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The Canadian geographical names service in 2007

Submitted by Canada**

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THE CANADIAN GEOGRAPHICAL NAMES SERVICE IN 2007

At the 22nd Session of UNGEGN in 2004, Canada presented a paper about the Canadian Geographical Names Service (CGNS), a free Web service. (See W.P. 13(a) The Canadian Geographical Names Service (CGNS) on the UNGEGN Web site at (http://unstats.un.org/unsd/geoinfo/22ndsessiontechnicalpapers.htm).)

Since 2004, there have been many modifications and improvements to incorporate new technologies and to meet the needs of those using the CGNS for data entry and retrieval. The CGNS may be found at (http://gnss.nrcan.gc.ca/index_e.html).

Visitors to the CGNS public Web site access the service through the Geographical Names Search Service (GNSS). They may make a simple query for a particular name, or create an advanced query using various parameters. A query can be constructed by choosing from geographical name, generic, location, and status, or by combining any or all of those. The ability to use one or more wildcards in the geographical name has further enhanced the capabilities and flexibility of the search. At the moment, there is a 10,000 record limit on the number of records which may be retrieved by a single query. This limit is in place partly for performance reasons, to ensure that the query works efficiently for all users at all times. As the technology improves, it will be possible to download a larger number of records with a single query, allowing users to create individualized data sets for various purposes. An Application Programming Interface (API) is also available to allow advanced users to further customize their query and output to suit their particular needs.

A GNSS users' guide was developed and added to the Web site to help users to get the most benefit from the CGNS. The guide provides instructions on how to use the GNSS Web interface, and also gives multiple examples on how users' applications may access CGNS, using either the API or the Web Feature Service (WFS) capability. In addition, the service has a referrer capability, which allows those developing a Web site or a software application to build the query function directly into their application.

Another feature of the CGNS is a table showing hard-to-construct characters, used in many Canadian geographical names of Aboriginal origin. As these names use non-standard Roman alphabet letters, it is difficult to portray them correctly in a digital environment. A combination of brace brackets and numbers is used to represent the various Aboriginal characters in the CGNS data. The table on the Web site allows users to click on a graphic to use one or more of these special characters in a name search.

Data in the original CGNS was a subset of data derived from the Canadian Geographical Names Data Base (CGNDB), which is maintained by the Secretariat of the Geographical Names Board of Canada (GNBC) at Natural Resources Canada. Since 1978, when the CGNDB was created, data has been provided by the provinces and territories in digital or paper format, and was added to the CGNDB by digital upload or by manual data entry.

The goal of the CGNS is to replace the CGNDB, which, it is hoped, will be phased out in the coming year. The next step in the development of the service is currently underway. The number of fields in the CGNS has been expanded, to include all the fields contained in the parent CGNDB. In order to streamline the process of updating the national database, a user interface has been developed to allow each provincial, territorial, or federal member of the GNBC to load their geographical names data directly into the names warehouse. This Web-based application, known as the GNApp, is available only to CGNS data providers, and is protected by private login. Use of this interface will help to eliminate duplication of effort and delays in processing geographical names decisions. Provinces and territories may use the CGNS to store their toponymic data instead of maintaining their own database. Currently, in the final stage of the phase out, data reconciliation is underway for those provinces and territories with their own databases. As the reconciliation of each jurisdiction's data is completed, they will move to direct entry through the GNApp or use an upload from their database to update the CGNS. The province of Newfoundland and Labrador has moved to direct entry, and has provided invaluable feedback on the application, reporting on problems and suggesting improvements. Several other provinces are nearing the final stage in the changeover. It is hoped to complete the phase out of the CGNDB by the end of 2007.

Some provinces and territories do not maintain their own databases, and are not familiar with data entry and maintenance. In order to help them with inputting their information directly into the CGNS, a guide is being prepared. The *GNApp Records Manual* will replace the *Canadian Geographical Names Data Base Records Manual,* as the CGNS will replace the CGNDB. The manual will provide information on all of the codes used in the data. It will describe each field and what should be entered in it. It will also give guidelines on how geographical names records are to be created and maintained. By providing the guide, the Secretariat will help to ensure that the data in the CGNS is consistent and follows national standards, regardless of where it is entered. A half-day training course in use of the GNApp was also provided to several GNBC members attending the annual meeting of the GNBC in Ottawa in June 2006. As the CGNS develops further, the Secretariat will continue to provide advice, guidance and support to toponymic staff handling data entry or maintenance in provinces, territories or federal government offices. Print copies of the text will be made available on request, but for ease of use, and easy updating, the *GNApp Records Manual* will be maintained as an online document. This will ensure that all users have access to the most up-to-date version, and will provide enhanced capabilities such as simpler navigation and linking to the Internet, or to other documents, from within the text.

In 2006, the CGNS acquired new mapping capability when it was linked to Toporama, a mapping tool developed by the Atlas of Canada and the Centre for Topographic Information of Natural Resources Canada. Toporama allows users of the Web query to view their selected name on maps at various scales. The maps used for cartographic display are derived from digital versions of Canadian federal topographic maps at regional scales (1:50,000 and 1:250,000), and Atlas of Canada base maps at national scales of 1:1M and 1:7.5M. Users can zoom in or out, and map views can be customized by selecting or de-selecting layers. One significant addition is the depiction of geographical feature extents or delineations for approximately 15,000 natural features. The application also provides a variety of additional functions as well as links to metadata and historical and cultural information.

Name records in the CGNS are currently linked only to a point, identified by latitude and longitude. The next stage in the evolution of the CGNS will be to provide access to digital extent data. Each record contains a feature identifier, a code which will allow the name record to be linked to spatial data for a place or entity. The identifier will also allow the tracking of name changes for a particular feature, and provide the basis for location-based services in the future.

The Web mapping capability of the CGNS will continue to be an important function. To that end, our developers are working with various groups to develop a standard for a "Relevance at Scale" attribute. This attribute will associate a map scale, or range of scales, with each name record, in order to enable selection of toponyms on-the-fly for map applications. As users use mapping software to zoom in or out, the name selection will adapt accordingly.

As technology advances, the CGNS will evolve further, continuing to provide geographical names data for a growing variety of users and applications in the future.

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