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Reports by Governments on the situation in their countries and on the progress made in the standardization of geographical names since the Ninth Conference (for distribution only).

Country Report – Canada

Submitted by Canada**

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COUNTRY REPORT - CANADA

I. Goals and national programmes

1. The national names authority

1.1 Mandate and membership

The Geographical Names Board of Canada (GNBC) is the national names authority of Canada. The mandate of the GNBC, as outlined in its Strategic Plan, includes: promoting the application of standards and principles; endorsing the geographical name decisions taken by Canadian naming authorities; and disseminating geographical names data. The GNBC also represents Canada internationally in forums and activities related to toponymic standards and practices.

The Board currently has 32 members. There are members from each of the thirteen provinces and territories, as well as some of the federal government departments. Three members are representatives of the academic community. The GNBC Chair, Mr. Bruce Amos, and the Chairs of the two advisory committees – the Advisory Committee on Nomenclature, Policy, and Research and the Advisory Committee on Automation and Delineation – are also members.

Working groups are created when there are specific needs or purposes. Currently, there are working groups on: the naming of undersea and maritime features; cultural generics, and how to incorporate them into existing feature entity classification systems; Aboriginal naming and Aboriginal engagement in the naming process; FIDs, or feature identifiers, and their assignment and use in data bases.

1.2 GNBC meetings

The GNBC meets annually in different parts of the country. The Board has met five times since the Ninth Conference – in Yellowknife, Québec, Iqaluit, Moncton and Dawson. The 2012 annual meeting is scheduled for September 20 and 21 in the city of Québec, Quebec.

1.3 Decision making

Decisions on geographical names in Canada are made at the provincial and territorial level. However, on federal lands (national parks, military establishments) decisions must be made by both the provincial/territorial authority and the appropriate federal authority in order to become official. An agreement known as the Victoria Accord outlines the joint decision process and procedures for naming when jurisdiction is shared. When joint decisions are required, the GNBC Secretariat coordinates the process and updates the national data base.

II. Problems, solutions, and achievements since the last Conference

1. Publications

In 2012, the GNBC and its Secretariat published a new edition of the publication *Principles and Procedures for Geographical Naming.* A small number of paper copies was printed, but the majority of users will aquire the publication by downloading it from the Geographical Names of Canada Web site. Increasingly, to reduce costs and increase distribution, paper publications are giving way to Web-based information.

As GNBC members create Web sites, or develop existing sites, previously published documents are being made available online, and new publications are being prepared for online distribution only. Among the advantages of paperless publication are: the ability to add multi-media content, such as graphics, photos, video and sound files; flexibility in adding new material or deleting content as it becomes outdated; and the ability to reach an exponentially wider audience. Some of the disadvantages are: the need to use a computer or device to refer to the publication; and the requirement to change or adapt material as technology changes, and software or file formats become obselete.

Both Yukon and Northwest Territories have produced new editions of their territorial Gazetteers since the last Conference, and both are available exclusively online. Manitoba also made the French language version of their publication *Bilingual Glossary of Manitoba Geographical Names* available online as a resource for the French-speaking community.

Since 2004, the Commission de toponymie du Québec has produced toponymic ìnformation items on topics of current interest and made them available on their Web site to attract users and build client loyalty. These short articles cover a wide variety of topics, and relate themes or news items to the toponymy of Quebec. New items are added regularly, and older items are retained online for reference purposes.

2. Canadian Geographical Names Data Base

The Canadian Geographical Names Data Base (CGNDB) was originally created in 1978 to replace a manual record system based on paper index cards. The digitization of the card system meant that records were more easily searchable and that data could be found and manipulated much more easily. The CGNDB was re-engineered in 1988 and again in 1998 to incorporate newer technology and adapt to the changing needs of its users. In 2003, Canada launched the Canadian Geographical Names Service (CGNS), part of the Canadian Geospatial Data Infrastructure (CGDI). The CGDI is an on-line resource for users of Canadian geospatial information, facilitating and promoting sharing and use of location-based data, and making it available as part of the Global Geospatial Data Infrastructure. A national geospatial data portal known as GeoBase has been created to facilitate the gathering and downloading of a wide variety of datasets, and the selection continues to expand as more and more data becomes available. The toponymic data layer provided by the CGNS is a framework layer of the CGDI.

In support of Web-based and conventional mapping, and other services, GNBC members and the Canadian Council on Geomatics are collaborating on the development of a national repository for digital delineations of named features in Canada. There are on-going projects to create and store delineations, and digital extent data is already stored for approximately one third of all offical toponymic records. Currently, the goal is to maintain a central repository where all the partners can collaborate on completing the digital delineation dataset. There has been discussion of developing online tools for quality control and upgrading of the delineations. Ultimately, the delineations could be made available online to all users, and used in a wide variety of ways.

Since 2008 a Web-based application known as the GNApp has been available to GNBC members. Using GNApp, all members now have access to the full content of the national data base, and may load new name records. One jurisdiction, Newfoundland and Labrador, presently maintains provincial data directly using the GNApp, and others are considering the possibility of replacing or supplementing their provincial data bases with direct access to the CGNDB. Development work is on-going, as is reconciliation of the national and provincial data sets to ensure that all data is current, accurate, and synchronized.

3. Web sites

In the past two years, as part of a national initiative, all federal government Web sites in Canada have been upgraded and restructured. The purpose was to modernize and standardize the look and feel of government sites, to incorporate new features and technologies, and to ensure accessibility for the visually impaired and others using assistive technologies. As part of the process, a large scale content review was undertaken to ensure that material being presented is current and relevant. The Web site managed by the GNBC Secretariat – the *Geographical Names of Canada* site (http://geonames.nrcan.gc.ca) – is now part of the Earth Sciences Sector site of Natural Resources Canada.

The name query on the site has been its most popular feature since the site was launched in 1994. In 2011, there was considerable development work on the site. The query tool now integrates the functionality of the CGNS name query for better, faster, more customizable searches. It allows users to select more search parameters, and receive more data in a more formats. Clients can now use the Web Feature Service (WFS) capability to create output files in Hypertext Markup Language (html), Extensible Markup Language (xml), delimited files suitable for importing into spreadsheets or databases, or Keyhole Markup Language (kml).

Clients requiring small data sets related to specific areas or themes can structure queries using various parameters, or make use of an api (application programming interface) to retrieve data. As with the data available from the GeoBase portal, data provided by this service is available without cost, and may be used without restriction, provided that the source is identified and credited.

Two long-standing issues in the dissemination of Aboriginal names related to the ability to store and display special characters used in Canadian toponyms in Aboriginal languages.

For example, many of the names in Nunavut are in the Inuit language, often referred to as Inuktitut. The written form of the language uses a writing system based on symbols which represent syllables. Although an internationally-recognized standard font existed for the Inuktitut syllabic characters, they could not be stored in the data base, or displayed on the Web site. This issue was resolved when the GNBC adopted the use of ISO standard codes for international languages, and migrated the data base, the Web Feature Service (WFS) and the Web site to new instances which support Unicode UTF-8 character encoding to allow the correct display of these names. Now, when the language code is present in the data base, it identifies the language of a toponym. When the language code attribute contains the code for Inuktitut, a conversion from Roman characters to syllabics is triggered. Not all names display both writing systems yet as work is still needed to add the language code to pre-existing records. However, when all records are updated, the conversion will happen for all names in the Inuit language.

A slightly different challenge was the storage and display of special characters used in many Aboriginal languages. As most Aboriginal languages were not in a written form prior to European settlement, writing systems were developed by linguists. These written forms consist mainly of standard Roman alphabet character, but also include special characters, usually consisting of Roman characters combined with diacritical marks or symbols. The "hard to construct" or Modified Extended Roman Alphabet Characters (MERACs) used in many Aboriginal names presented a very difficult challenge for those wishing to Aboriginal names in databases, or to display them in digital environments. A number of different approaches were adopted at different times to deal with this problem. One solution was to create graphic images of the written names and present those names as an image. This was a partial solution, which allowed display on Web pages, but it did not allow the name to be searched easily in data bases or on the Web. A different approach was used on the Geographical Names of Canada Web site, which used a system of numbers combined with brackets to represent the special characters. For example, a lower case barred L was represented by {2}. Each bracketed number was used to cross reference each character to the image of the character in a table. Although it was better than nothing, this solution was far from ideal, and did not solve the problem of using names containing special characters on maps.

A new international standard known as Unicode has made it possible to incorporate these special characters into the data base, and to display them on the Web and in documents. Previously, there were hundreds of different encoding systems which were used to assign numbers to special characters. Now Unicode provides a unique number for *every* character, regardless of platform or language. The GNBC has adopted the Unicode standard, and employs the UTF 8 character set. Some of the Web site pages had to be migrated to UTF-8 encoding and were implemented in such a way that they do not require users to download special fonts. These pages have been tested in all browsers. There have been very few issues identified.

4. Mapping

As of 2012, Natural Resources Canada has completed mapping coverage of the entire country at the 1:50 000 scale, in addition to the previously existing maps at the 1:250 000 scale. Most of

the work required to fill the gaps was in the North, as the majority of the maps missing existed in Nunavut and in the Northwest Territories.

While work to compile mapping data was underway, the department also undertook a pilot project to create a new map series especially for the North. This series was designed to facilitate the use of names in Aboriginal languages, and to introduce the use of Inuktitut syllabics which had previously only been used in a limited way on federal map products. One of the project objectives was to provide multilingual maps which were useful to both the local population and to others such as mining companies, geologists and scientists who required the maps. As the work proceeded, there was widespread consultation with Northern communities, names authorities and other stakeholders. A number of prototypes were developed to seek the best possible design for the maps, and to incorporate information and features which would make them as helpful as possible to hunters, trappers and fishers, and also to assist those who used maps in resource development and exploration work, and for scientific investigation. Some of the prototype maps show new elements which have not previously appeared on Canadian federal topographic maps, such as bathymetric information and hill shading. A multilingual surround was developed for maps of Nunavut in which the legend was provided in the four official languages of the territory: English, French, Inuktitut and Inuinnaqtun. New specifications were developed to display information specific to the North, such as emergency cabins and summer and winter trails.

This new map series featured a new design which incorporated photographs of local people and landscapes. The maps also incorporated many new Aboriginal language names which have been approved in the past 10 years as many traditional names are restored to the landscape. Across the North, on-going field programs are gathering toponyms and origin information from elders and others in the community in order to preserve the information for future generations. Names serve not only to assist in location, but also to record history and culture. They are a vital part of the oral tradition which tells the story of the people who have lived in the North for thousands of years.

The project allowed toponymists and cartographers to explore the challenges and opportunities of mapping in multiple languages, and to seek solutions by incorporating new and different concepts into the design and presentation of the maps. As of the writing of this report, it was unknown whether the project would continue, but it is hoped that more work can be done to develop the concept, and create a unique and special product which represents the North, its people and its toponyms to the world.

5. Activities related to GNBC members and their work

In some ways the current situation resembles the situation in 1897 when the Geographic Board of Canada was established to regulate the country's geographical names and standardization of feature identification. At that time the country was expanding, settlement and immigration were increasing, and new mapping was being done in areas of settlement and exploration. There was a great need for a central authority to authorize names and maintain a registry of official names. Since then, the original Board and its successors have worked to develop policy, establish

standards, and disseminate official names toponymic information in Canada and around the world. As names are disseminated in new ways, new approaches must be developed to continue that work. Today, authoritative, standard toponyms are still of great importance for mapmakers and users of geospatial data, and the history and origins of names are still a vital part of the cultural fabric of the country.

An on-going issue for all GNBC members is the increasing dissemination of unofficial and variant names. This has been a concern for some time, but the development of new types of applications and social media and their widespread use has accelerated the process, and increased its visibility. Names are used on Internet sites, in Web mapping applications, and in online tools such as Google Maps. Users can create their own maps and datasets and display names from a wide variety of sources, without validation or verification of the names, spelling, correct location etc. Volunteered Geographic Information (VGI), or crowd sourced data, which is available through many tools and applications such as Wikimapia, and Google Map Maker can be a valuable resource, but use of unofficial names is of concern to naming authorities because of potential confusion among users of names, such as map makers, GPS and GIS users, and Web developers using geospatial data. Some GNBC members are currently working with Google to develop strategies for the use of official names. The goal is to at least allow users to readily identify authoritative names in data presented. If possible, ways could even be found to encourage and promote use of official names.

Today, new technologies, new communications tools, and unprecedented access to geospatial data have created a world of new challenges and new opportunities. The Internet and social media make geospatial data available to an extremely wide audience, and engage users on a new level. Geographical names are the most accessible and intuitive element of geospatial data for users, an attribute which is recognized and understood by everyone. Because of their social and cultural significance, they also inspire interest and even a sense of ownership.

It is now possible for toponymists to seek input and information from people they would never have been able to reach in the past. They can also receive unsolicited information from local sources, or anywhere in the world. While this can be an advantage, there are also challenges. Ironically, ease of communication can be a problem, as it means that the volume of information created is very great. When names are submitted, it can be difficult to evaluate whether a name submitted is truly a toponym in local use, or is a frivolous suggestion or joke. There is also an expectation among users of such tools of immediate or rapid action. In a time of shrinking resources for field work and research, names authorities cannot deal with large volumes of new information. Any meaningful validation process takes time, and name approvals can be bogged down for long periods as staff attempt to evaluate material received.

For Canada's naming authorities, dissemination of official names is a priority, and it is an ongoing challenge to ensure that names which represent broad local usage, and respect principles and procedures for geographical naming, are clearly identified and used as widely as possible.

6. International relations

Participants from Canada attended the UNGEGN Sessions in New York (2007), in Nairobi, Kenya (2009), and in Vienna, Austria (2011).

Since the Ninth UN Conference in 2007, Ms. Helen Kerfoot, as Chair of UNGEGN, has participated in a number of meetings of UNGEGN Working Groups (Toponymic Data Files and Gazetteers, 2009; Exonyms, 2010, 2012; Publicity and Funding / Evaluation and Implementation, 2010, 2011) and UNGEGN Divisions (Norden, 2008; Asia South-East and Pacific South-West, 2009; East Central and South-East Europe, 2010; Dutch- and German-speaking, 2010; Africa Central, 2010; Africa East, 2011; Africa South, 2012).

She has presented material relative to current UNGEGN issues and geographical names standardization at various venues, including: International Geographical Congress (Tunis, 2008); geodata, cultural heritage and marine geophysical symposia (Frankfurt, 2007; Vienna, 2008; Busan, 2010; Johannesburg, 2011); 10th South East Asian Survey Congress (Indonesia, 2009); International Cartographic Conference (Chile, 2009); American Association of Geographers (Washington, 2010); Ewha Women's University (Seoul, 2010); and the International Congress of Onomastic Sciences (Toronto, 2008; Barcelona, 2011).

Ms. Kerfoot has been an instructor at UNGEGN training courses and consultative workshops in Africa in Burkina Faso (2008); Romania (2008); Brazil (2008); Kenya (2009); Cameroon (2010); Botswana (2011); South Africa (2012), and she participated in the early meetings of the UN Global Geospatial Information Management in New York and Seoul (2011). She was elected as President of the Ninth UN Conference in 2007, and has chaired the 25th and 26th Sessions of UNGEGN.

III. Conclusion

Since the last Conference, members of the Geographical Names Board of Canada have continued to produce publications, update and reconcile their databases, and modify existing Web sites or create new ones. In addition, they are facing new challenges posed by new technologies and new demands placed on them by the public, business, and policy and decision makers for quality geospatial data.

Members continue to balance the two aspects of geographical names, as a vital key to accessing geospatial data, and as a reflection of the culture and heritage of the country and its people. As the importance of geospatial data continues to grow, it is important to ensure that standards and policies are in place, and that naming practices keep pace with the evolution of society. Participation in international forums and activities is also important to promote the development and observance of international standards, the sharing of best practices, and the education of future generations of professionals in the field.

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