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Cartouche

Canadian Cartographic Association

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Canadian Cartographic Association
l'Association canadiene de cartographie

Cover illustration: Selections from previous Cartouche issues in commemoration of this 100th issue.
Cover imagery compiled by Marikka Williams.

Cartouche content compiled and edited by Stephanie Pyne and Marikka Williams.
Layout by Gordon Campbell.

Cartouche is the Association's annual publication, featuring updates by the executive committee, news about conferences and events, member submitted articles and much more. CCA members receive Cartouche as part of the membership. Current versions are sent directly to members, and past editions are added to the website: https://cca-acc.org/cartouche

PRESIDENT'S MESSAGE

Glenn Brauen

Associate Professor, Teaching Stream
in the Department of Human Geography
at the University of Toronto Scarborough

I am happy to be writing to you as part of Cartouche #100! The CCA issued Cartouche #1 in Spring 1991, after renaming what had been known as the association Newsletter up until then. According to Roger Wheate, the name change was intended to provide a slightly more prestigious-sounding title for feature authors to use in publication lists.

I was delighted to see the CCA annual conference and general meeting bring people together for an on-site, in-person conference this year! Carto 2023, held jointly with the Association of Canadian Map Libraries and Archives (ACMLA), June 13-16 at the University of Calgary, was an excellent return from the online-only conferencing we were restricted to during the pandemic. Thanks to ACMLA for being open to holding a joint conference and to the organizers from both associations who met regularly from October 2022 onward to ensure the conference was a success. The conference was a hybrid event, including in-person and online presenters and real-time questions and answers from the conference floor and from online participants. Please see the separate item this issue for a more complete summary of the conference and acknowledgements of the organizers.

I am happy to announce that CCA awarded the Norman Nicholson Memorial Scholarship this year to Henry Shaver who is in his last year of study at Western University to complete his Bachelor of Arts with an Honours Specialization in Geographic Information Science.

Thanks to Ted MacKinnon who, with assistance from Byron Moldofsky, has set up an association account with Membee (membee.com), a subscription-based service that provides membership services to ease tracking of memberships and renewals by the association while creating extensions to our website for, among other possible purposes, a member directory and event calendars. Watch for a roll-out of the new membership pages on our cca-acc.org website in the near future.

The 31st International Cartographic Conference (ICC) 2023 was held in Cape Town, South Africa, August 13-18. Congratulations to Anaya Cherian of Surrey, BC, for taking second place in the 9-12 age group of the Barbara Petchenik Children's World Map Drawing Competition at this year's conference! The 32nd ICC will be held Aug 18 - 22, 2025 in Vancouver. Canadian Institute of Geomatics is the lead organizer for the event.

We are starting to plan for our 2024 annual conference and general meeting. The executive committee has decided to host the conference at the University of Toronto Scarborough (my home campus), May 23-24. I hope to see many of you here next spring! Please see the separate item this issue and watch for updates concerning the conference as we start to develop plans and call for volunteers to assist.

Many thanks to Stephanie Pyne and Marikka Williams for co-editing this issue of Cartouche and to Gordon Campbell who continues to do layout and design for the newsletter.

Best wishes for a healthy Winter!

Glenn Brauen
President
Canadian Cartographic Association
glenn.brauen@utoronto.ca

PAST PRESIDENT'S MESSAGE

Ted MacKinnon

Geomatics Specialist with the
Department of Natural Resources

Despite the challenges faced over the past few years, the CCA has persevered and continued to thrive, and I am proud to have served on the CCA Executive during this remarkable time. The collective power of our expertise and the generous spirit of collaboration has enabled us to navigate the challenges and emerge even stronger.

Recognizing the need to continue engagement, we adapted to host several online events that brought our members together. We organized online meetings, student map competitions, and virtual conferences, providing a platform for knowledge exchange and fostering connections despite the physical distance. Our commitment to supporting our members remained consistent, and through these virtual initiatives, we continued to grow as a community.

Thanks to the collective efforts of our dedicated volunteers and the CCA Executive we successfully co-hosted CARTO2023, the first in-person event since 2019 (with an online component that also included members who could not attend in person). This milestone not only brought together map enthusiasts from across the country but also provided an opportunity for us to reconnect, network, and learn from one other. The event showcased the resilience and determination of our association, and served as a testament to our commitment to advancing the field of cartography through community support. You can read more about CARTO2023 in this issue on page 10.

This year the Association recognized and celebrated young talent within the cartographic field. The CCA Executive awarded the Norman L. Nicholson Memorial Scholarship, presented two President's Prizes and acknowledged outstanding students with a Best Student Presentation Award, recognizing their exceptional contributions to the art and science of cartography. These young minds continue to inspire us with their innovative approaches and fresh perspectives, and we are excited to see the contributions they will make to our profession in the years to come. More details about all the student awards presented this year is included in this issue on page 37.

In response to the evolving needs of our members and volunteers, we have adopted an online membership management system that aims to simplify the registration process, enhance access to exclusive members-only resources, and streamline communication within the mapping community. The CCA Executive hopes that these improvements will provide improved service to the CCA membership and increase member engagement. In relation to this initiative, as this year starts, we are launching an update to the CCA website, which includes an online directory and a members section, where you will have the ability to log into the CCA website to retrieve information and interact more with CCA members.

As we look forward to the coming year, we will continue to explore innovative ways to engage our members, support aspiring cartographers, and promote excellence in our field. I encourage each of you to actively participate, share your expertise, and seize the chance to shape the future of cartography.

On behalf of the Canadian Cartographic Association, I want to thank you for being an integral part of our vibrant mapping community and hope to see you at one of our upcoming future events.

Ted MacKinnon
Past President
Canadian Cartographic Association

Upcoming CCA Annual Conference and General Meeting

CCA2024 – Scarborough and Online – May 23-24

Announcing **CCA2024**, our Annual Conference and General Meeting, to be held at the University of Toronto Scarborough (UTSC), Scarborough, Ontario, May 23-24.
Please hold the date and watch for updates concerning theme, program, and registration.

We are looking for volunteers to assist with all aspects of planning the conference. Many aspects will be planned through on-line meetings so you can get involved from wherever you are. Please get in touch if you are interested in helping to shape the conference. Email glenn.brauen@utoronto.ca.

CCA Treasurer's Report for 2023

Byron Moldofsky

Last year at the AGM in Calgary I reported on our previous fiscal year 2022 and tabled the full report for that year. That report is available to members, and was sent out with the AGM minutes – if anyone needs a new copy they are welcome to email me at: cancartassoctreasurer@gmail.com. Since we are now most of the way through 2023, I can provide an estimate of our financial status for the current year. It is summarized in the tables below. I am including columns for three previous years for comparison, although they are not always precisely comparable. I am excluding 2020 since it was the year COVID affected us most, and was an anomaly. Please note these figures are estimates and may change.

Association Revenue	**Estimate 2023**	**2022**	**2021**	**2019**
Membership fees (balance of year)	$7,389	$6,402	$6,741	$7,177
Membership/conference fees (2023 transfer from ACMLA)	$1,380	$378	$2,020	$21,105
Interest received CCA-specific term deposits	$254	$793	$3,440	$386
Total Association Revenue	**$9,023**	**$7,573**	**$12,201**	**$28,668**

Association Expenditures	**Estimate 2023**	**2022**	**2021**	**2019**
Cartographica distribution (5 issues)	$5,399	$3,480	$3,347	$2,345
AGM Travel for Executive (2021-22 Online only)	$2,165	$0	$0	$3,729
Website expenses (hosting and domain)[2]	$605	$0	$36	$72
Conference expenses (2023 incl. in transfer from ACMLA)	n/a	$525	$4,632	$19,516
Bank service fees (not incl. deductions Paypal, Stripe)[3]	$314	$132	$157	$375
Membership in ICA for 2 years (shared with CIG)	n/a	$457	$0	$800
Administrative/Office Expenses	$226	$76	$958	$282
Student Awards – President's prize, Webmap, Presentation	$750	$1,500	$1,000	$1000
Association Management – MEMBEE license	$1,329	-	-	-
Consulting accountant – Business income tax **(ASSUMED)**	$2,000	-	-	-
Total Association Expenditures	**$12,788**	**$6,170**	**$10,130**	**$28,119**

Excess of Association revenue over expenditures	**Estimate -$3,765**	**+ $1,403**	**+ $2,071**	**+ $549**

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Generally, the executive considers our goal is to break even on an annual basis, while investing in the activities and growth of the association. In past years we have registered a modest surplus. In 2023 I anticipate a deficit of close to $4000 due to some unusual circumstances. To list some of these:

- Cartographica distribution – 5 issues this year due to irregular publishing schedule
- Website hosting – some costs deferred from 2022 paid in 2023
- Membee license – decision to acquire Membee Association Management system
- Consulting accountant – need to file initial tax return as non-profit business required assistance

In addition to these factors, 2023 was our first year back to an in-person/hybrid annual conference. As described elsewhere in these pages, we decided to meet jointly with the Association of Canadian Map Librarians and Archivists (ACMLA) in Calgary. CCA executive members were very active on the program and organizing committees, but ACMLA assumed most of the responsibility for registration and administration, through the Membee Association Management System (AMS) that they have been using for approximately 5 years. The CCA had been considering adopting an AMS for the last couple of years to streamline membership applications and renewals, and conference registration. Seeing Membee in action through the eyes of the ACMLA executive members spurred us to investigate further, and eventually to decide to acquire Membee for ourselves. Members will see the results of this decision gradually over the next year or so.

The conference seemed to be very successful, but one of its ancillary effects was to change the way our conference financials appear in the table above. Essentially ACMLA collected all payments for conference registrations, which included membership in both associations for the balance of 2023, as well as the benefits of attending CARTO2023. After the conference there was a reckoning of all the funds coming in and going out, and there was an overall surplus of $2,760. ACMLA transferred half of this to our bank account, which appears above in Association Revenue as Membership/conference fees of $1,380.

Despite this year's shortfall CCA is still in good financial shape. As will be reflected in the full annual report to be tabled at the AGM next year, we still have overall investments assets of around $40,000 dollars, and an operating balance of around $12,000 more.

The future use of Membee for recording registrations and issuing receipts should simplify keeping track of financial information and the preparation of financial reports and tax returns. This looks to be my final year as treasurer of the CCA, and I expect to leave the association's financial affairs in good order. My thanks to all the members of the executive who have helped make this possible, especially Ted McKinnon and Glenn Brauen.

Above: a drone workshop was one of the highlights of this past year's CCA Conference.

CCA Annual General Meeting

June 15th, 2023

Stephanie Pyne - CCA Secretary

The CCA held its 2023 Annual General Meeting (AGM) on June 15, 2023, 11:45 AM MDT (10:45 AM PDT; 1:45 PM ADT) during CARTO2023. The meeting was attended both in-person at CARTO2023 (University of Calgary) and online via Zoom. Box lunches were provided for in-person participants. Full minutes are available on the CCA website (https://cca-acc.org/membership/agm)
AGM - Summary of Discussions

Welcome and Reports from CCA President:

Glenn Brauen

Glenn thanked participants for joining the meeting and reviewed CCA executive priorities, including recruitment, CARTO2023 conference organization, membership management with Membee (see Membership Management – Introducing Membee), special interest groups, and the 2025 International Cartographic Conference (ICC) in Vancouver.

Treasurer's Report and Summary of Finances:

Byron Moldofsky

Byron shared information from the treasurer's report, including expenditures back to 2019, and concluded that the CCA is in a good position with respect to its financial position.

Cartographica:

Heather McGrath

Heather noted that submissions to Cartographica were not quite as high as pre-Covid pandemic submissions, that Cartographica is open to submissions and/or special edition proposals, and that most submissions have been from Canada, the U.S. and Australia. Cartographica has good readership status, with approximately 20000 downloads in the past year from up to 90 countries. In addition to article submissions, Cartographica has also been receiving submissions for technical notes, reviewers, book reviews etc. Heather also reminded CCA members who are interested in being reviewers to update profiles in their Cartographica accounts.

Membership Management – Introducing Membee:

Ted MacKinnon

Ted provided an overview of Membee as a preferred membership management tool for the CCA website. In addition to explaining the rationale for conversion to Membee, Ted outlined potential changes to executive roles related to the conversion and a discussion ensued around the issue of changing membership away from "calendar year" renewals, which would require a minor update to the constitution.

Executive Task descriptions:

Byron Moldofsky

Byron indicated that a draft of revised executive position descriptions was being prepared and would be circulated to the membership for review once finalized.

Recruitment for CCA Executive Council:

Glenn Brauen

Glenn reiterated the call for a new treasurer in addition to the call for a membership coordinator and a Cartouche co-editor (see President's report)

CCA 2024 Conference Discussion:

Glenn Brauen

Glenn noted that it would be good to get started as soon as possible with respect to plans for next year, including striking an organizing committee and determining a location, and called for comments and suggestions.

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New Business:

Student Map Competition and Awards:

Stephanie Pyne

Stephanie provided an update that the adjudication of map entries was in process and that an email announcement with the winning entries would be made later in the summer.

Awards of Distinction:

Glenn Brauen, Heather McGrath, Roger Wheate

• Heather presented the Award of Distinction for Scholarly Contributions to Cartography to Dr. Emmanuel Stefanakis, who was present to accept the award.

• Roger presented the Award of Distinction for Exceptional Contributions to the CCA to Claire Gosson, and Claire (online) accepted the award with thanks and encouraging words for the CCA

• Glenn presented the Award of Distinction for Exceptional Contributions to the CCA to Anna Jasiak, and Anna (online) accepted the award with thanks, recollections and encouraging words for the CCA, including a big thanks to Roger Wheate.

Other Business:

None.

Closing Remarks and Adjournment:

Glenn Brauen

Canadian Cartographic Association
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Canadian Cartographic Association Awards of Distinction

The Canadian Cartographic Association (CCA) Awards of Distinction program was initiated in 1994 to help recognize individuals or groups who have made exceptional contributions in the field of Cartography in one of three categories:

1. Exceptional professional contributions to the practice of cartography
2. Exceptional scholarly contributions to cartography
3. Exceptional contributions to the Canadian Cartographic Association.

Nominations for future awards may be forwarded by any CCA member to the Past-President or any member of the CCA Executive.

Note: Awards of Distinction are not necessarily awarded every year.

Visit the CCA website to view lists of all the distinguished recipients from over the years, as well as links to other CCA awards and scholarships.

Overview of CARTO2023

Conference Event Summary

Ted MacKinnon

This year the Canadian Cartographic Association (CCA) teamed up with the Association of Canadian Map Libraries and Archives (ACMLA) to host the first in-person Canadian cartography-related Conference since 2019. The event took place June 13th to the 16th at the University of Calgary in Alberta. It was based on the theme of "Making and Breaking Boundaries". https://cca-acc.org/conferences/carto-2023

Presentations were streamed online to accommodate members that were not able to attend the event in person. The conference featured presentations on all aspects of cartography including: spatial data collection, analysis, and dissemination; cartographic methods; applied cartography; freelance cartography; map librarianship and much more. There was a map and poster display throughout the conference, where a variety of maps created by CCA members were displayed, including student maps that were entered into this year's mapping competitions. The event also included a workshop, several panel discussions, 2 AGMs, a banquet, and a scenic hike. With more than 35 different presentations, participants were easily able to immerse themselves in almost all aspects of cartography. The consensus from those that attended was that it was a great event and nice to be able to get together and network in-person again.

The conference kicked off with a workshop on data creation using drones and Lidar technology. It was based around two main components: live demonstrations of drone technology featuring actual flight missions, and a discussion of current rules and regulations and strategies for drone mission planning in Canada. To finish off the first day, an Ice-Breaker event was held at Inner City Brewing.

The first day of conference presentations began with a keynote talk by Dr. Peter Dawson, the Chair of the Anthropology department at the University of Calgary, whose research focuses on digital archaeology, particularly 3D scanning and 3D reconstructions of heritage sites.

The day continued with a variety of interesting cartographic presentations, the ACMLA AGM, followed by more presentations and a panel discussing the "Practice of Cartography in Canada Today". The day ended with a group discussion on CCA Interest Groups which focused on the role of Interest Groups and how attendees think that the CCA Executive Committee should proceed with involving members in this aspect of CCA.

The next day was another busy day filled with cartographic themed presentations, the CCA AGM, a panel discussing life as a solo GIS Librarian, and concluded with a banquet at the Last Defence (the University of Calgary grad pub).

Making & Breaking Boundaries
Créer et briser les frontières

Association of Canadian Map Libraries and Archives /
Association des cartothèques et archives cartographiques du Canada
Canadian Cartographic Association /
L'Association canadienne de cartographie

June 14–16 juin, 2023 / University of Calgary

Three awards of distinction were announced at the AGM: Heather McGrath presented Dr. Emmanuel Stefanakis with an Award of Distinction for Scholarly Contributions to Cartography. Dr. Stefanakis was Editor of Cartographica for a total of 32 issues between 2014-2022, the longest stint by any editor apart from the founder. This included two special issues as guest editor on Mapping the Pandemic, and Discrete Global Grid Systems. Following degrees from the National Technical University of Athens and the University of New Brunswick (UNB), he has now supervised over 120 students from all six continents and authored or co-authored 5 textbooks and over 100 articles published in international journals. Midway through his time as editor he moved from the Geodesy and Geomatics Engineering department at UNB, to become Head of the Geomatics Engineering department at the University of Calgary, indicating his academic prowess in this field, especially covering topic areas such as web mapping and geospatial data modelling, statistical modelling, spatio-temporal data analysis and mining, discrete global grid systems, hydrological flow and flood mapping.

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Roger Wheate presented Claire Gosson with an Award of Distinction for Exceptional Contributions to the CCA. Claire Gosson has served the CCA in almost every office during the new millennium. While still serving her consecutive terms as vice-president, president and past-president 2002-05, she took over as co-editor of Cartouche with Diane Lacasse in 2005. Subsequently she returned as secretary 2014-21 and simultaneously as Chair of the Education interest group. Throughout her service, she was able to incorporate her decades of experience with the Atlas of Canada and Natural Resources Canada to the benefit of the Association, for example in preparing national map exhibits for the International Cartographic Conference (2005).

Glenn Brauen presented Anna Jasiak with an Award of Distinction for Exceptional Contributions to the CCA. Anna Jasiak is a long-standing member of the association and was an active member of the Executive Committee for more than a decade. Anna was part of a Cartouche editorial collective, working with Diane Lacasse, and co-edited Cartouche before she became CCA Vice President in 2011. In 2012 Anna became CCA President for a one-year term but then decided, with the rest of the executive, that some of her work to revamp our communications and outreach, including moving onto social media, required more time. She voluntarily extended her tenure as President to two years and this has set a pattern for subsequent CCA two-year executive terms, continuing to the present. Shortly after completing her term as CCA Past President, Anna returned to the CCA Executive in a newly-created Communications role, promoting association activities and maintaining connections between CCA and colleagues in various Federal departments and elsewhere across Canada. When COVID-19 began to prevent in-person gatherings, Anna participated in organizing CCA's online conferences and annual meetings, helping to organize our 2020, 2021 and 2022 online conferences.

The final day included presentations and a post-Conference Hike to Nose Hill, one of the largest city parks in Canada (11 square kilometres), located 2 kilometres north of the University of Calgary campus.

A full list of presentation titles and their presenters can be found on the CCA website: https://cca-acc.org/conferences/carto-2023/carto-2023-conference-program with presenter details found on the Speaker Bios page https://cca-acc.org/conferences/carto-2023/carto-2023-speakers

Many thanks to the presenters and to those who volunteered in the capacities listed below:

Program Committee:

Francine Berish
Thomas Herbreteau
Martin Chandler
Saman Goudarzi
Meg Miller
Sherri Sunstrum
René Duplain
Roger Wheate
Zach MacDonald
Rhys Stevens

Organizing Committee:

Zach MacDonald
Dan Jakubek
René Duplain
Byron Moldofsky
Paul Pival (also, local organizer)
Glenn Brauen

Sponsors:

University of Calgary
Western University Libraries

And, of course, the many people who helped by chairing or moderating sessions, the presenters and the attendees!

The CCA Executive feels that the event went well and is currently planning next year's annual conference which will be another in-person hybrid event, with more details to be announced soon. If you are interested in volunteering for any of the conference committees or at the event then we encourage you to reach out and indicate your interest.

CCA 2023 Presentation Summaries

Information as Art

Jeff Clark
Principal, Clark Geomatics

The Essential Geography of the Salish Sea, published in November 2022, is an award-winning 1:700,000 scale reference map featuring the tectonically active and glaciated terrain of North America's Pacific Northwest. The region is a complex transboundary area encompassing the inland coastal waterways of southern British Columbia and Washington State, the Cascade Range, the southern extent of the Pacific Ranges, and half of the Olympic Peninsula, which was formed by eight ice ages over a period of 2.5 million years.

In this part of the world the coastal landscape is composed of steep mountains, fjords and rocky headlands which plunge into the ocean to form the underwater canyons, inlets, passages, banks, and channels we hear about but rarely see. This heavily glaciated terrain has produced craggy, glacier-topped mountains and extensive inlets with depths greater than 700 metres. In many areas, bathymetric depths in the Salish Sea are deeper than the ocean banks at the edge of the continent.

About Bioregions

The Salish Sea is an inland water body surrounded by snow-capped mountain ranges and rich in biodiversity. Freshwater lakes and glaciers filter through temperate rainforest into rivers that meet the Pacific Ocean's tidal salt waters, filling the Puget Sound, Georgia Basin, and Strait of Juan de Fuca. We are accustomed to seeing this part of the world divided by the Canada – US border and split into the three inland water bodies mentioned above. But there is another way to see, and

Figure 1 - The Essential Geography of the Salish Sea

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better understand, this landscape we call home. It is referred to as a "Bioregion" — a large geographical area made up of terrestrial, freshwater, and marine environments and ecological systems, not political boundaries, which are defined by large-scale geological structures or similar climate zones.

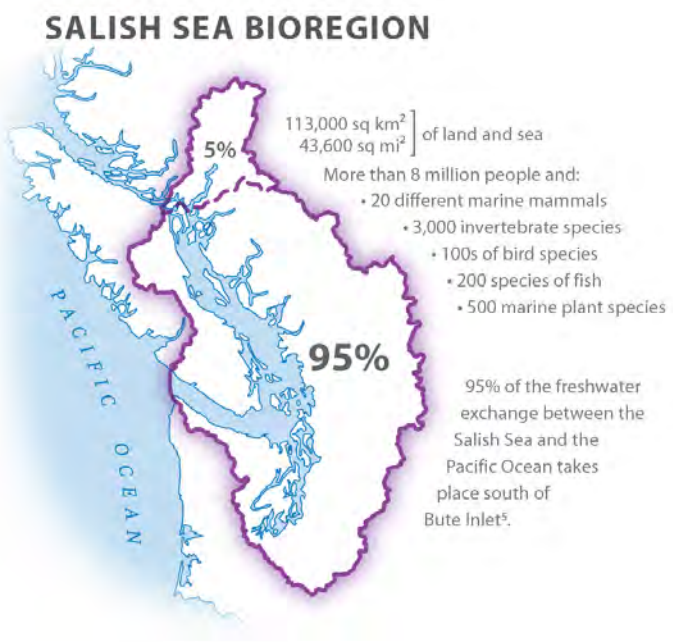

Figure 2 - Salish Sea Bioregion

What's in a Name?

The name, "Salish Sea," was introduced in the late 1980s by Dr Bert Webber, a professor emeritus at Western Washington University (Bellingham, WA), to provide a unifying name for the area, and was finally adopted by Canada and the United States in 2010. While the name itself honours the Coast Salish Peoples who have lived in the Pacific Northwest for thousands of years, it also gives present-day residents a heightened sense of place within this vast and beautiful landscape. The concept of a single, cohesive Salish Sea ecosystem has also become a focal point for local bioregional education, research, restoration, conservation, and policy development.

My Approach to Map Design

My goal as a cartographer is to improve the depth of communication, provide visual clarity and promote geographic awareness of place through maps. I believe that in order to prompt people to engage with a map, it must be visually attractive enough to capture the viewer's interest and then it must hold their interest with relevant, accurate and easy-to-read content.

At first glance, The Essential Geography of the Salish Sea map may look like a map you would find in an atlas, insofar as it includes the standard map items like the names of towns, rivers, lakes, and highways along with landmarks, mountain peak names, etc. So, the question is: What makes this map different?
Intuitive design and attention to detail make this map different from a typical atlas map where:

• the map was designed to help build geographic literacy and cultural and environmental awareness of this complex, trans-boundary area by providing clear, easy to read information over a visually appealing backdrop,

• every piece of information or symbol placed on this map is the result of a decision based on research with placement being adjusted to make the map easier to read, while helping the map reader make sense of the complex geography,

• the colour scheme, derived from satellite imagery, is based on Nature's palette, and resembles the colours you would see if you were viewing the landscape from an airplane, which gives the map the visual qualities of a painting, and

• the map is visually striking and offers a wealth of information from up close or at a distance.

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Figure 3 - Map detail showing central Salish Sea bioregion (Strait of Georgia and surrounding area)

Indigenous Place Names and Geographies

Coast Salish Tribes and First Nations are the longest standing marine stewards of the Salish Sea and Indigenous place names serve to help us re-evaluate what we think we know about the area.

Including Indigenous place names respectfully is particularly important with respect to connecting the reader to the ancient landmarks and natural landscape features that make up the bioregion. As a non-Indigenous cartographer, I focused on including placenames that were notably in the public domain (e.g., Wikipedia, First Nation websites/atlases, road signs or other public and government records). The Salish Sea map includes First Nation and Tribal reserves, band office locations, and historic ethnolinguistic regions within British Columbia and Washington State.

Information as Art

This map is meant to inspire interest in the beauty of this vast landscape, advance peoples' awareness of the integrated environment that sustains them and give a better sense of place and history by including colonial and Indigenous place names to promote cross-cultural understanding. In the end, when executed properly, the decisions made along the way result in a visually engaging, geographically, and culturally expressive map – information as art.

CCA 2023 Presentation Summaries

Mapping Strategically for the Municipality

Marikka Williams, MSc, GISP - Fleming College

Introduction

This presentation focused on how Municipal GIS professionals strategically provide mapping services, and was based on research and experience that I have acquired since 2002 when I first started working in the GIS industry in a Municipal Mapping role. I have been teaching Geovisualization, Geomatics in Surveying, Spatial Analysis and Municipal Mapping at Fleming College since 2014. In 2017, I created a special project to foster a learning environment for GIS Post Diploma Program students who enrolled in the Municipal Mapping course to connect them to municipal GIS professionals. Twenty Ontario municipalities have participated in this project:

- Durham Region
- Frontenac County
- Haliburton County
- Lennox-Addington County
- Peterborough County
- Prince Edward County
- Municipality of Temagami
- City of Barrie
- City of Brampton
- City of Kawartha Lakes
- City of Kingston
- City of Oshawa
- City of Peterborough
- City of Pickering
- City of Vaughan
- Town of Ajax
- Town of Cobourg
- Town of Newmarket
- Town of Whitby
- Township of Loyalist

As a result of creating this learning environment for students, I've been gathering data since 2017. I compiled it and performed further research on what is public facing to prepare for this presentation. My findings are influenced by the perspective of the survey respondents, the students who participated in the project and the temporal aspect.

My purpose is to provide direction to build an understanding around what Municipalities need to support their business practices, and to provide examples of how Ontario municipal GIS professionals have utilized resources that are available to meet those needs, how cartographic design principles factor in, and ultimately how to strategically provide improved mapping services in a Municipal context.

Strategic Mapping Outcomes

To summarize my research, I identified three strategic mapping outcomes (see Figure 1), which tie back into the media that GIS professionals typically work with. I categorize the information products that GIS Professionals provide to support Municipalities into

Figure 1. Strategic Mapping Outcomes – Mapping Platforms to support Municipal Business

INFORMATIVE	EXPLORATORY	EMPOWERING
Paper Media • Large Format Print Maps • Map Books • Brochure Maps **Digital Media** • PDF Downloadable Maps	**Web Media** • Mobile Apps • Dashboards • Story Maps • Themed Web Apps • General Web Apps	**Mobile Apps** • Survey 1-2-3, Field Maps, Avenza MAPs **Desktop** • Design Focus (i.e., Adobe Illustrator) • All Purpose (i.e., ArcGIS Desktop, AutoCAD) • Specialized (i.e., CityWorks) **Cloud** • Access to Data (i.e., Open Data Portal) • Access to Basic Mapping (i.e., ArcGIS Online) • Access to Analysis (i.e., Community Analyst)
Static – Themed	*Interactive – General or Themed*	*DIY – Design Intensive – Open Ended*

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informative, exploratory, and empowering categories to facilitate discussion. These categories differentiate how the media is utilized by design and help determine which platform is appropriate with respect to supporting a particular business practice.

Informing the Municipality

I categorize the *static* media, which is available digitally but can also be printed on paper, in the *informative* category. These maps are designed to deliver information at a specific scale to support a business practice, such as reporting, creating an exhibit to support a meeting, or creating a themed map to support community outreach, promote economic development, or help people navigate through a themed query or to an activity. *Static* cartographic products that can be printed on paper are designed to direct the map user, to a specific message, and to enable them to retrieve information quickly, faster than typing a query into a computer and waiting for a response. While they are not scalable the map reader does not need to formulate a query to retrieve information.

Recording the Terrain

Static paper maps are an essential part of the portfolio that GIS professionals provide. The utilization of this format demonstrates the value of implementing cartographic design in this context to provide access to a perspective that is not available on a desktop computer or mobile device. I provided numerous *static map* examples, created by the 20 municipalities that I researched, which are available in a printable PDF format. Most municipalities share common themes (see figure 2) ranging from reference maps to specialized thematic maps. These maps are informative by design, providing access to the facts associated with municipal assets, operations, or plans.

Large Format Static Maps

Large format *static* maps are often utilized to facilitate meetings and community outreach. General reference large format *static* maps such as address maps, road maps, and administrative boundary maps and parks and recreation maps are common themes that thread through the large format *static* map examples. Large format double-sided *static* maps in a brochure format are commonly utilized to provide access to information about parks, playgrounds, trails and bikeways within the city and regionally.

Small Format Static Maps

Small format *static* maps are utilized by municipalities to disseminate information for a variety of reasons, such as fulfilling legislative requirements associated with proposed zoning or land use change related to development initiatives and trail system master plans. Municipalities utilize small format maps to provide guidance through complex trail systems, or access to detailed zoning bylaw maps in small format *static* map book formats that can be printed. Official land use plan documents maintained by municipalities across Canada include a series of small format report maps. Access to this information in a *static* map format creates transparency, accountability and enables a collaborative approach to Urban Planning.

County of Lennox and Addington and Durham Region must plan around regional natural heritage systems, the Oak Ridges Moraine, conservation areas, greenbelt land use designations, and regional road right-of-way requirements. The Haliburton County animal natural heritage plan reflects land management challenges and associated concerns encountered in northern Ontario.
There are many facets of land use that are mapped in lower and single tier municipalities such as: urban structure, road network plans, trail and bikeway networks, greenspace, natural heritage systems, vulnerable water resources, source water, protection zones, water resources, which provide insight on what municipalities manage and how mapping services are relevant to that process. There is value in being able to access information in a paper-based format. Digital technology is not always cognitively accessible. Emergency preparedness is an important aspect, providing access to the historical record to provide an educational resource or a benchmark to inform decisions, is also an important aspect.

Exploring the Municipality

I created the *exploratory* category for map designs that prompt exploratory activity. When an open-ended general-purpose web map is made available, a map user must have a query they seek an answer to. This is an exploratory activity. When a *themed interactive web map* is accessible, the information is provided, by

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design, to direct the map user to find answers to thematic questions. The purpose of *interactive themed* maps is to direct the map user to focus on the information, relevant to a business practice, while still enabling them to explore further to add value.

Themed interactive web maps are designed to direct a map user to focus on aspects of data by utilizing thematic design strategies to facilitate communication and often provide easily accessible statistics associated with the data, while enabling the map user to conduct a secondary query, in an interactive map environment, to derive information they deem necessary to provide context for that theme, based on the available data in the app. Whether a map user is given access to a *general web map* or *themed web map*, they become enabled to explore, to create a cognitive, or literal map of their choosing. This could just be simply an adventure or a focused query. It is an advanced activity that is not accessible to all users. The map user must develop an understanding around how to utilize the tools to navigate around the interface, which often requires basic training. In scenarios where the technology and design skillset are available, *themed interactive* web solutions, such as Story Maps, Dashboards, and themed Web Maps are growing in popularity because they summarize information while also providing added *exploratory* value. The themes (see figure 2) are summarized in the next section.

Exploring the Terrain – Interactive Web Maps

Exploratory interactive web maps are a valuable part of the GIS portfolio that provide access to data and are accessible to most of the community. While they require access to the internet, they do not require printing or distribution. They can be customized to create a general web app with access to many themes to enable open-ended exploration, or a themed web app to guide map users through a municipal experience.

Figure 2. Map Themes to support Municipal Business Practices

Theme	Static	Web	Theme	Static	Web
• Art & Cultural Heritage	B, L	S, T, G	• Official City Map	B, L	G
• Addressing & Cadastral	L	G	• Official Land Use Plan Maps	M, L, R	G
• Administrative Boundaries	L	G	• Parking	B, L	G
• Asset Management	M, L, R	S, D, T	• Parks and Recreation	B, M, L	S, T, G
• ATV Trail Maps	L	G	• Planning and Development	M, L, R	S, T
• Conservation Areas	L, R	G	• Points of Interest	-	G
• Crime Mapping	L, R	G	• Public Transit	B, M, L	T, G
• Cycling and Trail Maps	B, M, L	D	• Public Safety	L	D, T
• Demographics	L	D	• Recommended Routes	L	T, G
• Economic Development	L, R	S	• Reference Maps	L	-
• Educational Facilities	L	G	• Road Maps	M, L	G
• Election	L	T	• Stormwater Distribution	M, L	T, G
• Emergency Preparedness	M, L, R	-	• Topography	-	G
• Environmental Health	-	T	• Tourism (Visitor Map)	B, L	-
• Fire Inspection and Response	L, R	D	• Trail Master Plans	L, R	G
• Floodplain	L	G	• Tree Inventory	M, L	G
• Green Space	L	G	• Waste Collection	M, L, R	T, G
• Healthcare	-	D, G	• Wastewater Distribution	M, L	T, G
• Municipal Facilities	L	G	• Water Distribution	M, L	T, G
• Natural Features	L, R	G	• Zoning By-Law	M, L, R	T, G

B= Brochure; M = Map book; L=Large Format; R= Report Format; S = Story Map; D= Dashboard; T= Themed App; G = General App

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General Web Maps

Almost all municipalities, counties, and regions that I researched provide access to *general web maps*. These web maps generally support municipal staff, developers, and residents. They are available in various formats that provide base maps and access to a wide variety of themed data layers (see figure 2) for people to access and explore to orient themselves with the community or answer independently driven queries.

Themed Web Maps

In the communities I researched, the themed web map apps are not as common as the general web maps. The common *themed web map apps* (see figure 2) are related to EMS, crime reporting, asset management initiatives, economic development, planning and development, parks and recreation, community events and public transit.

Dashboards

The most common themes, in a Dashboard format, are associated with community outreach related to public safety and capital improvement projects. York Region and Durham Region together provide an example of how an Upper Tier Municipality can increase efficiencies by creating interactive, scalable, crime reporting dashboards that support the Lower and Single Tier Municipalities while also contributing to increasing public awareness. The City of Kingston maintains a dashboard for the Fire Department which provides an example of how this format facilitates information delivery to support public safety. A dashboard from the City of Peterborough is an example of utilizing the technology to provide access to capital budget planning, where the investment is improving the infrastructure.

Story Maps

Municipalities are increasing utilization of the Story Map format to communicate information to the public about special projects. Examples that I shared in my presentation include capital improvement projects, asset management projects, economic development, permitting and development readiness, neighborhood clean-up events, community safety and well-being initiatives. A film location promotion Story Map example, from Durham Region, is an example of an effort to market the filming opportunities and stimulate the economy in the Region. Example Story Maps from the City of Barrie and another from City of Peterborough connect the public to the Arts by providing an opportunity to virtually tour Public Art.

Themed Web Apps

The most utilized web based themed format that Ontario municipalities are using to disseminate information are themed web maps. Municipal parks and recreation *themed web map* examples are most common. Loyalist designed a web map to guide the map user through their parks. Other *themed web map* examples include where to launch watercraft in Kawartha Lakes. find the closest Whitby Park, or bike and walk in Barrie. Planning and Zoning is a common *web map* theme. A multi-layered, *themed web map* designed to facilitate Planning and Development in Barrie is an example of a web map designed to provide access to the development applications approval process with respect to approvals, impacts on current land use and zoning by laws.

Customized Web App Maps

Examples of *themed web maps* (see figure 2) are related to cultural heritage, scenic routes, transport routes, environmental issues, and providing access to election information. Public Transit is a common *web map app* theme maintained by municipalities. I shared examples from Barrie and Peterborough, which both maintain *themed web maps* focused on transit routes. Unique *themed web map* examples connect people to the history of Newmarket and the cultural heritage of City of Kawartha Lakes. The City of Peterborough created a unique educational and exploratory *themed web map* associated with emerald ash borer impact on the tree community. A unique *themed web map* from Lennox and Addington County orients people with scenic routes and oversized load transport routes.

Variations on the Theme

Mapping themes that have threaded throughout information products provided by 20 Ontario Municipalities speak volumes (see figure 2). Land management issues related to conservation versus utilization is a concern for municipalities, which have a primary directive to maintain infrastructure to support a growing population and facilitate asset management to meet legislative requirements. Maintaining a sufficient tax base to maintain the infrastructure is critical.

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Ensuring that public transportation is accessible, to create a more sustainable environment for people to live in, is growing in importance. Attending to public safety and increasing public awareness will continue to be essential priorities. Connecting people to opportunities, promoting a healthy active community that creates a sense of home, stimulates the tax base, and retains or attracts new residents is vital to municipal growth. Web mapping themes I have consistently encountered provide insight into the challenges faced by municipalities and the importance of enabling accessibility to information, interactive exploration, and strategic empowerment.

Empowering the Municipality

In the *empowerment* category, the technology is placed in the hands of the map user. At this stage they become the mapmaker. During this phase, a map user is given a mobile app to collect data, or a web map with a base map to add data to, often through a portal, to produce an information product; or they are given access to a desktop app and an open data portal to enable them to acquire, preprocess and symbolize data to create a cartographic product from ground zero. This is a design intensive process. It is a do-it-yourself design process, which is not inherent in the task and requires advanced training. There is an in-depth process involved in learning how to utilize technology and design maps properly.

Mapping the Terrain – Technological Considerations

In the *empowerment* category the GIS toolkit is made accessible to municipal staff and the public. Making the technology more accessible in strategic ways that are aligned with business practice and skillset is a challenge that must be overcome. During this phase, it is important to consider what makes sense in relation to the dynamics of the community and skillset. Some people need basic maps with very little analysis to support their business practices. Some people need access to an analysis toolkit to support their business practices. In this context, it is essential to seek to deepen the understanding around business practices through collaboration, and synergize strategies based on the combined experience of the team that emerges from the process. Collaboration is key to creating improved, more efficient, innovative solutions to strategically provide mapping services to support municipalities.

Mapping the Terrain – Design Considerations

Cartography has the power to influence society in many ways, through policy decisions, economic development initiatives, environmental quality assessments, infrastructure management business practices and community well-being. It provides the foundation for municipal operations.

Municipal GIS professionals are tasked with the challenge of encoding information to communicate effectively, in a variety of situations to support people, including integrating cartographic standards and conventions to make information cognitively and visually accessible online and offline. This is why cartographic design principles and accessibility requirements are important aspects that municipal GIS Professionals need to continue investing time in developing an understanding around. It is critical to recognize that cartography is a symbolic language based on cartographic standards that are rooted in cognitive research with the primary intention of facilitating effective communication. It is a language that, when utilized properly, can lead people in the right direction. If a map is designed properly, the data will be intuitively encoded, in such a way that it can be cognitively received, at a subconscious level, much faster than the conscious process of interacting with a computer to retrieve information. Maps are a very efficient way of communicating information that helps people make informed decisions when design principles are implemented properly. The intention is to lead people in the right direction, to teach people who are not formally trained to integrate cartographic standards, and accessibility requirements, to further develop those standards, and to share those standards with their colleagues as part of a strategic empowerment process.

Conclusions

It is important to keep in mind that the primary mission of a municipal GIS professional is to support municipal operations and decisions. Essential aspects of the process include considering the community, the geography, the demographic, the skillset, continuing to learn from the past and present, collaborating with colleagues, evaluating municipal priorities, and assessing the available budget. By designing the path, researching the terrain, forming connections, synergizing solutions, integrating cartographic design principles, sharing the knowledge, and empowering others, municipal GIS professionals will be enabled to strategically map for municipalities to contribute to creating more sustainable solutions. As a result, municipal GIS professionals will meet with success alongside the municipalities they serve.

CCA 2023 Presentation Summaries

Mapping Assiniboia Residential School Survivor Stories: Did You See Us?

Stephanie Pyne, David Valeri, Andrew Wiebe

The Assiniboia Indian Residential School was opened in 1958 in Winnipeg, Manitoba, operated until 1973, and was the first urban residential high school in Canada. Residential School survivor groups such as the Assiniboia Residential School Legacy Group (ARSLG) are increasingly engaging in partnerships with academic researchers to work on sharing the knowledge and truths of Survivors for the benefit of present and future generations. Our current project builds on earlier collaborations with the ARSLG on the Assiniboia Residential School Map of the Residential Schools Land Memory Atlas. "Mapping Assiniboia Residential School Survivor Stories: Did You See Us?" (funded by the Social Sciences and Humanities Research Council) has been engaging the group as a partner in the digital journey mapping of a story by the Late Theodore (Niizhotay) Fontaine, a founding member of the ARSLG. This article briefly summarizes three consecutive CARTO2023 presentations about the project, which included a project overview (Stephanie Pyne), a discussion of the project's historical geographical dimension (David Valeri), and a discussion of the project's technical dimension (Andrew Wiebe).

Brief Project Overview

In 2021, the ARSLG published *Did You See Us?: Reunion, Remembrance and Reclamation at an Urban Indian Residential School*, a book based on a series of audio recorded interviews held during the 2017 Assiniboia Residential School Reunion and Commemorative Event with Survivors and others with a connection to the school. This event was video, audio and photo documented as part of the work on the Assiniboia Residential School Map, which also included transcribing the audio interviews conducted at the event. This work later evolved into our current pilot project, which focuses on mapping Theodore Fontaine's story in the book, entitled "Assiniboia Was a Place of Hope for Us … But it was Still a Residential School". In the story, Theodore chronicles a memorable early teen journey when he and his two cousins gathered some funds shortly after graduating from Fort Alexander Residential School, and travelled unchaperoned by bus from Sakgeeng First Nation (then called Fort Alexander Reserve) to the Union Bus Depot in Winnipeg to investigate their prospective new (residential) high school. With details of routes, places and events reflecting the historical geography of the late 1950s, in addition to other sociocultural details, Theodore's story exhibits excellent potential for narrative digital mapping development.

In order to map Theodore's story, we divided it into 16 "geonodes" – geographical points or trajectories – which correspond to its various story episodes (see Figure 1). In terms of content, mapping extends beyond geolocating textual references to include a concern with historical geographical context and change over time. This is reflected in the archival research to gather photographic and other media to help paint a picture of the environment of Theodore's story. In terms of technology, mapping extends to the creation of a "geoarchive" structured around and inspired by the story through the development and use of GIAMedia (a content management system with geospatial functionalities and views, developed by Glenn Brauen) as the technological basis rather than a strictly GIS approach.

Historical Geographical Dimension

The story mapping is designed to allow users to navigate through different episodes of the story with direct quotes from both the chapter and the transcript, corresponding audio interview clips, and related media to provide context. An interactive interface allows users to navigate the site at their own pace, and explore specific events, and specific media types. With an eye to drawing on archival and historical media to contextualize Theodore's story, we cast our net broadly in terms of sources, which include everything from institutional archives to collections curated by individuals. The example in Figure 2 shows episode four in Theodore's story, when he and his travel mates arrived at the long gone Union Bus Depot in Winnipeg at Carlton Street and Graham Avenue in the summer of '58. The image of the bus is similar to the look of the bus that Theodore and his

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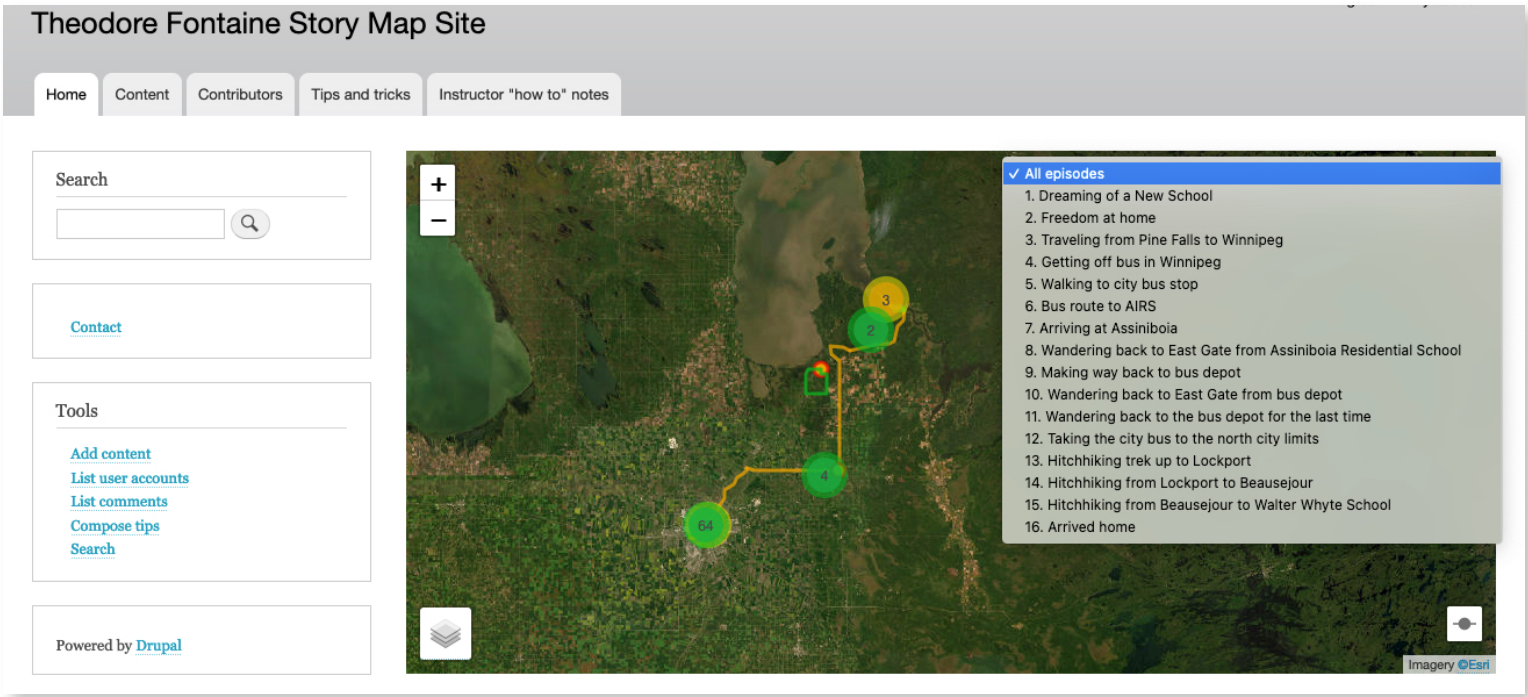

Figure 1. Screenshot from the Theodore Fontaine Story Map Site showing the filtered display options for all story episodes and a zoomed-out view of the story's geonodes.

Figure 2. Screenshot from the Theodore Fontaine Story Map Site showing the location in Winnipeg of the former Union Bus Depot and associated media. There is currently a parking lot on the site of the depot.

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friends would have been riding on, and is drawn from an individual's collection titled Suburban Winnipeg Buses by William A. Luke. While the image of the parking lot, which is the current state of the former Union Bus Depot, was contributed by a Flickr user named Christian.

represents the "Mapping Survivors Stories'' website, with reflective content contributed by graduate students in an experience-based workshop course in the Faculty of Information (University of Toronto), and survivor stories based on a video series posted on the Legacy of Hope's

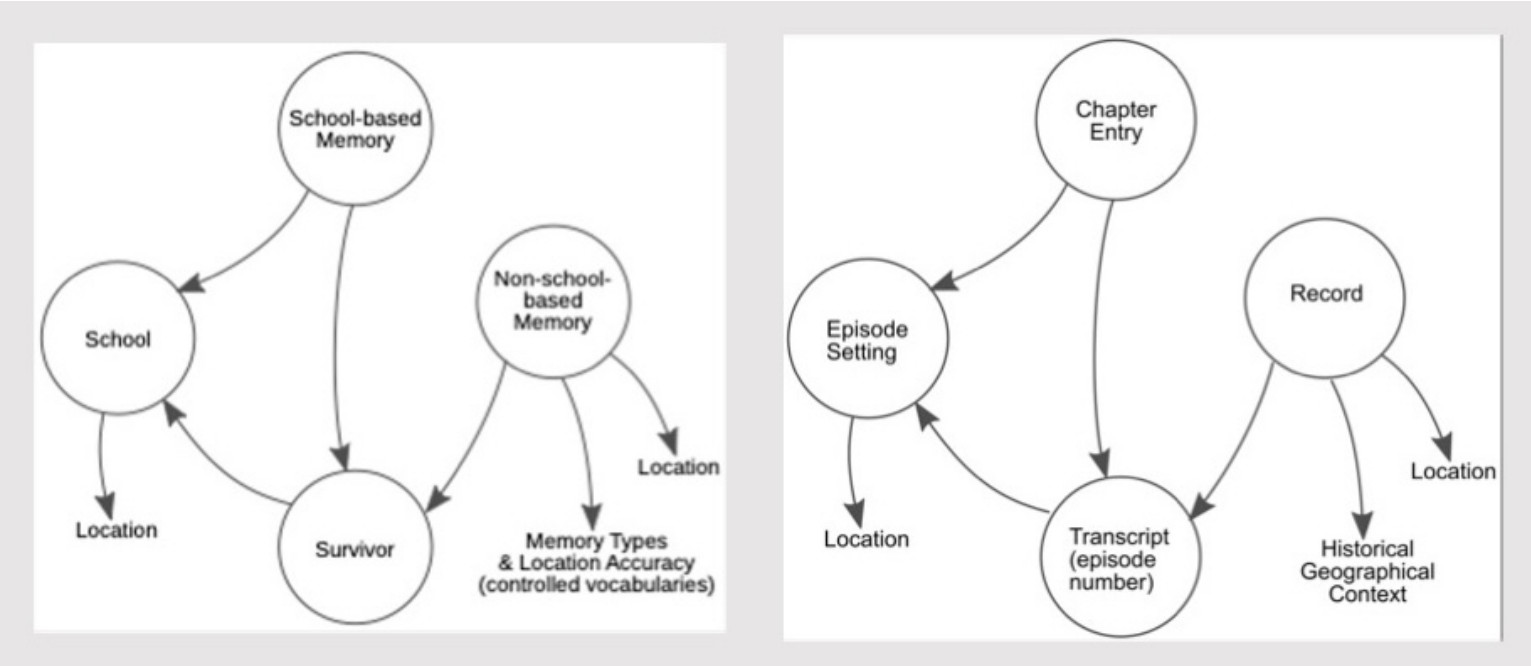

Figure 3. Evolution of a data model.

Technical Dimension

Whereas the Nunaliit Software Framework provided the basis for the first mapping work with the ARSLG on the Assiniboia Residential School Map, this story mapping project uses GIAMedia. Despite their differences, both systems share the quality of being content management systems with geospatial functionalities, in addition to sharing an iterative approach to technology development that leverages both previous technology iterations and with "story" being an important driving factor in technology development. An example of this in the current project is the way the data model for a previous GIAMedia story mapping website devoted to mapping of a group of survivor stories was adapted and repurposed to create the map-based website framework for geo-transcribing a single survivor's story.

Figure three shows two similar yet contrasting data models. The model on the left, created by Glenn Brauen, Where Are the Children website. While the model on the right represents the Theodore Fontaine Story Mapping Site, which was adapted from the model on the left, after which it underwent a number of technological changes in response to the requirements of Theodore's story.

Conclusion

At this point, the Theodore Fontaine Story Map Site remains a development site with registered user access that is limited to the ARSLG and the research team. Work thus far on the project has provided the base to proceed further with considering ways to optimize story navigation and other interactivity features. While this summary has provided a brief glimpse of the historical geographical and technical dimensions of the project, it may have introduced more questions than answers. A fuller project description will be included in an article to be published in 2024.

Featured Articles

The Northern Métis?: residency and mobility during the fur trade, 1810 - 1925

Sandy J. Hoye, Ashley J. Sims, and Frank J. Tough

This short research note will (1) demonstrate the geographical content of the Métis Entitlement Documents created by the federal Department of the Interior (c. 1875-1925); (2) provide select spatial summaries of this data; and (3) challenge the uninformed belief that there are no Northern Métis.[1]

The Métis are a New People, a nation, with a distinct Indigenous identity. Much stress has been placed on the interracial origins of this population,[2] however, the Métis, as often asserted, were "children of the fur trade." By commodifying nature, which required an extensive transportation system, the mercantile fur trade created a demand for wage labour. This labour, such as the Portage La Loche York boat brigades, required provisioning.

The Métis played many crucial roles in this commercial economy, including seasonal and contract labour. The organisation of the Hudson Bay Company (HBC) entailed a spatial hierarchy. As shown in **Figure 1**, the HBC District Headquarters served as regional centres/central places which entailed administering the district, storing commodities, some manufacturing, collecting furs, and self-provisioning. Whereas posts functioned to collect furs, to trade goods, and to self-provision. Given this economic structure, and the demand for seasonal and contract labour, a Métis presence would be expected at District Headquarters.

From the Crown's legal point of view, a Métis interest in Indian or Aboriginal Title had to be "extinguished," but with some compensation. To this end, land was "provided" to Manitoba Métis children with individual grants of land (240 acres), while in Manitoba adults were issued a paper entitlement known as scrip. Outside of Manitoba, Métis adults and children were issued scrip. For our purpose here, we are simply interested in the demographic data that can be abstracted from claims/applications for Métis entitlements. The importance of Métis mobility lies in a recognition of the intricate nature of Métis communities and that their movements throughout the nineteenth century were linked to the fur trade.

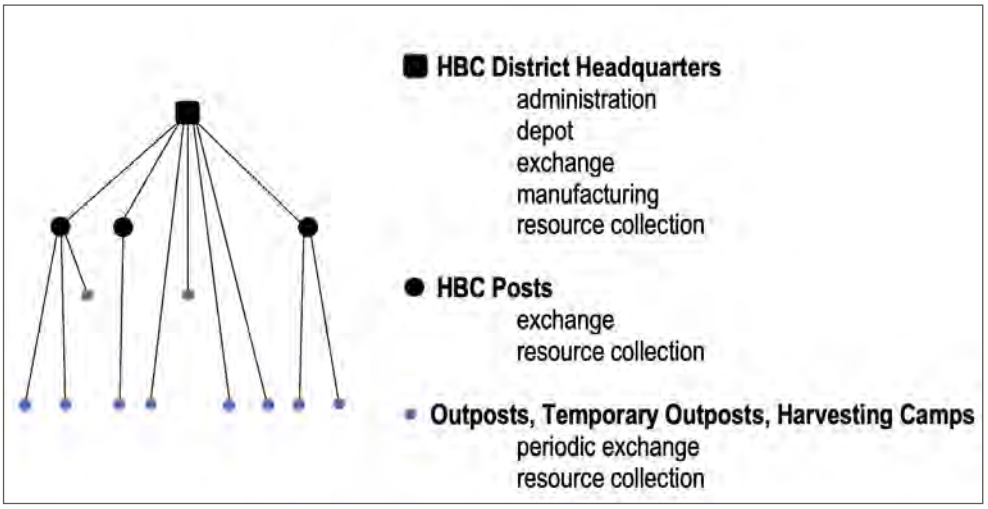

Figure 1. Spatial Hierarchy of the Hudson Bay Company, c. 1870

[1] Heather Devine, The People Who Own Themselves: Aboriginal Ethnogenesis in a Canadian Family, 1660-1900 (Calgary: University of Calgary Press, 2004) pp. 204-205. John Giokas and Paul L.A.H. Chartrand, "Who are the Métis in Section 35? A Review of the Law and Policy Relating to Métis and 'Mixed-Blood' People in Canada" in Chartrand ed., Who Are Canada's Aboriginal Peoples?: Definition, Recognition, and Jurisdiction (Saskatoon: Purich Publishing Ltd., 2002) pp. 89-93.

[2] Chris Andersen, "Metis": Race, Recognition, and the Struggle for Indigenous Independence (Vancouver: University of British Columbia Press, 2004) pp. 54-55.L

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Geographical event data was abstracted from 24,327 digitised records documenting both Manitoba and Northwest Métis entitlement grants.[3] Our geographical sample was based on the following Northern District Headquarters: Fort Simpson, Fort Chipewyan, Île-à-la-Crosse, Cumberland House, Norway House, and York Factory. Typically, Métis entitlement applications, made by both men and women, included geographic and demographic details: name, place and date of birth, names and ethnicity of parents (e.g., "Halfbreed," "Indian," "Scotch"), past and current residences, marital status, the date and place of birth of children, and names of witnesses. Table 1 represents a sample of 1,800 claimants from the six Northern District Headquarters.[4] It captured 3,596 unique geographic events: current residence, place of application, place of birth, place of death, place of marriage, PO address, and previous residence.

Northern District Headquarters	Current Residence	Place of Application	Place of Birth	Place of Death	Place of Marriage	PO Address	Previous Residence	Total
Cumberland House	167	171	289	62	95	145	85	1,014
Fort Chipewyan	148	84	188	7	69	102	29	627
Fort Simpson	8	7	63	0	27	0	27	132
Île-à-la-Crosse	300	163	389	16	87	0	50	1,005
Norway House	88	50	159	16	56	18	97	484
York Factory	35	22	169	9	56	1	42	334
Total	**746**	**497**	**1,257**	**110**	**390**	**266**	**330**	**3,596**

Table 1. Northern HBC District Headquarters Geographic Event Data, ca. 1787-

The people represented in **Table 1** either remained resident at one of these locations or moved, which can be inferred by the geographic events. For example, the claim application of Julie Lizotte née Mercredi records that she was born at Île-à-la-Crosse in 1862 and applied for scrip in 1899 at Fort Vermilion. Here, Julie lists three previous residences: Fort Chipewyan, Fond du Lac, and Portage la Loche. Her application identifies her father as Abraham Mercredi, a fisherman with the HBC. Information from Abraham's HBC employment records correspond with Julie's identification of her previous residences. Abraham's employment with the HBC determined where the family lived, in 1872 this meant moving the family from Fort Chipewyan to Portage la Loche.[5] Julie's mobility would seem to be representative of those northern Métis associated with HBC employment (i.e., movements between HBC posts and headquarters).

Table 2 frames the same seven types of geographical event data, as well as the frequency and date range of these events when there is movement from one Northern District Headquarters to another. These geographical events are derived from some 1,030 individual Métis entitlement records. Non-residents of Northern District Headquarters (e.g., Métis who only resided at smaller posts) were not included in our sample. Since the sample only includes those of the District Headquarters, it underrepresents the overall size of the Northern Métis population. **Table 2** indicates 797 births at Northern District Headquarters. The birth data establishes the existence of a sizable Métis population in the Subarctic.

[3] Unless otherwise noted, all data used in this research note comes from LAC RG15 Vols 170-1371.

[4] The larger Métis Nation entitlement database is made up of 24,327 entitlements.

[5] Hudson Bay Company Archives, B.239/u/2, folio 223. Abraham's contract was from 11 June 1869-1 June 1872, he was paid £25 per annum plus tea and sugar.

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Geographic Event Type	Number	Average of Year	Date Range	Standard Deviation of Year
Current Residence	470	1898.5	1852-1925	9.9
Place of Application	219	1897.9	1876-1924	9.8
Place of Birth	797	1867.1	1787-1915	21.6
Place of Death	86	1886.6	1870-1909	9.0
Place of Marriage	472	1875.4	1812-1924	19.6
PO Address	125	1893.6	1885-1907	7.3
Previous Residence	589	1875.1	1805-1920	15.0
Total	**2,758**	**1879.9**	**1787-1925**	**20.7**

Table 2. Northern HBC District Headquarters, Geographic Event Data from 1,030 Métis entitlement record applications, 1875-1925

The historical Métis were often depicted as a mobile population. The spatial characteristics of the Métis consist of two broad categories of geographical mobility: (1) seasonal movement (e.g., buffalo hunting and pemmican production on the grasslands) and (2) changes in residence (e.g., movements associated with HBC employment). In an effort to ascertain the spatial characteristics of northern Métis, origin-destination maps of headquarters' geographical event data were generated. Origin-destination flow maps are a specialised type of cartographic visualisation that can depict processes such as the movement of people, trade and goods, or transportation between different locations. This type of mapping provides an intuitive way to illustrate patterns and intensity of connections between origin and destination. Essentially, these maps show where entities originate, where they are headed, and the volume or frequency of these movements. To create origin-destination maps, the data needs to be formatted into two components: (1) a node table, and (2) an edge table. **Table 3** summarises the node and edge data for the study region.

The data summarised in each row of this table includes the to-and-from information from each district headquarter. Some overlap between the movement between headquarters (e.g., an individual could be moving from Norway House to Fort Simpson) is inherent to this technique. While certain edges are being counted in two rows of the table, this duplication is only an issue with movement between headquarters. The straight-line distances between nodes represents a simplification of Métis movements.[6] These "as the crow flies" distances understate the actual distances travelled by Métis.

Northern District Headquarters	Distance (km)	Number of Edges	Number of Nodes	Average Edge Distance (km)
Fort Chipewyan	130,054.60	244	48	533.01
Île-à-la-Crosse	102,021.28	318	70	320.82
Cumberland House	129,258.63	433	79	298.52
Norway House	147,901.59	321	69	460.75
Fort Simpson	117,010.48	130	38	900.08
York Factory	128,134.65	200	53	640.67
Total	**712,851.35**	**1,570**	**127**	**454.05**

Table 3. Frequency and Distance Travelled Between Northern HBC District Headquarters, ca.1787-1925.
Note: The overall totals do not reflect an overlap/duplication of movement between headquarters.

[6] The distances were determined using the Haversine formula, which computes the distance between the two sets of coordinates factoring in the curvature of the Earth.

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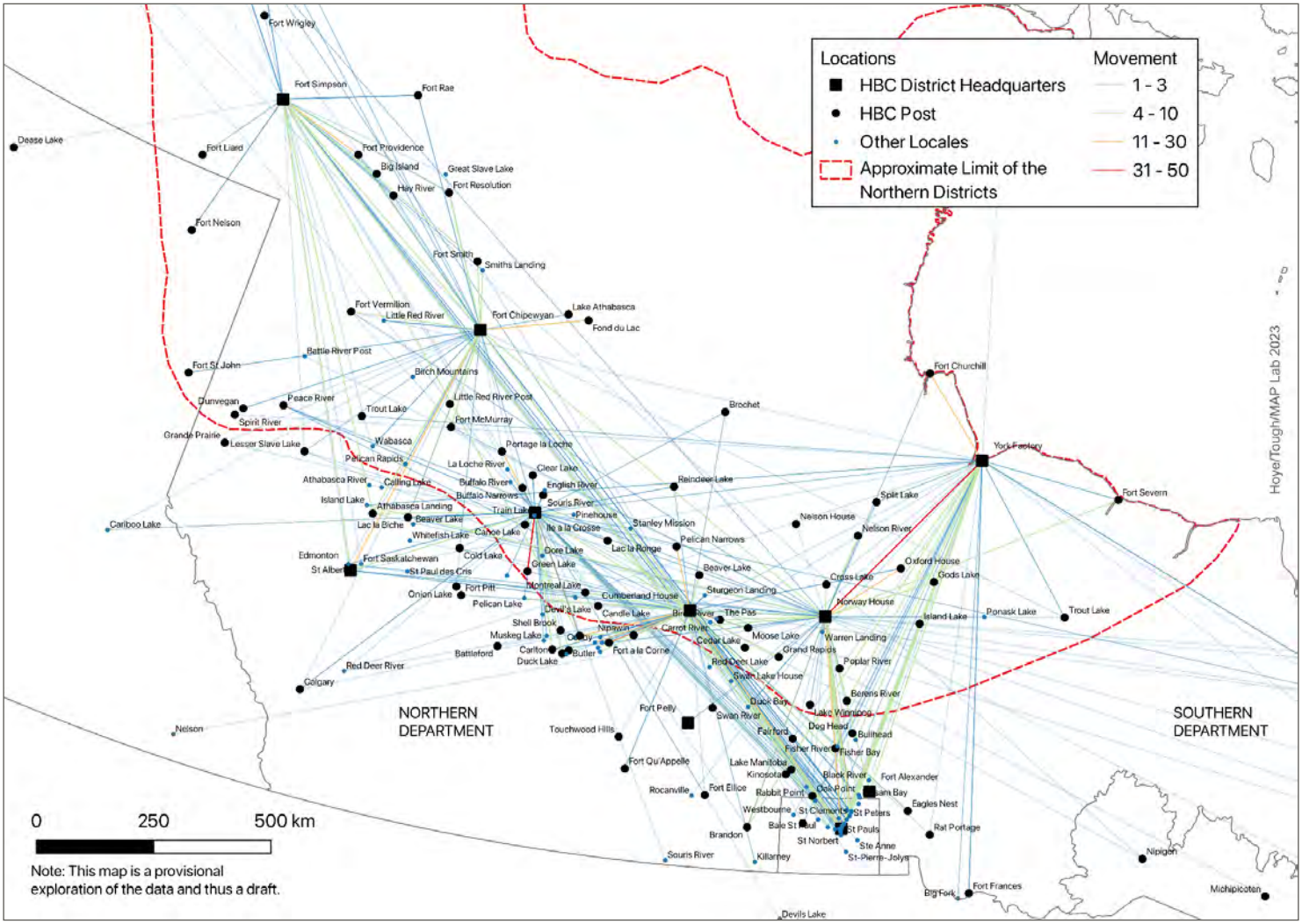

Map 1. Origins, Destinations, and Edges for the HBC Northern District Headquarters, ca. 1787-1925

Note: The data for this map depicts the mobility of 1,105 individuals taken from 1,030 entitlement records and their movement into and out of Northern Headquarters.

Nevertheless, the 321 edges connecting 69 nodes amounting to 147,901.59 km associated with Norway House Métis are representative of a considerable amount of travel.

Based on **Table 2**, considerable Métis movement is discernible in **Map 1**. Contrary to the assumption that fur trade posts were isolated, the event data shows frequent movements of people in the northern fur trade country. The most striking feature of **Map 1** is a strong southeast to northwest diagonal connecting Red River Country to Fort Simpson.[7] Many edges depict movement between (what will become) the "Postage Stamp Province" of Manitoba and the Northwest: there are 291 total connections which consist of 193 edges moving from the Northwest into Red River Country and 98 moving from the Red River Country into the Northwest. These edges represent the movement of 250 people.

[7] The postage stamp province of Manitoba was not created until 15 July 1870. Since the entitlement data predates this period "Red River Country" is used in reference to the areas around and including the Red River Settlement. The Postage Stamp Province of Manitoba is indicated on Map 1.

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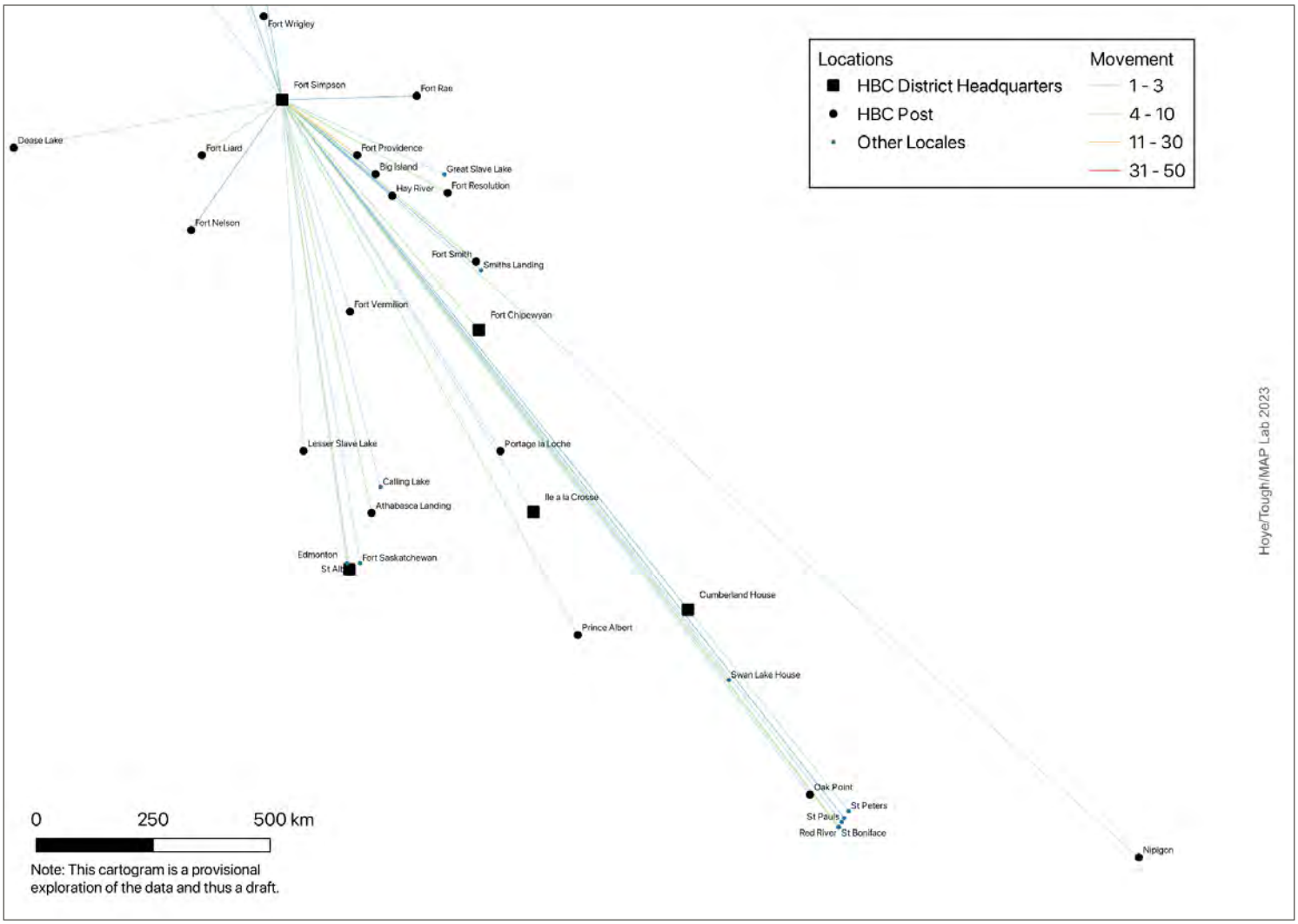

Map 2. Origins, Destinations, and Edges for Fort Simpson, ca. 1822-1924

Note: The data for this map depicts the mobility of 84 individuals taken from 81 entitlement records; there are 38 nodes including Fort Simpson.

York Factory served as the headquarters of the HBC's Northern Department and as the mercantile entrepôt connecting the Northwest and the United Kingdom while Norway House was the inland depot for the HBC. Consequently, the edges between York Factory and Norway House reflect economic influences on Métis movement between nodes. Movement between Northern District Headquarters and various northern posts is also evident in **Map 1** (e.g., Fort Chipewyan and Fond du Lac). The origin-destination mapping strongly depicts the spatial presence of the Métis. By isolating the origin-destination flows for a single District Headquarters, the movement between nodes is more evident. The most northern of the HBC District Headquarters, Fort Simpson, has a southward origin-destination orientation. The connection between Fort Simpson and its district posts is indicative of the economic/social roles of a district's central place.

The spatial origin-destination pattern for Norway House (**Map 3**) indicates 68 edges radiating out in many directions. The single largest linkage is with York Factory, however there are many linkages to the Red River parishes. The widely dispersed edges connecting Norway House to other nodes reflects the fact that Norway House served as the inland depot for the HBC's

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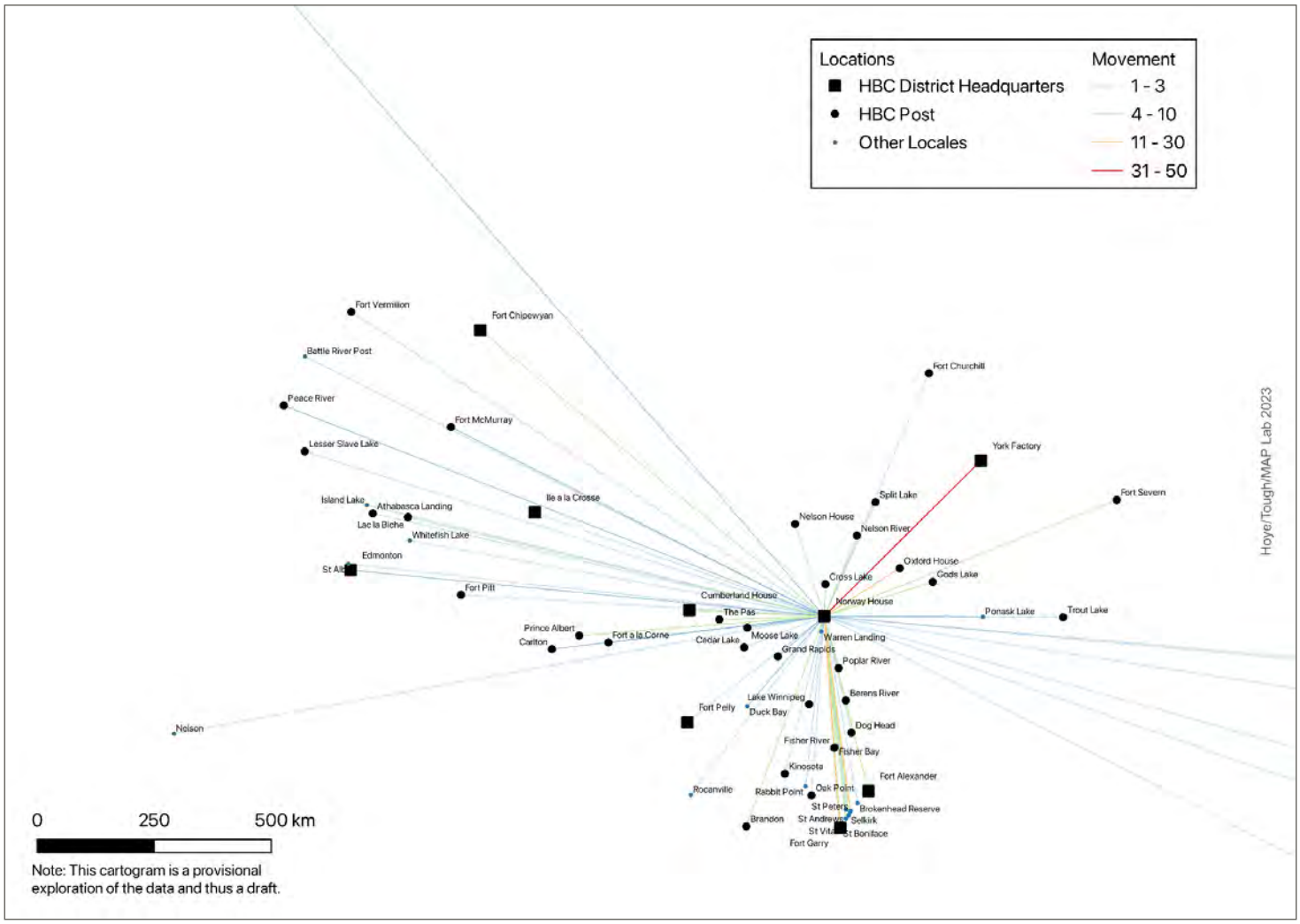

Map 3. Origins, Destinations, and Edges for Norway House, ca. 1805-1912

Note: The data for this map depicts the mobility of 225 individuals taken from 207 entitlement records; there are 69 nodes including Norway House.

warehousing and transportation. Norway House is a good example of an HBC node that created a demand for seasonal and contract labour. Both Fort Simpson and Norway House indicate connections between the Red River Settlement and these Northern District Headquarters.

The Northern Métis represent more than movement between nodes. The radial family tree in **Figure 2** depicts four generations of Michel Bouvier's family. Radial family trees are an intuitive way of combining geographic and genealogical information. Placing Michel Bouvier at the centre of the plot creates a starting point for the family's lineage. The proximity/distance of individuals on the radial branches to the centre illustrates their relative closeness; immediate family members are positioned closer to the centre and more distant relatives extend outward. Unlike traditional family trees, which become complex with large sets of data, the radial design maintains a clear hierarchy, identifies family clusters, depicts the natural progression of families over time, and connections to specific locations are clear. Kinship relations reflect the existence of a distinct people and as **Figure 2** demonstrates, Métis like the Bouviers had a generational presence in northern locales like Île-à-la-Crosse.

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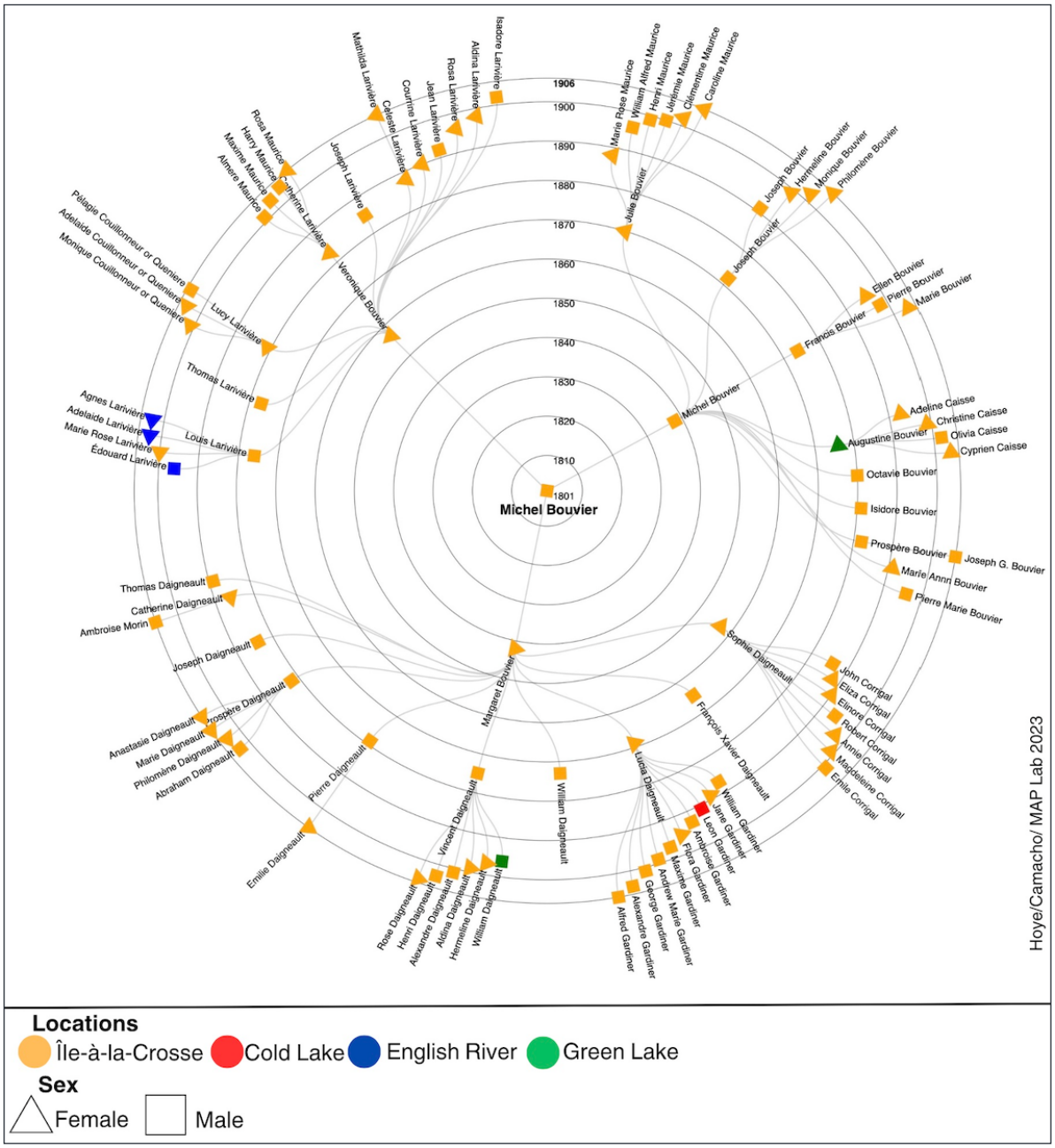

Figure 2. Radial Family Tree Depicting Direct Descent from Michel Bouvier, ca. 1813-1906

Born in 1801, we know that Michel Bouvier was a steersman, guide, interpreter, and all skilled labour, with the HBC from at least 1840 to 1865.[8] He married Julie Desjarlais (b. 1811) and together they had three children: Michel, Margaret, and Veronique. As **Figure 2** displays, these children went on to have families of their own, continuing to reside overwhelmingly at Île-à-la-Crosse. Families like the Bouviers are critical for demonstrating that Northern Métis were not simply moving around, rather, families aggregated as communities which endured.

[8] Michel Bouvier appears on the 1881 census as well as the HBC's Servant Contract records. He did not apply for an entitlement so there is no information on him as a claimant, however he is listed as the father to Michel, Margaret and Veronique on their own entitlement applications.

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Place of Birth	Number of Nodes	Percentage of Nodes	Male to Female Ratio	Date Range
Cold Lake	1	1.1%	1:0	1891
English River	3	3.2%	2:1	1898-1906
Green Lake	2	2.1%	1:1	1876-1896
Île-à-la-Crosse	87	92.6%	44:43	1838-1906
Northwest	1	1.1%	1:0	1801
Total	**94**	**100%**	**49:45**	**1801-1906**

Table 4. Place of Birth and Year of Direct Descent from Michel Bouvier, ca.1801-1906

Table 4 summarises the spatial/genealogical data from **Figure 2**. Most individuals who were of direct descent from Michel Bouvier, were born at Île-à-la-Crosse, comprising 92.6% of the total nodes. The gender distribution in this location is almost balanced at a ratio of 44:43 (males to females). Seven percent of the individuals were born between 1806-1869, and 93% were born between 1870-1906. The multiple generations of endogenous marriages (e.g., Métis father, Métis wife) provides specific empirical support for Andersen's argument that Métis are more than interracial marriages.

Maps 1 to 3 demonstrate the richness of the geographical content of Métis entitlement records. Similarly, the radial family tree (**Figure 2**) is another valuable approach to the genealogical relationships that can be extracted from the entitlement records. Even this cursory analysis of entitlement data reveals that the assertions made by Devine, Giokas, and Chartrand regarding the absence of Northern Métis are wholly without foundation. Using an empirical approach, this research note has shown that not only do Northern Métis exist, but that there are significant connections between the Northern Métis and the Red River Settlement and other locales in the Parkland. Clearly, more spatial discoveries are possible than what are depicted in this brief paper.

Acknowledgements

This research note benefited from the work of the MAP Lab staff who entered and verified entitlement data over the years. Lina Maritza Camacho helped with the radial family tree. The authors would like to acknowledge the financial support provided by Métis governments and SSHRC (Grants 410-2003-0857; 410-2011-2415).

Featured Articles

The ZAPPER Line Simplification System Rides Again

Steve Prashker
sprashker@gmail.com

In the early 80's, this author had the opportunity to research, create and develop cartographic mapping software for the newly burgeoning technology – microcomputers. Software was being written at a rapid pace to take advantage of this new technology, and the field of cartography embraced these new developments. As an instructor at Carleton University in Ottawa, Ontario, Canada, in the Department of Geography (now Geography and Environmental Studies), I had the good fortune to develop several software packages, namely MIGS (Microcomputer Interactive Geocartographic System) and ZAPPER, a cartographic line simplification package that performed line simplification in real time and animated the process using computer graphics. At the time, Basic, Fortran, Cobol, Pascal and C were the software development languages of choice under DOS (Disk Operating System), the operating systems of microcomputers. I chose QuickBasic, a flavour of Basic (Beginners All-Purpose Symbolic Instruction Code) which, within its language structure, had logic, mathematics, 640 x480 colour graphics, communications, sound and printing capability, all without adding in extra libraries of code to do it. It was a complete high-level language that came with a compiler to create executable code. Easy to use and learn, it was ubiquitous throughout the microcomputer world.

The ZAPPER package (named fondly for its ability to 'zap' unnecessary points on a cartographic line yet maintain the integrity and readability of the line at smaller scales), was used as an educational tool to demonstrate, using animated computer graphics, the actual process of several popular line simplification algorithms and their unique methods of reducing the complexity of a cartographic line. Some of these algorithms were described in Mark S. Monmonier's book Computer-Assisted Cartography – Principles and Prospects, published in January 1982 and in the subsequent second edition. Monmonier described these algorithms in detail, showing their advantages and disadvantages, and included accompanying illustrations of their function. However, to actually see how they operated in real time was the impetus for developing ZAPPER. To enhance ZAPPER, the package also included an interactive on-screen digitizing package, a plotting package (output to a now defunct HP7475 pen plotter), and several lines and maps as demonstration files to be used. A complete set of algorithm descriptions were included, as well as descriptive Help files to help a user navigate the system. The digital data files themselves were simple ASCII text files, with a 9999 separator between lists of X,Y coordinate pairs, starting with a bounding rectangle (lower left corner, upper right corner) that would enclose the complete set of map lines to follow in the file. A simple data structure but effective for non-proprietary distribution, other data files could be easily converted into this simple data structure format.

Many years later, DOS was effectively gone when it was replaced with the Windows Operating system, currently in its latest Windows 11 incarnation. However, software developers realized the usefulness of having these obsolete software packages resurrected once again, and hence came the development of DOSBox, a free software emulator for DOS that runs in Windows. DOSBox creates a software environment whereby users can run their old DOS based software programs, in full screen colour, within Windows machines. With this new tool, I decided to resurrect ZAPPER, test it within the DOSBox environment, and if successful, distribute it freely to anyone who wants it for personal or educational purposes. After installing DOSBox and running ZAPPER within it, to my surprise, I concluded that the software works within DOSBox just as well as it did 40 years ago!

I have prepared instructions to download DOSBox on a Windows machine, install DOSBox, install ZAPPER within the DOSBox environment, and then run ZAPPER. All the HELP files are ASCII files that can easily be printed using Notepad, WordPad or Word. If you would like to try Zapper, email me for a copy. I may be able to assist if you have difficulties with the software, but remember I'm retired after 40 years of happily working at Carleton University! I'd be very interested to hear how you use ZAPPER.

Featured Articles

Children's Mapping in Africa: Building on the Barbara Petchenik Children's Map Competition

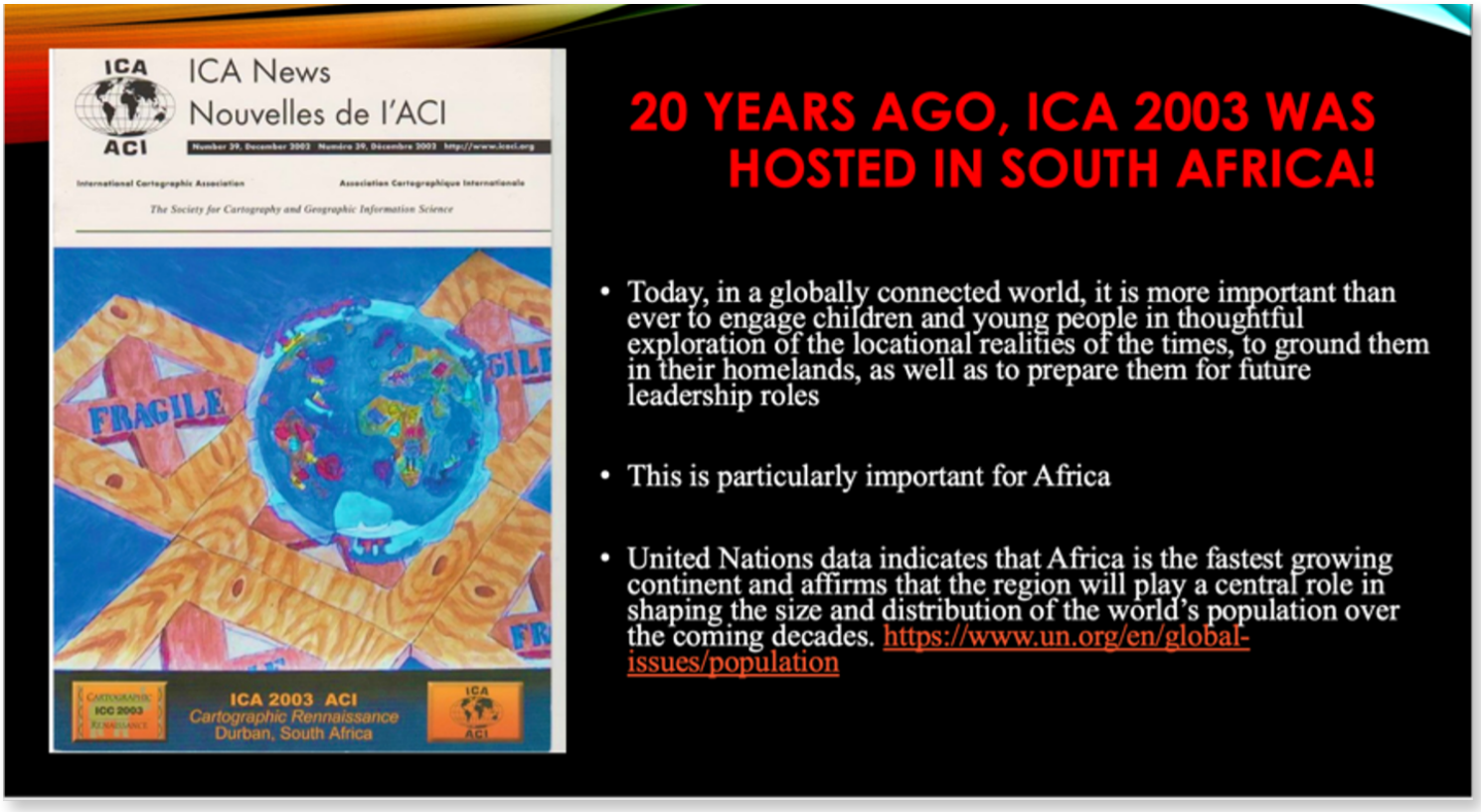
Romola V. Thumbadoo PhD
Postdoctoral Research Fellow, Carleton University

This article provides a brief overview of the innovative Children's Mapping Project with the Geomatics and Cartographic Research Centre (GCRC, Carleton University) in collaboration with the National Association of Child Care Workers (NACCW) in South Africa, and Circle of All Nations (legacy work of Indigenous Elder William Commanda) with some related discussion of the 30th Anniversary of the International Cartographic Association's Barbara Petchenik Children's Map Competition. In addition, it presents a preliminary review of the new developments and suggests directions for future research.

Background

The thirty-year anniversary of the Barbara Petchenik Children's Map Competition, created by the International Cartographic Association (ICA) in 1993, was celebrated at the 31st International Cartographic Conference (ICC) 2023 in Cape Town, South Africa. Twenty years earlier, in 2003, the conference had been hosted in Durban, South Africa.

The competition was initiated under the leadership of Professor D. R. Fraser Taylor, then ICA President, and also Director of the Geomatics and Cartographic Research Centre (GCRC) at Carleton University. It acknowledged both the first female Vice President of the ICA, Barbara Petchenik (1939–1992), as well as her passion for promoting creative graphic cartographic representation of the world by children and her wish to make sure children leave school with some idea of the relative shapes and sizes and arrangements of labelled earth areas. An instructive and commemorative UNICEF children's mapping poster was produced to support the initiative.



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The competition maps are sent to the Carleton University's MacOdrum Library where they are processed for digital and physical archiving and all the entries are then made publicly available at https://repository.library.carleton.ca/collections/wd375x35j. The ICA also hosts the related Facebook page: ICA Commission on Cartography and Children.

Countries across the globe, in particular Brazil, Bulgaria, Hungary, Spain and Canada, have engaged enthusiastically over the years: for example, Brazil has engaged in intensive school mapping work with children, academia and researchers. Some of this is presented in commemorate books, including Dra. Carla de Sena's recent book *Children's Maps: The History of the Lívia de Oliveira Competition (2021)*; and the *Children Map the World* series produced in 2005 by the ICA, in collaboration with prestigious publishers like Esri Press, SinoMaps and National Geographic Institute of Spain. Submitted drawings are also examined in academic publications by international and national organizations in different countries. Other recent publications include the bilingual book entitled SDGs in Action: A Generations' View, published by the Jobstmedia Präsentation Verlag and the Vienna University of Technology in 2021 and Súťaž Detska Mapa Sveta Barbara Petchenik Children's Map Competition book (2023) Bratislava by Monika Kopecka and Martin Ksinan.

The Children's Mapping Project: A Collaborative Initiative

The special 30th year anniversary of the Barbara Petchenik Children's Map Competition presented as a pivotal moment to commemorate, advance and expand the reach and import of children mapping their worlds. The GCRC, together with colleagues from the NACCW and the Circle of All Nations, made five presentations at ICC 2023, with four in the context of the Children's Map Competition.

In a globally connected world, it is more important than ever to engage children and young people in thoughtful exploration of the locational realities of the times, as well as to prepare them for future leadership roles, particularly in Africa, which the United Nations indicates is the fastest growing continent, and affirms that the continent will play a central role in shaping the size and distribution of the world's population over the coming decades.

This collaborative Children's Mapping Project was initiated in January 2022. It engages social services sector child and youth care workers, researchers and children in cartography and locational exploration of a complex intersection of critical issues; with the children being from a diversity of locations (urban, rural, informal settlements and isolated), and facing a range of environmental challenges (floods to drought and power outage), in addition to community and social challenges (safety, poverty, empowerment). In this collaboration, colleagues have been engaged in the development of an innovative transdisciplinary project where cartography, child and youth care work, social justice priorities and Indigenous approaches are intermeshed with art and creativity, drawing together distinct disciplinary priorities of geo-science, social service and arts and humanities. Drawing inspiration from the Children's Mapping Competition, the project further supports the affirmation of children's rights as stated in the United Nations Convention on the Rights of the Child.

Consistent with the art of storytelling of the ancient humans in the caves in the vicinity of the 2023 ICC conference, learners in the NACCW *Isibindi-Ezikoleni (Safe Parks-Courage in Schools)* school-based program, supported by a dedicated team of Child and Youth Care Workers (CYCWs), engaged in locational and aspirational mapping practice in seven provinces across South Africa, with children and youth using crayons and paints to explore and present their worlds with tremendous enthusiasm. The passion and focus with which the 20 NACCW CYCWs and several hundred learners embraced map drawing was overwhelming: Over 200 maps were created in a year, and 66 maps were submitted to the Barbara Petchenik Children's Map Competition.

A conceptual *Circle of All Nations* medicine wheel motif was created to structure the project and facilitate cohesion in the implementation and development of the project amongst the diverse players facing a wide range of locational realities. Almost two years into the work, it is possible to track the evolution of the work consistent with this planning model.

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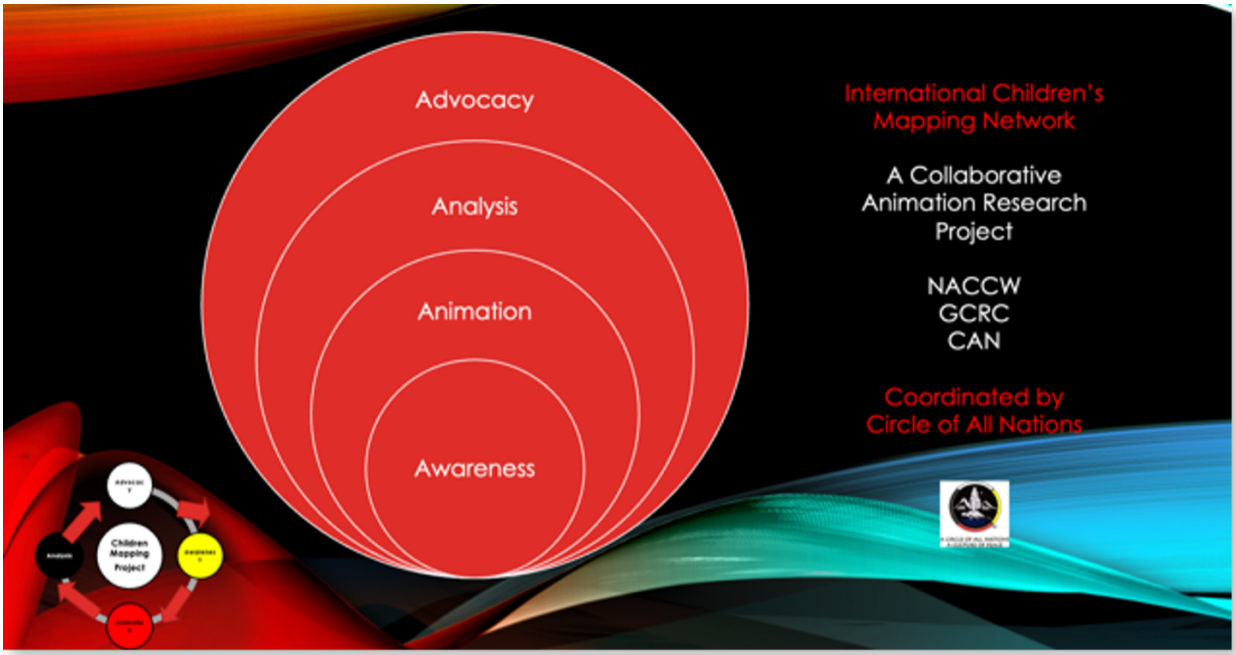
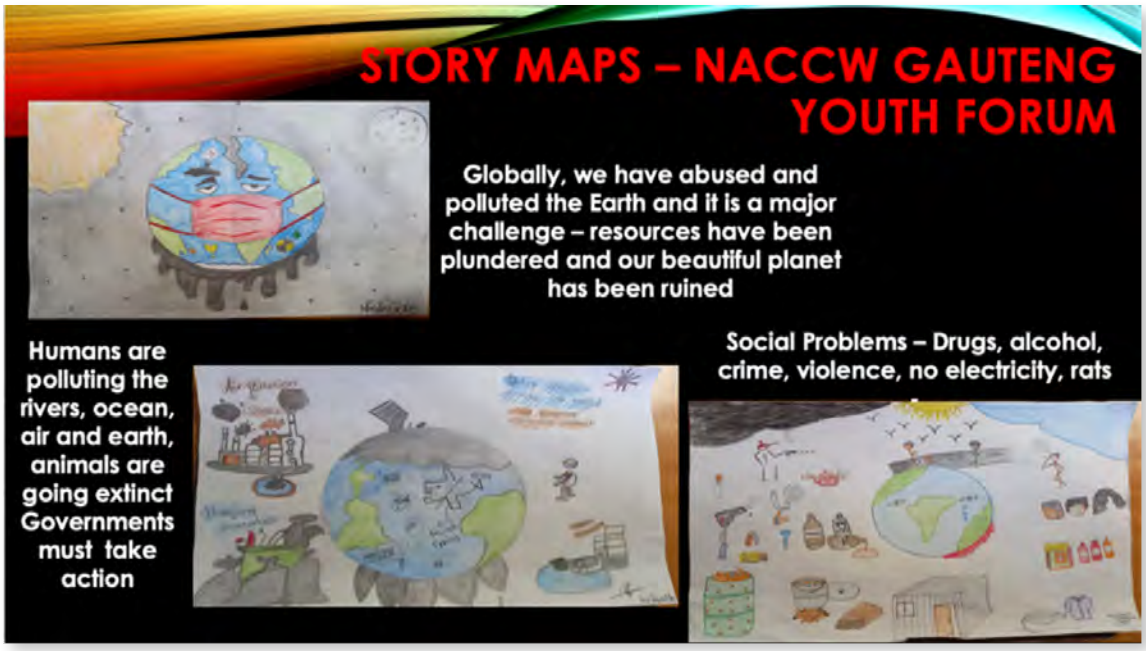


The maps created by the children illustrate enhanced locational awareness, with the following categories evidenced in the preliminary analysis of the maps:

- Location – homes, community, village, towns, schools, universities, safe parks, churches, graveyards, hospitals, clinics, sports
- Environment/space/time – global earth and local places
- Environmental realities – pollution, power and power outages, sewage, food, security, water, rivers, beaches
- Climate change – floods, drought, weather, extreme weather, storms
- Safe and dangerous places, access, boundaries, borders, no man's zones, trails
- Transportation, taxis, busses, walking, hitchhiking
- Mental health – impact of location, isolation, fear, community, abuse
- Medicine Wheel – and cosmic/nature/animal world connection
- Relationships – community, family, lost ones, teenage pregnancies, death
- Dreams and aspirations – for local and global environment
- Culture, language, art, creativity, hobbies, sports



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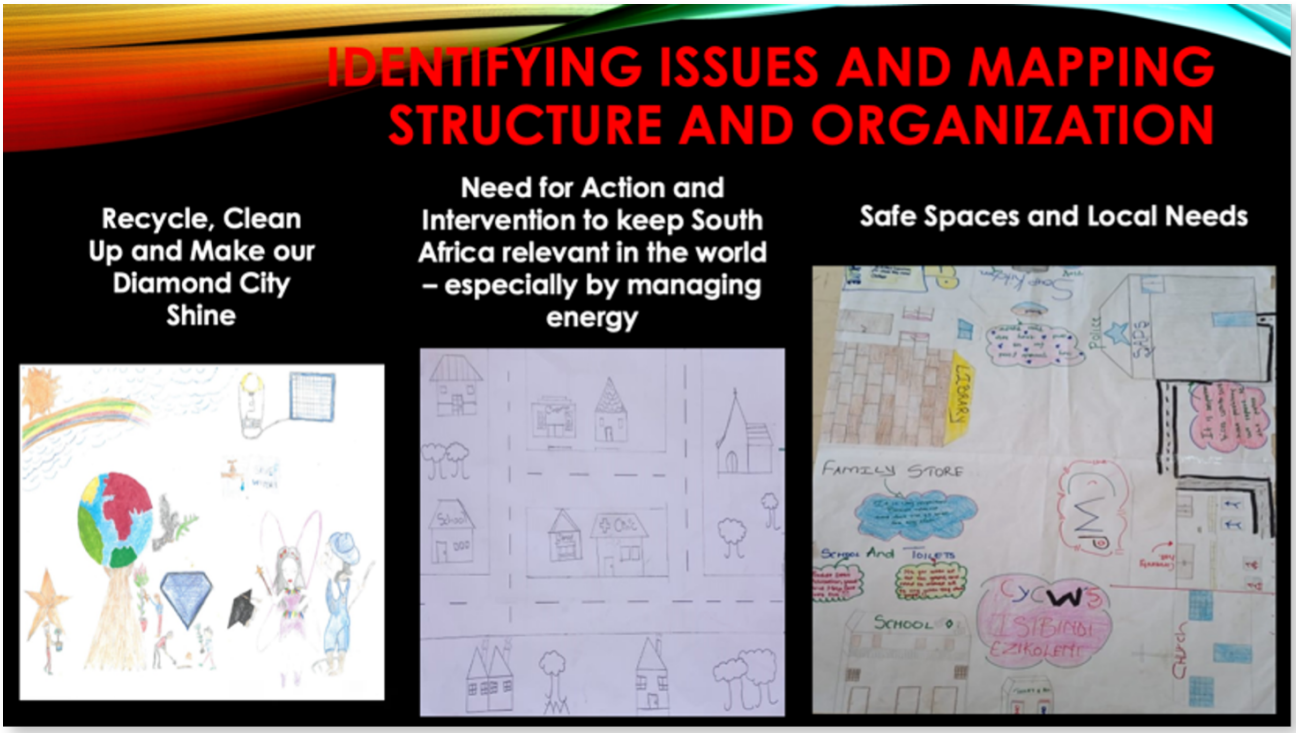
Preliminary Discussion

Two primary themes have emerged with the work: First, the use of children's mapping as a methodological tool for interaction and engagement in child care work practice on a range of locational items that impact their lives; and second, the implications for the drawing with the focus on location to surface previously unvoiced issues and trauma, and to support some degree of healing in the form of therapeutic art creation. In addition, carto-semiotic theory provides important avenues for deeper analysis of the visual, graphic and textual messaging evident in the maps.

a) With respect to the use of mapping as a methodology in child care practice, the preliminary analysis of the children's map visualizations of environmental and social conditions suggests that previously unspoken locational issues are now surfacing in communications with children in the school based *Isibindi/Ezikoleni* program, and the children's mapping work is serving as a catalyst and methodology to support practice, programs, policy and advocacy consistent with the United Nations Convention on the Rights of the Child. While the three decades of archival maps in the Carleton University repository reveal children's awareness of environmental and social realities, this new NACCW interface is stimulating interventions responsive to the needs, articulations and aspirations of the children.

As such, the project has contributed to a prioritization of issues for further practice, program and policy development, which is projected for further research in partnership with national and international bodies like the Durban University of Technology, the South African Human Rights Commission, the Children's Institute at the University of Cape Town, and UNICEF.

b) With respect to the process of the drawing, the relevance and potential of the art creation elements in children's mapping (drawing, painting and "photoatlas" storytelling) to surface undisclosed issues and enhanced awareness and understanding of locational and social issues of importance to children, as well as visualization and memory reclamation and strengthening is becoming evident in the maps; and now maps are consciously being created for child protection and other priorities.



c) Carto-Semiotics supports the visualization and apprehension of cultural, historical and contemporary information and knowledge, adds new dimensions meaning making, and demonstrates the potential range of application of cartography. "Photoatlassing" (after A. Wolodtschenko) demonstrates the potential of graphic storytelling to complement or enhance geographic information system data in global earth observation, particularly in the information age dominated by graphic

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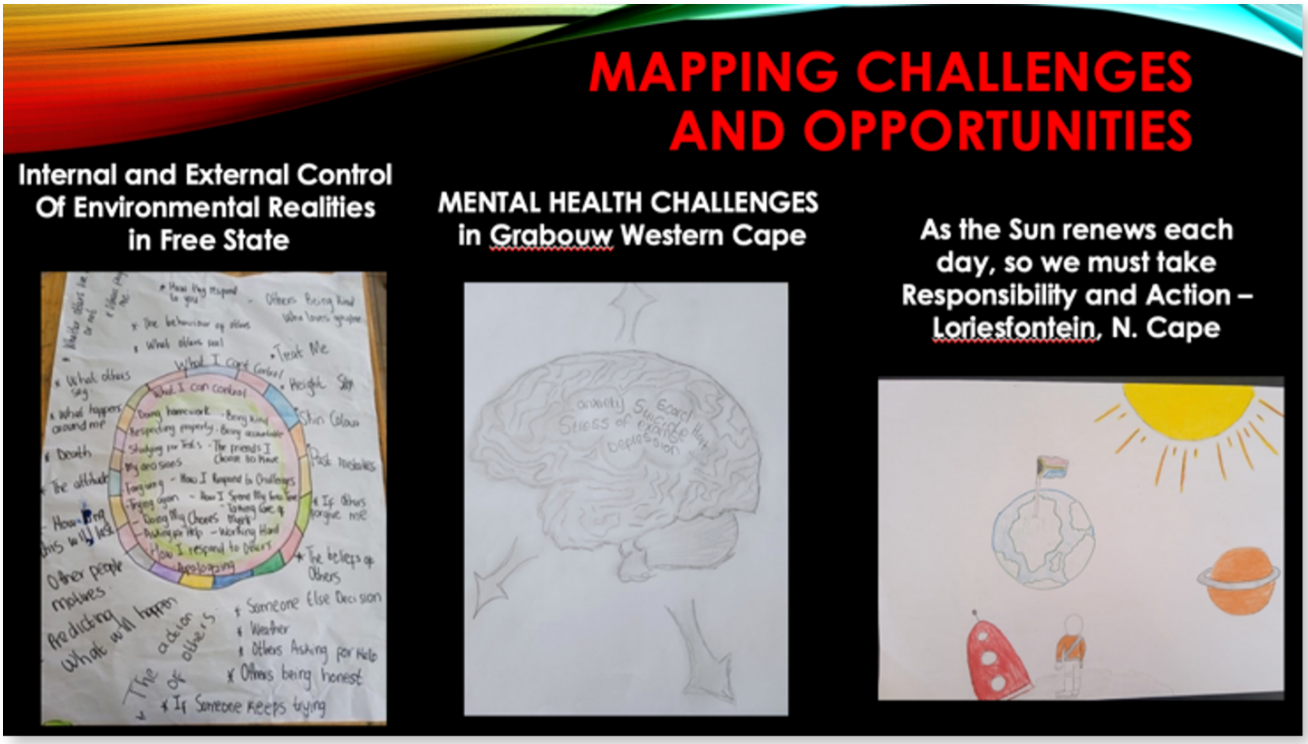


digital technology. Carto-semiotics serves as a powerful methodological tool for further examination of the stories embedded in children's maps in contemporary times of post 9/11 and post pandemic stress, extreme environmental episodes, climate change, migration and dislocation, refugee camps, war, and global connection.

With this innovative project, the unique combination of players (children, child and youth care workers, cartographers, managers and researchers) has contributed to the expansion of the children's mapping beyond the competition level and intense development has occurred with respect to use of a mapping as methodology in childcare work, supported by the creative / therapeutic components of drawing. Introducing dedicated time for art and creativity is also yielding interesting findings about the depth of insight and range of awareness of the largely systemically disempowered children. NACCW has integrated children's mapping in South Africa's annual Child Protection Week Awareness campaign to raise the presence of the voice of children in program and policy development and has also taken this message to the public at large via national media. The next stage of the project will involve ongoing map creation and detailed analysis of the maps and discussions already recorded.

Please contact RVThumbadoo@gcrc.carleton.ca to discuss further.

Conclusion

Grounded in the human cultural sign making heritage, children's maps, partly emergent from the child and youth care work of the social service sector, and grounded in the artistic expression, creativity and storytelling of the humanities, integrative reflection, self-empowerment and hope, present animative and transformative cartographic expression for the global earth observation science. Today, in a world of innovative and accelerating digital communications, technological development, Indigenous visibility, global connection, urbanization, migration, displacement, refugee crises, diversity challenges, climate change and loss of species, both mapping and storytelling have the potential to play increasingly more important roles, including in the context of the United Nations Sustainable Development Goals (UNSDGs). Children's mapping can serve as a catalyst and methodology for such engagement, and, in collaboration with child and youth care and education sector partners, can support practice, programs, policy and advocacy consistent with the United Nations Convention on the Rights of the Child.

NOTE: A presentation was also made at ICC 2023 on storytelling, visual and cognitive mapping and photoatlassing of Indigenous Elder William Commanda's "Canoe" Journey, which discussed art, craft, motion, experience knowledge and wisdom.

CCA Student Map Competitions 2023

President's Prize Map Competition and Best Student Paper

The CCA President's Prize recognizes excellence in student map design and is open to all students at Canadian post-secondary institutions who have completed and produced a cartographic thematic map during the preceding school year. It consists of two prizes, 1 for entries from college-level or CEGEP students, and 1 for entries from university-level students in the following category: A thematic map on any subject.

> A *thematic map* is a map that is meant to communicate a specific subject matter within a particular geographic area. They are often defined as special purpose maps and can be either quantitative or qualitative in nature. The International Cartographic Association (ICA) defines the thematic map this way: "A map designed to demonstrate particular features or concepts. In conventional use this term excludes topographic maps" (Dent 1999, 8).

This year we received several entries from both college-level and university-level students. All maps submitted have been posted for members to view on the CCA website, simply go to the following pages to find this years entries:

https://cca-acc.org/2023-student-mapping-competition-entries-university.html

https://cca-acc.org/2023-student-mapping-competition-entries.html

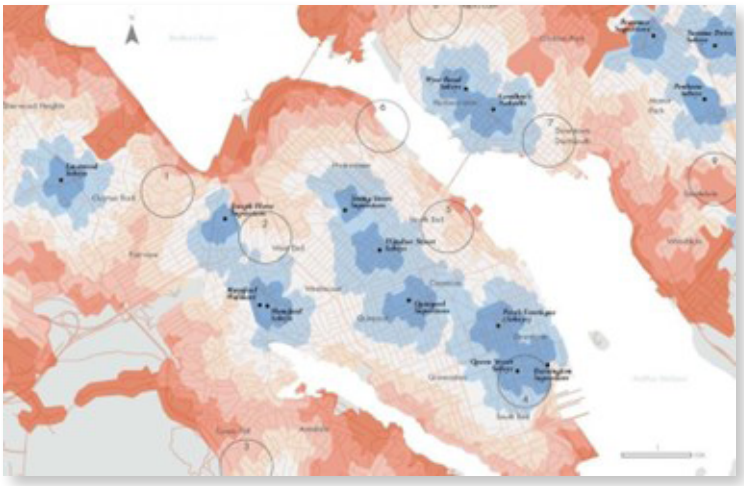
All the maps were printed and displayed throughout the CARTO2023 conference, and were featured at the 2023 GoGeomatics Geospatial Technology Expo in Calgary.

2023 President's Prize (College or CEGEP)

Awarded to: **Hannah Genosko**

The 2023 college-level / CEGEP award was presented to Hannah Genosko from the Centre of Geographic Sciences (COGS) / Nova Scotia Community College (NSCC) for her map titled "Food Deserts in urban Halifax / Dartmouth". The map illustrates her research and exploration of food deserts in both urban Halifax/Dartmouth and rural counties in Nova Scotia.

You can view the full map entry (below is only a small clip) including an overview of her design objectives by going to https://cca-acc.org/2023-cca-presidents-prize-winner-food-deserts-in-urban-halifax-dartmouth.html



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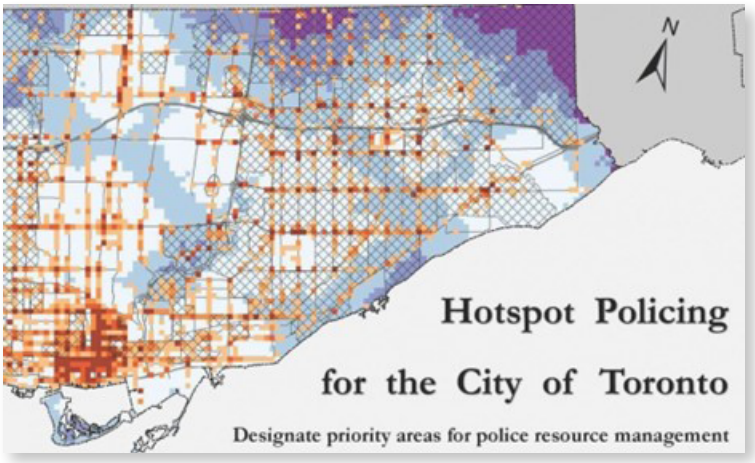
2023 President's Prize (University)

Awarded to: **Sigao Li**

The 2023 University level award was presented to Sigao Li from Toronto Metropolitan University for his map titled "Hotspot Policing for the City of Toronto". His map focuses on how a hotspot map can help to reduce police response time, improve the efficiency of police patrols by detecting high-crime areas, and provide potential transportation infrastructure or regulation improvements by locating high-incident-prone areas.

To view the full map entry (below is only a small clip) including an overview of his design objectives, go to https://cca-acc.org/2023-cca-presidents-prize-winner-hotspot-policing-for-the-city-of-toronto.html



Carto 2023 Best Student Paper

Awarded to: **Ayomide Fatogun**

Earlier this year we held CARTO2023, the first in-person CCA annual conference since 2019, jointly hosted with the Association of Map Libraries and Archives. The Best Student Presentation at Carto 2023 was awarded to Ayomide Fatogun, University of Winnipeg for his presentation entitled "A spatial analysis of Moose distributions in Manitoba".

Nick Field, University of Toronto, was given an Honourable Mention for this presentation entitled "Alternative Historical GIS Approaches to Sir Aurel Stein's 1918-1922 Maps of Northwestern China".

Thank you to Francine Berish, Alex McPhee and Julia Siemer for judging the student presentations. Judging was based on the content and structure of the work and the quality of the presentation.

Above: hiking in Nose Hill Park at this past year's CCA Conference in Calgary.

Right: more fun with drones as Julia Siemer attempts to catch one in mid-air.

Cartographica

Heather McGrath

Article Highlight

Authored by Christopher Thiry, 'Santa's Got a Gun: A case study of cultural stereotypes embedded in a map"' is a thoroughly researched and expertly crafted article that utilizes a critical viewpoint to reveal the culturally significant facets of modern cartographic objects, which may not always be entirely innocuous.

The manuscript explores the curious dichotomy between the commitment to accuracy and cultural biases, as revealed through the General Drafting Company's annual Christmas card maps of the 20th century. Commencing in 1930, General Drafting Company initiated a series of yuletide cartographic creations featuring none other than Santa Claus.

These festive maps from the 1930s conspicuously underscored cultural and regional stereotypes, whereas those from the 1950s elucidated a prominent American nationalist worldview. Thiry dissects these maps and presents an interesting discussion on the cultural, geographic and political stereotypes in the representations of Santa partaking in various activities across America and the globe.

Discover the latest research just published in Volume 58, Issue 3 of Cartographica—read the full article online now!

Link: https://bit.ly/CARTO583

Cartographica is an international and interdisciplinary peer-reviewed journal that publishes transformative research, education, and practice contributions to the social, political, technological, and historical aspects of cartography and geovisualization. An official publication of the Canadian Cartographic Association.

Membership Coordinator

Roger Wheate
University of Northern British Columbia

Welcome new members 2023!

Name/Nom:	City/Ville	Province/State
Gabriel Betlen	Pickering	Canada
Juliette Bricker	Calgary`	Canada
Sophie de Nonancourt	Vancouver	Canada
Tim Elrick	Montreal	Canada
Cath Evans	Butler	USA
Nicholas Hinsperger	Chelsea	Canada
Peace Imologhome	Calgary	Canada
Aman Kalsi	Chestermere	Canada
Andreas Korsos	Sherwood Park	Canada
Milton Lee Thomas Lowe	Calgary	Canada
Cindy MacNeill	Halifax	Canada
Yahaya_Isah Makarfi	Kaduna	Nigeria
Jackson McCutcheon	Kingston	Canada
Antonio McGee	Oklahoma City	USA
Katherine Sanchez	Calgary	Canada
Megan Sheremata	Toronto	Canada
Romola V. Thumbadoo	Ottawa	Canada
Andrew Wiebe	Toronto	Canada

I have a number of extra copies of Cartographica for most issues back to 2004 and would be happy to send to good homes and lighten my bookshelves.

Please email me at Roger.Wheate@unbc.ca if you need issues to fill any gaps over past years.

Report from the Canadian Representatives to the International Cartographic Association (ICA)

Yaïves Ferland and Julia Siemer

Le Canada à la conférence ICC2023 au Cap, en Afrique du Sud

Les Canadiens ont pleinement participé à la 31e conférence de l'Association cartographique internationale (ACI-ICA) tenue dans la ville du Cap, au mois d'août 2023. Le professeur Jonathan Li, de l'Université de Waterloo et président élu de l'Association canadienne des sciences géomatiques (ACSG-CIG), et Yaïves Ferland, de l'Université Laval, y étaient les délégués officiels à l'assemblée générale parmi les 35 pays membres représentés. Les 28 commissions thématiques ont vu leur mandat renouvelé.

Lors de la cérémonie de clôture, la professeure Cynthia Brewer, originaire de l'Ontario maintenant à la Pennsylvania State University, a reçu la médaille d'or Carl Mannerfelt de l'ACI, la plus haute distinction honorant ses contributions en tant que théoricienne des couleurs pour la représentation et le design des cartes par les professionnels du domaine. À la même occasion, Jonathan et Yaïves ont invité tous les conférenciers et participants à venir à Vancouver lors de la prochaine conférence, en 2025, et ont pour cela rapporté le drapeau de l'ACI au Canada.

Une jeune de Surrey, en Colombie-Britannique, Anaya Cherian, a été choisie par le vote des délégués lors du concours Barbara Petchenik de dessins cartographiques d'enfant. Il s'agit d'une compétition internationale organisée depuis 1993 par la Commission sur la cartographie et les enfants, ayant pour thème « Le Monde dessiné par les enfants ». Grâce à son dessin « Mon avenir tout en couleur », Anaya a reçu le prix avec un certificat pour la deuxième place dans la catégorie des 9 à 12 ans, parmi 173 dessins soumis. Toute la collection des dessins de carte nationaux gagnants sont conservés sur le site de la bibliothèque de l'Université Carleton, à Ottawa. Voir page 32 pour en savoir plus sur ICC2023.

Canada at the ICC2023 conference in Cape Town, South Africa

Canadians fully took part at 31st International Cartographic Association (ICA-ACI) conference held in August 2023 in Cape Town, South Africa. Professor Jonathan Li from University of Waterloo, also president-elect of Canadian Institute of Geomatics (CIG-ACSG), and Yaïves Ferland from Université Laval, were our official delegates to the General Assembly with 35 countries, where the Terms of Reference of 28 thematic commissions were renewed.

At the closing session, Canadian-born Professor Cynthia Brewer, Pennsylvania State University, was awarded the Carl Mannerfelt Gold Medal, the ICA's highest honor for her distinguished contributions to the field as an influential theorist of colours for map representation and design by GIS professionals. At the same occasion, Jonathan and Yaïves invited all present delegates and speakers to meet again at the next conference ICC2025 in Vancouver, for which they were given the ICA flag to bring it to Canada.

Anaya Cherian, age 11 from Surrey, British Columbia, was awarded by delegates' voting of the Barbara Petchenik Children's Mapping Competition, created by ICA in 1993 and organized by its Commission on Cartography and Children under the theme "The World drawn by Children". Anaya's map drawing "My Colourful Future" finished in second place in the 9 to 12-year-old category, among 173 exhibited drawings, for which she earned both prize and certificate. All the national awarded drawings are archived on the Children's Map collection webpage at the Carleton University Library, in Ottawa. See page 32 for more on ICC 2023.

Yaïves Ferland

continued on page 42

The ICA-ACI flag in Canadian hands

Anaya Cherian
age 11
Surrey, BC

"My Colourful Future"
by Anaya Cherian

The 32nd International Cartographic Conference (ICC 2025) in Vancouver: Volunteer Opportunities

Cartographers, mark your calendars!

The 32nd International Cartographic Conference (ICC 2025) will take place in Vancouver, British Columbia, from August 18 to 22, 2025. This will be the first International Cartographic Conference in Canada since the ICC 1999 in Ottawa, ON. If you attended that conference, you will know that we have big shoes to fill.

Brian Davies and the organizing committee are busy getting everything set up. To make this a great conference and to show off Canadian cartography, we are looking for volunteers to get involved in a variety of committees. This includes the general and the scientific program committees, the map exhibition committees – the International Map Exhibition and the Barbara Petchenik Children's Map Competition – as well as technical and social activities committees. We are looking for volunteers from all over Canada but also particularly for French Canadians as this will hopefully be a fully bilingual conference. If you are located in the Vancouver area – even better!

ICC 2025 VANCOUVER, CANADA

To inquire about opportunities to get involved or to express interest, please don't hesitate to contact me at julia.siemer@uregina.ca.

Happy mapping!

Julia Siemer
CIG Technical Councillor for Cartography
CNC/ICA

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CCA Executive/Exécutif de l'ACC

President/Président
Glenn Brauen
Department of Human Geography
University of Toronto Scarborough
1265 Military Trail
Toronto, ON M1C 1A4
E-mail: glenn.brauen@utoronto.ca

Vice President/Vice-président
Alex McPhee
Prairie Heart Maps
Box 201 Val Marie, SK S0N 2T0
E-mail: alex@awmcphee.ca

Past President/Président-sortante
Ted MacKinnon
GISP – Geomatics Specialist
Natural Resources Canada
Amherst, NS
E-mail: t_mackinnon@yahoo.com

Secretary/Secrétaire
Stephanie Pyne
Geomatics and Cartographic Research Centre (GCRC) Carleton University
Ottawa, ON
E-mail: sapyne@gmail.com

Treasurer/Trésorier
Byron Moldofsky
317-3900 Yonge St
North York, ON M4N 3N6
E-mail: cancartassoctreasurer@gmail.com

Interest Group Chairs/ Présidents des groups d'Intérêt

History of Cartography/ Histoire de la cartographie
Byron Moldofsky
E-mail: byron.moldofsky@gmail.com

Education/Éducation
Stephanie Pyne
E-mail: sapyne@gmail.com

Mapping Technologies and Spatial Data/ Technologie cartographiques et données spatiales
Marikka Williams
200 Albert St. South
Lindsay, Ontario K9V5E0
E-mail: Marikka.Williams@flemingcollege.ca

Geovisualization and Map Design / Géovisualisation et conception de cartes
Thomas Herbreteau
Victoria Health Centre
PO Box 6000, Fredericton NB E3B 5H1
E-mail: thomas.herbreteau.gis@gmail.com

Appointees/Personnes nommées

Cartographica (submissions/ proposition d'articles)
Heather McGrath
Natural Resources Canada
580 Booth St.,Ottawa ON
E-mail: heather.mcgrath@nrcan-rncan.gc.ca

ICA Delegate/délégué à l'ACI
Julia Siemer
Dept. of Geography and Environmental Studies, University of Regina
E-mail: julia.siemer@uregina.ca

Membership Coordinator/ Coordonnateur des adhésions
Roger Wheate
Faculty of Environment
University of Northern British Columbia
Prince George, BC V2N 4Z9
E-mail: roger.wheate@unbc.ca

Communications
Newly Vacant

Webmaster
Ted MacKinnon
E-mail: t_mackinnon@yahoo.com

Cartouche Editorial Team/ Équipe éditoriale de Cartouche

Stephanie Pyne
E-mail: sapyne@gmail.com

Marikka Williams
E-mail: Marikka.Williams@flemingcollege.ca

Gordon Campbell
Supervisor, GIS & Property Information
Municipality of the County of Colchester
Truro, NS
E-mail: gcampbell@colchester.ca

Co-ordinator, National Map Exhibit/ Coordonnateur de l'exposition cartographique nationale

Julia Siemer
E-mail: julia.siemer@uregina.ca

Barbara Petchenik International Children's Map Competition/ Compétition internationale Barbara Petchenik de cartes dessinées par des enfants

Karen VanKerkoerle
Cartographic Section
Geography Dept., SSC, Western
London, ON N6A 5C2
E-mail: kvankerk@uwo.ca

Student Representative/ Représentant des étudiants

Yegane Vahidi
Environmental Sciences / GIS /Studio Art
University of Toronto
E-mail: yegane.vahidi@mail.utoronto.ca

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