

## A new approach to Census data

**M**onumental changes are taking place with how the U.S. Census Bureau collects demographic, social, economic and housing information about the people in the U.S. The method used for well over a century, the decennial census<sup>1</sup> long form, is being replaced by the American Community Survey, or ACS.

This new national survey will replace the sample portion of the upcoming 2010 census, as well as all future censuses, by collecting comparable statistics on a monthly basis. The increased collection frequency means state and local data, including Alaska's, will be released every year instead of every 10 years.

### An overview

The traditional decennial census has consisted of two types of questionnaires: a "short form" and a "long form." All households in 2000 received the short form, which counts the population and gathers basic characteristics, such as age, sex and race. It asked seven questions in the 2000 Census. In 2010, the census short form will continue to go to all U.S. households to count the population.

The census long form finds out what a community looks like. It is more detailed and asks numerous questions about such items as income, education, rent and mortgages, commute times to work and who speaks what languages at home. In the 2000 Census, the long form went

to about 1-in-6 households in the U.S., or an overall average of 17 percent of the households.

The ACS – as it is planned now, given continued Congressional approval and funding in the years to come – will replace the decennial census long form. Its objective is the same as the long form's – to describe the population rather than count it. It will ask the same types of questions, but every month instead of every 10 years. It will be sent to some 250,000 addresses in the U.S. each month, or about 2.5 percent of the nation's population.

### History

Congress charged the Census Bureau in the early 1990s with three directives to reengineer the census: to decrease the number of people missed or counted twice (called the "net undercount"); to hold down or reduce operational costs; and to collect and release socio-economic data more often than every 10 years while maintaining consistent measurements across areas with large and small populations.

The ACS was developed in response to the third directive. It will release data every year instead of every 10 years.

The ACS was tested and reviewed from 1996 to 2004. Census Bureau statisticians studied 31 comparison sites to pinpoint the differences between the ACS and the 2000 Census long

<sup>1</sup> The decennial census is a count of the U.S. population conducted every 10 years by the Census Bureau in years ending in 00.

## Current and Future Tabulations

form. They conducted three supplementary surveys between 2000 and 2002 to study the feasibility of collecting long-form data using a methodology different from what was used for the regular census. They wanted to demonstrate the reliability and stability of state and large-area estimates over time, as well as the usability of multiyear estimates.

The Census Bureau launched the ACS questionnaire on a national level in January 2005.

### The sample

The ACS survey is collected in every U.S. county – census areas and boroughs in Alaska – from 12 independent monthly samples of randomly selected addresses. This equates to about 3 million of the nation’s households being contacted each year, about one-seventh of the long form sample size. Over the course of the decade, one out of 480 households in the U.S. will be sent the ACS survey each month. No address should receive the ACS questionnaire more than once in a five-year period.

The ACS survey will expand in the 2006 collection year to include 2.5 percent of the “group quarters population.” Group quarters include nursing homes, prisons, college dormitories, military barracks, juvenile institutions and emergency and transitional homeless shelters.

Since the ACS was developed to replace the census long form – which provides data for federally mandated programs – data quality is essential. It is also critical that data users understand the similarities and differences between the data collection methods for the ACS and the decennial census long form. Data users will need to become familiar with census products based on moving averages, different reporting periods and different size samples of the ACS.

| Tabulations Available Now                                 |
|---|
| U.S.  |
| States  |
| Counties  |
| County Subdivisions                                       |
| Places (Incorporated Places and Census Designated Places) |
| Metropolitan Statistical Areas                            |
| Congressional Districts                                   |
| Rural Areas   |
| Anticipated Tabulations                                   |
| Tracts  |
| Voting Districts  |
| American Indian Reservations                              |
| School Districts  |
| State Legislative Districts                               |
| Zip Code Areas  |
| Urbanized Areas   |

Source: U.S. Census Bureau, American Community Survey

For all surveys, both sampling and nonsampling errors can affect accuracy. Sampling error occurs when a proportion or sample of the population does not accurately reflect the general population. Nonsampling error includes all other errors including nonresponses, coverage measurements and processing errors.

The sample size of the decennial long form in 2000 was selected to produce reliable estimates for areas with small populations. While overall the sample equaled about 17 percent of U.S. households, there were situations where the sample size was increased to improve the reliability of the results. In Alaska, the Census Bureau agreed to increase the sampling rate to 50 percent for many small places and Alaska Native Village Statistical Areas, or ANVSAs.<sup>2</sup> The increase was also done in part because for rural areas, the census was conducted in person by census takers and not by mail. Since most of the cost of collecting census information in rural areas is travel, the

<sup>2</sup> The Census Bureau defines “places” as cities or Census-Designated Places, which are unincorporated communities. Places are contained within boroughs and census areas. ANVSAs are Census Bureau designations for Native villages.

difference between collecting a 17 percent sample and a 50 percent sample is minimal.

For the ACS, the Census Bureau has indicated it plans to continue a higher level of sampling for Alaska's areas with low populations. This means that places and ANVSAs that had less than 200 people in the 2000 Census – about 173 communities – will be sampled at a 50 percent rate, the same as in the 2000 Census. Another 131 places and ANVSAs with populations between 200 and 799 will be sampled at a 37.5 percent rate (versus a 50 percent rate in the 2000 Census). Those with populations between 800 and 1,200 will be sampled at an 18.5 percent rate (versus a 25 percent in the 2000 Census).

While small places and ANVSAs will be sampled at a higher rate, the smaller overall sample size of the ACS means its estimates will be subject to higher sampling error levels. This will result in less precise data than those based on the census long form at every level of geography.

The somewhat smaller sample requires that a greater emphasis is placed on securing the best initial response to each questionnaire each month.

The ACS surveys are mailed out each month with postage-paid return envelopes.<sup>3</sup> Census Bureau staff send reminder cards to those who fail to respond, then follow up with phone calls and personal interviews if the recipients still do not respond. The interviewing is done by well-trained and experienced census professionals – in contrast to the temporary work force typically hired for the decennial census. This approach yields better data quality, thereby reducing nonsampling error due to their ability to obtain more complete responses during the follow-up stages.

Responding to the ACS, as with the decennial census, is mandatory. Title 13 of the U.S. Code requires participation but also protects individual responses. Census Bureau employees are sworn to protect the

confidentiality of the information they collect; violators face fines and prison sentences.

## **Comparing the ACS to the decennial census**

As stated earlier, the ACS does not produce independent population counts, it provides the characteristics of the population. Each year, the Census Bureau will adjust the ACS to its yearly population estimates developed through its Federal State Cooperative Program for Population Estimates. In other words, each annual release of ACS data will describe the population that the federal-state cooperative program has estimated for that year. Accordingly, the Census Bureau will adjust the ACS to the census count during decennial census years.

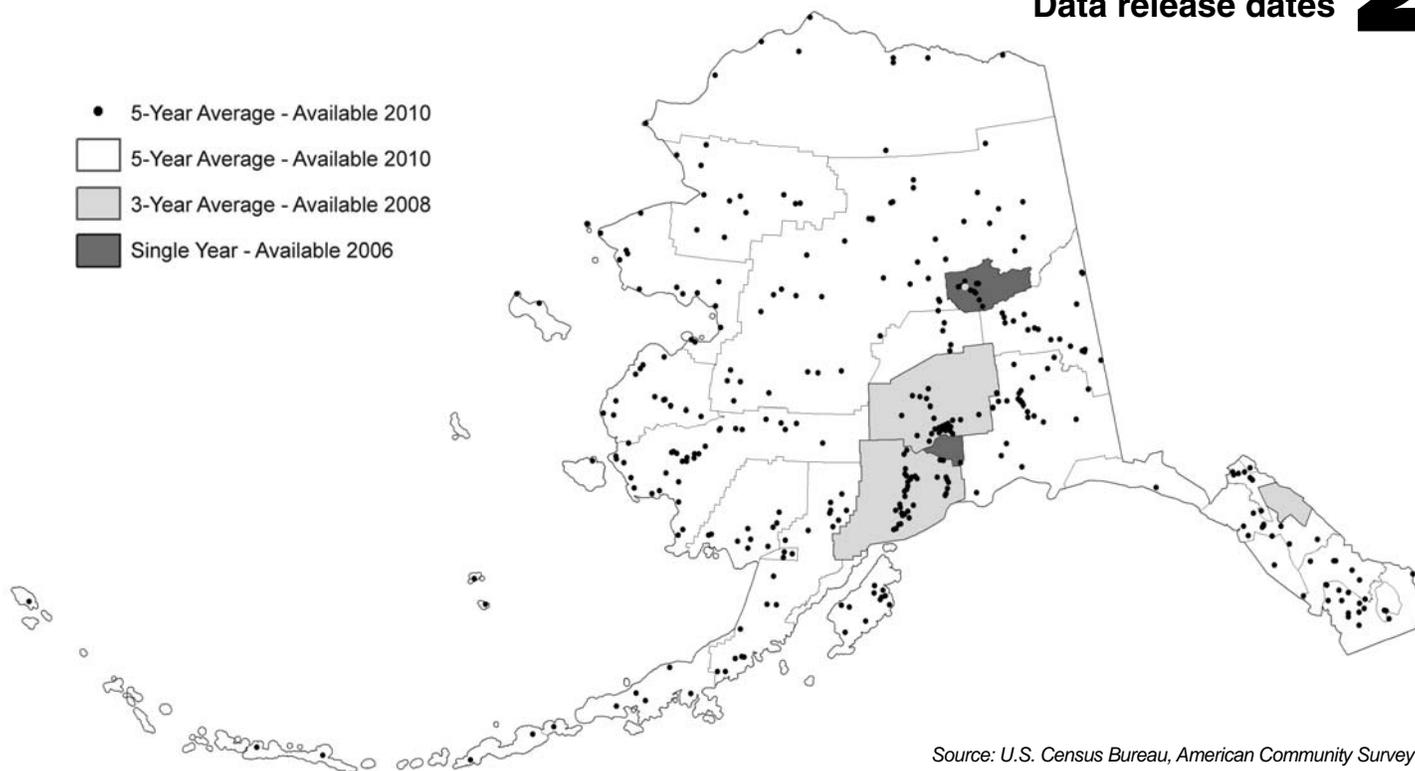
As an example, the 2010 Census short form will provide complete counts of race and Hispanic-origin groups. The ACS, on the other hand, will provide updated information about patterns of change in the size and geographic location of race, ethnic and ancestry groups during the decade.

Another important point for data users to be aware of is that the ACS will not produce information exactly comparable to that from traditional decennial censuses even though the ACS and the long form use similar questions, similar data collection methods and similar reports.

Some ACS variables will be collected differently or may be defined differently. For instance, the ACS defines residency as a person's "current residence" in contrast to the census long form's "usual residence" rule. "Current residence" is defined as the location of a person's household if he or she has been living there for at least two months before he or she received the survey. "Usual residence" is where a person lived and slept most of the time during the preceding year.

The difference in residency definitions affect who is included in the population being

<sup>3</sup> For Alaska's rural communities, Census Bureau staff will conduct the surveys in person.



Source: U.S. Census Bureau, American Community Survey

described. For instance, a large number of people in some areas may spend several months a year away from their primary residences, such as when retired people in the Midwest spend their winters in Arizona. In that case, they would be considered Arizona residents for some winter ACS surveys, but they would have been considered Minnesota residents for the population estimate or decennial census count.

This difference in the residency definitions means that the ACS and the decennial long form would not necessarily report the same vacancy rate or homeownership rate for the same area. Other variables, such as median income, may also be affected.

Another difference between the ACS and decennial census relates to the time period the questionnaires reference. ACS recipients are asked to answer the survey questions based on the day they fill out the survey or the 12 months prior to that day. Since each month a

new survey is collecting information, the “12 month prior” period will be shifting forward by one month for each survey cycle. The census long form, in contrast, asks recipients to answer questions as of April 1 of the census year, or the preceding calendar year.

### ACS data

There will be different types of data available depending on the population size of the reporting area. The continuous nature of the ACS means it is designed to measure the characteristics of the detailed social, economic and housing data as an annual or multiyear average instead of at a fixed point in time.

The most recent ACS data available now is for 2004 when the ACS survey was still limited to areas with populations of 250,000 or more.<sup>4</sup> That includes roughly 800 U.S. geographical areas, including 244 counties, 203 congressional districts, most large cities, all 50 states and the

<sup>4</sup> Data are limited to the household population and exclude the population living in institutions, college dormitories and other group quarters.

District of Columbia. For Alaska, the Anchorage Municipality is the only area that falls into this category, other than the state as a whole. Many data tabulations, or groupings, are available now; others are anticipated. (See Exhibit 1.)

Beginning in the summer of 2006, the Census Bureau will release ACS data each year for any defined area with a population of 65,000 or more.<sup>5</sup> The 2006 release will be based on the 2005 ACS. In Alaska, the data will be available for the state as a whole, the Municipality of Anchorage and the Fairbanks North Star Borough. (See Exhibit 2.)

In areas with populations of less than 65,000, however, it will take three or five years to accumulate a large enough sample to produce data similar to that of the decennial census. Once the data are collected, the Census Bureau will release annual tables based on rolling three-year averages<sup>6</sup> for areas with populations between 20,000 and 65,000, and rolling five-year averages for areas with populations less than 20,000.

The first ACS data for areas with populations between 20,000 and 65,000 will be released in 2008; the data will cover the 2005-2007 collection period. In Alaska, the data will cover the Matanuska-Susitna and Kenai Peninsula Boroughs, City of Fairbanks, and the City and Borough of Juneau.

The first ACS data for areas with populations below 20,000 will be released in 2010 and the data will cover the 2005-2009 collection period. For Alaska, the data will cover all remaining cities, boroughs, census areas, CDPs and ANVSAs.

Eventually, after 2010, it will be possible to measure changes over time for areas with low populations. Comparing ACS trends to past established, historical decennial census data, however, will be difficult because the

census data provide a snapshot as of April 1 of the decennial year and the ACS data provide more of a “moving picture.”

Detailed summary tabulations form the basis for ACS data products. There are four broad types of data available: general demographic, plus various social, economic and housing characteristics. (See Exhibit 3.) These tabulations will be available for single-year releases later this year, and will eventually be available for multiyear statistics in 2008 and 2010.

The tabulations will be available for multiple racial categories, plus whether the category falls under the overall grouping of (a) Hispanic or Latino origin or (b) not Hispanic or Latino origin. The racial categories include white alone, black or African American alone, American Indian and Alaska Native alone, Asian alone, Native Hawaiian and other Pacific Islander alone, “some other race”<sup>7</sup> alone, two or more races alone, and race alone or in combination with one or more other races.

### **What the ACS will mean for Alaska’s areas with small populations**

Much of the literature currently promoting the ACS uses terms such as community, place and small area to convey a message that the tabulations will serve the same range of geography as past decennial censuses. While the five-year rolling average was developed to address the need to collect and tabulate data for areas with small populations (under 20,000), the majority of tabulation areas and places in Alaska fall far below the 20,000 population range.

Of Alaska’s 27 census areas and boroughs,<sup>8</sup> 22, or 81 percent, have populations less than 20,000; 18, or 67 percent, have populations less than 10,000; and eight, or 30 percent, have populations less than 5,000. Of the state’s 148 cities, 98 percent have populations less than

<sup>5</sup> Based on the area’s population totals from the 2000 Census

<sup>6</sup> For a rolling three-year average, the oldest year of the three years will be dropped and the newest collection year will be added. For a rolling five-year average, the oldest year of the five years will be dropped and the newest collection year will be added.

<sup>7</sup> “Some other race” refers to self-identification with a race other than the five main “race alone” categories.

<sup>8</sup> The 27 includes the City and Borough of Juneau, City and Borough of Sitka, City and Borough of Yakutat and the Municipality of Anchorage.

20,000. Of those, 123 have less than 1,000 people and 38 have less than 200 people. As far as Alaska's unincorporated places, 97 percent have fewer than 1,000 people.

Outside of some very limited test data collected in other states during the ACS development phase, no three- or five-year collections of data have taken place in Alaska to evaluate the potential robustness of the state's small-area data. The question of whether the characteristic data for populations this small will meet the accuracy standards necessary for release has yet to be answered. And since the first set of five-year averages will not be available until 2010, it is not clear if the full range of place and other small-area data Alaska has historically relied on for social and economic characteristics from past censuses will continue to be available through the ACS.

While there is no question that geographic areas with populations greater than 65,000 will benefit from the release of characteristic data on an annual basis, we will need to wait four years to make the same statement about Alaska's areas with limited populations.

## American Community Survey **3** Population and housing profiles

| General Demographic Characteristics   |
|---|
| Sex and age<br>Race<br>Hispanic origin and race<br>Relationship<br>Households by type   |
| Selected Social Characteristics   |
| School enrollment<br>Educational attainment<br>Marital status<br>Fertility<br>Grandparents<br>Veteran status<br>Disability status of the civilian noninstitutionalized population<br>Residence one year ago<br>Place of birth<br>U.S. citizenship status<br>Year of U.S. entry<br>World region of birth of foreign born<br>Language spoken at home<br>Ancestry (total reported)                               |
| Selected Economic Characteristics   |
| Employment status<br>Commuting to work<br>Occupation<br>Industry<br>Class of worker<br>Income and benefits (in 2004 inflation-adjusted dollars)<br>Percentage of families and people whose income in the past 12 months is below the poverty level  |
| Selected Housing Characteristics  |
| Housing occupancy<br>Units in structure<br>Year structure built<br>Rooms<br>Bedrooms<br>Housing tenure<br>Year householder moved into unit<br>Vehicles available<br>House heating fuel<br>Occupants per room<br>Value<br>Mortgage status and selected monthly owner costs<br>Selected monthly owner costs as a percentage of household income<br>Gross rent<br>Gross rent as a percentage of household income |

Source: U.S. Census Bureau, American Community Survey