GIS SOFTWARE AND DATA REVIEWS

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Geography Products for the 2016 Census of Population
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2016 Census geography and GIS software products were initially released in November, 2016 with updates in 2017. The 2016 roster features many products that will be familiar from previous years, reskinned online tools, and a whole new unit within the Standard Geographical Classification. This review will focus on a few new and updated features of the 2016 Census geography products.

Aggregate Dissemination Areas

Aggregate Dissemination Areas (ADAs) "are created from existing dissemination geographic areas and are formed from census tracts (CTs), census subdivisions (CSDs) or dissemination areas (DAs)" and cover the whole country in units of 5,000-15,000 people with the goal of "ensur[ing] the availability of census data, where possible, across all regions of Canada"[1] while respecting province/territory, census division (CD), and tracted census metropolitan area (CMA) and census agglomeration (CA) boundaries.

The introduction of ADAs should make it possible to access data for sub-census division geographies that might otherwise be suppressed due to confidentiality issues. However, it's not immediately evident what purpose ADAs will serve in tracted CMAs and CAs with larger and denser populations. The ADA doesn't immediately or obviously answer any outstanding issues this reviewer has faced in the past several years of data and GIS reference work, but its true value may become evident in the future.

Individual reference maps are available for each CD in Canada showing all ADAs[2] and ADA boundary files are also available[3].

GeoSuite

GeoSuite 2016 is now available as a web-based tool on the Statistics Canada website as well as the downloadable, MS Access-based format of yesteryear.

The downloadable GeoSuite is essentially unchanged since its first appearance in 2001 (excepting the addition of new geographical units such as the ADA), by this point seeming charmingly retro if clunky. GeoSuite remains a useful tool for exploring and extracting data for geographical units within the hierarchy of the SGC but its limitations are becoming apparent. It is disappointing that the application still only contains the current and previous census year's data; despite five census' worth of data in four editions of GeoSuite, the 2016 edition only incorporates 2016 and 2011 data. It also unfortunate that the application only gives dwelling and population counts without incorporating any additional data points. One wonders if the downloadable GeoSuite product line will be discontinued for future censuses should the web-based version prove successful.

The web-based GeoSuite[4] takes much of the same functionality and places it in a single, more streamlined interface. This interface incorporates various features of the downloadable application as panes in a single web page: the name and code search into one entry field with the chart search appearing next to it; search results are given for

[1] Dictionary, Census of Population, 2016, "Aggregate dissemination area (ADA)" http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/geo053-eng.cfm

[2] Aggregate Dissemination Area (ADA) Reference Maps, 2016 http://www12.statcan.gc.ca/census-recensement/2016/geo/ADA/ADA-eng.cfm

[3] 2016 Census - Boundary files http://www12.statcan.gc.ca/census-recensement/2011/geo/bound-limit/bound-limit-2016-eng.cfm

[4] GeoSuite, http://geosuite.statcan.gc.ca/geosuite/en/index

2016 and 2011 population and dwelling counts, alongside a bar chart comparing both years' data and a reference map showing the geographical entity in question with an option for overlaying 2011 boundaries; at the bottom of the page results are given for the geographies selected in the chart search, which also provides export options.

The web-based GeoSuite is a welcome development and should be especially useful for any students trying to use the service from a public computer where installing the downloadable version wouldn't be permitted. The bar chart and reference map features are welcome additions and we hope that these are not the end of new developments for GeoSuite: as well as incorporating multiple previous census' data and more detailed information from the Census Profiles, it would be great to see integration of GeoSearch within GeoSuite so that the reference map could also serve as a discovery tool. The only real problem with the web-based GeoSuite is that it currently doesn't link out to any Census Profiles or tabular information other than the Geographic Attribute File; however, this may change as the remainder of the standard census products are released later in 2017.

GeoSuite users should note that Statistics Canada has identified errors in both the 2016 and 2011 versions of GeoSuite and reissued corrected versions of both of these products on June 1, 2017. A notice of the correction was issued through the Data Liberation Initiative (DLI) mailing list at that time but there does not appear to be any mention of this on the Census Program website.

GeoSearch
The interactive, map-based search tool GeoSearch[5] has a fresh coat of paint and some changes to the way it displays results. The new GeoSearch is much quicker and slicker than the old versions which, though archived on the website, haven't preserved their full functionality. Whereas the 2006 and 2011 iterations of GeoSearch linked to limited sets of census information, the new version provides

a much more comprehensive set of links to data and analytical products and reference and thematic maps from the 2016 and 2011 censuses. When selecting the province of Ontario, for example, the search results link to 222 data products, 28 analytical products, and 10 maps.

The main problem with the new GeoSearch is that the interactive map itself is a bit finicky. The options to display and remove boundaries and to specify the geographic levels to search are not located in the same menu and are not intuitively placed. More importantly, the level of zoom determines which level of geography can be selected: it is impossible to select sub-provincial levels of geography (such as CDs) when all or most of a province is visible on the map, even if sub-provincial boundaries are displayed. This can be rather annoying and requires undue zooming and panning to select sub-provincial geographies. It is also exacerbated by the lack of a deselect feature, which also makes it difficult to select a sub-provincial geography or to confirm that you have selected if you have already erroneously selected the province. This issue persisted in current versions of Chrome, Firefox, and Internet Explorer. Also, the display window is on the small side, even when enlarged.

Positional accuracy strategies
Statistics Canada has been improving the accuracy of its road network data through convergence, the "alignment of the existing road network to externally available GPS-compliant authoritative provincial sources."[6] This also means that "Statistics Canada's dissemination geographies will better integrate with other spatial datasets originating outside of Statistics Canada such as the provincial sources and municipal topographic data." The results of this process will be included in 2016 geography products for British Columbia, Alberta, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island.

Is there a dataset or software application you'd like to see reviewed? Would you like to contribute a review? If so, contact section editor Tomasz Mrozewski at tmrozewski@laurentian.ca

[5]GeoSearch, http://www12.statcan.gc.ca/census-recensement/2016/geo/geosearch-georecherche/index-eng.cfm

[6]What's new for 2016,http://www12.statcan.gc.ca/census-recensement/geo/geosuite/new-neuf-eng.cfm