From Aporta, C., Kritsch, I., Andre, A., Benson, K., Snowshoe, S., Firth, W., Carry, D., 2014. The Gwich'in Atlas: Place Names, Maps, and Narratives. In: Taylor, D.R.F., Lauriault, T.P. (Eds.), Developments in the Theory and Practice of Cybercartography. Elsevier Science, 229-244. ISBN: 9780444627131
Elsevier Science

CHAPTER

16

The Gwich'in Atlas: Place Names, Maps, and Narratives

Claudio Aporta[1], Ingrid Kritsch[2], Alestine Andre[2],
Kristi Benson[3,4], Sharon Snowshoe[2], William Firth[2], Del Carry[4]

[1]Marine Affairs Program, Dalhousie University, Halifax, Nova Scotia, Canada,
[2]Gwich'in Social and Cultural Institute, Yellowknife, Fort McPherson and Tsiigehtchic,
Northwest Territories, Canada, [3]GIS/Heritage Affiliate, Gwich'in Social and Cultural Institute,
Santa Clara, Manitoba, Canada, [4]MDT Communications, Ottawa, Ontario, Canada

16.1 INTRODUCTION

All peoples and cultures have the need to describe and represent place and space. Spatial frameworks of orientation are both universal and culture-specific. They are universal because all human beings need to relate their locations and trajectories to broader frames of reference in the world. They are culturally specific because such frameworks are intriguingly different across cultures, as people relate them to magnetic phenomena, celestial bodies, winds, coastal and river layouts, mountains, etc. In establishing relationships to specific places, and

to regions, place names are a significant way of articulating people's connections to their surroundings, to features, and to more or less bounded bodies of land or water. They serve to anchor perceptions, memories, and ideas of place in particular locations. They also serve to convey such concepts and information to other people. Place names such as Yellowknife or Halifax possess a functional trait beyond the semantic and symbolic meanings associated to them. They are essential in facilitating people's narratives of place. 'Halifax, Nova Scotia' brings to mind a particular location, thus helping people avoid taxing topographic and geographic descriptions every time the place is referred to.

Place names and maps have been used hand-in-hand by most European and European-descendent cultures since the development of writing, and especially since the production of the first maps and the emergence of cartography (Thrower, 2008; Short, 2009). Maps gradually became essential tools in representing place and space. In the history of exploration, maps were also significant instruments of possession and control in the context of the colonial enterprise.

The exploration and 'discovery' of the Americas by Europeans could be, in a sense, read as a gradual *mapping* of newly found lands. The maps produced by the explorers not only informed Europe about the geographic features of land and water, but also established claims of ownership. Such claims were always established and reinforced through naming. The need to explore, map, name, and take possession were most often part of the same process of 'discovery'. Of course, the aboriginal peoples they encountered had their own approaches to naming and to geographic representation, but the European enterprise of naming after their own cultural frames of reference announced to the rest of the world that they were taking possession of lands they considered to be without previous history and culture.[1]

For a very long time, therefore, Indigenous place names were either ignored or partially adapted to the Colonial naming approach and frames of reference.[2] The native names that 'made it' to our maps (including the name *Canada*) were most often reinterpreted, decontextualized, and deprived of their true cultural meanings and histories.

Beyond instances of map use and map-making in precontact times that have been documented (Lewis, 1998; Mundy, 1996), most Indigenous groups in Canada were characterized by an oral approach to geographic representation. The fact that maps were mostly nonexistent and that Indigenous spatial representations did not accord with European cartographic conventions, made it easier for colonial powers to claim possession of what they intentionally or unintentionally portrayed as wilderness.

In the context of an oral culture, place names are particularly important as spatial and geographic referents, and as crucial elements of spatial narratives (or of any narrative, really, where certain reference to location is required). Place names can also reflect cultural meaning and cosmological views of the peoples who use them. Many explorers, missionaries, anthropologists, geographers, and historians have documented Indigenous place names across North America, from the Apache in the southern United States to the Inuit in the Arctic. In contemporary times,

---

[1] We are aware that this statement generalizes a phenomenon that was more diverse and complex, across the Americas. However, 'discovery' and colonization of the Americas was a race towards asserting geopolitical claim (Galeano, 1997).

[2] It should be added that fur traders, in particular, used Indigenous place names to identify prominent natural features in the Western Interior, even if the trading posts themselves usually bore European names (Wonders, 1987; See also Freeman (1985)).

and in the context of new geopolitical and cultural realities, an increasing number of Indigenous groups have embarked on the task of documenting and mapping their own place names as part of a variety of projects of cultural revitalization and political activism. In Canada, these systematic efforts started in the 1970s, as part of land-claims processes. This chapter is concerned with the place names of the Gwich'in of the Northwest part of Canada. It focuses on the place names collected and documented by the *Gwich'in Social and Cultural Institute* (GSCI) among the Gwich'in communities now inhabiting the Northwest Territories (NWT), but whose traditional land use included lands in both the NWT and Yukon (Figure 16.1).

The Gwich'in have long used a complex system of place names to refer to a variety of features, events, and processes. Immersed in a context of cultural and language loss, and of political struggle, like most aboriginal groups of Canada, the Gwich'in have been engaged in place names projects since 1992 as part of cultural revitalization initiatives, and as a way of documenting traditional use of the land (Gwich'in Social and Cultural Institute, 2003). This chapter will briefly introduce the Gwich'in, summarize the main characteristics of their place names, describe the place names project undertaken by the GSCI, and, finally, reflect on the effects of mapping oral geographic knowledge and the advantages of the Cybercartographic approach.

16.2   THE GWICH'IN AND THEIR PLACE NAMES

The Gwich'in are one of the most northerly Indigenous peoples in North America, living at the northwestern limits of the boreal forest. Only the Inuit live further north. In anthropological terms, the Gwich'in are part of a larger family of Indigenous peoples known as Athapaskans, which include the Slavey, Tłįchǫ (Dogrib), Tr'ondëk Hwëch'in (Han) and Tutchone. Their language and way of life, however, are distinct.

At the time of contact with Euro-Canadians in the latter part of the eighteenth century, the Gwich'in lived in nine groups, with lands stretching from the interior of present-day Alaska, through the Yukon and into the Mackenzie Valley. Today, the Gwich'in number over 6000 people with 3300 Gwich'in living in the NWT, primarily in the communities of Aklavik, Fort McPherson, Inuvik, and Tsiigehtchic, where they are known respectively by the following names: Ehdiitat Gwich'in, Teetł'it Gwich'in, Nihtat Gwich'in, and Gwichya Gwich'in. The Gwich'in in the NWT still maintain close cultural and family ties with Gwich'in relatives in the Yukon and Alaska, meeting as a Nation on a biennial basis since 1988 at the Gwich'in Gathering–alternating meetings between Alaska, Yukon, and NWT.

The lands of the Gwich'in now living in the NWT traditionally extended from the mountain headwaters of the Peel and Arctic Red rivers in the south to the Mackenzie Delta in the north, and from the Anderson River in the east to the Richardson Mountains in the west. The Gwich'in retain a close relationship with the land and many families living in the present-day settlements also have summer and winter camps outside of their communities. Hunting and fishing remain important, both culturally and economically, with caribou, moose, and whitefish being dietary staples.

In 1992, the Gwich'in of the NWT signed a Comprehensive Land Claim Agreement with the Government of Canada and the Government of the NWT. The land claim outlines
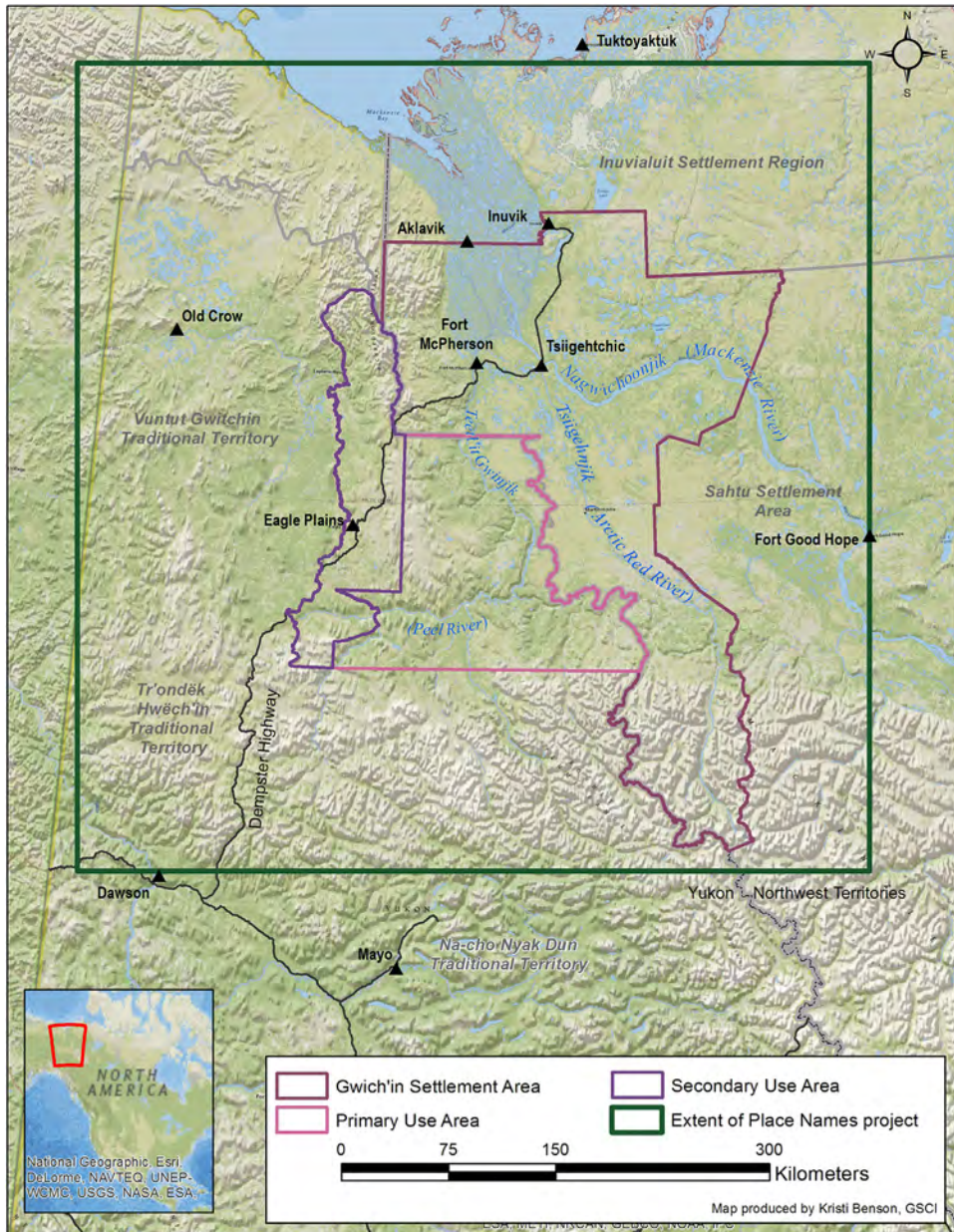
FIGURE 16.1   Map of the Gwich'in Settlement Region (GSR) defined by the 1992 Gwich'in Comprehensive Land Claim Agreement. The GSR is composed of the Gwich'in Settlement Area in the NWT and Primary Use and Secondary Use areas in the Yukon – Trans-boundary areas shared with neighbouring Aboriginal groups. The area within the square indicates the extent of Gwich'in traditional land use and the place names recorded in the Gwich'in Place Names Atlas.

economic, cultural, and political provisions and describes the lands to which the NWT Gwich'in have rights to in both the NWT and Yukon. The claim provides the Gwich'in with increased control and responsibility over their communities, lands, and resources while also recognizing and encouraging the Gwich'in way of life 'which is based on the cultural and economic relationship between the Gwich'in and the land' (Indian and Northern Affairs Canada, 1992: 2).

The Gwich'in Tribal Council (GTC) is the main political body responsible for implementing the land claim, and its mission statement, 'Gwich'in land, culture and economy for a better future', speaks to the need to balance these three entities. To facilitate this, the GTC established a number of Gwich'in organizations following the signing of the land claim. The GSCI is the organization responsible for implementing the heritage resource chapters of the claim, and carrying out cultural and language research and programming. The GSCI's mandate is 'to document, preserve, and promote Gwich'in culture, language, traditional knowledge and values.'

The Gwich'in have a rich oral tradition that is centred on extensive knowledge and use of the land. Travel with the seasons was a necessity to make a living from the seasonal resources that the land provided. The Gwich'in travelled extensively by land and water, naming features and places that were of significance to them, and sharing stories about these places. Names are found everywhere on the landscape, and these names and their associated stories reflect Gwich'in travels, explain the history of the place, and offer insight into Gwich'in culture and knowledge about their lands and about people's relations with the land. Therefore, it could be safely said that Gwich'in culture is tied directly to the land.

Working with a generation of elders who have an in-depth knowledge of the land learned from personal experience and oral tradition, GSCI has been building an inventory of named places within traditionally used lands, both within and beyond the area now known as the Gwich'in Settlement Region (GSR). To date, GSCI has recorded stories and information on approximately 850 named places with many places having more than one name. Most of these names are in the Gwich'in language and the meaning and stories attached to them are informed by many aspects of Gwich'in culture, history, and values. An important concept in the stories that elders tell is that the people and the land are closely linked and that everything and everyone is related. The Gwich'in place names and oral history research carried out by GSCI over the past 20 years has produced a voluminous and precious body of knowledge, and has been the foundation upon which much of the institute's other research and initiatives have been based (Figures 16.2 and 16.3).

Unlike most non-Indigenous place names, Gwich'in named places describe what is important about a location. Gwich'in place names may relate to:

1. the resources available and/or the use of traditional methods for capturing resources (i.e. types of birds, fish or animals for subsistence purposes, stone for making tools, wood to make moose skin boats, plus technology such as fish traps and caribou fences);
2. the physical characteristics of a place (i.e. a distinctive looking round hill or an area where smoke is present from coal-burning beds);

3. connections with a sacred place (i.e. Shiłdii), This place name means 'sitting down' or 'sitting in fear' and relates to a Gwich'in legend about a young girl who broke the rules of her puberty training and caused her three brothers and their dog to turn into stone pillars;
4. connections with legendary or historical events (i.e. how a river was formed, a reference to starvation, or contact with another Indigenous group); and
5. connections with a particular person who is known to have lived or used the location (Kritsch et al., 1994).
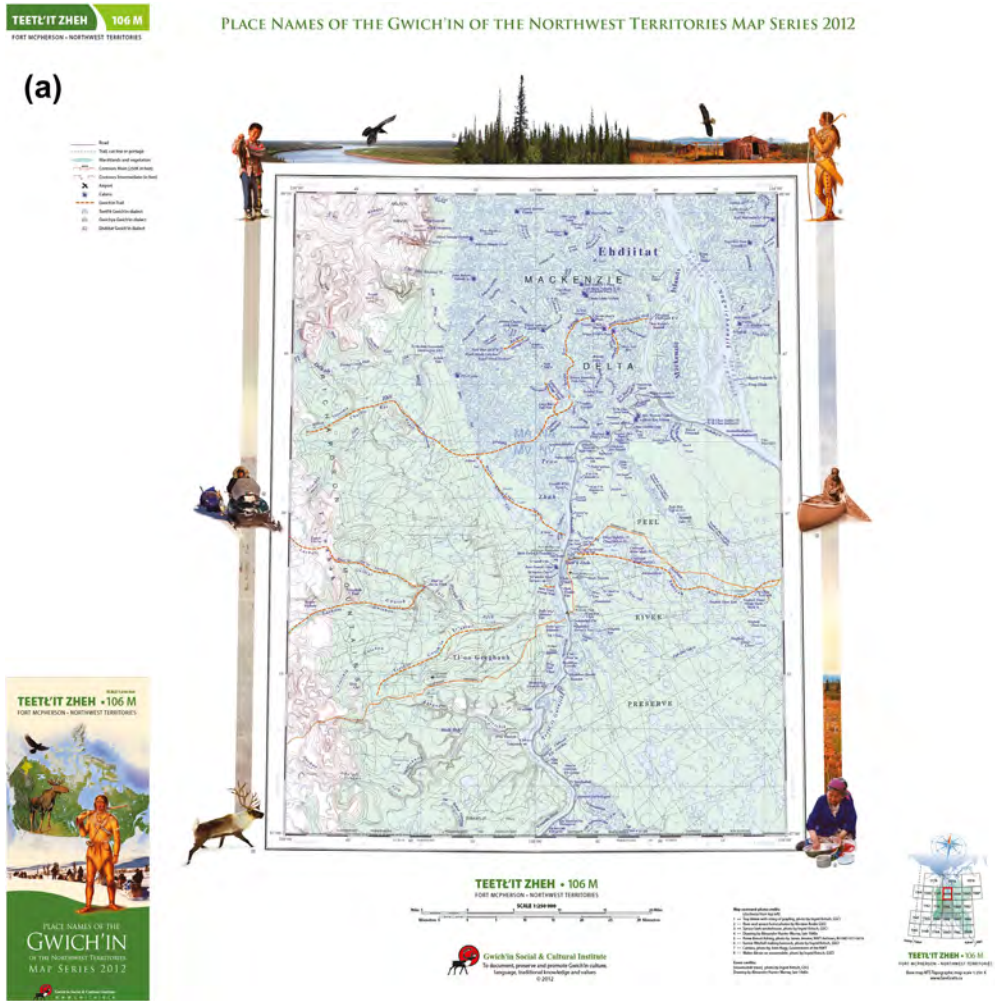
FIGURE 16.2   (a) Gwich'in place names map 106M for Teetł'it Zheh (Fort McPherson) from the 1:250,000 series produced by GSCI.
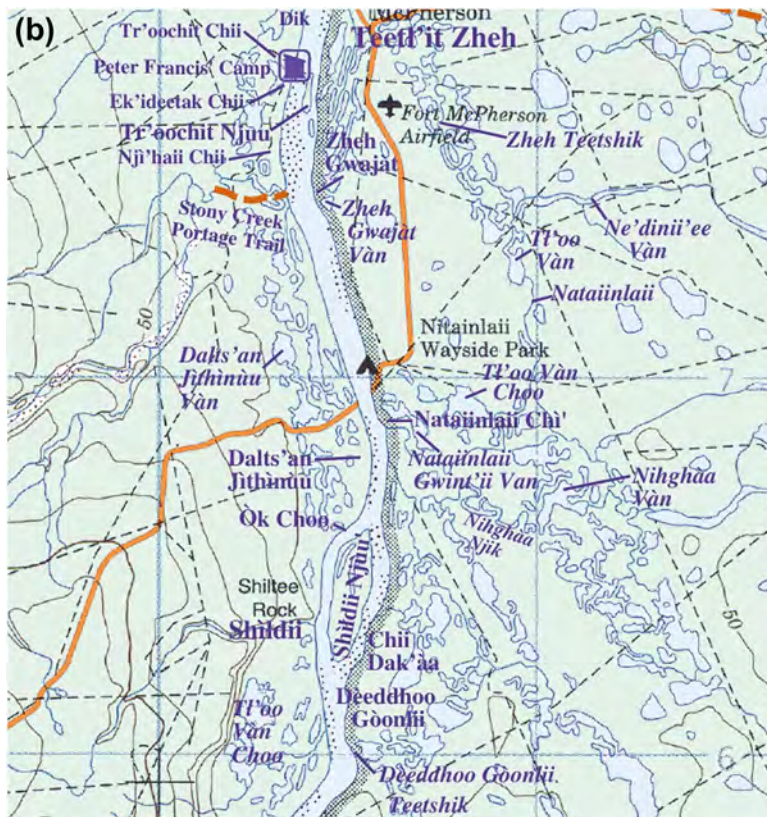
FIGURE 16.2, cont'd   (b) Enlarged area of map sheet 106M for Teetł'it Zheh (Fort McPherson) with sample of place names from Fort McPherson to Dèeddhoo Gòonlii Teetshik along the Peel River.

FIGURE 16.3   Travelling along the traditional Teetł'it Gwich'in trail between Fort McPherson and Dawson or Mayo in March 1998. This was the trail that the infamous Royal Northwest Mounted Police 'Lost Patrol' travelled on in 1911 between Fort McPherson and Dawson and lost their lives. The travelers are approaching a range of mountains called Ddhah Dik'ee ('mountain-sharp ridge'), which are located north of the Peel River, across from the Bonnet Plume River. *Source: Ingrid Kritsch, GSCI.*

Most place names can be translated, but a few names are so old, and the language so intricate, that they elude translation. These names are referred to as *Ts'iidaii* (Teetł'it Gwich'in dialect) or *Ts'iid*ęįį (Gwichya Gwich'in dialect) referring to their ancestors of long ago – 'stone age people from 500 years or more'.

16.3   DOCUMENTING THE NAMES

The Gwich'in place names and oral history research initiated in 1992 was originally intended to complement archaeological research being carried out at this time in the Gwichya Gwich'in area, north of the Mackenzie River (see Pilon, 1994; Kritsch et al., 1994). In carrying out this research, however, the Gwichya Gwich'in elders in Tsiigehtchic asked the researchers (Andre and Kritsch) to continue the recording and documentation of other areas in their traditional land-use region that extended up the Arctic Red River and into the Mackenzie Delta. The elders were concerned that if this information was not recorded it would be lost as the younger generations were no longer spending much time on the land where this knowledge is traditionally acquired. The elders felt that this knowledge was vital for future generations to understand and appreciate their lands and culture. The researchers soon learned that this view was shared by all the Gwich'in communities consulted in the NWT. From 1993 to 2007, as funding became available, GSCI researchers worked with elders from Tsiigehtchic, Inuvik, Aklavik, and Fort McPherson to record named places and other land-based heritage information, such as trails and historical and archaeological sites. What began as a solitary research project in one Gwich'in community transformed into part of a comprehensive plan to preserve, promote, and manage Gwich'in heritage.

The methodology used for this project included one-on-one interviews with elders and other knowledgeable land-users using 1:50,000 National Topographic System (NTS) topographic map sheets and a tape recorder to record the place names and their meanings, associated stories, trails, traditional camp sites, graves, historic sites, harvesting locales, and sacred or legendary places. Initial interviews were usually carried out in the communities, although in a few cases the interviews took place at people's bush camps. These initial interviews were then followed up with further interviews and verification on-the-land at as many of the named places as possible that could be reached by boat, snowmobile, and helicopter. Each of the named places visited was photographed, and if above ground features were visible, these were also recorded (Figure 16.4).

Verification workshops of the names and associated information were conducted in each community following the mapping, and summary reports were prepared by the researchers. Translation and transcription of all taped interviews were also carried out with the help of local translators. In later years, GSCI held a series of community workshops to verify the names, locations, translations, record the sounding of the place names, and delineate the geographic extents of each name. In order to determine extents, NTS maps were projected onto walls so the elders could indicate the approximate bounds of each place. In some cases, this was quite straightforward (i.e. with lakes), but other features such as rivers, as discussed below, proved more challenging (Figures 16.5 and 16.6).

Determining the extent of the named feature was required for submitting place names for official recognition in the NWT. This requirement follows guidelines set by the Geographical

FIGURE 16.4 Hyacinthe Andre telling a story to his daughter Alestine Andre during the 1993 Gwichya Gwich'in Place Names Project about traditional travel routes up the Arctic Red River while sitting on a hillside of a major fish lake called Nihtavan Diniinlee. The last time Hyacinthe was here was in the early 1950s. *Source: Ingrid Kritsch, GSCI.*

FIGURE 16.5 Annie B. Gordon showing the extents of a named place using a projected map on the wall during the Aklavik community workshop in November 2010. *Source: Alestine Andre, GSCI.*

FIGURE 16.6 Ingrid Kritsch recording the sounding of the names by Walter Alexie during the Fort McPherson community workshop in March 2012 using the Nunaliit application developed by the Geomatics and Cartographic Research Centre, an iPad and snowball microphone. This technology allowed the project to enter the sound files directly into the appropriate place name record – a great time-saving measure. *Source: Alestine Andre, GSCI.*

Names Board of Canada (2007), and is a way to help understand Indigenous naming practices (see Andrews, 2011: 61–63). In Gwich'in, for example, the name for the mouth of a river is often differentiated from the rest of the waterway by a different suffix and this is reflected in the extents. The mouth of the Road River in the Peel River watershed for instance is called Vihtł'òo Tshik whereas the length of the river beyond the mouth is called Vihtł'òo Njik. In most cases, 'tshik' refers to the mouth and 'njik' for the length of the river, although where one begins and the other ends is not always straightforward and speaks to the difficulty of 'bounding' places.

The value of the place name research went beyond recording and documenting this critical land-based knowledge that was at risk of being lost. It also gave GSCI an opportunity to bring elders and youth together on the land, promoting the sharing of the language, knowledge about the land, and Gwich'in culture. The process of knowledge sharing with younger generations that was facilitated in the context of the research project was considered by many in the communities to be as significant as the data collected.

Besides encouraging this intergenerational exchange of knowledge, the place names research continues to be relevant by raising an awareness and appreciation of Gwich'in culture, language, and knowledge of the land. It has assisted GSCI in ensuring that culturally significant heritage sites and places in the GSR are recognized, protected, and/or managed in a manner consistent with Gwich'in values for the benefit of future generations. This work is being carried out through the designation of named places and heritage sites as Territorial or National Historic Sites, and through protective measures in the Gwich'in Land Use Plan.

The place names project has also resulted in the development and publishing of culturally relevant books, exhibits, and educational materials for local schools, museums, and interpretive centres, and for the general public. A prototype 'Talking Map' developed in 1993 by Gwich'in Geographics Ltd. and GSCI to showcase named places within the Gwich'in Territorial Park outside of Inuvik was expanded in 2003 on the GSCI website (http://www.gwichin.ca/Research/placeNameMap.html) as a way to share knowledge gained through this research. The 'Talking Map' provides a virtual tour of the three major rivers in the GSR using place names and associated oral history information, plus photos, and audio sounding of the names. Gwich'in place names are now recognized on highway signage, within Territorial Parks, and on maps of the GSR. The information contained in the names (and the names themselves) also facilitate the review of regulatory land and water permits, providing insight on possible impacts that economic developments could have on Gwich'in culture and resources. The names and knowledge resulting from this research, therefore, are becoming important instruments in regards to heritage and land management issues and are all important measures in the process of Gwich'in nation-building (Kritsch and Andre, 1997).

16.4 MAPPING ORAL GEOGRAPHIC KNOWLEDGE

There are significant challenges in mapping place names and other geographic knowledge pertaining to oral-based Indigenous cultures. The most basic one is epistemological, as Indigenous geographic knowledge is significantly more holistic and connected to other spheres

of knowledge and performance than its western counterpart. While, in principle, a western-European place name can be reduced as discrete location, in most cases Indigenous place names only make sense in the context of larger narratives, or in the context of actual travel (as with names that describe features as they appear in the horizon). Therefore, the mapping of a Gwich'in place name involves a process of 'conversion' of an entity that forms part of a wider set of oral narratives and performances – into an artifact developed by western science (a map) designed specifically to place and locate names in reference to a framework of geographic grids and cartographic conventions.

Gwich'in place names, as described above, resist classification, as even the effort of grouping them in different thematic clusters does not reflect the realities of the use of a name in everyday life and in speech. Names referring to land resources, shapes of the land, legendary and historical events, etc. belong to broader narratives in which thematic categories become blurry. The process of mapping or documenting a place name involves, to a degree, isolating it from its broader uses and from its relationships with the land in the context of oral narratives. Place names that refer to, for instance, legendary events are often linked to particular shapes of the land (e.g. a rock), to the presence of animals (e.g. caribou), and to historical events (e.g. a hunting or fishing camp). Place names are in fact multidimensional and they are fully significant not only in the context of broader narratives, but also, and mainly, in the acts through which people interact with the land.

The Gwich'in relationship with their land and environment is intrinsically connected to travel and trails, and place names are fully significant only when they are recognized in familiar horizons. In other words, Gwich'in geographic, historic, and environmental knowledge is embedded in the land. Names are not merely discrete entities fixed in particular places, but they represent connections of people with topographic features and with past events (historic and legendary are not necessarily separate categories in the Gwich'in cosmology). Shiłdii, for instance, has been identified as one of the most important sacred sites to the Gwich'in. The story is told in different ways, but it generally refers to a young woman in puberty, who, in ignoring cultural prescriptions to be followed at this time, sets a series of events in motion resulting in her three brothers (and their dog) transforming into stone. The story is multidimensional, as it not only refers to space, but also to a particular season and to an activity (the brothers are actually returning from a caribou hunt). It is embedded in real space as events unfolded in recognizable places, making the story (and the place name) interconnect with people's lives. As told by William Nerysoo Sr., for instance, the brothers 'traveled to the mountains which you can see over there to the west of Ft. McPherson', and at Dèeddhoo Gòonlii (Scraper Hill) where the family was camping and fishing 'if you look around carefully you will see stones that the women used to bake (a kind of) bannock on,' a reference to another part of the story (Nerysoo, 1976: 98–102). The story, therefore, is anchored in real space, and the place name is part, not only of broader narratives, but also of relationships that people establish with place.

The mapping of the place named Shiłdii, therefore, will in theory separate the name from both the story and the experience of place. Fortunately, reality is less encumbered than theory by such distinctions, and performances (e.g. the act of reading a map by a Gwich'in person) often restore the words to their stories and to their proper place in the land. Semiologist Roland Barthes (1973) made it clear that written text becomes alive with new meaning every time it is read.

The reasons for mapping Indigenous place names are several, but in this paper we will briefly refer to three of them. The emergence and continuous development of mapping projects are a consequence of the need of Indigenous groups to: (1) reclaim their proper place in history, (2) reclaim their traditionally used lands, and (3) take action against a process of culture and language loss. Mapping is now facilitated by the possibilities offered by new technologies, and the new methods of documenting and representing place-based knowledge. These three reasons converge in the pragmatic decision of most First Nations and Inuit groups in Canada to undertake place names projects.

16.4.1   Reclaiming

The first and most obvious reason for mapping is political. Place names mapping projects can certainly be framed as acts of cultural resistance and re-appropriation. Maps have undoubtedly become tools of power, and putting Indigenous place names on the maps are certainly acts of justice. More often than not, places that have been long identified with English (or French) names have their counterparts in the local Indigenous group's language. The names may not refer to the same exact features, as the extent of the features is often conceptualized differently by different cultural approaches, but most English names coincide or overlap with Indigenous names. In Nunavut, for instance, the lake identified as Hall Lake (after a nineteenth century American explorer) is known as Tasiujak ('like a lake') among Inuit from the Igloolik region. At the same time, Inuit also have dozens of names describing shores, bays, hills, camps, and even rocks around the lake. The naming of small features around the lake reveals the intimate knowledge and intensive use of the area by Inuit, while the official English name shows the lack of such cultural context. A Gwich'in example of the same representational conflict is the Peel River, named by John Franklin for Robert Peel on his second overland expedition to the Arctic in 1826. The Gwich'in name for this river is Teetł'it Gwinjik, ('at the head of the waters river'). This river gives the Teetł'it Gwich'in their name as their traditional lands were centred upon this watershed. Many islands, river banks, canyons, hills, and camps along the river have traditional Gwich'in names, revealing their intensive use of the place and showing, again, a significantly different connection to these places than the singular connection implied in the name of the river as the 'Peel'. In the context of Indigenous place names projects, the mapping of place names could be understood as a process through which a western-European tool (the map) is appropriated as a means to empower local groups in their effort to reclaim their history and their rights. In many cases, the documentation of place names is done in the context of land claims negotiations, or to identify places of significance in the context of potential economic development (see, for instance, Milton Freeman Research Limited, 1976).

16.4.2 Language and Cultural Loss

As a result of a long history of contact, land claim negotiations and of formal schooling, maps have become part of people's lives among most Indigenous groups in Canada. While traveling on the land, topographic maps are often used as navigational tools, a practice that is becoming more intensive among younger generations (who are also using Global Positioning

Systems; see Aporta and Higgs, 2005). From a pragmatic point of view, it certainly makes sense for people to use maps with their own place names on them, but the significance of mapping place names goes beyond this, as maps and gazetteers are among the most important instruments to keep Indigenous peoples' histories and knowledge of the land alive. This is especially important in the present context of significant cultural change and language loss common to most Indigenous groups in Canada. Maps are indeed significant educational tools, and efforts to create new artifacts (beyond the traditional map) have been implemented all across Canada. In the Gwich'in context, the GSCI has produced a 1:250,000 map series and a wall map, and has submitted the documented place names for official recognition in both the NWT and Yukon.

16.4.3 New Methods

Finally, the flexibility offered by new mapping technologies and methods (particularly since the introduction of Geographic Information Systems –GIS- and Global Positioning Systems –GPS) has signified a step beyond the former 'static' character of the conventional map. Databases built in these new ways allow for the storage of geographic data in connection to data of different sorts. For instance, the meaning and story associated with a name could be documented and linked, not only to a geographic location, but also to photographs, audio recordings, and video material. Names and other features can also be mapped on location with GPS units, and maps and scales can be changed according to need.

As the technologies of mapping have evolved and merged with other technologies (e.g. multimedia), the possibility of creating a culturally appropriate tool also became clear. The convergence of multimedia, mapping, and web technologies has prompted a number of efforts to document not only the name as an isolated or discrete entity, but also in connection to larger narratives and in accordance with different ontologies of representation, as well as multisensory and interactive experiences of place. It is in this context that the Cybercartographic approach should be placed.

16.5 CYBERCARTOGRAPHIC APPROACHES AND THE GWICH'IN ATLAS

Explanations of the Cybercartographic paradigm, as defined by D. R. Fraser Taylor (2005), can be found in several chapters of this book including chapter one of this book. Of significance to this paper, it suffices to say that a Cybercartographic atlas is an artifact that allows for story-telling or story-building, beyond the representational limits of traditional maps. A Cybercartographic atlas is based on the premise that representations of place and space cannot be circumscribed to the two (or even three) dimensions of a map, but should contemplate different aspects of the concrete perception of place and space as experienced by people. In that sense, the Cybercartographic approach has developed alongside a number of technologies and techniques, allowing for the dynamic combination of data of different sources and different type, including audio, video, and photographs. This type of representation (namely, the combination of different types of data on a map) can be pursued through

different approaches, including the use of multimedia products, or web-based mapping of the type offered by Google Earth. Cybercartography, however, offers a different type of approach as it goes beyond representations to more effectively combine the contents of databases. A Cybercartographic atlas consists mainly of a programming framework allowing for communication between datasets, resulting in interactive products that can be built by the user, both through the process of reading and/or while incorporating data.

The fact that this atlas is always in a process of being constructed makes it an ideal instrument for the mapping of Indigenous knowledge. Audio, video, and text recordings of oral histories can be intertwined with photographs and drawings, allowing narratives to emerge through the user's navigation of the atlas, and eventually, through his/her input *into* the atlas.

The types of narrative that emerge through this process are certainly not meant to replace knowledge and experience of place gained on location through traditional frameworks and methods of learning. In fact, a paper map with names and trails is often as useful and as rich in its integration of broader narratives and experiences as a web-based interactive atlas. Rather, a Cybercartographic atlas is useful in two other ways: (1) as a repository of datasets of different kinds, and (2) as a facilitator of learning among younger generations.

From 2010 to 2012, GSCI worked with Gwich'in elders, Carleton University's Geomatics and Cartographic Research Centre, and MDT Communications on the 'Gwich'in Goonanh'kak Googwandak: The Places and Stories of the Gwich'in' project. The goals of the project were to produce an online interactive Gwich'in Place Names Atlas, a series of Gwich'in place name maps for the Gwich'in traditional land-use area, a large wall map, and to submit almost 850 place names for official recognition on future government maps in both the NWT and Yukon.[3] The project was largely funded through the Federal Government's Museums Assistance Program and the GSCI.

The Gwich'in Place Names online atlas showcases almost 850 place names and is based on 20 years of GSCI research with Gwich'in elders living in Aklavik, Fort McPherson, Inuvik, and Tsiigehtchic. The online Atlas uses a Google Earth map image to present all the named places, and contains a database to house all of the information behind the named places. The squiggles, lines, polygons, and circles on the map represent the defined extents or boundaries for each named place. The extents were determined through extensive consultation with Gwich'in elders and other knowledgeable land users.

The Atlas presents a zoom-able map, where Gwich'in place names can be observed in more detail and at different scales. Most of the data collected through the mapping projects have been integrated into the atlas. The combination of geographic data (the place name) with other narratives can be observed, as the clicking of the mouse on the place name will bring up the associated textual oral history, and historical information about the named place and links to its sound files.

Searching the online Atlas can be done using either place names or keywords. For example, entering Chigwaazraii ('Black coloured mountain' – locally known as Black Mountain) in

---

[3] In a series of community meetings…Canadian government. In December 2011, the GSCI submitted 574 names for official recognition in the NWT. On June 21, 2013, the Government of the Northwest Territories officially recognized 414 of these names, significantly transforming future maps for the northwestern part of the NWT. GSCI also submitted 274 names for official recognition in the Yukon and is awaiting a final decision.

the search field will centre the map on the proper feature and highlight it in brown and blue. The atlas will also show all associated data related to the name and place. Searches through keywords such as 'sheep', 'caribou', 'dog', etc., will bring up all the place name records with these keywords.

Each place name record includes the Gwich'in name for the place, a translation of the name, and alternate names in cases of features that are known by more than one name. Besides the geographic location of the place name, the records include oral history, and also, in some cases, historical and archival information associated with that place. The next stage will involve adding additional material such as photographs and videos of interviews with elders. While this information has been collected over the years, and archived in different datasets, the Atlas allows us to articulate relationships among the data, and to make it available to a broader audience (particularly a Gwich'in audience) in a visually attractive manner.

Another important feature of the atlas is that the user can hear how the name is pronounced in Gwich'in. The pronunciation of the names was recorded with knowledgeable elders, and the audio files represent a valuable record of how the language is spoken before additional transformation and loss takes place. The GSCI hopes that younger Gwich'in will become more familiar with the names, and use them more often instead of the English counterparts. It should be noted that in cases where names are pronounced differently, recordings of multiple pronunciations have been added.

16.6 CONCLUSION

It is clear that the full dimensions of Indigenous place names cannot be captured by any representational technique outside of the original context of use. The limitations presented by traditional cartography, however, have been engaged with and expanded by new mapping and documenting techniques and technologies. While traditional paper maps could only render geographic location and spelling of an orally transmitted place name, new technologies allow for the recording and presentation of the stories and other information connected to the name. The capacity to actually record visual and audio information in connection with the name allows for a more comprehensive type of documentation and representation.

As we have seen with the Gwich'in Atlas, the Cybercartographic approach goes a step further, creating a digital environment for data integration. The importance of this cannot be underestimated, as it sets it apart from other kinds of narrative-constrained multimedia and web-based media. The Gwich'in Cybercartographic Atlas can be understood as a framework within which the user is able to build his/her own narrative through the seamless use and connection of different datasets. Geographic locations, audio recordings of the pronunciations of names, text, and eventually audio and video converge to facilitate the creation of a multidimensional narrative, controlled, to a large degree, by the user. The potential of this approach in the documenting of oral spatial and environmental narratives is beyond doubt, as is the possibilities of this new approach in the context of contemporary education or cultural programs. At the end of the day, however, the full multidimensionality of Gwich'in place names will be only materialized within the context of actual use of the land.

References

Andrews, T.D., 2011. There will be Many Stories. Museum Anthropology, Collaboration, and the Tłı̨chǫ. Ph.D. Thesis, University of Dundee.

Aporta, C., Higgs, E., 2005. Satellite culture: global positioning systems, Inuit wayfinding, and the need for a new account of technology. Current Anthropology 46 (5), 729–753.

Barthes, R., 1973. Le Plaisir du Texte. Editions du Seuil, Paris.

Freeman, M.M.R., 1985. Appeal to tradition: different perspectives on wildlife management. In: Brosted, J., Dahl, J. (Eds.), Native Power: The Quest for Autonomy and Nationhood of Aboriginal Peoples, Universitetsforlaget, Oslo, pp. 265–281.

Galeano, E., 1997. Open Veins of Latin America: Five Centuries of the Pillage of a Continent. Monthly Review Press, New York.

Geographical Names Board of Canada, 2007. Delineation Guidelines, Version 1.0. Geographical Names Board of Canada Secretariat, Ottawa.

Indian and Northern Affairs Canada, 1992. Gwich'in Comprehensive Land Claim Agreement. vol. 1.

Kritsch, I., Andre, A., 1997. Gwich'in traditional knowledge and heritage studies in the Gwich'in settlement area. In: Nicholas, G., Andrews, T. (Eds.), At a Crossroads: Archaeology and First Peoples in Canada, Archaeology Press, Simon Fraser University, Vancouver, BC, pp. 125–144.

Kritsch, I., Andre, A., Kreps, B., 1994. Gwichya Gwich'in oral history project. In: Pilon, J.-L. (Ed.), Bridges across Time: The NOGAP Archaeology Project Victoria, BC, Canadian Archaeological Association Paper No. 2, pp. 5–13.

Lewis, M. (Ed.), 1998. Cartographic Encounters: Perspectives on Native American Mapmaking and Map Use, University of Chicago Press, Chicago.

Milton Freeman Research Limited, 1976. Inuit Land Use and Occupancy Project. Dept. of Indian and Northern Affairs, Ottawa.

Mundy, B.E., 1996. The Mapping of New Spain: Indigenous Cartography and the Maps of the Relaciones Geográficas. University of Chicago Press, Chicago.

Nerysoo, W., 1976. Shiłdii. In: Ritter, J. (Ed.), Gwich'in (Loucheux) Athapaskan Noun Dictionary, Fort McPherson Dialect Appendix 2. The Queen's Printer for the Yukon, Whitehorse, YT.

Pilon, J.-L. (Ed.), 1994. Bridges across Time: The NOGAP Archaeology Project Victoria, BC, Canadian Archaeological Association Paper No. 2.

Taylor, D.R.F., 2005. Cybercartography: Theory and Practice. Modern Cartography Series, vol. 4. Elsevier, Amsterdam.

Thrower, N.J.W., 2008. Maps & Civilization: Cartography in Culture and Society, third ed. University of Chicago Press, Chicago.

Wonders, W.C., 1987. Native land claims and place names in Canada's Western Arctic. The Canadian Journal of Native Studies 7 (1), 111–120.