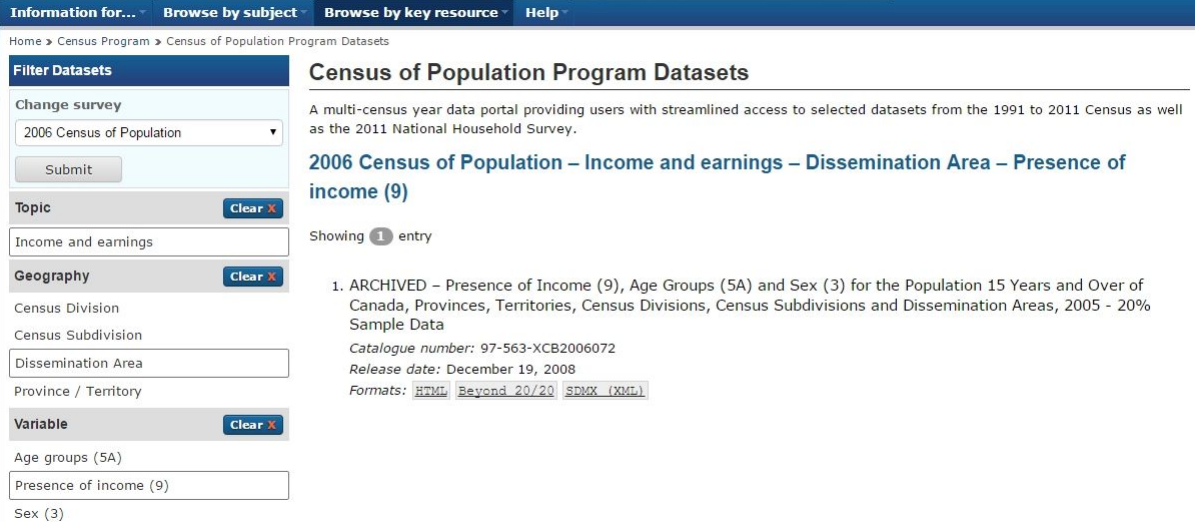## GEG 4920 - Finding and Mapping Census Data

Step 1: Finding census data

- Sample question: How did income vary by Dissemination Area in Côte-des-Neiges (Montreal) in 2006?
- Navigate to http://www.statcan.gc.ca/
- Click on Census Program
- Click on Census of Population Program datasets
- Choose:
    - **Year/Survey**: 2006 Census of Population
    - **Topic**: Income and earnings
    - **Geography**: Dissemination Area
    - **Variable**: Presence of income
- Download the associated table (catalog number: 97-563-XCB2006072) in Beyond 20/20 format (35.71 MB)

Step 2: Working in Beyond 20/20

- Open the table in Beyond 20/20
- Select income variable(s) to include in the analysis (e.g. Average 2005 total income $), then right-click to choose the "show" option
- Select dissemination areas found in Montreal (beginning in "2466"), again right-clicking to choose the "show" option
- Ensure headers show the appropriate geographic codes by clicking the button on the toolbar
- Save As CSV format

	Sex (3) ⓘ: Total - Sex	Age groups (5A) ⓘ: Total - Age groups
Geography	Presence of inc ⓘ ⓘ	Average 2005 total income $
24660001		40,393
24660002		45,987
24660003		28,778
24660004		41,879
24660005		0
24660006		35,339
24660007		31,397
24660008		34,973

Step 3: Working in Excel

- Open the CSV file in Excel
- Change header names to conform to ArcGIS (e.g. "Average 2006 income" to "AVG_INC_2006")
- Save As XLS format

	A	B	C	D	E	F
1	DAUID	AVG_INC_2006				
2	24660054	27844				
3	24660055	28293				
4	24660056	33882				
5	24660057	26281				
6	24660058	25238				
7	24660060	29118				
8	24662905	29132				
9	24660001	40393				

Step 4: Download boundary files from Statistics Canada

- Open a web browser and navigate to: http://www.statcan.gc.ca
- Click on Census Program
- Click on Geography
- Click on Boundary files
- Click on Census year of choice (e.g. 2006)
- Make the following selections:
    - **Language**: (By choice)
    - **Format**: ArcGIS (.shp)
    - **Boundary files**: Dissemination Areas (Cartographic Boundary File)
- Click Continue
- Download the Compressed Archive (ZIP) version of the file
- Unzip the file in preparation for Step 5
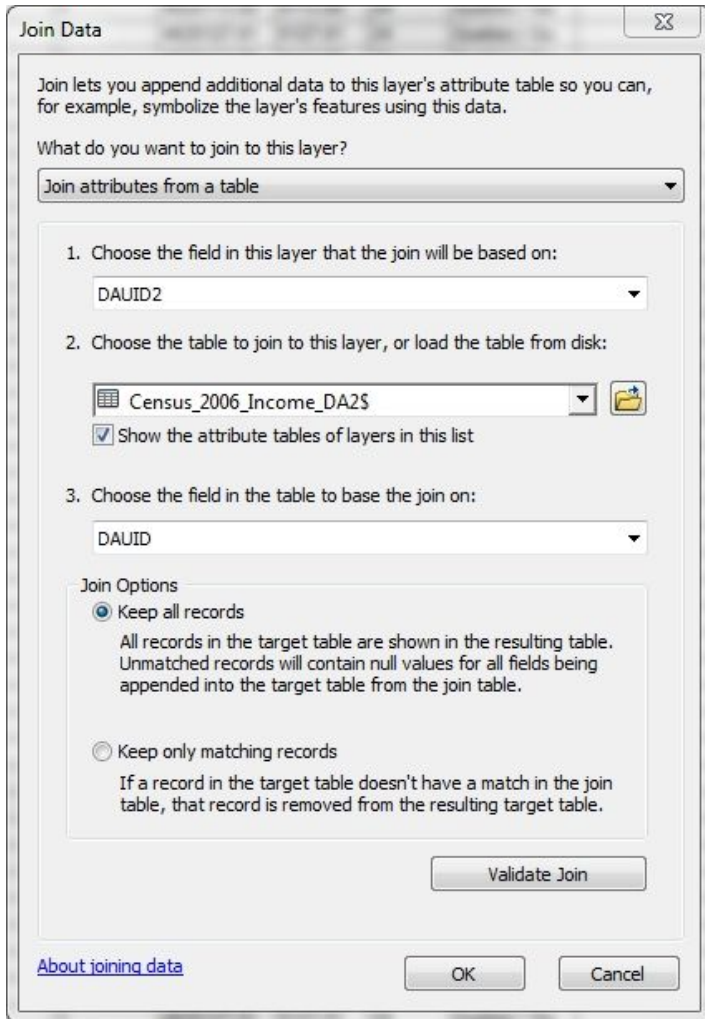
Language

◉ English ○ French

Format

◉ ArcGIS ® (.shp)
○ Geography Markup Language (.gml)
○ MapInfo ® (.tab)

Boundary files

Geographic Area or Water Feature	Cartographic Boundary File	Digital Boundary File	Water File
Provinces/Territories	○	○	...
Federal Electoral Districts (2003 Representation Order)	○	○	...
Economic Regions	○	○	...
Census Divisions	○	○	...
Census Agricultural Regions	○	○	...
Census Consolidated Subdivisions	○	○	...
Census Subdivisions	○	○	...
Census Metropolitan Areas and Census Agglomerations	○	○	...
Census Tracts	○	○	...
Dissemination Areas	◉	○	...

Step 5: Joining census data to boundaries in ArcMap
- Launch ArcMap
- Add Dissemination Area boundaries shapefile (.shp) to ArcMap
- Add Excel XLS table to ArcMap (from Step 3)
- In order to join these tables, you need a common field (e.g. DAUID) that is in the same format in both tables (e.g. Double, String, etc).
    - In our case, DAUID in the boundary file is a String, but the DAUID in the Excel table is a Double
    - To align both fields to the same formats, follow these steps:
        - Open the boundary file attribute table
        - Add a new field as a Double and name it DAUID2
        - Open Field Calculator for the new field
        - DAUID2 = [DAUID], click OK
        - Now you have a common field in the *right format* that is ready to be joined
- In ArcMap, right-click on the boundary file, select Joins and Relates, and click Join...
- In the Join Data window, select the following:

- Click OK
- Your final table should now include your income variable, as shown below:

- To make this join permanent, export this layer as a new shapefile