

Catalogue no. 92-639-G
ISBN 978-0-660-26042-6

Agricultural Ecumene Boundary File: Reference Guide



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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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An HTML version is also available.

Cette publication est aussi disponible en français.



Agricultural Ecumene Boundary File: Reference Guide

About this guide

This reference guide is intended for users of the Agricultural Ecumene Boundary File. The guide provides an overview of the files, the general methodology used to create them, and important technical information for users.

This reference guide does not provide details on specific software packages that are available for use with the Agricultural Ecumene Boundary File. Users are advised to contact the appropriate software vendor for information.

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What's new?

- Updates were made to the hydrographic layers with a selection of features from the National Hydro Network (NHN). As a result, users may notice differences in the geometry of the hydrography network in British Columbia compared to the 2006 Census version.
- The Agricultural Ecumene Boundary File is available for [free download](#) from the Statistics Canada website (www.statcan.gc.ca).
- There is more standardization with the geographic boundaries used with the Population Ecumene Census Division Cartographic Boundary File. The same generalized boundaries are used for each.
- In addition to the specific criteria developed for choosing what areas to include in the ecumene, satellite imagery was used to help localize the ecumene in areas of marginal agriculture.
- The census division boundaries are no longer embedded in the ecumene layer, but are included as a separate layer.

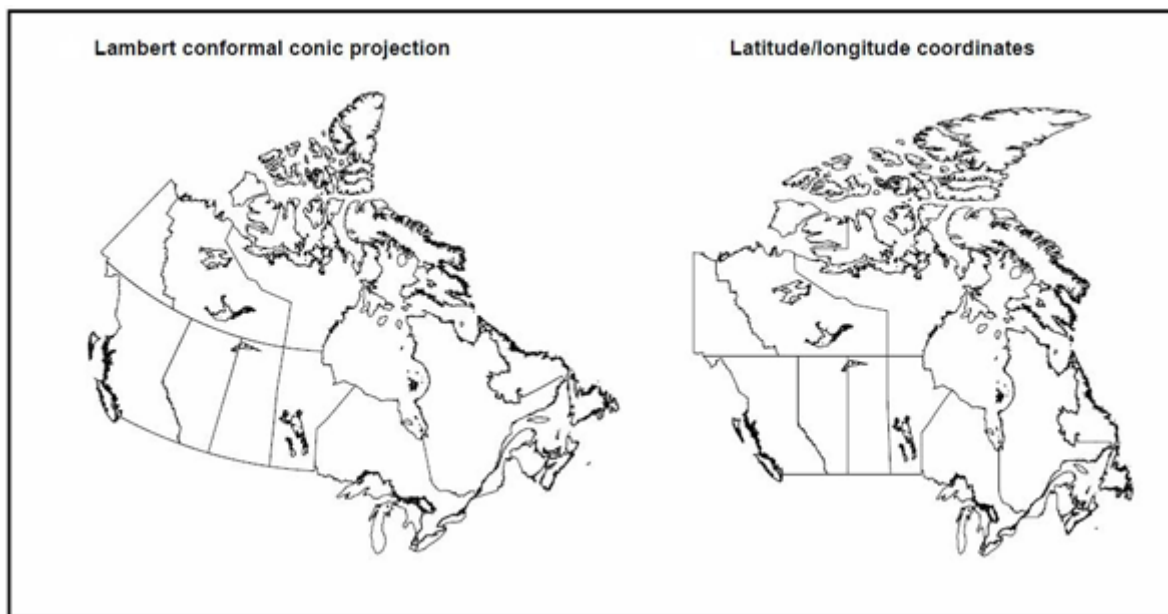
Overview

The Agricultural Ecumene Boundary File represents Canada's agricultural ecumene. Ecumene, a word derived from the Greek root *oixos* meaning inhabited and *nenon* meaning space, is a term used by geographers to indicate inhabited land. It generally refers to land where people have made their permanent home, and to all areas that are considered occupied and used for agricultural or any other economic purposes.

The Agricultural Ecumene Boundary File is portrayed in latitude and longitude coordinates (North American Datum of 1983 [NAD83]). Figure 2.1 illustrates an example of a Lambert conformal conic projected cartographic boundary file and an unprojected file in latitude and longitude coordinates.

Figure 2.1

Example of a map projection and unprojected coordinates



How to cite this guide

Agricultural Ecumene Boundary File: Reference Guide, Census year 2011. Statistics Canada Catalogue no. (number)92-639-G.

How to cite this product

Agricultural Ecumene Boundary File, Census year 2011. Statistics Canada Catalogue no. (number)92-639-X.



About this product

Purpose of this product

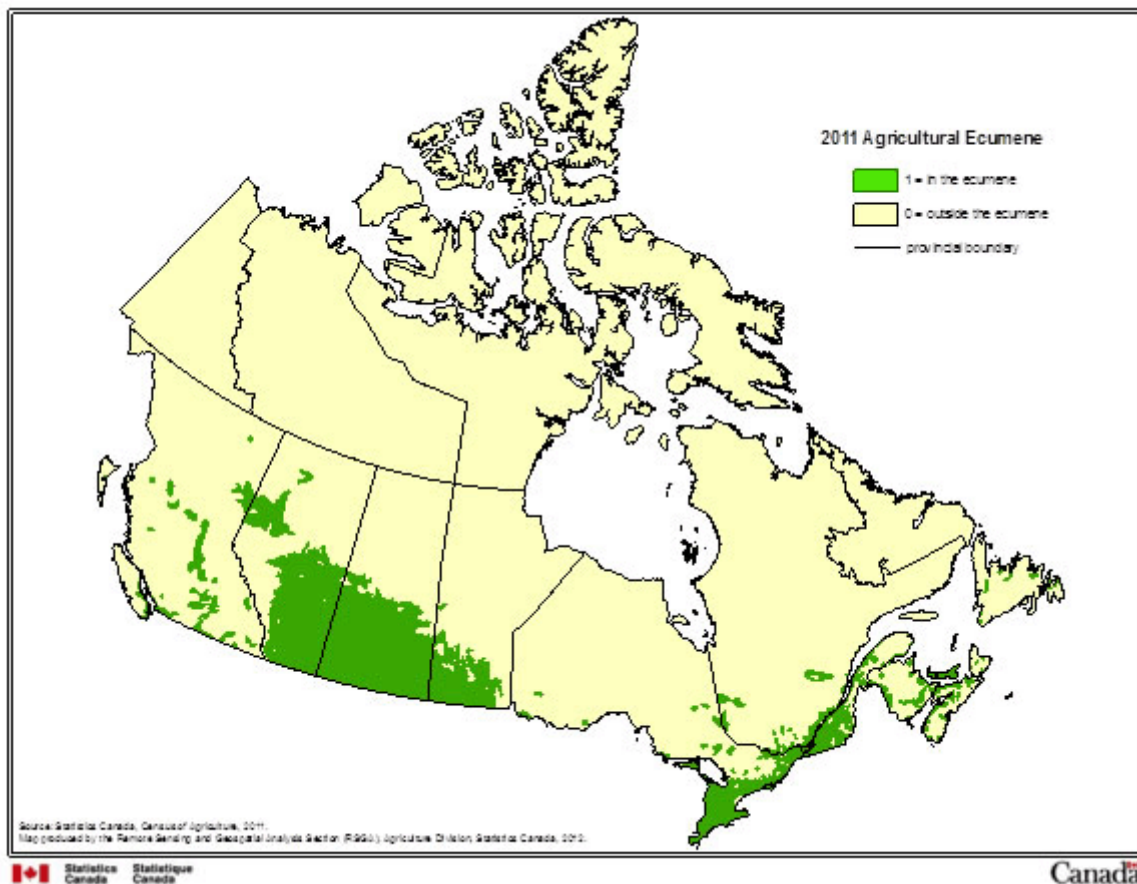
The agricultural ecumene is designed to assist users in thematically mapping data. By effectively masking non-ecumene areas of Canada, it enables users to display data in areas where agriculture is concentrated.

An ecumene mask is useful for dot and choropleth thematic mapping. In dot map applications, if an ecumene is not applied, the dots may be spread over the spatial extent of a geographic area. This approach defeats the main attributes of dot mapping (i.e. (that is to say), showing correct location, extent and density of various characteristics).

In choropleth map applications, one of the inherent limitations is that the statistical distribution is assumed to be homogeneous or uniformly spread over each geographic area, and is consequently represented by a single tone or colour covering the entire area. Using an ecumene limits the display to only those areas where agriculture is found and results in a more accurate representation of the spatial distribution of data.

Figure 3.1

Example of an ecumene mask with the provinces and territories generalized cartographic boundary file



Definitions and concepts

Geographic terms and concepts are briefly defined in the glossary ([Appendix A](#)). More details can be found in the [2011 Census Dictionary](#) (Catalogue no. (number) 98-301-X) and the [2011 Illustrated Glossary](#) (Catalogue no. (number) 92-195-X).

Content

The Agricultural Ecumene Boundary File consists of four spatial files:

1. Ecumene mask file

The ecumene mask consists of polygons flagged with a value: 1, being in the ecumene; 0, outside the ecumene. All non-amalgamated census divisions with reported agriculture are represented in the ecumene.

2. Census division boundary file

The census division boundary file contains census division boundaries. Related attribute information is available for each census division polygon, including a unique identifier, name and type.

3. Province and territory boundary file

The province and territory boundary file contains the boundaries of the provinces and territories. Related attribute information is available for each province and territory polygon,

including a unique identifier, English name, French name, English abbreviation and French abbreviation.

4. Hydrographic reference file

The hydrographic reference file contains a selection of lakes. Each hydrographic feature contains a unique identifier.

All spatial files are available in English and in French, in three formats: ArcGIS® (.shp), Geography Markup Language (.gml) and MapInfo® (.tab).

General methodology

The National Geographic Database (NGD) is a joint Statistics Canada-Elections Canada initiative to develop and maintain a spatial database which serves the needs of both organizations. The focus of the NGD (National Geographic Database) is the continual improvement of quality and currency of spatial coverage using updates from provinces, territories and local sources. The native files used for the creation of the Agricultural Ecumene Boundary File, Census year 2011, reside on Statistics Canada's Spatial Data Infrastructure which was derived directly from data stored on the NGD (National Geographic Database).

The reference files that make up the agricultural ecumene were created using the following processes:

Agricultural Ecumene Boundary File

A) Ecumene mask file

The ecumene mask file was created by using the land area and the current census agricultural data to calculate the importance of agricultural activity in each dissemination area (DA). Every DA (Dissemination area) was then classified as either being an ecumene area (meeting the agricultural activity criteria based on land use and sales) or being a non-ecumene area (those without significant agricultural activity). The resulting ecumene outline was smoothed and buffered to facilitate small scale mapping.

The dissemination areas included in the agricultural ecumene boundary layer were selected according to three separate, but complementary, indicators of agricultural intensity. The primary indicator was the ratio of total agricultural land to total DA (Dissemination area) land area. Agricultural land included all land in the DA (Dissemination area) devoted to crops (including Christmas trees), summerfallow, tame or seeded pasture, and natural land for pasture. This ratio was calculated for each DA (Dissemination area) within a province and the DAs (Dissemination areas) sorted in descending order, starting with the largest ratio. DAs (Dissemination areas) were

selected for inclusion in the agricultural ecumene until the cumulative total area of the selected DAs (Dissemination areas) exceeded a pre-determined percentage of the total agricultural land area for the province.

The second indicator of agricultural intensity was the ratio of total agricultural receipts to total DA (Dissemination area) land area. This is particularly important for DAs (Dissemination areas) containing farms with large sales on a relatively small land base, such as greenhouses or feedlots. This ratio was also calculated for all DAs (Dissemination areas) in a province and the DAs (Dissemination areas) sorted in descending order. Using the same principle as for the previous indicator, DAs (Dissemination areas) were selected for inclusion in the ecumene until the cumulative total area of the selected DAs (Dissemination areas) exceeded a pre-determined percentage of the total agricultural land area for the province.

The third indicator was to include all DAs (Dissemination areas) in a province that exceeded not only a specific agricultural land total but also a certain ratio of total agricultural land to total DA (Dissemination area) land area. The final list of selected DAs (Dissemination areas) in a province consisted of all DAs (Dissemination areas) meeting the criteria for one or more of the three indicators, and ensured that the ecumene reflected those areas of significant agricultural activity in a province.

This DA (Dissemination area) selection process was successful in all provinces except Newfoundland and Labrador. The poor results in this province were due primarily to a combination of many large DAs (Dissemination areas) in the province and a limited and localized pattern of agricultural activity. As a result, the DA (Dissemination area) selection process was replaced with a procedure that identified and selected smaller areas of significant agricultural activity within dissemination areas. The territories were not included in the delineation of the agricultural ecumene.

A base ecumene layer was created by integrating the selected DAs (Dissemination areas) in nine provinces with the selected DA (Dissemination area) components in Newfoundland and Labrador. Every DA (Dissemination area) or DA (Dissemination area) component polygon was classified as either being an ecumene DA (Dissemination area) (meeting the agricultural activity criteria) or not being an ecumene DA (Dissemination area). This base layer was divided into three component layers: main ecumene, other ecumene pockets (outside the main ecumene) and non-ecumene pockets (within the main ecumene). Three subsequent steps generalized the base layer into an agricultural ecumene boundary layer suitable for small-scale mapping of census division data.

First, internal non-ecumene pockets and external ecumene pockets too small to be visible at small scale were eliminated. Second, the detailed boundaries of the remaining external ecumene pockets were smoothed (generalized) and enlarged to increase their visibility on small-scale maps. Third, the detailed boundaries of the large internal non-ecumene pockets and main ecumene were smoothed. The smoothing process incorporated the use of satellite imagery within large marginal DAs (Dissemination areas) in order to give a more realistic ecumene.

The ecumene was also extended to include at least one portion of each census division that contains Census of Agriculture data for 2011.

B) Creation of the generalized cartographic boundary files

To create the generalized cartographic boundary files, a subset of the full hydrography, the coastal layer, was created.

Using the source hydrography file, all generalized coastal water features were extracted. Hydrography features were then dissolved to create one coastal file used in the creation of the generalized province and territory and census division boundary files included in this product.

The coastal hydrographic features were then used to erase the portions of census divisions that are covered by coastal waters. Subsequently, the province and territory file was derived from the census division file.

C) Creation of the hydrographic reference file

The hydrographic reference file contains a selection of water features from the National Geographic Database's hydrographic reference layer. These reference data were sourced from the National Topographic Data Base (1:50,000 and 1:250,000) and the Digital Chart of the World (1:1,000,000). In British Columbia, information was supplemented with data from the National Hydro Network. All small islands were transformed into water polygons.

Final data processing consisted of the conversion from the File Geo Database format, using FME[®] (Safe Software), into the following Geographic Information System (GIS) file formats: ArcGIS[®] (.shp), Geography Markup Language (.gml) and MapInfo[®] (.tab).

Limitations

The positional accuracy of these files does not support cadastral, surveying, digitizing or engineering applications.

The input data used to create the files were obtained from several sources having a wide range of scales. Maps created from the Agricultural Ecumene Boundary File should not be used to determine the precise location of boundaries.

Comparison to other products/versions

The Agricultural Ecumene Boundary File is generalized to render it suitable for cartographic display at a small scale (i.e. (that is to say), 1:20,000,000 to 1:25,000,000). Due to this generalization, the position of the shoreline is not necessarily consistent with the suite of census cartographic boundary files.

The Agricultural Ecumene Boundary File is similar but not necessarily consistent with ecumene boundary files released prior to the 2011 Census.

Using with other products

The Agricultural Ecumene Boundary File can be linked to other 2011 Census statistical data products using the unique identifier (UID) for each geographic area.

The Agricultural Ecumene Boundary File is generalized to render it suitable for cartographic display at a small scale. Due to this generalization, the position of the shorelines are not necessarily consistent with the suite of 2011 Census Cartographic Boundary Files or 2011 Census Road Network File.

When considering using the Agricultural Ecumene Boundary File, users should be aware of the compatibility of these files with those that are available from other sources. They may not be consistent with Statistics Canada files.

Reference date

The geographic reference date is a date determined by Statistics Canada to finalize the geographic framework for which 2011 Census statistical data are collected, tabulated and reported. The reference date for 2011 Census standard geographic areas is January 1, 2011. More specifically, the census reports data according to the geographic areas (e.g. (for example), municipalities and equivalents referred to as census subdivisions) that are in effect on January 1, 2011, provided that Statistics Canada receives the information on the changes by March 1, 2011 (see 2011 Census Dictionary – Geographic reference date for more details).



Technical specifications

Record layouts and data descriptions

Agricultural ecumene mask file

The agricultural ecumene mask file contains polygons for each ecumene and non-ecumene pocket, which combined cover all of Canada.

Census division generalized cartographic boundary file

The Census division generalized cartographic boundary file portrays the census division boundaries for which 2011 Census statistical data are disseminated. A census division is a unit of regional government (such as a county or regional district) or an area treated as equivalent for statistical purposes. A census division is usually made up of a number of adjacent census subdivisions (municipalities). The file contains the boundaries of all census divisions which combined cover all of Canada.

Province and Territory generalized cartographic boundary file

The Province and Territory generalized cartographic boundary file portrays the boundaries of the 10 provinces and 3 territories for which 2011 Census statistical data are disseminated. Provinces and territories are the major political (legislated) areas of Canada. The file contains the boundaries of all provinces and territories which combined cover all of Canada.

Hydrographic reference file

The supplementary hydrographic file is provided for the mapping of inland water. This file was created to be used as spatial reference in conjunction with the ecumene file to enable thematic mapping.

Attribute domain values

CDTYPE

CDTYPE	CD description
CDR	Census division / Division de recensement
CT	County / Comté
CTY	County
DIS	District
DM	District municipality
MRC	Municipalité régionale de comté
RD	Regional district
REG	Region
RM	Regional municipality
TÉ	Territoire équivalent
TER	Territory / Territoire
UC	United counties

File specifications

Not applicable

Software formats

The Agricultural Ecumene Boundary File is available for download from the Statistics Canada website in the following formats:

- ArcGIS® format
File extension: .shp

- Geography Markup Language version 3.1.1
File extension: .gml
- MapInfo® format
File extension: .tab

This reference guide does not provide details on specific software packages that are available for use with the Agricultural Ecumene Boundary File. Users are advised to contact the appropriate software vendor for information.

System requirements

Not applicable

File extension and accented character information

The ArcGIS®, Geography Markup Language and MapInfo® files are compressed into WinZip® files (file extension .zip).

An XML schema file (.xsd) is included to describe and validate the structure and content of the .gml files.

Some files within this product contain attributes with accented characters. They were successfully tested on desktop versions of ArcGIS® 9.3.1 and MapInfo® 11.0.1.

Geographic representation

The Agricultural Ecumene Boundary File is available on the Statistics Canada website in the following geographic representation:

Datum: NAD83

Coordinates: Longitude and Latitude

The North American Datum of 1983 (NAD83) is an adjustment of the 1927 datum (NAD27) that reflects the higher accuracy of geodetic surveying.

The geographical coordinate system is the primary locational reference system for the Earth. This system provides for the unique statement of location for features such as points, lines and polygons.

Users of the Agricultural Ecumene Boundary File can transform the files into the representation that best satisfies their needs, knowing the effects these representations have on angles, areas, distances and direction. Users have the option to choose the best projection in concert with mapping objectives.

File naming convention

Spatial product file names follow a file naming convention. The 2011 Census standard geographic area and code, file type, geographic reference date, software type and language are embedded within the file name. Standardizing the names of the files facilitates the storage of compressed files, all having the extension .zip.

Each file name is 13 characters in length. All alphabetic characters are in lower case to maintain consistency.

First character: projection of file

g projection is Geographic (latitude and longitude)

Next three characters: primary geographic level of file

pr_ province and territory

cd_ census division

eca agricultural ecumene

hy_ supporting hydrography (Great Lakes, St. Lawrence River and a selection of inland lakes)

Next three numbers: geographic code of coverage

000 Canada

Next character: file type

e ecumene

Next two numbers: geographic reference date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which 2011 Census statistical data are collected, tabulated and reported. For 2011 Census products, the geographic reference date is January 1, 2011.

11 geographic reference date is 2011

Next character: file format

a ArcGIS® (.shp)

g Geography Markup Language (.gml)

m MapInfo® (.tab)

Final two characters: language

_e English

_f French



Table 4.1 Agricultural ecumene mask file record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary Cartographic Boundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup Language
ECUMENE	Character (1)	A one-digit code indicating whether the polygon is part of the ecumene: 1= in the ecumene; 0=outside the ecumene
AGECUID	Character (10)	Uniquely identifies an ecumene polygon



Table 4.2

Census division generalized cartographic boundary file record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary CartographicBoundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup Language
PRUID	Character (2)	Uniquely identifies a province or territory
PRNAME	Character (55)	Province or territory name
CDUID	Character (4)	Uniquely identifies a census division (composed of the 2-digit province or territory unique identifier followed by the 2-digit census division code)
CDNAME	Character (40)	Census division name
CDTYPE	Character (3)	Census division type (see Attribute domain values)



Table 4.3
Census division types by province and territory, 2011 Census

Census division type		Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Nunavut
CDR	Census division / Division de recensement	85	11	...	...	...	5	9	23	18	19	...	...	...	...
CT	County / Comté	15	...	...	...	15	...	...	...	...	...	...	...	...	...
CTY	County	41	...	3	18	...	...	20	...	...	...	...	...	...	...
DIS	District	10	...	...	...	...	...	10	...	...	...	...	...	...	...
DM	District municipality	1	...	...	...	...	...	1	...	...	...	...	...	...	...
MRC	Municipalité régionale de comté	81	...	...	...	...	81	...	...	...	...	...	...	...	...
RD	Regional district	28	...	...	...	...	...	...	...	...	...	28	...	...	...
REG	Region	10	...	...	...	...	...	...	...	...	...	1	...	6	3
RM	Regional municipality	6	...	...	...	...	...	6	...	...	...	...	...	...	...
TÉ	Territoire équivalent	12	...	...	...	...	12	...	...	...	...	...	...	...	...
TER	Territory / Territoire	1	...	...	...	...	...	...	...	...	...	...	1	...	...
UC	United counties	3	...	...	...	...	...	3	...	...	...	...	...	...	...
Total		293	11	3	18	15	98	49	23	18	19	29	1	6	3

... not applicable

Source: Statistics Canada, 2011 Census of Population



Table 4.4

Province and territory generalized cartographic boundary file record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary CartographicBoundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup Language
PRUID	Character (2)	Uniquely identifies a province or territory
PRNAME	Character (55)	Province or territory name
PRENAME	Character (30)	Province or territory name in English
PRFNAME	Character (30)	Province or territory name in French
PREABBR	Character (10)	English abbreviation of the province or territory name
PRFABBR	Character (10)	French abbreviation of the province or territory name



Table 4.5

Hydrographic reference file record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary CartographicBoundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup Language
HYDROUID	Character (7)	Uniquely identifies a water feature



Data quality

Spatial data quality elements provide information on the fitness-for-use of a spatial database by describing why, when and how the data are created, and how accurate the data are. The quality elements include information on the lineage, positional accuracy, attribute accuracy, logical consistency and completeness. This information is provided to users for all spatial data products disseminated for the census.

Lineage

Lineage describes the history of the spatial data, including descriptions of the source material from which the data were derived, and the methods of derivation. It also contains the dates of the source material, and all transformations involved in producing the final digital files.

The National Geographic Database (NGD) is a joint Statistics Canada-Elections Canada initiative to develop and maintain a spatial database which serves the needs of both organizations. The focus of the NGD (National Geographic Database) is the continual improvement of quality and currency of spatial coverage using updates from provinces, territories and local sources. The source files used for the creation of the boundary files reside on Statistics Canada's Spatial Data Infrastructure (SDI) which is derived directly from data stored in the NGD (National Geographic Database).

The 2011 Census standard geographic area unique identifier, name, type, and the relationships among the various geographic levels are found on the SDI (Spatial Data Infrastructure). The data for administrative areas are updated using information from provincial and territorial sources.

Positional accuracy

Positional accuracy refers to the absolute and relative accuracy of the positions of geographic features. Absolute accuracy is the closeness of the coordinate values in a dataset to values accepted as or being true. Relative accuracy is the closeness of the relative positions of features to

their respective relative positions accepted as or being true. Descriptions of positional accuracy include the quality of the final file or product after all transformations.

The Spatial Data Infrastructure is not Global Positioning Systems (GPS)-compliant. However, every possible attempt is made to ensure that the 2011 Census standard geographic area boundaries maintained in the Spatial Data Infrastructure respect the limits of the administrative entities that they represent (e.g. (for example), census division and census subdivision) or on which they are based (e.g. (for example), census metropolitan area or census agglomeration). The positional accuracy of these limits is dependent upon source materials used by Statistics Canada to identify the location of limits. In addition, due to the importance placed on relative positional accuracy, the positional accuracy of other geographic data (e.g. (for example), road network data and hydrographic data) that are stored within the Spatial Data Infrastructure is considered when positioning the limits of the 2011 Census standard geographic areas.

Attribute accuracy

Attribute accuracy refers to the accuracy of the quantitative and qualitative information attached to each feature (e.g. (for example), census division unique identifier, name).

As noted under Lineage, the attributes (UIDs (Unique identifiers), names, types and codes) for all 2011 Census standard geographic areas are sourced from the Spatial Data Infrastructure. The names and types for administrative 2011 Census standard geographic areas have been updated for the 2011 Census using source materials from provincial and territorial authorities.

The attribute data associated with the polygons in the boundary files were independently verified against the data in the Spatial Data Infrastructure and found to be accurate.

Logical consistency

Logical consistency describes the fidelity of relationships encoded in the data structure of the digital spatial data.

All 2011 Census standard geographic areas contained in the four files have been verified to have a unique identifier that is valid for the 2011 Census.

The ecumene mask boundary file was verified to ensure that every census division with agricultural data contains an ecumene pocket.

Consistency with other products

As a result of the generalization of the shoreline, the boundaries in the Province and Territory and Census Division files of this product are not necessarily consistent with the shoreline of the 2011 Census Cartographic Province and Territory and Census Division Boundary Files.

Topology checks were performed with the road network file and boundary files to measure the degree of integration amongst these products. The results indicated the degree of integration was within the default tolerance parameters as defined below.

XY Resolution: 0.000000001 degrees

XY Tolerance: 0.000000008983153 degrees

Completeness

Completeness refers to the degree to which geographic features, their attributes and their relationships are included or omitted in a dataset. It also includes information on selection criteria, definitions used, and other relevant mapping rules.

All non-amalgamated census divisions with reported agriculture (16 or more farms) were represented in the ecumene.

The Agricultural Ecumene Boundary File contains two standard geographic area boundary files that are generalized: census division; province and territory. The census division generalized boundary file contains all 293 census divisions which cover all of Canada. The province and territory generalized boundary file contains the 10 provinces and 3 territories covering all of Canada.



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Appendices



Appendix A

Glossary

Adjusted counts

'Adjusted counts' refer to previous census population and dwelling counts that were adjusted (i.e. (that is to say), recomputed) to reflect current census boundaries, when a boundary change occurs between the two censuses.

Block-face

A block-face is one side of a street between two consecutive features intersecting that street. The features can be other streets or boundaries of standard geographic areas.

Block-faces are used for generating block-face representative points, which in turn are used for geocoding and census data extraction when the street and address information are available.

Cartographic boundary files

Cartographic boundary files (CBFs) portray the boundaries of standard geographic areas together with the shoreline around Canada. Selected inland lakes and rivers are available as supplementary layers.

Census agricultural region

Census agricultural regions (CARs) are composed of groups of adjacent census divisions. In Saskatchewan, census agricultural regions are made up of groups of adjacent census consolidated subdivisions, but these groups do not necessarily respect census division boundaries.

Census consolidated subdivision

A census consolidated subdivision (CCS) is a group of adjacent census subdivisions. Generally, the smaller, more densely-populated census subdivisions (towns, villages, etc. (and so on)) are combined with the surrounding, larger, more rural census subdivision, in order to create a geographic level between the census subdivision and the census division.

Census division

Census division (CD) is the general term for provincially legislated areas (such as county, *municipalité régionale de comté* and regional district) or their equivalents. Census divisions are intermediate geographic areas between the province/territory level and the municipality (census subdivision).

Census metropolitan area and census agglomeration

A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a population centre (known as the core). A CMA (census metropolitan area) must have a total population of at least 100,000 of which 50,000 or more must live in the core. A CA (census agglomeration) must have a core population of at least 10,000. To be included in the CMA (census metropolitan area) or CA (census agglomeration), other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from previous census place of work data.

If the population of the core of a CA (census agglomeration) declines below 10,000, the CA (census agglomeration) is retired. However, once an area becomes a CMA (census metropolitan area), it is retained as a CMA (census metropolitan area) even if its total population declines below 100,000 or the population of its core falls below 50,000. Small population centres with a population count of less than 10,000 are called fringe. All areas inside the CMA (census metropolitan area) or CA (census agglomeration) that are not population centres are rural areas.

When a CA (census agglomeration) has a core of at least 50,000, it is subdivided into census tracts. Census tracts are maintained for the CA (census agglomeration) even if the population of the core subsequently falls below 50,000. All CMAs (census metropolitan areas) are subdivided into census tracts.

Census metropolitan influenced zone

The census metropolitan influenced zone (MIZ) is a concept that geographically differentiates the area of Canada outside census metropolitan areas (CMAs) and census agglomerations (CAs). Census subdivisions (CSDs) within provinces that are outside CMAs (census metropolitan areas) and CAs (census agglomerations) are assigned to one of four categories according to the degree of influence (strong, moderate, weak or no influence) that the CMAs (census metropolitan areas) or CAs (census agglomerations) have on them. CSDs (Census subdivisions) within the territories that are outside CAs (census agglomerations) are assigned to a separate category.

Census subdivisions within provinces are assigned to a MIZ (metropolitan influenced zone) category based on the percentage of their resident employed labour force that commutes to work in the core(s) of CMAs (census metropolitan areas) or CAs (census agglomerations). CSDs (Census subdivisions) with the same degree of influence tend to be clustered. They form zones around CMAs (census metropolitan areas) and CAs (census agglomerations) that progress through the categories from 'strong' to 'no' influence as distance from the CMAs (census metropolitan areas) and CAs (census agglomerations) increases. As many CSDs (Census subdivisions) in the territories are very large and sparsely populated, the commuting flow of the resident employed labour force is unstable. For this reason, CSDs (Census subdivisions) in the territories that are outside CAs (census agglomerations) are assigned to a separate category that is not based on their commuting flows.

Census subdivision

Census subdivision (CSD) is the general term for municipalities (as determined by provincial/territorial legislation) or areas treated as municipal equivalents for statistical purposes (e.g. (for example), Indian reserves, Indian settlements and unorganized territories).

Census tract

Census tracts (CTs) are small, relatively stable geographic areas that usually have a population of 2,500 to 8,000. They are located in census metropolitan areas and in census agglomerations that had a core population of 50,000 or more in the previous census.

A committee of local specialists (for example, planners, health and social workers, and educators) initially delineates census tracts in conjunction with Statistics Canada. Once a census metropolitan area (CMA) or census agglomeration (CA) has been subdivided into census tracts, the census tracts are maintained even if the core population subsequently declines below 50,000.

Coordinate system

A coordinate system is a reference system based on mathematical rules for specifying positions (locations) on the surface of the earth. The coordinate values can be spherical (latitude and longitude) using angular units of measure such as degrees, minutes and seconds or planar (Universal Transverse Mercator) using linear units such as metres.

Cartographic boundary files, digital boundary files, representative points and road network files are disseminated in latitude/longitude coordinates.

Core, fringe and rural area

The terms 'core,' 'fringe' and 'rural area' replace the terms 'urban core,' 'urban fringe' and 'rural fringe' for the 2011 Census. These terms distinguish between population centres (POPCTRs) and rural areas (RAs) within a census metropolitan area (CMA) or census agglomeration (CA).

A CMA (census metropolitan area) or CA (census agglomeration) can have two types of cores: the core and the secondary core. The core is the population centre with the highest population, around which a CMA (census metropolitan area) or a CA (census agglomeration) is delineated. The core must have a population (based on the previous census) of at least 50,000 persons in the case of a CMA (census metropolitan area), or at least 10,000 persons in the case of a CA (census agglomeration).

The secondary core is a population centre within a CMA (census metropolitan area) that has at least 10,000 persons and was the core of a CA (census agglomeration) that has been merged with an adjacent CMA (census metropolitan area).

The term 'fringe' includes all population centres within a CMA (census metropolitan area) or CA (census agglomeration) that have less than 10,000 persons and are not contiguous with the core or secondary core.

All territory within a CMA (census metropolitan area) or CA (census agglomeration) that is not classified as a core or fringe is classified as rural area.

Datum

A datum is a geodetic reference system which includes an ellipsoid and an origin against which the latitude and longitude of all other points on the earth's surface are referenced. A datum may often be associated with a particular ellipsoid (mathematical reference model of the earth).

Designated place

A designated place (DPL) is normally a small community or settlement that does not meet the criteria established by Statistics Canada to be a census subdivision (an area with municipal status) or a population centre.

Designated places are created by provinces and territories, in cooperation with Statistics Canada, to provide data for submunicipal areas.

Digital boundary files

Digital boundary files (DBFs) portray the boundaries used for census data collection and, therefore, often extend as straight lines into bodies of water.

Dissemination area

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

Dissemination block

A dissemination block (DB) is an area bounded on all sides by roads and/or boundaries of standard geographic areas. The dissemination block is the smallest geographic area for which population and dwelling counts are disseminated. Dissemination blocks cover all the territory of Canada.

Economic region

An economic region (ER) is a grouping of complete census divisions (CDs) (with one exception in Ontario) created as a standard geographic unit for analysis of regional economic activity.

Ecumene

Ecumene is a term used by geographers to mean inhabited land. It generally refers to land where people have made their permanent home, and to all work areas that are considered occupied and used for agricultural or any other economic purpose. Thus, there can be various types of ecumenes, each having their own unique characteristics (population ecumene, agricultural ecumene, industrial ecumene, etc. (and so on)).

Federal electoral district

A federal electoral district (FED) is an area represented by a member of the House of Commons. The federal electoral district boundaries used for the 2011 Census are based on the 2003 Representation Order.

Geocoding

Geocoding is the process of assigning geographic identifiers (codes or x,y coordinates) to map features and data records. The resulting geocodes permit data to be linked geographically to a place on the earth.

Households, postal codes^{OM} and place of work data are linked to block-face representative points (coordinates) when the street and address information is available; otherwise, they are linked to dissemination block (DB) representative points. In some cases, postal codes^{OM} and place of work data are linked to dissemination area (DA) representative points when they cannot be linked to DBs (Dissemination blocks). As well, place of work data are linked to census subdivision representative points when the data cannot be linked to DAs (Dissemination areas).

Geographic code

A geographic code is a numerical identifier assigned to a geographic area. The code is used to identify and access standard geographic areas for the purposes of data storage, retrieval and display.

Geographic reference date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which census data will be collected, tabulated and reported. For the 2011 Census, the geographic reference date is January 1, 2011.

Geographical region of Canada

The geographical regions of Canada are groupings of provinces and territories established for the purpose of statistical reporting. The six geographical regions of Canada are: Atlantic, Quebec, Ontario, Prairies, British Columbia and Territories.

Land area

Land area is the area in square kilometres of the land-based portions of standard geographic areas. Land area data are unofficial and are provided for the sole purpose of calculating population density.

Map projection

A map projection is the process of transforming and representing positions from the earth's three-dimensional curved surface to a two-dimensional (flat) surface. The process is accomplished by a direct geometric projection or by a mathematically derived transformation.

The Lambert conformal conic map projection is widely used for general maps of Canada at small scales and is the most common map projection used at Statistics Canada.

National Geographic Database

The National Geographic Database (NGD) is a shared database between Statistics Canada and Elections Canada. The database contains roads, road names and address ranges. It also includes separate reference layers containing physical and cultural features, such as hydrography and

hydrographic names, railroads and power transmission lines.

Place name

'Place name' refers to selected names of active and retired geographic areas as well as names from the Canadian Geographical Names Data Base. Place names include names of census subdivisions (municipalities), designated places and population centres, as well as the names of some local places.

Population centre

A population centre (POPCTR) has a population of at least 1,000 and a population density of 400 persons or more per square kilometre, based on the current census population count. All areas outside population centres are classified as rural areas. Taken together, population centres and rural areas cover all of Canada.

Population centres are classified into three groups, depending on the size of their population:

- small population centres, with a population between 1,000 and 29,999
- medium population centres, with a population between 30,000 and 99,999
- large urban population centres, with a population of 100,000 or more

Population centre population includes all population living in the cores, secondary cores and fringes of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as the population living in population centres outside CMAs (census metropolitan areas) and CAs (census agglomerations).

Population density

Population density is the number of persons per square kilometre.

Postal code^{OM}

The postal code^{OM} is a six-character code defined and maintained by Canada Post Corporation for the purpose of sorting and delivering mail.

Province or Territory

'Province' and 'territory' refer to the major political units of Canada. From a statistical point of view, province and territory are basic areas for which data are tabulated. Canada is divided into 10 provinces and 3 territories.

Reference map

A reference map shows the location of the geographic areas for which census data are tabulated and disseminated. The maps display the boundaries, names and unique identifiers of standard geographic areas, as well as major cultural and physical features, such as roads, railroads, coastlines, rivers and lakes.

Representative point

A representative point is a coordinate point that represents a line or a polygon. The point is centrally located along the line, and centrally located or population weighted in the polygon.

Representative points are generated for block-faces, as well as for selected geographic areas – province/territory (PR), federal electoral district (FED), economic region (ER), census division (CD), census metropolitan area/census agglomeration (CMA (census metropolitan area)/CA (census agglomeration)), census subdivision (CSD), population centre (POPCTR), designated place (DPL), census tract (CT), dissemination area (DA) and dissemination block (DB).

Households, postal codes^{OM} and place of work data are linked to block-face representative points (coordinates) when the street and address information is available; otherwise, they are linked to dissemination block (DB) representative points. In some cases, postal codes^{OM} and place of work data are linked to dissemination area (DA) representative points when they cannot be linked to DBs (Dissemination blocks). As well, place of work data are linked to census subdivision (CSD) representative points when the data cannot be linked to DAs (Dissemination areas).

Road network file

The road network file (RNF) contains streets, street names, types, directions and address ranges. Address ranges are dwelling-based.

Rural area

Rural areas (RAs) include all territory lying outside population centres (POPCTRs). Taken together, population centres and rural areas cover all of Canada.

Rural population includes all population living in rural areas of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as population living in rural areas outside CMA (census metropolitan area)s and CAs (census agglomerations).

Spatial Data Infrastructure

The Spatial Data Infrastructure (SDI) is an internal maintenance database that is not disseminated outside of Statistics Canada. It contains roads, road names and address ranges from the National Geographic Database (NGD), as well as boundary arcs of standard geographic areas that do not follow roads, all in one integrated line layer. The database also includes a related polygon layer consisting of basic blocks (BB; basic blocks are the smallest polygon units in the database, and are formed by the intersection of all roads and the arcs of geographic areas that do not follow roads), boundary layers of standard geographic areas, and derived attribute tables, as well as reference layers containing physical and cultural features (such as hydrography, railroads and power transmission lines) from the NGD (National Geographic Database).

The SDI (Spatial Data Infrastructure) supports a wide range of census operations, such as the maintenance and delineation of the boundaries of standard geographic areas (including the automated delineation of dissemination blocks and population centres), and geocoding. The SDI (Spatial Data Infrastructure) is also the source for generating many geography products for the 2011 Census, such as cartographic boundary files and road network files.

Spatial data quality elements

Spatial data quality elements provide information on the fitness for use of a spatial database by describing why, when and how the data are created, and how accurate the data are. The elements include an overview describing the purpose and usage, as well as specific quality elements reporting on the lineage, positional accuracy, attribute accuracy, logical consistency and completeness. This information is provided to users for all spatial data products disseminated for the census.

Standard Geographical Classification

The Standard Geographical Classification (SGC) 2011 is Statistics Canada's main classification of geographic areas in Canada. It is designed to classify statistical information by geographic areas. The classification consists of four levels: geographical regions of Canada, provinces and territories, census divisions (such as counties and regional municipalities) and census subdivisions (such as municipalities). The four geographic levels are hierarchically related; a seven-digit code is used to show this relationship.

Statistical Area Classification

The Statistical Area Classification (SAC) groups census subdivisions according to whether they are a component of a census metropolitan area, a census agglomeration or a census metropolitan influenced zone (MIZ). The MIZ (metropolitan influenced zone) classifies all CSDs (Census subdivisions) in provinces and territories that are outside census metropolitan areas and census agglomerations.

The Statistical Area Classification is a variant of the Standard Geographical Classification (SGC). Census subdivisions (CSDs) form the lowest level of the classification variant. The next level consists of individual census metropolitan areas (CMAs), census agglomerations (CAs) and census metropolitan influenced zones (MIZs). The highest level consists of three categories that cover all of the land mass of Canada:

- census metropolitan areas
- census agglomerations
- outside census metropolitan areas and census agglomerations.

The SAC (Statistical Area Classification) provides unique numeric identification (codes) for these hierarchically-related geographic areas. It was established for the purpose of reporting statistics.

Thematic map

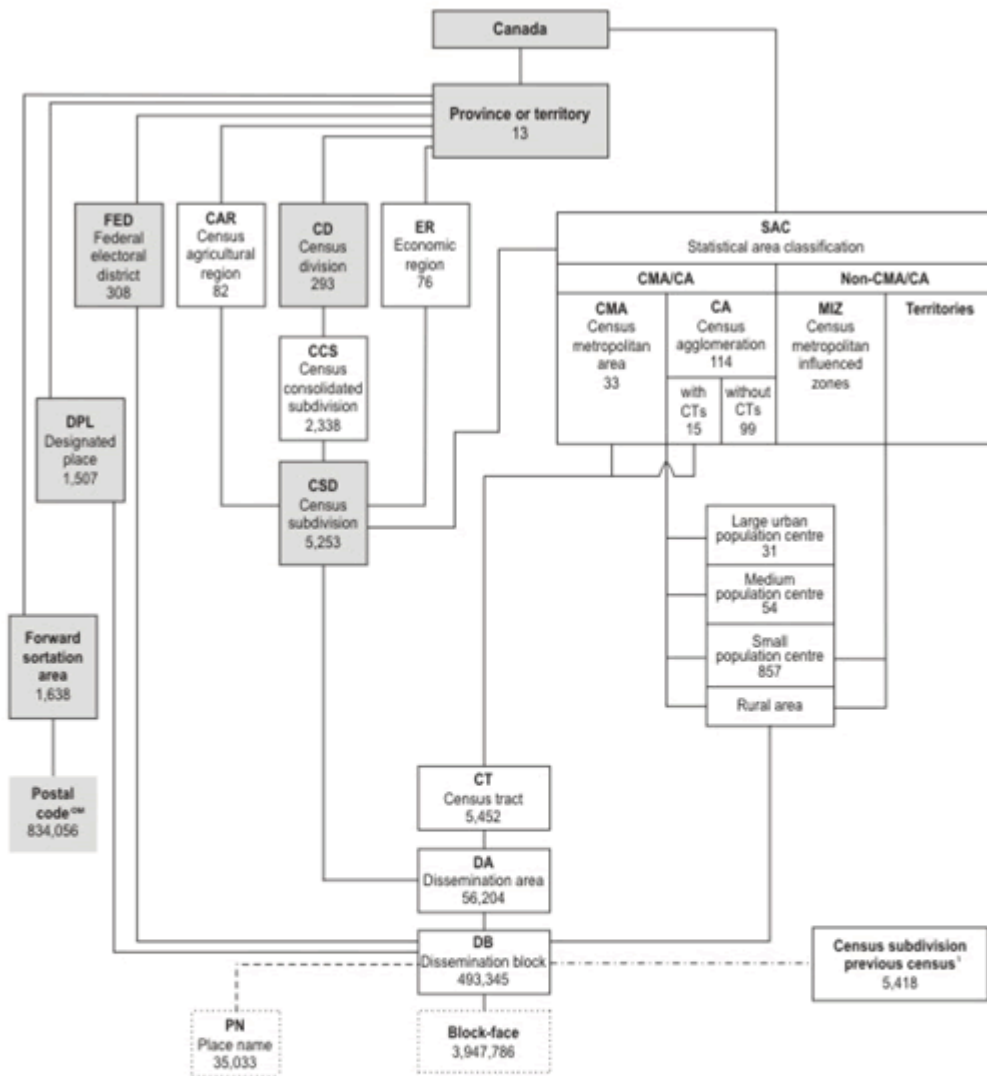
A thematic map shows the spatial distribution of one or more specific data themes for selected geographic areas. The map may be qualitative in nature (e.g. (for example), predominant farm types) or quantitative (e.g. (for example), percentage population change).

OM: Postal code is an official mark of Canada



Appendix B Hierarchy of standard geographic units for dissemination, 2011 Census

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



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

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

Appendix C

Geographic units by province and territory, 2011 Census

Table C.1 Geographic units by province and territory, 2011 Census

Geographic unit	Canada 2006	Canada 2011	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Nunavut
Federal electoral district (2003 Representation Order)	308	308	7	4	11	10	75	106	14	14	28	36	1	1	1
Economic region	76	76	4	1	5	5	17	11	8	6	8	8	1	1	1
Census agricultural region	82	82	3	3	5	4	14	5	12	20	8	8	0	0	0
Census division	288	293	11	3	18	15	98	49	23	18	19	29	1	6	3
Census consolidated subdivision	2,341	2,338	89	68	43	151	1,005	316	126	300	77	153	1	6	3
Census subdivision (CSD)	5,418	5,253	376	113	99	273	1,285	574	287	959	435	743	37	41	31
CSD dissolutions (Jan. 2, 2006 to Jan. 1, 2011)	221	...	3	0	1	6	13	13	13	26	19	126	0	1	0
CSD incorporations (Jan. 2, 2006 to Jan. 1, 2011)	...	56	2	0	0	3	4	2	3	1	1	33	2	5	0
Designated place	1,289	1,507	183	0	65	167	106	114	97	194	261	319	1	0	0
Census metropolitan area	33	33	1	0	1	2	6 ¹	15 ¹	1	2	2	4	0	0	0
Census agglomeration (CA)	111	114	3	2	4	5 ¹	25 ¹	28 ¹	4	7 ¹	16 ¹	21	1	1	0
CA with census tracts	15	15	0	0	0	1	3	4	0	0	3	4	0	0	0
CA without census tracts	96	99	3	2	4	4 ¹	22 ¹	24 ¹	4	7 ¹	13 ¹	17	1	1	0
Census tract	5,076	5,452	47	0	93	102	1,371	2,273	173	109	573	711	0	0	0
Small population centre (1,000 to 29,999)	811	857	29	6	35	30 ¹	224 ¹	237 ¹	42 ¹	59 ¹	101 ¹	87	1	3	7
Medium population centre (30,000 to 99,999)	54	54	0	1	1	2	13	19	1	2	6	9	0	0	0
Large urban population centre (100,000 or more)	29	31	1	0	1	1	6 ¹	14 ¹	1	2	2	4	0	0	0

Place name	21,411	35,033	1,836	709	3,138	2,679	6,985	8,091	1,839	2,687	3,117	3,528	195	153	76
Dissemination area	54,626	56,204	1,071	293	1,645	1,454	13,622	19,964	2,179	2,467	5,711	7,582	68	98	50
Dissemination block	478,831	493,345	8,732	3,573	15,842	15,415	109,455	132,777	30,471	51,610	66,332	55,529	1,359	1,492	758
Block-face	3,739,041	3,947,786	81,868	27,050	155,484	135,411	842,992	1,003,813	201,005	362,238	525,180	577,975	13,036	15,612	6,122
Forward sortation area	1,625	1,638	35	7	77	111	418	526	64	48	153	190	3	3	3
Postal code ^{OM}	805,640	834,056	10,878	3,316	27,852	58,617	212,162	276,844	24,568	21,923	80,948	115,435	968	516	29

... not applicable

1. Census metropolitan areas, census agglomerations, large urban population centres and small population centres crossing provincial boundaries are counted in both provinces, and, therefore, do not add up to the national total.

Sources: Statistics Canada, 2011 Census of Population; Canada Post Corporation, May 2011.

Appendix D

Census subdivision types by province and territory, 2011 Census

Table D.1 Census subdivision types by province and territory, 2011 Census

Census subdivision type	Canada	Newfoundland and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories	Nunavut
C City / Cité	6	...	...	...	4	...	2	...	...	...	...	...	...	...
CC Chartered community	3	...	...	...	...	...	...	...	...	...	...	...	3	...
CG Community government	4	...	...	...	...	...	...	...	...	...	...	...	4	...
CN Crown colony / Colonie de la couronne	1	...	...	...	...	...	...	...	1	...	...	...	...	...
COM Community	33	...	33	...	...	...	...	...	...	...	...	...	...	...
CT Canton (municipalité de)	45	...	...	...	...	45	...	...	...	...	...	...	...	...
CU Cantons unis (municipalité de)	2	...	...	...	...	2	...	...	...	...	...	...	...	...
CV City / Ville	2	...	...	...	...	...	2	...	...	...	...	...	...	...
CY City	149	3	2	...	4	...	46	9	16	17	49	1	1	1
DM District municipality	52	...	...	...	...	...	...	...	...	...	52	...	...	...
HAM Hamlet	36	...	...	...	...	...	...	...	...	...	...	2	10	24
ID Improvement district	7	...	...	...	...	...	...	...	...	7	...	...	...	...
IGD Indian government district	2	...	...	...	...	...	...	...	...	...	2	...	...	...
IM Island municipality	1	...	...	...	...	...	...	...	...	...	1	...	...	...
IRI Indian reserve / Réserve indienne	961	3	4	25	18	27	139	75	168	81	419	...	2	...
LGD Local government district	2	...	...	...	...	...	...	2	...	...	...	...	...	...
LOT Township and royalty	67	...	67	...	...	...	...	...	...	...	...	...	...	...
M Municipality / Municipalité	3	...	...	...	...	...	3	...	...	...	...	...	...	...
MD Municipal district	76	...	...	12	...	...	...	...	...	64	...	...	...	...
MÉ Municipalité	619	...	...	...	...	619	...	...	...	...	...	...	...	...
MU Municipality	54	...	...	...	...	...	54	...	...	...	...	...	...	...
NH Northern hamlet	11	...	...	...	...	...	...	...	11	...	...	...	...	...
NL Nisga'a land	1	...	...	...	...	...	...	...	...	...	1	...	...	...
NO Unorganized / Non organisé	137	...	...	...	...	96	16	10	2	...	...	4	6	3
NV Northern village	11	...	...	...	...	...	...	...	11	...	...	...	...	...
P Parish / Paroisse (municipalité de)	150	...	...	...	150	...	...	...	...	...	...	...	...	...
PE Paroisse (municipalité de)	179	...	...	...	...	179	...	...	...	...	...	...	...	...

RCR	Rural community / Communauté rurale	4	...	...	...	4	...	...	...	...	...	...	...	...	...	...
RDA	Regional district electoral area	158	...	...	...	...	...	...	...	...	...	158	...	...	...	...
RG	Region	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
RGM	Regional municipality	4	...	...	3	...	...	...	...	...	...	1	...	...	...	...
RM	Rural municipality	413	...	...	...	...	...	...	117	296	...	...	...	...	...	...
RV	Resort village	40	...	...	...	...	...	...	...	40	...	...	...	...	...	...
S-É	Indian settlement / Établissement indien	28	...	...	...	...	6	5	4	1	4	3	5	...	...	...
SA	Special area	3	...	...	...	...	...	...	...	...	3	...	...	...	...	...
SC	Subdivision of county municipality / Subdivision municipalité de comté	28	...	...	28	...	...	...	...	...	...	...	...	...	...	...
SÉ	Settlement / Établissement	13	...	...	...	...	...	...	...	...	...	...	13	...	...	...
SET	Settlement	13	...	...	...	...	...	...	...	...	...	...	...	10	3	...
SG	Self-government / Autonomie gouvernementale	4	...	...	...	...	...	...	...	...	...	...	4	...	...	...
SM	Specialized municipality	5	...	...	...	...	...	...	...	...	5	...	...	...	...	...
SNO	Subdivision of unorganized / Subdivision non organisée	92	92	...	...	...	...	...	...	...	...	...	...	...	...	...
SV	Summer village	51	...	...	...	...	...	...	...	...	51	...	...	...	...	...
T	Town	743	277	7	31	13	...	88	51	147	108	14	3	4	...	...
TC	Terres réservées aux Cris	8	...	...	...	...	8	...	...	...	...	...	...	...	...	...
TI	Terre inuite	12	...	...	...	...	12	...	...	...	...	...	...	...	...	...
TK	Terres réservées aux Naskapis	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
TL	Teslin land	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...
TP	Township	207	...	...	...	...	...	207	...	...	...	...	...	...	...	...
TV	Town / Ville	15	...	...	...	14	...	1	...	...	...	...	...	...	...	...
V	Ville	222	...	...	...	...	222	...	...	...	...	...	...	...	...	...
VC	Village cri	8	...	...	...	...	8	...	...	...	...	...	...	...	...	...
VK	Village naskapi	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...
VL	Village	550	...	...	...	66	45	11	19	266	95	43	4	1	...	...
VN	Village nordique	14	...	...	...	...	14	...	...	...	...	...	...	...	...	...
Total		5,253	376	113	99	273	1,285	574	287	959	435	743	37	41	31	

... not applicable

Source: Statistics Canada, 2011 Census of Population.



More information

Acknowledgements

First to be thanked are Canadian farmers. The success of the Canadian agricultural statistics program rests upon their continued assistance. Every five years they are called upon to fill out the Census of Agriculture and, in between, many are contacted by our survey program to update the statistics that describe what is happening in the agriculture sector. We appreciate the co-operation of farmers across Canada, and hope that this publication will help give a wide range of Canadians a sense of the challenges and innovations they face and embrace as they grow agricultural products for Canada and the world.

Note of appreciation

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

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Catalogue no. (number) 92-639-G

Frequency

Ottawa