Hello, I am Armando Mendoza and I am one of several data dissemination specialists at the Census Bureau. We provide training in the use of Census data and are happy to help you access the data you need.
Today's workshop will begin with an overview of the data that the Census Bureau collects, emphasizing the importance of the data and the wide variety of surveys that we conduct. We do more than count the U.S. population every ten years. Every month we are collecting data.
The Decennial Census is a constitutional mandate and we’ve been conducting decennial censuses since 1790. The primary purpose is for congressional reapportionment. That is the number of representatives in congress is determined based on how the population has shifted over time. Also, district boundaries are drawn using these counts (congressional districts, legislative districts, and school districts). Distribution of federal funds also is guided by the data collected through our surveys. So, there are a lot of political and economic implications.
This graph shows the percentage change for California over the last 100 years. There was significant growth in the 1910’s, 1930’s, 1950’s and 1960’s, and then the population begins to draw back a little bit. California grew only 10% between 2000 and 2010.
The apportionment for the state for the last 100 years is shown on this graph. The increase in political power started in 1930 with 9 additional seats, 7 seats in 1950, 8 seats in 1960, and so on, until 2010 when something significant happened. For the first time since 1920, California did not receive any additional congressional seats. There were some concerns that perhaps California was going to lose its seats. So it’s going to be interesting to see what happens in 2020. Based on the current population estimates, it looks like the state is still lagging a little bit and we are only a couple of years away from the next census.
Comparing other states from 2000 to 2010, Texas and Florida each got two additional seats, while other states went down or remained the same.
This map summarizes the current apportionment.
Now that you know the impact of the Census, let’s review some of the other surveys the Bureau does.
This slide lists a sampling of some of our surveys. Some surveys are based on small samples. For example, the Current Population Survey is a sample of about 50,000 across the nation, relatively small compared to the American Community Survey (ACS), which I will describe more a little later. When the samples are small, the data are available at the state level. That is the smallest level of geography.
Based on the data collected through these surveys conducted, the U.S. Census Bureau produces estimates and projections.
The estimates are produced the present and the past and incorporate administrative records as well as survey data. These official measures of the population are compiled by using the latest census count as the base updating them based on births, deaths, and migration.

Projections are estimates for the future. By making an assumption about future trends, we use the latest published census and estimates as a base.
You can use American FactFinder to find other survey information such as Population Estimates. These are the official population estimates for intervening years between censuses. They are available for the nation, states, counties, Census Designated Places (e.g., cities, towns), and Puerto Rico.

Components of change is based on the population estimates and tells you why the population changed based on births, deaths, and migration for the nation and states.

These data are produced annually and as I already mentioned they are based on births, death, and migration.
I looked up the data for southern California and the aggregate total population of Riverside, Orange, San Diego and Los Angeles counties is about 19 million. The fastest growing county of the four is Riverside.
This slide shows the change from the 2010 Census to 2016. Riverside County has grown 9%, Orange County 5.4%, San Diego 7.2%, and LA a little slower at 3.3%.
Nationwide, there were about 309 million people on April 1, 2010. As of July 2016, the total had grown to 325 million.
For California, there were 37 million in 2010 and we are up to 39 million based on the 2016 annual population estimates.
Focusing on San Diego County, there were a little bit over 3 million in 2010 and in 2016 about 3.3 million.
And for the City of San Diego, here is the trend.
This slide shows the percent change for the city, county of San Diego, California and the US population. Since 2010, the population of California grew 5.4%, slower growth than the city and county. It will be interesting to see what happens in 2020 when the official count is conducted.
Moving on to projections for the future, the population is projected to grow much more slowly over the next several decades, compared with the last set of projections released in 2008 and 2009. That is because the projected levels of births and net international migration are lower in the projections released today, reflecting more recent trends in fertility and international migration.

The population is projected to go up about 100 million between 2015 and 2060.
These projections are available for subpopulations. For example, the population age 65 and older is expected to more than double between 2012 and 2060, from 43.1 million to 92.0 million. The older population would represent just over one in five U.S. residents by the end of the period, up from one in seven today. The increase in the number of the “oldest old” would be even more dramatic — those 85 and older are projected to more than triple from 5.9 million to 18.2 million, reaching 4.3 percent of the total population.
Now, let’s talk about more about the American Community Survey or ACS
Here is the relationship between the Decennial Census and the American Community Survey. Between 1940 and 2000, we had 2 forms during the census. The short form that asked basic demographic information and a long form that asked about detailed socioeconomic characteristics of the household. While the short form was sent to every household in the nation, the long form was completed by a sample of the population. In 2000, 1 in 6 houses received the long form. That long form was replaced in 2005 by the American Community Survey so in 2010 we only did the short form. Meaning what? Meaning that you won’t be able to find social demographic characteristics of the population from the Decennial Census but you will find it now from the American Community Survey.
Differences Between Decennial Census and ACS

This slide summarizes the differences between the two programs. The census happens every 10 years by Constitutional mandate during years that end in zero. It includes 100% of the population and is considered the official count. The Decennial Census is more like a static picture of what the country looked like on April 1st of that decade. The American Community Survey, just like the long form between 1940 and 2000, is a sample of the population. It is the largest survey conducted by the Census Bureau with 3.5 million a year in the sample. Every month, approximately 291,000 questionnaires are sent randomly to households across the country. It is not a point in time like the census. It is more like a moving picture, allowing for trends and comparisons to be examined.
The type of estimate depends on the size of the population. Initially, the estimates were compiled for three periods. The 3-year estimates were discontinued in 2013, due to budget constraints. Since the data are based on a nationwide sample, it takes longer to collect a large enough sample size for reliable analysis. For geographic areas with 65,000 population or more, 1-year estimates are available (e.g., large cities and counties). For smaller geographic areas, the 5-year estimates are produced.
The American Community Survey’s demographic characteristics include: age, race, sex and Hispanic origin. The racial breakdown for a neighborhood or place is available through the American Community Survey, however for counties, states and the nation the Population Estimates are the official source for those numbers.

That is, use the Population Estimates for official population information on age sex race and Hispanic origin for counties and above. For all other geographies use the ACS.
American Community Survey
Social Characteristics

- Education
- Marital Status
- Fertility
- Grandparent/Caretakers
- Veterans
- Disability Status

- Place of Birth
- Citizenship
- Year of Entry
- Language Spoken at Home
- Ancestry/Tribal Affiliation

Social characteristics on the ACS include topics such as educational attainment, marital status, fertility, grandparent caregivers, veterans, disability status, place of birth, citizenship status, year of entry, language spoken at home, ancestry and tribal affiliation.

For example, we can determine from the ACS the percentage of people that have a high school diploma, those who dropped out of high school. We can look at veteran status, disability status, place of birth, language that is spoken at home.
Economic characteristics include topics such as income, benefits, employment status, occupation, industry, commuting to work, and place of work. Data on the economic characteristics of the population are collected to assess the well-being of individuals and households.

The data provide insight into equality, pay, achievement gaps and allows us to drill down between neighborhoods.

We can look at income and the sources of income, employment status, occupation, the average commute to work. Transportation planning organizations like SANDAG use this information to make decisions about road improvements, freeway expansion, and so forth.
Housing characteristics include topics such as tenure, occupancy and structure, housing value, taxes and insurance, utilities, and mortgage or monthly rent. This housing data gives us a measure of the housing stock of the country.

Tenure is the percentage of people that own their home.
Margin of Error (MOE)

- Margin of Error Definition: A measure of the precision of an estimate at a given level of confidence (90%, 95%, 99%) -- MOEs at the 90% confidence level for all published ACS estimates
- Confidence Interval Definition: A range that is expected to contain the population value of the characteristic with a known probability

The ACS estimates have a measure of uncertainty because the data were gathered from a sample of the population rather than the full population. This is called sampling error. So, why do sample estimates have uncertainty associated with them? There are two reasons:
- Estimates of characteristics from the sample data can differ from those that would be obtained if the entire population were surveyed.
- Estimates from one subset or sample of the population can differ from those based on a different sample from that same population.

A key measure of sampling error is the margin of error or MOE. It is defined as a measure of the precision of an estimate at a given level of confidence. The most commonly used confidence levels are 90%, 95% and 99%.

What does the confidence level mean?
- The range of values expected to include (at some desired probability called a confidence level) the true value of a parameter, or in our case, the true population.
- Another definition is a range that is expected to contain the population value of the characteristic with a known probability.

All ACS estimates are published with their margins of error at the 90 percent confidence level. That means that when we produce a statistic we are 90% confident that the true value is between the upper and lower bounds. So if the statistic is 100 and the margin of error is 10, that means that it could also be 110 or it could be 90.

It is possible to construct margins of error with higher levels of confidence, such as 95 percent or 99 percent, by adjusting the published margin of error. Instructions for these adjustments can be found in the technical appendices of the ACS Compass Products Handbooks available on the American Community Survey web site.

It is important to note that the long form data from Census 2000 are also sample data. Therefore estimates produced from the long form also had sampling error associated with them, but the Census Bureau did not publish these data within the data products.
This slide summarizes the release schedule for ACS data. It was implemented in 2005 so we released the data for the first year estimates in 2006. Typically, the 1-year file is released in September. The 5-year estimates are released in December. You can compare 1-year estimates over time (i.e., across years). For the 5-year estimates, it is important to make sure that comparisons do not include overlapping years. So you can compare the 2005-2009 file with the 2010-2014 or 2011-2015 files. You don’t want to compare anything in between because there is going to be overlapping periods.
Now, let’s go online to look at how we can track trends using ACS data. Before we get started, I want to mention that there are websites unrelated to the Census Bureau that provide Census and ACS data, some of which charge for data and reports. However, the American Factfinder tool is free. There can be challenges is navigating it, but that is why I am here. Myself and other data dissemination specialists are available to provide support through workshops like this one, doing a webinar, or one-on-one by phone. The data dissemination branch of the Census Bureau was established after the 2010 Census to teach people about the data and how to use it. This work has multiple benefits. Not only are the data used, but awareness about the survey also is raised, which will hopefully increase response rates and reduce the need for costly in-person follow-up to reach 100 percent participation.
If you haven’t visited the Census website, here it is. It is very easy to access data through QuickFacts in the middle of the page. Simply specify the state (e.g., California) and you get a table full of information that you can scroll through.
To add geographic areas to the Quick Facts, use the search menu in the top left. You can add up to 6 geographies here. Add San Diego...
The results are side by side. To see more details, click on the magnifying glass.
First, you get this landing page, where you can choose the information of interest: social characteristics, economic, etc. The example on the right is social characteristics. The margin of error is displayed next to each measure. You can print or download this table as an Excel or PDF.
At any point, to get back to the Census main page, simply click on the Census logo.
I mentioned the population estimates earlier and here is the population clock. By clicking on “Learn More,” you get the details. For example, one birth every eight seconds, etc. and a comparison to the other most populous countries in the world.
If your scroll down, there are charts showing growth by region and population by age and sex. The tabs provide options for accessing data of different states, counties, and cities. Just click on the tab to see the list and then click on the state or county or city to see the Quick Facts shown here on the right.
In the Newsroom, there is section called Facts for Features that includes reports produced by the Census Bureau using the data we collect. You can subscribe through the link near the top of the page so you’ll be notified when new things are posted.
Now, let’s check out American Factfinder. From the main page, select Data, then Data Tools & apps, and American Factfinder.
There are many ways to access the data. In the Community Analysis Workshop, I went over Community Facts and how to do a Guided Search. Let’s do an Advanced Search now. Who has a question that we can answer?

How do you get data for all the census tracts in San Diego?
Click on Geographies and then specify Census Tract under geographic type, then select California for the state and San Diego for the county. The top option allows you to select all the census tracts.

I want only the ones in the City of San Diego.

In order to specify the census tracts within a smaller area than county, you’ll need to know the numbers and select them separately. To find out the tract numbers, we recommend a tool at the Missouri Census data center called MABLE/Geocorr. Here is the link: http://mc当地c.missouri.edu/websas/geocorr_index.shtml

It allows you to select certain geographies (e.g., the City of San Diego) and targeted geographies (e.g., census tracts) to generate a list in which targeted geographies correspond with the source geographies. Then you take the list of census tracts and select the ones that you need on the American FactFinder. The maximum number of geographic areas is 250 at a time, so it might require separate queries/searches.
After creating a custom list of specific census tracts, you’ll probably want to save the search so you do not have to recreate the list again in the future.

To do this, use the "Save Search" button which will save the search selections to a file on your local drive. This option does not save the data, but only the search selections for your currently viewed search results.

To retrieve a saved search or query, use the "Load Search" button in "Your Selections."
One table that compares data over time is the Comparison Profile, which is available for Census Designated Places (i.e., cities and towns), counties, states, and the nation. It includes a notation when the differences over time are statistically significant. To access it, simply type Comparison under “topic or table name” and choose “Comparison Profile”. The results are shown here on the right. Click on the second one down, the 1-year estimates.
As you can see non-family households with householders living alone that are 65 years and over increased from 2015 to 2016 and this change is statistically significant.
That is all that I wanted to share with you today. For additional training, go to census.gov and click on Data and then Choose Training & Workshops. This page is where we post upcoming training opportunities and if you scroll down you can access previously recorded webinars, training resources, and how to videos.
Contact Information:
Armando Mendoza
Data Dissemination Branch
Customer Liaison and Marketing Services Office
Email: armando.mendoza@census.gov
Telephone: 818.554.3606

My contact information is on this slide. Please contact me if you have any questions. I can walk you through accessing data via individual webinar. If you want a workshop on something in particular, let me know. With a few weeks advanced notice, I can put together a customized training for you.