata Sample Files (PUMS Files)
- Access raw data in a Research Data Center

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# ACS Publishes Estimates and Their Margins of Error

- The ACS publishes margins of error with all of its estimates
- Check margins of error to ensure estimates have sufficient reliability for their intended use
- You can improve the reliability of estimates by aggregating geographies or subpopulations

# Data Quality in the ACS

- **Sampling Error:** Uncertainty because the data are gathered from a sample of the population
  - ACS has higher sampling error than the Census 2000 long-form
- **Nonsampling Error:** Error from respondents not answering questions, giving incorrect answers, etc.
  - Indicators show that ACS has lower non-sampling error than Census 2000

# Completed Interviews

Number of persons interviewed		Percent of Population Interviewed	
Census 2000	2005-2009 ACS 5-year	Census 2000	2005-2009 ACS 5-year
43,459,449	22,556,247	15.4	7.5

# Item Allocation Rates

## Percentage of items allocated

	2000 Census	2009 ACS
Educational Attainment	7.2	4.6
Employment Status	11.1	4.2
Wage/salary	20.0	14.0
Tenure (owner/renter)	8.0	0.7
Mortgage	18.6	1.4
Real estate taxes	32.0	14.4

# Survey improvements this year

- January 2011
  - Sample reallocation to increase reliability for small Census tracts
  - 100 percent personal visit follow-up for non-respondents in remote Alaska and some American Indian areas
- June 2011
  - Yearly sample increased to 3.54 million addresses (approximately 295,000 per month)

# New Population Controls

- ACS population controls are updated every year
- New controls come from Census Bureau's Population Estimates Program
- 2000-2009 ACS controls were based on 2000 census (moved forward to July 1<sup>st</sup> of survey year)
- 2010 ACS controls based on 2010 census

# Other improvements this year

- Updated geographic boundaries and definitions for selected statistical geographies – consistent with 2010 Census
- Selected Population Tables and American Indian and Alaska Native Population Tables – scheduled for Spring 2012
- All 2010 ACS data in the New American FactFinder

# For further information

- **American FactFinder**  
Accessible from [www.census.gov](http://www.census.gov) using left menu
- **American Community Survey Website**  
<http://www.census.gov/acs>
- **American Community Survey Data User Support**  
301-763-1405 or [acso.users.support@census.gov](mailto:acso.users.support@census.gov)



# Expected improvements

Tract characteristics, by size of tract

<b>Tract Size Category</b>	<b>Number of tracts</b>	<b>Average Tract Size</b>	<b>Percentage of Population in Category</b>
<b>0 – 400</b>	<b>884</b>	<b>291</b>	<b>0.07%</b>
<b>401 – 1,000</b>	<b>1,074</b>	<b>735</b>	<b>0.26%</b>
<b>1,001 – 2,000</b>	<b>5,452</b>	<b>1,588</b>	<b>3%</b>
<b>2,001 – 4,000</b>	<b>23,756</b>	<b>3,058</b>	<b>24%</b>
<b>4,001 – 6,000</b>	<b>19,615</b>	<b>4,898</b>	<b>32%</b>
<b>6,000 +</b>	<b>14,681</b>	<b>8,391</b>	<b>41%</b>

# Expected improvements

Five Year Coefficients of Variation (CVs) for a sample statistic, by tract size where red > yellow > green

Tract Size Category	CVs before reallocation and sample expansion	CVs after reallocation, before sample expansion (2.9M)	CVs after reallocation and sample expansion (3.54M)
0 – 400	66%	41%	35%
401 – 1,000	41%	30%	25%
1,001 – 2,000	29%	29%	25%
2,001 – 4,000	26%	29%	25%
4,001 – 6,000	19%	29%	25%
6,000 +	15%	28%	25%