

# LAYERS

A Dalhousie newsletter  
about Data & GIS

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## GIS DAY!

### *There's a day for GIS?*

Who would have thought that GIS would have a day to itself? But it does, and it is hugely popular worldwide. To appreciate the value of using a day to focus on the benefits of GIS, it's helpful to look at how and why it came to be... and have some cake.



## GIS Day! *There's a day for GIS?*

One might be tempted to think that it was wholly created by the sponsoring company, Esri Inc. (Environmental Systems Research Institute), but it wasn't Esri or the owner, Jack Dangermond, who came up with the idea – it was Ralph Nader, the famous citizen and consumer advocate. Nader saw GIS as a vital tool to educate people, especially youth, about the benefits of GIS and how it can be used to create positive change from the grassroots up. He convinced (pressured) Jack to create a way to focus attention on how GIS could be a participatory system that helps people get into contact, work with, and protect the space around them.

And so, GIS Day was born. But the story doesn't start or end with just two people talking about having a party once a year. The first GIS Day was Friday, November 19th, 1999. After a few years, it was moved to the Wednesday of the 3rd week of November in the middle of Geography Awareness Week (GAW). In the mid-1980s, several Gallop Surveys compared American children's "geographic literacy" to those of other countries. Many academic and professional geography associations, private sector companies, like Esri, and governmental organizations looked at those surveys with great concern. They took collective action to generate the Presidential Proclamation 5700, September 8th, 1987 signed by

Ronald Reagan and establishing Geography Awareness Week. The creation of GAW brought together every major geography association, agency, and private sector company with a direct interest in having people develop knowledge and skills in geography, focusing the energy of those same groups to establish GIS Day. GIS Day became a well-known and enjoyed occasion to promote the value of GIS in society.

It also became something that is part of the Canadian GIS community. Within the context of many universities in Canada, the key supporters and drivers of GIS Day have been libraries. This came about through the GIS in Canadian Libraries Initiative which was based on the US library program. It was supported by Esri Canada and CARL, the Canadian Association of Research Libraries, the Canadian Association of Public Data Users, and the Association of Canadian Map Libraries and Archives (ACMLA). The Dalhousie Libraries also hosted some of the first GIS training sessions for librarians as well as bringing in keynote speakers who were leaders in the field, organizing conferences and local meetings with the GIS community in Nova Scotia.

## GIS Day! *There's a day for GIS?*



The Libraries involvement was also translated into support for the Canadian version of Geography Awareness Week which is attached to the Royal Canadian Geographical Societies education program (CanGeoEdu). All of this arose out of efforts which saw the creation and launch of CanGeoEdu in Halifax in August 1993 – with the support of the same groups as the GAW of 1987, plus numerous other Canadian geography associations, agencies and companies, like Esri Canada. The 1993 National Council for Geographic Education international conference (the 2nd time outside the US) was co-chaired and organized by members of the Dalhousie community.

Dalhousie Libraries was at the forefront of these initiatives, bringing in training sessions, lectures by leaders in the field and promoting and supporting the use and application of GIS in teaching,

elearning and research across the University, which has seen continual growth and impact from the early 1990s to now. Of course, Covid 19 has impacted this like other activities, but the hope is to see a resurgence of GIS Day here and across Canada.

Since its founding, GIS Day has been about the people using GIS and the work they are doing rather than the technology alone. This is why the theme for this year's GIS Day is Celebrating the GIS Professional. If you go to [gisday.com](http://gisday.com), you can see a map of the places which have registered their event and see who is doing what. If you google GIS Day, you will also see images that show how much people enjoy the day, and mostly how they develop outreach activities to schools and the public, and most often through libraries. Outreach and library connections have been fundamental from day one. And you'll also see lots and lots of cake. It is an unofficial competition to see who can make the most geographically themed cake. Globes have become the norm, but GIS people are very creative, so you will see some wonderful maps, landscapes, and technology (a GPS cake?). You can't have a GIS Day without cake!

# 2021 Census of Population PUMFS and Other Census Releases

There are many data products and geographical products available that allow you access to 2021 census data. For example, the [2021 census profiles](#) have been available for a while now and give snapshots of census variables at given levels of geography, and [all boundary files](#) - which can be used to map census data in GIS software – have been released.

But did you know that new 2021 census products have recently come out, and there is still more to come? For example, [census data tables](#) consist of useful cross-tabulations of census variables available at various limited levels of geography. While many data tables for the 2021 census are now available, there are still plans to release more as shown on the [2021 Census of Population upcoming releases page](#). While the 2021 Census of Population Public Use Microdata File (PUMF) for individuals was released on September 12, 2023, some file formats have needed to be corrected and the files are taking a bit longer to make it to the interfaces we usually use to access Census PUMF. Additionally, we’re still waiting on the hierarchical file anticipated to be released over the Winter of 2023-2024!

The 2021 Census (Individuals) PUMF allows you to create your own crosstabs or conduct your own analysis of census data, although for limited levels of geography

(census metropolitan areas or provinces in the 2021 census individual PUMF). You will want to use an interface that allows you to apply an individual weighting factor and replicate PUMF weights or explore the data in statistical software that allows the same. For example, the “knowledge of official languages” variable shows that in 677,080 rows of the individual 2021 census PUMF, we find the value “1” in the knowledge of official languages column to identify individuals that know English only. However, these 677,080 individuals in the PUMF represent 25,074,741 people in the Canadian population. Because we have access to census microdata, we can create our own table of knowledge of official languages combined with any other of the numerous 2021 census variables.

KOL - Language: Knowledge of official languages				Qualitative
Field:	59	Size:	1	Position: 166
<b>Description:</b>				
"Knowledge of official languages" refers to whether the person can conduct a conversation in English only, French only, in both or in neither language. For a child who has not yet learned to speak, this includes languages that the child is learning to speak at home.				
For more information on language variables, including information on their classifications, the questions from which they are derived, data quality and their comparability with other sources of data, please refer to the Languages Reference Guide, Census of Population, 2021.				
<b>Reported for:</b> Persons in private households				
Code	Description	Unweighted	Weighted	Includes
1	English only	677,080	25,074,741	
2	French only	107,916	3,998,222	
3	English and French	176,881	6,552,166	
4	Neither English nor French	17,923	663,795	
8	Not available	1,068	39,552	
<b>Total</b>		980,868	36,328,477	

## DATA COMMUNITY NEWS

### New Estimates of Non-Permanent Residents and Impact on GDP per Capita





A Globe and Mail article [\*Undercounting of an estimated million non-permanent residents could affect per-capita GDP, say economists\*](#) published on September 4, 2023, shares economists' insights about the importance of good estimates of the total number of Canada's non-permanent residents in properly calculating GDP per capita. However, according to the article, several economists have been raising the alarm that official estimates may be severely undercounting the number of non-permanent residents in Canada by as much as one million, such as by missing some of the international students who contribute to Canada's economy.

On September 27, 2023, Statistics Canada released table 17-10-0121-01 [Estimates of the number of non-permanent residents by type, quarterly](#) in which an updated estimation method was used to

provide revised estimates for non-permanent residents for the period of July 1, 2021, to April 1, 2023. If you've been using non-permanent residents estimates or GDP per capita in your work, make sure to check out the article and the newly released table!

### New Interfaces Used To Retrieve Statistics Canada Data

We have access to many interfaces at Dalhousie University that can be used to retrieve Statistics Canada data, including newer additions: Statistics Canada's Rich Data Services (RDS) and the Real Time Remote Access (RTRA) online tabulation tool. We've put together an [overview of different options](#), but if you're finding it tricky to decide which interface will work best for your needs, or need a tutorial on how to use any of these interfaces, don't hesitate to contact data librarian Julie Marcoux at [Julie.Marcoux@dal.ca](mailto:Julie.Marcoux@dal.ca).

 <h3>Explorer</h3> <p><b>RDS Explorer</b> </p> <p><b>Explore the Data</b></p> <p>Use the RDS Explorer to browse the data records, create custom extracts by filtering records and selecting variables, and produce personalized open data packages for download.</p>	 <h3>Tabulation Engine</h3> <p><b>RDS Tabulation Engine</b> </p> <p><b>Aggregate the Data</b></p> <p>Use the RDS Tabulation Engine to aggregate data across various dimensions to rapidly create analytical tables.</p>
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# DATA COMMUNITY NEWS

## Notable Data Releases

While you can always learn about new datasets by subscribing to Statistics Canada’s The Daily or Nova Scotia’s Daily Stats, we wanted to highlight three exciting new data releases from Statistics Canada.

Two General Social Survey (GSS) Public Use Microdata File cycles were released in 2023. Microdata for the Social Identity 2020 cycle of the GSS was released on May 31, 2023. Among other topics such as sense of belonging, social networks and values, it also includes questions about discrimination that respondents might have encountered during the Covid pandemic because of their age, ethnicity, culture, race, or other factors.

Variable Name:	DIS_15	Length:	1.0	Position:	237
Question Name:					
Concept:	5 yrs before Covid-19 - Reasons discrim. - Ethnicity/culture				
Question Text:	In the 5 years before the Covid-19 pandemic, have you experienced discrimination or been treated unfairly by others in Canada because of any of the following? Was it because of: Your ethnicity or culture				
Universe:	All respondents				
Note:	The World Health Organization declared the Covid-19 outbreak as a global pandemic on March 11, 2020.				
Source:	General Social Survey, Social Identity 2020.				
<b>Answer Categories</b>	<b>Code</b>	<b>Frequency</b>	<b>Weighted Frequency</b>	<b>%</b>	
Yes	1	4,668	3,338,083	10.7	
No	2	26,895	26,404,691	84.5	
Valid skip	6	0	0	0	
Don't know	7	0	0	0	
Refusal	8	0	0	0	
Not stated	9	2,481	1,513,078	4.8	
<b>Total</b>		<b>34,044</b>	<b>31,255,852</b>	<b>100.0</b>	

Microdata for the Canadians’ Safety (Victimization) 2019 cycle of the GSS was released on September 29, 2023. "This survey is the only national survey

of self-reported victimization and is collected in all provinces and territories. The survey allows for estimates of the numbers and characteristics of victims and criminal incidents. Topics covered are neighbourhood safety, crime prevention, risks and perceptions, abuse by current spouse/partner, crime incidents, criminal harassment, confidence in police, hate crimes, cyberbullying, experiences of discrimination, health and well-being and also a variety of socio-demographic measures."

## Spatial Access Measures

The Spatial Access Measures are a set of indicators available at the 2021 Dissemination Block level of geography and "quantify the ease of reaching destinations of varying levels of attractiveness from an origin dissemination block. There are seven destination amenities which include educational and post-secondary educational facilities, health care facilities, places of employment, grocery stores, cultural and arts facilities, and sports and recreational facilities. (...) there are four variants based on the transportation mode: access via public transit during peak hours, access via public transit during off-peak hours, access via cycling, and access via walking."

# GIS COMMUNITY NEWS

## ARCGIS Pro

For the 2023-24 school year, ArcGIS Pro version 3.1.2 has been installed on all Dalhousie University lab and library computers, as well as in [Dalhousie's Virtual Lab](#). As version 3.1.2 constitutes a major release, older projects can be brought into the newer version only as a one-way process. Once your data is converted to the newer version, you will be unable to use it in older releases of ArcGIS Pro.

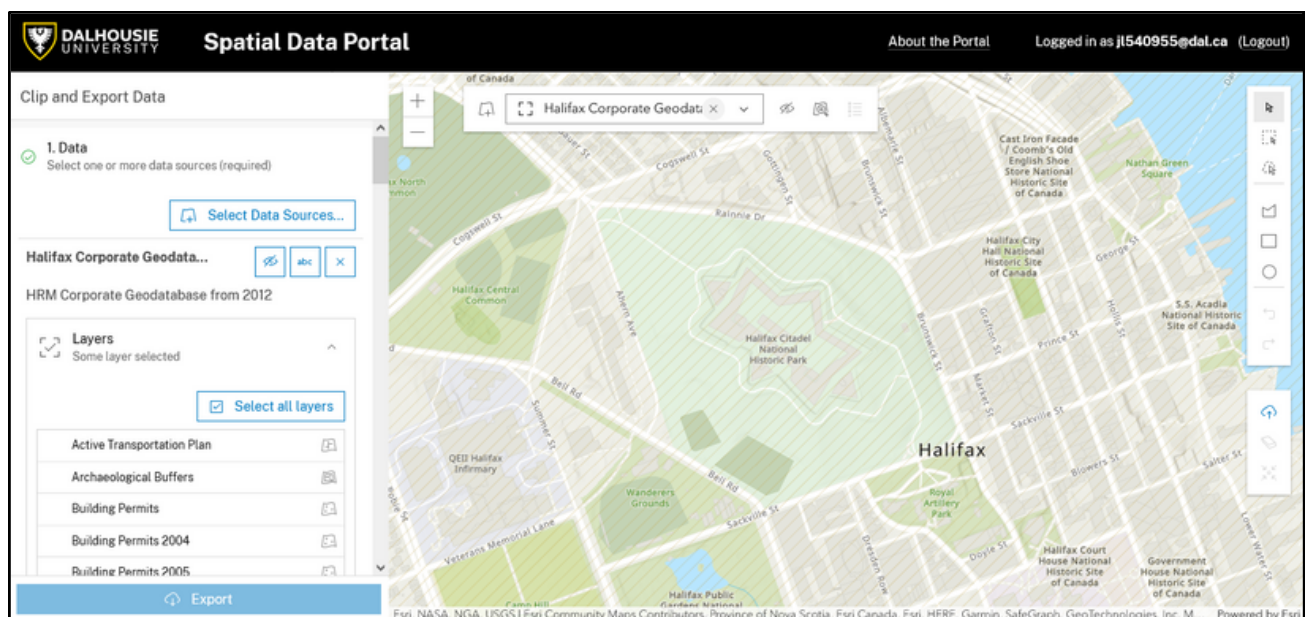
The version running on campus is always downloadable for all students, staff and faculty machines from [Dalhousie's Software Downloads site](#). If you want to install ArcGIS Pro version 3.1.2 on your own device, please make sure that you have version 6.0.23 of Microsoft .NET Runtime already installed. To verify that your computer meets ArcGIS Pro hardware

requirements, go to the [ArcGIS Pro 3.1 system requirements page](#) (it's fine that this page doesn't say "3.1.2") and click on the "Scan your computer for compatibility" link to verify your computer's ability to meet software specifications.

## Spatial Delivery Portal

Did you know that active Dalhousie students, faculty, or staff have access to a [spatial delivery portal](#) that includes both public and Dal-only datasets and applications?

The spatial delivery portal, created by Dal GIS Developer Thomas Zuber-buehler allows you to self-serve by selecting one or more data sources, clipping an area of interest (you can even use your own shape file to define the clip area!), and exporting your selection



## GIS COMMUNITY NEWS

as a geodatabase or as shape/TIFF files. You can easily access licence information, and when applicable, you'll be able to see whether a layer consists of polygons, points, or a table. Once you've made your selections, use the "Export" button and make sure to be patient – it can take a few seconds for the Portal to generate a custom file for download.

Data sources currently available in the spatial delivery portal include estimated depth to watertable for Nova Scotia, Halifax Quickbird Data from 2005, Halifax Corporate Geodatabase from 2012, Nova Scotia LiDAR DEM at 5m resolution, Halifax DSM Data from 2007, and Halifax DEM Data from 2007. A given data source may include several layers, such as the Halifax Corporate Geodatabase which has building permits, bus stops, contours, trees, and more!

If you have any questions or feedback about the Spatial Delivery Portal, don't hesitate to reach out to Thomas Zuberbuehler at [Thomas.Zuberbuehler@dal.ca](mailto:Thomas.Zuberbuehler@dal.ca).

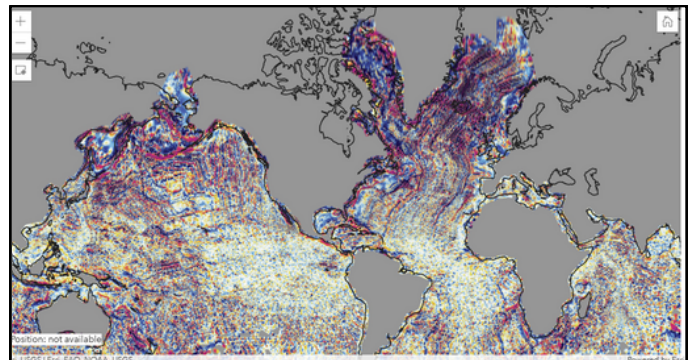
### Datasets to Explore

The GIS Centre continues to send you data links for a wide range of topics for use within the GIS Software. Please bookmark them now for future use!

[Sentinel-2 Landcover](#) - This link, supplied by Esri's Living Atlas, gives you access for global land use/ land cover through time (2017-2022) as derived from Sentinel-2 data. AI and deep learning created this very impressive dataset. The website allows users to look at information interactively or to download tiles as a raster dataset.

[Global Solar Atlas](#) - The world is looking to renewable resources as potential power sources. This website allows people to download maps or GIS Datasets for either the entire world or specific countries. GIS data are available as zipped geotif files or as Esri ASCII grids.

[NOAA Grid Extract](#) - Allows downloads of bathymetry data, elevation/ bathymetry combination data, as well as magnetic anomaly data. Users select the area of interest by specifying minimum and maximum coordinates or by drawing a box over the area of interest and the results are downloadable as a geotif file.





## EDUCATIONAL RESOURCES

From a book, to a learning series, to a full program of MOOC courses, there are a lot of learning resources out there that can meet all kinds of needs!

### [Easing into Excellent Excel Learning Practices](#)

"How can you best set yourself up for success in Excel? The Easing into Excellent Excel Practices folder covers the drawbacks of working with data in Excel; tips and tricks on how to prepare files, spreadsheets, and data for work in Excel; and exceptional Excel learning resources." Download the contents of this series to your desktop.

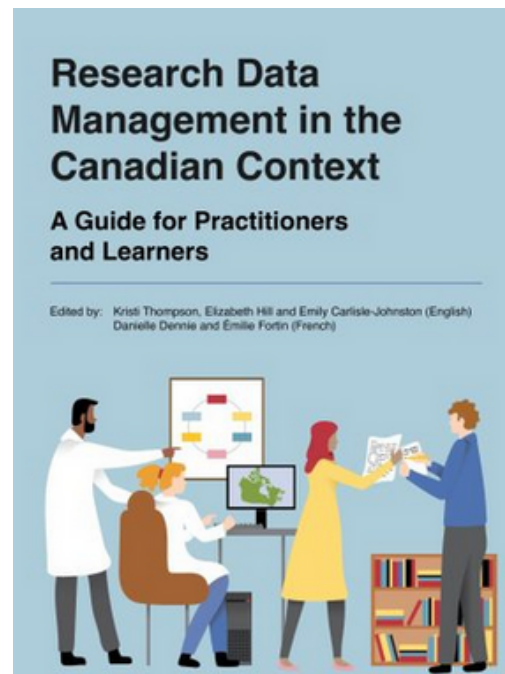
### [Esri's MOOC Program](#)

"These free online courses are for anyone who wants to build new skills, grow professionally, and expand their horizons. Courses range from four to six weeks and are self-paced. Have fun, explore a new topic, get hands-on practice with the latest ArcGIS software, and earn a certificate of completion."



### [Research Data Management in the Canadian Context](#)

"Research Data Management is a term for all the things that researchers do to structure, organize and maintain data before, during and after doing research. RDM is also an emerging discipline that is concerned with researching and developing ways to manage research data more effectively. But what is research data? Where is the push towards formal Research Data Management coming from? What are the requirements of good data management?"



## DATES & EVENTS

There are a lot of exciting events scheduled for 2023-2024. Have a look and see if there are any that you might want to attend!

### National DLI Training

Training sessions aimed at Canadian data librarians and library staff including sessions that might be of wider interest.

Data Liberation Initiative, online, Monday to Wednesday, November 20-22, 2-5:30 p.m. (AST).

### Visualization with R

"This workshop is aimed at providing additional insights into data through data visualization using R."

Acenet, online, Wednesday, November 29, 1-3 p.m. (AST).

### Love Data Week 2024

"Love Data Week is an international celebration of data, taking place every year during the week of Valentine's day. Universities, nonprofit organizations, government agencies, corporations and individuals are encouraged to host and participate in data-related events and activities." ICPSR, online and in-person in select institutions, February 12-16.

### IASSIST and CARTO 2024: navigating the future of data

Conference for "professionals working in and with information technology and data services to support research and teaching in the social sciences and beyond" as well as "Canadian map librarians, cartographic archivists and others interested in geographic information in all formats."

IASSIST and Carto, Halifax, Nova Scotia, May 28-31.



### 2024 Esri User Conference

"Join thousands of users from around the globe and discover how you can leverage GIS capabilities to solve problems, build shared understanding, and create the world you want to see." Esri, San Diego, California, July 15-19.

# LAYERS

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**DALHOUSIE**  
UNIVERSITY

LIBRARIES

## **DATA & GIS SERVICES**

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[gis@dal.ca](mailto:gis@dal.ca)

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