

Guide to convert census data from ODESI into GIS data

ODESI, acronym for Ontario Data Documentation, Extraction Service and Infrastructure, is a web-based data exploration, extraction and analysis tool for social science data. The tool is available at University of Waterloo Library and provides researchers the ability to search data from thousands of datasets.

Researchers interested in analyzing Canadian demographic data can download census data directly from ODESI. If they want to use the data for spatial analysis, two additional steps are needed: download census boundary files from Tri University Data Resources (<http://www.uoguelph.ca/tdr/>) and joining census data with census boundary shapefiles.

Access to census data

1. Look for the subject guide for Statistics and Data. Go to University of Waterloo Library Homepage (<http://www.lib.uwaterloo.ca>), on the top left side, click Resources for Research and then select E-Data. This will bring out the subject guide webpage. (http://subjectguides.uwaterloo.ca/stats_data).
2. Look for a link to ODESI data portal. In the 'Key Links' section in the left side and double click ODESI Data Retrieval.



3. Look for Census of Population category which allows user to access to Canadian census data

<odesi> is best viewed using Chrome or Firefox

<odesi>

Advanced Search / Recherche avancée >>> DESCRIPTION TABULATION

- ODESI (Click to View Categories)
- Agriculture
- Business and Financial
- Census of Population**
- Communications and Information
- Consumer Surveys
- Crime and Justice
- Demographics and Population
- Education
- Elections and Politics
- Geography
- Government Finances and Economic Indicators
- Health
- Labour and Employment
- Natural Resources and Environment
- Public Opinion Polls
- Social Surveys
- Trade
- Travel
- Communications et information
- Démographie et population
- Éducation
- Emploi et main-d'oeuvre
- Enquêtes auprès des consommateurs
- Enquêtes sociales
- Géographie
- Industries et Finance
- Justice et criminalité
- Recensement de la population
- Ressources naturelles et environnement
- Santé
- Sondages d'opinion publique
- Voyages

<odesi>

A data portal for researchers, teachers and students inspiring, developing and supporting research excellence

Un portail de données à l'intention des chercheurs, professeurs et étudiants développant et à appuyer l'excellence en matière de recherche

OCUL
Ontario Council of University Libraries

Note: In many cases, it is advisable to weight analysis results before reporting them. Correct weighting requires careful attention to the weighting procedures of the study before applying the weights. To apply weights, select the Weight icon (W) and results need careful interpretation. The data collectors and the data producers bear no responsibility for the analysis.

Note: Dans la plupart des cas, il est recommandé de pondérer les résultats d'analyse avant d'en rendre compte. L'attention particulière doit être portée sur les procédures de pondération d'une étude avant d'appliquer les pondérations, sélectionner l'icône de poids (W) et choisir la variable de pondération qui sera utilisée. Les personnes chargées de la collecte et de la production des données ne peuvent être tenues responsables des résultats de l'analyse.

- Expand Census of Population category. Click the + sign by the category-> Canada-> 2006 until you see a view like one below. Profiles and Topic Base Tabulation are two series of tables presenting demographic variables by in various levels of geography.

<odesi> is best viewed using Chrome or Firefox

<odesi>

Advanced Search / Recherche avancée >>> DESCRIPTION TABULATION ANALYSIS

- ODESI (Click to View Categories)
- Agriculture
- Business and Financial
- Census of Population
 - CANADA**
 - 2006**
 - Profiles
 - Public Use Microdata Files (PUMF)
 - Topic Based Tabulations (TBT)
 - Census of Population, 2006 [Canada]: Population and Dwelling Counts [Excel] **NEW**
 - 2001
 - 1996
 - 1991
 - 1986
 - 1981
 - 1976
 - 1971
 - 1901
 - 1881
 - 1871
 - Communications and Information
 - Consumer Surveys
 - Crime and Justice
 - Demographics and Population

Dataset: Census of Population, 2006 [Canada]: Population and Dwelling Counts [Excel]

Abstract:

The Census 2006 Population and Dwelling Counts (PDC) tables show the distribution of population in Canada, province and territory, federal electoral district (FED) (2003 Representation Order), census and their zones of influence, census division/census subdivision (CD/CSD), urban area (UA), design Data are also provided for land area and population density. Geographic boundaries are those in effect.

Note: In many cases, it is advisable to weight analysis results before reporting them. Correct weighting requires careful attention to the weighting procedures of the study before applying the weights. To apply weights, select the Weight icon (W) and results need careful interpretation. The data collectors and the data producers bear no responsibility for the analysis.

Note: Dans la plupart des cas, il est recommandé de pondérer les résultats d'analyse avant d'en rendre compte. L'attention particulière doit être portée sur les procédures de pondération d'une étude avant d'appliquer les pondérations, sélectionner l'icône de poids (W) et choisir la variable de pondération qui sera utilisée. Les personnes chargées de la collecte et de la production des données ne peuvent être tenues responsables des résultats de l'analyse.

Download a 2006 Profiles Series table

- Navigate the Profiles category to find the link to data access page. Click to expand Metadata->Study Description-> Data Access to find the link to the data access page as one shown on the last screen capture.

Advanced Search / Recherche avancée

- ODESI (Click to View Categories)
 - Agriculture
 - Business and Financial
 - Census of Population
 - CANADA
 - 2006
 - Profiles
 - Census of Population, 2006 [Canada]: Profile Series [B2020 files]
 - Metadata
 - Public Use Microdata Files (PUMF)
 - Topic Based Tabulations (TBT)
 - Census of Population, 2006 [Canada]: Population and Dwelling Counts [Excel] **NEW**

ODESI (Click to View Categories)

- Agriculture
- Business and Financial
- Census of Population
 - CANADA
 - 2006
 - Profiles
 - Census of Population, 2006 [Canada]: Profile Series [B2020 files]
 - Metadata
 - Study Description
 - Bibliographic Citation
 - Study Scope
 - Methodology And Processing
 - Data Access
 - Other Study Description Materials
 - Data Files Description
 - Other Documentation

ODESI (Click to View Categories)

- Agriculture
- Business and Financial
- Census of Population
 - CANADA
 - 2006
 - Profiles
 - Census of Population, 2006 [Canada]: Profile Series [B2020 files]
 - Metadata
 - Study Description
 - Bibliographic Citation
 - Study Scope
 - Methodology And Processing
 - Data Access
 - Other Study Description Materials
 - Data Files Description
 - Other Documentation

Advanced Search / Recherche avancée

Dataset: Census of Population, 2006 [Canada]: Profile Series [B2020 files]

Data Set Availability
Media: Beyond 2020

Location
[Access Census Profiles - B2020 tables HERE](#)

Archive where study originally stored
Statistics Canada

Availability Status
Available / ongoing

Extent of Collection
Complete cumulative profile, including income and earnings, and shelter costs and 6 release components including: Age and Sex, Marital status, Common-law status, Families, Dwellings and households, Language, Immigration, Citizenship, Mobility and migration, Aboriginal peoples, Labour market activity, Industry, Occupation, Education, Language of work, Place of work and mode of transportation, and Ethnic origin and visible minorities.

Restrictions
The data is restricted to use by current students, faculty and staff of [Ontario Council of University Libraries \(OCUL\)](#) Member Libraries for academic research and teaching only.

- Browse 2006 Census of Population B2020 Aggregate Data. Click “Access Census Profiles – B2020 Tables Here” to open up a new webpage. It will look like one below. All census data files are separated by topic and each topic is separated by geography.



2006 CENSUS OF POPULATION : PROFILE SERIES - by Topic

B2020 Aggregate Data (.ivt format)

To view Profiles by Geographic Area (Cumulative)

The following data is presented in the **Beyond 2020** format. In order to view this data you must download and install the B2020 browser software. You may obtain this software [HERE](#)

To: [Analysis Series](#)

The files below are divided by topic, and within that topic by census geographic division.

Jump to: [Aboriginal Peoples](#); [Age & Sex](#); [Ethnic Origin and Visible Minorities](#); [Labour Market Activity, Industry, Occupation, Education, Language of Work, Place of Work and Mode of Transportation](#); [Language, Immigration, Citizenship, Mobility and Migration](#); [Marital Status, Common-law Status, Families, Dwellings, Households](#);

Census Geographies: Canada, Provinces, Territories, Census Divisions, Census Subdivisions, Dissemination Areas, Forward Sortation Areas, Census Metropolitan Areas, Census Agglomerations, Census Tracts, Federal Electoral Districts (2003 Representation Order), Designated Places, Urban Areas, Statistical Areas Classification.

CANADA

94-581-XCB2006001	Profile for Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census
94-581-XCB2006002	Profile for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2006 Census
94-581-XCB2006003	Profile for Canada, Provinces, Territories and Forward Sortation Areas, 2006 Census
94-581-XCB2006004	Profile for Census Metropolitan Areas and Census Agglomerations, 2006 Census
94-581-XCB2006005	Profile for Census Metropolitan Areas, Tracted Census Agglomerations and Census Tracts, 2006 Census
94-581-XCB2006006	Profile for Census Metropolitan Areas, Census Agglomerations and Census Subdivisions, 2006 Census,
94-581-XCB2006007	Profile for Canada, Provinces, Territories and Federal Electoral Districts (2003 Representation Order), 2006 Census
94-581-XCB2006008	Profile for Designated Places, 2006 Census
94-581-XCB2006009	Profile for Urban Areas, 2006 Census
94-581-XCB2006010	Profile for Dissolved Census Subdivisions, 2006 Census
94-581-XCB2006011	Profile for Statistical Area Classification, 2006 Census

Profile of Aboriginal Peoples

94-578-XCB2006001	Profile of Aboriginal Peoples for Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census
94-578-XCB2006002	Profile of Aboriginal Peoples for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2006 Census
94-578-XCB2006003	Profile of Aboriginal Peoples for Canada, Provinces, Territories, and Forward Sortation Areas, 2006 Census

- Download and install Beyond 2020 browser software. All data files are in B2020 (.ivt) format. If your computer has not installed Beyond 2020 Browser, you will need to download and install it. The software can be downloaded from this website: <http://estat.statcan.gc.ca/Estat/English/beyond20-eng.shtml> . The installation instructions are given below:
 - Download an executable program to a location on your local hard drive
 - Double click on the executable program to begin the installation
 - Follow the installation prompts on your screen
 - The Beyond program will be installed in Program Files\Beyond 2020\Professional Browser
- Now you are going to download a B2020 ivt file. The example here is an Age and Sex subject file : 94-578-XCB2006005 as highlighted below. Click the file and start a download.

Profile of Aboriginal Peoples

94-578-XCB2006001	Profile of Aboriginal Peoples for Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census
94-578-XCB2006002	Profile of Aboriginal Peoples for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2006 Census
94-578-XCB2006003	Profile of Aboriginal Peoples for Canada, Provinces, Territories, and Forward Sortation Areas, 2006 Census
94-578-XCB2006004	Profile of Aboriginal Peoples for Census Metropolitan Areas and Census Agglomerations, 2006 Census
94-578-XCB2006005	Profile of Aboriginal Peoples for Census Metropolitan Areas, Tracted Census Agglomerations and Census Tracts, 2006 Census
94-578-XCB2006006	Profile of Aboriginal Peoples for Census Metropolitan Areas, Census Agglomerations and Census Subdivisions, 2006 Census
94-578-XCB2006007	Profile of Aboriginal Peoples for Canada, Provinces, Territories, and Federal Electoral Districts (2003 Representation Order), 2006 Census
94-578-XCB2006008	Profile of Aboriginal Peoples for Designated Places, 2006 Census
94-578-XCB2006009	Profile of Aboriginal Peoples for Urban Areas, 2006 Census

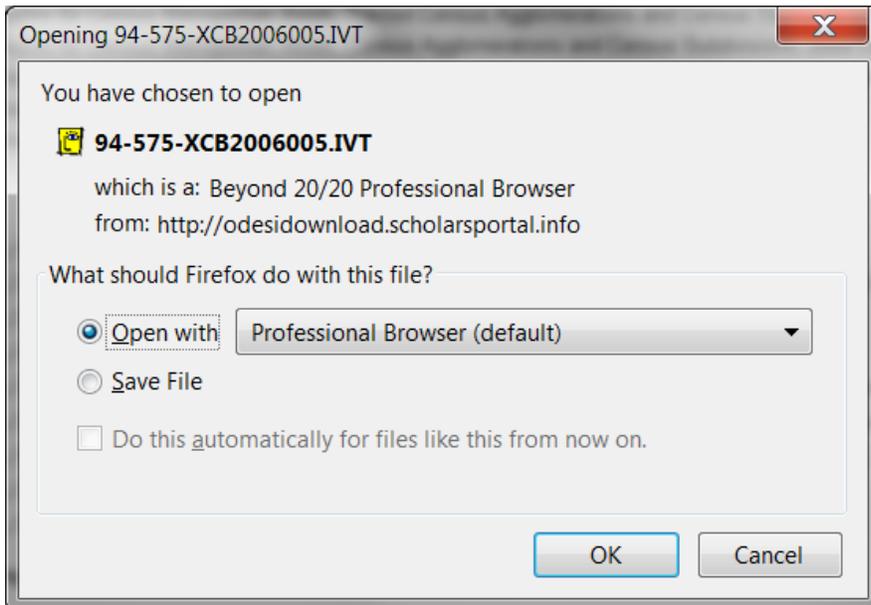
Age and Sex

94-575-XCB2006001	Profile of Age and Sex, for Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census
94-575-XCB2006002	Profile of Age and Sex, for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2006 Census
94-575-XCB2006003	Profile of Age and Sex, for Canada, Provinces, Territories and Forward Sortation Areas, 2006 Census
94-575-XCB2006004	Profile of Age and Sex, for Census Metropolitan Areas and Census Agglomerations, 2006 Census
94-575-XCB2006005	Profile of Age and Sex, for Census Metropolitan Areas, Tracted Census Agglomerations and Census Tracts, 2006 Census
94-575-XCB2006006	Profile of Age and Sex, for Census Metropolitan Areas, Census Agglomerations and Census Subdivisions, 2006 Census
94-575-XCB2006007	Profile of Age and Sex, for Canada, Provinces, Territories and Federal Electoral Districts (2003 Representation Order), 2006 Census
94-575-XCB2006008	Profile of Age and Sex, for Designated Places, 2006 Census
94-575-XCB2006009	Profile of Age and Sex, for Urban Areas, 2006 Census

Marital Status, Common-law Status, Families, Dwellings and Households

94-576-XCB2006001	Profile of Marital Status, Common-law Status, Families, Dwellings and Households for Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census
94-576-XCB2006002	Profile of Marital Status, Common-law Status, Families, Dwellings and Households for Canada, Provinces, Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2006 Census
94-576-XCB2006003	Profile of Marital Status, Common-law Status, Families, Dwellings and Households for Canada, Provinces, Territories, Census Divisions and Forward Sortation Areas, 2006 Census

9. Open the file with B2020 browser. If you see a popup message like below, click OK to view the table. If you don't see it, check if the browser is installed on your PC.



Explore and export census table

- Check the table dimensions. The dimensions are the column or row headings of the table. When the B2020 browser opens, the geography dimension is along the columns, and the census data is along the rows. This dimension arrangement is opposite to what is needed for spatial analysis.

The screenshot shows a web browser window titled 'Beyond 20/20 Professional Browser - [Profile of Age and Sex for Census Metropolitan Areas, Tracted Census Agglomerations and Census Tracts, 2006 Census (Re)]'. The 'Dimension' menu is open, showing 'Profile of Cens' selected. The table below has 'Geography' as a column header and 'Profile of Cens' as a row header. The data is organized as follows:

Profile of Cens	St. John's (001) 00000	0001.00 (001000100) ...	0002.00 (001000200) ...	0003.01 (001000301) ...	0003.02 (001000302) ...	0004.00 (001000400) ...	0005.01 (001000501) ...	0005.02 (001000502) ...	0006.00 (001000600) ...	0007.00 (001000700) ...
Population, 2001 - 100% data	172,918.00	2,162.00	5,081.00	4,843.00	5,437.00	6,800.00	2,807.00	3,659.00	3,355.00	...
Population, 2006 - 100% data	181,113.00	2,004.00	4,942.00	4,586.00	5,004.00	7,278.00	2,532.00	3,584.00	3,249.00	...
Population percentage change, 2001 to 2006	4.70	-7.30	-2.70	-5.30	-8.00	7.00	-9.80	-2.00	-3.20	...
Land area in square kilometres, 2006	804.64	10.12	1.96	1.63	1.94	9.23	0.96	0.98	1.08	...
Total population by sex and age groups - 10...	181,115.00	2,000.00	4,945.00	4,590.00	5,005.00	7,280.00	2,530.00	3,585.00	3,250.00	...
Male, total	86,650.00	1,000.00	2,220.00	2,115.00	2,285.00	3,275.00	1,140.00	1,640.00	1,595.00	...
0 to 4 years	4,715.00	50.00	105.00	95.00	95.00	195.00	45.00	80.00	55.00	...
5 to 9 years	5,000.00	65.00	115.00	95.00	145.00	200.00	45.00	80.00	40.00	...
10 to 14 years	5,290.00	80.00	105.00	115.00	190.00	180.00	50.00	95.00	55.00	...
15 to 19 years	6,085.00	85.00	130.00	135.00	195.00	235.00	75.00	125.00	75.00	...
20 to 24 years	6,780.00	65.00	140.00	180.00	190.00	405.00	60.00	225.00	150.00	...
25 to 29 years	6,155.00	60.00	125.00	150.00	170.00	315.00	90.00	150.00	185.00	...
30 to 34 years	6,185.00	50.00	135.00	130.00	145.00	240.00	85.00	130.00	140.00	...
35 to 39 years	6,395.00	70.00	170.00	140.00	115.00	210.00	80.00	100.00	140.00	...
40 to 44 years	7,200.00	90.00	190.00	190.00	185.00	210.00	85.00	120.00	120.00	...
45 to 49 years	7,065.00	75.00	195.00	140.00	210.00	205.00	100.00	125.00	160.00	...
50 to 54 years	6,745.00	75.00	170.00	175.00	190.00	230.00	105.00	115.00	120.00	...
55 to 59 years	5,880.00	75.00	135.00	170.00	145.00	200.00	85.00	100.00	115.00	...
60 to 64 years	4,490.00	45.00	110.00	135.00	85.00	140.00	65.00	65.00	75.00	...
65 to 69 years	3,070.00	55.00	90.00	95.00	70.00	105.00	50.00	50.00	60.00	...
70 to 74 years	2,270.00	20.00	105.00	65.00	40.00	80.00	60.00	30.00	60.00	...
75 to 79 years	1,575.00	15.00	85.00	45.00	60.00	60.00	35.00	25.00	25.00	...
80 to 84 years	1,085.00	15.00	65.00	50.00	45.00	30.00	20.00	20.00	20.00	...

- Switch the table dimensions. Click and drag 'Geography' move over 'Profile' dimension area (the dark blue area).

The screenshot shows the same browser window, but the 'Dimension' menu is now set to 'Geography'. The 'Geography' label is highlighted in a red box, and a red arrow points to the 'Profile of Cens' row header area, indicating the intended drag-and-drop action. The table structure is now as follows:

Geography	St. John's (001) 00000	0001.00 (001000100) ...	0002.00 (001000200) ...	0003.01 (001000301) ...	0003.02 (001000302) ...	0004.00 (001000400) ...	0005.01 (001000501) ...	0005.02 (001000502) ...	0006.00 (001000600) ...	0007.00 (001000700) ...
Profile of Cens	172,918.00	2,162.00	5,081.00	4,843.00	5,437.00	6,800.00	2,807.00	3,659.00	3,355.00	...
Population, 2001 - 100% data	181,113.00	2,004.00	4,942.00	4,586.00	5,004.00	7,278.00	2,532.00	3,584.00	3,249.00	...
Population, 2006 - 100% data	4.70	-7.30	-2.70	-5.30	-8.00	7.00	-9.80	-2.00	-3.20	...
Population percentage change, 2001 to 2006	804.64	10.12	1.96	1.63	1.94	9.23	0.96	0.98	1.08	...
Land area in square kilometres, 2006	181,115.00	2,000.00	4,945.00	4,590.00	5,005.00	7,280.00	2,530.00	3,585.00	3,250.00	...
Total population by sex and age groups - 10...	86,650.00	1,000.00	2,220.00	2,115.00	2,285.00	3,275.00	1,140.00	1,640.00	1,595.00	...
Male, total	4,715.00	50.00	105.00	95.00	95.00	195.00	45.00	80.00	55.00	...
0 to 4 years	5,000.00	65.00	115.00	95.00	145.00	200.00	45.00	80.00	40.00	...
5 to 9 years	5,290.00	80.00	105.00	115.00	190.00	180.00	50.00	95.00	55.00	...
10 to 14 years	6,085.00	85.00	130.00	135.00	195.00	235.00	75.00	125.00	75.00	...
15 to 19 years	6,780.00	65.00	140.00	180.00	190.00	405.00	60.00	225.00	150.00	...
20 to 24 years	6,155.00	60.00	125.00	150.00	170.00	315.00	90.00	150.00	185.00	...
25 to 29 years	6,185.00	50.00	135.00	130.00	145.00	240.00	85.00	130.00	140.00	...
30 to 34 years	6,395.00	70.00	170.00	140.00	115.00	210.00	80.00	100.00	140.00	...
35 to 39 years	7,200.00	90.00	190.00	190.00	185.00	210.00	85.00	120.00	120.00	...
40 to 44 years	7,065.00	75.00	195.00	140.00	210.00	205.00	100.00	125.00	160.00	...
45 to 49 years	6,745.00	75.00	170.00	175.00	190.00	230.00	105.00	115.00	120.00	...
50 to 54 years	5,880.00	75.00	135.00	170.00	145.00	200.00	85.00	100.00	115.00	...
55 to 59 years	4,490.00	45.00	110.00	135.00	85.00	140.00	65.00	65.00	75.00	...
60 to 64 years	3,070.00	55.00	90.00	95.00	70.00	105.00	50.00	50.00	60.00	...
65 to 69 years	2,270.00	20.00	105.00	65.00	40.00	80.00	60.00	30.00	60.00	...
70 to 74 years	1,575.00	15.00	85.00	45.00	60.00	60.00	35.00	25.00	25.00	...
75 to 79 years	1,085.00	15.00	65.00	50.00	45.00	30.00	20.00	20.00	20.00	...
80 to 84 years	...	...	...	...	...	...	...	...	...	...

This will ensure that the Geography data is along the rows, census data along columns.

Beyond 20/20 Professional Browser - [Profile of Age and Sex for Census Metropolitan Areas, Tracted Census Agglomerations and Census Tracts

File Edit View Dimension Item Window Help

Geography

Values: Values

Profile of Cens	Population, 2001 - 100% data	Population, 2006 - 100% data	Population percentage c...	Land area in square kilom...	Total population by sex an...	Male, total	0 to 4 yea
St. John's (001) 00000	172,918.00	181,113.00	4.70	804.64	181,115.00	86,650.00	4,715
0001.00 (001000100) 00000	2,162.00	2,004.00	-7.30	10.12	2,000.00	1,000.00	50
0002.00 (001000200) 01010	5,081.00	4,942.00	-2.70	1.96	4,945.00	2,220.00	105
0003.01 (001000301) 01010	4,843.00	4,586.00	-5.30	1.63	4,590.00	2,115.00	95
0003.02 (001000302) 00010	5,437.00	5,004.00	-8.00	1.94	5,005.00	2,285.00	95
0004.00 (001000400) 01010	6,800.00	7,278.00	7.00	9.23	7,280.00	3,275.00	195
0005.01 (001000501) 01010	2,807.00	2,532.00	-9.80	0.96	2,530.00	1,140.00	45
0005.02 (001000502) 01010	3,659.00	3,584.00	-2.00	0.98	3,585.00	1,640.00	80
0006.00 (001000600) 02020	3,355.00	3,249.00	-3.20	1.08	3,250.00	1,595.00	55
0007.00 (001000700) 02020	2,615.00	2,395.00	-8.40	0.56	2,400.00	1,240.00	45
0008.00 (001000800) 00000	1,616.00	1,630.00	0.90	2.46	1,635.00	780.00	30
0009.00 (001000900) 01010	581.00	507.00	-12.70	0.52	505.00	245.00	5

12. Change geography dimension label. The key information in the geography label is the census tract ID, for example 001001300. To change label, go to Dimension -> Change Labels.

Beyond 20/20 Professional Browser - [Profile of Age and Sex for Census Metropolitan Areas, Tracted Census

File Edit View Dimension Item Window Help

Geography

Values: Values

Summary
Sort...
Search...
Reverse
Show All
Reset
Drill Down
Drill Up
Drill Back
Change Labels
Load Profile...
Save Profile...

Profile of Cens	Population, 2001 - 100% data	Population, 2006 - 100% data	Population percentage c...	Land area in square kilom...	Total po
St. John's (001) 0000	172,918.00	181,113.00	4.70	804.64	181,115.00
0001.00 (001000100)	2,162.00	2,004.00	-7.30	10.12	2,000.00
0002.00 (001000200)	5,081.00	4,942.00	-2.70	1.96	4,945.00
0003.01 (001000301)	4,843.00	4,586.00	-5.30	1.63	4,590.00
0003.02 (001000302)	5,437.00	5,004.00	-8.00	1.94	5,005.00
0004.00 (001000400)	6,800.00	7,278.00	7.00	9.23	7,280.00
0005.01 (001000501)	2,807.00	2,532.00	-9.80	0.96	2,530.00
0005.02 (001000502)	3,659.00	3,584.00	-2.00	0.98	3,585.00
0006.00 (001000600)	3,355.00	3,249.00	-3.20	1.08	3,250.00
0007.00 (001000700)	2,615.00	2,395.00	-8.40	0.56	2,400.00
0008.00 (001000800) 00000	1,616.00	1,630.00	0.90	2.46	1,635.00
0009.00 (001000900) 01010	581.00	507.00	-12.70	0.52	505.00
0010.00 (001001000) 01010	1,630.00	1,525.00	-6.40	0.62	1,525.00
0011.00 (001001100) 01020	2,811.00	2,815.00	0.10	0.49	2,815.00
0012.00 (001001200) 01010	2,700.00	2,728.00	1.00	1.48	2,728.00
0013.00 (001001300) 01010	2,054.00	1,814.00	-11.70	0.90	1,814.00
0014.00 (001001400) 00010	3,360.00	3,465.00	3.10	1.58	3,465.00
0015.01 (001001501) 00000	1,790.00	1,190.00	-33.00	10.11	1,190.00

Repeat this step until you see a label with only census ID as shown below.

Geography	Population, 2001 - 100% data	Population, 2006 - 100% data	Population percentage c...	Land area in square kilom...	Total pc by se
001	172,918.00	181,113.00	4.70	804.64	18
001000100	2,162.00	2,004.00	-7.30	10.12	
001000200	5,081.00	4,942.00	-2.70	1.96	
001000301	4,843.00	4,586.00	-5.30	1.63	
001000302	5,437.00	5,004.00	-8.00	1.94	

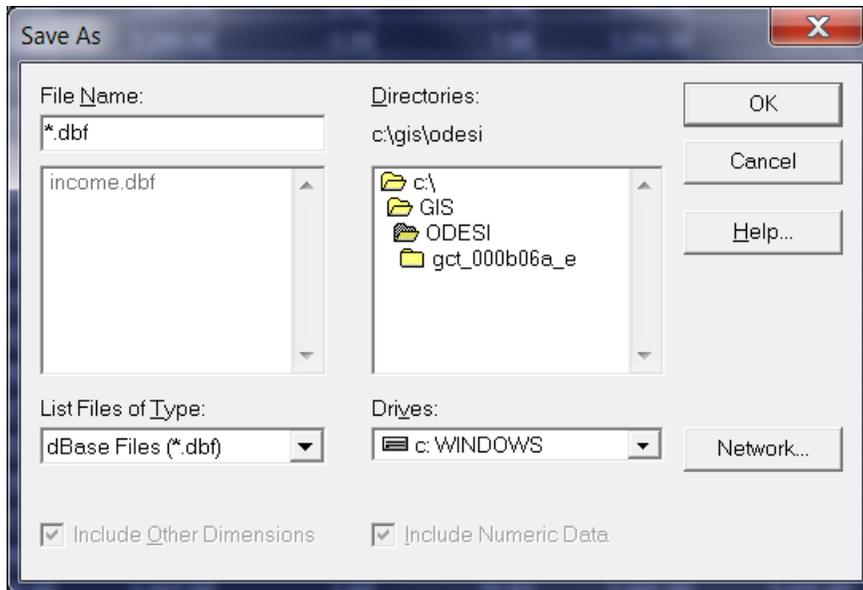
13. Export the census table. Go to Item-> Select All. All selected cells turn black.

Geography	Population, 2001 - 100% data	Population, 2006 - 100% data	Population percentage c...	Land area in square kilom...	Total populat by sex an.
001	172,918.00	181,113.00	4.70	804.64	181,11
001000100	2,162.00	2,004.00	-7.30	10.12	2,00
001000200	5,081.00	4,942.00	-2.70	1.96	4,94
001000301	4,843.00	4,586.00	-5.30	1.63	4,59
001000302	5,437.00	5,004.00	8.00	1.94	5,00

Next go to File -> Save As.

File	Edit	View	Dimension	Item	Window	Help
Open...						
Close						
Find...						
Summary						
Save As...						
Page Setup...						
Print Preview						
Print...						
Utilities						
Exit						

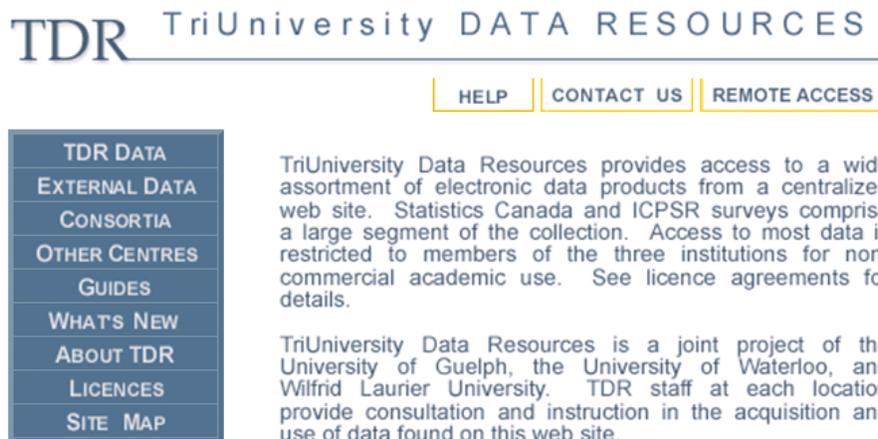
14. Save the data as a dBase table. You will need to select a folder in C drive, then define 'List Files of Type' as 'dBase File (*.dbf)', and assign a file name (Age_sex1.dbf in this tutorial). Click OK when finish.



Download and a census geographic file

Once the dBase table is ready and your next step is to find a census geographic file (Census tract boundary). The shapefile is available in TriUniversity Data Resources (TDR)

15. Navigate to TDR site. Open an Internet browser (IE or Firefox), type in the TDR address in the address bar <http://www.uoguelph.ca/tdr/>. You will see a page like below.



16. Navigate to the webpage for Canadian Census Geographic Files. Click 'TDR Data' and then click 'Geographic Files'. This will lead you to a webpage of TDR geographic data.

TDR TriUniversity DATA RESOURCES

[HELP](#) | [CONTACT US](#) | [REMOTE ACCESS](#)

- TDR DATA**
- EXTERNAL DATA
- CONSORTIA
- OTHER CENTRES
- GUIDES
- WHAT'S NEW
- ABOUT TDR
- LICENCES
- SITE MAP

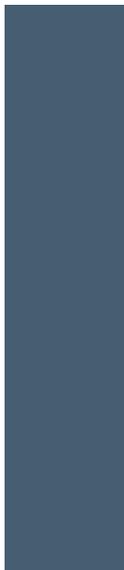
- Nesstar Web-Retrieval
- CANSIM
- E-STAT
- Geographic Files
- ICPSR
- Local Climate Data
- Penn World Tables

Data Resources provides access to a wide range of electronic data products from a centralized location. Statistics Canada and ICPSR surveys comprise the majority of the collection. Access to most data is available to members of the three institutions for non-commercial use. See licence agreements for details.

Canadian Census Geographic files

Data Resources is a joint project of the University of Toronto, the University of Waterloo, and the University of Western Ontario. TDR staff at each location provide consultation and instruction in the acquisition and use of data found on this web site.

17. Navigate to the spatial files section. Click 'Spatial Files'



TDR GEOGRAPHIC DATA

[HOME](#) | [HELP](#) | [TDR DATA](#) | [LICENCES](#) | [CONTACT US](#)

GEOGRAPHIC CENSUS DATA FOR 2006, 2001, 1996, 1991, (+ partial 1986 & 1981)

Jump to: [Help/Information](#) | **[Spatial Files](#)** | [Attribute Files](#) | [Maps](#)

Digital geographic products are available for both [spatial](#) and [attribute](#) information. Spatial data files use [latitude](#) and [longitude](#) coordinates to define the shape and location of geographic features while attribute files provide descriptive information about the features.

The files are accessible over the stats - server by:

You will see a view like below. Find 'Cartographic Boundary Files (CBF)' and click it. This will open up a new webpage for cartographic boundary files (2001 and 2006).

- A limited number of files have been produced for the 1981 & 1986 Census years.

[Back to top](#)

SPATIAL FILES :

GEOGRAPHIC SERIES	DATES AVAILABLE
Digital Boundary Files (DBF)	1981(limited), 1986, 1991, 1996 Discontinued in 2001 Available in 2006
Digital Cartographic Files (DCF)	1991, 1996 Replaced by (CBF) in 2001
Cartographic Boundary Files (CBF)	2001, 2006
Census Agricultural Region Cartographic Boundary File	1996, 2001, 2006 (new for 2006 - cartographic and digital boundary files)
Forward Sortation Area Boundary File	2001
Population Ecumene Census Division Boundary File	New for 2001, 2006

18. Navigate to Cartographic boundary files webpage. Click 'Datasets' and this will bring you to the geographical file section.



CARTOGRAPHIC BOUNDARY FILES

[Description](#) - [User Guides](#) - [Datasets](#) - [back to Geographic Census Data Index](#)

DESCRIPTION:

The boundaries of the geographic areas reflect those in effect on January 1, 2006 (the geographic reference date for the 2006 Census of Canada).

Cartographic boundary files are created by integrating Canada's external shoreline with the selected source boundary layer from the Spatial Data Infrastructure (SDI). The boundaries extending into water bodies are 'erased' and replaced by the shoreline and offshore islands. The hydrographic features are also from the Spatial Data Infrastructure (SDI). Further adjustments are made, such as the feature selection and the ranking of features for scale dependent mapping.

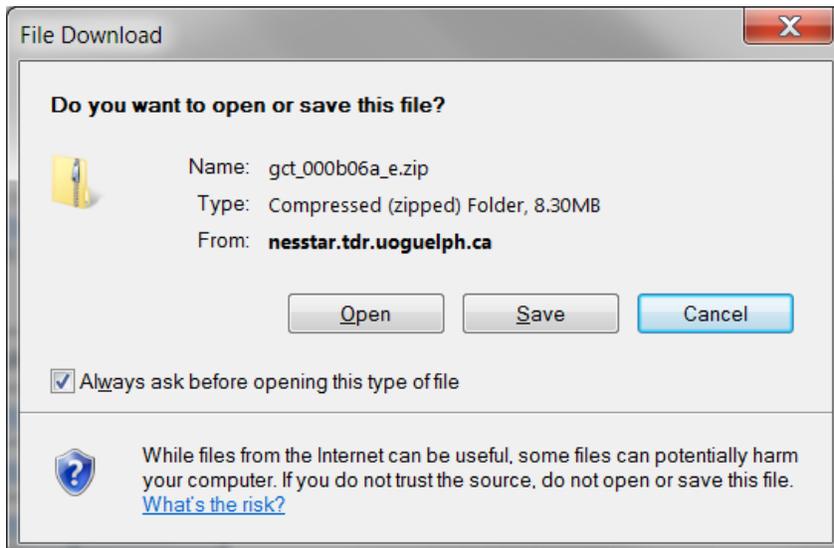
You will see a page like below. Find 'Census Tracts' and click 'ArcInfo'.

2006

In the tables below, the 2006 Data are available in either [ArcInfo\(r\)](#) Export format (*.E00), or in [MapInfo \(r\)](#) Format in the [Lambert Projection](#) or in the [Latitude / Longitude Projection](#). Most files are available in both formats. The Data are also available from the [Statistics Canada website](#) in [Geography Markup Language \(GML\)](#)

GEOGRAPHIC AREA	CANADA	
Provinces and Territories	ArcInfo	MapInfo
Federal Electoral Districts	ArcInfo	MapInfo
Economic Regions	ArcInfo	MapInfo
Census Divisions	ArcInfo	MapInfo
Consolidated Census Subdivisions	ArcInfo	MapInfo
Census Subdivisions	ArcInfo	MapInfo
Census Metropolitan Area/Census Agglomeration	ArcInfo	MapInfo
Census Tracts	ArcInfo	MapInfo
Urban Areas	ArcInfo	MapInfo
Designated Places	ArcInfo	MapInfo
Dissemination Areas	ArcInfo	MapInfo
Forward Sortation Areas	ArcInfo	MapInfo
Dissemination Block	ArcInfo	MapInfo

19. Save the census tract file in a folder. Click 'Save' and save the zip file in a folder.



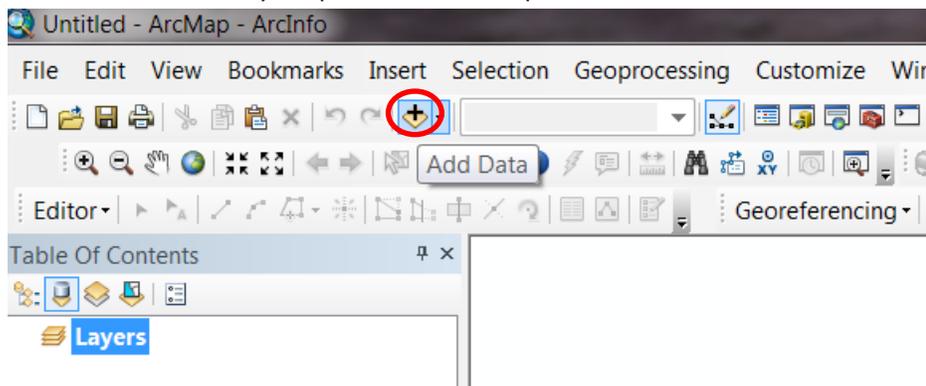
20. Unzip the zip file. After decompression, the Census Tract (CT) boundary shapefile will look like below.

Name	Date modified	Type	Size
gct_000b06a_e.dbf	2011-12-16 10:15 ...	DBF File	80 KB
gct_000b06a_e.prj	2011-12-16 10:15 ...	notepad	1 KB
gct_000b06a_e.shp	2011-12-16 10:15 ...	ESRI Shape File	13,791 KB
gct_000b06a_e.shx	2011-12-16 10:15 ...	SHX File	40 KB

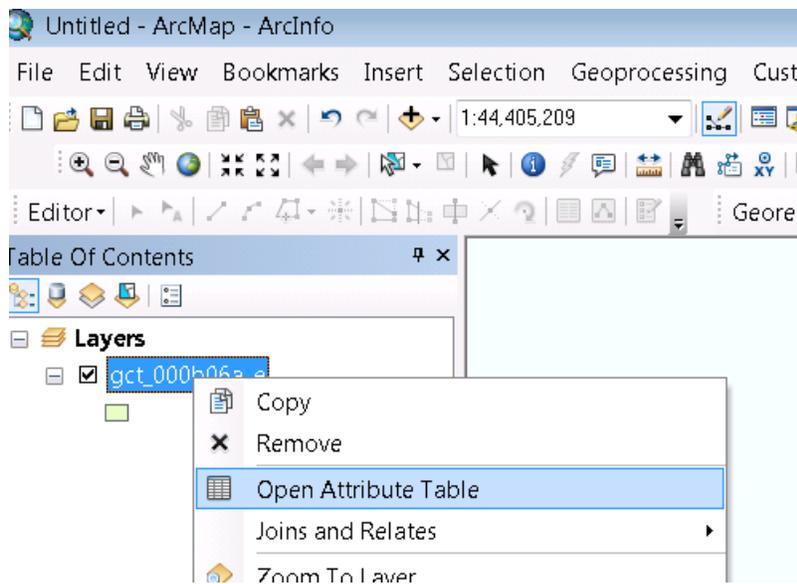
Modify the CT shapefile's attribute table

All records in the CTUID field can't be directly joined into the matching field in the dBase table without modification.

21. Add the CT shapefile into ArcMap. Open the ArcMap and click 'Add Data' button to add the census tract boundary shapefile into ArcMap.



22. Open the attribute table. Right click under the shapefile in Table of Contents and select 'Open Attribute Table'.



23. The CTUID field can't be used to join to 'Geography' field of the dBase table because their field values are not in the same format. So you will need to create a new CTUID field to keep the modified values.

Table

gct_000b06a_e

	FID	Shape	CTUID	CMAUID	PRUID
▶	0	Polygon	0010001.00	001	10
	1	Polygon	0010002.00	001	10
	2	Polygon	0010003.01	001	10
	3	Polygon	0010003.02	001	10
	4	Polygon	0010004.00	001	10
	5	Polygon	0010005.01	001	10
	6	Polygon	0010005.02	001	10

Table

Age_sex1

	OID	GEOGRAPHY	POPULATION
	0	001	172918
	1	001000100	2162
	2	001000200	5081
	3	001000301	4843
	4	001000302	5437
	5	001000400	6800
	6	001000501	2807
	7	001000502	3659
	8	001000600	3355

24. Add a new field into the attribute table. Click under the 'Table Options' and then select 'Add Field'.

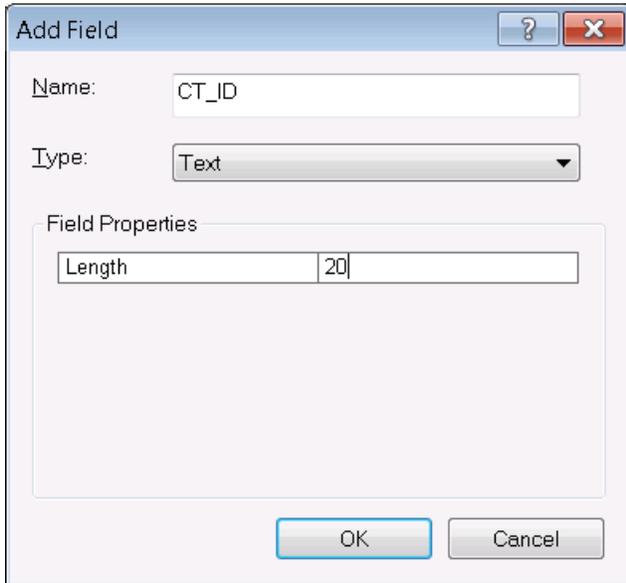
Table

PRUID

10
10
10
10
10
10
10
10
10
10
10
10
10

Find & Replace...
 Select By Attributes...
 Clear Selection
 Switch Selection
 Select All
 Add Field...
 Turn All Fields On
 Show Field Aliases
 Arrange Tables
 Restore Default Column Widths

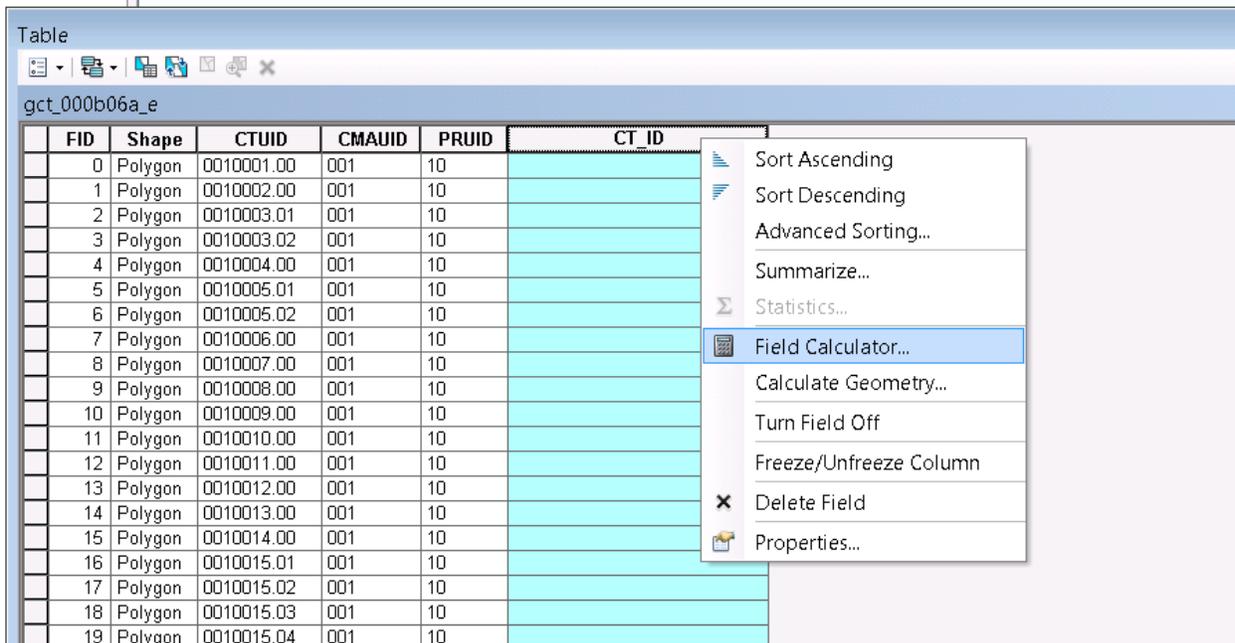
You will see a new 'Add Field' message window. Enter a name as 'CT_ID', set the type as 'Text' and length as '20'. Click OK when finish.



The 'Add Field' dialog box is shown with the following details:

- Name: CT_ID
- Type: Text
- Field Properties: Length 20
- Buttons: OK, Cancel

25. Perform a field calculation. Now you are going to do a field calculation to remove '.' in each CTUID record.

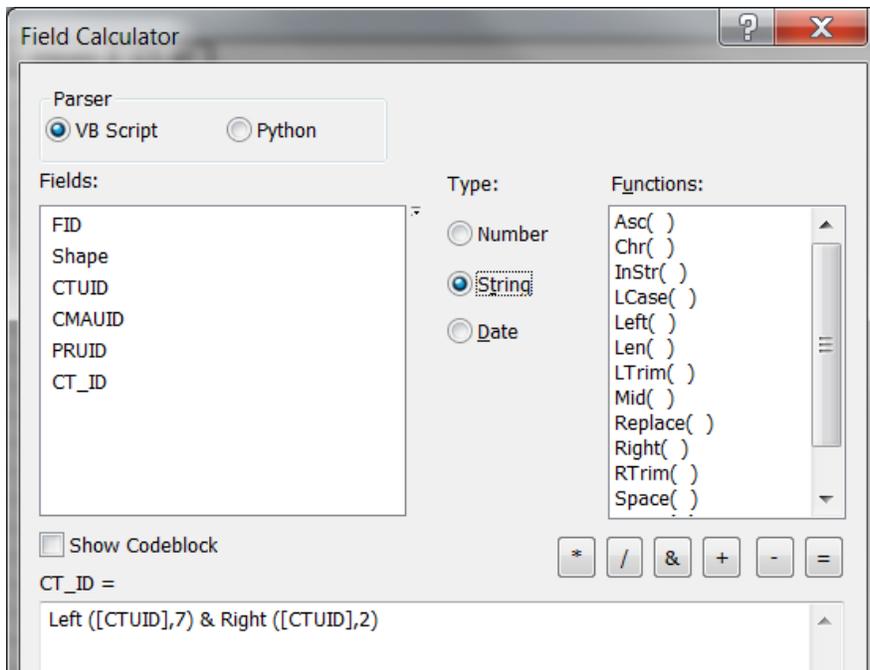


The table window displays the following data:

FID	Shape	CTUID	CMAUID	PRUID	CT_ID
0	Polygon	0010001.00	001	10	
1	Polygon	0010002.00	001	10	
2	Polygon	0010003.01	001	10	
3	Polygon	0010003.02	001	10	
4	Polygon	0010004.00	001	10	
5	Polygon	0010005.01	001	10	
6	Polygon	0010005.02	001	10	
7	Polygon	0010006.00	001	10	
8	Polygon	0010007.00	001	10	
9	Polygon	0010008.00	001	10	
10	Polygon	0010009.00	001	10	
11	Polygon	0010010.00	001	10	
12	Polygon	0010011.00	001	10	
13	Polygon	0010012.00	001	10	
14	Polygon	0010013.00	001	10	
15	Polygon	0010014.00	001	10	
16	Polygon	0010015.01	001	10	
17	Polygon	0010015.02	001	10	
18	Polygon	0010015.03	001	10	
19	Polygon	0010015.04	001	10	

The context menu is open over the CT_ID column, showing options: Sort Ascending, Sort Descending, Advanced Sorting..., Summarize..., Statistics..., Field Calculator... (selected), Calculate Geometry..., Turn Field Off, Freeze/Unfreeze Column, Delete Field, and Properties...

26. Enter CT_ID = Left ([CTUID],7) & Right ([CTUID],2) in the field calculation box. Click OK when finish.



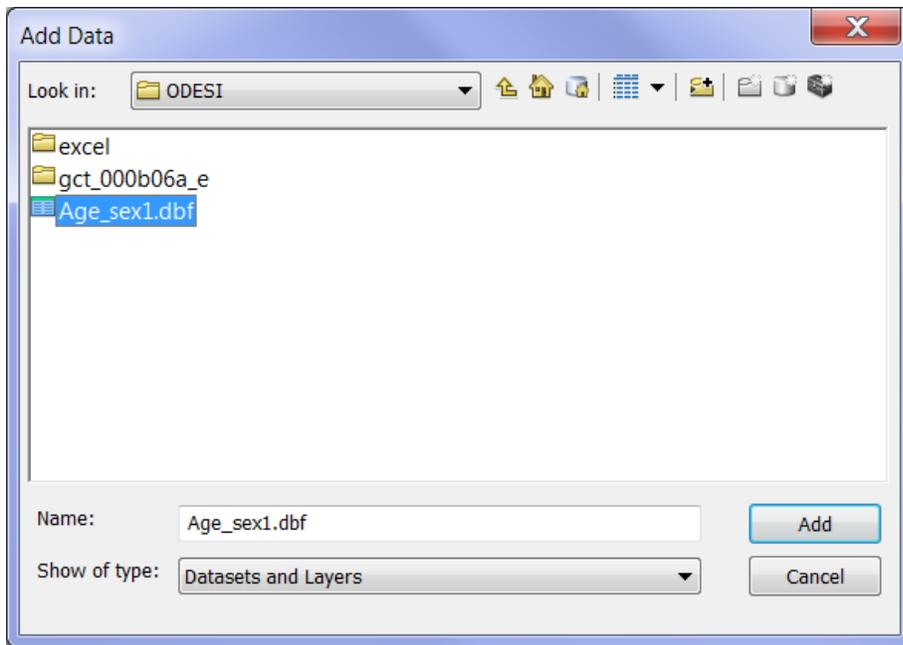
When the calculation finish, CT_ID's values will look like below.

Table

gct_000b06a_e

FID	Shape	CTUID	CMAUID	PRUID	CT_ID
0	Polygon	0010001.00	001	10	001000100
1	Polygon	0010002.00	001	10	001000200
2	Polygon	0010003.01	001	10	001000301
3	Polygon	0010003.02	001	10	001000302
4	Polygon	0010004.00	001	10	001000400
5	Polygon	0010005.01	001	10	001000501
6	Polygon	0010005.02	001	10	001000502
7	Polygon	0010006.00	001	10	001000600
8	Polygon	0010007.00	001	10	001000700
9	Polygon	0010008.00	001	10	001000800

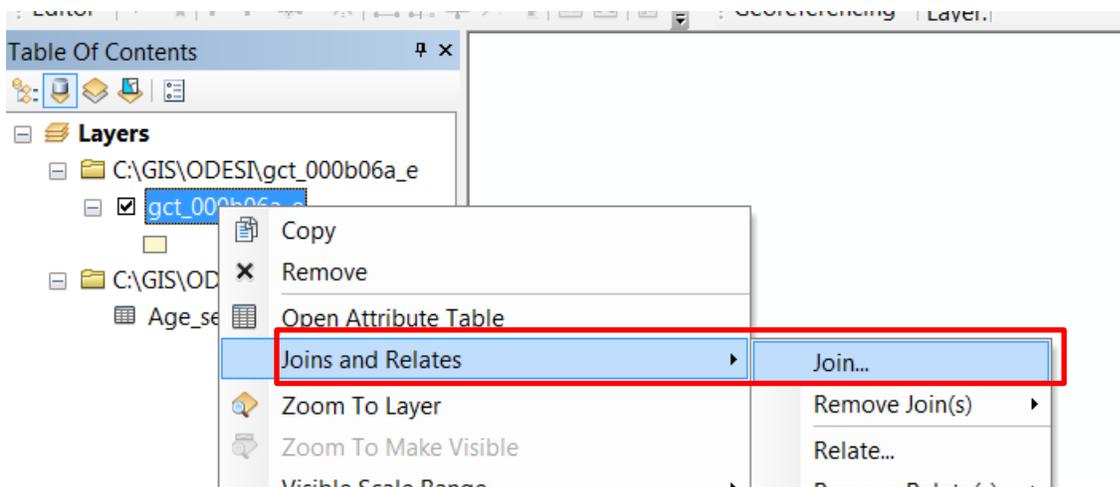
27. Add the dBase table into ArcMap. Click 'Add Data' button  again to navigate to the folder and add the Age_sex1.dbf.



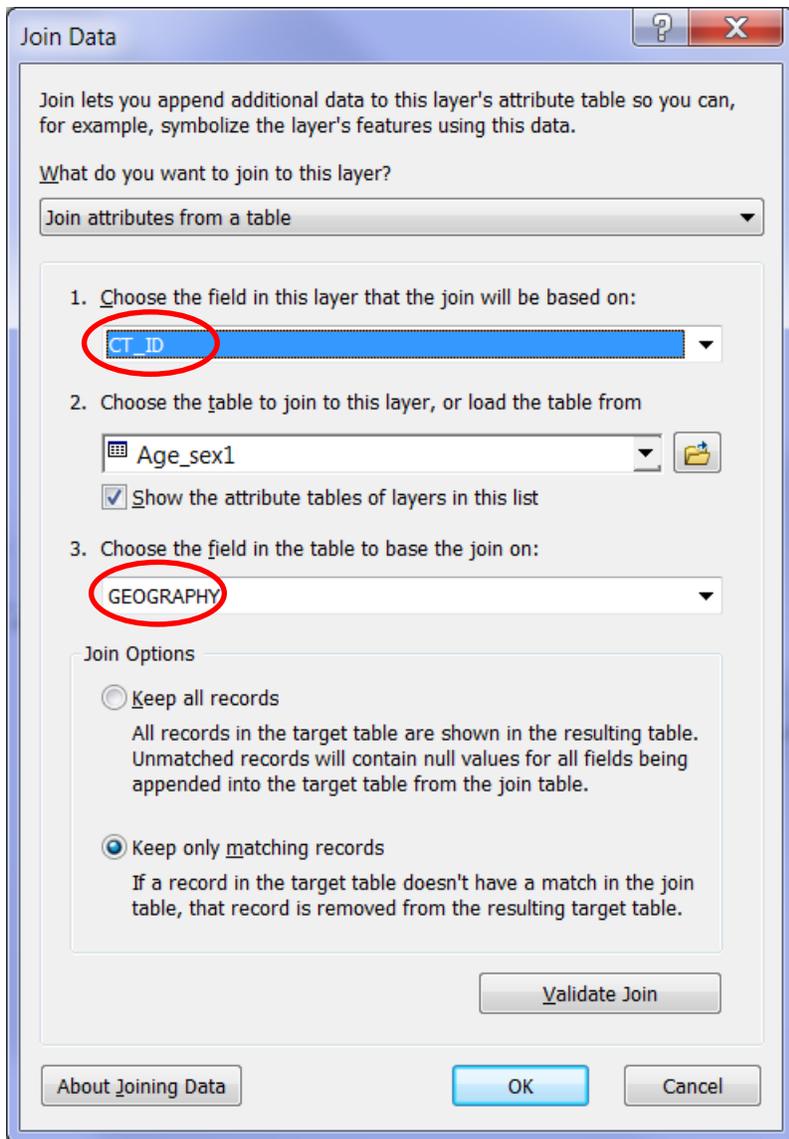
Join the tables

ArcGIS allows you to associate records in one table with records in another table through a common field, known as a key. After joining two tables, the dBase table attributes are appended to the attribute table of census tract boundary.

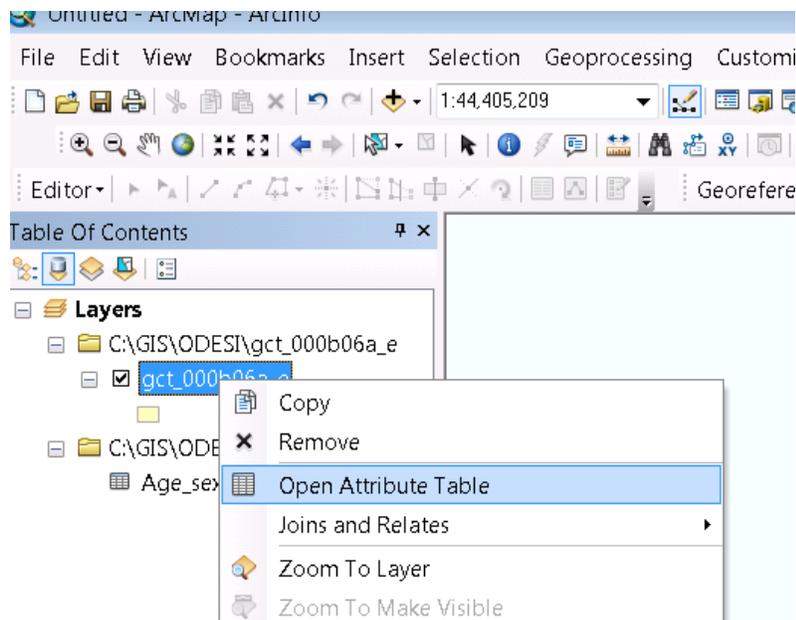
28. Activate the join function. Right click under the census boundary shapefile in Table of Contents and select 'Joins and Relates' and then select 'Join'.



29. Choose the key to join two tables. Select the key as 'CT_ID' in the shapefile layer and 'Geography' in the dBase table. In the Join Options, select 'Keep only matching records' Click OK when finish.



30. Open the joined table. Right click under the census boundary shapefile in Table of Contents and click 'Open Attribute Table'. You will notice that census variables have been appended into the geography table.

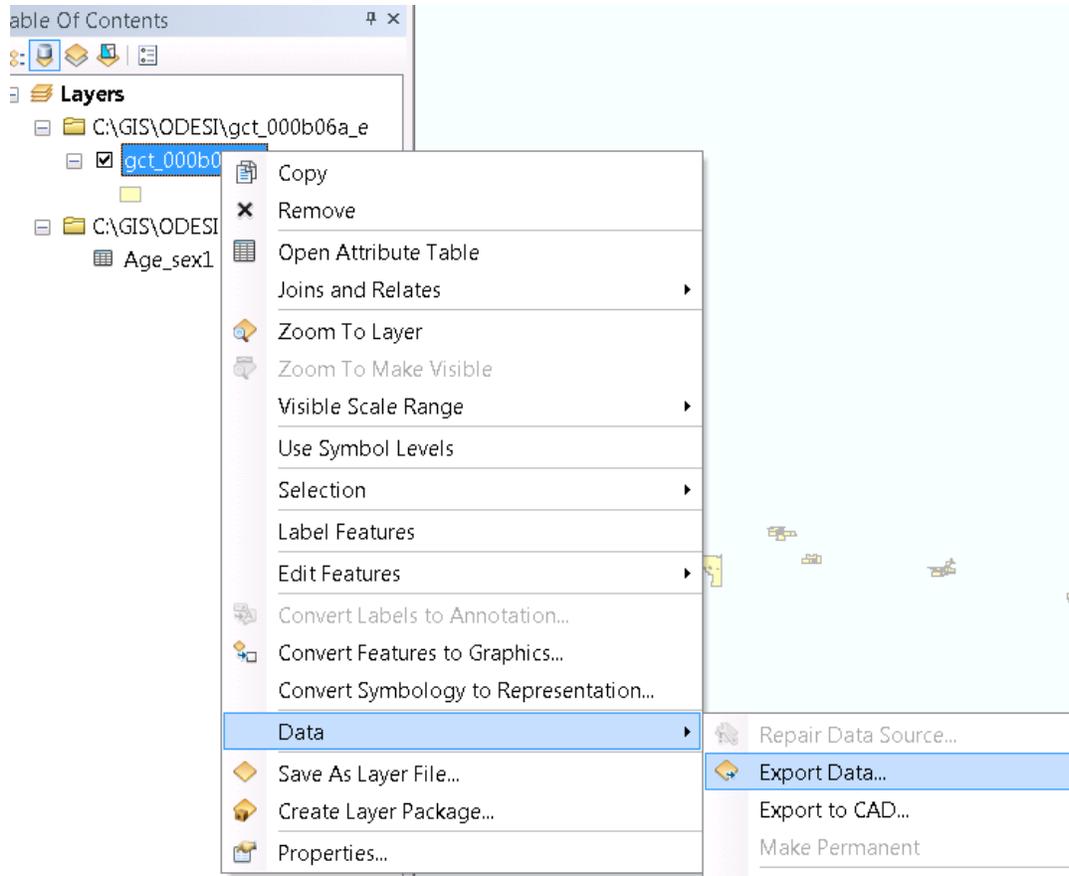


Table

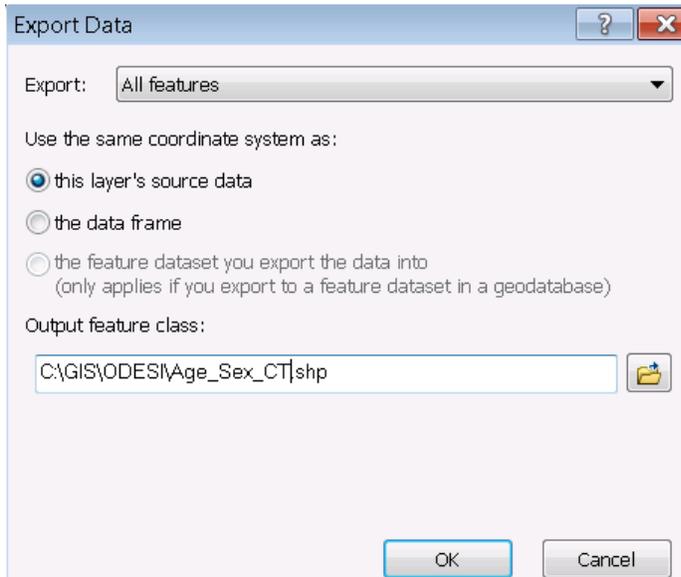
gct_000b06a_e

FID	Shape	CTUID	CMAUID	PRUID	CT_ID	OID	GEOGRAPHY *	POPULATION	POPULATIO1	POPULATI2	L
0	Polygon	0010001.00	001	10	001000100	1	001000100	2162	2004	-7.3	
1	Polygon	0010002.00	001	10	001000200	2	001000200	5081	4942	-2.7	
2	Polygon	0010003.01	001	10	001000301	3	001000301	4843	4586	-5.3	
3	Polygon	0010003.02	001	10	001000302	4	001000302	5437	5004	-8	
4	Polygon	0010004.00	001	10	001000400	5	001000400	6800	7278	7	
5	Polygon	0010005.01	001	10	001000501	6	001000501	2807	2532	-9.8	
6	Polygon	0010005.02	001	10	001000502	7	001000502	3659	3584	-2	
7	Polygon	0010006.00	001	10	001000600	8	001000600	3355	3249	-3.2	
8	Polygon	0010007.00	001	10	001000700	9	001000700	2615	2395	-8.4	
9	Polygon	0010008.00	001	10	001000800	10	001000800	1616	1630	0.9	
10	Polygon	0010009.00	001	10	001000900	11	001000900	581	507	-12.7	
11	Polygon	0010010.00	001	10	001001000	12	001001000	1630	1525	-6.4	
12	Polygon	0010011.00	001	10	001001100	13	001001100	2811	2815	0.1	
13	Polygon	0010012.00	001	10	001001200	14	001001200	2700	2728	1	
14	Polygon	0010013.00	001	10	001001300	15	001001300	2054	1814	-11.7	
15	Polygon	0010014.00	001	10	001001400	16	001001400	3360	3465	3.1	
16	Polygon	0010015.01	001	10	001001501	17	001001501	4790	4490	-6.3	
17	Polygon	0010015.02	001	10	001001502	18	001001502	4087	3844	-5.9	
18	Polygon	0010015.03	001	10	001001503	19	001001503	5485	5362	-2.2	
19	Polygon	0010015.04	001	10	001001504	20	001001504	5318	5605	5.4	
20	Polygon	0010016.00	001	10	001001600	21	001001600	6447	7821	21.3	
21	Polygon	0010017.00	001	10	001001700	22	001001700	748	1756	134.8	
22	Polygon	0010100.01	001	10	001010001	23	001010001	4968	5047	1.6	
23	Polygon	0010100.03	001	10	001010003	24	001010003	3428	3321	-3.1	
24	Polygon	0010100.04	001	10	001010004	25	001010004	3853	4075	5.8	
25	Polygon	0010110.00	001	10	001011000	26	001011000	2070	2148	3.8	

31. Make the table join permanent. You will right click under the census boundary shapefile in Table of Contents again and select 'Data' and then select 'Export Data'. This will create a new shapefile.



Assign a new file name for the shapefile and click OK when finished.



Steve Xu

January 10, 2012