
United States™ Census 2010

*A Description of the 2010 Census Operations
and Data Products of the Island Areas, and
How They Compare to the 50 States and
the District of Columbia*



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IT'S IN OUR HANDS

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IT'S IN OUR HANDS

On December 21, 2010, the U.S. Census Bureau announced that the 2010 Census showed the resident population of the United States on April 1, 2010, was 308,745,538. Just prior to this announcement, Commerce Secretary Locke delivered the apportionment counts to President Obama, 10 days before the statutory deadline of December 31.

The apportionment totals were calculated by a congressionally defined formula, in accordance with Title 2 of the U.S. Code, to divide among the states the 435 seats in the U.S. House of Representatives. The apportionment population consists of the resident population of the 50 states, plus the overseas military and federal civilian employees and the dependents living with them who could be allocated to a state. The populations of the District of Columbia, Puerto Rico and the U.S. Territories are excluded from the apportionment population, as they do not have voting seats in Congress.

The 2010 apportionment totals and the resident population are a few of the many statistics that over the next few years the Census Bureau will report from its 2010 Census results. This information will not only provide population and housing characteristics of the United States including the District of Columbia, but also detailed characteristics of several U.S. Territories. The territories that were included in the 2010 Census are Puerto Rico, American Samoa, the Commonwealth of the Northern Mariana Islands, Guam and the U.S. Virgin Islands. The last four territories are collectively referred to as the Island Areas.

Title 13 authorizes the decennial census for Puerto Rico, and for the Island Areas, except for American Samoa. The decennial census for American Samoa is conducted by an agreement with the Department of State. The decennial censuses of Puerto Rico and the Island Areas are not authorized by the U.S. Constitution. The resulting population counts do not figure into the Congressional apportionment, but rather decide the level of Congressional funding for these territories.

The 2010 United States Census of Population and Housing (2010 Census), including the District of Columbia and Puerto Rico, is the most extraordinary and expansive government endeavors during peacetime. It involves the employment of hundreds of thousands of workers in every corner of the nation, as well as the participation of millions in filling out the questionnaires that the Federal Government uses for apportionment, redistricting and statistical purposes.

This paper describes how the censuses were conducted in the states, Puerto Rico and the Island Areas, and provides the release schedules of the 2010 Census products.

The 2010 Census of the United States and the District of Columbia; and the 2010 Census of Puerto Rico

The census population totals determine which States gain or lose representation in Congress. It also determines the amount of state and federal funding communities receive over the course of the decade. The 2010 Census data will directly affect how more than \$3 trillion is allocated to local, state and tribal governments over the next 10 years. For fair representation and funding allocation, the goal of the decennial census is to count everybody, count them only once, and count them in the right place.

The census activities described below pertain only to the 2010 Census of the United States and the District of Columbia, and to the 2010 Census of Puerto Rico. For the 2010 Census, the populations of the states and the two territories were canvassed using the census form comprised of 10 questions. Collectively, the data collection, data processing and data products are referred to as stateside census operations.

Identifying Where Everyone Lives

The Census Bureau first determines where everyone lives across the country and in Puerto Rico in order to deliver census questionnaires to their homes. To do this, the Census Bureau conducts field operations to collect and update living quarter addresses and group quarters addresses. There is also the opportunity for tribal, state, and local governments to review and comment on the Census Bureau's address list to ensure an accurate and complete counting of their communities.

Once the Census Bureau has recorded everywhere someone could be living, the Census Bureau works closely with the U.S. Postal Service to create a master address file for the mail delivery of Census forms. Census 2000 created the original master address file and the Census Bureau continually updates this file throughout the decade with ongoing surveys, fieldwork, and updates from the U.S. Postal Service.

Collecting the Census Data

Second, the Census Bureau must collect demographic information for everybody living within the nation's borders and Puerto Rico. The primary method of collection is to mail questionnaires to the addresses identified through the procedures above. Not everyone is literate in English, so questionnaires are developed in many languages to assist reporting. Telephone centers and in-person assistance centers are created to help respondents complete and return the questionnaires and to answer any questions that arise.

However, not everyone lives at a location with reliable mail delivery or at a location with a street address. Also, because geographic boundaries change, housing unit addresses change, new homes are built, and old ones removed not everyone receives a questionnaire in the mail. The Census Bureau must go to those people who do not get a form in the mail to ensure they are counted. The Census Bureau has developed methods to ensure that each individual is counted and their demographic information is obtained.

For individuals who reside in group homes or other places not covered by the normal mailing, such as nursing homes, military barracks, college dormitories, and prisons, the Census Bureau uses alternative collection methods. Americans with the Armed Services and federal workers temporarily living overseas are also counted by alternative methods.

Regrettably, not every household that receives a form returns it. Therefore, the census conducts a large follow-up operation to determine why this occurs and to count everyone at an address, or other location, that has not been included on a returned form. This process must ensure that duplicate responses are not included and every person is counted only once, where they reside.

Preparing Everyone for His/Her Participation in the Census

The Census Bureau promotes its field operations – starting with the address canvassing and ending with nonresponse follow-up – through a Census Integrated Communications Campaign. This campaign helps prepare the United States and Puerto Rican populations for their participation in the census. For 2010, its goals were to increase mail response, to improve accuracy and reduce the differential undercount, and to improve cooperation with enumerators.

The 2010 Census Integrated Communication Campaign was divided into the following three phases:

- **Awareness Phase:** January and February 2010. To build awareness and familiarity with the 2010 Census and will reach 95% of the population at least 10 times.
- **Motivation Phase:** March and April 2010. To motivate individuals to complete the Census Form and mail it back, and will reach 95% of the population at least 20 times.
- **Support Phase:** May and June 2010. To support the Nonresponse Follow-up efforts to inform people about the possible visit of a census enumerator and will reach 75% of the population at least 5 times.

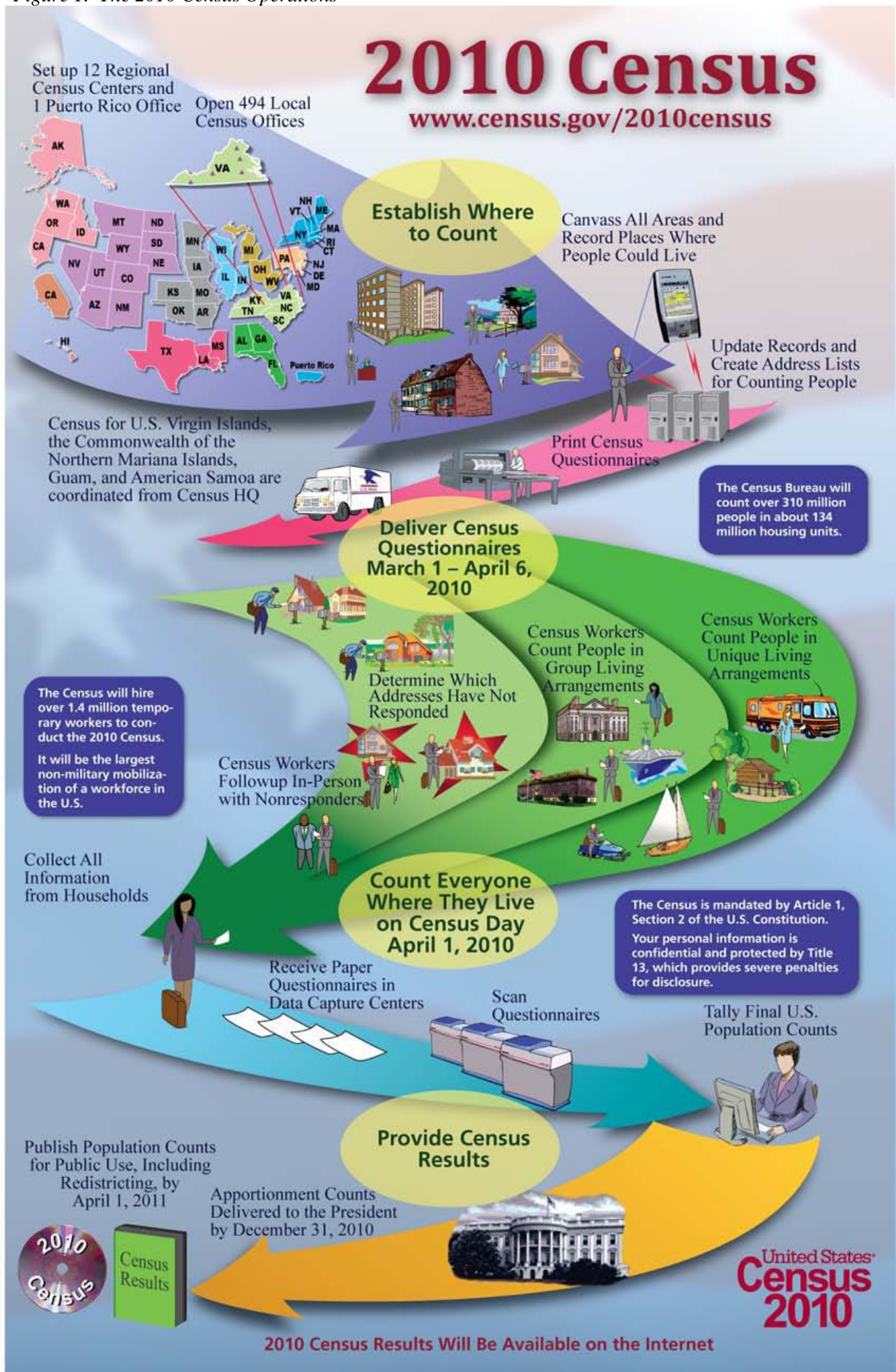
Processing and Aggregating the Census Data

The Census Bureau has developed a means to electronically capture response information from diverse sources and integrate the information into a common set of formats for further processing. All of the responses, whether from returned questionnaires, field representatives conducting follow-up, or other sources, are captured. There are twelve separate operations that ensure forms are mailed to people where they live, that all possible living arrangements are covered, and that the data are processed.

Finally, the collected information is precisely tabulated as to location. From these tabulated counts, data products are developed. Apportionment counts are provided to the President of the United States by December 31, 2010. Data for use in congressional representation redistricting use are provided by April 1, 2011. Additional data products are prepared and released for general public use. There are five operations involved in tabulation and dissemination of the results.

The overall activities of the 2010 Census are illustrated in Figure 1 found on the next page. The illustration shows the major operational phases, key activities, and key milestones necessary to complete the census. (The census of the Island Areas is noted in the illustration as being coordinated at the Census Bureau's headquarters.)

Figure 1. The 2010 Census Operations



Publishing the Census Results

The product plan for the 2010 Census is similar to the plan for Census 2000. The product plan currently includes Redistricting Data Summaries, Demographic Profiles, Summary Files, Congressional District Summaries, State Legislative District Summaries, a Legislative District Geographic Supplement, American Indian and Alaska Native Summaries and Tribe Reports, Census Briefs and Special Reports, and Public Use Microdata Sample Files. The content and layout of each product is produced by subject matter experts. In addition, comments on the proposed products are provided by local governments. The release schedule of the 2010 Census data products for the United States is shown in Table 1.

Because the District of Columbia and Puerto Rico used the 2010 Decennial Census short form, they follow the stateside timeline. Many of these products include data for the District of Columbia and Puerto Rico.

Table 1. Release Schedule of the 2010 Census Data Products for the United States, the District of Columbia and Puerto Rico

Product	Release Dates: Planned, Actual
Redistricting Data Summary File by State	February - March 2011
Redistricting Data National Summary File	April 2011
Demographic Profile	May 2011
Summary File 1 by State	June - August 2011
• National Update	October - November 2011
• Urban / Rural Update	October 2012
• Redefined Core-Base Statistical Areas (CBSA) Update	July - August 2013
Summary File 2 by State	December 2011 - April 2012
• National Update	May 2012
• Urban / Rural Update	January 2013
Summary Population and Housing Characteristics Report Series	May - December 2012
Congressional District Summary File (113 th Congress)	January 2013
State Legislative District Summary File	June 2013
American Indian and Alaska Native Summary File	December 2012
Characteristics of American Indians and Alaska Natives by Tribe Report	April 2013
2010 Census Briefs	March 2011 - February 2012
Public Use Microdata Sample (PUMS) Files	December 2012 – April 2013

For details and updates, see <http://www.census.gov/population/www/cen2010/glance/>

The 2010 Censuses of the Island Areas

The Census Bureau conducts a separate census for each Island Area, which includes American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the U.S. Virgin Islands. The census population totals obtained through these censuses are based on April 1, 2010 residency, and determine the amount of federal and local funding different Island Area communities receive over the course of the decade. Although considered a part of the overall 2010 Census, the operations conducted for the four Island Area censuses are distinct from the stateside operations described in the previous sections of this paper. For the Island Area censuses, the field enumeration, data collection, data processing and data products are on a timeline distinct from stateside processing. The Island Areas' unique census operations are described below.

Entering into a Contract with the Island Areas

The 2010 Census Island Areas enumeration was conducted through contracts between the U.S. Census Bureau and local government agencies. For American Samoa and the Commonwealth of the Northern Mariana Islands, the Census Bureau secured separate contracts with the local Department of Commerce. For Guam, the contract was with its Department of Administration; the Bureau of Statistics and Planning served as the liaison agency. For the U.S. Virgin Islands, the contract was with the University of the Virgin Islands. The use of contracts was new for 2010; prior censuses used Memoranda of Agreement. Contracts were necessary to allow the transfer of funds.

Under the terms of these contracts, the Census Bureau agreed to develop and supply each government with procedures and materials, print the materials, provide support and direction, process the data collected, and produce the data products. The local government agencies were responsible for recruiting, testing, selecting, and hiring local workers, who performed the fieldwork (i.e., collecting the census data) in accordance with the procedures provided. The local government agencies were also responsible for promoting the 2010 Census locally.

Establishing Local Census Offices in the Island Areas

There were five Local Census Offices in the Island Areas: one in each of the three Pacific Islands, and in St. Croix and St. Thomas of the U. S. Virgin Islands. Census Advisors were present in each of the Island Areas to offer technical guidance. The Census Advisors were the only Census Bureau employees working in the Local Census Offices and directly reported to Census Bureau headquarters. The Census Advisors provided support throughout the field operations: to ensure that the terms of the contract were upheld and that the procedures were followed. Before the Local Census Offices officially opened in the fall of 2009, the Census Advisors swore in and trained the management staff, drafted the layout of the office space, shopped for and helped procure office furniture and equipment, helped set up the payroll and administrative functions, and participated in press conferences and media engagements to see that the portrayal of the census was accurate. After the field operations were complete, the Census Advisors helped close the Local Census Offices a year later. American Samoa's Local Census Office was the last to close on September 17, 2010.

Hiring and Training Staff for the Local Census Offices

The census workers were hired locally through the local government agencies. There were approximately 2,000 temporary positions created by the census throughout the four Island Areas. The Census Bureau requires that the locally hired census workers pass a written test of basic skills, submit to a Federal Bureau of Investigation background check through fingerprint screening, and take an oath of confidentiality. Additionally, local hiring guidelines apply to these employees. The Local Census Offices trained their employees, using training materials developed at Census Bureau headquarters.

Preparing Everyone for His/Her Participation in the Census

The Island Areas participated in the Census in Schools program to raise awareness about the purpose and history of the Decennial Census. All other publicity and promotion was developed and procured locally in the Island Areas, outside the overall 2010 Census Integrated Communications Program. Publicity and promotional materials were developed locally due to the differences between stateside enumeration operations and the Island Areas operations. In addition, locally produced materials maximized the use of the local culture and heritage of the Island Areas.

Language guides and/or promotional materials were locally translated in different languages reflecting the diversity of the Island Areas' population:

- American Samoa: English, Samoan, Chinese, Tongan, Korean and Fijian
- Commonwealth of the Northern Mariana Islands: English, Chamorro, Carolinian, Korean
- Guam: Chamorro, Chuukese, Chinese, Kosraean, Pohnpeian, Yapese, Marshallese, Palau, Japanese, Korean, and Tagalog
- U.S. Virgin Islands: English and Spanish

Identifying Where Everyone Lives and Collecting the Census Data

The Island Areas were the only areas in the 2010 Census to use a List/Enumerate methodology to conduct their 2010 Census field operations. The Island Areas followed this methodology using the long-form questionnaire and undergoing 100 percent coverage of every Census block in order to conduct an enumeration. The long-form questionnaire used in the Island Areas is based on the American Community Survey form, and is comprised of about 75 questions.

The List/Enumerate methodology was used in the Island Areas to collect census data because there is no corporate master address list in existence for these island territories. A few days before Census Day, April 1, 2010, the U.S. Postal Service delivered Advance Census Reports questionnaires to Island Areas post offices, where families picked up the forms to fill out. Due to challenges with the address and mail systems in the Island Areas, a blanket mailing approach was used. Prior to the delivery of the Advance Census Report, an advance letter was mailed to inform residents that a 2010 Census form will be arriving within one week. They were instructed to complete the form in advance and keep it until an enumerator visited the household. Census enumerators picked up the completed questionnaires, in cases where the Advance Census Report was completed, or conducted personal interviews using Enumerator Questionnaires for each housing unit in the Islands Areas. The enumerators submitted the completed questionnaires

and address registers to their crew leaders who reviewed the information for completeness. The crew leaders then returned the materials to their Local Census Office where they were checked in and edited. Each housing unit was also pinpointed on a paper map and an address or physical description was captured.

There were several different maps used for the Island Areas enumeration. All of the maps were made from the latest 2009 benchmark of the Topologically Integrated Geographic Encoding and Referencing (TIGER) system. The largest maps were county maps used to delineate areas for enumeration workloads. The middle-sized maps were the enumeration workload maps that allowed enumerators and their crew leaders to identify where the collection blocks were located. The smallest maps were the most detailed and allowed the enumerators to travel the blocks for map spot collection and respondent interviews.

Persons living at group quarters were enumerated during the Group Quarters Enumeration using an Individual Census Report questionnaire. The Individual Census Reports contain the same “person” questions found in the Advance Census Reports. In Guam, military personnel living in group quarters on base were enumerated using Military Census Report questionnaires, while military personnel whose permanent residence was a military vessel were enumerated using Shipboard Census Report questionnaires.

As the questionnaires were logged in the Local Census Offices, office staff checked them against the enumerators’ assignment areas. Different staff reviewed the questionnaires for completeness and for obvious errors, and made telephone calls to try to address these concerns. A special unit of enumerators conducted field follow-up to investigate assignment areas in which questionnaires were missing, to address questionnaires that continue to fail edit, and to verify housing units that were classified as vacant. For housing units that were erroneously classified as “vacant,” the enumerators conducted interviews. The follow-up operations were designed to improve data quality and coverage.

Processing and Aggregating the Census Data

Prior to closing out its operations, the Local Census Offices boxed and shipped the completed census materials to the Census Bureau’s National Processing Center. The National Processing Center keyed all the response data recorded on the questionnaires and keyed all other associated data obtained in the field. Based on the subject areas (i.e., race, ethnicity, ancestry, Hispanic origin, industry and occupation, geography of persons’ birth and work, health insurance, and language) of the write-in responses, the keyed data of these responses were codified by distinct computer programs to standardize their categorization. The National Processing Center also processed the maps, address registers and the quality control forms completed at the Local Census Offices.

Below is a list of the National Processing Center operations to process the Island Areas’ data:

- Open and sort the materials shipped from the Local Census Offices
- Scan and digitize the maps
- Key the address registers
- Key the quality control forms
- Check in the questionnaires
- Prepare the questionnaires for keying
- Key the questionnaires
- Code the write-in responses

After completing the data capture and coding of the Island Areas data, the National Processing Center produced the data in digital format and sent these to Census Bureau headquarters where the digitized data were processed to produce resident population counts and housing unit counts.

The digitized data files are now currently undergoing edits. The edits produce logical relationships among all people in the household, and ensure that the data are internally consistent. For example, responses to basic demographic items such as age, date of birth, sex, household relationship, race, and Hispanic Origin (for the U. S. Virgin Islands), and Ethnicity (for the Pacific Islands) need to agree with one another. The edited data files for each Island Area are then transformed (e.g., disclosure avoidance techniques are applied) so that an array of data products can be designed and produced.

Below is a list of the headquarters operations to process the digitized data and generate the census data products:

- Review and correct the digitized response data for each Island Area
- Link all continuation-forms records to the appropriate household
- Allocate tabulation geography
- Generate and review the census unedited files for each Island Area
- Conduct data edits
- Generate and review the census edited files for each Island Area
- Prepare the edited data for tabulation
- Generate and review the tabulated data files for each Island Area
- Generate and review the data products for each Island Area
- Release the data products for each Island Area

Publishing the Census Results

The product plan for the 2010 Island Areas Decennial Census currently includes Resident Population Counts, Demographic Profiles, Summary Files, Printed Reports, and Detailed Cross Tabulations. Public Use Microdata Sample Files (*) are prepared only for Guam and the U.S. Virgin Islands. The release schedule of the 2010 Census data products for each Island Area is shown in Table 2 provided on the attachment.

Descriptions of these products are as follows:

- 2010 Population Counts. Population counts are produced at the *district level* from the unedited files, with comparisons to 2000.
- Supplemental Population Counts. Supplemental population counts are produced at the *place level* from the unedited files. The supplemental counts were introduced with the 2010 Census.
- Housing Unit Counts. Total housing unit counts are produced at the *district* and *place* levels from the unedited files. The housing unit counts were introduced with the 2010 Census.
- Demographic Profile. These profiles are produced at the *place level* and are based on selected demographic, social, economic, and housing characteristics.
- Summary File. A set of electronic files for each Island Area provides detailed demographic, social, economic and housing characteristics at the *block, block group* and

census tract levels. These files are used to describe the population's education levels, marital status, relationships, income levels, types of employment, and commute to work. They are also used to describe the Island Areas' types of housing structures and their values and costs.

- Social, Economic, and Housing Characteristics (Printed Reports). Printed reports are provided at the *place level* for Island Areas' characteristics mentioned above.
- Detailed Cross-Tabulations. Tables for each Island Area will present at the *place level* distributions of selected demographic, social, economic and housing characteristics.
- Public Use Microdata Sample (PUMS) File. For only Guam and the U. S. Virgin Islands, the Public Use Microdata Sample files contain a 10 percent sample of individual records, with identifying information removed, showing at the *place level* the population and housing characteristics of the units, and the people included in those units. These files are not available for American Samoa and the Commonwealth of the Northern Mariana Islands because the populations of these Island Areas are not large enough to ensure that no information disclosure occurs about particular households or persons.

Summary

In conclusion, there were major differences between the 2010 Census of the United States (including the District of Columbia and Puerto Rico) and the 2010 Census of the Island Areas.

- The Island Areas questionnaires were all long forms with about 75 questions (as opposed to the stateside questionnaire, which asked 10 questions).
- There was no mail-out of questionnaires since the Island Areas lack a household mailing infrastructure. This required a List/Enumerate methodology in which Census workers list all the housing units in every block on the islands, and then enumerate the entire family on the spot. The map spotting of each housing unit and the completion of a long form questionnaire are very labor-intensive efforts.
- The Island Areas' Local Census Office workers were contracted, not Federal, employees.
- Release of Island Areas data is later than the rest of 2010 Census data due to the customization of the post-data collection processing systems. The Census Bureau's National Processing Center keyed all of the hand-made markings into digital form. After keying and coding hundreds of thousands of pages worth of questionnaires and geographic information, the data began a lengthy quality check in advance of subsequent data processing. The data then went through several stages of processing and extensive reviews. Customized systems were developed to ensure that Island Areas data were appropriately captured, coded and processed. Finally, data products are prepared and cleared for dissemination for public use.



Table 2. Release Schedule of the 2010 Census Data Products for Each of the Island Areas

February 14, 2012

Note: Target release dates are subject to change.

Data Product by Island Area		Lowest Level of Geography	Release Dates: Target and Actual
American Samoa			
2010 Population Counts		District	August 2011
Supplemental Population Counts		Places	January 2012
Housing Unit Counts		Places	February 2012
Demographic Profile		Places	Summer 2012
Detailed Cross-Tabulations		Places	Fall 2012
Summary File	<i>Demographic Characteristics; Population & HU counts</i>	Blocks	Fall 2012
	<i>Detailed characteristics (demographic, social, economic & housing)</i>	Block Groups / Census Tracts	
Social, Economic, and Housing Characteristics (Printed Reports)		Places	Summer 2013
Commonwealth of the Northern Mariana Islands (CNMI)			
2010 Population Counts		District	August 2011
Supplemental Population Counts		Places	January 2012
Housing Unit Counts		Places	February 2012
Demographic Profile		Places	Summer 2012
Detailed Cross-Tabulations		Places	Fall 2012
Summary File	<i>Demographic Characteristics; Population & HU counts</i>	Blocks	Fall 2012
	<i>Detailed characteristics (demographic, social, economic & housing)</i>	Block Groups / Census Tracts	
Social, Economic, and Housing Characteristics (Printed Reports)		Places	Summer 2013
Guam			
2010 Population Counts		Municipality	August 2011
Supplemental Population Counts		Census Designated Place	January 2012
Housing Unit Counts		Census Designated Place	February 2012
Demographic Profile		Census Designated Place	Summer 2012
Detailed Cross-Tabulations		Places	Fall 2012
Summary File	<i>Demographic Characteristics; Population & HU counts</i>	Blocks	Fall 2012
	<i>Detailed characteristics (demographic, social, economic & housing)</i>	Block Groups / Census Tracts	
Social, Economic, and Housing Characteristics (Printed Reports)		Places	Summer 2013
Public Use Microdata Sample (PUMS) File		Guam	Summer 2013
U.S. Virgin Islands			
2010 Population Counts		Census Subdistrict	August 2011
Supplemental Population Counts		Estate	January 2012
Housing Unit Counts		Estate	February 2012
Demographic Profile		Estate	Summer 2012
Detailed Cross-Tabulations		Places	Fall 2012
Summary File	<i>Demographic Characteristics; Population & HU counts</i>	Blocks	Fall 2012
	<i>Detailed characteristics (demographic, social, economic & housing)</i>	Block Groups / Census Tracts	
Social, Economic, and Housing Characteristics (Printed Reports)		Places	Summer 2013
Public Use Microdata Sample (PUMS) File		U.S. Virgin Islands	Summer 2013