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# Census Agricultural Regions 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<sup>s</sup> value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- <sup>P</sup> preliminary
- <sup>r</sup> revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- <sup>E</sup> use with caution
- F too unreliable to be published
- \* significantly different from reference category ( $p < 0.05$ )

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# Census Agricultural Regions Boundary Files - Reference guide

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## About this guide

This guide describes the content, uses and technical specifications for the 2011 Census Agricultural Regions Boundary Files, and includes notes on the data quality and general methodology used to create them.

Technical specifications in Section 5 include system requirements, installation instructions, record layout, and item descriptions.

More details can be found in the *2011 Census Dictionary*, Catalogue No.98-301-XWE. Supplementary information is provided in the appendices.

This reference guide does not provide details on specific software packages that are available for use with the Census Agricultural Regions Boundary Files. Users are advised to contact the appropriate software vendor for information. Please contact your nearest Regional Reference Centre for further information.

This Reference Guide is based on the best information available at the time of its release. It in no way constitutes a warranty of the data in the event that users may observe characteristics that deviate from those stated in this document. All efforts have been made to ensure that the verification of this product has been thoroughly done, however, there is no guaranty that the data are 100% accurate.

## What's new?

- Files are compliant with Geography Division standards
- Census agriculture regions are built up from Dissemination Blocks to insure this file matches all other geographies built to this standard



# Overview

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## The Census Agricultural Regions Boundary Files

The 2011 Census Agricultural Regions Boundary Files contain the boundaries of all 82 census agricultural regions (see the Glossary subsection for a definition) delineated for the 2011 Census of Agriculture.

The 2011 Census Agricultural Regions Boundary Files are available for download in two types: digital boundary file and cartographic boundary file.

The 2011 Census Agricultural Regions Boundary Files provide a framework for mapping and spatial analysis. The digital file depicts the full extent of the geographical areas, including the coastal water area. See Figure 2.1. The cartographic file depicts the geographical areas using only the major land mass of Canada and its coastal islands. See Figure 2.2. The files are available in three formats: ArcGIS® (.shp), MapInfo® (.tab) and Geography Markup Language (.gml).

Supplementary hydrographic layers are also available and provided by Geography Division. More details can be found in the Boundary Files Reference Guide 2006 Census, Catalogue No. 92-160-G. This 'water' layer can be used for additional reference purposes when mapping or displaying the boundaries in either the digital or cartographic boundary file.

### Figure 2.1 Census Agricultural Regions Digital Boundary File, 2011



### Figure 2.2 Census Agricultural Regions Cartographic Boundary File with coastline, 2011



## Reference date

The **geographic reference date** is a date determined by Statistics Canada to finalize the geographic framework for which the census data will be collected, tabulated and reported. The geographic reference date for the 2011 Censuses of Population and Agriculture, and therefore for the geographic area boundaries in the Census Agricultural Regions Boundary Files, is January 1, 2011.



# How to use this product

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## Purpose of the product

The 2011 Census Agricultural Regions Digital Boundary File portrays the boundaries used for the 2011 Census of Agriculture collection and dissemination activities and as such often extend as straight lines into bodies of water.

The 2011 Census Agricultural Regions (CAR) Cartographic Boundary File was created to support the spatial analysis and thematic mapping of 2011 Census of Agriculture when realistic shorelines are required.

With the appropriate computer software, the `CAR` boundary files provide the framework for thematic mapping — particularly choropleth mapping. The shorelines were integrated with the boundaries to enable users to easily shade the land polygons. Geographic identifiers provide the linkage between the statistical data and the geographic area boundaries. The `CAR` boundary files are positionally consistent with the 2011 Road Network File, which can provide additional geographic context for mapping applications.

## Using Census Agricultural Region Boundary Files with other boundary files

When considering how to use the Census Agricultural Regions Boundary Files, users should be aware of the compatibility of these files with other spatial information files. Some of the mapping products available are:

### Agricultural Ecumene Census Division Digital and Cartographic Boundary Files

The Agricultural ecumene boundary files contain generalized ecumene boundaries. It is suitable for thematic mapping at a small-scale when displaying statistical data aggregated to the census division level.

The 2011 Agricultural Ecumene Census Division Cartographic Boundary File is not positionally consistent with the `CAR` cartographic boundary file. Users who wish to use the Agricultural Ecumene Census Division Cartographic Boundary File with the `CAR` cartographic boundary file should consider their positional differences. However, the 2011 Agricultural Ecumene Census Division Digital Boundary File is positionally consistent with the `CAR` digital boundary file.

### Digital and Cartographic Boundary Files

The Geography Division of Statistics Canada has produced and disseminated a series of 12 digital and cartographic boundary file products. Each contains the boundaries relating to a standard geographic level (e.g., census divisions). In addition, each product includes a separate file

containing supplementary hydrography that supports mapping inland water bodies (i.e., large inland lakes and double-line rivers). The CAR boundary files are positionally consistent with these files since they were all created from the same base.

In deciding which set of boundary files to use, one should consider what other geospatial data will be used in conjunction with the boundary files.

## **Limitations**

The positional accuracy of the 2011 Census Agricultural Region Boundary Files does not support cadastral, surveying or engineering applications.

The CAR boundary files will not be precise if plotted at a larger scale than the scale of the source material used in their creation. In particular, the shorelines originally digitised at a scale of 1:1,000,000 (outside census metropolitan areas and census agglomerations) will not support large-scale mapping.

The CAR boundary files are recommended for regional scale mapping. Boundaries can be mapped at scales ranging from 1:1,000,000 to 1:5,000,000.

## **General methodology**

### **Creation of the boundaries for the Census Agricultural Regions Digital Boundary File**

Geography Division's 2011 Dissemination Blocks Digital Boundary File of all 493,345 dissemination blocks (DBs) in Canada, served as the starting point for creating the CAR boundaries. In all provinces except Saskatchewan, census agricultural regions are defined as groups of one or more adjacent census divisions, while census divisions, in turn, are defined as groupings of census consolidated subdivisions (CCS). As a result, in these nine provinces the CAR boundaries were created by aggregating the polygons that formed individual dissemination blocks, first to the census consolidated subdivision level, then to the census division level, and then up to the CAR level. However, in Saskatchewan CARs are not defined as groupings of census divisions but rather aggregations of census consolidated subdivisions directly. Therefore, in Saskatchewan the CAR boundaries were created by aggregating the polygons forming individual dissemination blocks, first to the census consolidated subdivision level, then directly up to the CAR level.

### **Creation of the boundaries for the Census Agricultural Regions Cartographic Boundary File**

The completed Census Agricultural Regions Digital Boundary File was the basis for creating the cartographic version. Geography Division's 2011 Dissemination Blocks Cartographic Boundary File of all 493,345 dissemination blocks (DBs) in Canada was used as the basis for the Census

Agricultural Regions Cartographic Boundary File. The same methodology used with the digital file for aggregating DBs was also used here.

## **Attribute information for the Census Agricultural Regions Boundary Files**

Five main attributes were associated with the polygons in the `CAR` boundary files. The `CAR` code (CARUID) and name (CARNAME) were obtained from the Census Agricultural Regions Attribute File, which is updated prior to each Census of Agriculture with information from the provinces. This code was added to the Dissemination Blocks Boundary Files and then all five were derived from those files for assignment to the Census Agricultural Regions Boundary Files. The three other main fields were the province or territory code (PRUID), the province or territory name (PRNAME) and the Census of Agriculture standard geographic area code (AGUID).

## **Content**

The Census Agricultural Regions Boundary Files for Canada contain the boundaries of all 82 census agricultural regions delineated for the 2011 Census of Agriculture. A census agricultural region is a sub-provincial geographic area used primarily by the Census of Agriculture for disseminating agricultural statistics. In most provinces, census agricultural regions usually comprise groups of adjacent census divisions. The exceptions are in Saskatchewan, where census agricultural regions are made up of groups of adjacent census consolidated subdivisions that do not necessarily respect census division boundaries, and in Prince Edward Island where each of the three existing census divisions (counties) is treated as a census agricultural region for data dissemination purposes. Census agricultural regions are not defined in Yukon, the Northwest Territories or Nunavut. In the Prairie provinces, census agricultural regions are commonly referred to as crop districts.

The `CAR` boundary files consist of polygons representing the census agricultural regions. In the cartographic version, there are many more polygons than census agricultural regions primarily because additional polygons are needed to represent islands. Every polygon encoded as a census agricultural region has a CARUID (a code to uniquely identify each census agricultural region) associated with it. The `CAR` boundary files are available at the national level only.

## **Comparison to the 2006 Census Agricultural Regions Boundary File**

The 2011 Agricultural Regions Boundary Files are not compatible with the 2006 Agricultural Regions Boundary File.

The 2011 Agricultural Regions Boundary Files were created from dissemination block polygons aggregated into CARs to insure standardization with Geography Division 2011 Boundary Files.



# Data quality

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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.

## 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 or map products.

The 2011 `_CAR` boundary files were created using spatial data from the 2011 Dissemination Blocks Digital and Cartographic Boundary Files. These boundary files were developed using the following procedures:

### Creation of the 2011 Digital Boundary Files

The Spatial Data Infrastructure was used to generate the 2011 Digital Boundary Files by aggregating polygons using geographic codes. For example, to create the digital boundary files for the provinces and territories, all the polygonal units within the Spatial Data Infrastructure with the same relationship to a province or territory were aggregated to form the polygon(s) that represent that province or territory. Additional information (e.g., name) for each geographic area was incorporated into the product from the Spatial Data Infrastructure.

### Creation of the 2011 Cartographic Boundary Files

The creation of the 2011 Cartographic Boundary File used the 2011 Digital Boundary Files and a set of hydrographic features from the National Geographic Database. The hydrographic features used included coastal features (e.g., oceans, bays) and the Great Lakes, and the St. Lawrence River. These data were used to remove from the digital boundary files that portion of the geographical area that is within these major coastal water features.

### Additional formatting

The files were transformed from Lambert conformal conic projection into latitude / longitude coordinates. Finally, the files were verified, translated into French and English versions and appropriately labelled.

The files were converted into three output formats (ArcGIS® [.shp], Geography Markup Language [.gml] and MapInfo® [.tab]).

## **Creation of the coastal layer**

The coastal layer was created by selecting water features exterior to Canada's land mass from the National Geographic Database's hydrographic reference layers. These reference data were sourced from the National Topographic Data Base (1:50,000 and the 1:250,000 maps) and the Digital Chart of the World. In selected areas, information was supplemented with data from the National Hydro Network. This included polygon features forming the Pacific, Atlantic and Arctic oceans, as well as the Beaufort and Labrador seas and all related channels, straits, passages, inlets and bays including Hudson Bay and James Bay. In addition, features forming the Great Lakes, Lake of the Woods and the St. Lawrence Seaway were also included.

The coastal layer was then generalized by removing all islands smaller than 100,000 square metres except when the islands accounted for the only land area for geographic areas or when they were intersected by road arcs found on the road network file.

## **Creation of the inland water layer**

The inland water layer was created by selecting water features from the National Geographic Database's hydrographic reference layers. Each feature was assigned a rank based on its size and/or cultural importance. The largest and most important features have lower rank values. These ranks can be used to select and format features for map display at different scales.

## **Inland lakes and rivers (polygon)**

The inland polygon lakes and rivers file contains a selection of internal water bodies and islands not found in the coastal layer.

## **Inland rivers (line)**

The inland river file contains a selection of linear water features such as rivers and streams.

## **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 positional accuracy of the CAR boundary files are based on the positional accuracy of the source material used in its production.

The source boundaries are derived from the Spatial Data Infrastructure. The data in the Spatial Data Infrastructure are stored in double precision. This precision allows features that are next to each other on the ground to be placed in the correct position on the map, relative to each other, without overlap. However, the absolute positional accuracy of the features in the database varies depending on the source of the features.

The Spatial Data Infrastructure is not a Global Positioning System. However, every possible attempt is made to ensure that the geographic area boundaries maintained in the Spatial Data Infrastructure respect the limits of the administrative entities that they represent (e.g., census division and census subdivision) or on which they are based (e.g., 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., road network data and hydrographic data) that are stored within the Spatial Data Infrastructure is considered when positioning the limits of the geographic areas.

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

The input data used to create the files was obtained from several sources having a wide range of scales. Boundary files will not be precise if plotted at a larger scale than the scale of the source material used in its creation. Maps created from the boundary files should not be used to determine the precise location of boundaries. They are not intended to serve as a legal or cadastral representation of the geographic areas.

## **Attribute accuracy**

Refers to the accuracy of the quantitative and qualitative information attached to each feature (population centre, street name, census subdivision name and code).

The attribute data associated with the polygons in the CAR boundary file was verified against the data in the Census Agricultural Regions Attribute File.

## **Logical consistency**

Describes the fidelity of relationships encoded in the data structure of the digital spatial data.

Every polygon was verified to have a valid identifier for the census agricultural region: the CARUID. Every CARUID in the CAR boundary files was verified to be in the CAR Attribute File and have the correct corresponding AGUID (a code that uniquely identifies a CAR and provides a link to the data in 2011 Census of Agriculture data tables).

## **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.

The number of census agricultural regions as well as their unique identifiers was verified against the information in the CAR Attribute File.



# Technical specifications

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## Software formats

The 2011 Census Agricultural Regions Boundary Files are available for download from the Statistics Canada website in the following formats:

- ArcGIS® shapefile format version 9.3.1. File extension: .shp
- MapInfo® format version 11.0.1. File extension: .tab
- Geography Markup Language (GML) version 3.1.1. File extension: .gml

## Installation instructions

The ArcGIS®, MapInfo® and GML 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.

The geographic area names in the CAR boundary files contain accented characters. These characters can be seen in UNIX and Windows® versions of ArcGIS® and MapInfo®. They were tested on desktop versions of ArcGIS® 9.3.1 and MapInfo® 11.01.1.

## Geographic representation

The 2011 Census Agricultural Regions Boundary Files are available for free on the Statistics Canada website in the following geographic representation:

Datum: NAD83

Coordinates: Latitude / Longitude

To ensure calculations are relevant (e.g. (for example), to calculate land area), it is recommended that the latitude/longitude coordinates be transformed to an appropriate map projection.

## File naming conventions

The conventions used are:

ArcInfo® shape file gcar000a11a\_e.shp, gcar000b11a\_e.shp

MapInfo® TAB file gcar000a11m\_e.tab, gcar000b11m\_e.tab

Geography Markup Language (GML) file gcar000a11g\_e.gml, gcar000b11g\_e.gml

where "g" refers to geographic representation, "car" indicates that it is the census agricultural regions file, "000" is the three digit code identifying it as a national file, "a" indicates it is a digital boundary file while "b" indicates it is a cartographic boundary file, "11" is the date stamp for the year of release, "m" or "a" or "g" indicates the software and "e" or "f" indicates the language of the file.

File names and sizes						
	ARCGIS®		MapInfo®		Geography Markup Language	
	File name	Compressed file size (MB)	File name	Compressed file size (MB)	File name	Compressed file size (MB)
CAR digital boundary file	gcar000a11a_e	7.63	gcar000a11m_e	4,46	gcar000a11g_e	10.03
CAR cartographic boundary file	gcar000b11a_e	24.0	gcar000b11m_e	13,44	gcar000b11g_e	31.23

## Record layout and item description

Census Agricultural Regions record layout:

The following table shows the format of the attributes contained on the boundary files.

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
PRUID	char (2)	Uniquely identifies a province or territory.
CARUID	char (4)	Uniquely identifies a census agricultural region (composed of the 2-digit province/territory code and the 2-digit census agricultural region code).
CARNAME	char (50)	The official census agricultural region name.
AGUID	char (9)	Uniquely identifies any of the standard geographic areas disseminated by the Census of Agriculture (composed of the 2-digit province or territory code, the 2-digit census agricultural region code, the 2-digit census division code and the 3-digit census consolidated subdivision code).



# Glossary

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## Adjusted counts

'Adjusted counts' refer to previous census population and dwelling counts that were adjusted (i.e., recompiled) 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) contain the boundaries of standard geographic areas together with the shoreline around Canada. Selected inland lakes and rivers are available as a supplementary layer.

## 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.) 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 must have a total population of at least 100,000 of which 50,000 or more must live in the core.

A CA must have a core population of at least 10,000. To be included in the CMA or CA, 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 declines below 10,000, the CA is retired. However, once an area becomes a CMA, it is retained as a CMA 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 or CA that are not population centres are rural areas.

When a CA has a core of at least 50,000, it is subdivided into census tracts. Census tracts are maintained for the CA even if the population of the core subsequently falls below 50,000. All CMAs 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 that are outside CMAs and CAs within provinces are assigned to one of four categories according to the degree of influence (strong, moderate, weak or no influence) that the CMAs or CAs have on them. The CSDs in the territories but outside CAs are assigned a separate category.

Census subdivisions (CSDs) within provinces are assigned to a MIZ category based on the percentage of their resident employed labour force that commutes to work in the core(s) of CMAs or CAs. CSDs with the same degree of influence tend to be clustered. They form zones around CMAs and CAs that progress through the categories from 'strong' to 'no' influence as distance from the CMAs and CAs increases. As many CSDs in the territories are very large and sparsely populated, the commuting flow of the resident employed labour force is unstable. For this reason, CSDs that are outside CAs in the territories are assigned 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., 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 persons. 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 or CA 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 or a CA 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, or at least 10,000 persons in the case of a CA.

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

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

All territory within a CMA or CA 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 2011 Census 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 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.).

## **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 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 and place of work data are linked to dissemination area (DA) representative points when they cannot be linked to DBs. As well, place of work data are linked to census subdivision representative points when the data cannot be linked to DAs.

## **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.

## **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' provides name and location information on local place names. It also includes selected records of active and retired geographic areas as well as names from the Canadian Geographic Names Database.

'Place name' refers to the set of names that includes 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 or more persons 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 and CAs.

### **Population density**

Population density is the number of persons per square kilometre.

### **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/CA), census subdivision (CSD), population centre (POPCTR), designated place (DPL), census tract (CT), dissemination area (DA) and dissemination block (DB).

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

## **Road network file**

The road network file (RNF) contains roads, road names, types, directions, address ranges and road ranks for the entire country. 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 the rural areas of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as population living in rural areas outside CMAs and CAs.

## **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.

The SDI 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 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 classifies all CSDs 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 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., predominant farm types) or quantitative (e.g., percentage population change).



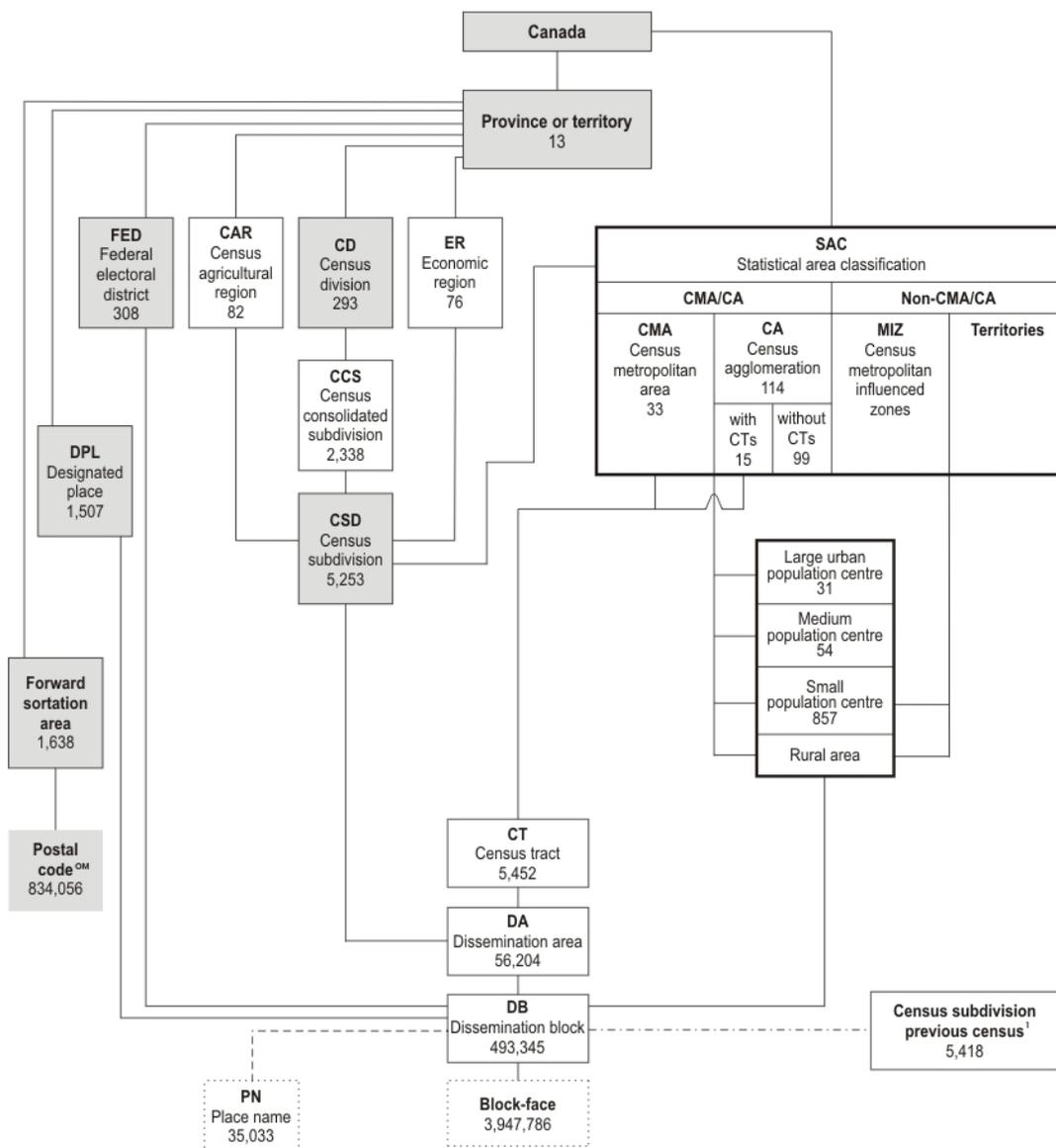
Statistics  
Canada

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Canada

# Appendices

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# Appendix A: 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 B: Spatial file naming conventions

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For the 2011 Census, spatial product file names for files disseminated to clients follow a spatial file naming convention. The geographic area and code, file type, date stamp, software type and language will be embedded within the name. Standardizing the names of the files should facilitate the storage of compressed files, all having the extension .zip.

Each file name is 13 characters in length, which meets the requirements of ArcGIS®'s and MapInfo®'s limitations for file name sizes. All alphabetic characters are in lower case to maintain consistency.

## First character: projection of file

- g        if projection is Geographic (latitude/longitude)
- l        if projection is Lambert Conformal Conic

## Next three characters: primary geographic area of file

**Table B.1 Spatial file naming conventions — geographic area of file**

Geographic area / product	English file	French file
National / provincial	pr_	pr_
Federal electoral district	fed	cef
Economic region	er_	re_
Census division	cd_	dr_
Census subdivision	csd	sdr
Census agricultural region	car	rar
Census consolidated subdivision	ccs	sru
Census metropolitan area / census agglomeration	cma	rmr
Census tract	ct_	sr_
Population centre	pc_	cp_
Designated place	dpl	ld_

<b>Geographic area / product</b>	<b>English file</b>	<b>French file</b>
Dissemination area	da_	ad_
Dissemination block	db_	id_
Population ecumene	ecu	ecu
Agricultural ecumene	eco	eco
Road network file	rnf	frr
International boundary files (part of mainland U.S.A. and Alaska as well as Greenland)	int	int
Supporting hydrography (Great Lakes, St. Lawrence River, oceans, etc.)	hy_	hy_

### **Next three numbers: geographic code of coverage**

**Table B.2 Spatial file naming conventions — geographic code of coverage**

<b>National coverage</b>	<b>Provincial and territorial coverages</b>	
000	010	Newfoundland and Labrador
	011	Prince Edward Island
	012	Nova Scotia
	013	New Brunswick
	024	Quebec
	035	Ontario
	046	Manitoba
	047	Saskatchewan
	048	Alberta
	059	British Columbia
	060	Yukon
	061	Northwest Territories
	062	Nunavut

## Next character: file type

a	digital boundary file
b	cartographic boundary file
c	interior lakes and rivers hydrographic reference file (polygon)
d	interior rivers hydrographic reference file (line)
e	ecumene
h	hydrographic coverage of Great Lakes, St Lawrence River and surrounding oceans

## Next two numbers: dissemination year (date stamp for versioning)

11	geographic reference date is January 1, 2011
----	--

## Next character: file format

a	ArcInfo® shapefile (.shp)
m	MapInfo® TAB file (.tab)
g	Geography Markup Language (GML) file (.gml)

## Final two characters: language

_e	English
_f	French

## Examples of the use of the file naming conventions

- The 2011 Census Subdivision Digital Boundary File for Newfoundland and Labrador with English attributes in GML format: gcsd010a11g\_e.zip
- The 2011 Economic Region Boundary File for Alberta with French attributes in MapInfo format: gre\_048b11m\_f.zip



# More information

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## 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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Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, the Agency has developed standards of service which its employees observe in serving its clients.

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