# Layers

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### November 2021



*Dal graduates become alumni and many go places far beyond Halifax and Truro. This observation is especially true for Dr. Kathryn Sullivan, the most vertically travelled person in the world. She walked in space in 1984 and visited the deepest trench in the Pacific Ocean in 2020. Kathy earned her PhD (in Earth Sciences) from Dalhousie in 1978 and now holds three Guinness World Records; one of which is setting the vertical record of travelling 622.085 km within Earth's exosphere. Her story from space shuttle to submersible is captured in a* [StoryMap](#).
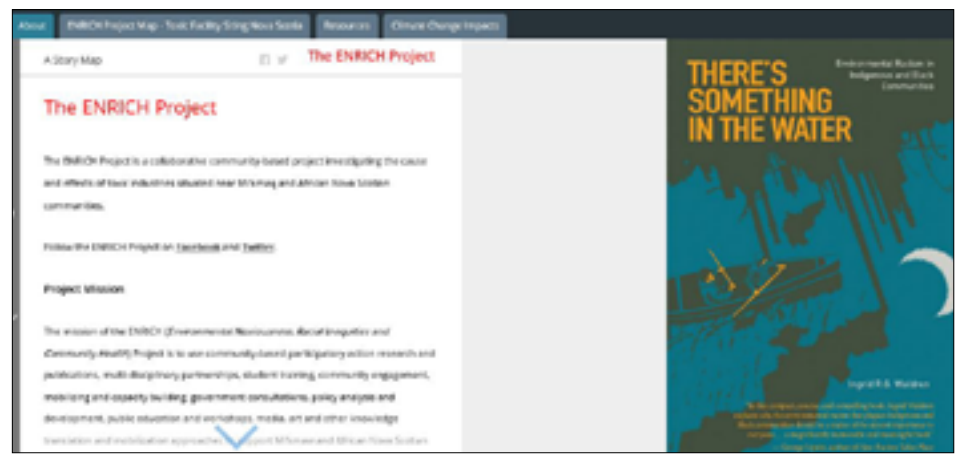
## *A Dalhousie newsletter about Data & GIS*

# IN THIS ISSUE

# StoryMaps Are for Everyone

There is a tendency to think of geographic information systems and spatial data as being for experts or those with a strong computer science background. While that is true on one level, there are also tools that anyone can learn to present their work using maps, images, text, video, and other forms of content.

Esri's platform ArcGIS StoryMaps provides a way to quickly and creatively describe your work and share it with your intended audience. The StoryMap featured on our cover is called *Illuminating the Deep*. It tells the story of travelling in a submersible to the deepest trenches in our oceans. The content is presented in a sequential manner and flows down the length of a webpage. It includes a map of the world and the pathway taken by the submersible to reach these trenches. It is part one in a series of four and was created by Esri.
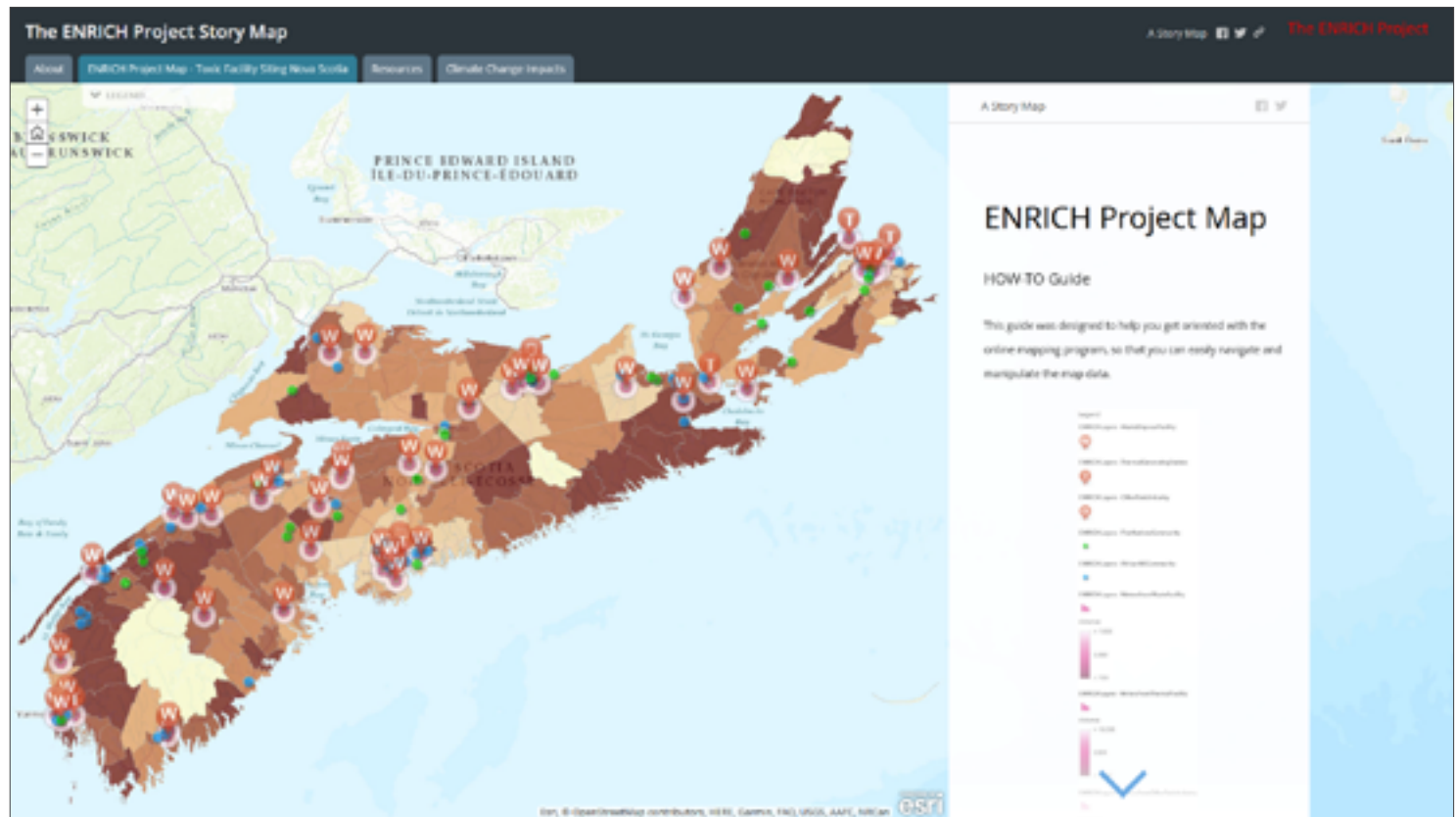


*The ENRICH Project StoryMap highlights the book* There's Something in the Water: Environmental racism in Indigenous and Black communities *by former Dalhousie faculty member Dr. Ingrid Waldron. This Storymap was revised by Lama Farhat, a former student assistant in Dalhousie's GIS Centre.*

Dalhousie's GIS Centre has supported the creation of many more StoryMap projects across a wide array of disciplines and topics. This list includes the history of Dalhousie's campuses, the Halifax explosion, Africville, plastics in Halifax Harbour, the Hadfield Space Photographs Collection, and the ENRICH Project.

The ENRICH Project StoryMap highlights Environmental Noxiousness, Racial Inequities and Community Health. The content is subdivided into sections with interactive tabs to facilitate access. The ENRICH Project Map became part of a 2019 documentary directed by Elliot Page and Ian Daniel, *There's Something in the Water*, which premiered at the Toronto International Film Festival.

# StoryMaps Are for Everyone (continued)



*The Project Map sites locations of facilities and communities in Nova Scotia. (Legend: W=Waste Disposal Sites; T=Thermal Generating Sites; GreenDot=First Nations Community; BlueDot=African Nova Scotian Community)*

StoryMaps are web-based applications enabling anyone at Dalhousie to share their story with the world. After all, we tell stories all the time about what we do, no matter the discipline or area of research.

All you need is an ArcGIS Online account and a story worth sharing. Contact us at gis@dal.ca to get started!
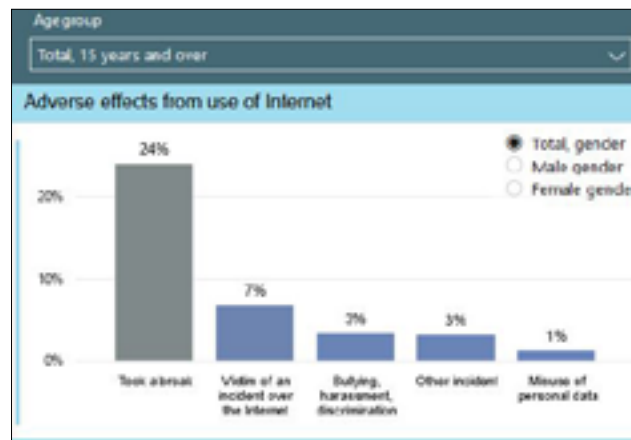
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# Visualization Dashboards from Statistics Canada

Statistics Canada has started producing a wide variety of interactive data visualization tools. These tools use standard browser features so no additional software is needed to manipulate the data. The default display is your starting point but each one provides combinations of tabs, charts, filters, and sliders to dynamically change the content shown on your screen.

### USE OF INTERNET SERVICES & TECHNOLOGIES BY CANADIANS

One interesting dashboard highlights data from the Canadian Internet Use Survey (CIUS) that was conducted in 2018 and 2020. The data collected is divided into five main themes: internet use, e-commerce, security and privacy, online activities and intensity of use. Each theme provides several charts that can be further defined by province, age, gender, and highest level of completed education.



*This bar chart shows that the highest adverse effect on Canadians using the internet was the need to take a break. It is followed by more serious events that could be investigated in more detail. Source: CIUS dashboard, Security & Privacy tab.*

### CONSUMER PRICE INDEX (CPI)
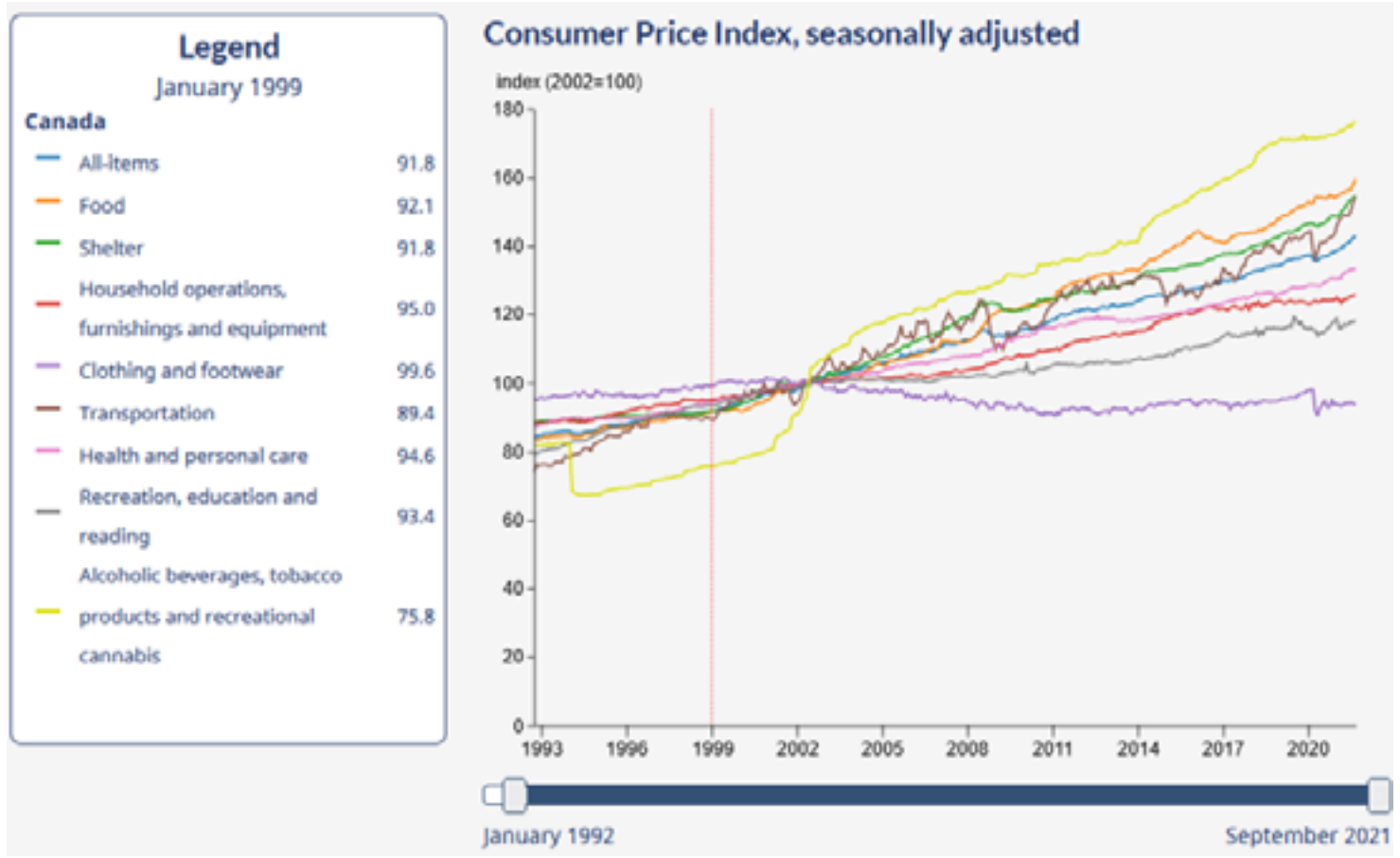
Recently, it was reported that our current rate of inflation is 4.4%. There is a CPI dashboard that lets you explore Canadian CPI data in more depth. The initial chart provides CPI values for the most recent five years (shown below on left). The September 2021 high of 4.4% and the May 2020 low of -0.4% reflect inflation rates associated with the COVID-19 pandemic. For a quick comparison, you can change the date range using dropdown menu choices to observe the 100-year trend line (shown below on right) instead of the 5-year trend line. It shows time periods when the CPI was much higher and much lower than current values.



The right side of each CPI dashboard displays a graph and the left side provides a list of corresponding data values. You can also use drop-down menus to change the chart to display annual average or seasonally adjusted CPI values, shown as annual averages or monthly increments. Within that framework, you can also select items of interest such as food, clothing, housing or recreational cannabis. Another filter enables you to focus on individual provinces and territories. Whatever you choose, the Legend will immediately change to reflect the current data (with a key to the line colours and index values that match your current mouse position on the chart).

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## Visualization Dashboards from Statistics Canada (continued)



**Legend**
**January 1999**

**Canada**

| Line | | |
|---|---|---|
| — | All-items | 91.8 |
| — | Food | 92.1 |
| — | Shelter | 91.8 |
| — | Household operations, furnishings and equipment | 95.0 |
| — | Clothing and footwear | 99.6 |
| — | Transportation | 89.4 |
| — | Health and personal care | 94.6 |
| — | Recreation, education and reading | 93.4 |
| — | Alcoholic beverages, tobacco products and recreational cannabis | 75.8 |

**Consumer Price Index, seasonally adjusted**

index (2002=100)

January 1992 — September 2021

*Going back to 1999, using seasonally adjusted data to view increases or decreases to inflation, shows a time period when clothing expenses were increasing more than food or housing.*

Accessing datasets from Statistics Canada has never been easier but all datasets have limitations which require the need to read the associated documentation. CIUS data limitations were framed by its survey methodology because it was conducted in all provinces but not the territories, and asked Canadians 15 years old and above (so does not include children).

Many more data visualization products are available from the StatCan website. For assistance, contact Julie Marcoux or Sai Chua.

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# News for the Data Community

***2019 Nova Scotia Quality of Life Survey dataset***
Engage Nova Scotia (ENS) is a non-profit NGO that has collected data to help Nova Scotians understand our challenges and possibilities. In partnership with the Canadian Index of Wellbeing (CIW), the Nova Scotia Quality of Life Survey recorded responses to more than 250 questions from close to 13,000 people across the province's 10 functional economic regions.



Dalhousie University has signed a Data Sharing Agreement (DSA) with ENS for Dalhousie researchers to use this dataset. The survey measured areas of wellbeing and economic indicators that the CIW uses to portray eight domains of wellbeing. The data was collected in 2019 (pre-pandemic) for all of Nova Scotia and the domain variables describe community vitality, healthy populations, democratic engagement, environment, leisure and culture, education, living standards, and time use. Survey responses can be disaggregated based on personal characteristics, functional economic region of province, income, race and ethnicity, living arrange-ment, education, employment, marital status, languages spoken, and more. Survey weight comes with the dataset. To get started, go to:
https://dal.ca.libguides.com/data/qol_survey_ns

***2021 Census Release Schedule***
Starting in February 2022, the first set of data from the 2021 Census will be available. It will report our new official population and describe where people are located. This bookmark features Themes and Topics for all the upcoming releases.

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### CONNECTING ARCGIS PRO TO ADOBE TOOLS

ArcGIS Pro is a great tool for geoprocessing but it isn't the only tool we use, especially for high end cartography and infographics. Design-oriented users are increasingly interested in getting maps and data layers from ArcGIS Pro into the Adobe Suite of tools (Illustrator and Photoshop). Esri has created a free plug-in that supports moving geographic content from ArcGIS Pro into Adobe. This plug-in is available to both Mac and Windows users and is installed as an extension to Adobe.

Prior to starting: verify that your Adobe installation meets the requirements and then download the Adobe plugin. You will also require an ArcGIS Online account. If you need help setting one up, contact the GIS Centre, gis@dal.ca

The procedure for moving from ArcGIS Pro to Adobe is quite simple. You start by making your map, and then create a Layout from that map. This Layout should contain all the basic elements required. Make sure to include a Legend and a Scalebar because these elements are difficult to

generate after you leave the ArcGIS Pro environment. Once you have your basic map with all your layers symbolized, export the Layout as an .AIX format file (Adobe Illustrator Exchange format). This is done using the Share tab and the Map Export button, filling in the appropriate information for the tool and clicking the Export button.

Once the Layout is exported to .AIX, switch to the Adobe application (Illustrator or Photoshop). Go to Open and select the file you created. Expect to see a login screen where you enter your ArcGIS Online account information. Once this information is entered, you have access to your Layout in Adobe format. It will contain multiple layers that can be turned on or off as desired, as well as giving you the ability to interact/change individual items.

For more information about this tool check out these resources:
• How to Install Adobe Creative Cloud plugin and requirements (use Install on a single machine)
• Video about ArcGIS Maps for Adobe Creative Cloud (10 minutes, with closed captions)

### INTRODUCING THOMAS ZUBERBUEHLER

Thomas is the new Library and Geographic Information System Developer, in the Dalhousie Libraries. He is currently working on a new portal installation that will support external access.

Thomas has previously worked as a GIS Developer for a consulting company in Halifax and before moving from Switzerland to Canada in 2017, he worked for eight years as a software engineer. He holds a master's degree in Geographic Information Science & Systems (UNIGIS MSc) from the University of Salzburg in Austria as well as a Cartography Diploma in Geographic Sciences from the Centre of Geographic Sciences (COGS), Nova Scotia Community College. He joined the Data & GIS team in June 2021.

# Dates & More Data

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**WORLD GIS DAY**
Wednesday, November 17

Having a GIS Day gives us the opportunity to think about where we live and how we share

I ♥ DATA

this space with other species and other forces that impact the quality of our air, land, and water. Our planet sustains life and in turn, we create cultures. Let's embrace these data- sharing activities as part of this year's GIS Day.

**DATASETS TO EXPLORE**
We feature datasets in every issue of *Layers*.

*Canadian Hydrographic Service non-Navigational Bathymetric Data (NONNA)*
Allows users to extract 10m or 100m gridded datasets created from both single and multibeam data sources. Can export files in ASCII, BAG, CSAR, or Geotif formats.

*Ontario Digital Terrain Model (Lidar-Derived)*
Raster datasets (either 0.5m or 1m resolution) created from Lidar Points or the bare earth. This website will allow you to download various areas (packages) primarily located in southern Ontario. Each package that is downloaded and unzipped is composed of many 1km2 images in an .img format.

*Government of Canada – Download Directory and Documentation*
Allows access to a wide variety of both Raster and Vector datasets created by Natural Resources Canada. Datasets range from general topographic data, to thematic data, to satellite composites.

StatCan CSI
Statistics Canada Crime Severity Index for population over 10,000 (CSI_Over10000) for 2020 is now available in the Scholars Portal Dataverse. In addition, revised CSI_Over10000 data for years 2017 through 2019 and updated CSI weights are also available.

**WINTER TERM 2022: UPCOMING LUNCHLESS LEARN SERIES**
The Dal Libraries will be offering two series of workshops during the winter term. The first series introduces GIS and the second series promotes data literacy. All sessions will be online. To view session descriptions and register to attend, visit the Dal Libraries events calendar in January 2022.

**LAST DAY WE'RE SUPPORTING ARCMAP: APRIL 30, 2022**
Dalhousie Libraries manages and supports the university-wide site license for GIS software. Esri Canada is the vendor for this software, and for the past three years, the Libraries have been transitioning the desktop application from ArcMap to ArcGIS Pro, which is becoming the industry standard. Most instructors and courses have already transitioned to the newer software, but there are a few labs and projects still using ArcMap. If you have concerns about this change, please be reassured that switching platforms will provide a more intuitive interface and additional functionality. If you have any questions, please get in touch at gis@dal.ca

# Find past issues of *Layers*

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