

# Join Census geography files with Census attribute data

**Example: Kingston ON CMA 2006 Dissemination Areas and PCensus data**

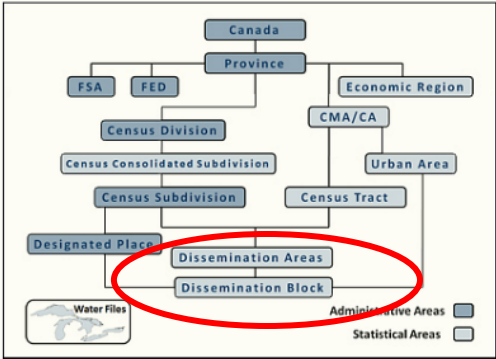
Follow the directions in the tutorial **Extract census data in PCensus to use in ArcMap 9.x** to obtain Census attribute files for the following exercise.

Download the Dissemination Area shapefiles from the library server

Go to <http://library.queensu.ca/webdoc/maps/census-geog/2006/census-geog-2006.htm>

Register first to obtain your User name and Password.

Click on the level of geography to see available files.



**Documentation**

- [2006 Census Dictionary](#)
- [Geography Reference Guides](#)
- [Illustrated Glossary](#)
- [Geography Catalogue](#)
- [Working Papers](#)

**Other Census Geography Files**

- [2001 Census Geography files](#)
- [2001 Road Network Files, Skeletal Road Network Files and Reference Maps](#)
- [1996 Census Geography files](#)
- [1981-1991 Census Geography files](#)

**Format**

- ESRI shapefile (.shp)
- MapInfo tab (.tab) files (available upon [request](#)).

Files are available for download to Queen's faculty, students and staff. You must register to access this data.

[Register](#)

## Dissemination Area (DA)

Small area composed of one or more neighbouring dissemination blocks, with a population of 400 to 700 persons. All of Canada is divided into dissemination areas.

- Census Metropolitan Area (CMA)
- ▶ Provincial Coverage
- National Coverage

## Dissemination Area (DA)

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### Census Metropolitan Area (CMA)

- [St. John's](#)
- [Halifax](#)
- [Moncton](#)
- [Saint John](#)
- [Saguenay](#)
- [Québec](#)
- [Sherbrooke](#)
- [Trois-Rivières](#)
- [Montréal](#)
- [Ottawa - Gatineau \(Quebec\)](#)
- [Ottawa - Gatineau \(Ontario\)](#)
- [Kingston](#)
- [Peterborough](#)
- [Oshawa](#)
- [Toronto](#)
- [Hamilton](#)
- [St. Catharines - Niagara](#)

Download and unzip the files to (in this case) the **C:\temp\Kingston** directory.

2006 Census 2005 Household Income.dbf	125 KB	DBF File
2006 Census Census Snapshot.dbf	159 KB	DBF File
2006 Census Ethnic Origin Summary.dbf	389 KB	DBF File
Export Log File.txt	9 KB	Text Document
cma_by_da_on_kingston.zip	1,322 KB	WinZip File
cma_kingston.dbf	1 KB	DBF File
cma_kingston.prj	1 KB	PRJ File
cma_kingston.sbn	1 KB	SBN File
cma_kingston.sbx	1 KB	SBX File
cma_kingston.shp	346 KB	SHP File
cma_kingston.shx	1 KB	SHX File
da_kingston.dbf	12 KB	DBF File
da_kingston.prj	1 KB	PRJ File
da_kingston.sbn	3 KB	SBN File
da_kingston.sbx	1 KB	SBX File
da_kingston.shp	959 KB	SHP File
da_kingston.shx	3 KB	SHX File
da_kingston_unclip.dbf	12 KB	DBF File
da_kingston_unclip.prj	1 KB	PRJ File
da_kingston_unclip.sbn	3 KB	SBN File
da_kingston_unclip.sbx	1 KB	SBX File
da_kingston_unclip.shp	742 KB	SHP File
da_kingston_unclip.shx	3 KB	SHX File

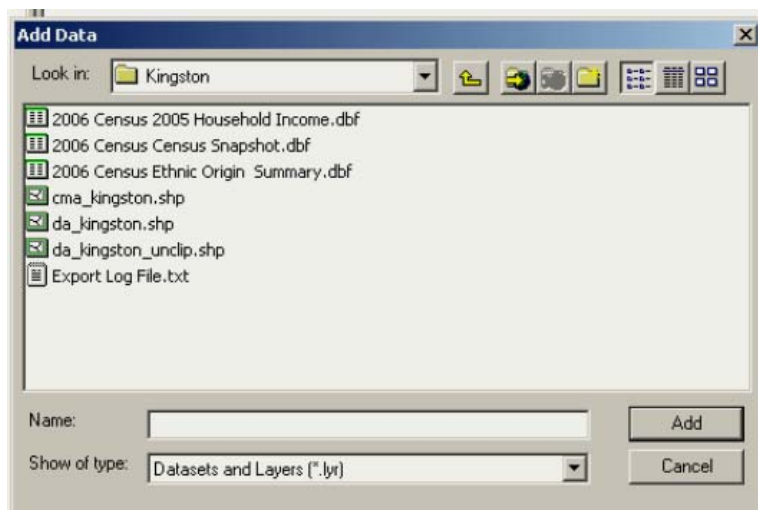
For 2006 Kingston DAs, there will be a number of shapefiles. Note that ESRI shapefiles are composed of a variety of files including in this example *.dbf*, *.prj*, *.sbn*, *..shp*, *.shx*.

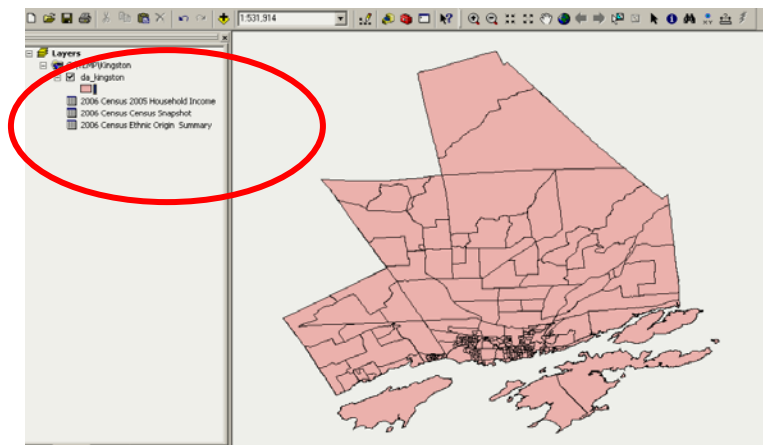
**da\_kingston.shp** ( a Cartographic Boundary File) -- DA boundaries which are “clipped” to the shorelines.

**da\_kingston\_unclip.shp** (Digital Boundary Files\_ -- DA boundaries which extend out to the legal boundary.

**cma\_kingston.shp** is the CMA boundary.

In ArcMap, click on the Add Data icon (the Yellow Cross  ) and navigate to your data. Add the spatial data (in this case **da\_kingston.shp**) and the statistical data files.





Right click on the shapefile and open up its Attribute Table. Scroll and note the fields that are present. Note DAUID, a field that holds a unique identifier for each Dissemination Area. This will be used to join the statistical data to this table.

Attributes of da\_kingston

FID	Shape	DAUID	CSDUID	CCSUID	CDUID	ERUID	PRUID	CTUID	CMAUID
0	Polygon	35100029	3510010	3510010	3510	3515	35	5210011.02	521
1	Polygon	35100030	3510010	3510010	3510	3515	35	5210011.01	521
2	Polygon	35100031	3510010	3510010	3510	3515	35	5210011.01	521
3	Polygon	35100032	3510010	3510010	3510	3515	35	5210011.02	521
4	Polygon	35100033	3510010	3510010	3510	3515	35	5210011.02	521
5	Polygon	35100035	3510010	3510010	3510	3515	35	5210011.01	521
6	Polygon	35100036	3510010	3510010	3510	3515	35	5210011.01	521
7	Polygon	35100040	3510010	3510010	3510	3515	35	5210011.01	521
8	Polygon	35100041	3510010	3510010	3510	3515	35	5210011.01	521
9	Polygon	35100042	3510010	3510010	3510	3515	35	5210011.01	521

Now, open up the Attribute Table for one of the statistical tables and look at the fields and their contents. Note that AREA-NAME and CODE look a lot like DAUID and probably can be used for a table join.

OID	AREA_NAME	CODE	XCOORD	YCOORD	TOTPOP	MALES	FEMALES	POPAGE004	POPAGE0519
1	35100193	35100193	-76.48832	44.2311	420	200	220	5	2
2	35100194	35100194	-76.48385	44.22946	465	235	230	5	1
3	35100195	35100195	-76.48179	44.22756	525	210	315	0	1
4	35100196	35100196	-76.48111	44.22573	495	200	295	0	3
5	35100197	35100197	-76.48652	44.22456	450	180	270	5	3
6	35100198	35100198	-76.48756	44.22834	500	235	265	15	5
7	35100170	35100170	-76.49538	44.22846	335	175	160	0	5
8	35100171	35100171	-76.49332	44.23198	450	220	230	5	4
9	35100189	35100189	-76.49818	44.2327	475	235	240	10	6
10	35100162	35100162	-76.51001	44.22291	295	145	150	5	5
11	35100163	35100163	-76.50728	44.22258	415	190	225	20	6
12	35100164	35100164	-76.51124	44.22834	375	185	190	20	6
13	35100166	35100166	-76.50748	44.22921	360	165	195	15	10
14	35100167	35100167	-76.50543	44.22696	585	275	310	35	11

Close the table.

Right click on the shapefile's name in the Table of Contents area in ArcMap. Select Joins and Relates ... Joins. This Dialog Box opens. Fill in the options as noted below and then click the Advance button. Select **Keep only matching records**, then OK and OK.

**Join Data**

Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.

What do you want to join to this layer?  
 Join attributes from a table

1. Choose the field in this layer that the join will be based on:  
 DAUID

2. Choose the table to join to this layer, or load the table from disk:  
 Ethnic Origin Summary  
 Show the attribute tables of layers in this list

3. Choose the field in the table to base the join on:  
 CODE

Advanced...

About Joining Data OK Cancel

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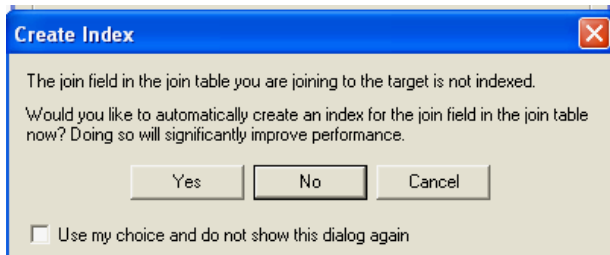
**Advanced Join Options**

Keep all records (default)  
 If a record in the target table doesn't have a match in the join table, that record is given null values for all the fields being appended into the target table from the join table.

Keep only matching records  
 If a record in the target table doesn't have a match in the join table, that record is removed from the resulting target table.  
 Note: If the target table is the attribute table of a layer, features that don't have data joined to them will not be represented in the layer when you use this option.

OK Cancel

When prompted to create an index, choose **No**.

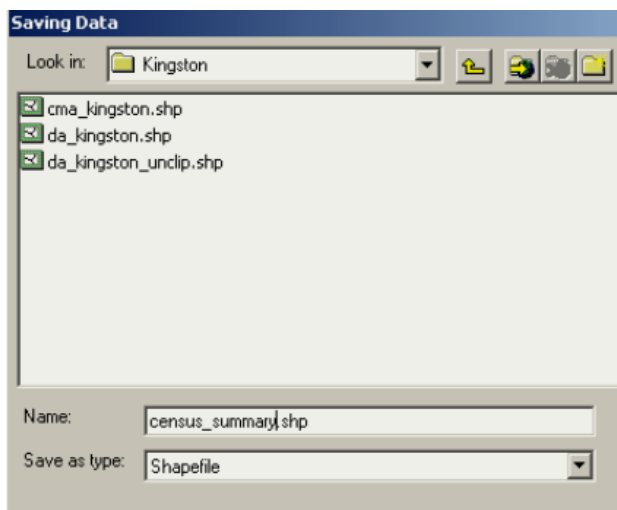


Now open the Attribute Table and see the changes after the Join.

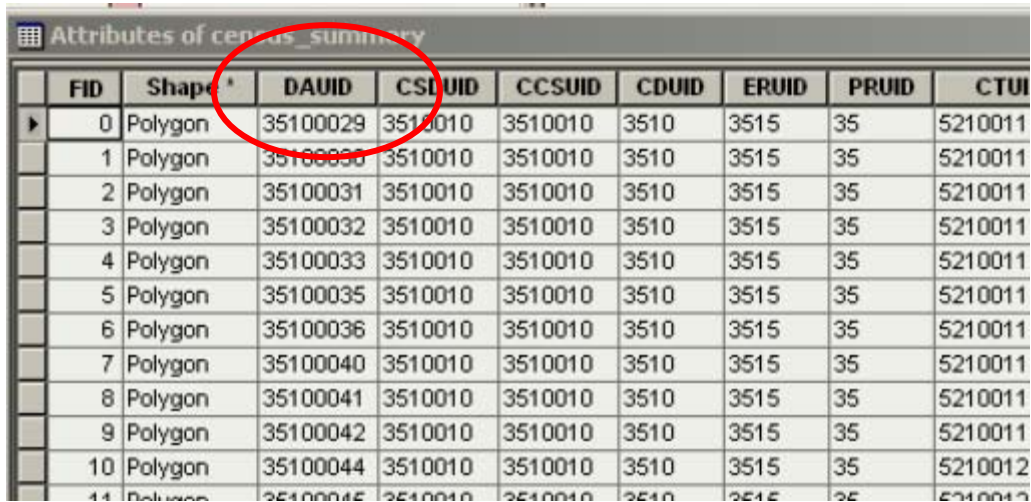
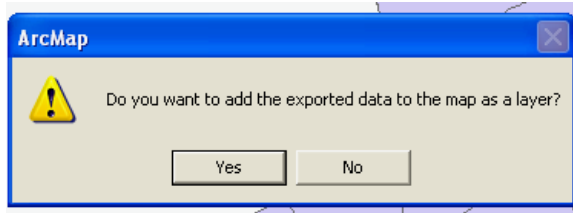
da_kingston.FID	da_kingston.Shape	da_kingston.DAUID	da_kingston.CSDUID	da_kingston.CCST
0	Polygon	35100029	3510010	3510010
1	Polygon	35100030	3510010	3510010
2	Polygon	35100031	3510010	3510010
3	Polygon	35100032	3510010	3510010

Notice that the census attribute table is joined to the dissemination area geographic table and that the headers have concatenated. They look something like **da\_kingston.DAUID** where the two former headers are joined, separated by a period.

In order to clean that up and especially to make the data easier to work with later in this exercise, right click on the shapefile name and choose **Data ... Export Data**. In the Dialog Box, Export All features, Use the same coordinate system as this layer's source data but change the name of the Output shapefile from Export-Output to something meaningful, such as **census\_summary.shp**.



Add the exported data to your map. The graphic will look very much like the map *before* the export took place, but look at the Attribute Table and note the change in the Headers.



A screenshot of the "Attributes of census\_summary" table in ArcMap. The table has 10 columns: FID, Shape, DAUID, CSUID, CCSUID, CDUID, ERUID, PRUID, and CTUID. The "Shape" column header is circled in red. The table contains 11 rows of data, with the first row having FID 0 and the last row having FID 10. The "DAUID" and "CSUID" columns contain values like 35100029 and 3510010 respectively.

FID	Shape	DAUID	CSUID	CCSUID	CDUID	ERUID	PRUID	CTUID
0	Polygon	35100029	3510010	3510010	3510	3515	35	5210011
1	Polygon	35100030	3510010	3510010	3510	3515	35	5210011
2	Polygon	35100031	3510010	3510010	3510	3515	35	5210011
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9	Polygon	35100042	3510010	3510010	3510	3515	35	5210011
10	Polygon	35100044	3510010	3510010	3510	3515	35	5210012
11	Polygon	35100045	3510010	3510010	3510	3515	35	5210011