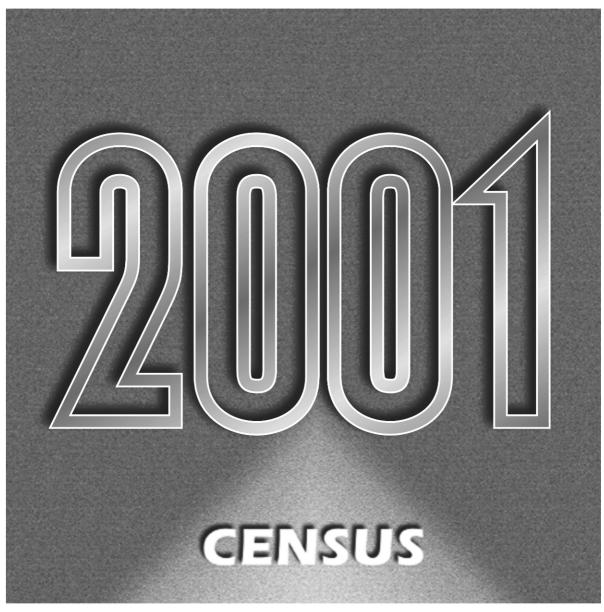


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# 2001 Census Handbook

Reference





Statistics Canada Statistique Canada Canadä<sup>\*</sup>



#### Statistics Canada Census Operations Division

# 2001 Census Handbook

Published by authority of the Minister responsible for Statistics Canada

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### Introduction



The 2001 Census Handbook is a reference tool covering every aspect of the 2001 Census of Population and Census of Agriculture. It provides an overview of every phase of the census, from content determination to data dissemination. It traces the history of the census from the early days of New France to the present. It also contains information about the protection of confidential information in census questionnaires and statistical tables. It provides a detailed description of the census questions and variables, along with information about data quality and the possible uses of census data. Also covered are census geography and the range of products and services available from the 2001 Census database.

The 2001 Census Handbook may be useful to new users who wish to familiarize themselves with the Canadian Census of Population. It will also be helpful to experienced users who want information about the specific content of the 2001 Census of Population and Census of Agriculture.

#### How to use the 2001 Census Handbook

Part I covers the Census of Population, and Part II is about the Census of Agriculture. There is a detailed table of contents to help users identify the topic of interest to them and quickly locate the information they need.

For reference, there is also a copy of the long questionnaire (2B) and the Census Guide (9B) for the 2001 Census of Population in the pocket inside the front cover. Users consulting the 2001 Census Handbook on-line can view the 2001 Census questionnaire electronically.

# Part

Census of Population



#### 1.1 Census-taking: Ancient Beginnings

The practice of taking a census dates back to the dawn of civilization. History records that Moses counted the children of Israel in the 15th century B.C. and that censuses were taken centuries earlier in Babylon (3800 B.C.), China (3000 B.C.) and Egypt (2200 B.C.). The methods employed in ancient censuses were rudimentary, and the goals were short-term – for example, to conscript young men for military service, or to enable rulers to impose taxes on their subjects.

The government of New France has the honour of being the first to take what we would call a *modern* census. That first census was conducted just as the colony of New France was getting established; in fact, one of its aims was to help the young colony take root.

#### 1.2 Taking Stock of the Colony

Jean Talon played a major role in the development of census-taking in the New World. He was sent to New France as Intendant of Justice, Police and Finance for Canada, Acadia, the island of Newfoundland and other French lands in North America. King Louis XIV instructed Talon to take appropriate steps to expand the colony so that it would quickly become self-sufficient and capable of supplying products needed for the growth of French industry; to accomplish this, he had to settle the country, develop agriculture and trade, and establish manufacturing industries. Realizing that he would need reliable statistics if he was going to organize the colony and foster its development, Talon took a census shortly after he arrived in New France. He did much of the data collection personally, visiting settlers throughout the colony in 1666.

Talon conducted his first census by the so-called *de jure* (by right) method, which counts people at their usual place of residence and not where they happen to be on Census Day (*de facto*). He recorded settlers' names, on a specific date, and collected information on age, sex, marital status, and occupation or trade. In 1666, a second survey allowed him to gather more data with a census of livestock and cleared land.

In all, 36 censuses were conducted under French rule, the last of them in 1739. More questions were added, covering subjects such as buildings and houses, agricultural and industrial production, and even – because of the frequent threats to peace in those days – weapons. After the British took over, regular censuses gave way to a series of less detailed surveys, though full censuses were conducted in 1765, 1784 and 1790. After 1817, censuses were held at more regular, though different, intervals in New

Brunswick, Nova Scotia, Upper Canada and Lower Canada. There was an annual census of Upper and Lower Canada between 1824 and 1842.

The content of those censuses varied widely, but after 1827, they generally covered a wide range of topics. Later, as a result of the *Census Act of the United Provinces* (1847 amendment), a census was conducted in February and March of 1848 and again exactly two years later. On August 30, 1851, royal assent was given to a new law requiring regular censuses, starting in 1851-52 and continuing in 1861 and every tenth year thereafter. Thus, 1851 would appear to mark the beginning of Canada's decennial census.

#### 1.3 An Established Tradition

The rebellions of 1837 and the widespread demand for an elected government with representation based on population size led to the passage of the *Constitution Act, 1867* (formerly known as the *British North America Act, 1867*). Under sections 8 and 51 of the Act, the census was to provide population figures that would be used to determine the number of representatives each province would have in the House of Commons. Electoral district boundaries were also to be adjusted on the basis of census counts. Consequently, in order for each Member of Parliament to be able to represent the population of a specific area, population counts had to be broken down by specific geographic area. With respect to the census, the *Constitution Act*'s key impact lay in the fact that it influenced the decision to standardize the *de jure* method and to conduct a census on a set date every 10 years for specific geographic units. In other words, the decision was made to continue the tradition established by Jean Talon.

Thus the first census taken under the *Constitution Act, 1867* was in 1871. The questions were essentially the same as in the 1851 and 1861 Censuses.

#### 1.4 A Set Date

Although the census is conducted on a set date – a specific point in time – the day of the census has varied over the years. Several factors enter into the choice of a date, and changes that have occurred – some due to data collection requirements, others to shifts in customs – have been designed to ensure respondents' full participation in the census and to improve coverage and data quality.

Under the *Census Act* of May 12, 1870, the census was to be conducted by May 1 of each census year, except in certain hard-to-reach areas, which were to be covered in July. Accordingly, the census was held in April until 1911, when the date was moved to June 1. This change was made to avoid the poor road conditions and unfavourable weather that hampered enumeration in earlier months. Holding the census in June was also advantageous from the standpoint of collecting agricultural data, since farmers would know by then exactly how many acres of land they had seeded. The date was set

as early as possible in June so that the census could be taken before people headed for summer destinations.

As time went by, however, it became clear that the first day of the month was moving day for a large number of households. In addition, June 1 sometimes fell on a weekend, when many respondents were away. To reduce the amount of follow-up made necessary by these movements, Census Day was shifted again in 1981, this time to the first Tuesday in June.

For the 1996 Census, the date changed once more, moving backward to the second Tuesday in May. Today, many of the households that move in a given year do so in late June. Pushing the census date ahead to mid-May meant that the questionnaires would be dropped off and mailed back during the same month, which lowered the risk that they would be lost in a move. In addition, follow-up of non-returns would take place in June, before most people go on vacation; this would keep costs down and produce better coverage and data quality.

#### 1.5 Self-enumeration

Every Census of Canada up to and including the 1966 Census was conducted by interview. Census representatives went from door to door, interviewing respondents and writing down their answers in census booklets. In 1971, however, there was a major change in the collection method. To improve data quality and address growing concerns about privacy, respondents were asked for the first time to complete the census questionnaire themselves (self-enumeration). By letting people fill in the form at their convenience on Census Day, Statistics Canada hoped to obtain more accurate results. Respondents could also consult their personal documents for information needed to answer certain questions. Moreover, self-enumeration eliminated errors of interpretation by census representatives and improved the accuracy of answers to sensitive questions. This method has been used since 1971 for 98% of the Canadian population.

#### 1.6 Sampling

In the 2001 Census, 80% of households received a short questionnaire containing seven questions, while 20% were given the 59-question long form. This method of gathering detailed data from a sample of households (rather than all households) was first employed in the 1941 Census of Canada. Housing data were collected from every tenth household in order to provide information about post-war housing problems and solutions for them. Sampling proved to be an effective collection method, yielding high-quality data while reducing costs and response burden. As a result, it was used again in 1951; this time, the sample was expanded to one household in five in order to obtain greater geographic detail. The sample has been set at one in five ever since, except in 1971 and 1976, when it was one in three.

#### Figure 1. Milestones in the History of the Census

- 1666 First census in New France. The total population was 3,215, excluding Aboriginals and royal troops.
- 1739 Last census under French rule.
- 1767 The census of Nova Scotia adds religion and ethnic origin variables.
- 1817 The census of Nova Scotia adds place of birth variables.
- 1831 The first census in what would become western Canada was taken in the Assiniboine.
- 1851 With the enactment of legislation requiring censuses in 1851, 1861 and every tenth year thereafter, the decennial census is born.
- 1870 First census of British Columbia and Manitoba.
- 1871 First census of Canada after Confederation. The questionnaire was produced in both English and French, as it has been in every census since.
- 1905 The census office becomes a permanent part of the government.
- 1906 A quinquennial census is taken in Manitoba, Saskatchewan and Alberta.
- 1911 The census is moved from April to June to avoid poor weather and road conditions and to improve the accuracy of crop acreage data.
- 1918 The Dominion Bureau of Statistics is established with the enactment of the 1918 Statistics Act.
- 1941 The census is moved for this year only to June 14 to avoid conflicting with the first Victory Bond campaign. Sampling is used for the first time; the questions concern housing.
- 1956 The first nation-wide quinquennial census is conducted.
- 1971 For the first time, most respondents complete the questionnaire by themselves (self-enumeration). The Dominion Bureau of Statistics becomes Statistics Canada. A new *Statistics Act* requires that a census of population and agriculture be conducted every five years.
- 1986 The census contains a question on activity limitations, which is later used to form a sample for the first postcensal survey on activity limitations.
- 1991 The question on common-law status is asked for the first time.
- 1996 For the first time, the census collects information about unpaid work and mode of transportation to work.
- For the first time, the census collects information on same-sex couples, as well as information on language of work.

#### 1.7 Decennial Census, Quinquennial Census

National censuses have been conducted at 10-year intervals since 1851, except in the provinces of Manitoba, Saskatchewan and Alberta, where they have been taken every five years since 1906. However, in 1956, it was decided a national census should be taken every five years. The five-year census would provide a better means of measuring the pace of economic growth and urbanization. Under the *Statistics Act* of 1971, it became a statutory requirement to conduct a nationwide census every five years.

The term *decennial* refers to censuses held at the beginning of each decade, in years ending in 1 (1971, 1981, 1991, 2001), while the word *quinquennial* is used to describe censuses taken at mid-decade, in years ending in 6 (1976, 1986, 1996).

#### **1.8 Census Content**

While the need for historical data suggests that the questions asked in a national census should always be the same, the fact is that some changes have to be made between censuses to meet new data requirements or reflect changes in society itself. The same dilemma arises prior to each census: maintain the historical continuity of census data, or keep pace with the country's social, cultural and economic development. This is why various changes have been made in the census over the years, such as in its terminology and definitions.

#### 1.8.1 In other words

For example, in the 1891 questionnaire, respondents were asked to indicate their relationship to the *head of family*. Up to and including 1971, the head of family or household was defined as the husband rather than the wife, the parent where there was only one parent living with unmarried children, or any member of a group sharing a dwelling equally. Because respondents expressed growing opposition to the use of the word *head*, due to its sexist, paternalistic connotations, the definition was rewritten for the 1976 Census. The questionnaire for that census stated that the *head of household* was either the husband OR the wife. Head-of-household data and household data by characteristics of the head were produced and disseminated in 1976 using the new definition. In 1981, there was no reference to *head of household* in the census questionnaire. Relationships between household members were defined on the basis of the person who completed the questionnaire for the rest of the household, known as *Person 1*.

Between 1871 and 1911, the census asked questions about *infirmities*. The questions were not included in the 1921 and 1931 censuses. In 1941 and 1951, there was a supplementary questionnaire for blind and deaf-mute people. The subject did not reappear in the census for 30 years, and when it did, the terminology had changed. A question on *activity limitations* was added in 1986. Respondents were asked to state if they were limited in their activities because of a physical condition, a mental condition or a chronic health problem. This question was used to prepare a sample of respondents for the first postcensal Health and Activity Limitation Survey, conducted later in 1986.

#### 1.8.2 A reflection of its time

The census questionnaire is a sign of the times in that its content reflects the concerns of the period in which it was developed. For example, housing has been covered in every census, but not always in the same way over the past censuses.

As of 1871, there was a question on dwelling type. In 1921 and 1931, questions on tenure and number of rooms were added. Also in 1931, families were asked if they owned a radio; the purpose of this question was to measure the extent to which this important invention was being used in Canada. As mentioned earlier, a sample survey of housing was conducted in 1941. There were only two housing questions in the 1966 Census – one on dwelling type and the other on tenure (owner or renter). In 1971, however, increased interest in housing led to the addition of questions on such topics as utilities (source of running water, drainage of waste water), heating systems, and principal fuel used to heat the dwelling, cook food and heat water. Respondents were also asked if anyone in the household owned a vacation home (cottage) and if their dwelling had a refrigerator, freezer, washing machine, automatic dryer, and black-and-white or colour television set. In the 1981 Census, questions on condominiums and the condition of dwellings (whether repairs were needed) were asked for the first time.

As questions were added to the census over the years to meet new requirements, some questions on subjects of decreasing importance were dropped. For this reason, questions relating to dwelling characteristics, such as primary heating system and principal fuel used for heating, were not included in the 1991 and 1996 Censuses.

#### 1.8.3 Changes in content for 2001

Changes from the 1996 Census are described below. In addition, some refinements have been made to the wording of questions, instructions, and response categories to ensure accurate results.

#### Language of work

A question in two parts on language used at work was introduced for the 2001 Census. The first part asked which language the respondent used most often in his or her job. The respondent could indicate English or French, or specify another language. The second part asked for any other languages he or she used on a regular basis in the job. This new question provides insight on the vitality of official languages among the official and non-official minority language communities across the country. The data, for example, would provide information on the extent to which workers belonging to English or French minority language communities use their language knowledge in their job. In addition, it could also be possible to observe the linguistic integration of allophone immigrants in the labour force.

#### Birthplace of parents

A question on birthplace of parents was last asked in the 1971 Census. This question is part of a series of questions, which include place of birth, ethnic origin, population group and religion, that provide a socio-cultural portrait of the Canadian population. Also, with data on birthplace of parents, the census is now able to provide information on socio-economic conditions of second-generation Canadians.

#### Religion

Data on religion are considered an important source of information on the ethno-cultural profile of Canadians. A question on the denomination or religion of the respondent (even if he or she is not currently a practising member of that denomination or religion) has been asked in every decennial census since 1871. Other surveys at Statistics Canada, such as the General Social Survey, are used to provide more in-depth information on religious practices.

#### Languages spoken at home

For the 2001 Census, a second part was added to the existing question on language spoken at home. The first part asked for the language spoken most often at home by the respondent: English, French or another language. The second part asked for any other languages spoken at home by the respondent on a regular basis. This more comprehensive question enables data users to better identify language behaviour in homes where more than one language is spoken, particularly where spouses have different mother tongues. The retention of the mother tongue by people living in a minority situation is of particular interest.

#### Common-law couples

In view of the legal recognition of same-sex couples and of the corresponding need of governments and the private sector for data on same-sex couples, the definition of a common-law couple has been changed to "two people of the opposite sex or of the same sex who live together as a couple but who are not legally married to each other." This definition is included in questions on common-law partners and on the relationship of household members to Person 1.

#### Questions dropped for 2001

No questions have been dropped from the short-form questionnaire. A question on fertility, which has traditionally been asked on the long form in decennial censuses, was not asked in 2001. The last time this question was asked was in 1991.

#### 1.9 The Census and the Law

The census is the most fundamental source of information about our country and our society. The data it produces are required by a multitude of statutes and regulations (for examples, see Chapter 4).

The Constitution Act, 1867 provided for the redistribution of each province's seats in the House of Commons based on the results of the 1871 Census and each subsequent decennial census. The mandate given to the census in the Constitution Act was replaced by a series of statutes, which in turn were superseded by the Statistics Act of 1970. The latter states: "A Census of Population of Canada shall be taken 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."

Census data are important not only for determining the number of seats in Parliament but also for setting the boundaries of federal electoral districts (FEDs). The *Electoral Boundaries Readjustment Act* states that decennial census data are to be used to redefine FED boundaries.

Federal transfer payments to the provinces and territories also rely on population estimates based on population counts from the census, as required by the *Federal-Provincial Fiscal Arrangements Act*. The census collects data under the authority of more than 80 pieces of legislation, including the *Employment Insurance Act*, the *Canadian Charter of Rights and Freedoms*, the *Official Languages Act*, the *Old Age Security Act*, the *Student Loans Act*, and the *Immigration Act*.

Under the *Statistics Act* of 1971, the Dominion Bureau of Statistics, established under the *Statistics Act* of 1918, became known as Statistics Canada. Also, under the *Statistics Act*, every Canadian household is required to complete a census questionnaire. There are penalties for refusing to take part in the census and for intentionally reporting false information. Refusal cases are forwarded to the Department of Justice, which is responsible for laying charges under the Act.



#### 2.1 Introduction

The dissemination of census results is the culmination of a multi-stage process that begins long before Census Day. The census is a unique undertaking on a vast scale, and it has its own special challenges. Collecting information from some 30 million people scattered over 9 million square kilometres is in itself a daunting challenge. Although censuses are conducted only once every five years in Canada, the census cycle extends over a number of years, as Figure 2 shows.

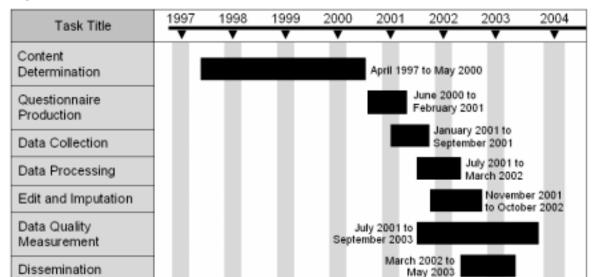


Figure 2. 2001 Census Timetable\*

#### 2.2 Content Determination

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 to shed light on them.

<sup>\*</sup> This timetable is only showing time of intense activities of each task.

The content of the 2001 Census questionnaire was influenced by various social policy issues, for example:

- The demands of an aging population for necessities such as medical services and housing (age, sex and marital status questions).
- Canada's programs and policies related to multiculturalism, bilingualism and employment equity (immigration, language, citizenship and ethno-cultural questions).
- Changes in technology that require upgrading of skills and continued learning (education questions).
- The prevention of economic inequality and consequent polarization of Canadian society into "haves" and "have-nots" (*income*, *education* and *labour* force *questions*).
- The demand for affordable housing programs and establishment of a "core housing need" (dwelling and housing questions).

Data needs are evaluated in light of a number of considerations including the respondent's right to privacy, legislative requirements, availability of other sources to meet data needs, respondent burden, and collection and processing costs.

#### 2.2.1 Public consultation

In early 1997, during the first part of the 2001 Census consultation process, Statistics Canada prepared a guide to help data users organize their ideas and suggestions. This guide was one of the primary vehicles to solicit user input for the upcoming census. The guide was mailed to major data users; printed copies were available on request, and an Internet version was accessible through the Statistics Canada Web site. A geography supplement providing additional information on census geography issues was also available on the Web site, and distributed on paper at meetings.

Consultations on the content of the 2001 Census took place from September 1997 to March 1998. Approximately 480 people participated. The majority were data users. Over 350 written submissions were received and more than 65 meetings were organized throughout Canada by regional reference centres, giving rise to some 1,650 comments in all.

#### 2.2.2 Testing

Statistics Canada undertakes an extensive content-testing program to ensure the census questions produce the required information. It is essential that respondents clearly understand the questions and be willing and able to respond to them in a manner that will yield accurate data. Qualitative testing (focus groups, and a large sample survey known as the National Census Test) are used to determine the quality of information that would result from changes made to the questions and questionnaire design.

The National Census Test (NCT) was held on October 20, 1997; 75,000 households in 13 areas across Canada were selected to participate. The areas were chosen from

different parts of the country, representing a cross-section of the population and including many groups such as Aboriginal people, immigrants, and farm operators. New and modified questions were tested in the NCT on a number of topics including same-sex couples, ethnic origin, birthplace of parents/grandparents, language, activity limitations, place where respondents completed their highest certificate, diploma or degree, and unpaid work.

#### 2.2.3 Recommendations and content approval

Prior to the 2001 Census, Statistics Canada undertook a vigorous consultation, testing, review and approval process to ensure that each question on the census responded to the highest-priority information requirements of governments, the private sector and the general public. Options for the content were developed by Statistics Canada and submitted to Cabinet for review. Once Cabinet had approved the questions, they were prescribed by Order in Council, as required by the *Statistics Act*, and published in the Canada Gazette, Part I. Publication took place on April 22, 2000.

#### 2.3 Questionnaire Production

Questionnaire design is important for several reasons. It reflects on Statistics Canada's public image, can affect the quality of the data obtained, and can also be a factor in the efficient collection and processing of data. Designing a user-friendly questionnaire that satisfies the requirements of collection, processing, and communications is a challenge. Space on the questionnaire is restricted, thereby limiting the number and length of questions that can be asked. Instructions and examples must also be included.

Once design has been finalized, questionnaires must be typeset and edited, printing and packaging contracts arranged, quality control measures carried out, and delivery of the more than 100 million documents monitored. The following is a short list of the many types of questionnaires, booklets, envelopes and related items produced:

- Form 2A is the short Population Questionnaire. It is used to enumerate all usual residents of 4/5 of all private dwellings in mail-back areas.
- **Form 2B** is the long **Population Questionnaire**. It is used to enumerate 1/5 of all usual residents of all private dwellings in mail-back areas. It is also used to enumerate residents of a Hutterite colony in these areas.
- Form 2C is used to enumerate people posted outside Canada, including Canadian government employees (federal and provincial) and their families, and members of the Canadian Armed Forces and their families. It is also used to enumerate all other Canadian citizens and landed immigrants and non-permanent residents outside Canada who request to be enumerated.

- Form 2D is the Northern and Reserves Questionnaire. It is used to enumerate northern areas and most Indian reserves, Indian settlements, Indian government districts and *terres réservées*. In canvasser areas, it is also used to enumerate usual residents of a Hutterite colony.
- Form 3A is the Short Individual Census Questionnaire. It is used in private dwellings enumerated on a Form 2A, to enumerate usual residents who wish to be enumerated in private (e.g., roomers, lodgers, boarders). It is also used in collective dwellings enumerated from administrative records, to enumerate usual residents and live-in staff members.
- Form 3B is the Long Individual Census Questionnaire. It is used in private dwellings enumerated on a Form 2B, to enumerate usual residents who wish to be enumerated in private (e.g., roomers, lodgers, boarders). It is also used in self-enumeration collective dwellings (except Hutterite colonies), to enumerate usual residents and live-in staff members.

The census questionnaires were produced in both official languages, in both regular and large print. The census questions were translated into 60 non-official languages, including Aboriginal languages, and could also be requested in Braille and on audio cassette.

#### 2.4 Data Collection

This stage of the census process ensures that each of the 11.8 million households in Canada is enumerated. The census enumerates the entire Canadian population, which consists of Canadian citizens (by birth and by naturalization), landed immigrants, and non-permanent residents together with family members who live with them. Non-permanent residents are persons living in Canada who have a Minister's permit, a student or employment authorization, or who are claiming refugee status, and family members living with them.

The census also counts Canadian citizens and landed immigrants who are temporarily outside the country on Census Day. This includes federal and provincial government employees working outside Canada, Canadian embassy staff posted to other countries, members of the Canadian Armed Forces stationed abroad, and all Canadian crew members of merchant vessels. Because people outside the country are enumerated, the Census of Canada is considered a modified *de jure* census.

#### 2.4.1 Collection methods

To ensure the best possible coverage, the country is divided into small geographic areas called enumeration areas (EAs). Each census representative is responsible for at least one EA. The optimal number of households in an EA ranges from 175 in rural areas to 600 in urban areas. In the 2001 Census, there were 42,851 enumeration areas in Canada, and 38,000 people engaged in collecting the data.

#### (a) Self-enumeration

In 2001, approximately 98% of households were self-enumerated. For self-enumeration, a census representative drops off a questionnaire at each household during the two weeks before Census Day. An adult or responsible member of the household is asked to complete the questionnaire for all members of the household, and then mails the questionnaire in a pre-addressed envelope.

#### (b) Canvasser enumeration

Approximately 2% of households were enumerated in the 2001 Census using the canvasser enumeration method. In this case a census representative visits the household and completes a questionnaire for the household by interview. This method is normally used in remote and northern areas of the country, and on most Indian reserves. The canvasser enumeration method is also used in certain urban areas where it is considered highly possible that respondents would be unlikely to return a questionnaire.

#### 2.4.2 Collection support

To support 2001 collection activities, an extensive communications program was established. In addition, 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 725,000 calls during the 2001 Census.

#### 2.5 Census Communications Project

The goal of the 2001 Census Communications Project was to make all Canadians aware of the census on May 15, 2001; of what they were expected to do; and of why completing the census was important.

"Count Yourself In!" was used as the slogan. Communications materials explained that census data are used to:

- redistribute electoral boundaries;
- allocate federal and provincial transfer payments;
- make decisions at national and provincial levels, as well as at the local community and neighbourhood levels.

People were also informed that, by law, participation in the census is mandatory, and that, by the same law, Statistics Canada must protect the confidentiality of respondents' information.

The public relations program had five components, which are listed below.

#### (a) Third-party support

Promotional support for the census was enlisted from corporations, associations, federal and provincial governments, and other organizations. Approximately 5,800 supporters included the census message in their regular correspondence with employees and clients, or posted a promotional banner on their Web site linking to the census Web site at Statistics Canada. More than 1.4 billion messages were sent to respondents as a result of this program.

#### (b) Media relations

Because the census is news, the media are instrumental in getting the census message out to the Canadian people on a daily basis before, on, and after Census Day. By means of interviews with Statistics Canada spokespersons, and of editorials and stories, the 2001 Census received extensive coverage in the media.

#### (c) Education

Educational activities were mostly directed at elementary and secondary students. The 2001 Census Teacher's Kit, containing assorted activities and materials that reinforced the importance of the census, was distributed free of charge to 24,000 educators. Activities for English and French as a Second Language (ESL/FSL) learners were an important component, since students who read English or French better than their parents can help them complete the census form. An Adult Basic Education (ABE) Kit was also developed for adult learners.

#### (d) Paid advertising

The 2001 Census advertising program used print, radio and out-of-home media placements. All ads featured the yellow census envelope with the stylized "people from the census" logo. The advertising campaign was split into three phases, with the precensus phase starting on May 10 and running to May 14; the census phase starting on May 16 and running to the 22nd; and the final phase starting on May 22 and running to the first week of July in some areas.

Limited television coverage in languages other than English and French was used for messages to ethnic and immigrant communities. The ads were also fed to all networks, and used in English and French as public service announcements.

#### (e) Special target populations

Hard-to-reach groups that were undercounted in the 1996 Census were targeted in the 2001 Census with communications strategies suitable to their situation. These groups included people who speak neither of the official languages; people with visual disabilities; people with low levels of literacy; seniors; students; the homeless; immigrants; Aboriginal people; and young men, and in some areas, young women, between the ages of 18 and 30.

#### 2.6 Data Processing

This part of the census process involved the processing of all of the completed questionnaires, from the data capture of the information through to creating an accurate and complete retrieval database. The final database was transferred to the Data Quality Measurement Project to determine the overall quality of the data, and to the Dissemination Project for the production and marketing of the 2001 Census products and services. A new objective for 2001 was to create an image retrieval system giving access to the images (pictures) of all of the census questionnaires and visitation records, so that subsequent processes requiring access to original census forms would not have to handle the thousands of boxes and paper documents, as in previous censuses.

There were five main components in the processing operation for the 2001 Census:

- regional processing;
- imaging;
- interactive verification;
- automated coding;
- edit and imputation.

#### 2.6.1 Regional processing

Regional Processing was responsible for the manual coding of the industry and occupation responses and the data capture of the questionnaire information into a machine-readable format for subsequent processing systems. Given the enormous volume of census questionnaires and information to be captured (over 4 billion keystrokes), Regional Processing has been contracting this work out to the Canada Customs and Revenue Agency (CCRA), formerly called Revenue Canada, since 1981. By using the trained staff and infrastructure already in place at CCRA, the census realized cost savings by partnering with another government agency. For the 2001 Census, approximately 2,800 CCRA employees were sworn to secrecy under the *Statistics Act* to perform the census work under the same rules and regulations used by the employees of Statistics Canada.

When the collection activities for a specific enumeration area (EA) were completed, the questionnaires, along with their maps and visitation records, were shipped in EA boxes

from the field collection units to one of eight designated CCRA tax centres across the country.

The first step was to prepare the completed questionnaires for data capture. This traditionally included the manual assignment of codes to written answers that were provided by the respondents. For 2001, most of the written responses were converted to codes using automated systems (see Section 2.6.4). The only written responses that had to be manually coded for the 2001 Census were the questions on industry and occupation contained in the long form questionnaires. Research into the automation of these questions has begun and it is expected that a system will be operational for the 2006 Census.

The industry responses were coded at CCRA according to the North American Industry Classification System (NAICS), which was introduced as a standard within Statistics Canada a few years ago. NAICS is designed to provide a common framework for Canada, the United States, and Mexico, to produce industry statistics under the North American Free Trade Agreement (NAFTA). This meant a change for industry coding – in 1996, industry was coded to the 1980 Standard Industrial Classification (SIC). In order to allow longitudinal comparisons, the 2001 industry question was also coded to the 1980 SIC, using more automated means during Automated Coding (see Section 2.6.4).

Once the questionnaires were received and registered at one of the CCRA tax centres, and the industry and occupation codes assigned, the next step was to sort, label, and batch the questionnaires in preparation for the data capture. The labels affixed to each questionnaire contained a unique sequence number that was used to control the movement of the questionnaire throughout the CCRA operations. For the first time, the label also included a bar code to facilitate the scanning of the questionnaire in the imaging operation (see Section 2.6.2).

The data capture was then performed by traditional manual keying at mainly mainframe terminals. Verification of the accuracy of the data capture operation was done by selecting a sample of questionnaires that were already key-entered and capturing the information from the questionnaires in this sample a second time. Quality control statistics were produced by comparing the two sets of captured information.

As the data were keyed, they were transmitted in real time over dedicated communication lines to the CCRA computer in Ottawa. Within 24 hours, the data were then transferred to tape cartridges and transported by bonded carrier to Statistics Canada, where they were loaded on the mainframe computer. Questionnaires were reassembled into their EA boxes for shipment to Statistics Canada's 2001 processing site in Ottawa.

#### 2.6.2 Imaging

In previous censuses, the remaining processing steps that required access to the questionnaires and visitation records used the paper documents. For 2001, the need to handle the paper was eliminated by imaging (scanning) all of the questionnaires and visitation records as soon as they arrived at the 2001 processing site from the CCRA tax centres. Subsequent operations then had access to the questionnaires and visitation record images using an image retrieval system, rather than using the paper documents for their work.

As the EA boxes arrived at the 2001 processing site, they were registered and then the documents were prepared for imaging. Since the questionnaires and visitation records were in booklet format, they had to be cut into separate sheets in order to be run through the scanners. Following the cutting, since the 2A questionnaire was actually two booklets glued together (one English and the other French), the unused portion had to be separated from the completed portion. Extra material that was included with the questionnaires was removed (e.g., paper clips, notes). The questionnaires were then batched by EA for imaging.

The 13 million documents were imaged using 15 high-volume scanners running 5 days a week, 2 shifts per day. The geographic identifier that was required to identify each document image was automatically assigned using the bar code on the label affixed during the data capture operations at CCRA (see Section 2.6.1). Quality control was performed to ensure that each document contained the right number of pages, and that the number of questionnaires by form type was correct for each EA. A problem resolution operation resolved any problems that arose. The images were then written to optical platters for subsequent access and archival purposes. As the questionnaires were scanned, their images were also kept in magnetic storage for immediate access by the Interactive Verification activities (see Section 2.6.3).

The images on the optical platters are being kept in a secure location and are only accessible to authorized Statistics Canada employees from within the secure location.

#### 2.6.3 Interactive verification

The main objective of the interactive verification was to identify and correct errors in the data, for which proper resolution required reference to the images of the questionnaires and/or visitation records. A detailed set of edits was applied to the captured data to identify possible errors, such as households with missing or duplicate persons, incorrect enumeration of foreign or temporary residents, questionnaires assigned to the wrong household, or misclassification of the households as occupied or unoccupied. A thorough review of the information on all relevant census forms was conducted to determine the appropriate corrective action for each edit failure. In some cases, this required adding and/or deleting persons or dwellings, and consequently this process had an impact on the census counts.

As the census data arrived on cartridges from CCRA, they were loaded onto Statistics Canada's computers, ready for the interactive verification activities. A series of automated "structural" edits were performed, mainly to verify the information on the front cover of the questionnaire filled out by the census representative. These edits included, among other things, matching questionnaire and household types; cross-checking the number of questionnaires; and of the people enumerated; and verifying that the geographic identifiers were unique. Some edits were also performed on the income information, so that anomalies could be extracted and examined by income subject-matter experts.

All edits were done by EA. Errors were flagged, and then corrected by referring to the images of the questionnaires and visitation record for that EA. The corrections were made to the electronic data using an interactive PC-based system. Some of the corrections were also noted on the questionnaire images, using a process commonly called "annotation".

Once the EA edits were completed, automated and manual processes were used to verify the block number (see box below) that the enumerator had copied from the EA map onto the questionnaire and visitation record.

A National Block Program has been implemented for the first time in 2001. A "block" is basically the smallest area bounded by streets or roads, lakes and rivers. In urban centres, "blocks" are generally recognizable city blocks. In rural areas, "blocks" are much larger areas, but are still bounded by identifiable features, with no significant feature splitting an area. These blocks will be added together to create the EAs for data collection purposes, and the dissemination areas (DAs) for the dissemination of the census products and services.

During the field collection operations, as enumerators delivered a questionnaire to each dwelling within their EA, they wrote the person's name (if possible) and the address in their visitation records (VRs). At the same time, they copied the VR line number from the VR onto the questionnaire, to uniquely identify the questionnaire for that dwelling. As well, they identified the block number for the dwelling from their EA map and copied the number into the VR and onto the questionnaire. These block numbers were data-captured, so that all of the dwellings in Canada can be identified as belonging to a particular block.

As a final step in the Interactive Verification, the data were reformatted and forwarded for the final processing steps, namely Automated Coding and Edit and Imputation.

The Interactive Verification also performed some special processing to ensure that Canadians living outside Canada on Census Day (people aboard coast guard and Canadian Armed Forces vessels, Canadian-registered merchant vessels, and diplomatic and military personnel) were enumerated.

#### 2.6.4 Automated coding

Automated Coding matched the write-in responses that were data-captured from the long form questionnaires during Regional Processing (see Section 2.6.1) against an automated reference file/classification structure containing a series of words or phrases and corresponding numerical codes. Although a large percentage of write-in responses can be coded in a purely automated manner, a series of responses always remains unmatched. Specially trained coders and subject-matter experts reviewed all unmatched responses and, with the assistance of PC-based interactive coding systems, assigned the appropriate numerical code after examining responses to other questions and from other members of the household. Automated coding was applied to write-in responses for the following questions on the long form:

- relationship to Person 1;
- home language;
- non-official languages;
- first language learned in childhood (mother tongue);
- language of work (new in 2001);
- place of birth;
- place of birth of parents (new in 2001);
- citizenship;
- ethnic origin (ancestry);
- population group;
- Indian Band/First Nation;
- place of residence 1 year ago;
- place of residence 5 years ago;
- major field of study;
- religion (last asked in 1991);
- place of work;
- industry according to 1980 SIC (first time for Automated Coding in 2001).

As the responses for a particular variable were coded, the data for that variable were sent to the Edit and Imputation phase.

#### 2.6.5 Edit and imputation

The data collected in any survey or census contain omissions or inconsistencies. These errors can be the result of respondents answering the questions incorrectly or incompletely, or they can be due to errors generated during processing. For example, a respondent may be reluctant to answer a question, may fail to remember the right answer or may misunderstand the question. Census staff may code responses incorrectly or may make other mistakes during processing.

Prior to Edit and Imputation, the questionnaires underwent some basic manual edits during collection. Field staff reviewed them for missing responses or unacceptable multiple responses. Such problems were resolved by contacting the respondents and obtaining the required information. Following collection, Interactive Verification (see Section 2.6.3) performed some basic structural edits, where the images of the questionnaires and visitation records were referenced as necessary.

The final clean-up of the data was done in Edit and Imputation, and was, for the most part, fully automated. It applied a series of detailed edit rules that identified any missing or inconsistent responses. These missing or inconsistent responses were corrected most of the time by changing the values of as few variables as possible through imputation. Imputation invoked "deterministic" and/or "minimum-change hot-deck" methods. For deterministic imputation, errors were corrected by inferring the appropriate response value from responses to other questions. For minimum-change hot-deck imputation, a record with a number of characteristics in common with the record in error was selected. Data from this "donor" record were borrowed and used to change the minimum number of variables necessary to resolve all the edit failures.

Two different automated systems were used to carry out this processing.

The Nearest-neighbour Imputation Method (NIM), developed for the 1996 Census to perform Edit and Imputation for basic demographic characteristics such as age, sex, marital status, common-law status and relationship to Person 1, was expanded for 2001 and implemented in a system called CANCEIS (CANadian Census Edit and Imputation System) to include Edit and Imputation for such variables as industry, place of work, mode of transportation, and mobility. As in 1996, CANCEIS continued to allow more extensive and exact edits to be applied to the response data, while preserving responses through minimum-change hot-deck imputation.

SPIDER (System for Processing Instructions from Directly Entered Requirements) was used to process the remaining census variables such as mother tongue, dwelling, income, etc. This tool translates subject-matter requirements, identified through decision logic tables, into computer-executable modules. SPIDER performed both deterministic and hot-deck imputation.

#### Weighting

Data on age, sex, marital status, common-law status, mother tongue, and relationship to Person 1 were collected from all Canadians. However, the bulk of the information gathered in the census came from the 20% sampling of the population. Weighting, applied to the respondent data after Edit and Imputation, was used to adjust the census sample to represent the whole population.

The weighting method produced fully representative estimates from the sample data. For the 2001 Census, weighting employed a methodology known as calibration (or

regression) estimation. Calibration estimation started with initial weights of approximately 5 and then adjusted them by the smallest possible amount needed to ensure agreement between the sample estimates (e.g., number of males, number of people aged 15 to 19) and the actual population counts established from the 100% sample (that is, the six basic questions on both the 2A short-form and 2B long-form questionnaires).

Once invalid and non-response data were corrected, they were transferred to the final national retrieval databases for subsequent data quality studies and dissemination.

#### 2.7 Data Quality Measurement

Throughout the census-taking process, every effort was made to ensure that the results would be of superior quality. The data quality measurement stage was intended to determine the overall quality of the census data. While rigorous quality standards were set for collecting and processing the data, and activities such as the communications program helped reduce non-response, it was impossible to eliminate all errors. Consequently, the quality of the data was measured in order to provide users with information about the reliability of the data, to improve data quality in future censuses, and to adjust the official census data. For more information on this subject, see Chapter 7.

#### 2.8 Dissemination

#### 2.8.1 Adapting a product line through consultation with data users

An extensive consultation process was conducted with census data users from the Fall of 2000 to the Spring of 2001. Participation included representatives from every level of government, libraries, academia, private sector, non-government associations, as well as licensed Statistics Canada data distributors. This consultation dealt with aspects of output such as content, medium of delivery, format, services provided, and pricing. Discussion on the progress of planning activities for the dissemination of census products and services continues with key stakeholders.

A thorough analysis was done of the feedback received during consultation activities, as well as throughout the census cycle. Changes to the 2001 Census Products and Services line are implemented to maximize users' satisfaction, as well as to enhance the accessibility of census data.

Following users' recommendations for the 2001 Census, the Internet will be the
predominant medium for disseminating standard data and reference products
available free, as "public good." The census data dissemination will move away
from mass-produced CD-ROMs and associated software tools that posed some
difficulties for data users. Dissemination through the Internet will improve the
timeliness of data availability to the public, while keeping content, delivery and data
retrieval capabilities simple. Given the immense popularity of the Community

Profiles for the 1996 Census, the product will be carefully expanded in an attempt to provide additional content, while preserving its simplicity. Another feature of the 2001 Census dissemination strategy is a continual updating of the Community Profiles as releases occur. For the 2001 Census, more census data will be made available free of charge to the public than ever before.

- To maximize accessibility to census data, CD-ROMs will be available on demand for users preferring this output medium. Some larger tables will be provided solely by traditional electronic means, such as CD-ROM and FTP, because of size and volume considerations.
- As users strongly recommended, a new census metadata search, navigation and indexing capability will be implemented on the Internet. The many 2001 Census products available on the Internet will be searchable by topic, release date, geography, variable name, and catalogue number within the census module of the Statistics Canada Web site. Useful linkages will be provided.
- To respond to users' feedback, simplified text is used in the 2001 Census products disseminated on the Internet to ensure that the information is more easily understood. Links from simplified text to more traditional and detailed definitions are also provided as reference for users.
- For the 2001 Census, information is disseminated following a topic-based approach, rather than the traditional breakdown into product series (Nation Series, Dimension Series, etc.), to enhance accessibility to census data.

#### 2.8.2 Marketing of products and services

Statistics Canada's head office, in conjunction with its network of statistical reference centres across Canada, communicates, promotes, and informs clients of appropriate opportunities to maximize awareness of census data. This is achieved, in part, by Statistics Canada:

- planning and co-ordinating the releases of census data and specific products;
- developing a market sector approach for the promotion of the census data;
- maintaining contact with, and providing services to, previous census clients, as well as those who supplied financial sponsorship to the census collection activities;
- providing sales support and training workshops to new and existing users of census data.

Users will have access to more 2001 Census information free of charge on the Internet through Statistics Canada's Web site (www.statcan.ca). Each release of data continues to be summarized and published on Statistics Canada's Web site, with some analysis in *The Daily*. Eight official 2001 Census data releases are scheduled between March 2002 and May 2003.



#### 3.1 Introduction

Canada owes the success of its statistical system to long-standing cooperation between Statistics Canada, the population of Canada, its businesses and its governments. Accurate and timely statistical information could not be produced without that sustained collaborative effort and goodwill. To ensure continued success, Statistics Canada is committed to making certain that the information provided by respondents is not released in any identifiable form. Consequently, between the time the data are collected from respondents and the time they are converted into statistical information and disseminated, Statistics Canada makes every effort to keep the responses confidential.

#### 3.2 Protecting the Information Provided by Respondents

#### 3.2.1 Statistics Canada employees

When hired, Statistics Canada employees are screened for reliability and made aware of the confidential nature of the materials they will be handling. In addition, all employees, including census representatives, take an oath of secrecy. Under the *Statistics Act*, any employee who breaks that oath, for example, by disclosing individual information or knowingly causing it to be disclosed, is liable to a fine of up to \$1,000, imprisonment for up to six months, or both.

#### 3.2.2 Names, addresses and telephone numbers

Even though respondents are asked to write their name, address and telephone number on the census form, that information is not entered in Statistics Canada's database. It is used mainly for quality control during the collection process. Names are requested only to ensure that each person is counted once and only once. The telephone number is needed so that households whose questionnaire is incomplete can be contacted. The address is used to make sure that respondents are enumerated at their usual place of residence on Census Day. It is also needed to ensure that in cases where more than one questionnaire has been completed for a household, all the forms are processed together.

#### 3.2.3 Handling of questionnaires

The vast majority of respondents (98%) were asked to complete the census questionnaire themselves and return it by mail in the yellow envelope provided. Special arrangements were made with Canada Post Corporation to have the yellow census envelopes treated as "personal contact items". This means that the Census

Commissioner or a designated representative had to accept delivery of the envelopes personally. Completed questionnaires were always handled by Statistics Canada employees or bonded carriers. Security precautions included special wrapping procedures to prevent packages from being torn open, and the use of seals on shipping containers to reduce the risk of tampering.

In addition, the information in census questionnaires is seen by only a small number of employees who have to handle the questionnaires in the course of their duties.

In 2001, for the first time in the Census of Population, the image of each questionnaire was placed in a database to speed up processing and simplify storage. The paper forms were destroyed as soon as this operation was completed. Access to the questionnaire images is restricted, just as access to the completed forms was in previous censuses.

#### 3.3 Protection of Disseminated Statistics

By law, Statistics Canada can use the responses in census questionnaires for statistical purposes only. The responses are input to a database – with no names, addresses or telephone numbers – and that database is used to prepare a variety of products for distribution.

Procedures are followed to ensure that the statistical data in those products cannot be associated with a particular individual.

### 3.3.1 Random rounding

Rounding is a mathematical operation that can increase a number, decrease a number or leave it unchanged; only certain predetermined values are permitted. For example, we could decide in advance to round figures to the nearest multiple of 10, the next highest multiple of 10, or the next lowest multiple of 10. So if we round 10, 13 and 17 to the next lowest multiple of 10, the result would be 10 in all three cases.

The random rounding method is based on established probabilities. It involves rounding every figure in a table (including the totals) randomly up or down to the nearest multiple of 5, or in some cases, 10. For instance, random rounding of 12 to a multiple of 5 would yield either 10 or 15; applying the same operation to 10 would produce 10. This technique provides strong protection against direct, residual or negative disclosure, without adding significant error to the census data.

#### 3.3.2 Area suppression

Area suppression involves removing all characteristic data for geographic areas with populations below a specified size. A table is always associated with a geographic area, viewed from either the "place of residence" standpoint or the "place of work" standpoint. Also, for place of residence, the threshold depends on the number of people who live in the area, and for place of work, it depends on the number of people who work in the

area. When a table involves both place of residence and place of work, the threshold depends on both the number of residents and the number of people employed in the area.

There are different thresholds for different cases:

- 250 people if the table contains income data, and if the table also contains place-ofresidence data, at least 40 private households;
- 100 people if it is a six-character postal code area, that is, a local delivery unit (LDU);
- 40 people in all other cases.

#### 3.3.3 Dissemination rules for statistics

Tables are sometimes accompanied by statistics such as averages, totals and standard deviations. There are various ways of ensuring that these statistics do not reveal sensitive information; for instance, they may be suppressed or made less precise. Some statistics, such as totals, ratios and percentages, are based on the rounded values in the tables to which they apply. A statistic will be suppressed if there are too few data to compute it; that is, if the number of data items needed to calculate the statistic is smaller than the rounding base (5 or 10), the statistic will be suppressed. In cases where data items expressed in dollars all have the same value, the statistic will be suppressed.

Starting with the 2001 Census, households and their associated population and dwelling counts are geographically referenced to the block at the time of collection. However, the linkage to the block-face level is a post-collection activity for areas having streets with address ranges. With the introduction of the block program, user-defined areas can be delineated with increased precision.

Only population and dwelling counts are disseminated by the block (with the dissemination area being the smallest standard geographic area for which characteristic data are disseminated). To ensure confidentiality, population counts are adjusted for blocks having a population of less than 15.



#### 4.1 Introduction

The best starting-point for a census data user is probably the questionnaire itself. Familiarity with question wording, response categories, and accompanying instructions is helpful in understanding the results of any survey. It is particularly important in the case of the census, since most respondents complete the questionnaire themselves (self-enumeration), relying on their own interpretation and understanding of the questions.

This section describes each step in the census questionnaire. It also contains a table of all census questionnaire content and derived variables since Confederation.

The two most important questionnaires used to enumerate the Canadian population in the 2001 Census were the short questionnaire (Form 2A) and the long questionnaire (Form 2B) in mail-back enumeration areas. The former was bilingual and was distributed to 80% of all households, while the latter had two separate English and French versions, and was distributed to 20% of all households. In dropping off long questionnaires, census representatives were to ensure that each household could respond in the official language of its choice: if they were able to contact a member of the household, they were to give out the version in the respondent's preferred official language; if not, they were to drop off both versions.

Forms 2A and 2B provided enough space for up to six household members. Larger households had to use additional questionnaires.

#### Form 2A - Short Questionnaire

There were seven questions in the 2001 Form 2A:

Question	Content
1	Name
2	Sex
3	Date of birth
4	Marital status
5	Common-law status
6	Relationship to Person 1
7	First language learned in childhood

#### Form 2B - Long Questionnaire

Form 2B contained the seven questions in the short questionnaire and 52 other questions. One in every five private households received a Form 2B, except in northern areas, remote areas and Indian reserves. In those areas, all households were required to complete a long questionnaire (Form 2D), since sampling was unlikely to produce accurate data for such small populations.

As the religion question is normally asked in decennial censuses, it was included in the 2001 questionnaire.

Question	Content
1	Name
2	Sex
3	Date of birth
4	Marital status
5	Common-law status
6	Relationship to Person 1
7	Difficulties with daily activities
8	Reduction in activities due to physical or mental conditions or health
	problems
9	Place of birth
10	Citizenship
11	Landed immigrant status
12	Year of immigration
13	Knowledge of English and French
14	Knowledge of other language(s)
15	Languages spoken at home
16	First language learned at home
17	Ethnic origin
18	Aboriginal Identity
19	Population group
20	Indian Band/First Nation membership
21	Treaty/Registered Indian
22	Religion
23	Instruction for remaining questions
24	Mobility – Place of residence 1 Year Ago
25	Mobility – Place of residence 5 Years Ago
26	Highest level of elementary or secondary schooling
27	Years of schooling (university)
28	Years of schooling (other)
29	School attendance
30	Certificates, diplomas and degrees
31	Field of specialization
32	Place of birth of parents

33	Unpaid work
34	Hours worked for pay or in self-employment
35	On temporary lay-off or absent from job or business
36	New job to start in four weeks or less
37	Looked for paid work in past four weeks
38	Reasons unable to start a job
39	When last worked for pay or in self-employment
40	Name of employer
41	Kind of business
42	Occupation
43	Main activities
44	Class of worker
45	Incorporation status
46	Place of work
47	Mode of transportation to work
48	Language of work
49	Weeks worked in 2000
50	Full-time or part-time weeks worked in 2000
51	Income in 2000
H1	Household maintainer(s)
H2	Owner or renter
H3	Number of rooms and bedrooms
H4	Period of construction
H5	Need for repairs
H6	Yearly payments
H7	Shelter costs – Renter
H8	Shelter costs – Owner

Figure 3. Census Questionnaire Content and Derived Variables Since Confederation

	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Demographic Characteristics								
Name	1871	Х	Х	Х	Х	Х	Х	Х
Relationship to Person 1	1891	X	Χ	X	Х	Х	Х	X
Date of birth	1871	X	Χ	Χ	Х	Х	Χ	Χ
Sex	1871	X	Χ	X	Х	Х	Χ	X
Marital status	1871	X	Χ	X	Х	_	_	_
Legal marital status	_	_	_	_	_	Х	Χ	Х
Common-law status	_	_	_	_	_	Χ	Χ	X

	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Mobility – Place of residence 1 year ago	-	-	-	_	_	Х	Х	Х
Mobility – Place of residence 5 years ago	1961	X	X	X	X	Х	X	Х
Number of moves since previous census	_	X	_	_	_	_	_	_
Date of first marriage	1941	Χ	_	Χ	-	_	-	_
Number of children ever born	1941	Χ	-	Χ	-	Χ	-	-
Ethnocultural and Language Characteristics								
Knowledge of official languages	1901	X	-	Х	Х	Х	Х	Х
Knowledge of non-official languages	_	_	_	_	_	X	X	Х
Home language	_	Χ	-	Χ	Χ	Χ	Χ	X
Mother tongue	1901	X	Χ	Χ	X	Χ	Χ	Χ
Language used at work	_	_	_	_	_	_	_	X
Place of birth	1871	X	_	X	Χ	X	Χ	X
Place of birth of parents	1891	X	_	_	_	_	_	X
Citizenship	1901	X	_	X	Χ	X	Χ	X
Landed immigrant status	_	_	_	_	_	X	Х	X
Period/year of immigration	1901	X	_	X	Χ	X	Χ	X
Ethnic origin	1871	X	_	X	X	X	X	X
Aboriginal status (self-perception)	-	-	-	-	Х	-	_	_
Registered Indian status	_	_	_	_	_	X	Χ	X
Indian Band/First Nation	_	_	_	_	_	X	Х	X
North American Indian, Métis, Inuit (self-reporting)	-	_	_	-	_	-	X	Х
Population group (visible minority status)	-	-	-	-	-	-	Х	Х
Religion	1871	X	-	X	-	Χ	-	X
Activity Limitations/Difficulties/ Reductions								
At home	_	_	_	_	Х	Х	Х	Х
At school or at work	-	_	-	-	X	Χ	X	X
In other activities	_	_	-	-	X	Χ	X	X
Long-term disabilities or handicaps	-	_	-	_	X	Х	X	_
Difficulties with daily activities	_	_	_	_	_	-	_	X
Education								
Highest level of elementary or secondary schooling	1941	Х	X	X	Х	Х	Х	Х

	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Years of schooling (university)	-	-	Х	Х	Х	Х	Х	Х
Years of schooling (other)	-	_	Χ	X	X	X	X	Χ
School attendance	1871	X	X	X	-	X	X	Χ
University degrees	-	_	X	X	X	X	X	Χ
Completion of full-time vocational course (3 months or more)	1971	X	-	-	-	_	-	-
Province of elementary or secondary schooling (or outside Canada)	1971	X	-	_	_	_	_	-
Major field of study	-	_	-	-	X	X	X	Χ
Labour Market Activities								
Actual hours worked last week	1951	X	Х	X	X	Х	X	X
Usual hours worked each week	1911	X	-	-	-	-	_	_
Last date of work	-	X	_	X	X	X	X	Χ
Industry	1901	X	_	X	X	X	X	Χ
Occupation	1871	X	_	X	X	X	X	X
Class of worker	1891	X	_	X	X	X	X	Χ
Weeks worked in reference year	1911	X	-	Χ	X	X	X	X
Full-time/part-time work	-	Χ	-	X	Χ	X	Χ	Χ
Temporary lay-off/absent from job	-	X	Х	Х	Х	Х	Х	Х
New job to start in four weeks or less	-	_	Х	X	Х	X	X	X
Looked for work in past four weeks	1961	X	X	X	Χ	Χ	X	X
Availability for work	_	_	Χ	Χ	Χ	Χ	Χ	Χ
Incorporation status	-	X	_	Χ	X	Х	Χ	Χ
Journey to Work								
Place of work	_	X	_	Χ	X	Χ	X	X
Mode of transportation to work	-	_	-	_	_	_	X	X
Income								
Income in year previous to census year	_	X	_	X	Х	X	X	Х
Wages and salaries	1901	X	-	Χ	X	Х	X	X
Net non-farm self- employment income	1961	Х	-	Х	Х	Х	Х	X
Net farm self-employment income	-	X	-	Х	Х	Х	Х	X

	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Family allowances	-	Х	-	Х	Х	Х	-	-
Federal Child Tax Credits/benefits	_	_	_	_	X	X	X	X
Old Age Security (OAS) and Guaranteed Income Supplement (GIS)	-	Х	-	X	X	X	X	X
Benefits from Canada or Quebec Pension Plan (CPP/QPP)	-	X	-	X	X	X	X	X
Benefits from Employment Insurance	-	X	_	X	X	Χ	X	X
Other income from government sources	_	X	_	X	X	X	X	X
Interests and dividends	_	X	-	X	X	X	X	X
Other investment income	-	Χ	-	Χ	Χ	X	Χ	Χ
Retirement pensions, superannuation, annuities	_	X	-	X	X	X	X	X
Other money income	-	X	_	X	X	X	Χ	X
Unpaid Work								
Hours doing unpaid housework last week	_	-	-	-	-	-	X	X
Hours caring for children without pay last week	-	-	-	_	-	-	X	Х
Hours providing unpaid care/assistance to seniors last week	-	_	_	-	-	-	Х	Х
Family and Household								
Agricultural operator	_	_	_	_	_	X	X	X
Household maintainer(s)	_	_	_	X	X	X	X	X
Household head (Person 1)	1941	Χ	Χ	Χ	Χ	Χ	Χ	Χ
Family head	1921	X	-	-	-	-	-	-
Tenure (owned/rented)	1921	X	X	X	Χ	X	X	X
Tenure (condominium)	-	-	-	Χ	Χ	Χ	Χ	Χ
Tenure (band housing)	-	-	-	-	-	Χ	Χ	Χ
Presence of mortgage	1941	Χ	-	Χ	Χ	Χ	Χ	X
Who holds first mortgage	-	Χ	_	_	_	_	Χ	Χ
Number of persons per household	-	X	Х	Χ	Χ	Χ	Х	Χ
Shelter costs – Renter	1941	X	_	Χ	X	Χ	X	Χ
Payment of reduced rent (e.g., government-subsidized housing)	-	Χ	-	-	-	-	-	-
Automobiles available for personal use	1941	X	-	-	-	-	-	-

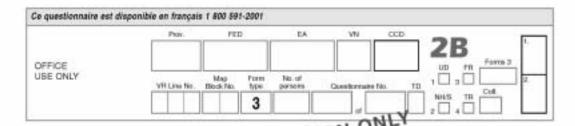
	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Vacation home ownership	_	Х	_	_	_	_	_	_
Major home appliances	1931	X	_	_	_	_	_	-
Yearly payments	_	X	_	X	Х	Х	Х	X
<ul><li>electricity</li></ul>	-	X	-	X	X	X	Χ	Χ
<ul><li>oil, coal, wood, etc.</li></ul>	-	X	-	X	X	X	Χ	Χ
– gas	-	X	-	X	X	X	Χ	Χ
- water	_	X	_	Χ	Χ	Х	Χ	Χ
<ul> <li>shelter costs – Owner</li> </ul>	_	_	_	Χ	Χ	X	Χ	X
<ul> <li>mortgage</li> </ul>	_	_	_	X	X	Х	Х	X
<ul> <li>property taxes</li> </ul>	_	_	_	X	X	X	Х	X
<ul> <li>condominium</li> </ul>	_	_	_	X	Х	Х	Х	X
condominium fees	_	_	_	_	_	Х	Х	Х
Dwelling								
Number of rooms	1941	X	_	Х	Х	Х	Х	Х
Number of bedrooms	_	X	_	_	_	Х	Х	Х
Number of bathrooms	_	_	_	X	_	_	_	_
Period of construction	1941	X	_	Х	Х	Х	Х	X
Condition of dwelling	_	_	_	X	_	Х	Х	X
Type of dwelling	1941	X	Х	Х	Х	Х	Х	X
Value of dwelling	1941	X	_	Х	Х	Х	Х	X
Number of dwellings in the building	1941	X	_	_	_	_	_	_
Garage	_	X	_	_	_	_	_	_
Piped running water in dwelling	1941	X	_	-	-	-	-	-
Bath or shower	1941	X	_	_	_	_	_	_
Use of flush toilet in building	1941	X	_	_	_	_	_	_
Unoccupied dwelling, reason for	-	_	Х	_	Х	_	_	-
Seasonal/marginal dwellings	_	_	_	Χ	Χ	X	Χ	X
Length of occupancy	1941	X	_	Χ	-	_	_	-
Source of water supply	_	X	_	_	_	_	_	_
Method of sewage disposal	-	X	_	-	-	_	_	-
Principal type of heating equipment	1941	Х	_	Х	Х	-	_	-
Principal fuel used for:								
<ul><li>cooking</li></ul>	-	X	_	-	-	_	_	-
<ul><li>heating</li></ul>	1941	X	_	Χ	Χ	-	_	-
<ul> <li>water heating</li> </ul>	_	X	_	Χ	_	_	_	_

	First Time in Census (Before 1971)	1971	1976	1981	1986	1991	1996	2001
Coverage							•	
Did you leave anyone out?	_	Х	-	X	X	Х	X	X
Household roster	-	X	-	-	-	X	Χ	Χ
Number of temporary residents	_	Х	-	Х	X	Х	X	X
Number of usual residents	_	X	_	X	Χ	X	Χ	Χ
Other								
Wartime service	1951	Х	-	_	_	_	_	_

#### 4.2 2001 Census Questionnaire

The questionnaire provided respondents with the following information:

- the confidentiality of the questionnaire when completed;
- the authority under which the census is conducted;
- the purpose of the census and Statistics Canada's commitment to keeping the information supplied by respondents confidential, as stated in the Chief Statistician's message;
- the requirement to provide information.





# CENSUS

Count yourself in! May 15, 2001

For over 300 years, the census has painted a picture of our people and the places in which we live. This census, on May 15, 2001, will continue the tradition by providing information needed by community groups, businesses and governments to develop plans for education and training, seniors' housing, day care, fire protection, public transport, and many other programs that are important to all of us.

As Canada's national statistics agency, Statistics Canada uses census data for producing statistical tables, analytical reports and for selecting samples or following up respondents for some of our surveys. These uses are strictly for statistical purposes and no one outside of the agency can have access to your identifiable information.

By law, Statistics Canada must take a census every five years, and every household must fill in a census form. Also, by law, Statistics Canada must protect the confidentiality of the personal information you provide. Our employees, including census takers, are personally liable to fines or imprisonment should they break the confidentiality of your information.

Please complete your census form and mail it back on May 15, 2001.

Thank you for your cooperation.

Ivan P. Fellegi Chief Statistician of Canada

	ation is collected under the authority c. 5-19, and must be provided by law			CONFIDEN	ITIAL WHEN COMPLETED
A	Begin here by printing your address No. and street or lot and co	ncession	Apt. No.	?	For information and instructions see the Guide Call us free of charge
	Postal code		lephone number	3	1 800 591-2001 TTY/TDD users call: 1 877 881-8301

#### Steps A to E

The coverage questions in Steps A through E were intended to ensure that people were enumerated at their usual place of residence in Canada on Census Day, even if they were temporarily absent. Statistics Canada needed the respondent's address to make sure that every household had been counted once and only once. The telephone number was needed so that the respondent could be contacted if any information was missing from the questionnaire. This information was essential to ensure accurate enumeration of Canada's population. Steps A through E also contained instructions to help respondents determine whom they should include in their questionnaire. They also helped Statistics Canada ascertain that everyone who should have been enumerated in a given household was actually counted.

# WHOM TO INCLUDE IN



- EVERYONE WHO USUALLY LIVES HERE, AT THIS ADDRESS: including newborn babies and room-mates:
- STUDENTS; students who return to live with their parents during the year should be included at their parents' address, even if they live elsewhere while attending school or working at a summer job;
- CHILDREN IN JOINT CUSTODY: children in joint custody who live here most of the time. Children
  who spend equal time with each parent should be included in the home of the parent where they
  are staying on May 15, 2001;
- ABSENT SPOUSES: spouses or common-law partners who live elsewhere while working or studying but who return here periodically;
- · LANDED IMMIGRANTS: landed immigrants who usually live at this address;
- · REFUGEES: persons claiming refugee status and family members living here with them;
- PERSONS FROM ANOTHER COUNTRY WITH A WORK, STUDENT OR MINISTER'S PERMIT: persons from another country who have an employment authorization, a student authorization or a Minister's permit, and tamily members living here with them;
- PERSONS IN INSTITUTIONS: persons who usually live here but are now in an institution (such
  as a home for the aged, a hospital or a prison), if they have been there less than six months;
- PERSONS WITH NO OTHER HOME: persons staying here on May 15, 2001, who have no usual home elsewhere.

# DO NOT INCLUDE IN



- Persons who have their usual home at another address in Canada and who are staying here temporarily (for example, persons visiting or persons who have their secondary residence here, at this address);
- Residents of another country visiting Canada (for example, on a business trip or on vacation);
- Government representatives of another country or members of the Armed Forces of another country and family members.

IF ALL PERSONS STAYING AT THIS
ADDRESS on May 15, 2001, have their
usual home elsewhere in Canada OR
are visitors, government or military
representatives of another country,
mark this circle

Do not complete this questionnaire. Mail it in the enclosed postage-paid envelope.

TEP	List below all persons who usually live they are temporarily away. Don't forget	here, at this address, as of May 15, 2001, even if to include yourself!
3		cable, by that person's spouse or common-law partner Continue with all other persons who usually live here. their parenties
	Family name	Given name Initial
	Person 1	Service Colonia
	Person 2	
	Person 3	
	Person 4	
	Person 5	
	Person 6	
	Person 7	
	Person 8	
	Person 9	
	Person 10	
	ir you need it	nore space, use the "Comments" section on page 32.
P	Did you leave anyone out of Step B because you were not sure the	Name
1	person should be listed?	Relationship
	For example:	Reason
	a person living at this address who has	
	another home;  • a person temporarily away.	
		Name
	○ No	Relationship
0.	at ○ Yes → Specify the name, the relationship and	Reason
	the reason.	
		If you need more space, use the "Comments" section on page 32.
<b>1</b>	Is anyone listed in Step B	A farm operator makes the day-to-day management decisions for a farm. Farms produce any of the
Ш	a farm operator?	following agricultural products intended for sale:
	⇔ O No	• crops
	□ O Yes	Ilvestock     poultry
		other agricultural products (greenhouse or nursery products, Christmas trees, sod, honey, maple syrup products, furs, eggs, milk, etc.)
P	Copy the names from Step B to Question 1, on the top of the next page.	IF MORE THAN SIX PERSONS LIVE HERE and yo do not have a second questionnaire to include them, note this in the "Commenta" section on page 32. A Statistics Canada representative will contact you.

#### **Basic population information**

Questions 1 to 6 on the long questionnaire (2B) concern the members of the household. They were designed to collect data that provide statistical information about the demographic characteristics of the population, family size, the number of children in lone-parent families, and the number of persons living alone. This information is used to plan many social programs, such as Old Age Security and the Child Tax Benefit. It is also used to analyze community requirements for day-care facilities, schools and senior citizens' homes. The order in which some of these questions were asked was changed between 1996 and 2001.

#### **Question 1: Name**

Although the respondents were asked to provide the name of each household member (also provided in Step B), the information was used only to ensure that each person was counted once and only once. The names were kept confidential and were not entered in the census database.

Legislative and program requirements:

- Constitution Act;
- Canada Elections Act;
- Electoral Boundaries Readjustment Act.



#### **Question 2: Sex**

This variable is present mainly so that other census variables can be broken down according to sex, not only for the population as a whole, but also for population subgroups such as Aboriginal women, elderly women, immigrant women, and lone-parent families headed by men. This was Question 4 in 1996.

- Employment Equity Act;
- Canada Pension Plan.



#### Question 3: Date of birth

Age data are derived from this question. In fact, this indirect method of determining the age of respondents provides more accurate results than asking respondents to indicate their age on Census Day. The age distribution of the population may be the most important information for decision-makers who plan the future. Age is the key factor in determining needs for certain services, such as day-care facilities and elementary and secondary schools. Age information can also be used to make forecasts regarding the major transitions in the lives of Canadians, such as joining the labour market, starting a family, and retiring.

#### Legislative and program requirements:

- Old Age Security Act;
- War Veterans Allowance Act:
- Federal-Provincial Fiscal Arrangements Act.



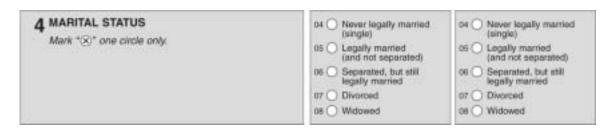


#### **Question 4: Marital status**

Marital status data, along with data on relationship to Person 1 (Question 6) and common-law status (Question 5), are needed to produce family data. All these data are very important in preparing estimates of population, families and households. The question in its current form was first asked in 1991, when common-law status became a separate question. Prior to 1991, people living common-law had to report themselves as married. With this change, it is now possible to do a systematic analysis of the breakdown between legal marriage and cohabitation. This was Question 5 in 1996.

#### Program requirements:

- Canada Child Tax Benefit;
- Old Age Security Program;
- Canada Pension Plan.



#### **Question 5: Common-law status**

This question is used to track changes in family structure and family relationships. Common-law data provide researchers and decision-makers with a better understanding of cohabitation and its prevalence in different parts of the country. This question was asked separately for the first time in the 1991 Census. Previously, the number of common-law couples had to be derived or estimated from the responses to the question on relationship to Person 1 (Question 6). Consequently, common-law data from the 1991 and 1996 censuses are more readily comparable than the data from earlier censuses. The 2001 question includes both opposite-sex and same-sex partners. This was Question 6 in 1996.

- Canada Child Tax Benefit;
- Old Age Security Act;
- Canada Pension Plan.

5 IS THIS PERSON LIVING WITH A COMMON-LAW PARTNER?	00 ○ Yes	00 ○ Yes
Common-law refers to two people of the opposite sex or of the same sex who live together as a couple but who are not legally married to each other.	10 O No	10 O No

#### **Question 6: Relationship to Person 1**

The relationships between household members are used to determine how many people belong to census families and economic families and, in general, to analyze living arrangements in households. The data gathered by this question are required to assess the need for federal, provincial and municipal programs in areas such as family income support, day-care facilities, and support for people with disabilities, senior citizens living alone, and lone-parent families. This was Question 2 in 1996.

- Canada Child Tax Benefit;
- Old Age Security Act,
- Canada Pension Plan.

6 RELATIONSHIP TO PERSON 1  For each person usually living here, describe his/her relationship to Person 1.	11 (⊠) PERSON 1	12 Husband or wife of Person 1  13 Common-law partner (opposite-sex) of Person 1
Mark "⊗" or specify one response only.	III & PERSON I	14 ( ) Common-law partner
Stepchildren, adopted children and children of a common-law partner should be considered		(same-sex) of Person 1 15 Son or daughter of Person 1
sons and daughters.		16 Son-in-law or daughter-in-law of Person 1
If none of the choices apply, use the "Other"		17 Grandchild of Person 1
box to indicate this person's relationship to Person 1.		18 Father or mother of Person 1
Examples of "Other" relationships to Person 1: • grandparent		19 Father-in-law or mother-in-law of Person 1
cousin		20 O Brother or sister of Person 1
niece or nephew     lodger's husband or wille		21 O Brother-in-law or sister-in-law of Person 1
room-mate's daughter or son     employee		22 O Lodger or boarder
• eviproyee		29 O Room-mate
		Other — Specify
		24

#### **Activities of daily living**

Question 7: Difficulties with daily activities

# Question 8: Reduction in activities due to physical or mental conditions or health problems

New disability questions were developed for the 2001 Census which are different from the filter questions used in 1986, 1991 and 1996. The answers to these questions are used to provide the survey frame for the postcensal Participation and Activity Limitation Survey (PALS).

This postcensal survey replaces the Health and Activity Limitation Survey (HALS), which was conducted in 1986 and 1991. PALS provides data on persons with disabilities and on the barriers persons with disabilities face in their everyday lives.

- Canadian Charter of Rights and Freedoms;
- Employment Equity Act;
- Canada Health and Social Transfer.

ACTIVITIES OF DAILY LIVING	07.	08.
7 Does this person have any difficulty hearing, seeing, communicating, walking, climbing stairs, bending, learning or doing any similar activities?	01 O Yes, sometimes 02 O Yes, othen 03 O No	ot O Yes, sometimes 02 O Yes, often 03 O No
8 Does a physical condition or mental condition or health problem reduce the amount or the kind of activity this person can do:  (a) at home?	04 O Yes, sometimes 05 O Yes, other 06 O No	04 ( Yes, sometimes 05 ( Yes, often 06 ( No
(b) at work or at school?	07 Ves, sometimes 08 Ves, often 09 No 10 Not applicable	07 Yes, sometimes 08 Yes, often 09 No 10 Not applicable
(c) in other activities, for example, transportation or leisure?	11 O Yes, sometimes 12 O Yes, often 13 O No	11 Yes, sometimes 12 Yes, other 13 No

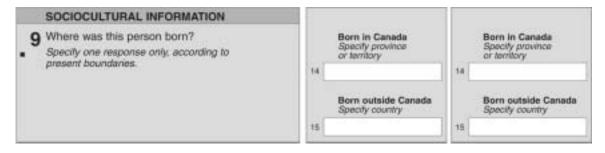
#### Sociocultural information

#### Question 9: Place of birth

Since the census is the only source of data on Canada's immigrant population, this question is particularly important for the development and evaluation of immigration policy. Information about the number of immigrants by place of birth and period of immigration is an important indicator of future immigrants' ability to adapt to Canadian society. The 2001 questionnaire had no check boxes for province or territory of birth.

Legislative and program requirements:

- Citizenship Act;
- Canadian Multiculturalism Act;
- Immigration Act.



#### **Question 10: Citizenship**

Citizenship is a complex subject. For example, some people born in Canada, such as the children of foreign diplomats posted to Canada, are not Canadian citizens. Others are Canadians by birth even though they were born abroad; children born in other countries to parents who are Canadian citizens fall into this category.

One of the benefits of citizenship is the right to vote. As a result, all levels of government need citizenship data for such purposes as electoral planning. The data are also used to plan citizenship courses and programs.

- Citizenship Act;
- Immigration Act;
- Canadian Multiculturalism Act.



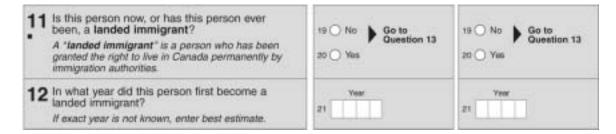
#### **Question 11: Landed immigrant status**

#### **Question 12: Year of immigration**

The answers to these questions, when combined with citizenship data, are used to identify the non-immigrant population (Canadian citizens by birth), the immigrant population (landed immigrants) and the non-permanent resident population (refugee claimants and holders of student authorizations, employment authorizations and Minister's permits, and family members living with them). The data are also used to study immigration trends.

#### Legislative and program requirements:

- Language Instruction for Newcomers to Canada;
- Independent, Sponsored Immigration, and Refugees;
- Immigrant Settlement and Adaptation Program.



#### Question 13: Knowledge of English and French

The response categories for this question indicate whether the respondent and other household members are able to carry on a conversation in English only, in French only, in both English and French, or in neither official language. The information produced from this question is used for such purposes as assessing the need for language training and services in both official languages.

- Official Languages Act;
- Citizenship Act;
- Official Languages Support Program.

13 Can this person speak English or French well enough to conduct a conversation?  Mark "S" one circle only.		14. 01 Cenglish only 02 French only 03 Both English and French 04 Neither English nor French
--	--	--

#### Question 14: Knowledge of non-official language(s)

This question measures how many Canadians can carry on a conversation in languages other than English or French. The data provide a good indication of people's language skills at the time of the census, regardless of their mother tongue or the language they used most often at home.

ther language(s)

Legislative and program requirements:

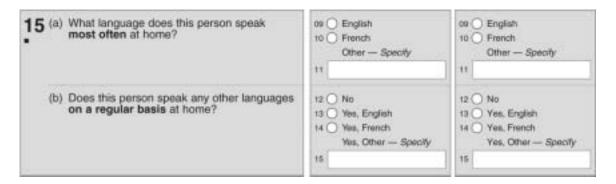
- Canadian Charter of Rights and Freedoms;
- Citizenship Act;
- Multiculturalism Program.

14 What language(s), other than English or French, can this person speak well enough to conduct a conversation?	05 None OR Specify other language(s)	05 O None OR Specify o
	06	06
	07	07
	08	ов

#### Question 15: Languages spoken at home

This question provides information that, when combined with mother-tongue data, can be used to analyze language transfer within minority groups in different parts of Canada. The data can also be used to assess the relevance of federal programs aimed at promoting language retention within minority groups. When combined with immigration data, the home-language data indicate the extent to which the various immigrant groups continue to use their native language. They also indicate which official language new immigrants learn and how that choice varies by province of residence.

- Official Languages Act;
- Citizenship Act;
- Official Languages Support Program.



#### Question 16: First language learned at home

The purpose of this question was to find out what language the respondent first learned at home in childhood and still understands. The information is used for such purposes as administering programs that safeguard the rights of Canadians. This question is also included in the short form (2A) as Question 7, and is therefore addressed to the entire population of Canada.

Legislative and program requirements:

- Official Languages Act;
- Canadian Charter of Rights and Freedoms;
- Multiculturalism Program.

16 What is the language that this person first learned at home in childhood and still understands?  If this person no longer understands the first language learned, indicate the second language learned.	16 English 17 French Other — Specify	16 O English 17 O French Other — Specify
	18	18

#### **Question 17: Ethnic origin**

This question provides information about ethnic and cultural diversity in Canada's population and about the characteristics of members of ethnic and cultural groups in Canada.

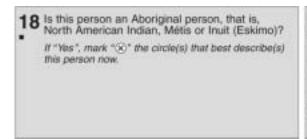
- Canadian Charter of Rights and Freedoms;
- Multiculturalism Program.

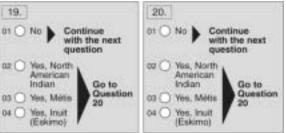
While most people in Canada view themselves as Canadians, information on their ancestral origins has been collected since the 1901 Census to capture the changing composition of Canada's diverse population. Therefore, this question refers to the origins of the person's ancestors.  17 To which ethnic or cultural group(s) did this person's ancestors belong?	Specify as many groups as applicable	Specify as many groups as applicable
For example, Canadian, French, English, Chinese, Italian, German, Scottish, Irish, Cree, Micmac, Métis, Inuit (Eskimo), East Indian, Ukrainian, Dutch, Polish, Portuguese, Filipino, Jewish, Greek, Jamaican, Vietnamese, Lebanese, Chilean, Somali, etc.	20 21 22	19 20 21 22

#### **Question 18: Aboriginal identity**

Respondents are asked to state whether they self-report as an Aboriginal person, that is, North American Indian, Métis or Inuit. The data are used by Aboriginal governments, communities, businesses and organizations in various contexts. They are needed to study the characteristics of Aboriginal peoples residing on and off reserves, and to inform employment equity programs in the areas of education, training and employment.

- Employment Equity Act;
- Indian Act;
- Multiculturalism Program;
- Aboriginal Human Resources Development Strategy.





#### **Question 19: Population group**

This question is intended to collect precise data about visible minorities in support of employment equity programs. Combined with other census variables, the data indicate the status of visible minorities in such areas as employment, income, education and housing.

- Employment Equity Act;
- Official Languages Act;
- Canadian Multiculturalism Act.

05 White 06 Chinese 07 South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.) 08 Black	os White  os Chinese  or South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.)
19 Filipine 10 Latin American 11 Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese, etc.) 12 Arab 13 West Asian (e.g., Afghan, Iranian, etc.) 14 Japanese 15 Korean Other — Specify	OB Filipino  Latin American  Latin American  Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese, etc.)  Arab  West Asian (e.g., Afghan, fransin, etc.)  Japanese  Korean  Other — Specify
	06 Chinese 07 South Asian (e.g., East Indian, Pakistani, Sri Lankan, etc.) 08 Black 09 Filipino 10 Latin American 11 Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vetnamese, etc.) 12 Arab 13 West Asian (e.g., Afghan, Iranian, etc.) 14 Japanese 15 Korean

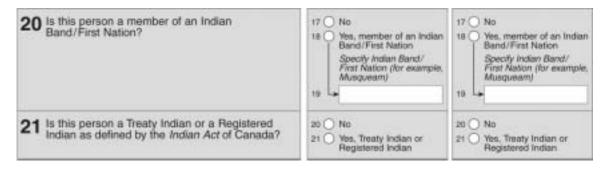
#### **Question 20: Indian Band/First Nation membership**

#### Question 21: Treaty/Registered Indian

Question 20 determines Indian Band or First Nation membership, and Question 21 identifies Registered and Treaty Indians. This assists in producing population figures for the various geographic regions. It is also possible to tabulate other census data for these populations, such as housing, education, income and occupation characteristics.

Legislative and program requirements:

- Employment Equity Act;
- Indian Act;
- Aboriginal Business Canada Program;
- Aboriginal Human Resources Development Strategy.



## **Question 22: Religion**

The religion question has been on every decennial census since 1871. Its purpose is to determine whether respondents belong to a religious denomination, and not whether they are practising members or attend religious services. The data collected by this question are used to develop, evaluate and administer a number of federal programs. In addition, many denominational groups use the data to determine their potential size.

- Cultural Integration Program;
- Cultural Enrichment Program;
- Multiculturalism Program.



#### Question 23: Instruction for remaining questions

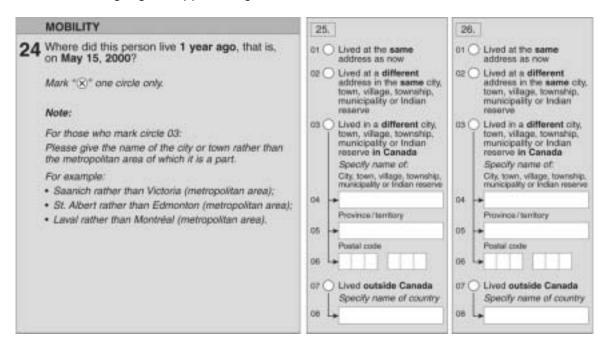
As in previous censuses, respondents were advised that all remaining questions, because of their subject-matter (e.g., employment), were to be answered only by people aged 15 and over.

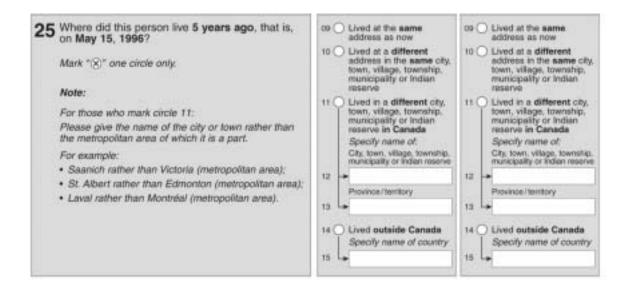
#### **Mobility**

# Question 24: Place of residence 1 Year Ago Question 25: Place of residence 5 Years Ago

Migration is an important factor in measuring population growth in the various parts of the country. Administrative records are used to estimate migration in intercensal years, but those estimates have certain limitations. In addition, it is important to collect benchmark data at regular intervals to adjust intercensal estimates and improve the methods used to produce them.

- Canada Elections Act;
- Federal-Provincial Fiscal Arrangements Act;
- Official Languages Support Program.





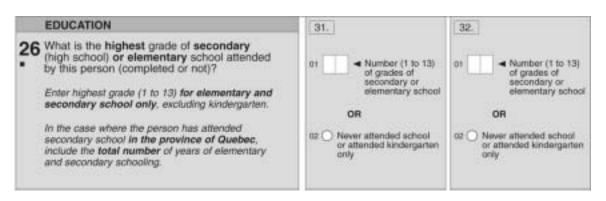
#### **Schooling**

Question 26: Highest level of elementary or secondary schooling

Question 27: Years of schooling (university)
Question 28: Years of schooling (other)

**Question 29: School attendance** 

The first three questions indicate the level of schooling of Canadians aged 15 and over, and Question 29 concerns people who were attending school either full time or part time when the census was conducted. The data are used to assess the scope of illiteracy in Canada and to plan the introduction of literacy and remedial programs. They are also used to evaluate the continuing education market, which is particularly important for refreshing or upgrading workers' skills, and to assess vocational training needs.



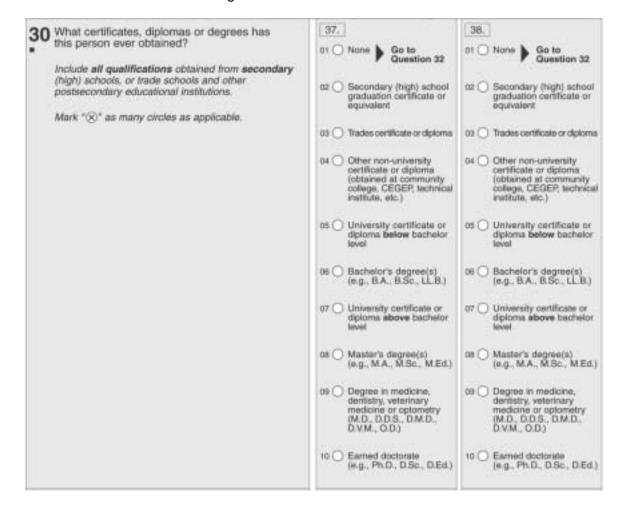
27 How many years of education has this person completed at university?	03 None 04 Less than 1 year (of completed courses) 05 Number of completed years at university	03 None 04 Less than 1 year (of completed courses) 05 Number of completed years at university
28 How many years of schooling has this person ever completed at an institution other than a university, a secondary (high) school or an elementary school?  Include years of schooling at community colleges, technical institutes, CEGEPs (general and professional), private trade schools or private business colleges, diploma schools of nursing, etc.	06 None 07 Less than 1 year (of completed courses) 08 Number of completed years at community colleges, trade schools, CEGEPs, etc.	06 None 07 Less than 1 year (of completed courses) 08 Number of completed years at community colleges, trade schools, CEGEPs, etc.
29 In the past nine months (that is, since last September), was this person attending a school, college or university?  Include attendance at elementary or secondary schools, business or trade schools, community colleges, technical institutes, CEGEPs, etc., for courses that can be used as credits towards a certificate, diploma or degree.  Mark "(X)" one circle only.	09 No, did not attend in the past nine months 10 Yes, full time 11 Yes, part time, day or evening	09 No, did not attend in the past nine months 10 Yes, full time 11 Yes, part time, day or evening

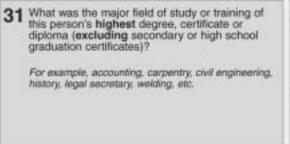
#### Question 30: Certificates, diplomas and degrees

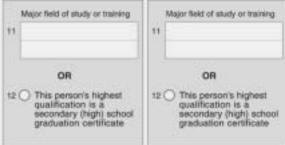
#### Question 31: Field of specialization

Data on Canadians' educational characteristics and level of schooling are used to assess the effectiveness of the education system, to analyze the relationships between education on one hand and occupation, industry and income on the other, to forecast occupational imbalances and to steer immigration policy.

- Employment Equity Act;
- Immigration Act;
- Canada Student Loans Program.





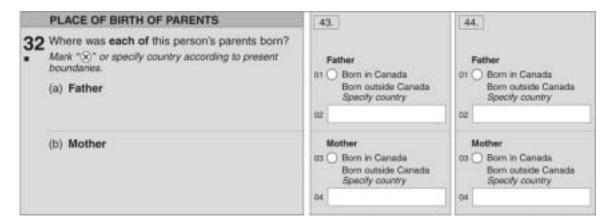


#### Place of birth

#### Question 32: Place of birth of parents

This question provides data on second-generation Canadians, that is, children born in Canada to immigrant parents. Since the 1970s, members of visible minorities have made up a growing proportion of this population group. Children whose parents immigrated to Canada in the 1970s and 1980s, for example, are now entering the labour market in large numbers, and there is increasing interest in their socio-economic situation. This question was last asked in the 1971 Census.

- Citizenship Act;
- Immigration Act;
- Canadian Charter of Rights and Freedoms.



#### **Unpaid Work**

#### **Question 33: Unpaid work**

This question is intended to determine how much time respondents aged 15 and over spend doing housework, maintaining their homes, and caring for children and the elderly. The data provide a more complete picture of the market and non-market components of Canadian society.

- Immigrant Settlement and Adaptation Program;
- Women's Program;
- National Advisory Council on Aging.

HOUSEHOLD ACTIVITIES	-	
Note: Last week refers to Sunday, May 6 to Saturday, May 12, 2001.		
In Question 33, report all time spent on each activity, even if two or more activities took place at the same time. See the Guide for examples.		
33 Last week, how many hours did this person spend doing the following activities:		
(a) doing unpaid housework, yard work or home maintenance for members of this household, or others?	05 None 06 Less than 5 hours 07 5 to 14 hours	os None os Less than 5 hours or 5 to 14 hours
Some examples include: preparing meals, washing the car, doing laundry, cutting the grass, shopping, household planning, etc.	08 15 to 29 hours 09 30 to 59 hours 10 60 hours or more	08  15 to 29 hours 09  30 to 59 hours 10  60 hours or more
(b) looking after one or more of this person's own children, or the children of others, without pay?	11 None 12 Loss than 5 hours 13 5 to 14 hours	11 None 12 Less than 5 hours 13 5 to 14 hours
Some examples include: bathing or playing with young children, driving children to sports activities or helping them with homework, talking with feens about their problems, etc.	14 15 to 29 hours 15 30 to 59 hours 16 60 hours or more	14 0 15 to 29 hours 15 0 30 to 59 hours 16 0 60 hours or more
(c) providing unpaid care or assistance to one or more seniors?	17 None 18 Less than 5 hours	17 O None
Some examples include: providing personal care to a senior family member, visiting seniors, talking with them on the telephone, helping them with shopping, banking or with taking medication, etc.	19 5 to 9 hours 20 10 to 19 hours 21 20 hours or more	19

#### Labour market activities

Question 34: Hours worked for pay or in self-employment

Question 35: On temporary lay-off or absent from job or business

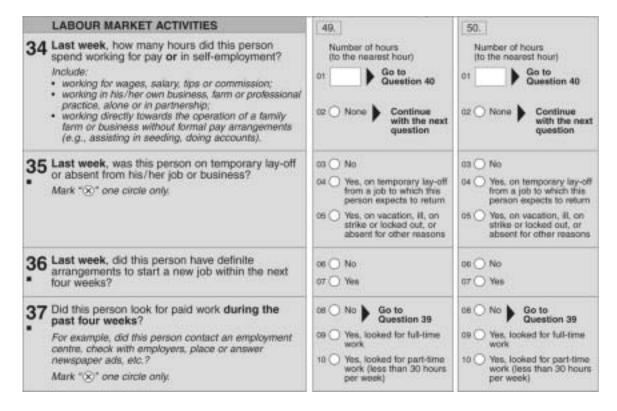
Question 36: New job to start in four weeks or less

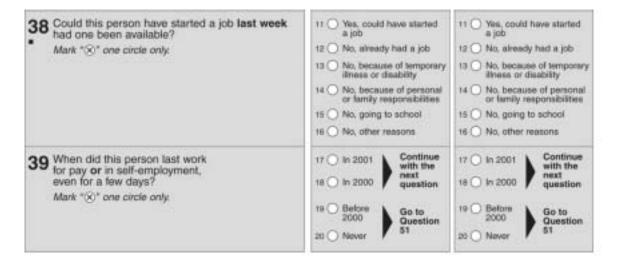
Question 37: Looked for paid work in past four weeks

Question 38: Reasons unable to start a job

Question 39: When last worked for pay or in self-employment

The data are used to design regional development projects for areas with weak economies. They also help public service managers to develop human resources education and training programs and plan the required facilities. The information is also needed for income support programs such as Employment Insurance and provincial social assistance programs.





# Question 40: Name of employer Question 41: Kind of business

These two questions provide information about the industries in which respondents work. The data are also used to analyze the country's economic and industrial structure and growth. Managers of industrial support programs need industry data in order to estimate regional productivity measures and assess industry support requirements.

Note: Questions 40 to 48 refer to this person's job or business last week. If this person held no job last week, answer for the job of longest duration since January 1, 2000. If this person held more than one job last week, answer for the job at which he/she worked the most hours.  40 For whom did this person work? For self-employed persons, enter the name of their business. If the business does not have a	Name of firm, government agency, etc.	Name of firm, government agency, etc.
name, enter the person's name.	Section, plant, department, etc. (if applicable)	Section, plant, department, etc. (# applicable)
41 What kind of business, industry or service was this?  Please be specific. For example:	Kind of business, industry or service	Kind of business, industry or service
road maintenance	04	04

# **Question 42: Occupation Question 43: Main activities**

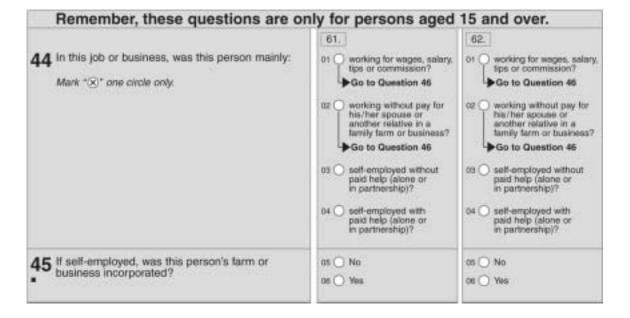
These two questions are used to determine the occupations of respondents. Combined with other census variables, the data help government planners assess current and future labour supply. With this information, they are able to develop vocational, secondary and postsecondary training programs, and assemble the labour pools needed to meet requirements.

42 What was this person's work or occupation?  Please be specific. For example:  • legal secretary  • wood furniture assembler  • plumber  • restaurant manager  • fishing guide  • secondary school teacher  (If in the Armed Forces, give rank.)	Occupation 05	Occupation os
43 In this work, what were this person's main activities?	Man activities	Main activities
Please give details. For example:  • prepared legal documents  • made wood furniture products		
Installed residential	07	07

#### **Question 44: Class of worker**

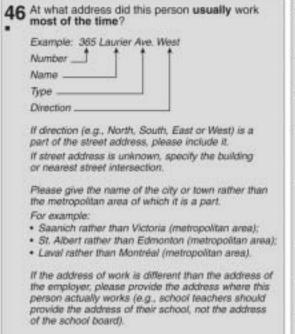
# **Question 45: Incorporation status**

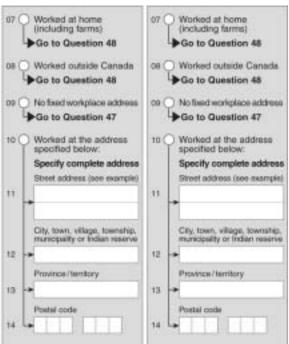
The data obtained with these questions provide a better understanding of the extent of self-employed work in various industries and occupations, and the kinds of remuneration that paid and self-employed workers receive in different occupations. This information is particularly important to managers responsible for small-business development, because it helps them understand their role and the economic characteristics associated with a high incidence of self-employment. The questions also supply data on the number of self-employed workers who have incorporated their business or farm.



#### Question 46: Place of work

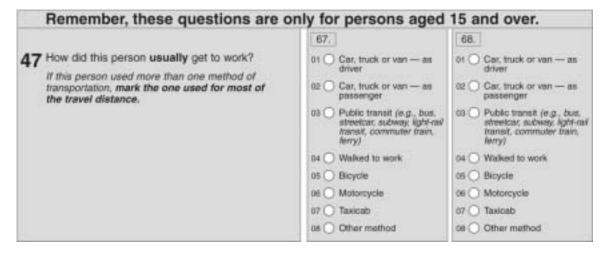
Since many Canadian workers have to commute between home and work, the data from this question provide a clearer understanding of commuting and its impact on the lives of people in urban areas. Place of work data are useful for identifying requirements for transportation services and selecting locations for public services such as schools, hospitals, day-care centres and recreational facilities. They also help urban transportation planners at all levels of government to analyze traffic patterns and assess transportation network requirements with a view to improving existing transportation systems.





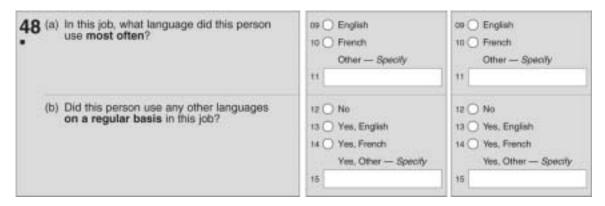
# Question 47: Mode of transportation to work

The information collected by this question meets the needs of users such as transportation planners and engineers, transportation boards, and market analysts. The data are used in planning urban growth and transportation networks in urban, suburban and rural areas. They are also useful for analyzing the environmental impact and energy consumption associated with transportation.



# Question 48: Language of work

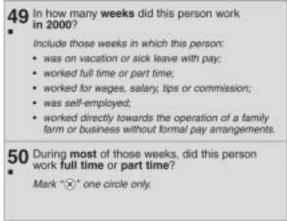
The information collected with this new question sheds light on the vitality of the official languages within the various official and non-official language minorities in Canada. The data indicate whether workers who are members of official language minority groups have the opportunity to use their language skills on a regular basis in their jobs.

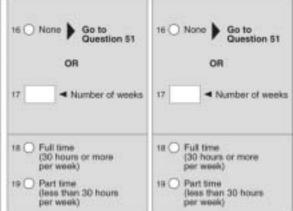


#### Question 49: Weeks worked in 2000

## Question 50: Full-time or part-time weeks worked in 2000

These two questions provide data which, when combined with other variables such as employment, occupation and education, are needed to identify the factors responsible for employment income disparities between regions and between groups. Furthermore, the availability of seasonal or part-time work may be a determining factor in the labour force participation of parents with young children, people with disabilities, and heads of lone-parent families. The data from these questions are also used in assessing the incidence of seasonal and part-time work in these groups, with a view to designing or evaluating programs to expand full-time and part-time job opportunities where desirable.





#### Legislative and program requirements:

- Employment Insurance;
- Old Age Security Act;
- Canada Pension Plan.

#### Income

#### Question 51: Income in 2000

Income data are an important indicator of the economic well-being of Canadians: men, women, young people, senior citizens, families and households. Data collected from this question are used to carry out detailed analyses of income levels in specific groups, families and households, and to conduct comparative studies of different groups. They also provide information on sources of income (employment income, government transfers, investment income, and so on), which is used to analyze income composition and the percentage distribution by source for different groups.

# Legislative and program requirements:

- Social Assistance (provinces/territories and municipalities);
- Employment Insurance;
- Old Age Security Act.

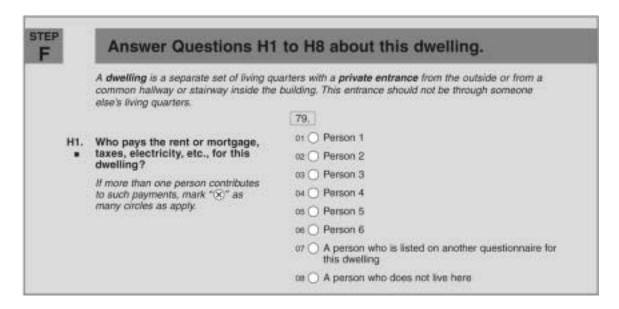
1 1	INCOME IN 2000		
51	During the year ending December 31, 2000, did this person receive any income from the sources listed below?  • Answer "Yes" or "No" for all sources.  • If "Yes", also enter the amount; in case of a loss, also mark "Loss".  • Do not include child tax benefits.	73.	74.
	PAID EMPLOYMENT:	Dollars Conto	Dollars Cents
. 1	(a) Total wages and salaries, including commissions, bonuses, tips, etc., before any deductions	01 ○ Yes ► 02 ○ No	01 ○ Yes ► 62 ○ No
	SELF-EMPLOYMENT:	os ○ Yes ►	03 ○ Yes ►
3	(b) Net farmincome (gross receipts minus expenses), including grants and subsidies under farm-support programs, marketing board payments, gross insurance proceeds	05 O No 04 O Loss	05 O No 04 O Loss
1	(c) Net non-farm income from unincorporated business, professional practice, etc. (gross receipts minus expenses)	06 () Yes ► (07 () Loss	06 ○ Yes ► 07 ○ Loss
	INCOME FROM GOVERNMENT:	-	
ŝ	(d) Old Age Security Pension, Guaranteed Income Supplement and Spouse's Allowance from federal government only (provincial income supplements should be reported in (g))	03 ○ Yes ► 10 ○ No	09 O Yes ►
1	(e) Benefits from Canada or Quebec Penaion Plan	11 ○ Yes ► 12 ○ No	11 ○ Yes ► 12 ○ No
- 1	(f) Benefits from Employment Insurance (total benefits before tax deductions)	13 ○ Yes ► 14 ○ No	13 ○ Yes ► 14 ○ No
	(g) Other income from government sources, such as provincial income supplements and grants, the GST/HST credit, provincial tax credits, workers' compensation, veterans' pensions, welfare payments (Do not include child tax benefits.)	15 ( Yes ► 16 ( No	15 ○ Yes ►

OTHER INCOME:  (h) Dividends, interest on bonds, deposits and savings certificates, and other investment income, such as net rents from real estate, interest from mortgages	17 ○ Yes ► 18 ○ Loss	17 ○ Yes ► 19 ○ No 18 ○ Loss
(i) Retirement pensions, superannuation and annuities, including those from RRSPs and RRIFs	20 ○ Yes ► 21 ○ No	20 ○ Yes ► 21 ○ No
(j) Other money income, such as alimony, child support, scholarships	22 ○ Yes ► 23 ○ No	22 ○ Yes ► 23 ○ No
TOTAL INCOME FROM ALL OF THE ABOVE SOURCES	24 O Yes ► 25 O Loss	24 O Yes > 25 O Loss

# Housing

## Question H1: Household maintainer(s)

The household maintainer concept is important in identifying the economic relationships between families and relatives who are dependants or maintainers. When combined with Question 6 data (Relationship to Person 1), this information provides an overview of the complex lifestyles in families. For example, the data indicate whether elderly people share a dwelling with their children and, if so, which family unit pays all or most of the maintenance costs.



#### **Question H2: Owner or renter**

The data from this question are used to estimate the value of owner-occupied and renter-occupied housing stock. They are also useful in evaluating government housing initiatives and federal and provincial housing programs.

H2.	Is this dwelling: Mark "(X)" one circle only:	to Owned by you or a member of this household (even if it is still being paid for)?  11 Orented (even if no cash rent is paid)?	

#### Question H3: Number of rooms and bedrooms

The ratio of the number of rooms and bedrooms in a dwelling to the size of the household provides a measure of overcrowding, which is an important indicator of housing conditions and quality of life. When combined with other census variables, the data can provide information about various geographic areas or about various groups, such as low-income earners, new immigrants, senior citizens and lone-parent families.

H3. (a)	How many rooms are there in this dwelling?	12 ◀ Number of rooms
	Include kitchen, bedrooms, finished rooms in attic or basement, etc.	
	Do not count bathrooms, halls, vestibules and rooms used solely for business purposes.	
(b)	How many of these rooms are bedrooms?	13 ◀ Number of bedrooms

#### Question H4: Period of construction

Dwelling age is a significant factor in determining the adequacy of housing stock. The data from this question provide information about the life cycle of residential buildings, new housing needs, rapid growth areas, and areas in need of renovation. The data are also used to develop and evaluate housing renovation and renewal programs, and to allocate funds to areas with the most urgent needs.

H4.		14 ( 1920 or before	19 ( 1981-1985
	originally built?	15 O 1921-1945	20 ( 1986-1990
	Mark the period in which the building was completed,	16 🔾 1946-1960	21 () 1991-1995
	not the time of any later remodelling, additions or	17 🔾 1961-1970	22 ( 1996-2001
	conversions. If year is not known, give best estimate.	18 🔾 1971-1980	

# **Question H5: Need for repairs**

This question is used to assess the condition of the housing stock. Even though the data are based on the owner's or renter's subjective assessment, they provide some indication of needed repairs. The information also serves as a reference point against which to measure the effectiveness of government programs to repair and renovate the housing stock.

H5.	Is this dwelling in need of any repairs?	23 No, only regular maintenance is needed (painting, furnace cleaning, etc.)
	Do not include desirable remodelling or additions.	24 Yes, minor repairs are needed (missing or loose floor tiles, bricks or shingles, defective steps, railing or siding, etc.)
		25 Yes, major repairs are needed (defective plumbing or electrical wiring, structural repairs to walls, floors or ceilings, etc.)

**Question H6: Yearly payments** 

Question H7: Shelter costs – Renter Question H8: Shelter costs – Owner

Data on household expenditures for public and municipal services, rent or mortgage payments, and property taxes are used to estimate the costs of keeping a roof over one's head (shelter costs). The latter data, when broken down by geographic area, dwelling type or household income, are useful in developing, administering and evaluating housing, welfare and public services programs.

H6. ■	For this dwelling, what are the YEARLY payments (last 12 months) for:  (a) electricity?	02 ○ None				
	(a) Country.	03 O Included in rent or other payments	OR	Dollars 04	Cents	per year
	(b) oil, gas, coal, wood or other fuels?	05 None 06 Included in rent or other payments	OR	Dollars 07	Cents	per year
	(c) water and other municipal services?	08 None 09 Included in rent or other payments	OR	Dollars 10	Cents	per
H7.	For RENTERS only: What is the monthly rent paid for this dwelling?	11 O Remod withou payment of cash rent		Dollars 12	Cents	per month

	H8.	For OWNERS only, answer parts (a) through (f):	Dollars Cents
		(a) What are the total regular monthly mortgage or loan payments for this dwelling?	13 None Go to part (c) OR 14 per month
		(b) Are the property taxes (municipal and school) included in the amount shown in part (a)?	15 () Yes (d) 16 () No
		(c) What are the estimated <b>yearly</b> property taxes (municipal and school) for this dwelling?	Dollars Cents  17 None OR 18 per year
		(d) If you were to sell this dwelling now, for how much would you expect to sell it?	Dollars 19
		(e) Is this dwelling part of a registered condominium?	20 Ves Continue with part (f) 21 No Go to Step G on next page
8		(f) What are the <b>monthly</b> condominium fees?	Dollars Cents 22 None OR 29 per month

# Legislative and program requirements:

- National Housing Act;
- Canada Pension Plan;
- Canada Health and Social Transfer.



#### 5.1 Introduction

As we saw in Chapter 4, there were 59 questions in the 2001 Census long questionnaire. Yet the 2001 Census Dictionary lists over 200 variables. The explanation for this discrepancy is that some questions yield a number of variables, and some variables are derived from the responses to a number of questions.

A variable can be thought of as a subject about which information can be retrieved from the census database. There are *direct* variables, *derived* variables, and *coded* variables. For example, the question on the sex of respondents has two response categories – male and female. These categories correspond exactly to the information in the database. For this reason, sex is said to be a direct variable. In Question 3, on the other hand, respondents are asked to provide the date of birth of each household member. The answers to the question are used to calculate the ages of respondents on Census Day, and it is this information that is stored in the database. Age is referred to as a derived variable because the information in the database is not what was asked for in the question. Coded variables are written responses that have been classified according to a pre-determined classification system.

This chapter provides an overview of census variables and what they can be used for. Detailed definitions of the variables are presented in the *2001 Census Dictionary*. Also included in the *Dictionary* is information about the historical comparability of census data and the difficulties that may arise in using these data.

Census variables are grouped into the following categories:

- counts and demographic data;
- ethnic origin;
- population group;
- religion;
- place of birth, place of birth of parents, citizenship and immigration;
- language;
- Aboriginal peoples;
- schooling;
- unpaid work;
- labour market activities;
- income:

- families and households;
- housing;
- · institutions and other collectives;
- disability.

When it comes to creating new census variables, the possibilities are virtually endless. The variables described in this chapter are simply the most common ones. With a knowledge of the census questions, their response categories and how census variables work, users can compute or derive variables that meet their needs.

#### 5.2 Universes

The census is divided into four universes (sets):

- population (i.e. persons);
- families;
- households;
- · dwellings.

A household may consist of one person or a number of related or unrelated persons sharing the same dwelling. Families are groups of persons within a household. There are two types of families: census families and economic families. There may be more than one family in a household, but only related persons living in the same dwelling can form a census family.

A household includes all persons living in the same dwelling. Hence there are as many private households as occupied private dwellings. Households and dwellings belong to two distinct universes: households relate to people, while dwellings have to do with the structures they live in.

# 5.3 Counts and Demographic Data

The census counts the number of people and dwellings by geographic area. Population and dwelling counts are the first results to be released, about 10 months after Census Day. Population counts are used to realign federal electoral district boundaries following each decennial census. They also play a part in determining revenue transfers under the *Federal-Provincial Fiscal Arrangements Act*.

The objective of the 2001 Census was to count:

- all Canadian citizens and landed immigrants with a place of residence in Canada;
- all Canadian citizens and landed immigrants posted to military bases or diplomatic missions in other countries:

- all Canadian citizens and landed immigrants at sea or in port aboard Canadianregistered merchant vessels;
- all non-permanent residents.

Persons in the second and third categories may also have a place of residence in Canada, but they need not be associated with a dwelling to be counted. The goal of the census is to count people at their usual place of residence; for most Canadians, this presents no difficulties. Problems can arise, however, when a person cannot be associated with a dwelling that fits the concept of usual place of residence, or when a person is associated with more than one dwelling in Canada. In the former case, the person is enumerated where he or she stayed on the night preceding Census Day; this could be a hotel, an institution, or the home of friends, to name a few examples. The latter case includes families who maintain two residences, and students living away from their parents' home. Instructions on whom to include were provided in Step B on the census questionnaire.

In short, the population counts for a community include all Canadian citizens, landed immigrants and non-permanent residents whose usual place of residence is in that community, regardless of where they happened to be on Census Day. The counts also include all Canadian citizens, landed immigrants and non-permanent residents who are staying in the community and have no usual place of residence elsewhere in Canada.

Linking people to a usual place of residence has implications for data users. For instance, in areas where resorts or large work camps are located, the demand for essential services is high on a per capita basis (i.e. in relation to the census-based usual resident population) because services must be provided to a large temporary population.

## 5.3.1 Non-permanent residents

In 1991, for the first time, the Census of Population covered both permanent and non-permanent residents of Canada. Non-permanent residents are persons from another country who have an employment authorization, a student authorization, a Minister's permit or who were refugee claimants at the time of the census, and family members living here with them. Prior to 1991, only permanent residents of Canada were included in the census (the only exception was the 1941 Census). Non-permanent residents were considered foreign residents and were not counted.

Today, non-permanent residents make up a growing segment of the Canadian population. Their presence can affect the demand for government services such as health care, education, employment programs, and language training. Incorporating non-permanent residents into the census has facilitated comparisons with provincial and territorial statistics (marriages, divorces, births and deaths), which include this group. Moreover, the definition of non-permanent residents brings Canada's census closer to

the United Nations recommendation that long-term residents (persons living in a country for one year or longer) should be enumerated.

Total population counts, as well as counts for all variables, have been affected by the new population universe that has been in place since the 1991 Census. Users must exercise caution when comparing data collected since 1991 with those from previous censuses, especially for geographic areas with large concentrations of non-permanent residents (i.e. the major census metropolitan areas in Ontario, Quebec and British Columbia).

Despite considerable effort, enumeration of the non-permanent resident population may be affected by factors such as language barriers, reluctance to complete a government questionnaire or difficulty understanding the reasons for participating. Non-permanent residents can be identified only through the long questionnaire, which is completed by 20% of Canadian households.

## 5.3.2 Age, sex, marital status and common-law status

Data on the age-sex structure of the Canadian population are needed for a variety of purposes. They are useful in planning resource allocation for education, day-care facilities, health care, pension plans and many other social services and government programs. They are also needed to maintain the accuracy of population estimates and to weight the 20% data from the census.

Age-sex data are crucial for any type of population research. They are used to study aging and to divide the population into subgroups based on the major phases of life, such as students, people in the labour force, and senior citizens. Sex data are also useful in developing and evaluating affirmative action programs and programs to increase the proportion of women in non-traditional occupations. For example, when combined with income and education data, they indicate the size of the wage gap between men and women.

Marital status and common-law status are two indicators used to measure the formation and dissolution of couples. Conjugal life and the structure of the Canadian family are in a constant state of flux. The results of the last few censuses show that common-law union is becoming more common in all major age groups. This form of union, which in the past was often considered a prelude to marriage, is now a real alternative to marriage. Many of today's young people are children of such unions. Since common-law unions are known to be less stable than unions formed by traditional marriage, a child stands a much greater chance of belonging to a lone-parent family at some point in his or her childhood. Hence it is important to collect information about this situation, so that institutions can monitor changes in family life and quickly adjust their social programs.

Marital status data combined with common-law status data provide a clearer picture of the conjugal history of individuals. For example, divorce remains a significant phenomenon in our society, but a large proportion of divorced people form new unions with or without children. In addition, for the first time in the 2001 Census, a person living with a same-sex partner is considered to be living common-law.

# 5.3.3 Mobility

Mobility data have been collected in every Canadian census since 1961 (with the exception of 1966). This variable provides information about the origin and destination of Canadians who move, as well as the age, sex, education, occupation, mother tongue and other characteristics of movers and non-movers. This information is useful to business and governments at all levels for the purpose of planning future housing, education and social service needs and assessing markets. Mobility data are also used in producing population estimates and projections for the provinces and territories and for census divisions and census metropolitan areas.

There are two types of mobility data in the 2001 Census: place of residence 5 years ago, and place of residence 1 year ago. Each type of data separates the population into two groups: (a) non-movers; and (b) movers (people who have changed dwellings during the period specified: 5 years or 1 year). Movers are further divided into non-migrants (people who remained in the same census subdivision when they moved) and migrants (people who moved to a different census subdivision). Migrants are classified as either internal migrants or external migrants, depending on whether they lived inside or outside Canada during the period specified: 5 years or 1 year. It should be noted that the mobility data based on place of residence 1 year ago has been collected since 1991.

The data on migrants are available for either origin or destination and, in the case of international migration, for country of origin. In-migration, out-migration and net migration can be computed for a given area by cross-tabulating with other demographic, linguistic and socio-economic variables.

# 5.4 Ethnic Origin

With one exception (1891), decennial censuses since 1871 included a question on the "origins" of respondents. The purpose of the ethnic origin question is to collect data on the ethnic or cultural ancestry of the Canadian population.

Comparability of ethnic origin data has been affected by several factors including changes in the question wording, format, examples, instructions and data processing, as well as by the social environment at the time of the census.

The wording and the format of the 2001 question are the same as in the 1996 question. The order of the examples, however, has been changed to reflect the order in which answers were reported in the 1996 Census.

In 2001, the ethnic origin question gave 25 examples which were based mainly on the frequency of single ethnic origin counts from the 1996 Census. Because "Canadian" was the most frequently reported response in 1996, it was listed as the first example in the ethnic origin question. The presence of "Canadian" as an example will affect the ethnic origin response patterns.

As a result of changing immigration patterns and increasing diversity in Canada, modifications are made to the specific ethnic groups and categories captured at each census. Therefore, it is recommended to consult the *2001 Census Dictionary* for a comparison of ethnic origin data collected in the 1991, 1996 and 2001 Censuses.

In addition to the factors discussed above, the measurement of ethnicity is affected by changes in the social environment in which the questions are asked and changes in the respondent's understanding or views about the topic. Awareness of family background or length of time since immigration can affect responses to the ethnic origin question, as can confusion with other concepts such as citizenship, nationality, language or cultural identity. Ethnic origin response patterns may be influenced by both social and personal considerations. The choices that respondents make can affect ethnic origin counts and the comparability of data between censuses.

In the past, census ethnic origin data were used by governments and ethnic groups to identify Canada's visible minority population. However, as of 1996, visible minorities are counted using the Population Group question.

# 5.5 Population Group

This question provides information about the visible minority population in Canada which is required for programs under the *Employment Equity Act* (1986). According to this Act, members of visible minorities are persons (other than Aboriginal persons) who are non-Caucasian in race or non-white in colour.

The 1996 Census was the first time a population group question was asked in the census. Prior to 1996, data on visible minorities were derived from responses to the ethnic origin question, in conjunction with other ethno-cultural information, such as language, place of birth and religion.

In the 2001 population group question, response categories included 11 mark-in circles and one write-in box. Respondents were asked to mark or specify one or more of the following: "White", "Chinese", "South Asian (e.g., East Indian, Pakistani, Sri Lankan)", "Black", "Filipino", "Latin American", "Southeast Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese)", "Arab", "West Asian (e.g., Afghan, Iranian)", "Japanese", "Korean", "Other – Specify".

The mark-in response categories listed, with the exception of "White", were based on the visible minority groups identified by the *Employment Equity Technical Reference Papers*, published by Employment and Immigration Canada in 1987, and used for federal employment equity programs. After "White", population groups were listed in order of the frequency (largest number) of visible minority counts derived from the 1996 Census. In 2001, a note on the census questionnaire informed respondents that this information is collected to support programs which promote equal opportunity for everyone to share in the social, cultural and economic life of Canada.

## 5.6 Religion

The census has been collecting data on religion since 1871. The question is asked in the decennial census.

Information on religion measures cultural diversity and is used in combination with other characteristics to trace fundamental change in Canadian society.

The religion question is open-ended and asks "What is this person's religion?". Respondents can write in the answer box provided the name of a denomination or religion, or anything else they choose, such as "atheist" or "agnostic". They can also mark the box for *no religion*.

Respondents were instructed to indicate a specific denomination or religion even if they were not currently a practising member of that group.

# 5.7 Place of Birth, Place of Birth of Parents, Citizenship and Immigration

More than 200 countries are collected for the place of birth question. Comparing province of residence with province of birth for people born in Canada yields "lifetime" interprovincial migration estimates. The place of birth and citizenship questions, in combination with other cultural, social, and economic variables, are a unique source of data on the immigrant population in Canada. Other data sources, such as Citizenship and Immigration Canada registration records, provide data on international migration streams, but yield no information about the immigrant population living in Canada on Census Day.

A question on birthplace of parents was added to the 2001 Census questionnaire. (A question on the birthplace of parents was last asked in the 1971 Census.) There is growing interest in how children of immigrants are integrating into Canadian society, especially since an increasing number of immigrants belong to visible minorities. The place of birth of parents question will provide information on second generation Canadians – that is, children born in Canada to parents who were born outside Canada. Along with other socio-cultural questions, this question will add to information on the diversity of Canada's population.

Data from the question on birthplace of parents will be used to assess the integration into Canadian society over the short and long term of children born in Canada to immigrant parents.

Citizenship is a legal concept, and the data reflect the changes that have occurred over time in Canada's citizenship laws. In addition, a person in Canada may hold dual or multiple citizenship. Changes introduced by the *Citizenship Act* of February 1977 may affect the immigrant population's propensity to acquire Canadian citizenship. Thus, historical comparisons must take changes in statutes and regulations into account.

The technique used to identify the immigrant population since the 1991 Census was different from the one used in 1981 and 1986. At that time, the immigrant population was defined as consisting of all persons who were not Canadian citizens by birth. Since 1991, a direct question on landed immigrant status was used to identify the immigrant population. Persons who answered *yes* to this question were considered immigrants to Canada.

Data on year or period of immigration can be used to study groups of immigrants who came to Canada at a particular time. With this information, historical analysis can be performed; for example, the effects of world events and changes in Canadian immigration policy on the size and composition of the immigrant population can be explored. Year of immigration in combination with year of birth yields a variable, known as age at immigration, that is useful in studying differences in adaptation and integration among Canadian immigrants.

Since 1991, the census included both permanent and non-permanent residents of Canada. Non-permanent residents are persons from another country who have an employment authorization, a student authorization, a Minister's permit or who were refugee claimants at the time of the census, and family members living here with them. Prior to 1991, only permanent residents of Canada were included in the census (the only exception was the 1941 Census).

The non-permanent resident population is identified from responses to the citizenship and landed immigrant status questions. Persons who are not Canadian citizens and answered *no* to the landed immigrant status question are considered to be non-permanent residents.

# 5.8 Language

The Census of Canada complies with United Nations recommendations concerning language questions. It contains questions on mother tongue (first language learned at home and still understood), language spoken at home, knowledge of official (English and French) and non-official languages, as well as language of work. Every member of the population is asked the first question; the remaining questions are answered by one household in five.

The mother tongue question has existed in its current form since the 1941 Census. Section 23 of the *Canadian Charter of Rights and Freedoms* refers to the "first language learned and still understood" in connection with minority language educational rights. The data on mother tongue serve several purposes, including analysis of the distribution of the population by language group. The 2001 Census provides information about some 140 languages and language families.

The question on language spoken at home, which has been asked since 1971 (except in the 1976 Census), yields data that can be used to analyse current language usage in Canada. In 2001, a second part was added to the question, on languages spoken on a regular basis at home. Coupled with the mother tongue question, it also provides a way of measuring language transfer and retention. A language transfer is said to have taken place when a person reports as his/her home language a language that is different from his/her mother tongue.

Two questions on language knowledge were asked in 2001. The first one, which has been asked in every census since 1901, deals with knowledge of the official languages, English and French. The data from this question are used primarily to study bilingualism, but also to track changes in the number of persons who cannot carry on a conversation in English or French. The second question, on knowledge of non-official languages, was included for the first time in the 1991 Census questionnaire in order to round out the linguistic profile of Canada's population. Cross-referencing this variable with other language variables results in better measurement of the usage of the various non-official languages in Canada and provides a more precise indication of the level of language retention and transfer affecting each one.

There was a new question added in 2001 on language of work. It asked respondents who are 15 years of age and over, and who have worked since January 1, 2000, for the language used most often at work during the week that preceded the census. Data on other languages used at work on a regular basis were also collected. The information from this question helps assess the use of mother tongue at work by official language minorities and the linguistic integration of non-official language minorities in the labour market.

The demolinguistic information supplied by the census includes one more variable: first official language spoken. Derived from the responses to the questions on knowledge of official languages, mother tongue and language spoken at home, this variable is used by the federal government in the official languages regulations pertaining to communications with and services to the public.

## 5.9 Aboriginal Peoples

In the 2001 Census, four questions were aimed at identifying Aboriginal peoples: (i) ethnic origin; (ii) Aboriginal identity; (iii) Indian Band/First Nation membership; and (iv) Treaty/Registered Indian (i.e. registration under the *Indian Act* of Canada).

There are different ways to define the Aboriginal population in Canada. The 2001 Census provides information on persons who reported at least one Aboriginal group to the ethnic origin question as well as information on persons who self-identified with an Aboriginal group. Depending on the application, data on either identity or ethnic origin/ancestry may be appropriate for defining the Aboriginal population.

# 5.9.1 Aboriginal origin

The ethnic origin question provides information on the ethnic or cultural ancestral roots of the Canadian population. The question allows for the identification of individuals who reported at least one Aboriginal origin (i.e. North American Indian, Métis or Inuit).

As in 1996, the 2001 question did not include any mark-in categories, and respondents were required to write in their ethnic origin(s) in four write-in boxes. Comparability of the Aboriginal origin data from the 2001 Census with previous censuses has been affected by several factors, including changes in the question format, wording, examples, instructions, and data processing, as well as by the social environment at the time of the census.

# 5.9.2 Aboriginal identity

The Aboriginal identity question was asked for the first time in the 1996 Census. It asked the respondent if he/she was an Aboriginal person, that is, a North American Indian, a Métis or an Inuit. The same question was used in the 2001 Census and is used to provide counts of persons who identify themselves as Aboriginal persons. The concept of "Aboriginal Identity" was first used in the 1991 Aboriginal Peoples Survey.

#### 5.9.3 Member of an Indian Band or First Nation

The 2001 Census repeated a question that first appeared in the 1991 Census aimed at identifying members of Canada's approximately 630 Indian Bands/First Nations. In 1991, this question was the second part of a two-part question, the first part being a question on registration under the *Indian Act* of Canada. In 1996, the question on registration was separate, and followed the question on Band membership. The Indian Band/First Nation membership question first asked respondents if they were members of an Indian Band or First Nation; then, for those persons who answered yes, a second part to this question asked them to give the name of the Indian Band or First Nation to which they belonged. The 2001 Census used the same question as in 1996.

## 5.9.4 Registered or Treaty Indian

The Treaty Registered Indian question was introduced for the first time in 1991, and appeared in a slightly modified format in 1996. The 2001 Census used the same question as in 1996. Its purpose is to identify Registered and Treaty Indians (registered under the *Indian Act* of Canada). Previous censuses used the ethnic origin question to identify the Registered Indian population. For example, the 1961 and 1971 Censuses had response categories that included "Native Indian: band member or non-band member"; the 1981 Census had "status or Registered Indian and non-status Indian"; and the 1986 Census introduced an Aboriginal status question to identify the Registered Indian population, but data quality problems prevented the release of the data. Published counts of the 1986 Aboriginal population were based on the ethnic origin question, and did not distinguish between Registered Indians and non-status Indians.

# 5.10 Schooling

The first three questions, Questions 26 to 28, serve to determine the level of schooling of the Canadian population. Question 29 identifies those who are currently attending school either full time or part time. Questions 30 and 31 identify accreditation received and field of specialization.

Educational and job-related training planners require these data to assess the need for academic upgrading and basic literacy programs in Canada, to plan the delivery of such programs, to assess the labour market for continuing education programs (particularly important in the renewal and upgrading of skills of the working population) and to assess the need for vocational training programs and determine the availability of educational facilities. Data obtained from the school attendance question, when combined with other census data, provide valuable information on the characteristics of full-time and part-time students in postsecondary education, continuing education, and academic upgrading.

Economic planners at all levels of government have emphasized the need for data concerning the educational characteristics and attainment of Canadians in order to assess the effectiveness of the education system; to examine relationships between education and employment, occupation, industry and income; to forecast occupational imbalances; and to guide immigration policies.

To determine the effect of education on labour productivity, labour market analysts require census data on level of schooling. Analysis of labour supply and its flexibility requires data on school attendance, educational attainment, labour force participation, migration, and field of specialization. Finally, census information allows labour market analysts to evaluate whether income level and availability of jobs influence the choice of specialization of Canadians.

Managers responsible for employment equity programs require 2001 Census level of schooling data to assess access to educational opportunities for the four designated groups: persons with disabilities, Aboriginal peoples, visible minorities, and women. From this information, training programs can be designed, and their effectiveness evaluated. Definition and participation in non-traditional occupations require current data on both the educational qualifications and the fields of specialization of designated group members. Level of schooling data also play a significant role in the analysis of income disparities between designated group members and the total population.

The introduction of new technologies is creating new jobs and changing the way we perform old ones. Information about the educational attainment of Canadians is more important than ever for evaluating our adjustment to these changes. The design of cost-effective programs for upgrading the skills of Canadians to facilitate their transition to new industries and new technologies requires detailed knowledge of present educational attributes and their geographic distribution.

Field of specialization data (Question 31) introduce a new dimension into labour market models and improve the analysis and forecasting of occupational distributions. The Major Field of Study Classification retained for the 2001 Census has changed since 1996. The Major Field of Study system is now an amalgation of ISCED\_97 (International Standard Classification of Education) and the U.S. CIP (Classification of Instructional Programs). The analysis of this data is necessary to develop and implement appropriate immigration and labour policies and programs. It also enables policy-makers to anticipate, and respond to, the economically motivated migration of Canadians from one part of the country to another or outside Canada.

In particular, the development of high technology industries and the rate of technological change require more detailed information on qualifications than can be obtained from Questions 26, 27, 28 and 29 alone. The emergence of these new technologies and the decline of old ones create a need for the retraining of people from one occupational category, or set of skills, to another. Census data can assess the magnitude of the need for retraining and guide the delivery of such programs.

Census information on education enables federal and provincial agencies considering regional development opportunities to look beyond the present occupations of the labour force to their potential occupations after retraining. Only a survey of the magnitude of the census can provide both the spatially specific data necessary for regional development policies and the degree of detail regarding fields of specialization for target groups within the Canadian population necessary for national and regional labour market and occupational forecasting models.

The variable *highest level of schooling* is derived from the years of schooling questions and the question on degrees, certificates and diplomas.

## 5.11 Unpaid Work

A three-part question was asked of respondents in the 2001 Census, dealing with hours spent in the week preceding Census Day on (a) unpaid housework, (b) looking after children without pay and (c) providing unpaid care or assistance to seniors. This question was first asked in the 1996 Census.

Hours spent by the respondent on unpaid housework also include hours spent on unpaid yard work or home maintenance. Some examples of these activities include preparing meals, washing the car, doing laundry, cutting the grass, shopping, household planning, etc.

Hours spent looking after children without pay include hours spent caring for the respondent's own children or someone else's children.

Some examples of unpaid care to seniors include providing personal care, and helping with shopping, banking, or taking medication. Seniors were defined in the *Census Guide* as all persons 65 years of age and over and some individuals close to 65 suffering from age-related disabilities.

Respondents were instructed not to include hours spent doing voluntary work for a non-profit or religious organization, charity, or community group in any of the three parts of the census question.

On the other hand, hours of overlapping unpaid activities were to be reported in each part of the question that was applicable. For example, a respondent who spent one hour preparing a meal while looking after his/her children was instructed to report one hour of unpaid housework and one hour of unpaid childcare.

#### 5.12 Labour Market Activities

Labour market activities data from the census can be divided into three groups:

- labour force activity data for the week preceding Census Day (or the "census reference week"), for example: employed, unemployed, not in the labour force, unemployment rate, participation rate and employment rate;
- data relating to work activity in the calendar year preceding the census year, for example: number of weeks worked, whether mostly full-time or mostly part-time;
- job characteristics, which describe a person's current position or one of longest duration since January 1, 2000 (for example, industry, occupation, and class of worker).

# 5.12.1 Labour force activity

Labour force activity data divide the population 15 years and over, excluding institutional residents, into the following three mutually exclusive categories: employed, unemployed, and not in the labour force. These categories are divided into more detailed groupings. For example, the employed are divided into those who worked and those who had a job but were absent in the week preceding Census Day. For persons not in the labour force, one can distinguish between those who had worked since January 1, 2000, and those who had worked prior to January 1, 2000, only or those who had never worked (see Figure 4).

The census definitions of employed, unemployed, and not in the labour force are comparable to those used for the Labour Force Survey (LFS), the source of the monthly unemployment rate and other labour force data. The LFS produces current labour market data. The census can provide detailed cross-tabulations of labour, job characteristics, or other census variables not collected in the LFS, and for small geographic areas.

The following should be noted:

- (a) "The employed" includes all persons who worked one hour or more for pay or in selfemployment during the week preceding the census. It includes all persons working for wages or salaries, all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay in a family farm, business or professional practice. Are also included the persons who were temporary absent from their job or business for the entire week because of vacation, illness, a labour dispute at their place of work or other reasons.
- (b) "Worked for pay or in self-employment" includes all persons working for wages or salaries, and all self-employed persons (with or without paid help) working in their own business, farm or professional practice, and all persons working without pay in a family farm, business or professional practice during the reference week. It does not include unpaid housework, unpaid childcare, unpaid care to seniors or volunteer work.
- (c) Persons were unemployed if they were not employed during the reference week but were searching for a job in the past four weeks or waiting for recall from a temporary lay-off or waiting to begin a new job that started within the next four weeks. To be counted as unemployed, a person must also be available for work in the reference week.
- (d) The labour force includes the employed and the unemployed. The experienced labour force includes the employed and the unemployed who last worked either in 2000 or in 2001. The inexperienced labour force includes the unemployed who last worked before January 1, 2000, and the unemployed who never worked.

- (e) The unemployment rate is the unemployed expressed as a percentage of the labour force. The participation rate is the labour force expressed as a percentage of the population 15 years and over, excluding institutional residents. The employment rate, formerly called the employment-population ratio, is the employed expressed as a percentage of the population 15 years and over, excluding institutional residents.
- (f) The category "not in the labour force" includes persons 15 years and over, excluding institutional residents, who do not satisfy the definition of the employed or unemployed, and are thus not part of the labour force. For example, persons in this category include students, homemakers, retired workers, seasonal workers in an "off" season who are not looking for work, and persons who could not work because of a long-term illness or disability.

## 5.12.2 Work activity

Work activity refers to the number of weeks in which a person worked for pay or in self-employment in 2000 at all jobs held, and whether these weeks were mostly full time (30 hours or more) or mostly part time (1 to 29 hours). Data are available for persons 15 years and over, excluding institutional residents.

The term full-year, full-time worker refers to persons 15 years and over, excluding institutional residents, who worked 49 to 52 weeks (mostly full time) in 2000, for pay or in self-employment.

#### 5.12.3 Job characteristics

Job characteristics were collected for persons who worked anytime from January 1, 2000, to the census reference week. Job characteristics include industry, occupation and class of worker.

- (a) Industry describes the economic sector of the employer, for example, manufacturing or retail trade. These descriptions are assigned a code from the 1997 North American Industry Classification System (NAICS), which contains over 300 industry groups with higher-level "roll-ups" such as sub-sectors and sectors.
  - The 2001 Census industry data are also classified according to the 1980 Standard Industrial Classification (SIC). The 1980 SIC must be used when comparing the 2001 industry data with those from the 1996, 1991 and 1986 Censuses.
- (b) Occupation describes the kind of work performed by Canadians. The 2001 occupation data are classified according to the 2001 National Occupational Classification for Statistics (NOC-S). The 2001 NOC-S contains over 500 unit groups which roll up to 140 minor groups, 47 major groups, and 10 broad categories. The NOC-S is a revision of the 1991 Standard Occupational Classification (SOC) used to

classify occupation data in the 1996 and 1991 Censuses. In order to compare 2001 data with 1996 and 1991, adjustments to both occupational classifications are necessary.

(c) The third job characteristic, class of worker, distinguishes between people who work for others (paid workers), those who work for themselves, and unpaid family workers. Traditionally, owners of incorporated businesses have been treated as paid workers (since they are technically employees of their own business), but some data users prefer to have them grouped with the remaining self-employed, i.e. those who have not been incorporated. Census data users can decide which presentation is appropriate to their needs.

When analyzing data on industry and occupation, data users can define the target population in different ways:

- the employed;
- the experienced labour force, i.e. persons who have worked since January 1, 2000, and who are currently employed or unemployed;
- those who have worked since January 1, 2000, regardless of whether they were in the labour force in the reference week.

Caution should be exercised when relating industry and occupation to variables such as 2000 work activity and 2000 employment income. If, for example, a person has changed jobs, the occupation and industry data reported for the reference week may differ from those for which the respondent reported work activity and income for 2000.

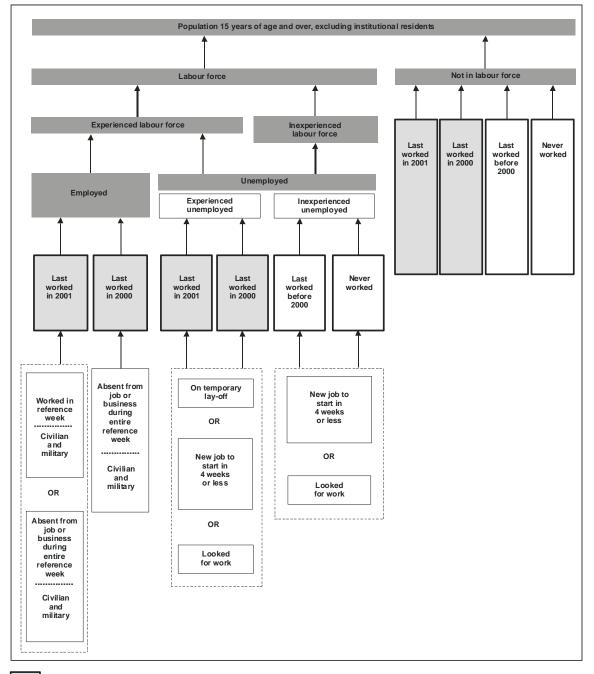


Figure 4. Population and Labour Force Activity Components, 2001 Census

Worked since January 1, 2000 (industry, occupation and class of worker data are available for all persons who worked since January 1, 2000).

#### 5.12.4 Place of work

A large proportion of the Canadian labour force commutes between home and work. Data on place of work are being used increasingly to develop a clearer picture of the commuting phenomenon and its impact on urban life. The data are used in analysing local and regional commuting patterns, public transportation requirements and energy consumption. They are also of particular importance in the study of the differential growth rates of industrialisation within regions and the dispersion and decentralisation of workers from the core to the periphery of urban areas.

Regional development planners and the business community use place of work data and the resulting commuting flows to establish the extent of labour markets and to analyse the distribution of industries across regions. Place of work data also provides analysts with information on the proportion of jobs held by local residents and by in-commuters.

Accessing census data by place of work provides a unique source of daytime demographic and socio-economic information, useful in locating public services such as colleges, libraries, day care and recreation facilities. In combining place of work data with other census data, analysts can identify concentrations of professionals, part-time workers or other segments of the labour force of interest to business owners who can then locate retail and service outlets, not where the population lives, but where it works.

This variable is defined as the location of work of non-institutional residents aged 15 and over who held a job the week prior to Census Day. However, if the person had not worked that week, the information relates to the job of longest duration since January 1, 2000.

The Place of Work question contains four response categories:

- worked at home: respondent worked at his/her place of residence;
- worked outside Canada: respondent worked outside the country;
- no fixed workplace address: respondent worked at various locations;
- worked at usual location: respondent worked at a specific location.

In the 2001 Census, place of work data are geocoded to the submunicipal level (i.e. block-face, block and dissemination area representative points).

#### 5.12.5 Mode of transportation

In 2001, for the second consecutive Census, a question on mode of transportation to work is asked in order to provide urban planners and transportation engineers with a better understanding of the commuting habits of the labour force. Analysts can now investigate shifts between public and private transportation and changes in the popularity of cycling and walking to work.

Since the data show local and regional commuter flows, they allow provincial, regional and municipal urban planners and engineers to analyse traffic patterns, assess the needs for transportation networks, and plan modifications to existing transportation systems.

The Mode of Transportation question contains eight response categories of usual mode for transportation to work:

- car, truck or van, as driver;
- car, truck or van, as passenger;
- public transit;
- walk to work;
- bicycle;
- motorcycle;
- taxicab;
- another method.

#### 5.13 Income

The 2001 Census Dictionary lists numerous income variables relating to individuals, families and households. Figure 5 also lists the components of income in 2000. Analysis of census income data can be undertaken in a number of ways:

- (a) Since the census database contains the actual income of individuals, families and households, users can define income classes for an analysis of income distributions and income inequality. As is the case with income groups, individuals, families and households can be divided into equal groups such as quintiles or deciles, and their comparative position analyzed.
- (b) Summary measures such as average and median incomes can easily be obtained for different segments of the population.
- (c) Detailed analysis can be undertaken for specific groups. For example, analysis of 1996 Census data revealed that the average earnings, in 1995, of persons who immigrated to Canada prior to 1966 or between 1966 and 1975 were over 30% higher than the overall earnings of non-immigrants. Much of this advantage can be traced to differences in age and educational attainment of these immigrant groups.
- (d) The role played by various sources of income can be analyzed by examining the income composition of a given group women, the elderly, husband-wife families, etc. Alternatively, one can look at the major source of income, which identifies the source or combination of sources that account for most of a person's or family's income. For example, the 1996 Census showed that government transfer payments

were the major source of income for 35% of young families in 1995, up from 23% of similar families in 1990.

- (e) Financial returns to education and training and the comparative earning position of men and women can be analyzed by examining employment income for various education and occupation groups. For example, in 1995, earnings of university-educated women working full year, full time were nearly 80% higher than those of women with only a secondary school certificate. This educational advantage also held true for men. However, the earnings of university-educated men working full year, mostly full time were about 65% higher than those of women with similar work experience and educational qualifications.
- (f) Income status of families, unattached individuals or the population in selected regions of the country can be analyzed in relation to Statistics Canada's low income cut-offs.

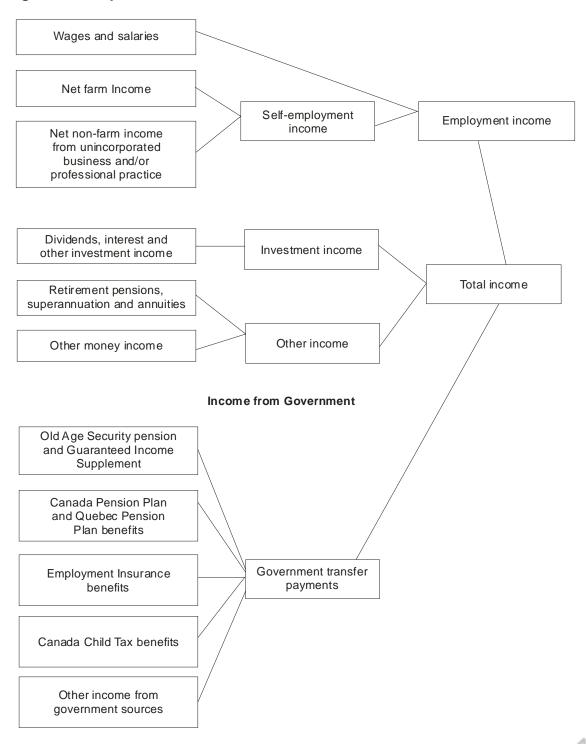
Users of census income statistics must also decide:

- Is the unit of analysis individuals, census or economic families, or households?
- Will the existing concept be used or does it need to be redefined?
- Will income statistics from previous censuses or other sources be compared?

Census income data can be tabulated for individuals, census families, economic families, and households. Users also have the flexibility to define their own analytical unit. They also have several income concept options at their disposal: total income, total income excluding one or more sources, market income, earnings, joint income or earnings of spouses, and so on.

Once conceptual and coverage differences have been accounted for, income data from different censuses can be compared by converting them into comparable (constant) dollars. The Survey of Labour and Income Dynamics (SLID), in addition to providing longitudinal income data, provides a useful source of intercensal cross-classified income estimates.

Figure 5. Components of Income in 2000



#### 5.14 Families and Households

Family and household data are important in understanding a population's socioeconomic and cultural characteristics. Canadian families have undergone rapid changes in the past few decades, and census data provide a statistical base for studying those changes.

Users of family and household data may encounter the following problems:

- (a) Family and household variables can seem cumbersome; it is very difficult to translate complex human relationships into tables. Users should consult the 2001 Census Dictionary and keep in mind the broad objectives underlying the family and household variables.
- (b) Users often want to analyze family and household data together with characteristics pertaining to individuals. Except for the income question, none of the census questions relating directly to individuals can be aggregated into family or household responses. Statistics Canada does not aggregate family data by mother tongue, for example. However, special tabulations based on user-defined methods can be produced. For instance, one could tabulate families by the mother tongue of one family member, such as the spouse or lone parent. The same thing can be done at the household level using the primary household maintainer. One could also select a variable such as census family status, whose unit of measurement is individuals rather than families. This variable shows the individual's situation within the family spouse, common-law partner, child, and so on. Such a variable can be crosstabulated quite easily with mother tongue, which is also an individual characteristic.

People living in the same dwelling are considered a census family only if they meet the following conditions: they are spouses or common-law partners (either opposite-sex or same-sex), with or without children at home, or a lone parent with at least one child at home. The census family includes all blood, step- or adopted sons and daughters who live in the dwelling, as well as grandchildren in households where there are no parents present. Sons and daughters who are living with their spouse or common-law partner, or with one or more of their own children, are not considered to be members of their parent's or parents' census family, even if they are living in the same dwelling. It is possible for two census families to live in the same dwelling; they may or may not be related to each other.

An economic family, on the other hand, includes all persons related by blood, marriage, common-law or adoption living in the same dwelling. For example, a brother and a sister living together would constitute an economic family, but not a census family.

The household is the broadest concept, encompassing all persons living in the same dwelling, whether they are related or not. Figure 6 shows the relationship between households, economic families and census families.

With the general decline in household size, there is a growing interest in the problems and advantages of living alone. Figure 6 shows that there are three ways of defining a target population for a study of this issue. The narrowest definition would be *persons living alone* – in other words, one-person households. The second option is *unattached individuals*, which includes persons living alone and persons living with others to whom they are not related; these other people could also be unattached individuals, or they could constitute an economic family. The third and least restrictive option is *non-family persons*, which includes unattached individuals, and persons who live with relatives but are not part of a census family.

The full range of census variables for families and households is described in the 2001 Census Dictionary. One of those variables will be covered in greater detail here: Income stands apart from the other variables because it lends itself to analysis based on individuals, families or households. If income data are used to study aspects of employment, the individual is the appropriate unit. In an analysis of economic well-being, on the other hand, the family is important. The decision whether to use the economic family concept or the census family concept usually depends on the assumptions made regarding income sharing.

A number of variables listed in the 2001 Census Dictionary under the household category refer not only to the individuals composing a household but also to the structure they live in. They include all variables related to shelter costs – gross rent and monthly cash rent, owner's major payments, and home ownership. Users interested in housing data should keep this source of data in mind.

Male and female spouses Persons in families of married couples Children\* Persons in census families (family persons) Opposite-sex common-law Persons in Persons in partners families of economic oppositefamilies Same-sex common-law commonpartners law couples Persons in Persons in private families of households same-sex commonlaw couples Total Children\* population Persons living with relatives (other than spouse, common-law Parents partner or children) Persons in Ione-parent Non-family families persons Persons living with non-Children relatives only Unattached individuals Persons living alone Persons in

Figure 6. Economic and Census Family Membership and Family Status

collective households

 $<sup>^{\</sup>star}$  May or may not be present.

# 5.15 Housing

The census counts dwellings for two main purposes. The first is to associate people with a spatial unit; otherwise, it would be impossible to enumerate people once and only once. The second objective is to publish counts of the dwellings themselves, along with information about dwelling characteristics.

A dwelling is a separate set of living quarters with a private entrance from the outside or from a common hallway or stairway inside the building. The entrance should not be through someone else's living quarters.

The 2001 Census Dictionary contains descriptions of a range of housing variables that can be used to characterize the housing stock at fine levels of geographic detail. Since the questions on household maintainer and tenure that appeared in the 1991 short questionnaire (Form 2A) were removed from the 2001 version, all housing information for 2001, with the exception of structural type data, is based on sample data. The database holds information on structural type, period of construction and condition of dwelling; these variables are essential in order to evaluate the quality of Canada's housing stock and assess the need for neighbourhood improvement programs. In addition, these variables and others, such as number of rooms, number of bedrooms, and value of dwelling, are used by municipal planners, provincial housing ministries, developers, construction companies and real estate firms.

Figure 7 shows the complete classification of dwellings as well as the progression from the census questionnaire definition to the definition underlying housing stock estimates. The first step in the progression is the distinction between collective and private dwellings; data on dwelling characteristics are collected only for occupied private dwellings. A collective dwelling is a set of living quarters occupied by 10 or more people unrelated to the reference person (Person 1), or any other set of living quarters that can be clearly identified as communal (rooming houses), institutional (jails, hospitals) or commercial (hotels) in nature, regardless of the number of occupants.

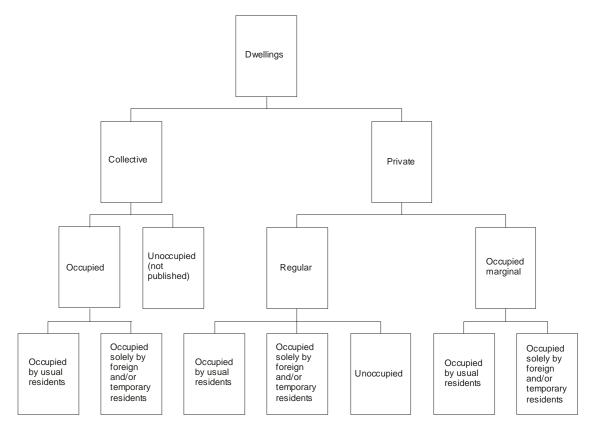


Figure 7. The Dwelling Universe, 2001 Census

As shown in Figure 7, private dwellings are divided into two categories: *regular* and *occupied marginal*. A regular dwelling is suitable for permanent year-round living; marginal dwellings (including cottages not suitable for year-round use) are listed only if occupied. Dwellings whose occupants are foreign or temporary residents are listed, but no data on dwelling characteristics are collected, whether they are regular dwellings or not.

#### 5.16 Institutions and Other Collectives

The census also provides counts of collective dwellings by type. *Institutional collectives* include establishments for children and minors, general hospitals, nursing care homes, senior citizens' homes, other hospitals and related institutions, facilities for the disabled, correctional and penal institutions, young offenders' facilities and jails, shelters for vagrants, other shelters, and lodging with assistance.

Non-institutional collectives include hotels, motels and tourist homes, lodging and rooming houses, school residences and residences for training centres, other temporary accommodations, campgrounds and parks, work camps, religious establishments, Hutterite colonies, military bases, merchant and coast guard vessels, naval vessels and other collectives.

The 2001 Census Dictionary provides a definition for every type of institutional and non-institutional collective dwelling.

The distinction between institutions and other collectives may seem ambiguous. For example, halfway houses operated by private companies are considered rooming or boarding houses, while government-run halfway houses that provide special services such as care for drug addicts or alcoholics, or rehabilitation of persons released from a penal institution, are deemed to be institutions.

Like private dwellings, collectives may be occupied by usual or temporary and foreign residents. In addition, institutional collectives may be occupied by institutional residents, live-in staff or both.

### 5.17 Disability

The Participation and Activity Limitation Survey (PALS), formerly known as the Health and Activity Limitation Survey (HALS), is designed to collect data on persons with disabilities.

The PALS is a postcensal survey conducted following the 2001 Census. The HALS was first conducted after the 1986 Census, and repeated after the 1991 Census. It was not conducted after the 1996 Census due to budget constraints.

The PALS identifies Canadians with an activity limitation, the impact of these activity limitations on their daily lives, and the barriers to full participation that they face. As for the previous postcensal survey (HALS), the survey frame for the PALS is provided by the answers to two filter questions on the census questionnaire.

The same filter questions were used in 1986, 1991 and 1996, and asked if the person was limited in activities at home, at school or at work, or in other activities. The person was also asked if he/she had any long-term disabilities or handicaps.

New disability filter questions were developed for the 2001 Census which are different from the filter questions used in the previous censuses. Results for the 1998 National Census Test showed that the new questions allow for the selection of a larger portion of the target population. The new questions are different both in their wording and in their response categories. The questions ask about difficulty in daily activities, and activity reduction at home, at work/school, and other activities. The "yes' answer category has been split into two possibilities: "yes, sometimes" and "yes, often".

The PALS is the primary source for disability data in 2001, as it provides a better identification of the population of persons with disabilities, and more detailed information on its characteristics. Disability data from the 2001 Census are available by special request only. The 2001 Census disability data were subjected to minimum edits and should be used with caution.



#### 6.1 Introduction

There is a geographic component to just about 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 geographic data. Small geographic areas are defined and mapped in detail so that the census representatives who distribute the census questionnaires can locate every dwelling during the data collection phase. During the processing phase, the data collected by households are coded to the geographic hierarchy 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, income and occupation groups, one can subdivide a population by geography. The geographic areas used by the census range in size from provinces and territories down to city blocks. The geographic areas are organized in a hierarchical model to show the nature of their relationships.

# 6.2 Hierarchical Model of Geographic Areas

The geographic areas and their relationships are depicted in a hierarchy chart (Figure 8). Each box in the hierarchy chart represents one type of geographic area. The 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 301 federal electoral districts (federal ridings), which in turn are subdivided into 478,707 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 relationship is a "one-to-many" relationship moving from top to bottom of the chart, and from bottom to top, the relationship is "many-to-one" (many areas at the lower level in the chart "nest" or fit exactly into one area at the next level in the chart). Each 'branch' of the hierarchy shows that, in general, 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.

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

Section 6.4 of this chapter briefly describes each of the geographic areas shown in the hierarchy chart. More detailed definitions are available in the *2001 Census Dictionary*. To put these descriptions in context, the following section describes the significant changes made, since the last census, to the way in which Statistics Canada creates and maintains the geographic infrastructure.

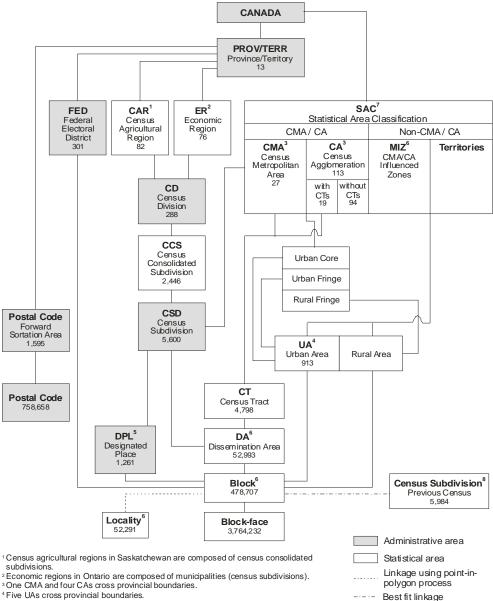


Figure 8. Hierarchy of Standard Geographic Units for Dissemination, 2001 Census

<sup>&</sup>lt;sup>5</sup> Designated places do not cover the total area of CSDs. Eighty-two DPLs cross CSD boundaries, of which 13 also cross CD boundaries.

<sup>&</sup>lt;sup>6</sup> Census metropolitan area and census agglomeration influenced zones (MIZ), dissemination area, block, and locality are new concepts for the 2001 Census

<sup>&</sup>lt;sup>7</sup>The Statistical Area Classification (SAC) is a new geographic classification that allocates each CSD according to whether it is a component of a CMA, CA, a census metropolitan area and census agglomeration influenced zone (MIZ), or the territories outside the CAs of Whitehorse and Yellowknife.

<sup>&</sup>lt;sup>8</sup> For the 2001 Census only, a best fit linkage is created between the 1996 CSDs and 2001 blocks to facilitate historical data retrieval.

Table 1. Geographic Units by Province and Territory, 2001 Census

Geographic	Cai	nada	No. 1	551			0	01		01	A11		v. <del>-</del>	A. 14/ T	Nort
Unit	1996	2001	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Federal electoral district (1996 Representation Order)	295*	301	7	4	11	10	75	103	14	14	26	34	1	1	1
Economic region	74	76	4	1	5	5	17	11	8	6	8	8	1	1	1
Census agricultural region	78	82	3	3	5	4	14	5	12	20	8	8	I	ı	-
Census division	288	288	10	3	18	15	99	49	23	18	19	28	1	2	3
Census consolidated subdivision	2 607	2 446	87	68	43	151	1 111	318	127	301	77	157	1	2	3
Census subdivision	-	5 600	381	113	98	275	1 476	586	298	1 002	452	816	35	37	31
1996 Census	5 984	-	381	113	110	283	1 599	947	298	970	467	713	35	68	S/O
Dissolutions (January 2, 1996 to January 1, 2001)	910	-	-	-	14	12	232	529	3	18	18	83	1	-	S/O
Incorporations (January 2, 1996 to January 1, 2001)	_	526	I	I	2	4	109	168	3	50	3	186	1	I	S/O
Designated place	828	1 261	182	1	59	172	78	81	51	158	260	219	1	-	-
Census metropolitan area	25	27	1	-	1	1	<u>6</u>	<u>11</u>	1	2	2	3	-	-	-
Census agglomeration	112	113	4	2	4	<u>5</u>	<u>28</u>	<u>30</u>	3	<u>7</u>	<u>10</u>	22	1	1	-
With census tracts	18	19	-	-	-	1	3	8	-	-	3	4	-	-	-
Without census tracts	94	94	4	2	4	<u>4</u>	<u>25</u>	<u>22</u>	3	<u>Z</u>	<u>Z</u>	18	1	1	-
Census tract	4 223	4 798	45	-	86	71	1 263	2 013	165	101	457	597	-	-	-
Urban area	929	913	36	7	39	<u>34</u>	229	<u>258</u>	<u>42</u>	<u>65</u>	<u>108</u>	93	1	3	3
Locality	S/O	52 291	2 428	964	3 920	3 445	12 448	10 889	2 339	3 868	3 466	7 699	362	173	290
Dissemination area	S/O	52 993	1 231	225	1 397	1 349	12 153	18 596	2 235	2 937	5 143	7 463	117	92	55
Enumeration area	49 361	42 851	1 204	225	1 337	1 216	9 133	14 753	1 805	2 697	4 129	6 088	117	92	55
Block	S/O	478 707	8 331	2 831	15 161	13 929	108 760	128 327	30 567	56 040	60 061	53 147	674	745	134
Block-face	817 734	3 764 232	80 162	19 854	168 840	136 311	865 600	955 847	200 569	377 776	435 604	499 365	10 644	12 304	1 356
Forward sortation area	1 477	1 595	33	7	74	110	398	518	64	47	147	188	3	3	3
Postal code	680 910	758 658	7 900	2 856	23 354	55 104	188 427	254 757	23 250	21 184	70 672	109 753	884	487	30

<sup>\*</sup> Federal electoral districts (1987 Representation Order)

**Note:** Underlined numbers indicate that those CMAs, CAs and urban areas crossing provincial boundaries are counted in both provinces.

### 6.3 Geographic Databases

The geographic areas depicted in the hierarchy chart are incorporated into large geographic databases. The databases include a digital representation of the boundaries of these areas, as well as attribute data such as the names and codes which are necessary for identifying each area uniquely. The databases contain additional geographic features including the road network, various hydrographic features (lakes, rivers and coastal shorelines), and selected other visible features (for example, railroads and power transmission lines). The additional features also have associated attribute data, such as street names and address ranges.

In preparation for the 2001 Census, the coverage of the spatial geographic database (boundaries, roads and other reference features) was expanded from approximately one percent of Canada's land area (the large urban centres with approximately 62% of the total population) to 100% coverage of the country. The sources for this new database include the existing geographic files from the 1996 Census, the National Topographic Data Base (NTDB) from Natural Resources Canada, the Digital Chart of the World, other digital files from Elections Canada, and updates from various field operations. All the spatial information is now based on the North American Datum of 1983 (NAD83) instead of NAD27 (used for previous censuses), which means that the positional accuracy of the spatial information is improved. However, it also means that positional differences can be as much as 100 metres between spatial information based on NAD27 and the same information based on NAD83. The spatial information is stored and maintained in this internal database. Geography products (described in Chapter 8) are derived from a "snapshot" of the information for the 2001 Census that is stored in the geographic databases.

The national road coverage and related geographic attributes permit the creation of a new basic geographic unit, the block. A block is an area bounded on all sides by roads and/or boundaries of standard geographic areas. The availability of the block for the entire country has made it possible for the first time to separate the requirements of geographic areas for collection and dissemination.

As shown in Figure 8, the block is the basic geographic area that respects the boundaries of all other geographic areas at a higher level in the hierarchy. Each side of a block is called a block-face, and generally address ranges are known for block-faces in larger urban centres.

#### 6.4 Administrative and Statistical Areas

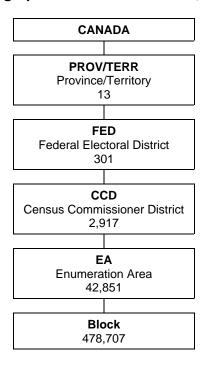
In Figure 8, geographic areas are depicted as being either administrative or statistical areas. Administrative areas are defined, with a few exceptions, by federal, provincial or territorial statutes, and are adopted for the purposes of the census. Statistics Canada (together with stakeholders) defines statistical areas for disseminating census data and complementing the structure of administrative regions. Table 1, on previous page, shows the number of geographic areas by province and territory for the 2001 Census.

Provinces and territories are administrative areas that provide the first level of detail in the geographic hierarchy for Canada. All other administrative and statistical areas respect the provincial/territorial boundaries (with the exception of five statistical areas that span provincial boundaries).

One of the administrative areas in the hierarchy is the federal electoral district (FED), the federal Member of Parliament's riding. The constitutional basis for the census originates from the requirement to apportion federal electoral representation based on population counts. Following the release of population counts from each decennial census, the Chief Electoral Officer determines the number of seats in the House of Commons based on those census population counts. In the geographic hierarchy, the FEDs add together to form provinces and territories, and blocks are defined to respect the FED boundaries.

While not shown in Figure 8, which represents the hierarchy of geographic units used for dissemination, there are two geographic areas used for census collection that fit between the block and the FED. These are enumeration areas (EAs), which are groups of blocks, and census commissioner districts (CCDs), which are groups of EAs (see Figure 9).

Figure 9. Hierarchy of Geographic Units for Collection, 2001 Census



Many provinces/territories are already divided into official areas for regional and local government purposes. Counties, regional districts, regional municipalities, cities, towns, townships and Indian reserves are examples of subprovincial administrative areas. Because of the great variety of names and statuses given to these areas across the provinces and territories, Statistics Canada uses standard terms to refer to groups of similar status. For example, census division (CD) is the general term applied to areas established by provincial law that are intermediate geographic areas between the municipality and the province/territory level. Census divisions represent counties, regional districts, regional municipalities and other types of provincially legislated areas. In Newfoundland and Labrador, Manitoba, Saskatchewan, Alberta, Yukon Territory, Northwest Territories and Nunavut, provincial/territorial law does not provide for these administrative geographic areas. Therefore, Statistics Canada, in cooperation with these provinces and territories, has created census divisions for the dissemination of statistical data. Next to provinces/territories, census divisions are the most stable administrative geographic area and are therefore often used in longitudinal analysis.

Census subdivision (CSD) is the general term for municipalities (as determined by provincial or territorial legislation) or their equivalents (for example, Indian reserves, Indian settlements and unorganized territories). There are 46 types of census subdivisions identified for the 2001 Census. The boundaries and names of municipalities (census subdivisions) can change from one census to the next because of annexations, dissolutions and incorporations. However, since the 1996 Census, the changes have been more numerous and more dramatic, especially in the provinces of Quebec, Ontario and British Columbia. Consequently, data from the 2001 Census is available for fewer and larger census subdivisions and historical analysis can be more complex. To assist users to bridge the transition from the 1996 CSDs to the 2001 CSDs, selected data tables are disseminated showing 2001 data based on the "dissolved" 1996 census subdivision boundaries.

The Standard Geographical Classification (SGC) is Statistics Canada's official classification for three types of administrative geographic areas: provinces and territories, census divisions (CDs), and census subdivisions (CSDs). The SGC provides unique numeric identification (codes) for these hierarchically related geographic areas.

Three types of statistical areas are defined by grouping administrative areas to facilitate special data analysis. Economic regions are groupings of complete census divisions (with one exception in Ontario). Prince Edward Island and the three territories each consist of one economic region. Economic regions are used primarily for analysis of regional economic activity. Agricultural data programs use subprovincial areas called census agricultural regions, also known as crop districts in the Prairie provinces. Census agricultural regions are made up of groups of adjacent census divisions, except in Saskatchewan where they are made up of groups of adjacent census consolidated subdivisions, but these groups do not necessarily respect census division boundaries. Census consolidated subdivisions (CCSs) provide a level of geography between the

census division and census subdivision. In the rural context, the CCS is a grouping of smaller municipalities, usually contained within a larger municipality. For instance, a town located within a surrounding township will be grouped together with the township to form a CCS. In urban areas, CCSs are formed by contiguous groupings of CSDs. CCSs are relatively stable geographic units and therefore can be used for longitudinal analysis.

Designated places (DPLs) are normally small communities or settlements that do not meet the criteria established by Statistics Canada to be a census subdivision (an area with municipal status) or an urban area. Designated places are created by provinces and territories, in cooperation with Statistics Canada, to provide data for submunicipal areas. The areas recognized as designated places may not represent all places having the same status within a province. DPLs are not required to respect CSD or CD boundaries, and a number of them straddle one or more CSDs or CDs. For 2001, there are about 50% more designated places than there were for the 1996 Census. There are no designated places in Prince Edward Island, the Northwest Territories, and Nunavut for the 2001 Census.

Most of Canada's vast land area is sparsely populated and, with each passing decade, a greater proportion of the total population is found in urban settings. Based on certain rules with respect to total population and population density, all land is defined by Statistics Canada as either urban or rural. An urban area has a minimum population concentration of 1,000 persons and a population density of at least 400 persons per square kilometre. All territory outside urban areas is classified as rural. Taken together, urban and rural areas cover all of Canada. For the first time, urban areas are defined using population counts and population density data from the current census, instead of from the previous census. The population density data are block-based, rather than enumeration-area-based, as in previous censuses.

Almost 80% of Canada's population lives in urban centres with a population of 10,000 persons or more. Urban-focused economies tend to expand beyond official municipal boundaries in terms of shopping trips and commuter travel. In order to encompass the area under the influence of a major urban centre, Statistics Canada has created groupings of municipalities, or census subdivisions. Specific guidelines are used to group municipalities that are closely interconnected due to people working in one municipality and living in another. The resulting geographic units are called census metropolitan areas (CMAs) for larger urban centres (100,000 or more persons in their urban core in the previous census) and census agglomerations (CAs) for smaller urban centres (with an urban core of at least 10,000 persons but less than 100,000 persons in the previous census). Within CMAs and CAs, the largest urban area is called the urban core; smaller urban areas that are not contiguous with the urban core are called secondary urban cores (when the population is 10,000 persons or more) or the urban fringe. All the rural area within the CMAs or CAs is called rural fringe. In census tabulations, urban population includes all the population living in the urban cores, secondary urban cores, and urban fringes of census metropolitan areas (CMAs) and

census agglomerations (CAs), as well as population living in urban areas outside CMAs and CAs. Similarly, the rural population includes all the population living in rural fringes of CMAs and CAs, as well as the population in rural areas outside CMAs and CAs.

Census tracts (CTs) are small, relatively stable geographic areas within census metropolitan areas and larger census agglomerations (with an urban core population of 50,000 or more at the previous census). A committee of local specialists (for example, planners, health and social workers, and educators) initially delineates CTs in conjunction with Statistics Canada. CTs are areas of 2,500 to 8,000 people (preferably close to 4,000) whose boundaries generally follow permanent physical features, such as major streets and railway tracks, and attempt to approximate cohesive socio-economic areas at the time of creation. A unique feature of CTs is that their boundaries are generally held constant from one census to the next, so that CTs are comparable over time. A subsequent census may split a CT when its population exceeds the target range, but normally it can be easily aggregated to equal earlier boundaries. Because of the splits that take place over time (CTs were first defined in some urban centres back in 1941), CTs do not necessarily follow current CSD or CD boundaries, except at the external outline of a CMA or a CA. In practice, however, there are few cases of CTs not nesting perfectly within CSDs and CDs. CTs have a long history of being the unit of choice for analyzing intra-metropolitan trends, since data are readily available for them.

A new concept called census metropolitan area and census agglomeration influenced zones (MIZ) is introduced for 2001. This concept is applied to census subdivisions outside CMAs and CAs to further differentiate this vast, largely rural area of Canada for statistical analysis purposes. These non-CMA/CA census subdivisions are assigned to four categories according to the degree of influence (strong, moderate, weak, and no influence) that CMAs and CAs collectively have on each of them. CSDs with the same degree of influence tend to be clustered into zones around the CMAs and CAs. As with CMAs and CAs, the allocation of a CSD to a MIZ category is determined using commuting flows of the employed labour force derived from 1991 Census place of work data. MIZ provides users with a more detailed geographic identity for the CSDs outside CMAs and CAs.

The new Statistical Area Classification (SAC) can be applied to census subdivisions (municipalities) for data dissemination purposes. SAC permits census data to be summarized for census metropolitan areas (CMAs), census agglomerations (CAs), census metropolitan area and census agglomeration influenced zones (MIZ), and the three territories. It is expected that the application of this classification to CSD data will reveal previously hidden details and help users to study the diversity of non-CMA/CA areas of Canada.

Also new for 2001, the dissemination area (DA) is a small, relatively stable geographic unit composed of one or more blocks. It is the smallest standard geographic area for which all census data are disseminated. DAs cover all the territory of Canada and

replace the enumeration area (that is still used for census collection) as the smallest standard geographic area for which census profile data are disseminated. In most cases, DAs have a population of between 400 and 700; this helps minimize the geographic suppression of data. However, due to operational constraints for the 2001 Census, the boundaries of DAs outside larger urban centres (50,000+ persons) are the same as the boundaries for 2001 Census enumeration areas; therefore, some DAs may fall below the target of 400 to 700 people. DAs respect the boundaries of census subdivisions and census tracts. Thus, they can be added together or "aggregated" to create any of the other standard geographic areas above CSDs and CTs in the hierarchy.

The concept of locality is supported to maintain a record of historical place names of former census subdivisions (municipalities), former designated places, and former urban areas, as well as the names of other entities such as neighbourhoods, post offices, communities and unincorporated places. Localities are stored as points in the geographic database, and therefore their location relative to any standard geographic area is easily determined. Census data are not available for localities, but are available for the standard geographic areas in which the localities are located.

Although shown as part of the geography hierarchy, the postal code is not, strictly speaking, a census geographic area. The postal code system is designed by Canada Post Corporation solely to facilitate the delivery of the mail. The first three characters of the postal code refer to the forward sortation area (FSA) which, in urban areas, is about the size of four to six census tracts. The last three characters are the local delivery unit (LDU) which, in urban areas, is often equivalent to a block-face (normally one side of a city street between two consecutive intersections). There are many LDUs in each FSA. In areas with carrier delivery, groupings of LDUs form the carrier's delivery route, called a postal walk, which is larger than a dissemination area but smaller than a census tract.

There is no exact relationship between postal codes defined by Canada Post Corporation and the blocks or block-faces defined in Statistics Canada's geographic database. Beginning in the early 1980's, Statistics Canada established an ongoing program to create and maintain a concordance file that makes it possible to match approximately the constantly changing postal code geography to the standard geographic areas used by the census. Users who may have their own data organized by postal codes may request census data tabulations for areas based on the match provided by the concordance file.

Since 1996, the postal code as provided by the respondent on all census questionnaires is captured during the census processing phase. The postal code reported by the respondent is verified and then accepted, whether or not it is the same as the postal code assigned by Canada Post Corporation to that address. This makes it possible to tabulate census data by these postal codes, although results may be different than those obtained with the concordance file described above.

Postal codes should be used cautiously in lieu of geographic areas. Standard geographic areas relate to the exact location of dwellings. Postal codes captured from the census questionnaire indicate the location of the mailbox where people wish to receive their mail. For instance, the postal code provided by a respondent could indicate a post office location (as in the case of General Delivery) or a business address.

### 6.5 Non-standard or User-defined Geographic Areas

The geographic areas described in Section 6.4 are the standard areas used to organize and disseminate census data. In most cases, the standard geographic areas satisfy data user requirements for census data tabulations; however, there are also many users who want data tabulated for geographic areas that are not in the standard geographic hierarchies as depicted in Figure 8. Examples are school districts, health zones, sales regions, etc.

There are two basic types of such non-standard or "user-defined" geographic areas: (1) areas that are simple aggregations of standard geographic areas, and (2) areas that do not match the standard geographic areas at all. An example of the first type could be sales regions for a census metropolitan area, where the sales regions are made up of one or more of the component municipalities. 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 want census data tabulated for non-standard geographic areas, they may turn to the Custom Area Creation Service (formerly the Geocoding Service) provided by Statistics Canada and described further in Chapter 8.



## 7.1 Introduction

Statistics Canada, as a professional agency in charge of producing official statistics, has the responsibility to inform users of the concepts and methodology used in collecting and processing its data, the quality of the data it produces, and other features of the data that may affect their use or interpretation.

Data users must first be able to verify that the conceptual framework and definitions that would satisfy their particular data needs and uses are the same as, or sufficiently close to, those employed in collecting and processing the data. Users then need to be able to assess the degree to which error in the data restricts the use of these data.

The measurement and assessment of data quality, however, is a complex undertaking. There are several dimensions to the concept of quality, many potential sources of error and often no comprehensive measures of data quality. A rigid requirement for comprehensive data quality measurement for all Statistics Canada products would not be achievable given the present state of knowledge. Emphasis must, however, be placed on describing and quantifying the major elements of quality.

#### 7.2 Errors in Census Data

The accuracy of a statistical estimate is a measure of how much the estimate differs from the correct or "true" figure. Departures from true figures are known as errors. Although this term does not imply that anyone has made a mistake, some degree of error is the inevitable result of decisions taken to control the cost of the census. This is an important point, since many kinds of errors can be anticipated and controlled by building special procedures into the census. The more resources put into these procedures, the tighter the control and the lower the degree of error in the data. However, there is a point at which the benefits of a further reduction in error are too minor to justify the expense.

The significance of error to the data user depends very much on the nature of the error, the intended use of the data and the level of detail involved. Some errors occur more or less at random and tend to cancel out when individual responses are aggregated for a sufficiently large group. For example, some people may overestimate their income, while others may underestimate it. If there is no systematic tendency for people to err in either direction, then overestimates by some individuals will more or less offset underestimates by others in the group. The larger the group, the closer the average reported income is

likely to be to the true value. On the other hand, if many people forget a source of income, the result will be a general tendency to understate total income. In this case, the average reported income will be lower than the true average. Such systematic errors are far more serious a problem for most users than random errors: the bias they cause in the data persists no matter how large the group, and is very difficult to measure.

#### 7.3 Sources of Error

Errors can arise from many sources, but can be grouped into a few broad categories: coverage errors, non-response errors, response errors, processing errors and sampling errors.

### 7.3.1 Coverage errors

The census attempts to count every Canadian resident on Census Day. Census representatives (CRs) make a list of all dwellings in their enumeration area and drop off a census questionnaire at each dwelling. The householder is asked to list all usual residents of the dwelling by following the Step B guidelines on the questionnaire. Mistakes can occur in this task. The CR may misjudge the location of the enumeration area boundaries and miss certain dwellings. A household may be missed because it is inside what looks like a single dwelling or located on a road not marked on the enumeration area map. The CR may fail to drop off a questionnaire at an occupied dwelling because it appears to be vacant.

Householders may misunderstand the Step B guidelines and not list all the usual residents of the dwelling; for example, a family member temporarily away from home at school or in a hospital could be left out. A family maintaining two residences could be missed at both because of confusion about where its members should be counted. Such situations could also lead to double-counting or "overcoverage", although this is less prevalent than "undercoverage", which occurs when individuals or households are missed.

### 7.3.2 Non-response errors

Sometimes it proves impossible to obtain a complete questionnaire from a household, even though the dwelling was identified as occupied and a questionnaire was dropped off. The household members may be away over the entire census period or may refuse to complete the form. In most cases, the questionnaire is returned but information is missing for some questions or individuals. Census representatives edit the questionnaires and follow up on missing information. The CR's work is in turn checked by both a supervisor and a quality control technician. Nevertheless, some non-response is inevitable and, although certain adjustments for missing data can be made during processing, some loss of accuracy is inevitable.

### 7.3.3 Response errors

A response may not be entirely accurate. The respondent may have misinterpreted the question or may not know the answer, especially if it is given for an absent household member. Occasionally, a response error may be caused by the Census Representative when following up for a missing response or when recording items such as the structural characteristics of a dwelling.

## 7.3.4 Processing errors

After collection has been completed, questionnaires are sent to the regional processing sites. Some of the write-in entries on the form are numerically coded. Mistakes can occur in coding, especially when the written information is ambiguous, incomplete or difficult to read. Quality control is used to help reduce these errors. The coded information and the remaining write-ins are key-entered into a computer file. Keying errors can occur despite rigorous quality checks on each key operator's work.

Census data files are sent to Ottawa, where the remaining write-ins are coded with the assistance of a computer. Additional coding mistakes can occur here, although quality control methods are used to limit them. Following coding, all the data undergo a series of computer checks to identify missing or inconsistent responses. Responses are created or "imputed" for missing or unacceptable information, using answers from respondents who share similar characteristics such as age and sex. The computer cannot, of course, impute a correct response every time, but when results are tabulated for sufficiently large geographic areas or subgroups of the population, imputation errors will more or less cancel out.

# 7.3.5 Sampling errors

Some census questions are asked of all Canadian residents, but most of the cultural and economic information is obtained from a sample of one in five households. The information collected from these households is "weighted" to produce estimates for the whole population. The simplest weighting procedure would be to multiply the results for the sampled households by five, since each household in the sample represents five households in the total population. The actual weighting procedure is much more complex, but similar in principle.

Naturally, the results of the weighted sample differ somewhat from the results that would have been obtained from the total population. The difference is known as sampling error. The actual sampling error is of course unknown, but it is possible to calculate an "average" value.

If several samples of the same size were selected using a random process similar to that used in the actual census, the weighted results would tend to vary around the true result for the total population. The "standard error" is a measure of the average size of this variation. Fortunately, it is not necessary to actually generate a number of samples to

estimate the standard error for the census; it can be estimated from the single sample actually taken.

### 7.4 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 2001 Census, special studies examine errors in coverage, sampling and content (i.e. non-response, response and processing).

### 7.4.1 Coverage errors

Three studies address coverage errors. First, a sample of dwellings listed by census representatives as vacant or as non-response is revisited to establish how many were in fact occupied on Census Day as well as the number of persons who were living in these dwellings. Estimates are obtained of the total number of households and persons missed in this way, and the census results are adjusted.

The remaining two studies provide estimates of gross undercoverage and overcoverage, but are not the basis for corrections of census results. The Reverse Record Check estimates gross undercoverage by identifying a sample of people before the census, collecting all addresses where they may have been enumerated and then checking census questionnaires corresponding to these addresses to see if these people were enumerated. The sample was selected from 1996 Census returns, from birth and immigration registrations and from permit (student, work or minister) holders and refugee claimant registrations, and from people identified as missed in the 1996 Reverse Record Check.

The census also includes a study to measure gross overcoverage. The Overcoverage Study contains three components. The first and main component is the *Automated Match Study* which attempts to match all households in the census database against each other; the detected matches are classified to strata and a sample of matches within each stratum is verified against census questionnaire information to confirm overcoverage. The second component is the *Reverse Record Check*, which collects all the addresses where a selected person may have been enumerated; each address is verified in order to detect multiple enumeration. The third component is the *Collective Dwelling Study*, which verifies if a person enumerated in a non-institutional collective dwelling, like a religious community, may have been enumerated at a private dwelling where the person used to live.

#### 7.4.2 Content errors

A number of studies evaluate the quality of data for each question. Response rates, edit failure rates, and a comparison of estimates before and after imputation are among the data quality measures used. Tabulations from the 2001 Census are also compared with corresponding data from past censuses, from other surveys, and from administrative

sources. Detailed cross-tabulations are checked for consistency and accuracy. Some of these checks are conducted prior to the release of census data, in a process known as certification; more detailed studies take longer.

### 7.4.3 Sampling errors

As mentioned earlier, it is possible to calculate standard errors for sample variables. In addition, studies evaluate sampling and weighting procedures.

# 7.5 Dissemination of Data Quality Information

Census data quality information is disseminated in two ways. All census products include a section on data quality that examines sources of errors and provides cautionary notes for users. In some cases, estimates of the magnitude of errors are given – for example, estimates of sampling error. Information is also published in the 2001 Census Technical Reports series that summarizes the results of data quality studies.

# 7.6 2001 Census Data Quality Problems

Many of the 2001 Census data quality studies were still in progress at the time this document was produced. However, one data quality problem had already been identified.

In certain cases, census representatives were refused access to some Indian reserves, or it was found that the quality of the data was unacceptable. In the absence of acceptable data for these reserves, they have been omitted from the census database. A list of these reserves with the population and dwelling counts from the 1981 and (where available) 1986, 1991 and 1996 Censuses is provided in each product. It should be noted that the size of this problem is smaller than in the 1996 Census.



#### 8.1 Introduction

Dissemination of 2001 Census data began less than a year after Census Day, in March 2002. The data are disseminated in different ways and in various forms. This chapter provides a description of the products and services developed for the 2001 Census and the various media on which they are available. Other sources, such as the 2001 Census Catalogue, the Statistics Canada site on the Internet (www.statcan.ca) and, specifically, the On-Line Catalogue, contain detailed information about the full range of 2001 Census products and services.

Figure 10. Overview of 2001 Census Products and Services

#### **Reference Products**

Preview

Dictionary

Catalogue

Stubsets

Handbook

**Technical Reports** 

#### **Geography Products**

GeoSuite

GeoSearch

Reference maps

Cartographic Boundary Files

Road Network Files

Skeletal Road Network Files

Postal Code Conversion File

Postal Code and Federal Riding File

#### **Standard Data Products**

Population and dwelling counts

**Topic-based Tabulations** 

Profiles

Public Use Microdata Files

#### **Analysis Series**

Provides an analytic perspective on 2001 Census topics.

#### **Custom Services**

Custom cross-tabulations

Semi-custom tabulations

#### **Custom Geography Products and Services**

Custom Area Creation Service (formerly Geocoding Service)

Geography Custom Services

Geography Custom Mapping

#### 8.2 What's New

#### Media

 The Internet is being used to provide much more detailed data free of charge. Tables showing population and dwelling counts for most standard geographic areas are available, as well as all reference maps, which can be viewed as .pdf files. In addition, GeoSearch is a new Internet tool that makes it easy to find any place in Canada, see it on a map, and get basic geographic and population and dwelling data for that place.

#### Content

- Data tables for the 2001 Census will be released by topics, that is, groups of variables on related subjects.
- Wherever possible, the language and vocabulary used in 2001 Census products available on the Internet will be simplified to make the information accessible to more people.
- Users will be offered various methods of searching and navigating through census standard products including reference products on the Internet.

## Geography

 Geographic units such as dissemination areas, urban areas, designated places and metropolitan influenced zones will be added to the standard products line. Some new units, such as dissemination areas, will replace others.

#### **Variables**

 Information on the following new subjects was collected in the 2001 Census: birthplace of parents, other languages spoken at home, and language of work. The 2001 questionnaire also included the question on religion, which is asked in every decennial census. The family structure variable was broadened to include same-sex couples.

### Geography products

• The quality and availability of digital geography products including reference maps, boundary files and road files have been improved due to the completion of one integrated database covering all of Canada (previously such coverage was limited to the major urban centres). Reference maps, previously only available in paper format, are now available electronically as .pdf files. Dissemination area reference maps replace the enumeration area maps. The Road Network File product now covers the entire country rather than just the largest urban centres (Street Network Files from

the previous census). The Cartographic Boundary Files (which replace Digital Cartographic Files from the previous census) and the Road Network Files are positionally consistent (features will match when one is overlaid on the other). All the spatial information is now based on the North American Datum of 1983 (NAD83), instead of NAD27, which was used for previous censuses. Dissemination area Cartographic Boundary Files replace enumeration area Digital Cartographic Files from the previous census.

 A reference map is available showing the Statistical Area Classification, which is applied to census subdivisions (municipalities). The map shows the location of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as the new concept of census metropolitan area and census agglomeration influenced zones. The Cartographic Boundary File for census subdivisions includes the Statistical Area Classification for each census subdivision. Users wanting to study the diversity of non-CMA/CA areas of Canada can analyze census data by using the Statistical Area Classification.

### Revised price structure

The pricing of 2001 Census products and services has been reviewed. Some prices
have been lowered, including those for several geographic products. 2001 Census
reference maps are now available free on the Internet as downloadable .pdf files.

# 8.3 Products and Services of the 2001 Census of Population

Many census products and services are based on 2001 Census variables described in previous chapters. These products are supported by reference documents and geographic tools designed to make the data easier to use.

### 8.3.1 Reference products

The 2001 Census has six reference products. They are intended to support the use of census data products and services.

#### 2001 Census Preview of Products and Services

This product is designed to provide a first look at the range of products and services available to clients. It contains information on release time frames, media choices, prices, and levels of geography available for each product.

### 2001 Census Dictionary

The *Dictionary* contains definitions of all 2001 Census concepts, universes, variables and geographic units. These definitions help users to understand and interpret census data. The *Dictionary* also supplies information about comparability with earlier censuses.

## 2001 Census Catalogue

This electronic product available on the Internet provides detailed information about 2001 Census products and services, how to obtain them, release dates, prices, media and available geographic units.

#### 2001 Census Standard Products Stubsets

This new electronic product available on the Internet provides detailed information about all census variables by category.

#### 2001 Census Handbook

This product provides a non-technical overview of the entire census process, from content determination to data dissemination. It also discusses issues such as data quality and confidentiality, and gives examples of census data applications.

### 2001 Census Technical Reports

These documents provide detailed information about the quality of 2001 Census data and help users determine to what extent they can use the data to meet their needs. Subjects covered in the reports include the concepts and components of census variables, collection and coverage, regional office and head office data processing, edit and imputation, quality evaluation and comparability with previous censuses.

Figure 11. Reference Products

	Preview	Dictionary	Catalogue	Stubsets	Handbook	Technical Reports
Major Characteristics	Information for users and potential users on the direction for the 2001 product line and services	Definition of census concepts and geographies Provides historical comparability of variables.	Description of census products and services  Contains prices, release dates and content of all census products.	Detailed information about all census variables by category	Non-technical overview of the complete census process from content determination to the dissemination of products and services  Discusses each census question and compares the 2001 questions with questions from previous censuses.	Detailed information on variables including definitions, explanations on concepts, collection, edit and imputation, data quality and historical comparability
Media	Internet Publication	Internet Publication	Internet	Internet	Internet Publication	Internet
Availability	January 2002	March 2002 on the Internet August 2002 in print	June 2002	June 2002	June 2002 on the Internet August 2002 in print	From October 2003 to May 2005

	Preview	Dictionary	Catalogue	Stubsets	Handbook	Technical Reports
Price	Free	Free on the Internet \$25 in print	Free	Free	Free on the Internet \$25 in print	Free
New for 2001	Newsletter format			New product		

## 8.3.2 Geography products

#### GeoSuite

GeoSuite is a data retrieval, query and tabulation tool. It provides 2001 population and dwelling counts for all geographic units except postal codes, as well as all the geographic reference information a user of census data might need, including geographic names and codes. It also helps users explore the relationships among the standard geographic units. It provides a list of dissemination area reference maps to make it easier to find maps of specific dissemination areas. The CD-ROM includes a separate file for a correspondence list that relates 1996 enumeration areas to 2001 dissemination areas.

#### GeoSearch

GeoSearch is a new Internet tool that makes it easy to find any place in Canada, see it on a map, and get basic geographic and population and dwelling data for that place. To find a specific place of interest, users can click and zoom on a map of Canada or they can search by place name, street name or street intersection. GeoSearch finds and displays the appropriate map that shows boundaries and other features. GeoSearch also automatically displays population and dwelling counts for the selected place, and shows what kind of geographic area it is and its relationship to other geographic areas. The following boundary layers are displayed: province/territory, census division, census metropolitan area/census agglomeration, census subdivision, federal electoral district, census tract, urban area, designated place, dissemination area, or block.

### Reference maps

Census reference maps show the geographic units of the census and identify their boundaries so that users can relate census data to physical locations. The following reference maps have been produced for the 2001 Census:

- census divisions and census subdivisions, by province and territory;
- census tracts, by census metropolitan area and census agglomeration;
- dissemination areas, by census tract in large urban centres (census metropolitan areas and tracted census agglomerations), by smaller urban centres (non-tracted census agglomerations), and by census division for areas outside census metropolitan areas and census agglomerations;
- national maps for census divisions, economic regions, census metropolitan areas and census agglomerations, federal electoral districts (1996 Representation Order), and the Statistical Area Classification (2001 census subdivisions).

### Cartographic Boundary Files (CBFs)

Cartographic Boundary Files (CBFs) contain the boundaries of standard geographic areas together with the shoreline around Canada and the larger inland lakes, all integrated in a single layer. The boundaries are provided in latitude/longitude coordinates that are based on the North American Datum of 1983 (NAD83). The Cartographic Boundary Files for 2001 replace the Digital Cartographic Files produced for the 1996 Census.

Cartographic Boundary Files can be used with Census of Population, Census of Agriculture or other Statistics Canada data for data analysis and thematic mapping (with appropriate software). Geographic codes provide the linkage between the statistical data and the geographic area boundaries. CBFs can also be used to create new geographic areas by aggregating standard geographic areas, and for other data manipulations available with the user's software. The CBFs are positionally consistent with the Road Network Files and Skeletal Road Network Files, which can provide additional geographic context for mapping applications.

A population ecumene boundary file at the census division level is also available for small-scale thematic mapping. The 2001 population ecumene is based on population density criteria, and the ecumene boundaries give a more accurate depiction of the spatial distribution of data.

### Road Network Files (RNFs)

These files contain the road and other useful information, such as street names, for the entire country. In combination with a suitable mapping program and the Cartographic Boundary Files, the RNFs can be used when preparing maps.

## Skeletal Road Network Files (SRNFs)

This file contains a subset of the road data from the *Road Network Files*, including names, but not addresses, for all of Canada. The selected roads are ranked according to four levels of detail. The different levels of detail are suitable for mapping at small to medium scales. In combination with suitable mapping software and Cartographic Boundary Files, the SRNFs can supply cartographic reference features to enhance thematic maps.

### Postal Code Conversion File (PCCF)

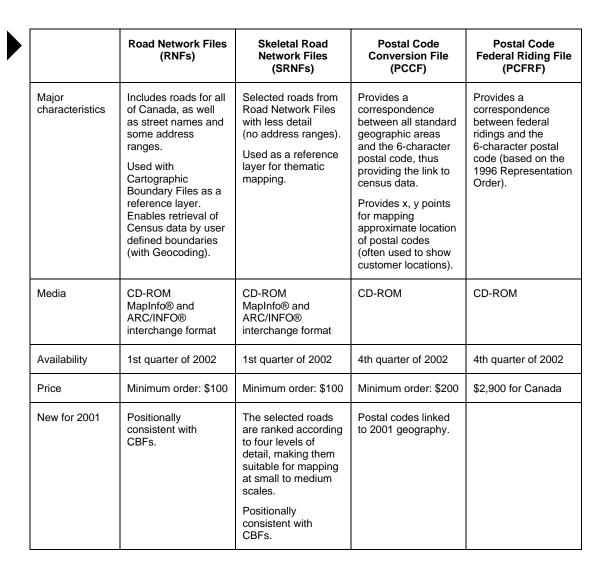
The *Postal Code Conversion File* associates six-character postal codes with census standard geographic units. To assist mapping applications, it also provides the coordinates of a point corresponding to the approximate location of a postal code. The PCCF is updated twice a year.

## Postal Code and Federal Riding File (PCFRF)

This file associates six-character postal codes with the names and codes of Canadian federal electoral districts. The PCFRF is updated twice a year. The PCFRF is based on the 1996 Representation Order.

Figure 12. Geography Products

	GeoSuite	GeoSearch	Reference Maps	Cartographic Boundary Files (CBFs)
Major characteristics	Tool that provides the links between all standard levels of geography.  Includes population and dwelling counts for all standard geographic areas, as well as many other attributes.  Includes correspondence list for 1996 EAs to 2001 DAs.	Internet tool that makes it easy to find any place in Canada, see it on a map, and get basic geographic, population, and dwelling data for that place.	Show census geographic areas.  Used to locate boundaries for most standard geographic areas.	Boundaries of census geographic areas integrated with shoreline and larger lakes.  Positionally consistent with Road Network Files and Skeletal Road Network Files.  Used for mapping and data analysis.
Media	CD-ROM	Internet	Internet CD-ROM Printed on demand	CD-ROM MapInfo® and ARC/INFO® interchange format
Availability	1st quarter of 2002	1st quarter of 2002	1st quarter of 2002	1st quarter of 2002
Price	\$60	Free	Free on Internet CD-ROM and print Minimum order: \$70	Minimum order: \$100
New for 2001		New Internet tool for 2001	Maps (as .pdf files) available free on the Internet for the first time.  Maps (as .pdf files) available for the first time on CD-ROM.	All standard geographic levels are derived from blocks, so they are consistent with each other.  Dissemination area boundaries replace enumeration area boundaries for 2001.



#### 8.3.3 Standard data products

The 2001 Census offers a wide array of standard data products that combine variables in different ways to meet customer needs. In all, there are four different series of standard data products. Some standard tables are available free of charge from Statistics Canada's Web site (www.statcan.ca).

### Population and dwelling counts

The first data released in the census cycle are the geographic distribution of Canada's population and the dwelling counts for all levels of geography. The data are available free on the Internet for the following geographic units: Canada; provinces/territories; federal electoral districts (1996 Representation Order); census divisions; census subdivisions; designated places; urban areas; census metropolitan areas; census agglomerations; urban core, urban fringe and rural fringe; and by the Statistical Area Classification. A publication containing similar tables is also available.

GeoSuite, described earlier, contains the population and dwelling counts for all standard geographic levels, including census tracts and dissemination areas, but not forward sortation areas or postal codes.

## Topic-based Tabulations

This series of tables paint a portrait of Canada based on various topics, that is, on groups of variables on related subjects. They are available for various levels of geography. Some tables provide a simple overview of the country; others consist of three or four cross-tabulated variables; and still others are of special or analytic interest. The *Topic-based Tabulations* replace *The Nation*, *Dimensions* and *Basic Summary Tables* series

#### **Profiles**

These tables provide a statistical overview of various geographic areas based on a large number of detailed variables. Groups of variables, referred to as electronic components of profiles, are made available in each of the eight major releases. Together they form a complete profile. A print version with less detailed variables is available for selected levels of geography. This series also includes the popular Community Profiles, which contain more variables and geographic content for the 2001 Census and are available via the Internet. In addition, the series includes a complete profile of all census subdivisions (CSDs) dissolved between 1996 and 2001, mostly as a result of numerous municipal mergers.

#### Public Use Microdata Files (PUMFs)

These files provide access to non-aggregated data, so that users can conduct their own research or analysis. The possibility of preparing a hierarchical file based on a single sample, consisting of three files of interrelated components (individuals, families and households), is under study.

**Figure 13. Standard Data Products** 

	Population and Dwelling Counts	Topic-based Tabulations	Profiles	Public Use Microdata Files
Major characteristics	Geographic distribution of Canada's population and dwellings at all levels of geography	Some tables provide a simple overview of the country; others consist of three or four cross-tabulated variables; still others are of special or analytic interest.	Provide a statistical overview of various geographic areas based on a large number of detailed variables.	Provide access to non-aggregated data such that users can conduct their own research or analysis. The possibility of preparing a hierarchical file based on a single sample, consisting of three files of interrelated components (individuals, families and households), is under study.
Geography	Canada Provinces/territories Federal electoral districts Census divisions and subdivisions Census tracts Census metropolitan areas and census agglomerations Dissemination areas Forward sortation areas Postal codes Census consolidated subdivisions Designated places Urban areas Statistical Area Classification (SAC)	Canada Provinces/territories Federal electoral districts Census divisions and subdivisions Census metropolitan areas and census agglomerations (and their zones of influence where applicable) Census tracts Dissemination areas Forward sortation areas	Canada Provinces/territories Census divisions and subdivisions Dissolved census subdivisions Federal electoral districts Census metropolitan areas and census agglomerations Census tracts Dissemination areas Forward sortation areas Urban areas Designated places	Canada Provinces/territories Selected census metropolitan areas and selected census subdivisions
Media	Internet (for most geographies) CD-ROM (GeoSuite) Electronic Shelf (for most geographies) Publication (for most geographies)	Internet Various electronic media	Internet CD-ROM Print Various electronic media	CD-ROM
Availability	Internet, GeoSuite – 1st quarter of 2002 Publication, Electronic Shelf – 2nd quarter of 2002	From March 2002 through 2004	From March 12, 2002, through 2004	3rd quarter of 2004

	Population and Dwelling Counts	Topic-based Tabulations	Profiles	Public Use Microdata Files
Price	Free on Internet \$40 - \$60	Selected tables free Available through the regional reference centres at prices comparable to 1996.	Selected Internet tables free Prices depend on various factors, including geographic coverage.	To be determined
New for 2001	More tables free on the Internet Additional data for dwelling counts	These tables replace The Nation, Dimensions and Basic Summary Tables series.		

### 8.3.4 Analysis series

These products will consist of a series of electronic documents on the Internet that provide an analytic perspective on all 2001 Census topics. These documents are published during the official release of census data, as well as in the following weeks.

#### 8.3.5 Custom services

Custom services from both the 100% and 20% databases are offered using databases containing data from the 1971 to 2001 Censuses. Users are able to order custom crosstabulations and semi-custom tabulations. Custom geographic services such as custom mapping and geocoding are also available.

## 8.3.6 Custom geography products and services

Several custom geography products and services are available. These include: the geocoding service that allows users to define their own geographic areas of study (user-defined areas or aggregations of standard areas) for census data tabulations; geography custom services for the creation of non-standard geographic products (such as special packaging, manipulation or merges of geography digital files); and geography custom mapping, whereby users may request thematic and reference maps to meet their own custom specifications.

#### 8.4 Census Data Releases

After the field work has been completed, the census forms go through data processing (regional processing, imaging, interactive verification, automated coding and edit and imputation) before the resulting data can be analyzed and made available to users. Each step must be completed and certified before the data are released. This ensures that census data continue to meet the high standards our users have come to expect.

Census data are released in Statistics Canada's official release vehicle, *The Daily*. Data tables for the 2001 Census are released by topics, that is, groups of variables on related subjects.

Figure 14. Topics and Dates of Major 2001 Census Releases

Dates	Release Topics	Data on
March 12, 2002	A Profile of the Canadian Population: Where We Live	Population, Dwellings and Geography
July 16, 2002	Age and Sex	Age Sex
	Marital Status of Canadians	Marital Status Common-law Status
October 22, 2002	Families and Household Living Arrangements	Family Structure Family Size Family Status Living Arrangements
	Housing	Private Dwellings Collective Dwellings Household Maintainer Tenure
December 10, 2002	Language Composition of Canada	Mother Tongue Home Language Knowledge of Official Languages Knowledge of Non-official Languages
	Canadians on the Move	Mobility Migration
	Immigration and Citizenship	Birthplace and Birthplace of Parents Country of Citizenship Immigrant Status Period or Year of Immigration Age at Immigration
January 21, 2003	Ethnocultural Portrait of Canada	Ethnic Origin Population Group Visible Minorities
	Aboriginal Peoples of Canada	Aboriginal Identity Aboriginal Origin Registered or Treaty Indian Member of an Indian Band or First Nation

Dates	Release Topics	Data on
	Canada's Workforce: Paid Work	Labour Force Activity Industry Occupation Class of Worker Work Activity During the Reference Year
February 11, 2003	Canada's Workforce: Unpaid Work	Unpaid Housework Unpaid Child Care Unpaid Senior Care
	Place of Work	Place of Work Status Workplace Location
	Commuting to Work	Mode of Transportation Commuting Distance
	Language Use at Work	Language of Work
	Education in Canada: School Attendance and Levels of Schooling	School Attendance Highest Level of Schooling Educational Attainment
March 11, 2003	Education in Canada: Major Fields of Study	Field of Study
	Earnings of Canadians	Wages and Salaries Employment Income
May 13, 2003	Income of Individuals, Families and Households	Total Income Low Income
	Social and Economic Characteristics of Individuals, Families and Households	Labour Force Activity of Family Members Educational Attainment of Family Members Housing Costs
	Religions in Canada	Religion

#### 8.5 How to Access Census Data

#### 8.5.1 Statistics Canada regional reference centres

Statistics Canada regional reference centres are located across the country. Each centre has a complete collection of current publications and reference documents that can be consulted or purchased. The staff of regional reference centres provide consultation and research services as well as after-sales service and support. For more information about the services provided by regional reference centres, please dial the toll-free number.

#### **Statistics Canada Regional Reference Centres**

Call 1 800 263-1136

Telecommunications device for the hearing-impaired: 1 800 363-7629.

#### 8.5.2 Libraries and bookstores

Residents of the National Capital Region can use Statistics Canada's library, located at its head office in Ottawa. The library maintains complete current and historical records of all Statistics Canada products. Library staff are available to help users find the information they need.

Statistics Canada Library R.H. Coats Building, 2nd Floor Tunney's Pasture Ottawa, Ontario K1A 0T6 Local calls: (613) 951-8219 Fax number: (613) 951-0939

Census information can also be found in libraries across the country. Some libraries receive free copies of the entire line of Statistics Canada products on various output media. Provincial and territorial statistics offices also hold census data. In addition, products can be purchased at bookstores that stock Canadian government publications.

#### 8.5.3 Internet

Information from the 2001 Census is accessible on Statistics Canada's Web site (www.statcan.ca).



#### 9.1 Introduction

Users of census data come from a variety of backgrounds and organizations, ranging from individuals to large corporations. The data are used by all levels of government, the private sector, and social and community groups.

Census information may be used in program planning and development. For example, the federal government uses it to help calculate financial grants to provinces and territories. Businesses may use it to assess demand and help market their products. The academic community and the media use census information to stay abreast of topics of current interest and identify trends in Canadian society. Some of the major users of census data are as follows:

- federal government;
- provincial and territorial governments;
- municipal governments;
- libraries;
- educational institutions:
- researchers and academics;
- private industry;
- business associations;
- labour organizations;
- ethnic and cultural groups;
- private citizens;
- public interest groups.

### 9.2 Applications of Census Data

The following are a few examples to illustrate the many possible uses of census data:

#### (a) Agriculture

The census has been measuring livestock, farm income and the area of land under cultivation since its inception. (The first separate Census of Agriculture was taken in Manitoba in 1896.) In 2001, the Census of Agriculture also asked questions about computer use, organic production, farm injuries, land management, non-farm paid work, farm machinery and equipment, and poultry hatched in commercial hatcheries. This type of information helps organizations (such as the Canadian Federation of Agriculture) to

monitor trends in farming. It is also used by the farming industry and the various levels of government to plan and administer farm programs.

# (b) Women

The census measures the number of women in the labour force, as well as their occupation, income, education and marital status. This information is used to develop employment and training programs, and it provides researchers with the data they need to analyze the expanding role of women in the Canadian economy.

# (c) Disability

The disability questions ask about difficulty in daily activities, and activity reduction at home, at work/school, and in other activities. These filter questions are used to provide the sampling frame for the postcensal Participation and Activity Limitation Survey (PALS). The information from PALS is used by all levels of government to evaluate and implement programs and services to eliminate the barriers that persons with disabilities face.

# (d) Special employment programs

Managers of programs to help visible minorities and the disabled join the workforce and get better jobs rely on the census for information about the job market and the people they are trying to help.

# (e) Health care

Planners employ census data to forecast health care needs and costs, choose sites for new hospitals and clinics, and measure the need for medical research programs.

# (f) Representation in Parliament

The boundaries and number of federal electoral districts (ridings) in each province and territory are determined with the aid of census data.

# (g) Provinces

Federal transfer payments in the order of billions of dollars made to the provinces and territories are based on population counts from the census and on the results of postcensal coverage studies.

# (h) Municipal and local governments

Some provincial and territorial governments use census data to determine how much money they should allocate to municipalities. These local governments use the same data to assess the need for community programs and services. Local governments analyze census data before deciding where to locate parks, bus routes, and day care or after-school care programs.

# (i) Business and industry

Businesses use census data to develop employment plans, select new retail or manufacturing sites, and analyze markets for their products and services.

# (j) Labour markets

The census provides information about the number, geographic distribution, and skills of Canadian workers. It also measures their characteristics – age, sex, marital status, education, income, ethnic origin, and disabilities – which are used to develop a profile of Canada's labour market. The commuting distance, which refers to the distance, in kilometres, between the respondent's residence and his or her usual place of work, can also be determined based on data collected by the census.

#### (k) News media

The census provides the background information the media need to report on the economic, social, cultural, and other activities of Canadian society. The news media also use census information to market their services. Census data are used to determine circulation areas, develop advertising, design market surveys, and evaluate advertising campaigns.

# (I) Education

School boards use population figures, listed by age groups and mother tongue, to project school enrolments and determine the need for new schools. The data are also used to develop special programs such as minority group language instruction.

# (m) Law enforcement agencies

Many communities depend on census data to calculate the number of workers they will need to serve and protect their citizens.

# (n) Social service agencies

Information from the census provides the framework necessary to develop programs such as day care, subsidized housing, and services for disabled persons.

# (o) Aboriginal peoples

Governments, agencies, and Aboriginal peoples' organizations need information on the socio-economic conditions of Aboriginal peoples in Canada to manage different programs and services.

# 9.3 How Census Data May Help Users

To give you a better idea of how census data could be used in various kinds of businesses, here are a few examples of inquiries received by Statistics Canada consultants.

#### Example 1: News media

A journalist writing a story wants a breakdown of population by ethnic origin for the Montréal, Ottawa-Hull and Vancouver CMAs.

Using census data, the journalist was able to find out not only the number of people belonging to various ethnic groups in the three CMAs, but also the distribution of population by other variables such as age, sex, marital status, education, income, mother tongue, and home language.

#### **Example 2: Marketing**

A daily newspaper has determined that its typical reader has above-average education and an annual income of \$70,000 or more. The company wants to know where to find people who fit this profile so that it can focus its marketing efforts on them.

Since census data are available for small areas, the newspaper was able to use education and income data to determine which neighbourhoods people fitting the profile live in.

#### **Example 3: Market sectors**

An entrepreneur wants to know how many dwellings in the Calgary CMA need repairs.

The census provided the entrepreneur with information about housing repair needs, as well as other valuable business information, such as period of construction, type of dwelling, number of rooms and bedrooms, tenure, costs of shelter, and value of dwelling, for each census tract in the Calgary CMA. If required, he could also obtain data on the occupants, such as the number of persons and maintainers in each household, their age, sex, and other characteristics.

### **Example 4: Actuarial analysis**

An actuary working on a workers' compensation case needed to know the employment income of crane operators in the marine industry in a particular region. He wanted to exclude seasonal fluctuations and regional and occupational variations affecting his client's occupation.

The census was able to supply data on the employment income of persons who had the same occupation and characteristics as his client and lived in the geographic area of interest.

# Parti

Census of Agriculture



#### 1.1 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 15, 2001. 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.

# 1.2 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 in Alberta and Saskatchewan beginning in 1906.

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 is 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 a wealth of information pertaining to the social and economic characteristics of the farm population.

# 1.3 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 15) is required to complete the Census of Agriculture questionnaire.

Figure 15. Products Intended for Sale from an Agricultural Operation

Crops	Livestock	Poultry	Animal Products	Other Agricultural Products
<ul> <li>hay</li> <li>field crops</li> <li>tree fruits or nuts</li> <li>berries or grapes</li> <li>vegetables</li> <li>seed</li> </ul>	<ul> <li>cattle</li> <li>pigs</li> <li>sheep</li> <li>horses</li> <li>game animals</li> <li>other livestock</li> </ul>	<ul> <li>hens</li> <li>chickens</li> <li>turkeys</li> <li>chicks</li> <li>game birds</li> <li>other poultry</li> </ul>	<ul><li>milk or cream</li><li>eggs</li><li>wool</li><li>furs</li><li>meat</li></ul>	<ul> <li>greenhouse or nursery products</li> <li>Christmas trees</li> <li>mushrooms</li> <li>sod</li> <li>honey</li> <li>maple syrup products</li> </ul>

Operators are defined as those responsible for the day-to-day management decisions made in operating the agricultural operation. All operations, regardless of size, must submit a completed Census of Agriculture questionnaire. As a group, even very small operations contribute significantly to the agricultural community and economy. Since 1991, the Census of Agriculture questionnaire has recognized multiple operators reporting for one farm.

# 1.4 Timing of the Census of Agriculture

The Census of Agriculture questionnaire is dropped off at the same time as the Census of Population questionnaire. Farm operators all across Canada were enumerated, as well as their livestock, crops and other products on Tuesday, May 15, 2001.

In recent years, the Census of Agriculture and the Census of Population were conducted on the first Tuesday of June. In 1996, the date was changed to the second Tuesday in May to improve follow-up activities. Dropping off questionnaires and mailing them back in the same month avoids beginning- and end-of-month movers and the problems in tracking them down. Nor have most people left for their annual vacation in May, making it more likely they will be available if census representatives need additional information.

Conducting the Census of Agriculture concurrently with the Census of Population saves millions of dollars. However, Statistics Canada recognizes that, for farmers, mid-May is one of the busiest times of the year, as they rush to get crops in the ground. To accommodate their hectic spring schedule, drop-off of the questionnaires started earlier in 2001, at the beginning of May, and census representatives were instructed to give farm operators some leeway in getting their questionnaires back to Statistics Canada.

# 1.5 Progress of Seeding Follow-up

The change in Census Day (from the first Tuesday in June to the second Tuesday in May) had an impact on the field crop areas reported by operators. Much of field crop seeding typically occurs between May 1 and June 1 across Canada. Depending on the spring weather, a large portion of the crop may not be seeded when respondents complete their forms in May. In years where seeding is incomplete by mid-May, crops seeded after Census Day may very likely differ from those planned and reported on the census.

The Progress of Seeding survey was implemented to verify or update crop data. It involves following up with operators who reported less than 90% of their field crops seeded when they completed their forms. More than 100,000 farmers across the country are contacted. This follow-up is required for historical comparability, for benchmarking intercensal crop estimates, and for small area data analysis.

# 1.6 Types of Data Collected

The 2001 Census of Agriculture questionnaire had 184 questions on 16 pages, slightly fewer than the 197 questions in 1996. Respondents are only required to complete questions that apply to their agricultural operations; an average respondent would answer about half the questions. A series of "skip" questions also helps the respondents move quickly through the questionnaire. The following is a list of the types of data collected:

- type of operating arrangements;
- farm operator information;
- size (area) of operation;
- 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 mushroom houses;
- number of bee colonies;

- land management practices;
- chicken and turkey production;
- number of commercial poultry hatcheries located on operations;
- number and type of livestock;
- market value of land and buildings;
- number and market value of farm machinery by type;
- farm business operating expenses;
- total gross farm receipts;
- · use of a personal computer in managing the farm business;
- value of forest products and number of maple taps;
- · weeks of paid labour.

## 1.7 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 detailed socio-economic profile of the farm population that includes information such as marital status, level of schooling, major field of study, labour force activity and sources of income.



#### 2.1 Introduction

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. In addition, planning for the next census begins even before the current census cycle is finished.

#### 2.2 User Consultation

User input played an important role in the planning of the 2001 Census of Agriculture. Through a series of workshops held across Canada in 1998, users provided recommendations for the types of questions they would like to see on the 2001 Census of Agriculture questionnaire. A cross-section of data users was also surveyed by mail and asked to rate the importance of proposed new census questions. The data requirements identified by users during these consultations were used to develop the content and design of the census questionnaire.

# 2.3 Questionnaire Content and Development

Although the questionnaire is updated every census to reflect the changing requirements of data users as identified through the Canada-wide workshops, certain basic or core questions appear at every census. These questions, such as those on operator name, land area, livestock numbers and crop area, are considered essential by Statistics Canada and other major users of Census of Agriculture data. Repeating basic questions enables the census to measure change over time; adding new questions and dropping others allows collection of data that reflect new technologies and structural changes in the agriculture industry. For example, a supplementary question asking what types of computer applications farmers use, in addition to whether or not they use a computer, was new for 2001. Also new was a section on certified organic production. Other sections, such as those on farm machinery and equipment, livestock, land management, and operating expenses, were modified or refined to reflect operators' use and understanding of farming terms and practices.

New or changed questions were developed at head office and tested a number of times with farm operators across Canada in one-on-one interviews on their farms and in focus groups. Operators selected for testing reflected regional diversity – in types of agriculture, production techniques, languages and terminology, and in policies or issues that could affect the sensitivity of questions. 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 2001 Census of Agriculture questionnaire. It was approved by Cabinet in the spring of 2000.

#### 2.4 Data Collection

The joint data collection phase for the Census of Agriculture and Census of Population begins by having the census representatives (CRs) drop off a Census of Population form at each household in their enumeration area (EA).

During the drop-off stage, CRs are instructed to ask all respondents, "Does anyone in this household operate a farm, ranch, or other agricultural operation?" This question helps identify those who must also complete a Census of Agriculture questionnaire. The question is especially useful in cases where a farm operator lives away from the actual farm operation. The same question appears on the Census of Population questionnaire, to identify other farm operators who may not have been contacted in person during drop-off. A Census of Agriculture questionnaire was also dropped off in instances where an agricultural operation was obviously present.

All Census of Agriculture respondents, except those living in remote and northern areas, were asked to mail back their completed questionnaires in the pre-addressed postage-paid envelopes provided. In remote or northern areas of the country, CRs visited the agricultural operations and completed the form by interviewing the farm operator.

For the first time, respondents in two test areas (southern Alberta and southwestern Ontario) were given the option of completing their 2001 questionnaire online and returning it via the Internet.

The Census of Agriculture Help Line was a toll-free telephone service that respondents could call during the collection period to get help completing the questionnaire. The service was used by more than 25,000 respondents.

Once the questionnaires were mailed back, the CRs initially reviewed them to ensure that they were completed properly and that all agricultural operations in the EA were accounted for. In predominantly urban areas, special agriculture CRs were trained to conduct the initial edits and the telephone follow-up, if necessary, to obtain any missing information. The questionnaires were then sent to head office in Ottawa for processing.

# 2.4.1 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 at the operation. Once completed, they were mailed back to head office, where they were edited before being incorporated into the regular census processing flow.

# 2.5 Census Communications Program

In the months leading up to the census, the Census Communications Program promotes both the Census of Agriculture and the Census of Population. The campaign informs respondents of the date for Census Day, and reminds 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 solicits 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 15.

In 2001, the international threat of foot-and-mouth disease moved the communications program into high gear. Census of Population and Census of Agriculture staff developed a number of strategies to protect farmers' livelihood as the vast numbers of census representatives dropped off questionnaires to rural properties. Census representatives (CRs) were limited to visiting the household, and were instructed not to search for a respondent in other buildings on the property, such as a barn. They were to respect "No trespassing" signs, leaving the questionnaires at the farm gate when access to the property was denied. Any census representative who may have been in a contaminated country, or in contact with visitors from a contaminated country, was screened from rural distribution areas.

#### 2.6 Head Office Processing

#### 2.6.1 Initial processing

The Census of Agriculture and Census of Population went their separate ways once the census field collection units had finished their preliminary checks. The units separated the agriculture questionnaires from the population questionnaires and sent them to the Census of Agriculture processing centre in Ottawa, where they were sorted, batched, and given a bar code label to register them in a control file. Next they were electronically scanned, and the data from them automatically captured using intelligent character recognition (ICR), a technology that reads data from the images and allows processing staff to reference questionnaires with the click of a mouse. Any responses not recognized by ICR were sent to an operator, who viewed the questionnaire image and entered the correct data into the system.

#### 2.6.2 Automated processing

Once the data have been scanned, they are loaded onto an automated processing system that takes the data through a long and complex procedure. Its many steps – including several kinds of edits (clerical, subject-matter, geographic), matching or unduplicating individual farms, adjusting for missing data, validating data by comparing them with those from other data sources, and providing estimates – ensures data of the highest quality possible. The data that emerge at the other end are stored in a database and used to generate publications and users' custom requests.

The list of agricultural operations compiled from the census is used to update the Agriculture Division's Register of Farms. This register is used to select samples of farms to be included in surveys in non-census years.

#### 2.6.3 Edit and imputation

This step involves numerous edits to identify and resolve problems related to keying errors, missing data, and geographic identification of farm operators' residences and headquarters.

Data are automatically imputed in cases where an enumerator was unsuccessful in obtaining missing information or resolving data inconsistencies during field follow-up. The system searches for another operation with similar characteristics and within the same geographic area. Once a suitable match is made, the "donor's" responses are duplicated in the questionnaire that was missing the information.

#### 2.7 Data Validation

Data validation follows the edit and imputation processes. At this stage, subject-matter analysts review the aggregate data at various geographic levels and examine the largest values 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. These procedures ensure that published census data are of very good quality, and that the major variables are generally of highest quality. All tabulated data are subject to confidentiality restrictions to prevent disclosing information on any particular agricultural operation or individual.

#### 2.8 Data Quality

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

Progress of Seeding is a parallel process to data collection and processing that verifies or changes crop data of respondents who reported less than 90% of their field crops seeded at the time they completed their census form. Most Canadian farmers seed their crops between May 1 and June 1. Not only could a portion of the crop not be planted at the time respondents complete their form, but crops planted in the unseeded portions may be different from those planned and reported in the census. Large changes in crop areas from what is reported in the Census of Agriculture can limit the value of the data for historical comparisons, such as benchmarking crop estimates between censuses and selecting samples for agricultural surveys.

The Farm Coverage Follow-up Survey originated with the 1996 process. At that time, Census of Agriculture staff did an *ad hoc* survey in three provinces and picked up an additional 5,000 farms missed in the census. A similar follow-up process for all provinces in 2001 is being used to locate any missed, but active, farms, and integrates their information into the other data before publication. Having a more complete inventory of farms better prepares the census staff for any methodological changes to data collection in 2006.

#### 2.9 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.

Chapter 3 (Part II) lists all products and services available from the 2001 Census of Agriculture.

# 2.10 Census of Agriculture Marketing

This is the last stage in the census cycle. When all the data have been collected, processed and produced, users and respondents must be made aware of what products and services are available. Promotion is done largely by the Census of Agriculture staff at head office and Advisory Services staff in the regional reference centres. The Marketing, Dissemination and Communications divisions of Statistics Canada provide technical support for producing data releases and marketing materials.

As with the Census Communications Program, marketing material is offered to farm organizations and producer groups to keep them informed of data releases and availability. A variety of activities – including mail-outs, media releases, feature articles, client visits and displays – make both the public and private sectors aware of 2001 Census of Agriculture products and services.



#### 3.1 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 on agriculture of natural disasters such as the floods in Manitoba's Red River area and in the Saguenay region of Quebec, the 1998 ice storm in Eastern Canada, and the drought conditions of 2001. 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 products and services in three formats – electronic products, printed publications, and custom services.

#### 3.2 Data Products

Electronic media (i.e., Internet and CD-ROM) have replaced paper as the primary dissemination medium for the 2001 Census of Agriculture data products. For the first time, all farm and operator data are released initially in electronic form. Four to six weeks later, most of these data are available on a print-on-demand basis. This move to electronic dissemination of all data products provides data users with earlier access to data on farms and farm operators, at all three subprovincial geographic levels, than in previous censuses.

Basic counts and totals for all 2001 farm variables become available electronically (i.e. via Internet and CD-ROM) on May 15, 2002. These data are tabulated at the national and provincial levels, as well as at all three subprovincial levels. This initial electronic release replaces the series of eight *Agricultural Profile* publications (one for Canada, one for the Atlantic provinces, and one for each of the other six provinces) that were produced for the 1996 Census of Agriculture.

The second electronic release (via Internet and CD-ROM) of 2001 Census of Agriculture data in November 2002 includes all 2001 farm operator variables for the national and provincial geographic levels, as well as for three subprovincial geographic levels. Selected historical farm and farm operator variables at the national and provincial levels are also included in this release. This release replaces two additional publications from the 1996 Census of Agriculture.

In the fall of 2003, the final electronic release of data (via Internet and CD-ROM) will include selected 2001 and historical variables from the agriculture—population linkage database, tabulated at the national and provincial levels.

# 3.3 Analytical Product

Canadian Agriculture at a Glance

Agriculture Division's flagship publication, *Canadian Agriculture at a Glance*, will again be available in book format. *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 book is designed with students in mind, avoiding jargon and explaining issues (such as supply management) in understandable terms. *Glance* will continue its tradition of marrying Census of Agriculture data with other Statistics Canada and external data sources. A teacher's kit makes the book particularly useful for schools. Both the book and teacher's kit will be available in 2004.

#### 3.4 Custom Data Products and Services

The User Services 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 2001 Census of Agriculture and agriculture—population linkage databases as well as the historical databases. Custom tabulations are available for the census years 1966 to 2001. (Agriculture—population linkage databases were not created for the 1966 and 1976 Censuses.)

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

Semi-custom products created from the standard tabulations are also available for clients interested only in specific variables or certain standard geographic areas.

# **Pricing**

Pricing for each custom product is 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. *Canadian Agriculture at a Glance* has a fixed price, subject to educational and volume discounts.

#### Media

Various formats are available depending on the user's requirements, including paper, diskette or CD-ROM.

#### **Service Centres**

To obtain more information on the data, products and services available from the Census of Agriculture, please contact your nearest Statistics Canada regional reference centre, the Census of Agriculture User Services Unit (toll-free at 1 800 465-1991) or consult the 2001 Census Catalogue or the Agriculture Division's People, Products and Services, Catalogue No. 21F0003GPB.

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