The American Community Survey
What Is It & How Does It Compare to the Census 2000 Long Form?

Presentation at Montana Association of Geographic Information Professionals - 2013 Spring Conference in Miles City, MT
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\textbf{MONTANA DEPARTMENT OF COMMERCE}
\textbf{CENSUS & ECONOMIC INFORMATION CENTER (CEIC)}
Presentation Outline

- The American Community Survey (ACS)
  - What is it?
  - What information does it provide?
  - Strengths & Weaknesses of the ACS
    - Margins of Error
  - Comparing ACS data
    - To other ACS estimates and the 2000 Census Long Form
  - Accessing ACS data

- CEIC Population Projections Plug
What is the American Community Survey (ACS)?

2010 Census Form

American Community Survey
Census 2010 and the ACS

- **Census 2010**
  - Decennial census is conducted once every 10 years – point-in-time count
    - Provides an official count of the entire US population to Congress

- **American Community Survey**
  - Conducted every year – rolling sample design
    - Shows how people live – education, housing, jobs, and more
ACS and Census 2000 Long Form

2000 Census Long Form

American Community Survey

This booklet shows the content of the American Community Survey questionnaire.

Please complete this form and return it as soon as possible after receiving it in the mail.

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 on the mailing label.

Start Here

1. Please print today’s date:
   North
   South
   West
   East

2. Please print the name and telephone number of the person who is filling out this form. We may contact you if there is a question.

First Name
Last Name

Age

How many people are living or staying at this address?

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For more information about the American Community Survey, visit our website at:
http://www.census.gov/acs/
What is the American Community Survey?

- The ACS replaced the Census Long Form
- The ACS is an ongoing survey
  - Provides data every year
    - Fully implemented in 2005
  - Gives communities the information they need to plan investments and services
  - Helps determine how more than $400 billion in federal and state funds are distributed each year
What is the American Community Survey?

ACS questions about individual and social characteristics:

- Gender
- Age
- Race/Hispanic Origin
- Education
- Marital Status
- Fertility
- Grandparent /Other Caregivers
- Veterans
- Disability Status
- Place of Birth
- Citizenship
- Year of Entry
- Language Spoken at Home
- Ancestry/Tribal Affiliation
What is the American Community Survey?

• ACS questions about economic issues and housing:
  • Income
  • Benefits
  • Employment Status
  • Occupation
  • Industry
  • Commuting to Work
  • Place of Work
  • Own or Rent Home
  • Housing Characteristics
  • Housing Value
  • Taxes & Insurance
  • Utilities
  • Mortgage/Monthly Rent
## ACS – National Sample Size

<table>
<thead>
<tr>
<th>Year</th>
<th>Initial Addresses Selected</th>
<th>Final Interviews</th>
<th>Initial Sample Selected</th>
<th>Final Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3,272,520</td>
<td>2,128,104</td>
<td>204,553</td>
<td>148,486</td>
</tr>
<tr>
<td>2010</td>
<td>2,899,676</td>
<td>1,917,799</td>
<td>197,045</td>
<td>144,948</td>
</tr>
<tr>
<td>2009</td>
<td>2,897,256</td>
<td>1,917,748</td>
<td>198,808</td>
<td>146,716</td>
</tr>
<tr>
<td>2008</td>
<td>2,894,711</td>
<td>1,931,955</td>
<td>186,862</td>
<td>145,974</td>
</tr>
<tr>
<td>2007</td>
<td>2,886,453</td>
<td>1,937,659</td>
<td>187,012</td>
<td>142,468</td>
</tr>
<tr>
<td>2006</td>
<td>2,885,384</td>
<td>1,968,362</td>
<td>189,641</td>
<td>145,311</td>
</tr>
<tr>
<td>2005</td>
<td>2,922,656</td>
<td>1,924,527</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2004</td>
<td>838,293</td>
<td>568,966</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2003</td>
<td>828,590</td>
<td>572,447</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2002</td>
<td>742,409</td>
<td>512,768</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2001</td>
<td>858,058</td>
<td>601,875</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2000</td>
<td>890,698</td>
<td>587,519</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

# ACS – Montana Sample Size

<table>
<thead>
<tr>
<th>Year</th>
<th>Initial Addresses Selected</th>
<th>Final Interviews</th>
<th>Initial Sample Selected</th>
<th>Final Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>17,746</td>
<td>10,913</td>
<td>1,176</td>
<td>725</td>
</tr>
<tr>
<td>2010</td>
<td>15,036</td>
<td>9,256</td>
<td>1,085</td>
<td>758</td>
</tr>
<tr>
<td>2009</td>
<td>14,208</td>
<td>8,971</td>
<td>1,100</td>
<td>786</td>
</tr>
<tr>
<td>2008</td>
<td>14,294</td>
<td>9,087</td>
<td>979</td>
<td>725</td>
</tr>
<tr>
<td>2007</td>
<td>14,259</td>
<td>9,271</td>
<td>587</td>
<td>402</td>
</tr>
<tr>
<td>2006</td>
<td>14,302</td>
<td>9,482</td>
<td>601</td>
<td>478</td>
</tr>
<tr>
<td>2005</td>
<td>14,248</td>
<td>9,076</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2004</td>
<td>7,567</td>
<td>5,102</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2003</td>
<td>7,563</td>
<td>5,255</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2002</td>
<td>6,904</td>
<td>4,712</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2001</td>
<td>8,920</td>
<td>6,246</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2000</td>
<td>8,732</td>
<td>5,954</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

## ACS Data Release Rules

<table>
<thead>
<tr>
<th>Data collected between...</th>
<th>Data pooled to produce</th>
<th>Data published for areas with</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2011 and December 31, 2011</td>
<td>ACS 1-year estimates Year: 2011</td>
<td>populations of 65,000+</td>
</tr>
<tr>
<td>January 1, 2009 and December 31, 2011</td>
<td>ACS 3-year estimates Years: 2009 – 2011</td>
<td>populations of 20,000+</td>
</tr>
<tr>
<td>January 1, 2007 and December 31, 2011</td>
<td>ACS 5-year estimates Years: 2007 – 2011</td>
<td>populations of almost any size</td>
</tr>
</tbody>
</table>

Source: US Census Bureau, American Community Survey (www.census.gov/acs)
Census Geography Hierarchy
ACS Data
Available Montana 1-Year Estimates (2011)

State of Montana

5 Montana Counties
- Cascade
- Flathead
- Gallatin
- Missoula
- Yellowstone

2 Montana Cities
- Billings
- Missoula
# ACS Data

## Available Montana 3-Year Estimates (2009 – 2011)

### State of Montana

### 9 Montana Counties

- Cascade  
- Flathead  
- Gallatin  
- Missoula  
- Yellowstone  
- Lake  
- Lewis & Clark  
- Ravalli  
- Silver Bow

### 6 Montana Cities

- Billings  
- Missoula  
- Bozeman  
- Great Falls  
- Helena  
- Kalispell
ACS Data

EVERYWHERE*

- ACS 5-year estimates are available for all census geographies – block groups and larger
  * Not available at the block level
## ACS Data Release Schedule

|---------------------------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|

* Five-year estimates will be available for areas as small as census tracts and block groups

Source: US Census Bureau, American Community Survey

- 1-year Estimates Released - September
- 3-year Estimates Released - October
- 5-year Estimates Released - December

Data Currently Available
ACS – Margin of Error

"I do—allowing for a soy. Margin of error..."
ACS – Margin of Error

• Sample Survey
  ◦ A sample of the total population is selected to fill out the survey
    • ACS, Census 2000 Long Form

• Decennial Census Survey
  ◦ Every person in every housing unit in America fills out the survey
  ◦ Actual count of ALL people and housing units
    • Census 2010, Census 2000, Census 1990, etc.
ACS – Margin of Error

- Decennial census (Census 2010) data is based on a survey of everyone in a geographic area
- ACS data is based on a sample of the total population

<table>
<thead>
<tr>
<th>Yellowstone County, MT</th>
<th>Census 2010</th>
<th>American Community Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10,122</td>
<td>10,321</td>
</tr>
<tr>
<td>Total Population</td>
<td></td>
<td>Margin of Error (+/-)</td>
</tr>
<tr>
<td>Under 5 years old</td>
<td></td>
<td>568</td>
</tr>
</tbody>
</table>

Source: US Census Bureau
Data: Census 2010 Summary File 1; ACS 1-year (2010) Estimates
Area: Yellowstone County, MT
What Makes a Good Estimate?

- Relative Margin of Error (RMOE)

$$RMOE = \frac{\text{Margin of Error}}{\text{Estimate}}$$

- Rule of Thumb

- $RMOE < 15\%$ → Good Estimate
- $15\% < RMOE < 35\%$ → OK Estimate
- $35\% < RMOE$ → Bad Estimate
What Makes a Good Estimate?

- Example – Relative Margin of Error
  - ACS 5-year (2007 – 2011) estimates for Custer County

<table>
<thead>
<tr>
<th>Custer County, MT</th>
<th>Estimate</th>
<th>Margin of Error (+/-)</th>
<th>Relative Margin of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Household Income</td>
<td>$41,373</td>
<td>$2,560</td>
<td>6.2%</td>
</tr>
<tr>
<td>Persons Below Poverty</td>
<td>1,605</td>
<td>280</td>
<td>17.4%</td>
</tr>
<tr>
<td>Males 75 years and older in Poverty</td>
<td>81</td>
<td>48</td>
<td>59.3%</td>
</tr>
</tbody>
</table>

Comparing ACS Data

- ACS data is comparable with some data...
  - ACS 1-year estimates with Census 2000 Long Form Data
    - For the most part!!!
  - ACS 1-year estimates from different years
  - ACS estimates from non-overlapping periods
    - ACS 3-year (2006-2008) estimates to ACS 3-year (2009-2011) estimates
Comparing ACS Data to 2000 Census Long Form Data

Cases where differences in question wording (Q), reference periods (RP), tabulation (T), and universes (U) may impact comparisons are noted in parentheses. Specific item-by-item guidance is also available.

- Ancestry
- Citizenship Status (T)
- Nativity
- Year of Entry
- Place of Birth
- Journey to Work (T)
- Grandparents and Grandchildren
- School Enrollment
- Educational Attainment
- Language
- Poverty (RP)
- Income and Earnings (RP)
- Veteran Status
- Period of Military Service
- Employment Status (Q)
- Hours and Weeks Worked
- Industry (T)
- Occupation (T)
- Class of Worker (T)
- Rooms and Bedrooms (Q)
- Cost of Utilities
- House Heating Fuel
- Kitchen Facilities (Q)
- Monthly Rent
- Mortgage Status
- Occupants/Room (Q)
- Owner Costs (T)
- Plumbing Facilities (Q)
- Tenure
- Units in Structure
- Home Value (Q)
- Vehicles Available
- Group Quarters
- Population (U)
Comparing ACS Data

- ACS data is **NOT** comparable to other data...
  - Different time period ACS estimates should not be compared
    - i.e. ACS 3-year estimate with an ACS 1-year estimate
  - Overlapping time period estimates
    - i.e. ACS 5-year (2006-2010) estimates with ACS 5-year (2007-2011) estimates
Comparing ACS Data

When in doubt…

◦ Go check out what you are trying to compare on the US Census Bureau’s website:

http://www.census.gov/acs/www/guidance_for_data_users/comparing_data/

◦ Give us a call or shoot us an email at the Census and Economic Information Center (contact information on last slide)
Getting ACS Data

- US Census Bureau
  - American Fact Finder 2
    http://factfinder2.census.gov/

- Missouri State Data Center
  http://mcdc1.missouri.edu/acsprofiles/acsprfmenu.html
Getting ACS Data

- Census & Economic Information Center’s Website
  - www.ceic.mt.gov
- New County Profiles Coming Soon!!!
MT County Population Projections Plug

- We have recently released population projections by gender by age for Montana and all of the State’s 56 counties

Available Online At:
Questions…

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