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Overview of the Census



Census year 2011

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Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued cooperation and goodwill.

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Overview of the Census

The Overview of the Census is a reference document covering each phase of the Census of Population and Census of Agriculture. It provides an overview of the 2011 Census from legislation governing the census to content determination, collection, processing, data quality assessment and data dissemination. It also traces the history of the census from the early days of New France to the present.

In addition, the Overview of the Census informs users about the steps taken to protect confidential information, along with steps taken to verify the data and minimize errors. It also provides information on the possible uses of census data and covers the different levels of geography and the range of products and services available.

The Overview of the Census may be useful to both new and experienced users who wish to familiarize themselves with and find specific information about the 2011 Census. The first part covers the Census of Population, while the second is about the Census of Agriculture.

Overview of the Census of Population

Chapter 1 – Introduction

General information

The census is Canada's largest and most comprehensive data source. The Census of Population collects demographic and linguistic information on every man, woman and child living in Canada. The Census of Agriculture, conducted the same month, collects information on Canada's agricultural operations.

The census is the main source of data available in a standardized format for small areas. It provides nationally comparable data that can be cross-classified to show details. It is also the main body of comprehensive statistical data at the subprovincial level on Canada's population.

Census of Population

The Census of Population is taken to meet statutory requirements. For example, population counts are used to realign the boundaries of federal electoral districts, to calculate transfer payments between levels of government, and to support a variety of programs.

The data are needed by both the public and private sectors to support decision-making in many areas. For example:

- to plan community services such as schools, day care, police services and fire protection
- to forecast consumer demand
- to conduct market research studies.

More detailed information on how census data are used can be found in [Chapter 10 – Dissemination](#).

Why is the census in May?

The first May census was held in 1996. Previous censuses were held in early June. However, the May date allows collection procedures to run more smoothly and therefore costs less. With a mid-May census, delivery of questionnaires and many of the follow-up procedures can be accomplished during the same month, thus avoiding the problem of people moving to a different address on May 1 or June 1. In addition, the mid-May date allows more time for final follow-up to be completed before the busy summer holiday period begins. The May data collection of the census has improved population coverage and the quality of Census data.

Census history

1666 – The first Canadian census was taken in New France by Intendant Jean Talon. The recorded population (excluding Aboriginal persons and royal troops) was 3,215. Information was obtained on age, sex, marital status and locality. In addition, the census identified professions and trades for 763 persons.

1666 to 1867 – Numerous censuses were taken at irregular intervals in the colonies of France and Britain that became parts of Canada.

1867 – The *Constitution Act, 1867* (formerly the *British North America Act*) included the requirement that a census be taken every 10 years (decennially) in order to determine representation by population in the new Parliament.

1871 – The first decennial census was taken in this year. The census enumerated the population of the four original provinces (Nova Scotia, New Brunswick, Quebec and Ontario). Manitoba and British Columbia, which had also joined Confederation, were surveyed separately.

The 1871 Census was the first to use the *de jure* method of enumeration rather than the *de facto* method used in Europe both then and now. The *de facto* method enumerates people where they are found on Census Day. The *de jure* method enumerates people according to their usual place of residence.

1896 – A mid-decade census was held in Manitoba beginning in 1896 and then in Saskatchewan and Alberta beginning in 1906. These censuses were needed to measure the rapid growth taking place in the West.

1905 – The census office became a permanent bureau of the federal government.

1912 – Responsibility for conducting the census was transferred from the Department of Agriculture to the Department of Trade and Commerce.

1918 – The Dominion Bureau of Statistics was created.

1941 – Sample information was collected for the first time. One in 10 households were asked an additional 27 questions about their dwelling (type, number of rooms, cooking fuel used, etc.).

1956 – A quinquennial Census of Population and Agriculture was held in all provinces across the country, replacing the mid-decade censuses of the Prairie provinces. The results of this census indicated a dramatic increase in the number of people moving to the cities, a rapid growth in the birth rate, and high levels of immigration.

1971 – Under the *Statistics Act* of 1971, the Dominion Bureau of Statistics was renamed Statistics Canada. The Act also confirmed that a Census of Population and a Census of Agriculture shall be taken every five years (quinquennially).

In 1971, self-enumeration was first introduced. With the exception of Indian reserves and remote areas, census forms and completion instructions were dropped off at private homes and respondents were asked to complete their own questionnaires. In urban areas with a population of 10,000 or more, respondents were asked to mail their completed questionnaires back in a pre-addressed envelope. In rural areas or smaller urban centres (with a population of less than 10,000), respondents were asked to keep their questionnaires until a census interviewer came to pick them up.

1991 – All respondents in self-enumeration areas (over 98% of the population) were asked to return their completed census forms by mail. The return rate was 85%, with more than 27 million people in over 10 million households counted. Information on common-law partners was also collected for the first time.

2001 – For the first time, data were collected on same-sex couples.

2006 – In the 2006 Census, forms were delivered by Canada Post to about 70% of households. The remaining 30% received the form from an interviewer as in previous censuses. For the first time, all Canadians could answer the census questionnaire online. This was also the first time people were asked if they wanted to have their personal information released in 92 years for the purpose of genealogical research. Respondents were also asked whether they would give Statistics Canada permission to access their tax files. This permission was sought in an effort to reduce response burden.

2011 – The positive response to the online option (18.5%) in 2006 prompted a major change in the methodology for the 2011 Census. Starting May 3, a letter was delivered to 60% of Canadian dwellings. This letter replaced the traditional paper questionnaire and provided information so respondents could complete the questionnaire online. The letter also contained a toll-free number respondents could call to request a paper questionnaire. Questionnaire packages were delivered to about 20% of dwellings by mail. The remaining 20% of dwellings had questionnaires dropped off by enumerators. At a small number of dwellings, enumerators conducted personal interviews.

All questionnaires explained to respondents how they could complete the census online. Questionnaires completed online require fewer edits, do not require scanning and data capture, and usually result in a higher overall item response rate.

For 2011, Statistics Canada did not use a mandatory long-form questionnaire as part of the census. Information previously collected by the mandatory long-form census questionnaire was collected as part of the new voluntary National Household Survey (NHS).

Collection of the NHS began within four weeks of the May 2011 Census. Approximately 4.5 million households received the NHS questionnaire.

The 2011 Census questionnaire consisted of the same eight questions that appeared on the 2006 Census short-form questionnaire, with the addition of two questions on language.

Privacy and confidentiality

Statistics Canada recognizes the importance of maintaining the confidentiality of personal information and has made the protection of such information its highest priority. Confidential data never leave Statistics Canada premises, nor are they ever out of Statistics Canada's control.

Providing personal information to anyone, whether in a census, survey, or in any other manner, does involve some loss of privacy. However, it is recognized that the public benefits of accurate data far outweigh this minimal loss of privacy, especially when measures are taken to ensure that personal information is kept strictly confidential.

Developing census questions

Statistics Canada takes care to ask questions that are in the public interest and that provide information that is not available from other sources. All questions have been carefully tested and the results show that respondents are willing to answer them. The Agency has paid full attention to the protection of personal information outlined in the *Charter of Rights and Freedoms* and the *Statistics Act*. Judicial rulings on this issue have held that census questions do not contravene the Charter.

Personal information

Statistics Canada does not release personal information without the consent of the individual. Census information is only seen, on a need-to-know basis, by employees of Statistics Canada or persons sworn under the *Statistics Act*.

Consent to release personal information

The 2011 Census asked respondents if they would consent to having their personal census information released to Library and Archives Canada in 92 years (Question 10 on the census questionnaire).

Oath of secrecy

All Statistics Canada employees, including interviewers, are sworn to secrecy under the *Statistics Act*. This oath remains in effect not only during employment, but for the rest of their lives. Penalties for divulging personal information include:

- a fine of up to \$1,000
- imprisonment for up to six months
- both a fine and imprisonment.

Published data

Statistics Canada is bound by law to protect the identity of individuals in all published data. All data releases are screened so that anonymity is assured; data are randomly rounded to a multiple of five or ten; and no detailed data are released for areas with populations below a certain size.

Names and addresses

Names, addresses and telephone numbers are used to make sure people have not been missed or counted twice (census coverage studies) and for follow-up (when incomplete information has been provided), or for selection in a small number of postcensal surveys.

Retention of census information

Until 2001, questionnaires were microfilmed and then destroyed after the census information was captured. The 2006 Census questionnaire responses have been stored electronically in flat file format. The 2011 Census responses will be stored the same way. Strict security precautions limit access to both the microfilms and stored records. Individuals can access their own census records for purposes such as obtaining proof of age for old age security.

Security online

The latest technologies were used to ensure that Statistics Canada's strict security and confidentiality requirements are met without imposing any pre-registration or lengthy download processes for the census Internet application.

Official languages

As early as 1871, census questionnaires were produced in English and French. This tradition became law in 1988 under the *Official Languages Act*. The Act states that English and French are the official languages of Canada and that service to the public must be provided in both languages.

As in previous censuses, procedures were in place for the 2011 Census to ensure that members of the public received service in the official language of their choice.

Chapter 2 – Legislation

Introduction

Statistics Canada is required by law to conduct a Census of Population and a Census of Agriculture every five years, in the years ending in 1 and 6. The most recent Canadian census was held in May 2011.

The relevant provisions of the *Statistics Act* (most recently amended in 2005) are as follows:

Subsection 19(1):

"A census of population of Canada shall be taken by Statistics Canada in the month of June in the year 1971, and every fifth year thereafter in a month to be fixed by the Governor in Council."

Section 20:

"A census of agriculture of Canada shall be taken by Statistics Canada

(a) in the year 1971 and in every tenth year thereafter; and

(b) in the year 1976 and in every tenth year thereafter, unless the Governor in Council otherwise directs in respect of any such year."

Subsection 21(1):

"The Governor in Council shall, by order, prescribe the questions to be asked in any census taken by Statistics Canada under section 19 or 20."

Subsection 21(2):

"Every order made under subsection (1) shall be published in the *Canada Gazette* not later than thirty days after it is made."

Requirement to respond

Just as Statistics Canada is required by law to conduct a census, respondents are also required by law to complete their census questionnaires.

This requirement is set out in section 23 of the *Statistics Act*, which reads as follows:

Subsection 23(1):

"In lieu of or in addition to using agents or employees for the collection of statistics under this Act, the Minister may prescribe that a form be sent to a person from whom information authorized to be obtained under this Act is sought."

Subsection 23(2):

"Subject to section 8, a person to whom a form is sent pursuant to subsection (1) shall answer the inquiries thereon and return the form and answers to Statistics Canada properly certified as accurate, not later than the time prescribed therefore by the Minister and indicated on the form or not later than such extended time as may be allowed in the discretion of the Minister."

The requirement to respond is supported by the penalty provisions found in section 31 of the Act, which states:

Subsection 31:

"Every person who, without lawful excuse,

- (a) refuses or neglects to answer, or wilfully answers falsely, any question requisite for obtaining any information sought in respect of the objects of this Act or pertinent thereto that has been asked of him by any person employed or deemed to be employed under this Act, or
- (b) refuses or neglects to furnish any information or to fill in to the best of his knowledge and belief any schedule or form that the person has been required to fill in, and to return the same when and as required of him pursuant to this Act, or knowingly gives false or misleading information or practises any other deception thereunder.

is, for every refusal or neglect, or false answer or deception, guilty of an offence and liable on summary conviction to a fine not exceeding five hundred dollars or to imprisonment for a term not exceeding three months or to both."

Voluntary surveys

The legal requirement to respond does not apply to voluntary surveys, as set out in section 8 of the Act. Section 8 also includes a provision that precludes obtaining information for a census of population or agriculture on a voluntary basis:

Section 8:

"The Minister may, by order, authorize the obtaining, for a particular purpose, of information, other than information for a census of population or agriculture, on a voluntary basis, but where such information is requested section 31 does not apply in respect of a refusal or neglect to furnish the information."

Statutory references to the census in constitutional law

- (a) A decennial census (i.e., a census every ten years) in the year 1871 and every tenth year thereafter is required under section 8 of the *Constitution Act, 1867* (formerly named the *British North America Act, 1867*).
- (b) Conduct of the census is made the responsibility of the federal government under section 91, subsection 6 of the *Constitution Act, 1867*.
- (c) Representation in the House of Commons is made dependent on decennial census data under section 51 of the *Constitution Act, 1867*, as amended by the *Representation Act, 1974*.
- (d) The amending formula for the *Constitution Act* is made dependent on population data from the "latest general census" under section 38 of the *Canada Act, 1982*.
- (e) A number of provisions relating provincial subsidies to population have been legislated and amended over the years. The following is a summary of this legislation:
 - The *Constitution Act, 1930*, Schedule, replaced the 1907 legislation with respect to the three Prairie provinces. A subsidy was made payable to these provinces (Alberta, Saskatchewan and Manitoba) based on quinquennial census population counts and a variable with these counts up

to a maximum population of 1,200,000. These provisions are still in effect.

Legal opinions provided to Statistics Canada indicate a constitutional obligation to conduct a quinquennial census of the Prairie provinces exists until such time as their populations exceed 1,200,000. Since 1961, the population of Alberta has exceeded 1,220,000.

- The *Newfoundland Act, 1949*, Schedule, part 26, made a federal subsidy to that province dependent on decennial census population counts. This provision is still in effect.
- (f) Representation of Alberta and Saskatchewan in the House of Commons was made dependent on the mid-decade census of those provinces for the first mid-decade census subsequent to their creation only (i.e., 1906). Thereafter, representation was to be based on the decennial census of Canada (*Alberta Act, 1905*, section 6; *Saskatchewan Act, 1905*, section 6).

Chapter 3 – Communications

Introduction

The Census Communications Team, which is composed of staff in Ottawa and in each of the three regions (Eastern, Western, and Central), was responsible for providing communications support for the collection and the dissemination phases of the 2011 Census. The mandate of the Census Communications Team is to provide pro-active communications programs that are creative and cost-effective, while maintaining a positive, non-partisan, corporate image of Statistics Canada.

Messages

For the 2011 Census, communications materials focused on:

- informing respondents of the need to complete the questionnaire accurately and to return their questionnaires quickly
- encouraging respondents to complete their questionnaires online
- reassuring respondents that Statistics Canada protects their personal and confidential information (*Statistics Act*)
- reaching difficult to enumerate groups (young adults, immigrants, students, seniors, persons with an activity limitation) with a view to improving data quality and response rates
- supporting collection activities in the field by preparing materials that escalate the messages consistently with paid advertising and media relations
- increasing public awareness of the census (during collection and dissemination) by explaining its rationale and usefulness
- supporting recruitment initiatives.

Media relations

Media relations included editorial boards with newspapers and news magazines, and visits to media organizations. Media advisories were sent to all media to promote the census.

Public relations outreach

Statistics Canada's outreach strategy for the 2011 Census involved contacting thousands of organizations to solicit support for the census.

Potential supporters received e-mails or letters from the census manager or a regional director requesting support for the 2011 Census. In addition, community groups and local businesses and organizations with

a specific clientele, or within a geographic area that was difficult to reach in other ways, were also contacted.

Paid advertising

Out-of-home advertising was placed in public locations such as bus shelters, on the outside of buses, subways, and billboards at the start of the drop-off/mail-out stage. Radio ads were also used to build awareness on the census. Advertisements were translated into several languages for ethnic print and broadcast media.

After Census Day, the messaging changed to a clear reminder that there was still time for people to send in a census form. Radio ads continued through June and July. During the last week of May, the message focused on calling the Census Help Line so that Statistics Canada staff could help respondents fill in their questionnaire over the phone.

Website

The census communications website was the primary response option for the 2011 Census. The website promoted the census, provided information and instructions for completing the questionnaires, and supported census recruitment.

Education

The 2011 Census Teacher's Kit comprised eight activities and a teacher's guide. Orders started in the spring of 2010 and the first mail-outs took place in September 2010. Copies were only mailed upon receipt of a specific order. Orders were filled as long as the kits were available (mid-May).

Promotional materials

Promotional materials for the 2011 Census were available free of charge. The poster, shown below, was an essential part of the census communications concept.



Chapter 4 – Consultation, testing and content approval

Introduction

Before each census, Statistics Canada asks data users and interested parties across Canada for their views on the type and extent of information that should be available through the census database. The goal is to ensure that Statistics Canada takes account of emerging social and economic issues and, where appropriate, uses the census and postcensal surveys to shed light on them. In addition to the consultation process, the census questions undergo an extensive testing process.

Consultation and testing up to June 2010 included references to questions previously collected by the long-form census questionnaire. In June 2010, the government instructed Statistics Canada to conduct the 2011 Census using the short-form only, and to introduce a new National Household Survey (NHS) as a replacement for the long-form. The National Household Survey (NHS) included the changes presented in the [2011 Census Content Consultation Guide](#), Catalogue no. 92-138-G, and discussed during the census consultation period and during ongoing consultation.

Consultation

Statistics Canada recognizes the importance of consultation, and encourages ongoing dialogue with data users. Consultation for the 2011 Census began in the spring of 2007. Three primary strategies were used during the consultation process to obtain feedback from data users and stakeholders for the 2011 Census content: in-person consultations, communications campaigns and the Internet. These strategies yielded over 1,200 content-related comments. More than 150 organizations and private citizens conveyed ideas and suggestions for the 2011 Census. A report presenting the consultation results was subsequently posted on the Statistics Canada website.

From April to November 2007, Statistics Canada met with over 360 people during more than 50 in-person consultations. The majority of the participants were data users. Meetings were held with federal, provincial and territorial governments, municipalities and regions, non-profit organizations, community groups, academia, private industry (which included licensed distributors and the media), advisory committees and the general public. Sessions were also organized with Statistics Canada subject matter divisions, regional offices and working groups. While the comments and suggestions expressed during these consultations were recorded, participants were encouraged to provide written submissions prior to the November 30, 2007 deadline.

The findings generated during the content consultation period can be found in the [2011 Census Content Consultation Report](#), Catalogue no. 92-137-X, posted on the Statistics Canada website on July 24, 2008.

Testing

Once new or revised questions were identified, all changes to their wording, placement and instructions were tested.

Discussion groups and one-on-one cognitive interviews were used to find out how the questions and instructions would be interpreted. From October 2007 to June 2008, three rounds of testing took place in selected cities across Canada. Seventeen focus groups were held and almost 400 people participated in one-on-one cognitive interviews. Feedback from these participants helped formulate the questions that would be asked in the 2008 Content Test.

2008 Census Test of content

The 2008 Content Test was conducted in May and June 2008. A sample of approximately 26,000 dwellings was selected from across the 10 provinces. The sample excluded the territories, Indian reserves, military bases, collective dwellings, and citizens abroad or on ships.

Half of the selected households received control versions that contained the content of the 2006 Census of Population short (Form 2A) and long (Form 2B) questionnaires. These questionnaires were used as controls. The other households received alternate versions of the short- and long-form questionnaires incorporating the proposed content modifications.

2009 Census Test

The 2009 Census Test took place from May to June 2009. The main test included 110,000 dwellings in the Montréal area (Quebec) and Red Deer (Alberta) and was designed to test procedures rather than content.

A supplementary sample of 25,000 dwellings was selected across Canada to evaluate the wave collection methodology which involved households receiving an Internet promotion letter rather than a paper questionnaire at the start of collection. The sample was divided into five panels of 5,000 dwellings each. The primary objective was to evaluate two versions of the letter and two different timeframes to return a completed questionnaire.

Additional testing following content approval

In August 2010, two language questions were added to the census content that required a format change to the census questionnaire (refer to the section [Changes to the 2011 Census questionnaire](#)). Qualitative interviews were conducted to evaluate instructions designed to maximize response to the questions appearing on the new page.

In September and October 2010, participants of qualitative testing provided feedback to the online version of the questionnaires. This test was used to evaluate the transition screens from the census to the NHS, as well as other messages used in the online version of the questionnaires.

Content approval

Many factors were considered when recommending content changes to the 2011 Census questionnaire. These included: legislative, policy and program requirements, response burden, data quality, cost, historical comparability confidentiality, privacy, alternative data sources, consultation and testing.

Comments received during the content consultation and the results of the testing program formed the basis of the decision of which questions were presented to Cabinet for approval.

In accordance with the *Statistics Act*, following approval by Cabinet, the questions for the Census of Population were prescribed by the Governor in Council through an Order in Council. The Order and the schedule of questions were published in the [Canada Gazette, Part I](#) on August 21, 2010.

Types of data collected

The following is a list of data collected on the 2011 Census questionnaire:

- Name
- Date of birth and age
- Marital status
- Legal marital status
- Common-law status
- Relationship to Person 1
- Knowledge of official languages
- Home language
- Mother tongue
- Access to personal information 92 years after the census
- Structural type of dwelling
- Collective dwellings

Changes to the 2011 Census questionnaire

The most significant change, in terms of content and questionnaire development, was the government decision to conduct the 2011 Census as the short-form only. The 2011 Census consisted of the same eight questions that appeared on the 2006 Census short-form questionnaire (covering basic demographic topics such as age, sex, marital status, mother tongue and consent to future release of personal information), plus two additional language questions on knowledge of official languages and languages spoken at home.

The [2011 Census questionnaires](#) can be found on the Statistics Canada website. Refer to the [2011 Census Dictionary](#), Catalogue no. 98-301-X, for detailed definitions of Census of Population concepts, universes, variables and geography, as well as historical information to facilitate the comparison of variables between census years.

Appendix A of the *Census Dictionary*, Catalogue no. 98-301-X contains a complete list of census questions asked since Confederation.

The following section focuses on specific modifications, additions, and deletions to the 2011 Census questionnaires.

New questions

Two questions on language were added to the 2011 Census. These questions were previously asked only in the census long-form.

Question 7 asks, 'Can this person speak English or French well enough to conduct a conversation?'

Question 8 consists of two parts, and asks the following: 'What language does this person speak most often at home?' and 'Does this person speak any other languages on a regular basis at home?'

Modified questions

A question on age was added to Question 3 (date of birth) of the 2011 Census. Combining information on date of birth with age helped collect more accurate data.

There were also modifications to the response categories to Question 6 on Relationship to Person 1.

Chapter 5 – Field operations

Introduction

During the data collection phase, the objective of field operations was to deliver a census questionnaire to every household and agricultural operation in Canada and to have it completed and returned.

Census delivery methods

Starting May 3, a bilingual letter was delivered to 60% of Canadian dwellings. This letter replaced the traditional paper questionnaire and provided the required information so respondents could complete the questionnaire online. The letter also contained a toll-free number respondents could call to request a paper questionnaire.

An additional set of dwellings (roughly 20%) received a census package by mail.

For the remaining dwellings (roughly 20%), questionnaires were either dropped off by enumerators (18%) or the questionnaires were completed by having enumerators conduct personal interviews (2%).

For most dwellings (98% of the population), respondents were asked to complete the questionnaire for themselves and for members of their household online, or complete and then return a paper questionnaire in the mail. A toll-free number was also provided if a respondent wished to complete the questionnaire over the telephone.

Refer to Chapter 6 for additional information about the online questionnaire.

Official languages and the census questionnaire

Households that received a bilingual letter were able to complete the online questionnaire in the language of their choice, or could request a (paper) questionnaire package. The package delivered by mail to 20% of households contained both an English and a French questionnaire. Those whose forms were dropped off by list/leave (L/L) also received a questionnaire package containing both an English and a French questionnaire.

Census collection methods

Self-enumeration

A member of the household was asked to complete the census using an online questionnaire or a paper questionnaire for all members of the household. If the questionnaire was completed on paper, the respondent returned it by mail in a pre addressed envelope to the Data Operations Centre (DOC).

Canvasser enumeration

Canvasser enumeration was conducted in remote, isolated parts of the provinces and territories, and where other collection methodologies were deemed to be too expensive to conduct. Canvasser methodology was also used in what is called early enumeration (EE) areas, because the actual field work was conducted in February, March and April 2011, thus before Census Day, due to seasonal climate variations, migrational activities or other travel impediments. When enumeration takes place before Census Day (May 10, 2011), the reference date used is the date on which the household is being enumerated.

In 2011, approximately 2% of households were enumerated using the canvasser enumeration method. In these cases, an enumerator visited the household and completed a questionnaire for the household by interview. This method was used in remote and northern areas of the country, and on most Indian reserves.

Early enumeration took place from February to April 2011 in remote and northern areas and on northern Indian reserves of the country. Canvasser enumeration also took place on Indian reserves in southern areas of the country and in transient areas of large urban centres primarily from May to July 2011, but extended into early August in some areas.

Enumeration of people outside Canada

To enumerate people posted outside Canada, the Form 2C was used. This included Canadian government employees (federal and provincial) and their families, and members of the Canadian Forces and their families. Form 2C was also used to enumerate all other Canadian citizens, landed immigrants and non-permanent residents outside Canada who requested to be enumerated.

Census Help Line

The Census Help Line (CHL), a free, nationwide, multilingual service, was available to all respondents. The toll-free number was printed on the census questionnaire and guide, and advertised in all communications materials. The CHL handled approximately 1,200,000 calls during the 2011 Census.

Census wave approach

Statistics Canada implemented a wave approach for the 2011 Census. The following table outlines the key dates for the different waves in list/leave (L/L) and mail-out (MO) areas.

Collection phase	Main activity	Coverage	Key start date
Wave 1	MO areas received letter with secure access code. No questionnaire package mailed.	60% of dwellings	May 3, 2011
	MO areas received questionnaire package and a voice broadcast message.	20% of dwellings	May 3, 2011
	L/L areas received questionnaire package.	20% of dwellings	May 2, 2011 to May 9, 2011
Wave 2	MO areas received reminder letter with secure access code.	All non-responding MO dwellings	Census Day (May 10, 2011)
	L/L areas received reminder card.	All L/L dwellings	Census Day (May 10, 2011)
Wave 3	MO areas received questionnaire package.	To non-responding Wave 1 dwellings that received a letter	May 18, 2011
	L/L areas received notice of visit and start of non-response follow-up (NRFU).	All other non-responding dwellings	May 20, 2011
Wave 4	Voice broadcast message, notice of visit and start of NRFU.	All MO non-responding dwellings	June 1, 2011
	Voice broadcast message and notice of visit.	All L/L non-responding dwellings	May 20, 2011

Data collection stages for the 2011 Census

Early enumeration and reserve enumeration – Early enumeration primarily took place from February 1 to March 31, 2011, but was extended into April in some areas. Reserve enumeration took place from May 2 until July 29, 2011 (extended into early August in some areas). No non-response follow-up (NRFU) took place in areas of early enumeration and reserve enumeration, as completeness (for example, dwelling coverage) was verified during the enumeration process.

List/leave – List/leave (L/L) took place in areas where return of completed questionnaires by mail was feasible, but drop-off needed to be done by hand because mail delivery was not conducted solely on the civic address of the dwelling. Door-to-door delivery took place from May 2 to May 9, 2011. During the L/L operation, census enumerators listed all private dwellings, collective dwellings and agricultural operations in their Visitation Record (VR). This list was then used for the follow-up of agricultural forms and for updating the Master Control System (MCS) for NRFU.

Mail-out – Mail-out (MO) refers to the mail delivery of questionnaires. Each census questionnaire was directed to a dwelling rather than to a specific person.

Collective dwelling enumeration – The enumeration of all types of collective dwellings followed the same general procedures (regardless of whether they were in a MO or L/L area), with field staff ensuring each usual resident was enumerated. A major difference between MO and L/L collective enumeration methodology was that the enumeration of collective dwellings in an L/L collection unit (CU) was the responsibility of the individual enumerator performing delivery; whereas, in mail-out CUs, teams were responsible for the enumeration activities. In other non-mail-out areas, the enumerator was responsible for the enumeration of private and collective dwellings.

Dwelling occupancy verification – The status of the dwelling's occupancy was verified immediately preceding non-response follow-up (NRFU) in MO areas. Dwelling occupancy verification (DOV) was conducted to identify as many unoccupied dwellings as possible, close to Census Day, in order to remove these dwellings from the NRFU workload. The accuracy of the unoccupied status was higher if identified closer to Census Day, May 10, 2011. This higher accuracy, in turn, provided more accurate census data.

Failed edit follow-up – Failed edit follow-up (FEFU) was a process through which attempts were made to resolve missing and incomplete responses on the census questionnaire. FEFU was conducted from Statistics Canada call centres for those questionnaires received at the Data Operations Centre (DOC) that were identified as having failed edits because they were missing information.

Non-response follow-up – The purpose of non-response follow-up (NRFU) was to obtain a completed questionnaire from all households that did not return a questionnaire. This was the final collection activity in MO and L/L areas. Follow-up was first done by telephone when numbers were available. If a completed questionnaire could not be obtained by telephone, personal visits were conducted until a completed questionnaire was obtained.

Chapter 6 – Online questionnaire

Introduction

In early May 2011, households, which were not enumerated using the canvasser enumeration method, received either a letter or a census questionnaire package. Each letter or paper questionnaire had a unique secure access code (SAC) printed on the front along with the 2011 Census website address (www.census2011.gc.ca). Respondents were able to use the unique code to access their questionnaire online throughout the collection period.

In 2006, approximately one in five (18.5%) households used the online application, which was available 24 hours a day, seven days a week, in English and in French. The Internet response rate for the 2011 Census was 54.4%.

Reduced costs and increased quality

Online census enumeration helps provide long-term cost savings, quality gains, and reduces respondent burden.

For the 2006 Census, an estimated 20% Internet return rate created improvements resulting in an approximate cost savings equal to the cost of developing and supporting the application. A higher take-up rate for the 2011 Census reduced the infrastructure required to handle paper questionnaires (scanners, physical space, logistics, shipping), resulting in expectations for reduced costs.

Technical factors, such as online edits that prompt respondents when they have left questions blank or entered conflicting information or an unusual value, made the questionnaire easier to complete. Any errors could quickly be identified and corrected, thereby improving the accuracy of the information. Automated skip patterns were programmed to guide respondents past questions that were not applicable.

Questions were personalized with respondents' names to reduce the likelihood of one person's responses being recorded in another's response area. In addition, help information was available for each question and provided details to assist respondents quickly without having to leave the application.

Security and the online application

Statistics Canada takes the protection of confidential information provided online seriously. A secure login process and strong encryption are key elements in helping to prevent anyone from eavesdropping or tampering with census information.

To protect the security of personal information on the Internet, Statistics Canada incorporated the following safeguards:

- Strong bi-directional encryption technologies based on Secure Socket Layer (SSL v3.0) ensure end-to-end security of data passing between respondents' computers and our web server.
- Data submitted to our web servers are encrypted before being stored and remain encrypted until they are transferred to the high security internal network.

- Census data are processed and stored on a high security internal network that will not permit access to any outside link and cannot be accessed by any person or organization outside of Statistics Canada.
- Powerful firewalls, intrusion detection and stringent access control procedures limit access to back-end systems and databases. Census employees who have proper authorization and who have affirmed an oath of secrecy can access census data but only from secure Statistics Canada locations.

Chapter 7 – Processing

Introduction

The step after collection, known as the processing phase, began May 3 with the process of transforming responses from approximately 13.5 million households into meaningful data.

Receipt and registration

For the 2011 Census, electronic questionnaires were transmitted directly to servers at Statistics Canada's Data Operations Centre (DOC) and registered automatically upon receipt. Paper questionnaires that were returned by mail were registered by Canada Post by scanning the bar code on the front of the questionnaire before delivery to the DOC. To confirm receipt by Statistics Canada, the questionnaires were removed from the envelopes and scanned again at the DOC.

Registrations were transmitted to the Master Control System (MCS) daily. The MCS then notified enumerators (via the Field Management System) which questionnaires had been received so they did not contact these respondents during non-response follow-up (NRFU) procedures.

Questionnaires that were completed by enumerators during NRFU were shipped from the local census offices (LCOs) across the country to the DOC where they were scanned and registered.

Often, the DOC received multiple responses (i.e., multiple questionnaires) for one household. These could have been valid responses (e.g., a supplementary questionnaire that contains information about additional household members) or invalid responses (e.g., a duplicate questionnaire for the household was completed by another household member). These situations were flagged and handled in the 'Edits' processing step described in the Edits section which follows in this chapter

Imaging and data capture

Once paper questionnaires were registered, they were loaded onto carts and moved to the next step for document preparation and scanning.

Steps

- (1) **Document preparation** – Mailed-back questionnaires were removed from envelopes. In order to ensure that questionnaires were ready to be scanned, operators removed foreign objects such as clips and staples from the documents. Forms were also separated in half (Census of Population) or into single sheets (Census of Agriculture) using guillotines (large paper cutters).
- (2) **Scanning** – Scanning, using high speed scanners, created digital images from the paper questionnaire.
- (3) **Automated image quality assurance** – An automated system verified the quality of the scanning for capture purposes. Images failing this process were flagged for rescanning.
- (4) **Automated data capture** – Optical Mark Recognition (OMR) and Intelligent Character Recognition (ICR) were used to extract respondent data. When the system could not recognize the handwriting (known as the write-ins), data repair was done by an operator. Paper forms that could not be scanned

(e.g., too damaged) or were filled out with a pen or pencil that could not be read by the automated capture systems, were sent for transcription.

- (5) **Check-out** – This quality assurance process ensured that the questionnaire images and captured data were of sufficient quality and that the paper questionnaires were no longer required.

Edits

As the data were captured, an interactive process of manual and automated edits was performed to ensure that problems and inconsistencies were identified and resolved.

- (1) **Blank and minimum content** – This automated edit identified questionnaires with no information or insufficient information to continue processing. These cases were returned to the field for non-response follow-up (NRFU) by census enumerators.
- (2) **Multiple responses** – This automated edit identified households with one or more missing questionnaires. These cases were held in a queue until all questionnaires were received.
- (3) **Coverage edits** – These edits ensured that the number of household members reported was consistent with the responses provided, including the number of names listed in the household roster. Errors were resolved by an automated process or through interactive verification by DOC staff by manually examining the captured data and scanned images (where available) to help determine the appropriate solution.
- (4) **Failed edit follow-up (FEFU)** – Household questionnaires that needed further coverage or content clarification were transmitted to a collection support office for FEFU collection using a Computer-assisted Telephone Interview (CATI) application. The data were transmitted back to the DOC and reintegrated into the system for subsequent processing.

Coding

Written responses were converted to numerical codes before they could be tabulated for release purposes. For the 2011 Census, all written responses on the questionnaires underwent automated and computer-assisted coding to assign each one a numerical code using Statistics Canada reference files, code sets and standard classifications. Reference files were built using actual responses from past censuses for the automated match process. Subject-matter experts supervised the interactive coding of responses that were not matched automatically with the reference files.

Edit and imputation

The data collected in any survey or census contains omissions or inconsistencies. These errors can be the result of respondents missing a question, or they can be due to errors generated during processing.

After the initial editing and coding operations were completed, the data were processed through the final edit and imputation activity. The final editing process detected errors and the imputation process corrected them.

Chapter 8 – Data quality assessment

Introduction

Data quality assessment provides an evaluation of the overall quality of census data. The results are used to inform users of the reliability of the data, to make improvements for the next census and, in the case of two coverage studies, to adjust the official population estimates. Quality assessment activities take place throughout the census process, beginning prior to data collection and ending after dissemination.

Sources of error

However well a census is designed, the data it produces will inevitably contain errors. Errors can occur at virtually every stage of the census process, including the preparation of materials, the listing of dwellings and data collection, and processing. Users of census data should be aware of the types of errors that can occur, so they are able to assess the usefulness of census data for their own purposes.

The principal types of error are:

Coverage errors occur when dwellings and/or individuals are missed, incorrectly included or counted more than once.

Non-response errors occur when some or all information about particular individuals, households or dwellings is not provided.

Response errors occur when a question is misunderstood or a characteristic is misreported by the respondent, or by the census enumerator or Census Help Line operator.

Processing errors may occur at any stage of processing. Processing errors include keying errors that can be made at data capture during coding operations, when written responses are transformed into numerical codes; and during imputation, when valid (but not necessarily correct) values are inserted into a record to replace missing or invalid data.

Sampling errors apply only when answers to questions are obtained from a sample. This type of error does not apply to the 2011 Census.

Data quality measurement

To allow data users to assess the impact of errors and to improve our own understanding of how and where errors occur, a number of data quality studies have been conducted for recent censuses. For the 2011 Census, special studies examine errors in coverage and data quality, i.e., non-response, response and processing.

Three studies are undertaken to measure coverage errors:

- (1) **Dwelling Classification Survey** – One of the sources of coverage error in the census is the misclassification of dwellings on Census Day. This can occur when a dwelling that is truly occupied is classified as unoccupied, or when an unoccupied dwelling is classified as occupied. This misclassification potentially affects any dwelling for which a census questionnaire is not returned (a non-response dwelling). The purpose of the Dwelling Classification Survey is to study these types of classification error. A sample of dwellings for which no census questionnaire was returned is contacted, and information is collected on the occupancy status and, if occupied, the number of persons living in each dwelling.

This information is used to adjust the census data for households and persons to correct for these misclassifications and to adjust the household size distribution through imputation for the non-response dwellings. This is done in time for the initial population count release.

- (2) **Reverse Record Check** – This study provides estimates of persons missed by the census (after accounting for the adjustments described in the Dwelling Classification Survey, above). Estimates are developed for each province and territory and for various subgroups of the population (e.g., age-sex groups, marital status).

For the provinces, there are two steps in this study:

Step 1: Construction of a sample of persons who should be enumerated in the census, using sources which include the previous census, birth registrations, immigration and non-permanent residents' records and the previous Reverse Record Check (to represent those missed in the last census).

Step 2: Checking the census response database to determine if these persons have been enumerated. Some persons have to be traced and interviewed to collect additional information. Persons who have died or emigrated prior to Census Day are identified during the tracing or the interviews.

For the territories, there are a couple of differences in Step 1. For the purpose of sampling, information that identifies respondents (such as name, date of birth and sex) from health care records is matched to census records to identify people who have been enumerated in the census. The sample for the Reverse Record Check is then selected among the unmatched persons.

The results of this study are the major source of information about persons missed by the census. However, unlike the Dwelling Classification Survey, the estimates are not used to adjust census counts before the initial population count release.

- (3) **Census Overcoverage Study** – For the 2011 and 2006 censuses, double-counting of persons was detected by searching the census database for pairs of records that had high-quality matches on sex, date of birth and name. Both deterministic (exact) and probabilistic matching techniques were used. Potential pairs of overcoverage were sampled and checked manually and results were used to estimate the census overcoverage.

When combined with the results from the Reverse Record Check, the results of the Census Overcoverage Study provide the estimates of the net coverage errors in census data. These are used to derive the official population counts.

Certification

Certification consists of several activities which rigorously assess the quality of the census data at specific levels of geography to ensure quality standards for public release are met. This evaluation includes the certification of population and dwelling counts and variables related to dwellings and population characteristics.

Components of the data certification are:

- a review and analysis of data quality indicators for internal and external consistency
- the provision of a quality statement
- recommendations and approval of the data for release
- the format of the final released data including advisories to the users in terms of special notes, caveats or other data quality indicators.

During certification, response rates, invalid responses, edit failure rates, and a comparison of estimates before and after imputation are among the data quality measures used. Tabulations from the 2011 Census are produced and compared with corresponding data from past censuses, from other surveys, and from administrative sources. Detailed cross-tabulations are also checked for consistency and accuracy.

Depending on the results of certification, census data may be released in one of three ways.

- First, the data may be released unconditionally, reflecting data of suitable quality.
- Second, the data may be released conditionally or in a constrained manner. In this case, the data will be released with a special note or waiver alerting the user to possible limitations or the data may also be specially treated, for example by combining reporting categories to address quality or confidentiality concerns.
- Finally, the data may be suppressed for quality reasons.

Chapter 9 – Census geography

Introduction

There is a geographic component to every stage of the census cycle, from consultation through collection, processing and dissemination. Users are consulted about the geographic concepts used by Statistics Canada and about various options for disseminating standard geographic data. Small geographic areas are defined and mapped in detail so every dwelling can be located during the data collection phase. During the processing phase, the collected data are coded to the appropriate geographic areas in the hierarchy of geographic units used for dissemination. Finally, census data are disseminated by a variety of geographic areas, along with supporting reference maps and other geographic data products.

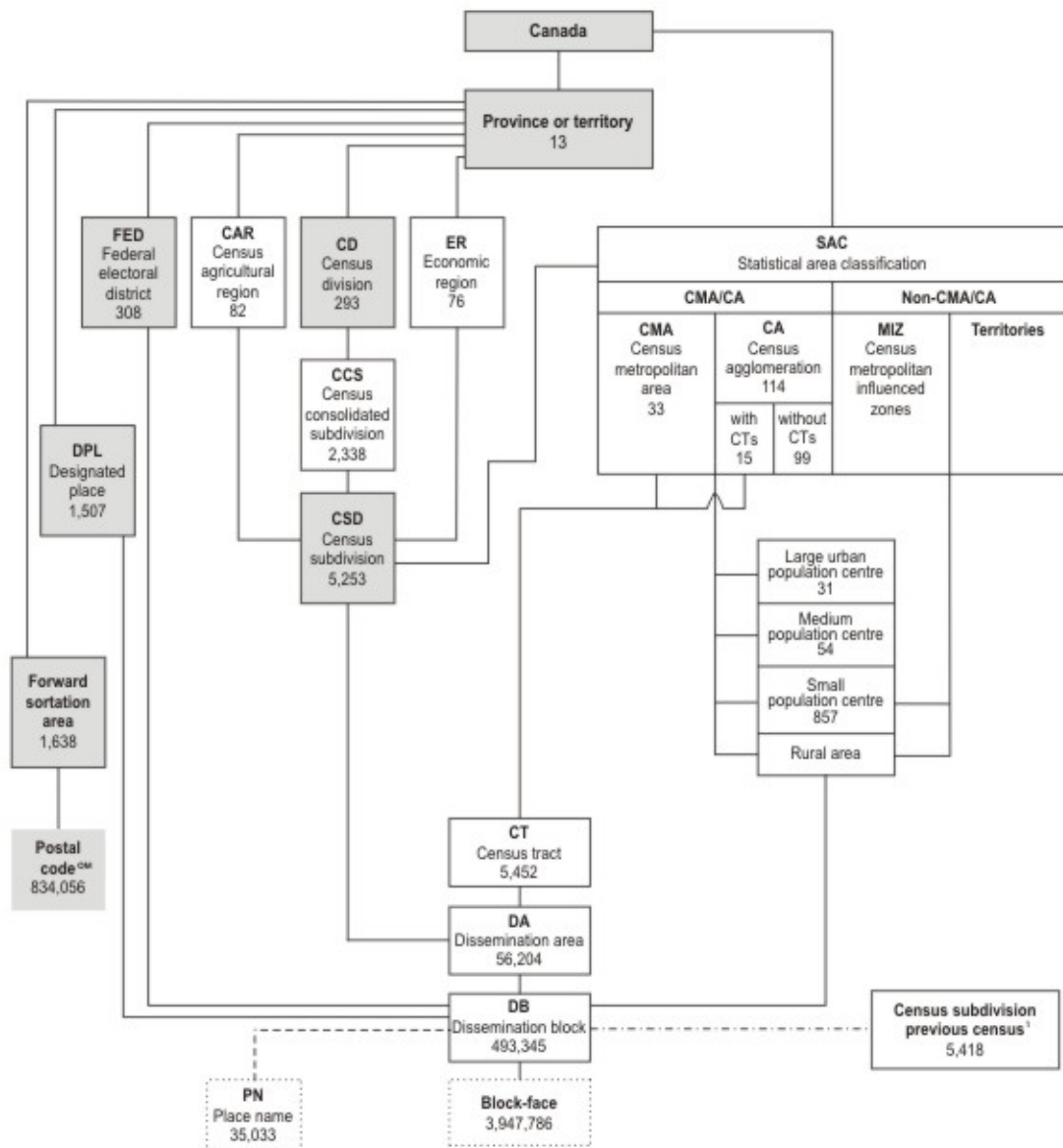
To take full advantage of census data, users need to have a basic understanding of the geographic dimension of the data. Just as one can subdivide a population by sex, or into age and language groups, one can subdivide a population by different geographic areas. The geographic areas used by the census range in size from provinces and territories down to dissemination blocks, and are organized in a hierarchical model to show the nature of their relationships.

Hierarchical model of geographic areas

Standard geographic areas and their relationships to one another are depicted in [Figure 1 Hierarchy of standard geographic units for dissemination](#).

- Each box in the hierarchy chart represents one type of geographic area.
- The relative position of each type of geographic area in the chart shows how it can be subdivided or aggregated to form other geographic areas. For example, the 13 provinces and territories are subdivided into 308 federal electoral districts (federal ridings), which in turn are subdivided into 493,345 dissemination blocks.
- The lines joining the boxes in the chart show that there is a relationship between the geographic areas at one level and those at the next level. In general, this is a 'one-to-many' relationship moving from top to bottom of the chart. From bottom to top, the relationship is 'many-to-one.'
- Each branch of the hierarchy shows there is no relationship between the geographic areas in that branch and those in an adjacent branch. For example, the chart shows that dissemination areas (DAs) group together to form census subdivisions (CSDs); they also group together to form census tracts (CTs), but there is no relationship (no exact fit) between CSD boundaries and CT boundaries.

Figure 1 Hierarchy of standard geographic units for dissemination, 2011 Census



1. A best fit linkage is created between the previous census CSDs and the current census dissemination blocks to facilitate historical data retrieval.

- Administrative area
- Statistical area
- Polygon
- Representative point
- Best fit linkage
- Linkage using point-in-polygon process

Sources:

Statistics Canada, 2011 Census of Population, Canada Post Corporation, May 2011.

Geographic analysis: from the general to the specific

A particular branch in the hierarchy shows how one can carry out geographic analysis starting with the general and moving to the specific (a top-down approach). For example, one can start with Canada and then, within each province or territory, look at census divisions (CDs) and CSDs. Or, using a bottom-up approach (building-block fashion), one can start by examining specific individual areas, CSDs for example, and comparing them with each other, within a particular CD, then within the province or territory, and eventually within the nation as a whole.

To put these descriptions in context, the following section describes the way in which Statistics Canada creates and maintains the geographic infrastructure.

Geographic database

The geographic areas depicted in the hierarchy chart are incorporated into a large geographic database, called the National Geographic Database (NGD). The NGD includes a digital representation of the boundaries of these areas, as well as attribute data, such as the names and codes, which are necessary for uniquely identifying each area.

The NGD contains additional geographic features, including the road network, various hydrographic features (such as lakes, rivers and coastal waters) and other selected visible features (for example, railroads). The additional features also have associated attribute data, such as street names and address ranges.

Geographic areas

In [Figure 1](#), geographic areas are depicted as being either administrative or statistical areas. Administrative areas are defined, with a few exceptions, by federal, provincial or territorial statutes, and are adopted for the purposes of the census. Statistical areas, on the other hand, are defined by Statistics Canada, in cooperation with stakeholders, for the purpose of disseminating census data and complementing the structure of administrative regions.

The number of geographic areas by province and territory for the 2011 Census is presented in the Geographic units by province and territory, [Table 1](#) of the *2011 Census Dictionary*, Catalogue no. 98-301-X.

Refer to the [Geography universe](#) section of the *2011 Census Dictionary*, Catalogue no. 98-301-X, for definitions and more detailed information on each of the following administrative and statistical areas. Supplementary information is also provided in the appendices.

Administrative areas

- [Province or territory](#)
- [Census division \(CD\)](#)
- [Census subdivision \(CSD\)](#)
- [Federal electoral district \(FED\)](#)
- [Forward sortation area \(FSA\)](#)
- [Postal code^{OM}](#)
- [Designated place \(DPL\)](#)

OM: Postal code is an official mark of Canada Post Corporation.

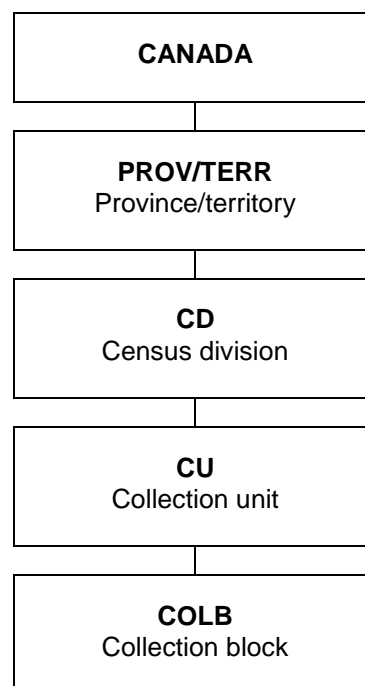
Statistical areas

- [Economic region \(ER\)](#)
- [Census agricultural region \(CAR\)](#)
- [Census consolidated subdivision \(CCS\)](#)
- [Population centre \(POPCTR\)](#)
- [Statistical Area Classification \(SAC\)](#)
- [Census metropolitan area \(CMA\)](#)
- [Census agglomeration \(CA\)](#)
- [Census metropolitan influenced zone \(MIZ\)](#)
- [Census tract \(CT\)](#)
- [Dissemination area \(DA\)](#)
- [Dissemination block \(DB\)](#)
- [Place name \(PN\)](#)

Collection geography

The geographic areas used for census data collection are illustrated below in [Figure 2 Hierarchy of geographic units for collection, 2011 Census](#) and are slightly different than those used for dissemination. Data are not published using collection-oriented geographic areas and therefore are not represented in the hierarchy of geographic units used for dissemination ([Figure 1](#)). The geographic areas used for census data collection include the collection unit (CU), the collection block (COLB) and supervisory areas for each field operation (Figure 2).

Figure 2 Hierarchy of geographic units for collection, 2011 Census



Non-standard or user-defined geographic areas

In most cases, the standard geographic areas described above satisfy data user requirements for census data tabulations; however, there are also many who require that data be tabulated for geographic areas that are not in the standard geographic hierarchy, depicted in [Figure 1](#).

There are two basic types of such non-standard or 'user-defined' geographic areas: areas that are aggregations of standard geographic areas, and areas that do not match the standard geographic areas at all. An example of the first type could be sales regions for a metropolitan area, where the sales regions are made up of one or more census subdivisions. Examples of user-defined areas that do not match the standard geographic areas are market areas, school districts, and transportation and utility corridors. When clients require that census data be tabulated for non-standard geographic areas, they may turn to the Custom Area Creation Service provided by Statistics Canada (see [Chapter 10 – Dissemination](#)).

Chapter 10 – Dissemination

Introduction

A primary goal of the dissemination process is to ensure that census and geography products and services meet data user needs. Similar to previous census releases, Statistics Canada strives to provide more data free of charge to the public, while at the same time seeking ways of publishing census results in a timely and accessible manner.

How census data are used

Governments, businesses and associations use census data extensively. The following are some examples:

- The federal government uses population counts from the decennial census (held in years ending in the number 1, for example, 2001, 2011) to realign the boundaries of federal electoral districts. These data are required under *The Constitution Act, 1867*, and ensure equal representation of the population in the House of Commons.
- Data from the decennial and quinquennial censuses are used in producing population estimates. These estimates are used in the calculation of transfer payments from the federal government to the provinces and territories, and from the provincial and territorial governments to municipalities. In 2011/2012, provinces and territories will receive \$58.4 billion through major transfers (Canada Health Transfer [CHT], Canada Social Transfer [CST], Equalization and Territorial Formula Financing [TFF]) and direct targeted support. Even a small error in the estimates could lead to the misallocation of billions of dollars.
- Government departments need to know the age trends of the population to estimate future demands for child tax benefits and old age pensions.
- Communities use census information on population growth and movement for planning services such as schools, daycare, police services and fire protection.
- Town planners, social welfare workers, and other government agencies use census information on families.
- Life insurance companies base their premium tables on census age data.
- Businesses determine new factory, store and office locations based largely on the size and distribution of the population in different areas.
- Manufacturers of household and farm equipment are guided by census data in determining the best market locations for their products. They can also assess the benefits of developing specific products by knowing the characteristics of the population in particular areas.

Overview of 2011 Census products and services

Products and services from the 2011 Census were developed after consulting with existing and potential data users about their data needs and requirements for census information. Past products were evaluated for their continued usefulness and relevance. Technologies such as the Internet were used to increase efficiency and accessibility for data users.

Based on these and similar considerations, 2011 Census products and services are meant to:

- satisfy market, policy and data needs
- be easy to use and understand
- contain information giving users both an historical and geographical perspective
- present data by variable as well as by topic
- offer levels of geography with the potential to better meet users' needs
- provide users with new media and price options.

The 2011 *Preview of Census Products and Services* was first made available in September 2011 and gives a general outline of the five types of products and services available for the 2011 Census:

(1) Data products

These products and services have been designed to present a wide range of census information, including population and dwelling counts, and data by variable and topic. These products are available for standard geographic areas and include:

- Highlight tables
- Topic-based tabulations
- Census Profile
- Visual Census.

(2) Analytical products

These products, specifically designed for the electronic medium, provide data and interpretation for selected characteristics on key findings from the 2011 Census topics. Analysis products include:

- Analytical documents
- Census in Brief series
- Focus on Geography Series.

(3) Reference products

These products are designed to help users make the most of census data. They cover various aspects of the census and are intended to support the use of the data by giving users a better understanding of the methods and concepts used. The list of reference products includes:

- Preview of Census Products and Services
- Overview of the Census
- Census Dictionary
- Technical reports
- Reference guides.

(4) Geography products

Geography products for the 2011 Census reflect both the changes to geography concepts, as well as the more precise geometry and more detailed cartographic features (such as water, roads and road names). The Road Network File (RNF), which covers all of Canada, is available annually. Reference maps and other geographic products are available through a variety of media, including the Internet. Tools are provided for users to find and view their geographic area of interest on the Internet. The list of geography products includes:

Reference documents

- Illustrated Glossary
- Geography Catalogue
- Reference guides
- Working papers
- Interim List of Changes to Municipal Boundaries, Status and Names.

Maps

- Reference maps
- Thematic maps
- GeoSearch.

Spatial information products

- Cartographic boundary files
- Digital boundary files
- Road Network File.

Attribute information products

- Geographic Attribute File
- GeoSuite
- Correspondence files
- Postal code geography files.

(5) Custom services

These services allow for products and services to be tailored to more specific and complex requests than can otherwise be accommodated by the standard products. User-defined tabulation services are made available upon the release of each variable. Custom services include:

- Census custom tabulations
- Semi-custom tabulations
 - Semi-custom profiles
 - Target group profiles
 - Semi-custom cross-tabulations
- Census data file at the Research Data Centres (RDCs)
- Geography custom services
 - Custom area creation
 - Custom Product Creation
 - Custom Map Creation
 - Print-on-demand

Availability of products and services

For 2011, census data will continue to be disseminated primarily via the Internet through Statistics Canada's website. Each release of data is summarized and published in *The Daily*. Four official 2011 Census data releases are scheduled between February 2012 and October 2012.

Census output major release dates

Data release	Date
Population and dwelling counts	February 8, 2012
Age and sex	May 29, 2012
Families, households and marital status	September 19, 2012
Structural type of dwelling and collectives	
Language	October 24, 2012

Overview of the Census of Agriculture

Chapter 1 – Taking an agriculture census

Introduction

A picture of Canada would be incomplete without important and current information about agriculture, which plays an important role in the Canadian economy.

The Census of Agriculture provides comprehensive information on topics such as crop area, number of livestock, weeks of farm labour, number and value of farm machinery, farm expenses and receipts, and land management practices. The most recent was conducted in conjunction with the Census of Population on May 10, 2011. Although the two censuses are very different, conducting them at the same time has several benefits. This chapter describes the Census of Agriculture and how it is conducted.

A brief history

The *Constitution Act of 1867* (formerly the *British North America Act*) determined that a census would be taken every 10 years starting in 1871. However, rapid expansion in Western Canada at the turn of the century made a more frequent census necessary. Starting in 1896, a separate Census of Agriculture was taken every five years in Manitoba, and, beginning in 1906, in Alberta and Saskatchewan.

By 1956, rapid economic growth and development created the need for national demographic and agricultural information at more frequent intervals. In 1956, the five-year Census of Agriculture was extended to the entire country, and the Census of Population became a regular enumeration every five years. That year, the two started a long tradition of being conducted concurrently.

Although the Census of Agriculture and the Census of Population are conducted at the same time, they do have separate questionnaires. Most of the development, testing, processing, data validation and preparation for data dissemination for the Census of Agriculture and the Census of Population are handled by different groups within Statistics Canada. However, sharing the data collection and communications activities for both censuses streamlines procedures and reduces costs considerably. Another important benefit is that information from the two questionnaires can be linked to create the agriculture-population linkage database. This unique database provides users with information pertaining to the social characteristics of the farm population.

Questionnaire respondents

Anyone who operates a farm, ranch or other agricultural operation that produces at least one of the products intended for sale (listed in Figure 3), is required to complete the Census of Agriculture questionnaire.

Figure 3 Products intended for sale from an agricultural operation

Crops	Livestock	Poultry	Animal products	Other agricultural products
<ul style="list-style-type: none"> • hay • field crops • tree fruits or nuts • berries or grapes • vegetables • seed 	<ul style="list-style-type: none"> • cattle • pigs • sheep • horses • game animals • other livestock 	<ul style="list-style-type: none"> • hens • chickens • turkeys • chicks • game birds • other poultry 	<ul style="list-style-type: none"> • milk or cream • eggs • wool • furs • meat 	<ul style="list-style-type: none"> • sod, greenhouse or nursery products • Christmas trees • mushrooms • honey or bees • maple syrup products

Operators are defined as those responsible for the management and/or financial decisions made in the production of agricultural commodities. All operations, regardless of size, must submit a completed Census of Agriculture questionnaire. As a group, even the very small operations contribute significantly to the agricultural community and economy. Since 1991, the Census of Agriculture questionnaire has expanded to include multiple operators reporting for one farm.

Timing of the Census of Agriculture

As in previous censuses, the 2011 Census of Agriculture data collection activities were conducted jointly with the Census of Population in early May.

Statistics Canada recognizes that for farmers this is one of the busiest times of the year. However, collecting the data at the same time as the Census of Population and combining public awareness campaigns—even though the two censuses are very different—streamlines procedures, ensures accurate coverage and saves millions of dollars.

In 2011, the Censuses of Population and Agriculture used a new method called 'the Wave' to deliver the questionnaires and, at specific times throughout the collection period, remind Canadians to fill out their questionnaires.

On May 3, 2011 (Wave 1), all known farm operations in Canada were mailed a Census of Agriculture questionnaire, which they were able to complete on paper or online or by calling the Census Help Line. Most rural Canadians still received their Census of Population questionnaire from an enumerator.

Wave 2 has no specific Census of Agriculture activities. However, a large proportion of Census of Agriculture respondents in areas received a Census of Population reminder card, which may also prompt a Census of Agriculture response.

Farm operations from Wave 1 that still did not respond received another Census of Agriculture questionnaire package as part of Wave 3.

In 2011, respondents returned their completed Census of Agriculture questionnaires directly to the Data Operations Centre by mail and not through an enumerator—as they did in 2006 when the mail-back method was introduced.

This rectifies concerns that local enumerators, often known by the respondent in rural areas, would see sensitive information on completed census forms.

Completing the questionnaire online has also been an option since 2006.

Types of data collected

The 2011 Census of Agriculture questionnaire had a total of 201 questions on 16 pages. Respondents were only required to complete questions that applied to their agricultural operations; an average respondent answered about 20% of the questions. A series of 'skip' questions also helped the respondents move quickly through the questionnaire. The following is a list of the types of data collected:

- CRA business number
- type of operating arrangements
- farm operator information
- main farm location
- size (area) of operation
- land use and land tenure
- area and type of field crops
- area and type of fruits, berries and nuts
- area and type of vegetables
- area of nursery products and sod
- area of Christmas trees
- area and type of greenhouse products
- area of mushrooms
- number of maple taps
- number of bee colonies and other pollinating bees
- land management practices
- chicken and turkey production and inventory
- eggs produced
- number of birds hatched in commercial poultry hatcheries
- number and type of livestock
- market value of land and buildings
- number and market value of farm machinery by type
- total gross farm receipts
- farm business operating expenses
- use of a personal computer in managing the farm business, use of Internet and high-speed Internet access
- value of forest products
- number of employees
- weeks of paid farm labour
- organic products produced for sale.

Agriculture-population linkage database

An important benefit of conducting the Census of Agriculture with the Census of Population is that the two can be matched or linked by computer. Since all farm operators also complete a Census of Population questionnaire, linking information from the two questionnaires provides a social profile of the farm population that includes information such as marital status, the language of farm operators and the size of farm families.

Chapter 2 – The Census of Agriculture cycle

Introduction

As previously stated, the censuses of agriculture and population are conducted at the same time every five years. However, once the data are collected, most processing activities are quite separate.

User consultation

Planning for the next census begins even before the current census cycle is finished. A series of workshops were held across Canada in 2007 with users and stakeholders such as federal departments and provincial ministries, agricultural associations, academics and agriculture service providers. Users subsequently submitted recommendations for the types of questions they would like to see on the 2011 Census of Agriculture questionnaire. The recommendations received through these submissions were used to develop the content and design of the census questionnaire.

Evaluating the suggestions

Before going any further, the submitted recommendations had to meet certain criteria before being judged suitable for inclusion in the Census of Agriculture:

- Is this topic of national interest?
- Are data worthwhile at more detailed geographic levels than provincial or national?
- Will farmers easily understand the question?
- Can the question be answered—that is, do the farm operators have the information to answer the question?
- Will farm operators be willing to answer it?
- Will there be a broad demand for the data generated by the question?
- Can the question be answered by either 'Yes,' 'No,' or a quantitative response?

Questionnaire content and development

Although the questionnaire is updated every census to reflect users' changing requirements as identified through the submission process, certain questions appear on every census. These questions—such as those on farm operators, land area, livestock numbers and crop areas—are considered essential by Statistics Canada and other major users of Census of Agriculture data. Repeating basic questions allows the census to measure change over time, while adding new questions and dropping others allows data to be collected that reflect new technologies and structural changes in the agriculture industry. For example, the questions on manure management practices were tested and improved to reflect operators' use and understanding of farming terms and practices on operations today. Other sections also modified and refined were those on land use, hours of work on and off the farm, area for which crop residue was baled, poultry, wages and salaries, computer use and organic production.

New or changed questions were developed in head office in consultation with industry experts. They were tested a number of times with farm operators across Canada through one-on-one interviews on their farms and in focus groups. Farm operators selected for testing reflected regional diversity—in types of agriculture, production techniques, farm size, language and age. This testing proved that some questions would not perform well on the census, and that the wording of other questions would require fine-tuning. Respondent burden, content-testing results, user priorities and budgets were all taken into consideration in determining the final content of the 2011 Census of Agriculture questionnaire. It was approved by Cabinet in the spring of 2010.

New on the questionnaire

Many questions on the 2011 questionnaire were modified slightly from 2006. Some highlights are:

- **Business number:** A question has been added to request the Canada Revenue Agency (CRA) Business Number for the agricultural operation. In addition, a brief explanation of the intent of this question has been added to the back cover of the questionnaire. Using this data, a pilot project will evaluate the feasibility of replacing the financial information asked in Step 32 with CRA tax data, which could significantly reduce the response burden for farmers.
- **Paid work:** The number of employees working full or part time has been added in order to provide a measure of the number of people working on farms. This will significantly add to the picture of agricultural labour when coupled with the established questions on the number of hours or weeks of paid work on farms.
- **Crop residue:** A new step has been added to request the area from which crop residue was baled. This is an environmentally relevant question, as crop residue management affects erosion rates, contamination of surface and groundwater, greenhouse gas emissions, and carbon sequestration.
- **Practices and land features:** Two new questions have been added to identify agricultural operations involved in 'in-field winter grazing or feeding' and 'nutrient management planning.' These questions will provide more comprehensive data on farmers' adoption of environmental management techniques.
- **Internet:** A question on access to high-speed Internet has been added in order to evaluate the accessibility of respondents to services provided by Internet. This will assist agriculture service providers in the public and private sectors in planning service delivery to farmers.
- **Farm-related injuries:** These questions were removed because better quality data are available from alternative sources.
- **Organic but not certified:** This category was removed in order to reflect the new regulations on the use of the term 'organic.'

Getting and returning your questionnaire

In 2011, for the first time, all known farm operations received their questionnaires by mail through Canada Post rather than through a local enumerator. Farm operators either mailed back the form directly to Statistics Canada in the National Capital Region or completed and submitted an electronic form on the Internet.

Data collection begins in May

Conducting the Census of Agriculture jointly with the Census of Population in mid-May helps streamline collection procedures and saves millions of dollars. In 2011, most Census of Population forms and all Census of Agriculture forms were delivered to households and farm operations by Canada Post.

A question on the Census of Population questionnaire is used to identify farm operators who may have been missed. Census staff may have followed up with a phone call to help the operator fill out the questionnaire.

All Census of Agriculture respondents were asked to mail back their completed questionnaires in the pre-addressed, postage-paid envelopes provided.

Options for completing the Census of Agriculture

The questionnaires are either completed and submitted through the Internet or completed on paper and mailed back to Statistics Canada's Data Operations Centre for data capture. (For more information please see Data processing.) Farm operators could also complete the form on the phone by calling the toll-free Census Help Line.

The Census Help Line

The 2011 Census Help Line (1-877-777-2011) provided a toll-free telephone service that respondents could call during the collection period to obtain assistance in completing the questionnaire.

The Census of Agriculture and the Internet

In 2011, the option of completing the Census of Population or Census of Agriculture questionnaires over the Internet was offered once again. Both the agriculture and population questionnaires used a single portal, or entry point. Instructions for accessing the website address and the Internet forms were included on the paper questionnaires delivered to respondents, as was the unique secure access code that respondents could use to access the electronic questionnaire. This authenticated users and confirmed that a questionnaire has been received from that household. The Internet version also included navigational aids, drop-down menus, help pages and online edits.

Internet security—completing the questionnaire online

Statistics Canada always takes the protection of confidential information provided online very seriously. A secure login process and strong encryption are key elements in helping to prevent anyone from accessing or tampering with census information when the questionnaire is completed and transmitted by Internet.

Census follow-up

Once the data are collected and captured, Statistics Canada employees edit or check them for completeness. Any questionnaire with missing or incomplete data required followed up by telephone. Questionnaires not returned within a certain period of time, also required telephone follow-up.

Large farms

A special data collection process was developed to handle the increasingly complex structure of large integrated agricultural operations. Each operation's business structure was profiled to determine which of its components were to be enumerated and how many questionnaires needed to be completed. The required number of questionnaires was sent to a contact within the operation. Once completed, they were mailed back to head office, where they were edited before being incorporated into the regular census processing flow.

Census Communications Program

In the months leading up to the census, the Census Communications Program promoted both the Census of Agriculture and the Census of Population. The campaign informed respondents about Census Day, and reminded them of the importance of completing the questionnaire and returning it promptly. A variety of separate promotional materials were developed for the Census of Agriculture and distributed to various agricultural organizations, producer groups and the farm media. They were also distributed at a number of farm shows and agricultural conferences, and displayed by businesses in rural areas. The program also solicited third-party support from government and agricultural organizations and corporations. In addition, a series of advertisements ran in the major agricultural trade magazines and newspapers and were aired on farm radio stations during the few weeks leading up to May 10.

Since diseases can be accidentally introduced by a visitor to a farm, enumerators were asked to behave responsibly by showing sensitivity to the issues operators face, and by making sure their actions did not contribute to the risk of spreading infection.

If there was a biosecurity sign at the entrance or main gate ('Restricted access,' for example), the enumerator did not enter the property, and another method (such as a phone call) was used to ensure that the operator received the census questionnaires.

Head office processing

Data capture

The Census of Agriculture and Census of Population questionnaires go their separate ways once they arrive at the Data Operations Centre in the National Capital Region. There they are sorted, electronically scanned and the data automatically captured using Intelligent Character Recognition (ICR) software, a technology that reads data from images. Any responses not recognized by the ICR process are sent to a Statistics Canada employee who views the questionnaire image and enters the correct data into the system. Questionnaires completed and submitted on the Internet also go to the Data Operations Centre.

Edit, follow-up and imputation

Once the data have been captured, they are loaded to an automated processing system that takes them through detailed edit, follow-up and imputation processes. The data are first subjected to many rigorous quality control and processing edits to identify and resolve problems related to inaccurate, missing or inconsistent data. A Statistics Canada employee followed up with these problematic records that could not be resolved in editing to clarify the missing or incomplete data. Finally, those situations that cannot be resolved through either edit or follow-up are handled by an imputation procedure that replaces each missing or inconsistent response either with a value consistent with the other data on the questionnaire or with a response obtained from a similar agricultural operation.

Data validation

Data validation follows the edit, follow-up and imputation processes. At this stage, Statistics Canada analysts review the aggregate data at various geographic levels and examine the individual values, large and small, reported for each variable. The data are compared with previous census results, current agricultural surveys and administrative sources. Errors remaining due to coverage, misreporting, data capture or other reasons are identified and corrected. Where necessary, respondents are contacted to

verify their responses. Near the end of the validation process, certification reports containing results of the analysis and recommendations for publication are prepared and presented to a review committee.

Data security

The security of personal information is of paramount importance to Statistics Canada. Census data are stored on Statistics Canada systems that are isolated from any other network. External devices, such as telephone dial-in services that connect to Statistics Canada's confidential data storage systems, are not permitted, making it impossible to break into Statistics Canada's databases.

In addition, Statistics Canada's premises have controlled access so that only persons with the appropriate security clearance who have taken the oath of secrecy can enter facilities housing confidential data. Anyone from outside Statistics Canada needing entrance to these premises is escorted by a Statistics Canada employee at all times. **Only Statistics Canada employees who need to see Census of Agriculture questionnaires and data as part of their regular work duties are able to access personal information.**

Data quality

Quality assurance procedures to ensure complete and accurate information from every agricultural operation in Canada are reviewed and improved for each census.

In 2011, Canada Post delivered a Census of Agriculture questionnaire to addresses where it was believed a farm operator lived. The addresses are determined from the previous census and other agriculture surveys. Census of Population questionnaires were delivered by Canada Post, or dropped off by an enumerator in list/leave areas, or completed by an enumerator in canvasser areas.

To ensure all farm operations were identified, the Census of Population questionnaire asked if there was a farm operator living in the household. This question triggered a follow-up from head office to help ensure that new farms were identified and enumerated for the Census of Agriculture.

Respondents will be able to complete their questionnaires on paper, by telephone or via the Internet. Telephone follow-up will be conducted with those respondents who received questionnaires but did not return them.

In addition, the data processing sequence includes several safeguards that can find 'missing' farms that were counted in 2006 but did not return a questionnaire in 2011 or, conversely, farms that did not exist in 2006 but have been identified on subsequent agriculture surveys since then.

Finally, the Coverage Evaluation Survey gave an estimated undercoverage rate for the 2006 Census of Agriculture of 3.4%.

Data dissemination

Once data are collected, processed, verified and certified, they are ready for public use. Census of Agriculture data are available at low levels of geography and are presented in various standard formats and through custom data tabulations. All published data are subjected to confidentiality restrictions to ensure that no respondent can be identified.

The section 'Census of Agriculture products and services' lists all products and services available from the 2011 Census of Agriculture.

Census of Agriculture marketing

This is the last stage in the census cycle. Once all the data have been collected, processed and produced, users and respondents must be made aware of what products and services are available. The Census of Agriculture staff at head office and Advisory Services staff in the regional reference centres complete most of the promotion. A variety of activities—including mail-outs, media releases, feature articles, client visits and displays—make both the public and private sectors aware of 2011 Census of Agriculture products and services. The marketing, dissemination and communications divisions of Statistics Canada provide technical support.

Chapter 3 – Census of Agriculture products and services

Census of Agriculture data at work

The Census of Agriculture is the cornerstone of Canada's agriculture statistics program. Governments use Census of Agriculture data to develop, operate and evaluate agricultural policies and programs. Statistics Canada uses the data as benchmarks for estimating crops, livestock and farm finances between census years.

Users in the private sector see the Census of Agriculture as an important window on the agricultural industry. Agribusiness evaluates market potential, and makes production and investment decisions based on census data; farm boards and organizations use Census of Agriculture data as a foundation for their discussions with governments and trade organizations. Governments and farm organizations use census data to evaluate the impact of natural disasters on agriculture (such as floods, drought and ice storms) and react quickly. Academics base much of their economic analysis of agriculture on data from the Census of Agriculture.

The Census of Agriculture serves all of these needs by offering a variety of products and services.

Data products

Basic counts and totals for all 2011 farm and farm operator variables will become available online as of May 10, 2012. These data are tabulated at the national and provincial levels, as well as at all three subprovincial levels (census agricultural region, census division and census consolidated subdivision).

As of the fall of 2012, the selected historical farm and farm operator data will become available. In the fall of 2013, the final online release of data will include selected 2011 and historical data on social characteristics of farm operators, census farm families and on the farm population from the agriculture-population linkage database.

Analytical product

Canadian Agriculture at a Glance

As of the fall of 2012, Agriculture Division's flagship publication, *Canadian Agriculture at a Glance*, will become available. 'Glance' will retain its format of short analytical articles, written in lively and readable text, on the many different aspects of agriculture and its people in Canada. These articles are complemented by maps, full-colour photos, graphs and charts that give its diverse array of subjects an eye-catching and informative visual interpretation. The online publication is designed with students in mind, avoiding jargon and explaining issues in understandable terms. 'Glance' will continue its tradition of marrying Census of Agriculture data with other Statistics Canada and external data sources.

Custom data products and services

The Data and Subject Matter Consulting Unit of the Census of Agriculture can tailor products and tabulations to meet the special data requirements of clients. Custom tabulations allow the user to create unique tables from the 2011 Census of Agriculture and agriculture–population linkage databases (from 1971 to 2011 [available in the fall of 2013] except for the 1976 Census), as well as selected historical data (every census year available since 1921).

Subject to confidentiality restrictions, custom tabulations can be produced for Census of Agriculture standard geographic areas, as well as user-defined areas.

Pricing

The data products mentioned previously are all available on Statistics Canada's website for free on their respective day of release. Pricing for custom data products and services are based on the consulting time that is required for developing the product, the number of geographic areas and variables requested, and the data processing requirements for the custom product.

Media

Custom products are available in a variety of output media (print, CD-R and electronic data transfer), depending on the users' requirements.

Service centres

To obtain more information on the data, products and services available from the Census of Agriculture, please contact Statistics Canada's National Contact Centre, the Census of Agriculture Data and Subject Matter Consulting Unit (toll-free at 1-800-465-1991) or consult the Statistics Canada Online Catalogue or [People, Products and Services](#), Agriculture Division, Catalogue no. 21F0003G.