



An Introductory Tour of ArcGIS Pro

<https://uoft.me/pro>

Presented By:

Cole White

GIS Analyst

Map and Data Library

cole.white@utoronto.ca

Agenda

01 Introduction

02 What is GIS

03 Accessing ArcGIS Pro

04 The Pro Interface

05 Exploring Data

06 Symbolizing Data

07 Exporting a Map

08 Getting Help



UNIVERSITY OF TORONTO
LIBRARIES

Poll: About you



Introduction

The Map and Data Library

- Access data collections
- Workshops and training
- One-on-one consults
- Appointment-only until summer 2025

<https://mdl.library.utoronto.ca/>
mdl@library.utoronto.ca
[416-978-5589](tel:416-978-5589)

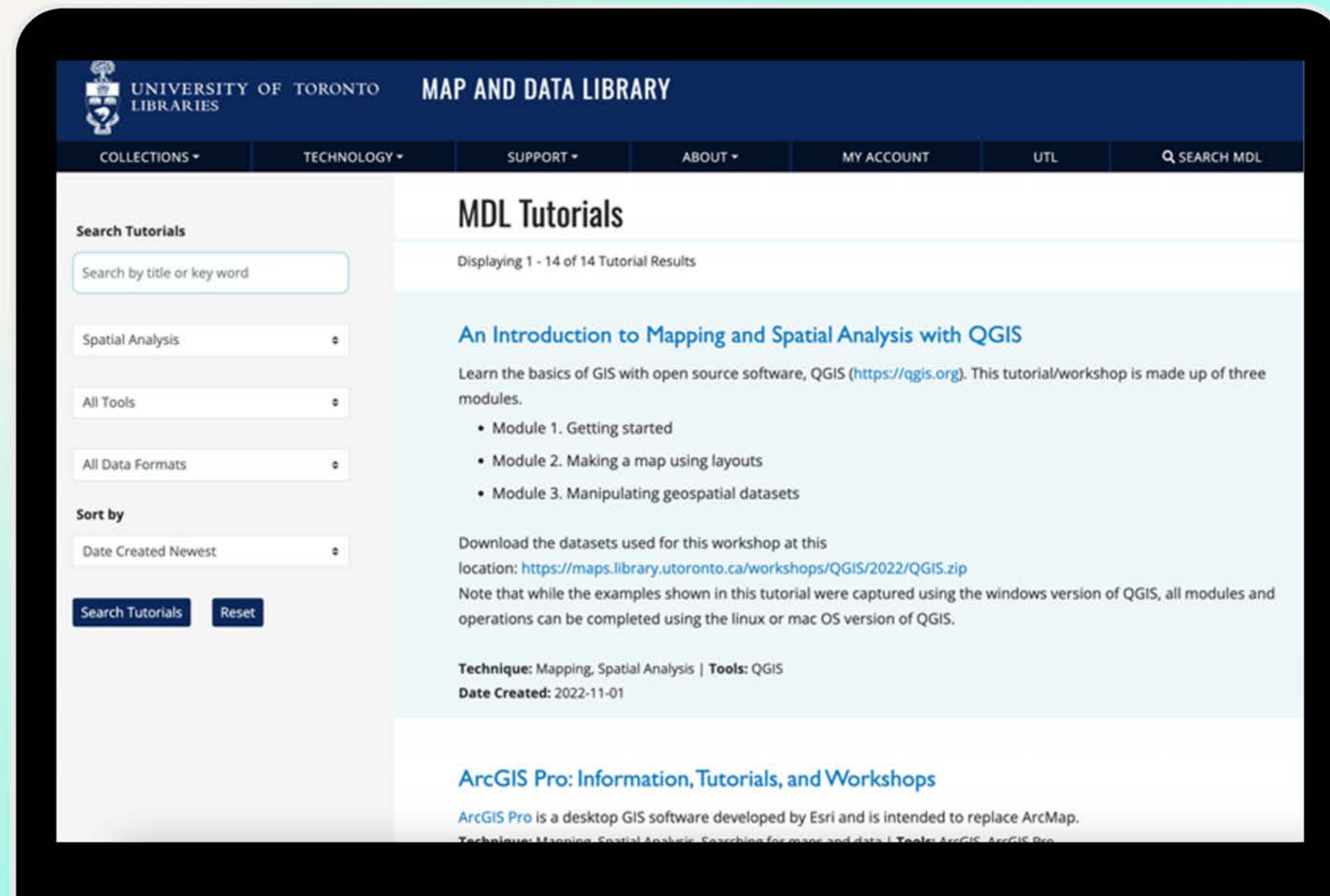
11am - 5pm, Monday - Friday

Map and Data Library

Tutorials and Workshops

<https://mdl.library.utoronto.ca/support/tutorials>

<https://mdl.library.utoronto.ca/support/workshops-and-training>





Map and Data Library

Search for data

LibrarySearch MDLSearch

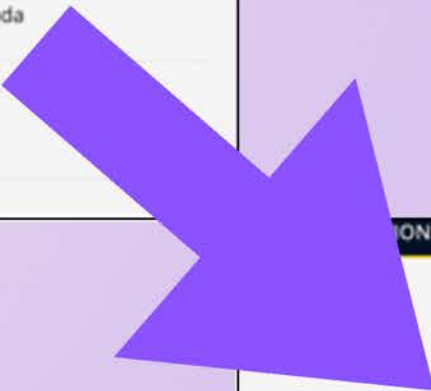
Search Map and Data Library website

lidar

Geospatial data
Scholars GeoPortal | Geospatial data | Remote sensing | Air photos

Numeric data
MDL Data Collection on Borealis | Microdata | Statistics | Census of Canada

Maps and atlases
Scanned Maps | Fire insurance plans | Rare maps | Topographic maps



MDL collection search results

lidar

or find "lidar" in LibrarySearch

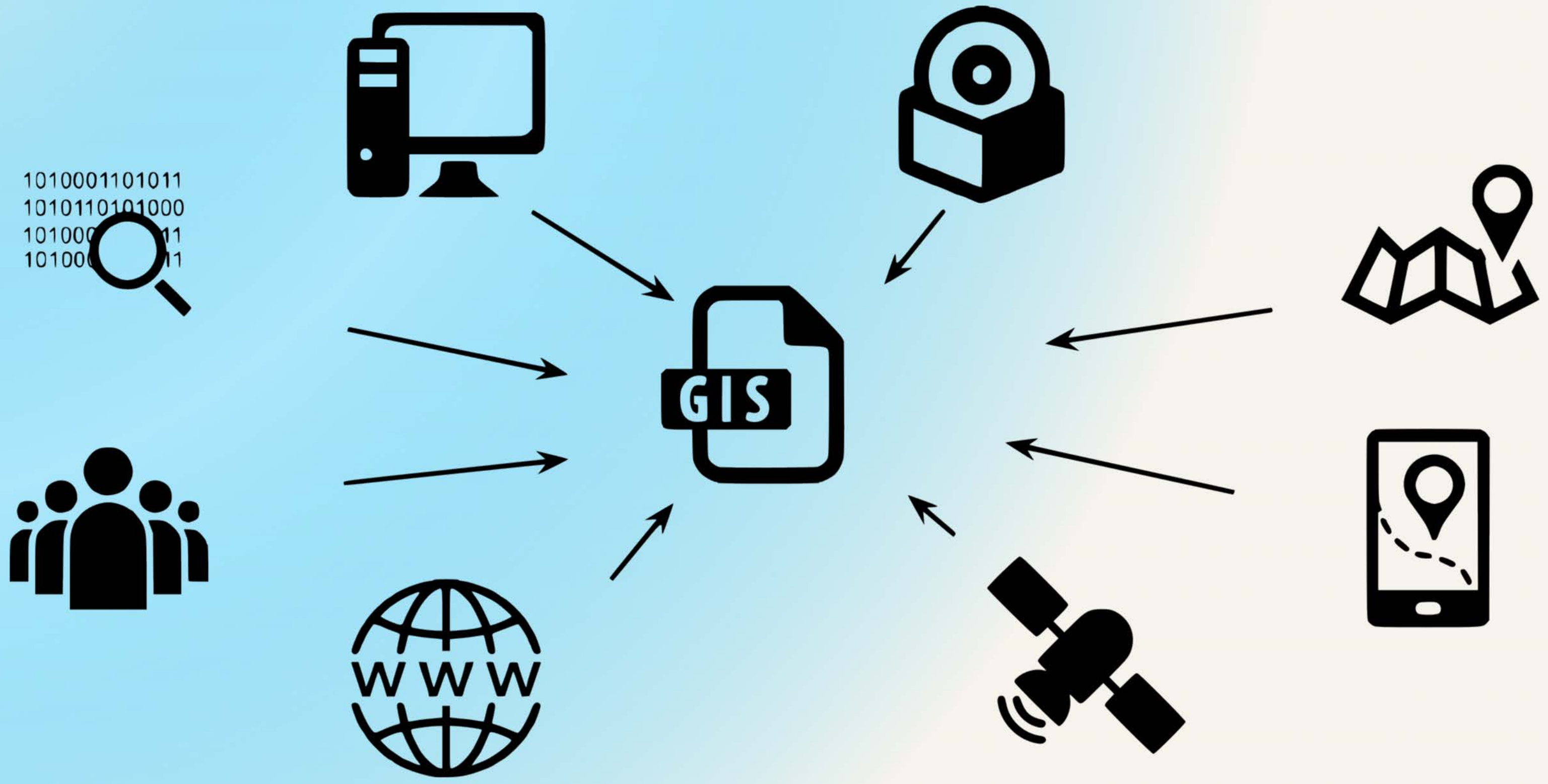
Geospatial data	MDL web page	Statistics	Tutorial
Geospatial data Toronto Lidar 2015 ... Toronto Lidar 2015 The Lidar data was collected between April 20, 2014 ... Toronto Lidar Data - 2008 ... Toronto Lidar Data - 2008 Please note that a license ... / External HD [4] / FTP (enquire) Format LIDAR Restrictions FACULTY STAFF STUDENTS ... York Lidar Data 2019 ... York Lidar Data 2019 Creator Airborne Imaging ... to use Citation Medium M:\data\private\toronto\lidar\AirborneImaging2019\York2019\webdata		Statistics Ozone data for the world ... ozonesondes, Umkehr N and retrieved values, lidar and surface ozone. Distributor Environment ... More Statistics results	

Scholars Geoportal

geo.scholarsportal.info

The screenshot displays the Scholars Geoportal interface. The top navigation bar includes 'Share', 'Print', 'Export', 'Data Table', 'Base Maps', 'Contact', and 'Français'. The main search area has a search bar with 'parks' entered, a location dropdown set to 'Anywhere', and a 'Search' button. Below the search bar, there are options for 'Downloadable content only' and a 'Back To Browse' link. The results section shows 'Found 96 results showing results 1 to 10' and a 'Sort by: Relevance' dropdown. A 'Refine: Topics' sidebar lists various categories such as 'Environment and conservation (16)', 'Census and administrative boundaries (12)', and 'Imagery, base maps, and land cover (10)'. The main content area lists five data layers: 'Park Sports Field Region', 'Park Sports Field Point', 'Federal Protected Area', 'Municipal Park', and 'Canadian Heritage River System'. Each entry includes a producer name, date published, and type of data layer. The right side of the interface features a map of the Greater Toronto Area with green dots representing parks. The map includes a scale bar (0-20km) and an inset map showing the location within the Great Lakes region.

What is GIS?



How is GIS used?

- **Choosing the right location**
- **Finding the best route**
- **Keeping track of things**
- **Planning for the future**
- **Responding to emergencies**

Project Map Insert Analysis View Edit Imagery Share Help Feature Layer Labeling Data

Paste Cut Copy Copy Path Explore Bookmarks Go To XY Basemap Add Data Add Graphics Layer Select Select By Attributes Select By Location Attributes Clear Zoom To Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced Convert Download Map Sync Remove More

Clipboard Navigate Layer Selection Inquiry Labeling Offline

Contents

Search

Drawing Order

- Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- Building
- Contour
 - Minor
 - Major
- Greenspace
- Road
 - Expressway
 - Local
 - Arterial or Collector

Map

1:7,500 79.4118954°W 43.6662604°N Selected Features: 0

Project | **Map** | Insert | Analysis | View | Edit | Imagery | Share | Help | Feature Layer | Labeling | Data

Clipboard | Navigate | Layer | Selection | Inquiry | Labeling | Offline

Clipboard: Paste, Cut, Copy, Copy Path
 Navigate: Explore, Bookmarks, Go To XY
 Layer: Basemap, Add Data, XY Table To Point, Add Graphics Layer
 Selection: Select, Select By Attributes, Select By Location, Clear, Zoom To
 Inquiry: Measure, Locate, Infographics, Coordinate Conversion
 Labeling: Pause, Lock, View Unplaced, More, Convert
 Offline: Download Map, Sync, Remove

Contents

Search

Drawing Order

- Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- Building
- Contour
 - Minor
 - Major
- Greenspace
- Road
 - Expressway
 - Local
 - Arterial or Collector

Map

Map Scale: 1:7,500
 Coordinates: 79.4018125°W 43.6545820°N
 Selected Features: 0

Project Map Insert Analysis View Edit Imagery Share Help Feature Layer Labeling Data

Cut Copy Copy Path Paste Explore Bookmarks Go To XY Basemap Add Data Add Graphics Layer XY Table To Point Add Data From Path Select Select By Attributes Select By Location Attributes Clear Zoom To Measure Locate Infographics Coordinate Conversion Pause Lock View Unplaced More Convert Download Map Sync Remove

Clipboard Navigate Layer Selection Inquiry Labeling Offline

Contents

Search

Drawing Order

- Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- Building
- Contour
 - Minor
 - Major
- Greenspace
- Road
 - Expressway
 - Local
 - Arterial or Collector

Map X

1:7,500 79.4004773°W 43.6547652°N Selected Features: 0

Project Map Insert Analysis View Edit Imagery Share Help Feature Layer Labeling Data

Clipboard Navigate Layer Selection Inquiry Labeling Offline

Clipboard: Paste, Cut, Copy, Copy Path
Navigate: Explore, Bookmarks, Go To XY
Layer: Basemap, Add Data, Add Data From Path, XY Table To Point, Add Graphics Layer
Selection: Select, Select By Attributes, Select By Location, Clear, Zoom To
Inquiry: Measure, Locate, Infographics, Coordinate Conversion
Labeling: Pause, Lock, View Unplaced, Convert, More
Offline: Download Map, Sync, Remove

Contents

Search

Drawing Order

- Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- Building
- Contour
 - Minor
 - Major
- Greenspace
- Road
 - Expressway
 - Local
 - Arterial or Collector

Map X

Map showing Queen's Park area with streets: Bathurst St, St George St, Beverley St, Nassau St, College St, Gerrard St-W, Elizabeth St, Bay St, Queen's Park, Wellesley St-W, Wellesley St-E, Charles St-W, Bloor St-W, Bloor St-E, Cumberland St, Isabella St, Gloucester St, Carlton St, GERRARD ST-E, Church St, MCGILL PARKETTE, MCCOUL ORDE PARK, LILEYAN H. SMITH PARK, ROBERT STREET PLAYGROUND.

Scale: 1:7,500
Coordinates: 79.4065945°W 43.6545775°N
Selected Features: 0

Project | **Map** | Insert | Analysis | View | Edit | Imagery | Share | Help | Feature Layer | Labeling | Data

Clipboard | Navigate | Layer | Selection | Inquiry | Labeling | Offline

Paste | Cut | Copy | Copy Path | Explore | Bookmarks | Go To XY | Basemap | Add Data | XY Table To Point | Add Graphics Layer | Select | Select By Attributes | Select By Location | Zoom To | Measure | Locate | Infographics | Coordinate Conversion | Pause | Lock | View Unplaced | More | Convert | Download Map | Sync | Remove

Contents

Search

Drawing Order

- Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- Building
- Contour
 - Minor
 - Major
- Greenspace
- Road
 - Expressway
 - Local
 - Arterial or Collector

Map

Map X

1:7,500 | 79.4027151°W 43.6543396°N | Selected Features: 0

Project Map Insert Analysis View Edit Imagery Share Help Feature Layer Labeling Data

Clipboard Navigate Layer Selection Inquiry

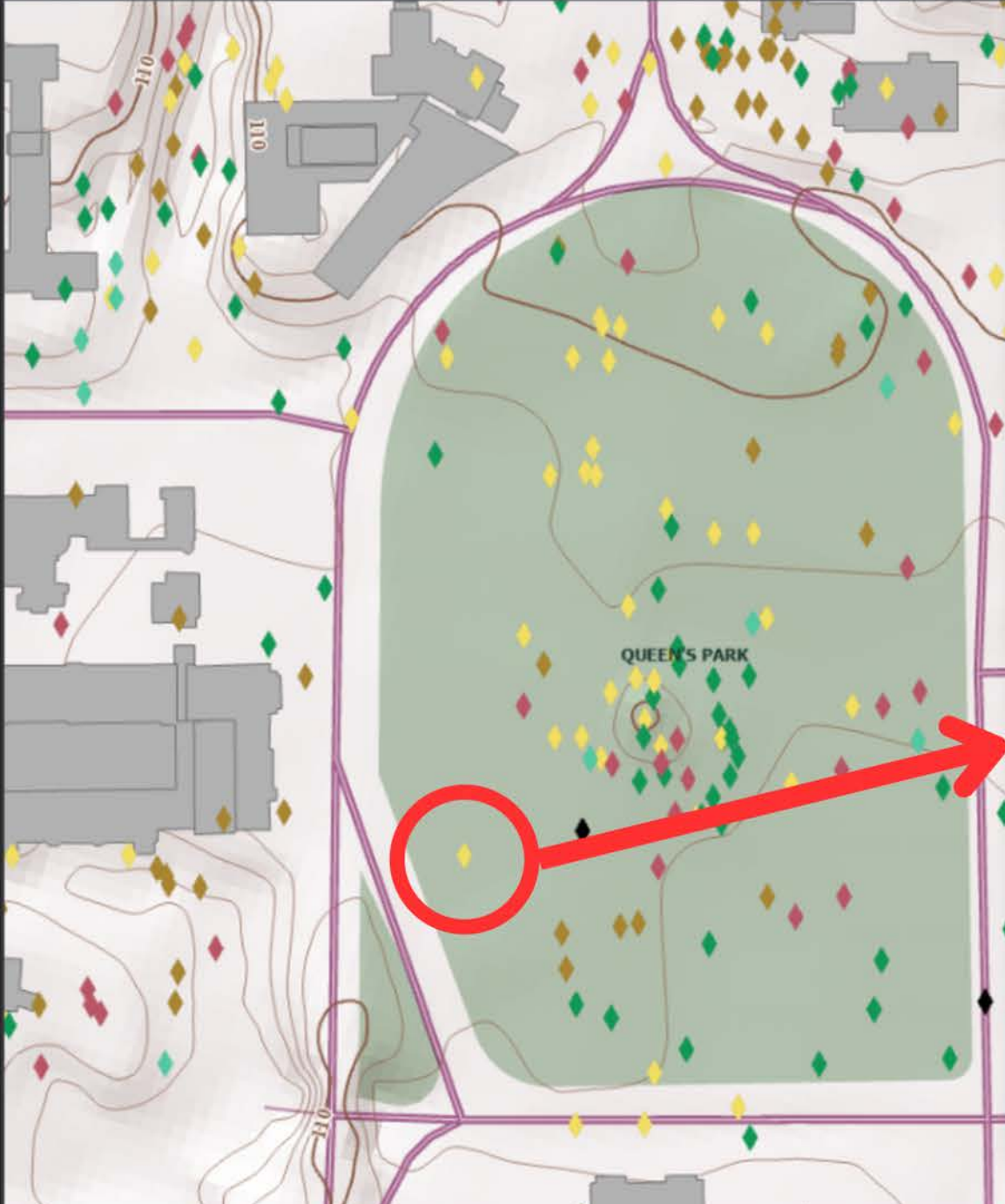
Contents

Search

Drawing Order

- ✓ Biodiversity Observation
 - Actinopterygii
 - Amphibia
 - Arachnida
 - Aves
 - Fungi
 - Insecta
 - Mammalia
 - Mollusca
 - Plantae
 - Protozoa
 - Reptilia
 - Unknown
- ✓ Building
- ✓ Contour
 - Minor
 - Major
- ✓ Greenspace
- ✓ Road
 - Expressway
 - Local
 - Arterial or Collector

Map X




QUEEN'S PARK

Pop-up

Biodiversity Observation (1)
Aves: Red-winged Blackbird

Biodiversity Observation - Aves: Red-winged Blackbird



May 2, 2024
Observed by [Simão Mateus](#)
[Creative Commons Attribution Non-Commercial \(CC BY-NC\)](#)

Agelaius phoeniceus (Red-winged Blackbird)

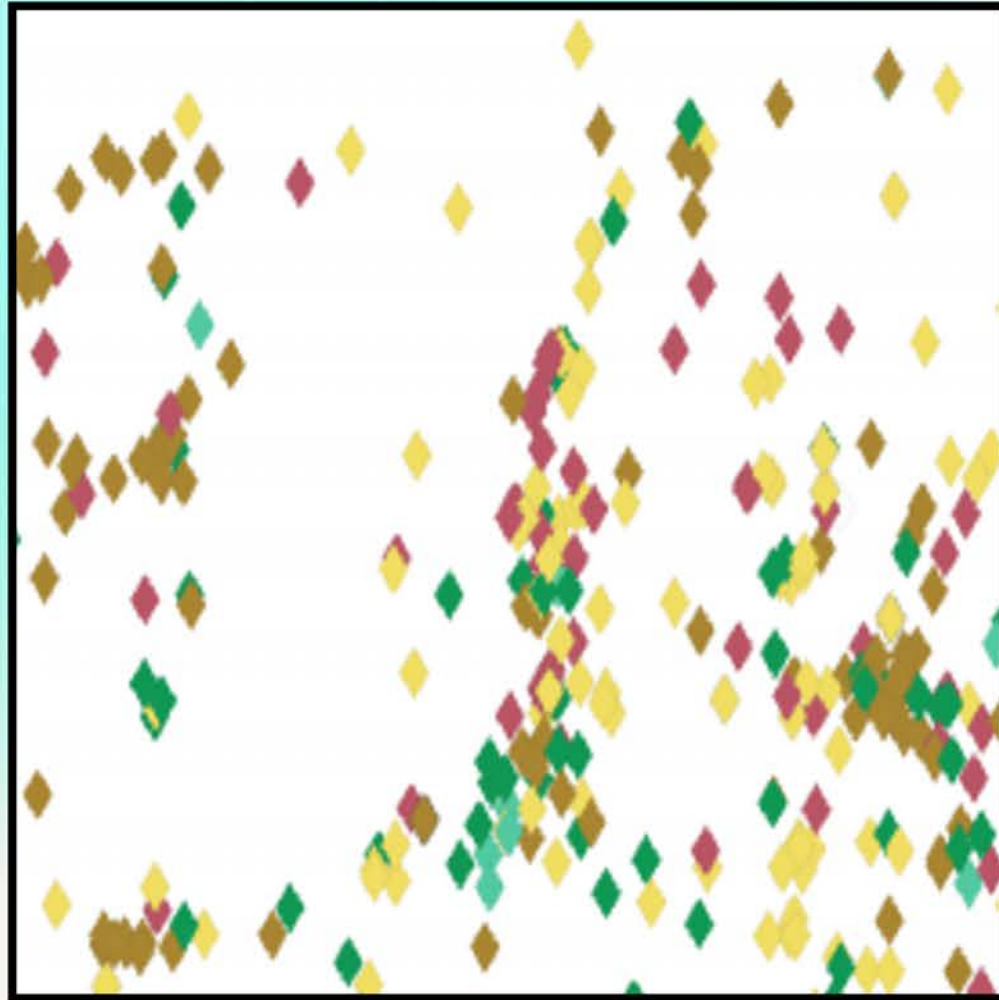
kingdom: **Animalia**
phylum: **Chordata**
class: **Aves**
order: **Passeriformes**
family: **Icteridae**
genus: **Agelaius**
species: **phoeniceus**

Taxon ID: 9744
[More Info](#)

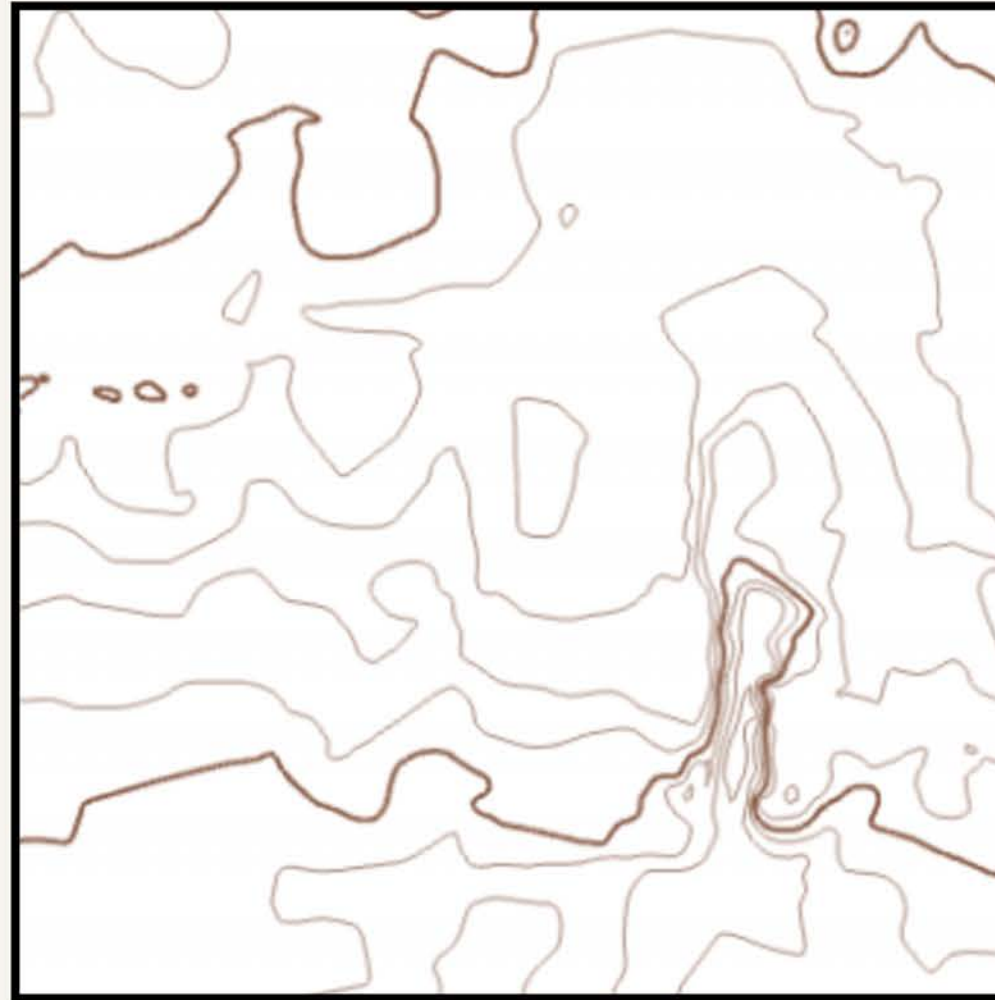
1 of 1 79.3930699°W 43.6650539°N

1:1,966 79.3929241°W 43.6628454°N Selected Features: 0

Vector Data: Geometries



Points



Lines

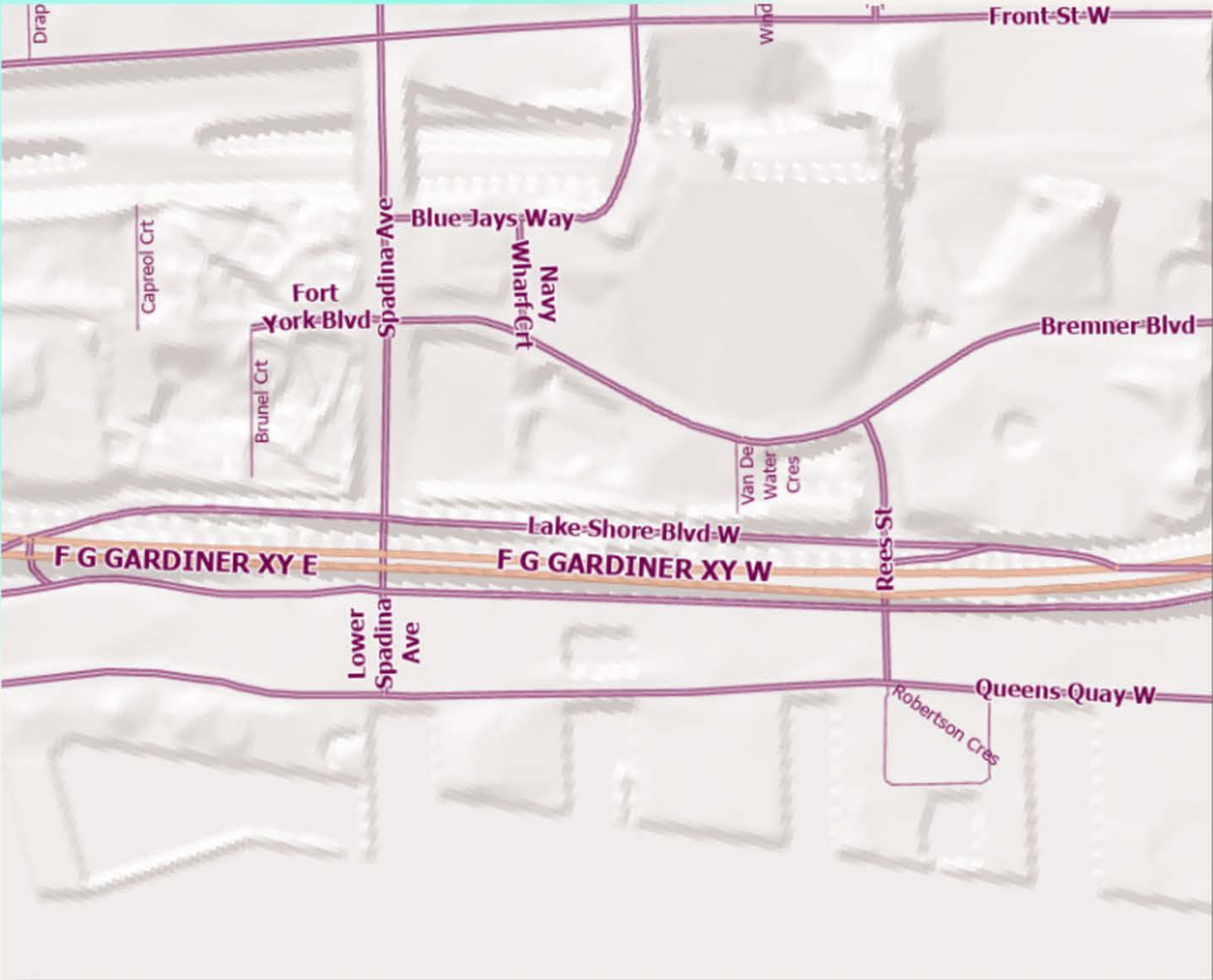


Polygons

Vector Data: Attribute Table

	GEO_ID	LF_NAME	ADDRESS_L	ADDRESS_R	FCODE_DESC *	JURIS_CODE *	Shape_Length *	Shape *
1	30082310	Island Rd			Other	PRIVATE	232.814506	Polyline
2	30075947	Ansell Ave	25-25	8-30	Local	CITY OF TORONTO	53.934218	Polyline
3	9950476	Lake Shore Blvd W	3795-3815		Major Arterial	CITY OF TORONTO	124.477184	Polyline
4	7641209	Fortieth St		89-107	Local	CITY OF TORONTO	128.81571	Polyline
5	7323458	Brockhouse Rd	127-141		Local	CITY OF TORONTO	153.729822	Polyline
6	20103021	Brockhouse Rd	9-111		Local	CITY OF TORONTO	188.058742	Polyline
7	913835	F G Gardiner Xy E			Expressway	CITY OF TORONTO	507.054913	Polyline
8	9950042	Lloyd George Ave	30-42	29-35	Local	CITY OF TORONTO	161.392988	Polyline
9	10618658	The Queensway	1581-1633	1580-1640	Major Arterial	CITY OF TORONTO	636.627116	Polyline
10	9949991	Alcan Ave	29-35	22-34	Local	CITY OF TORONTO	139.644637	Polyline
11	913692	Atomic Ave	20-54	15-57	Collector	CITY OF TORONTO	688.276411	Polyline
12	9950065	Lloyd George Ave	44-52	49-55	Local	CITY OF TORONTO	121.256258	Polyline
13	7323524	Evans Ave	457-469	460-460	Major Arterial	CITY OF TORONTO	147.922736	Polyline

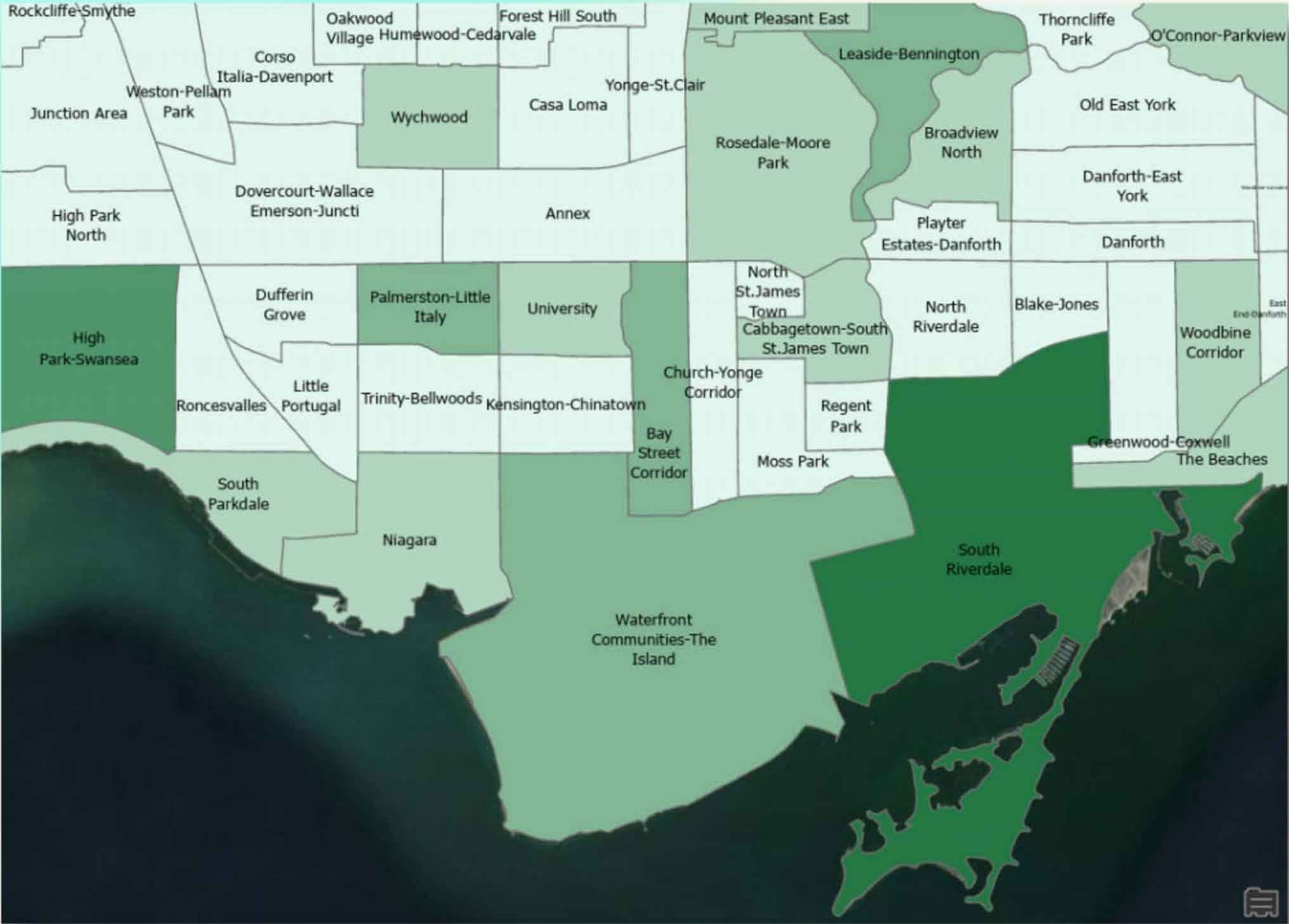
Vector Data: Symbology



☑ Road

- Expressway
- Local
- Arterial or Collector

Vector Data: Symbology

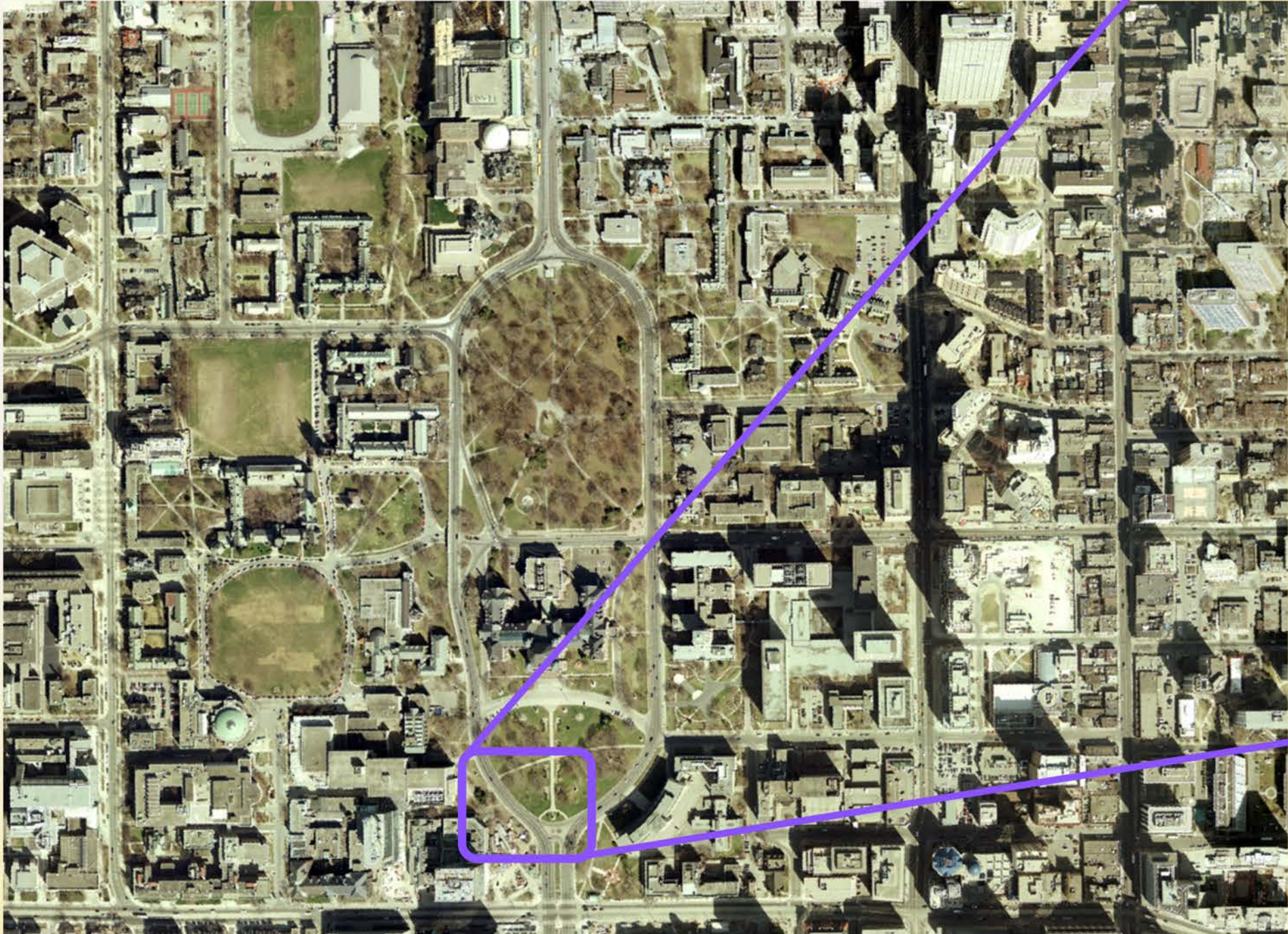


Toronto Neighbourhood

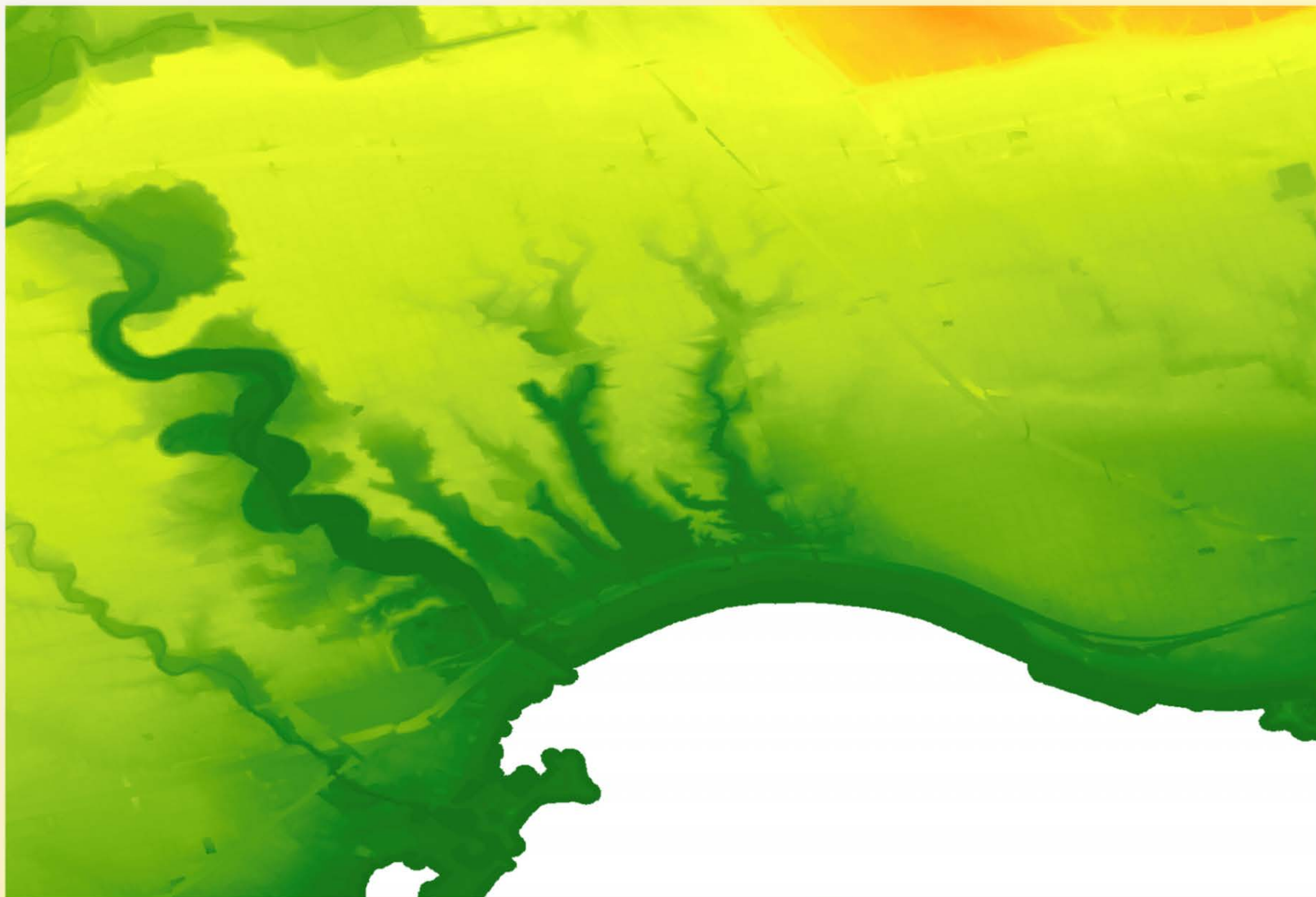
Number of Bird Observations

- 2 - 165
- 166 - 464
- 464 - 2089
- 2089 - 5138
- 5138 - 12914

Raster Data



Raster Data



Raster Data



ArcGIS Pro

- Create **2D and 3D maps**, perform spatial **analysis**, integrate/manage **data**, and process **imagery**.
- Connect to web portals and share content to **ArcGIS Online**.
- Tools for analysis and map creation.
- **Customizable functionality** with Python or R.
- Includes AI and machine learning tools for spatial analysis.
- Windows only



ArcGIS Pro



- ArcGIS Pro **completely replaces** ArcMap (also known as ArcGIS Desktop)



Other popular GIS applications



QGIS - Open source, cross-platform desktop app



ArcGIS Online - web-based ArcGIS mapping platform

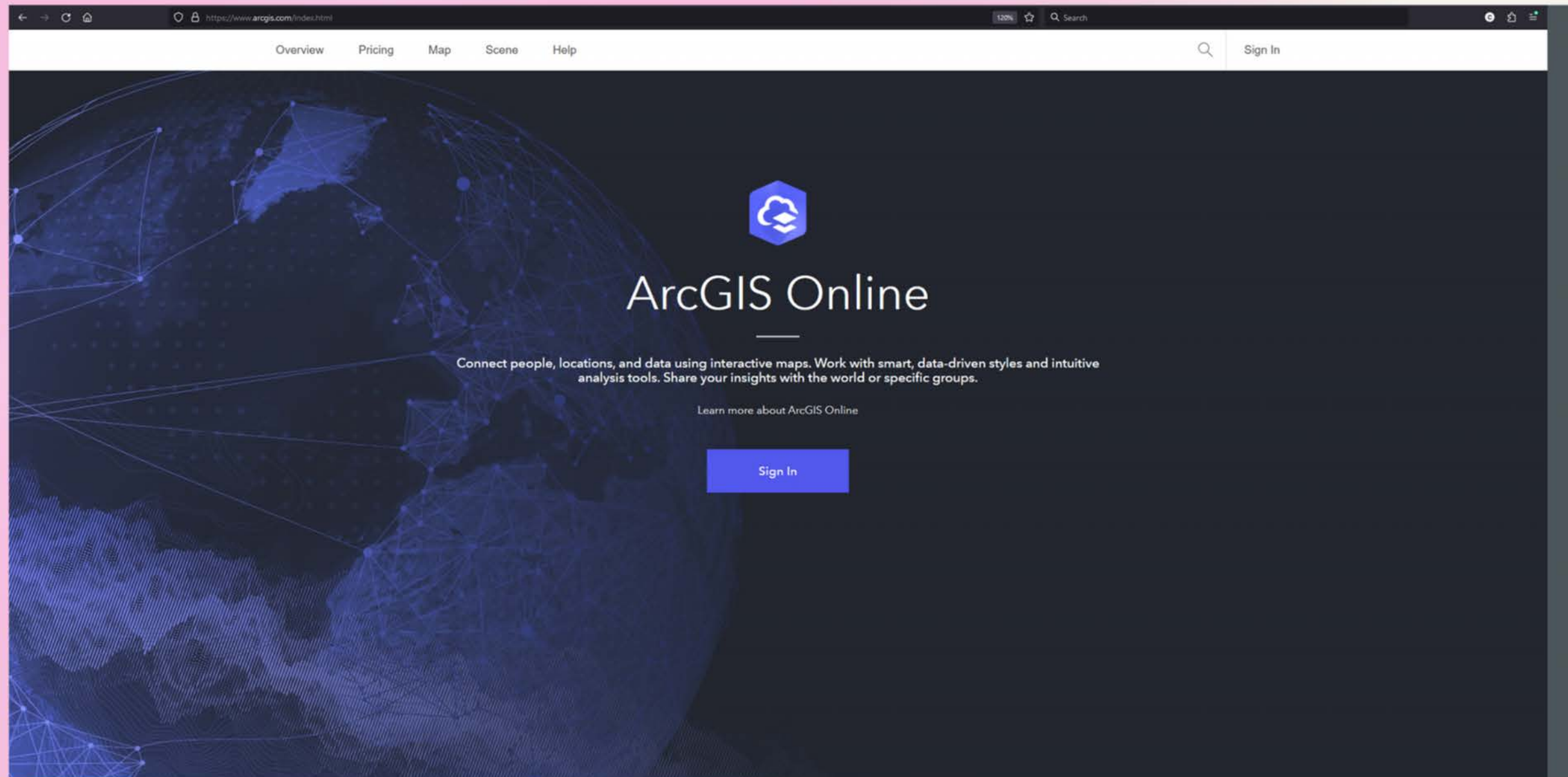
Where to find computers with GIS software

- Map & Data Library
- Robarts Library (*fourth floor lab and first floor*)
- Gerstein Science Information Centre
- Engineering and Computer Science Library
- Mathematics Library
- John W. Graham Library (*Trinity College*)
- John Kelly Library (*St Michael's College*)
- Pratt Library (*Victoria University*)
- Emmanuel Library (*Victoria University*)

Accessing Pro

Install ArcGIS Pro

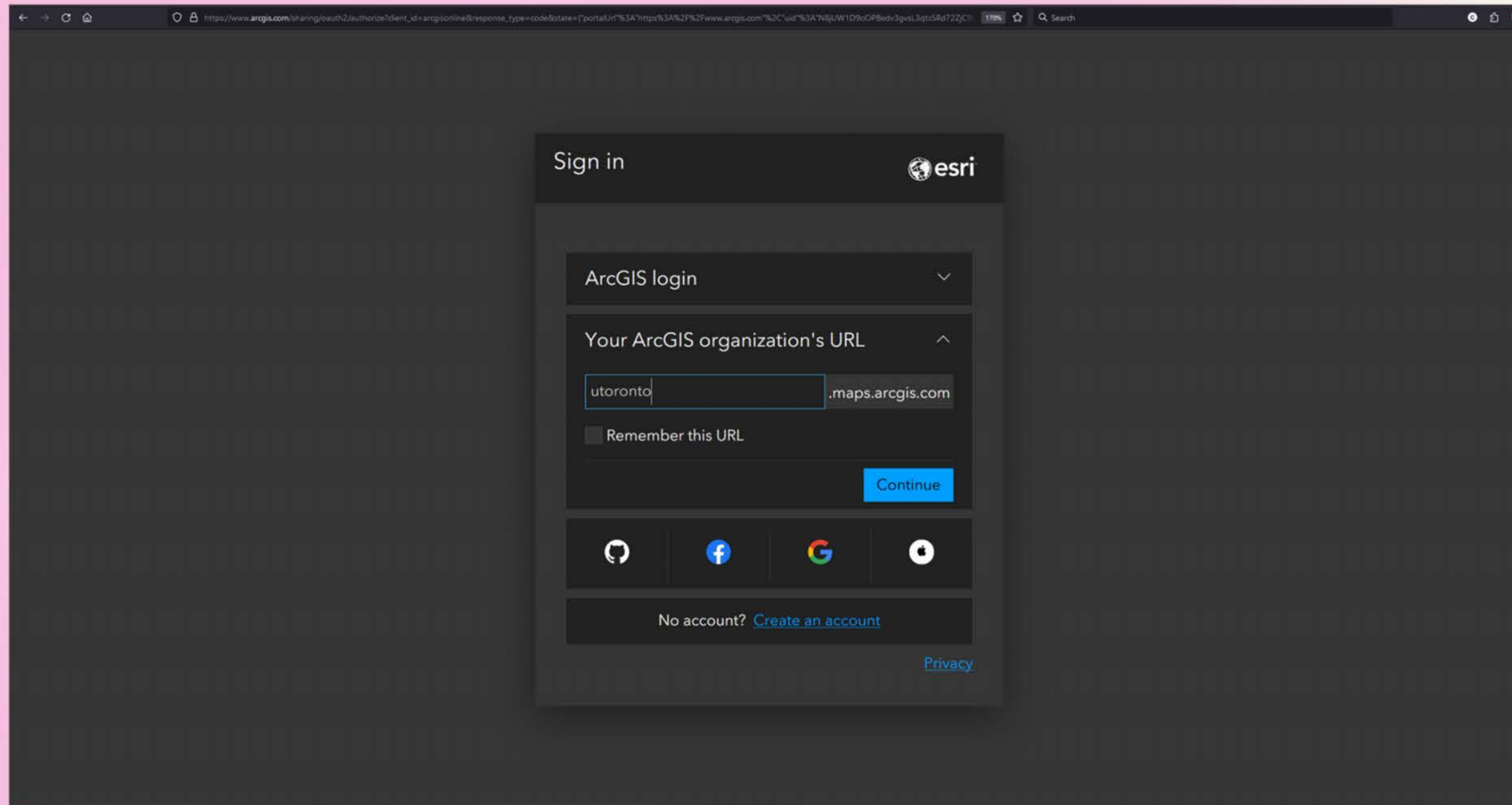
- Open a web browser
- Navigate to [arcgis.com](https://www.arcgis.com) (or utoronto.maps.arcgis.com)



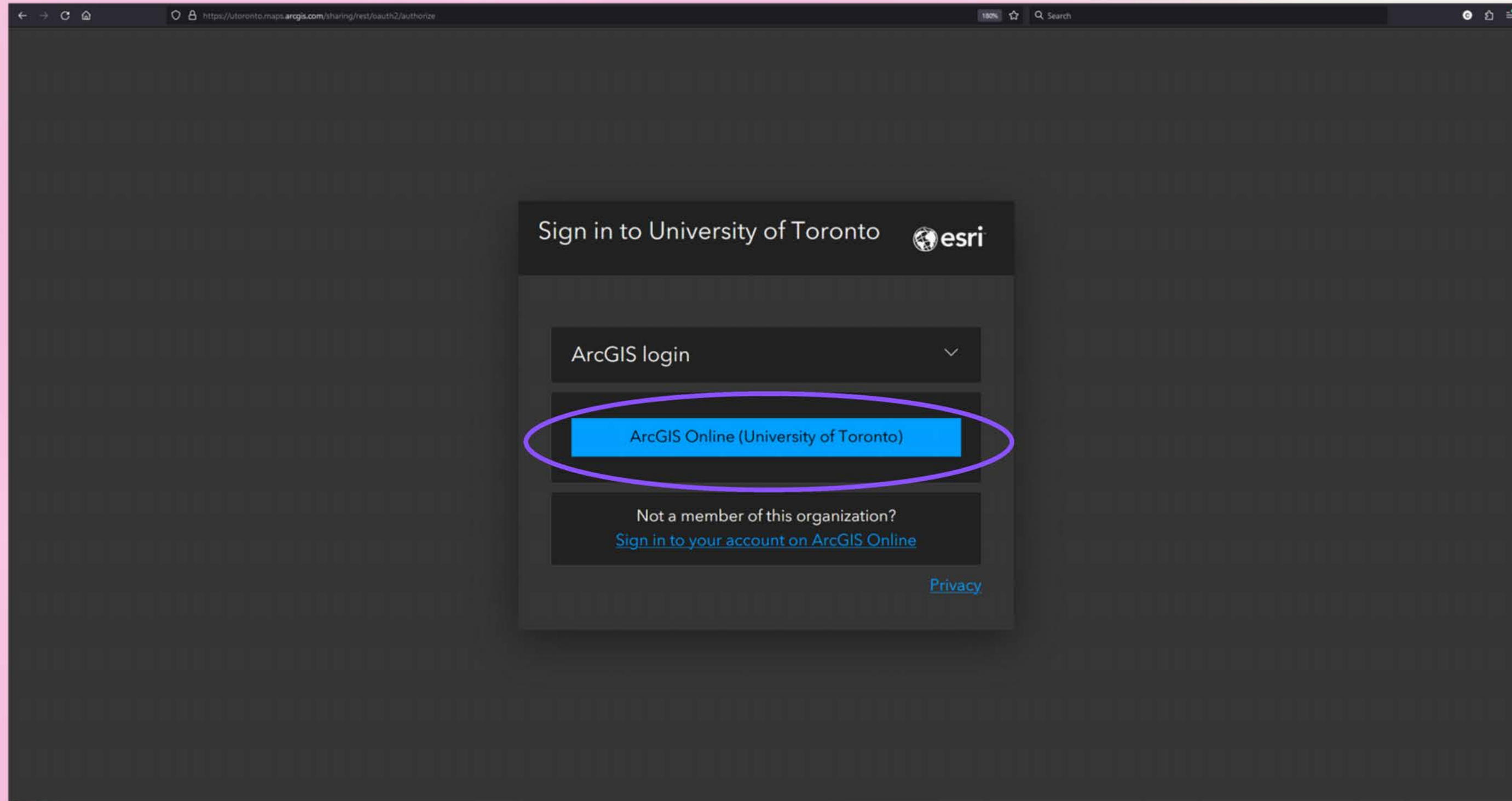
Accessing Pro

Install ArcGIS Pro

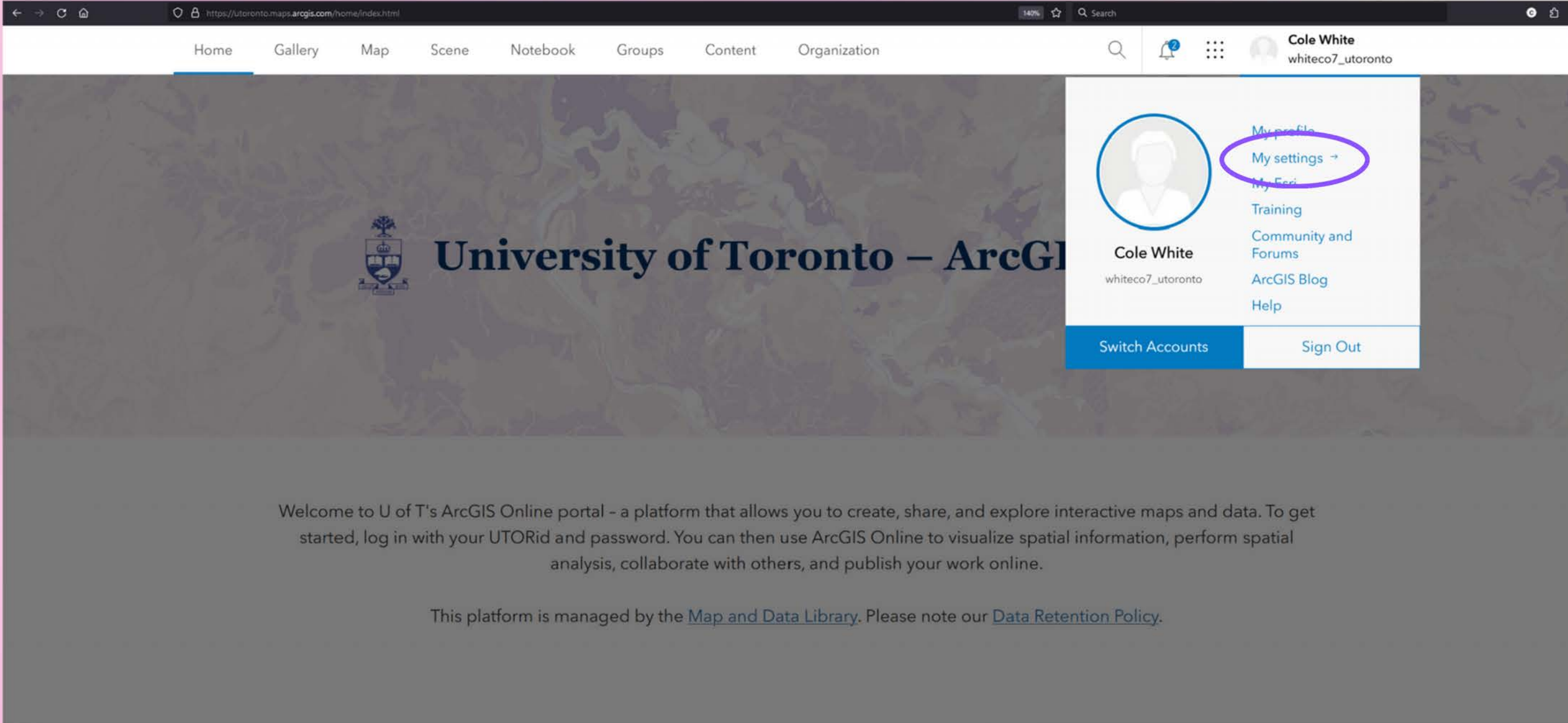
- Your ArcGIS Organization's URL: `utoronto.maps.arcgis.com`



Install ArcGIS Pro



Install ArcGIS Pro

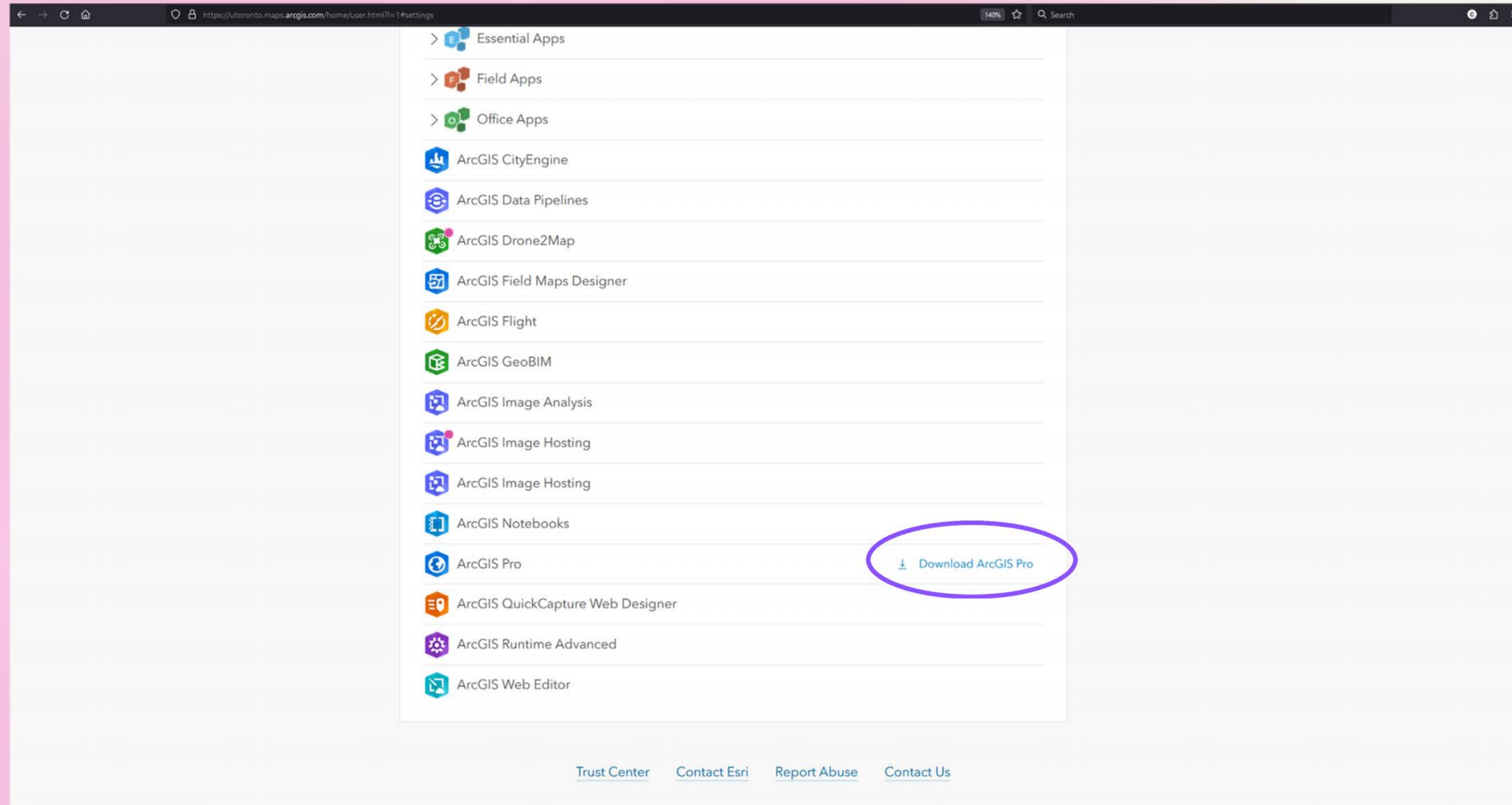


The screenshot shows the ArcGIS Online portal interface. At the top, there is a navigation bar with links for Home, Gallery, Map, Scene, Notebook, Groups, Content, and Organization. On the right side of the navigation bar, the user's name 'Cole White' and username 'whiteco7_utoronto' are displayed. Below the navigation bar, the main content area features the University of Toronto logo and the text 'University of Toronto – ArcGIS Online'. A user profile dropdown menu is open, showing options for 'My profile', 'My settings' (circled in purple), 'My Feed', 'Training', 'Community and Forums', 'ArcGIS Blog', and 'Help'. At the bottom of the dropdown menu, there are buttons for 'Switch Accounts' and 'Sign Out'. Below the main content area, there is a welcome message: 'Welcome to U of T's ArcGIS Online portal - a platform that allows you to create, share, and explore interactive maps and data. To get started, log in with your UTORid and password. You can then use ArcGIS Online to visualize spatial information, perform spatial analysis, collaborate with others, and publish your work online.' Below this message, it states: 'This platform is managed by the [Map and Data Library](#). Please note our [Data Retention Policy](#).'

Install ArcGIS Pro

The screenshot shows the ArcGIS Pro user settings interface. The browser address bar displays `https://utoronto.maps.arcgis.com/home/user.html#settings`. The navigation menu includes Home, Gallery, Map, Scene, Notebook, Groups, Content, and Organization. The user profile is identified as Cole White (whiteco7_utoronto). The main heading is "My settings". On the left sidebar, the "Licenses" option is highlighted with a blue box and a purple oval. The main content area is titled "Licenses" and features a search bar for "Licensed products". Below the search bar, there is a section for "License" with expandable categories: ArcGIS Pro extensions, Essential Apps, Field Apps, and Office Apps. A list of licensed products follows, including ArcGIS CityEngine, ArcGIS Data Pipelines, ArcGIS Drone2Map, ArcGIS Field Maps Designer, ArcGIS Flight, ArcGIS GeoBIM, ArcGIS Image Analysis, and ArcGIS Image Hosting. A red dot icon labeled "Add-on license" is visible in the top right corner of the licensed products section.

Install ArcGIS Pro



Install ArcGIS Pro

- You may also need to install Microsoft .NET Desktop Runtime from <https://dotnet.microsoft.com/en-us/download/dotnet/8.0>

https://dotnet.microsoft.com/en-us/download/dotnet/8.0

.NET Release Candidate (RC) Want to try out the latest RC release? .NET 9.0.0-rc.1 is available. [Get .NET RC](#)

Download .NET 8.0

Not what you're looking for? Visit the [downloads](#) page for more options.

8.0.8 Security patch

[Release notes](#) Latest release date September 24, 2024

Build apps - SDK

SDK 8.0.402

OS	Installers	Binaries
Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine
macOS	Arm64 x64	Arm64 x64
Windows	x64 x86 Arm64 winget instructions	x64 x86 Arm64
All	dotnet-install scripts	

Included runtimes
.NET Runtime 8.0.8
ASP.NET Core Runtime 8.0.8
.NET Desktop Runtime 8.0.8

Language support
C# 12.0
F# 8.0
Visual Basic 16.9

SDK 8.0.401

OS	Installers	Binaries
Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine
macOS	Arm64 x64	Arm64 x64
Windows	x64 x86 Arm64 winget instructions	x64 x86 Arm64

Run apps - Runtime

ASP.NET Core Runtime 8.0.8

The ASP.NET Core Runtime enables you to run existing web/server applications. **On Windows, we recommend installing the Hosting Bundle, which includes the .NET Runtime and IIS support.**

IIS runtime support (ASP.NET Core Module v2)
18.0.24201.8

OS	Installers	Binaries
Linux	Package manager instructions	Arm32 Arm32 Alpine Arm64 Arm64 Alpine x64 x64 Alpine
macOS		Arm64 x64
Windows	x64 x86 Arm64 Hosting Bundle winget instructions	x64 x86 Arm64

.NET Desktop Runtime 8.0.8

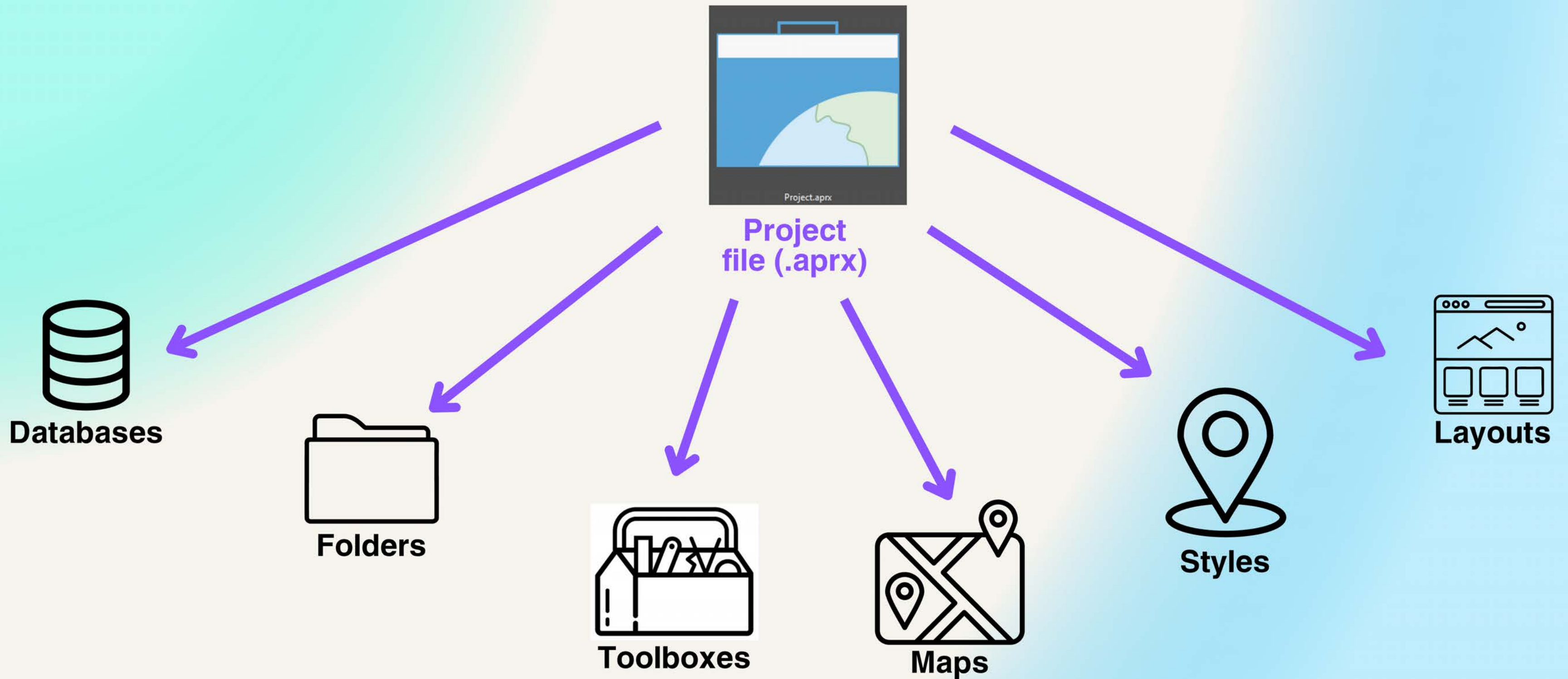
The .NET Desktop Runtime enables you to run existing Windows desktop applications. **This release includes the .NET Runtime; you don't need to install it separately.**

OS	Installers	Binaries
Windows	x64 x86 Arm64 winget instructions	

.NET Runtime 8.0.8

The .NET Runtime contains just the components needed to run a console app. Typically, you'd also install either the ASP.NET Core Runtime or .NET Desktop Runtime.

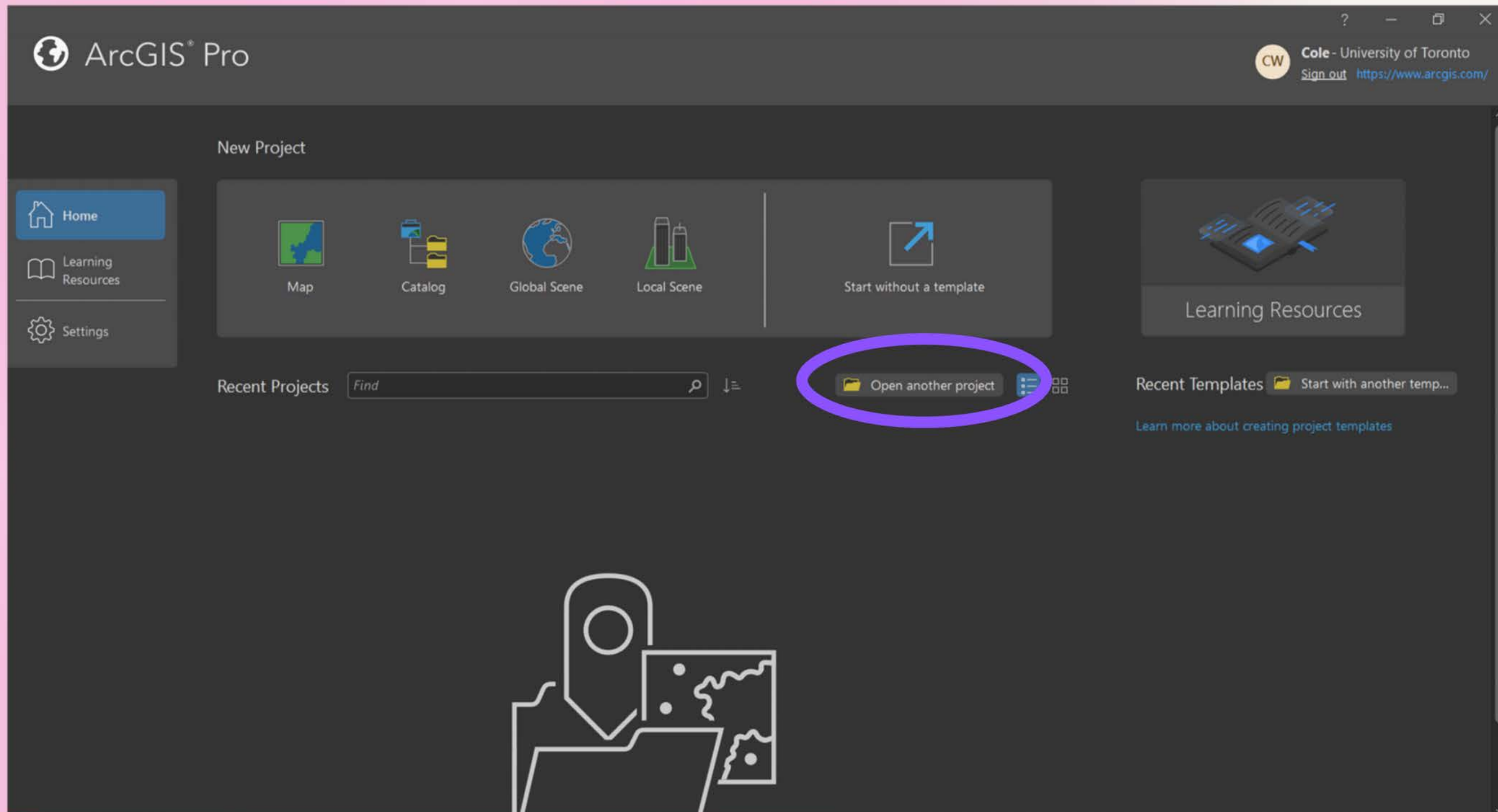
Projects in ArcGIS Pro



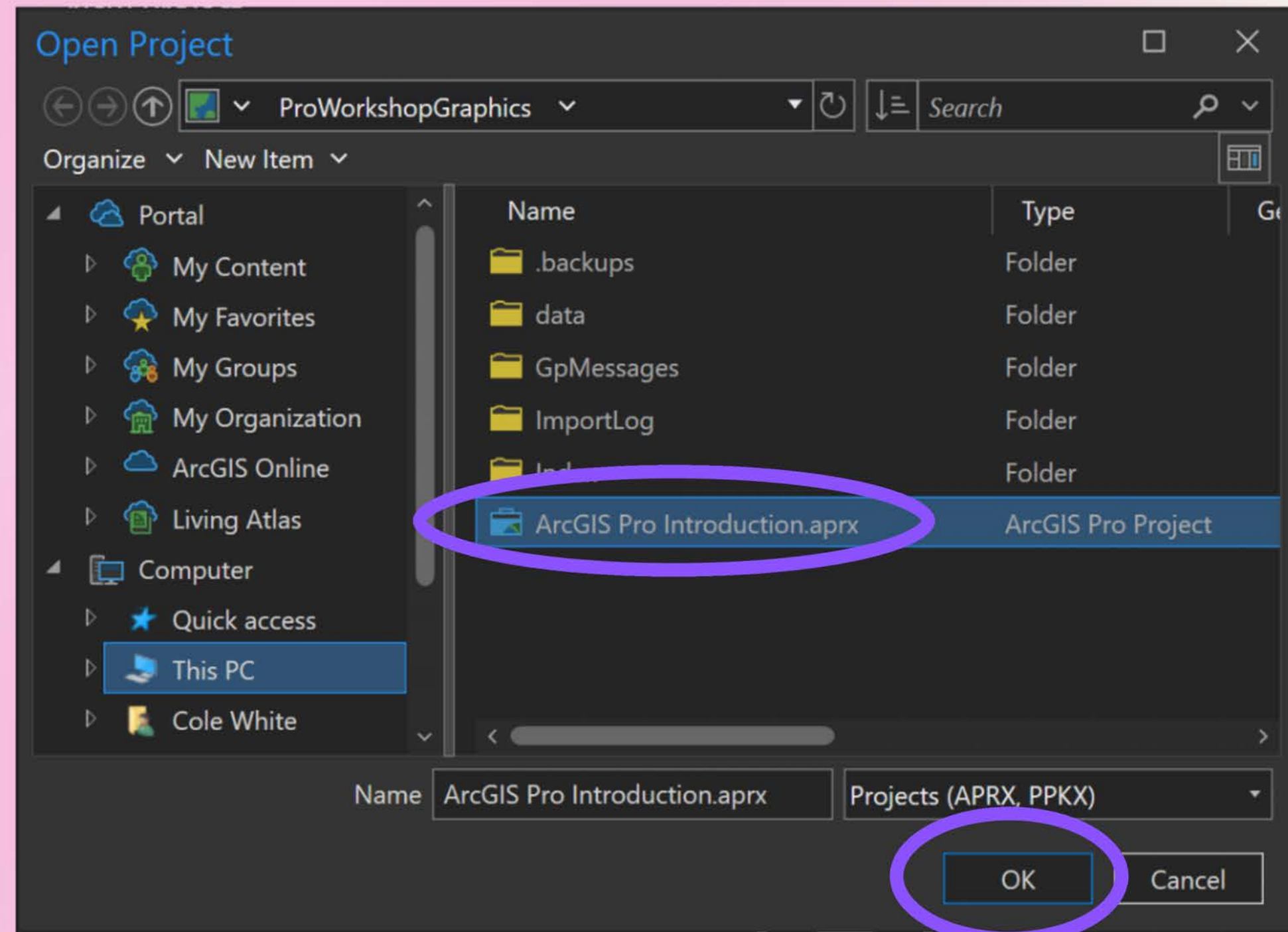
Download and unzip the sample data:

<https://uoft.me/IntroToPro>

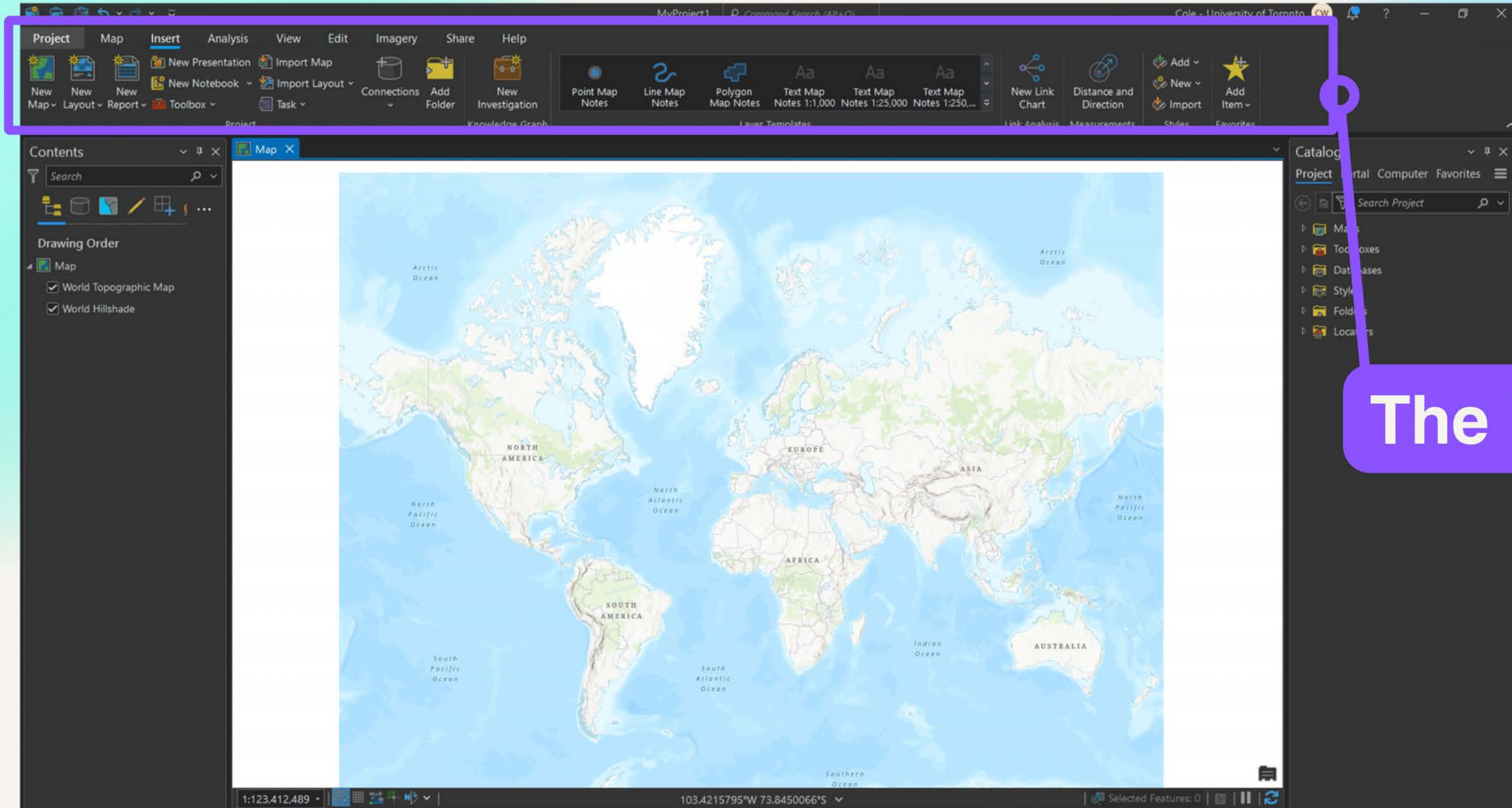
- Launch ArcGIS Pro
- Choose **Open Another Project**



- Navigate to **ArcGIS Pro Introduction.aprx**
- Click OK



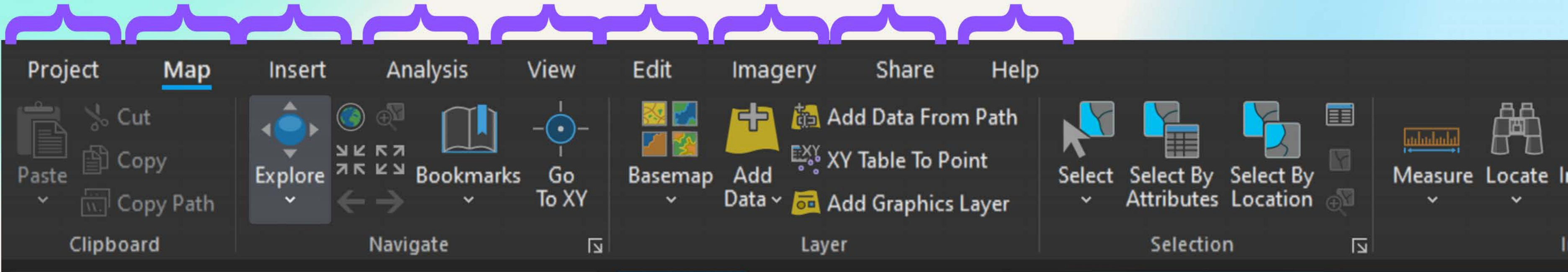
The Pro User Interface



The Ribbon

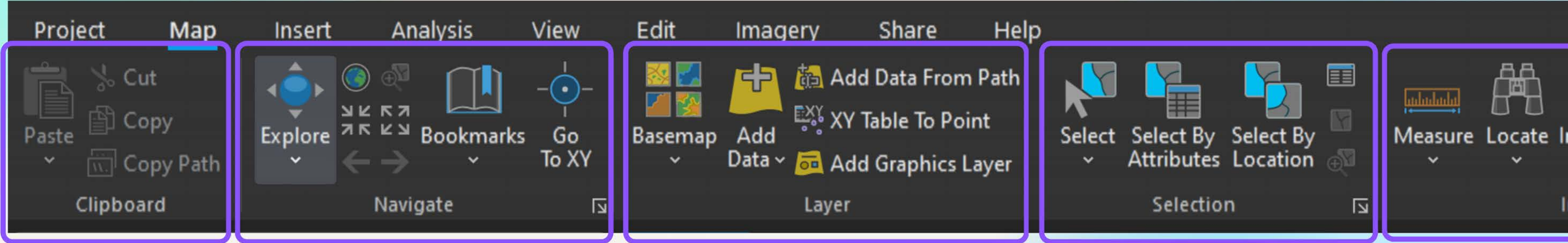
The Pro User Interface

Tabs

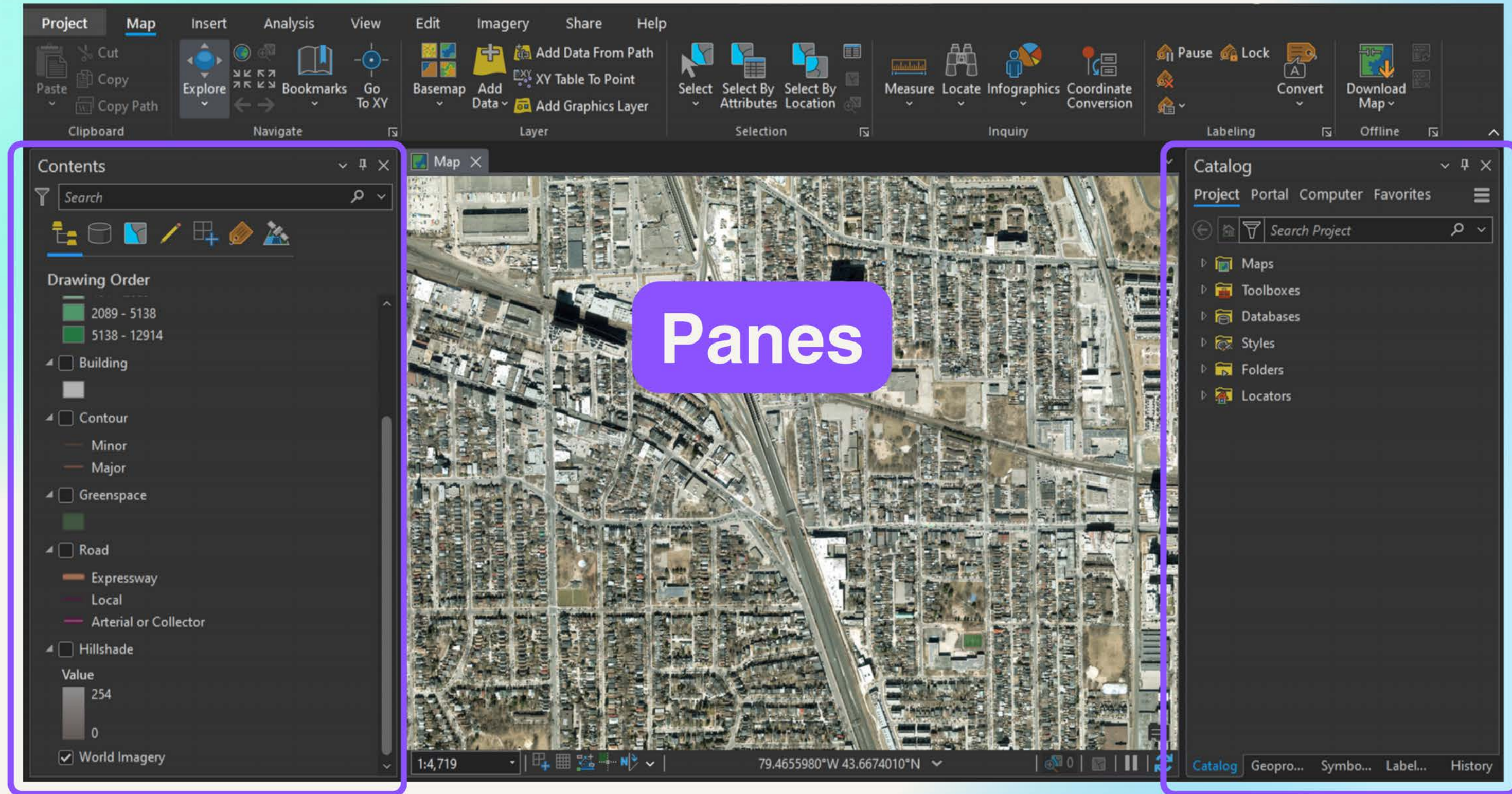


The Pro User Interface

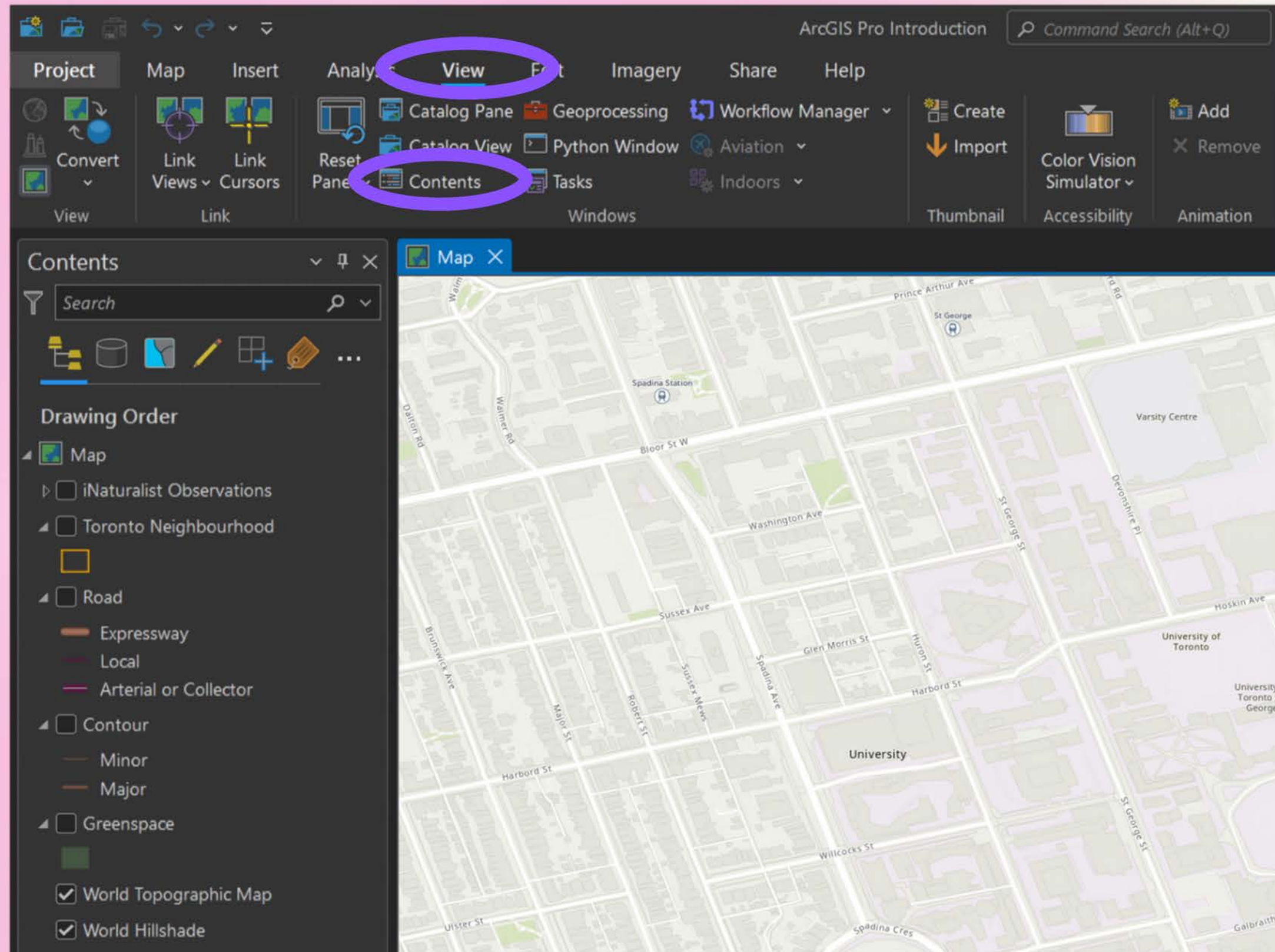
Groups



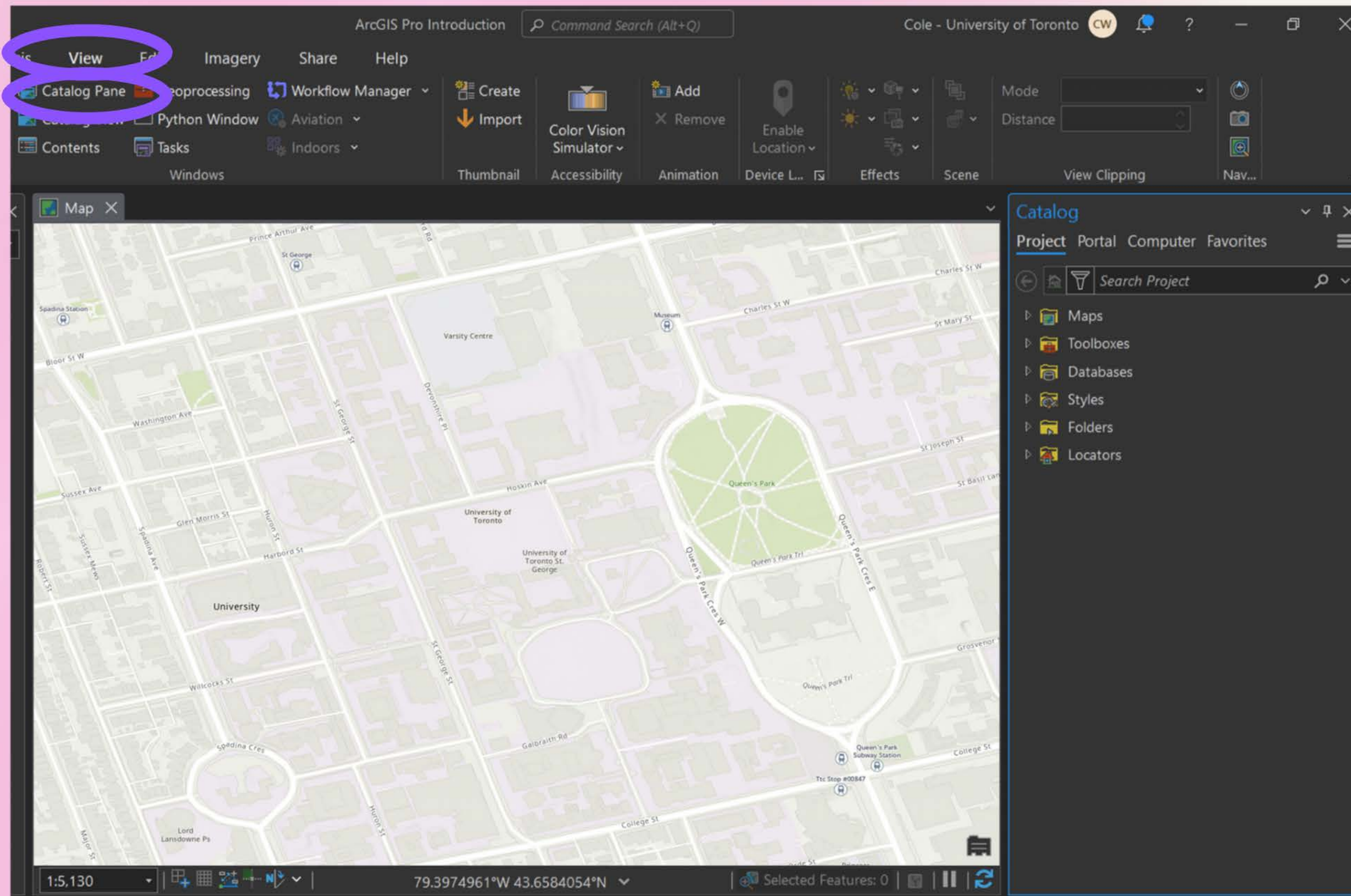
The Pro User Interface



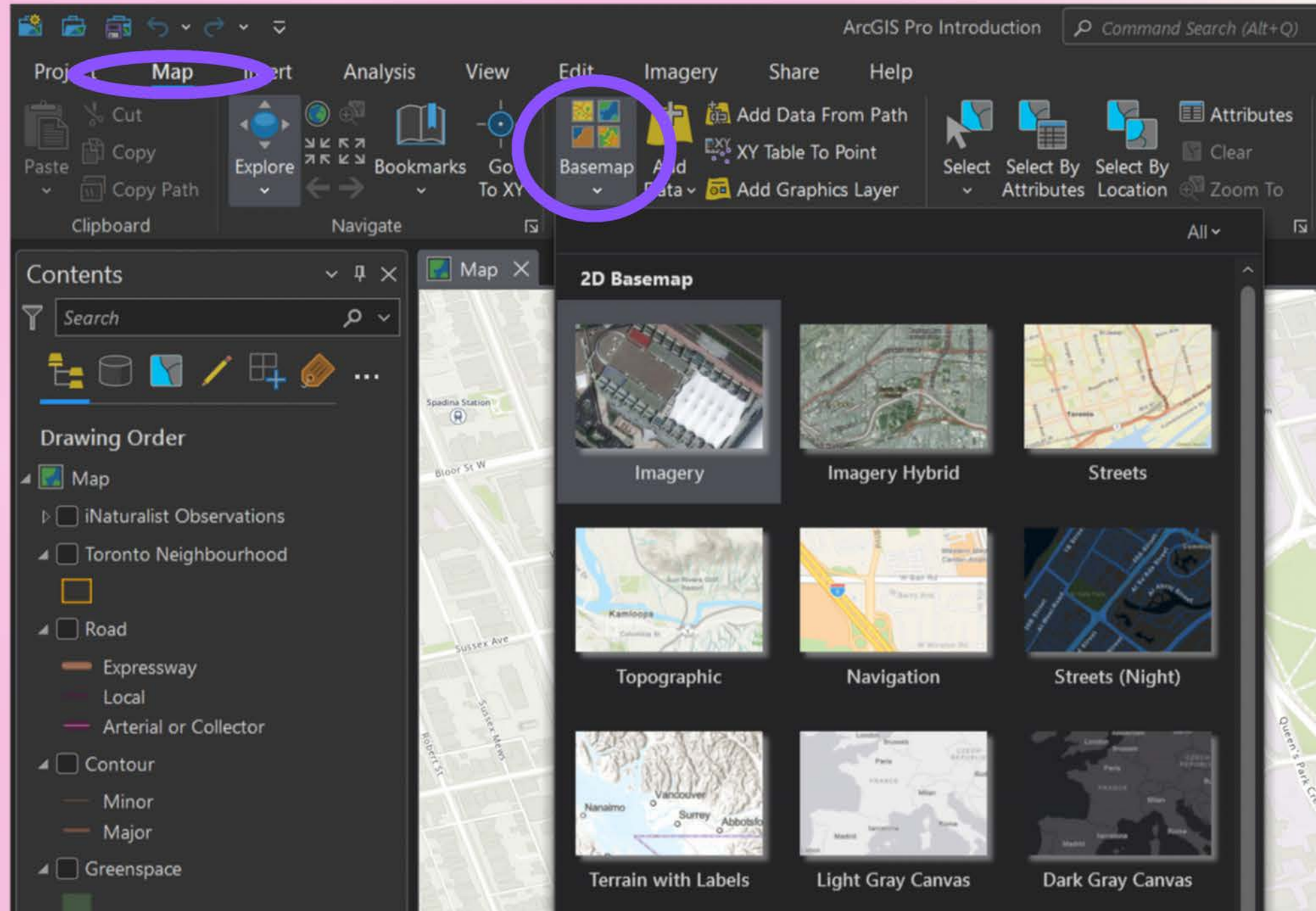
- From the **View** tab, click the **Contents** button



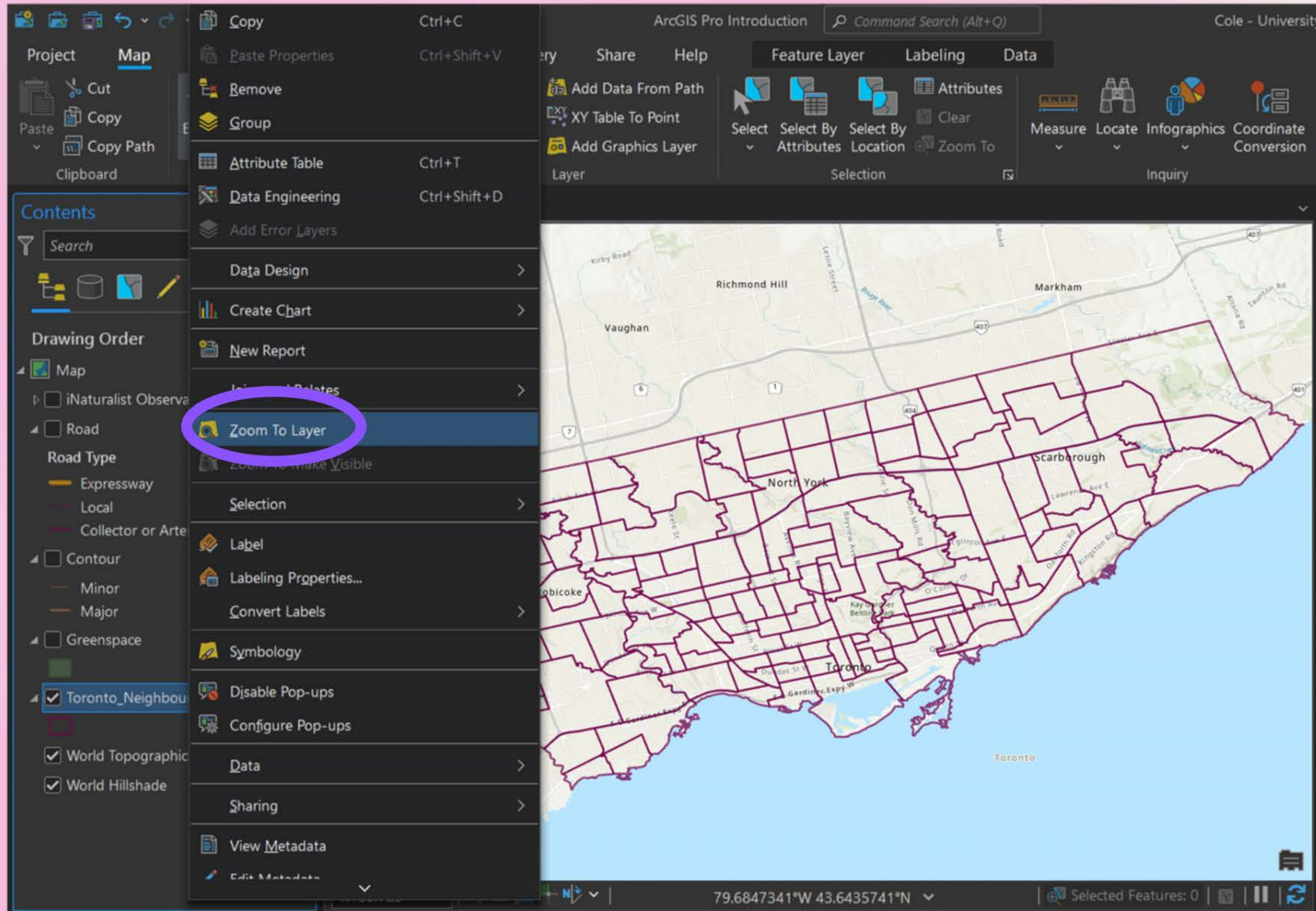
- From the **View** tab, click the **Catalog Pane** button



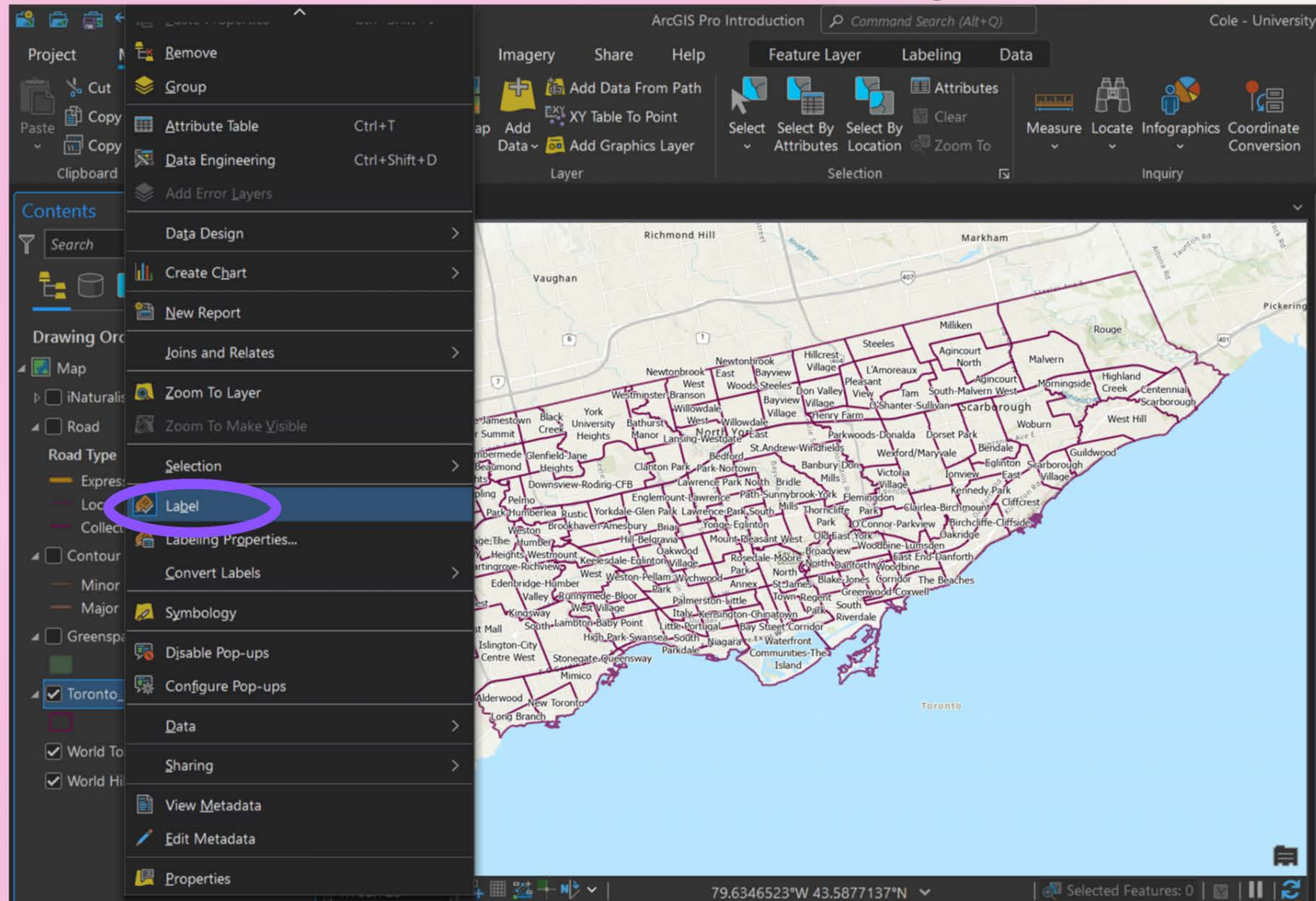
- From the **Map** tab, click the **Basemap** button.
- Review the various available basemaps.



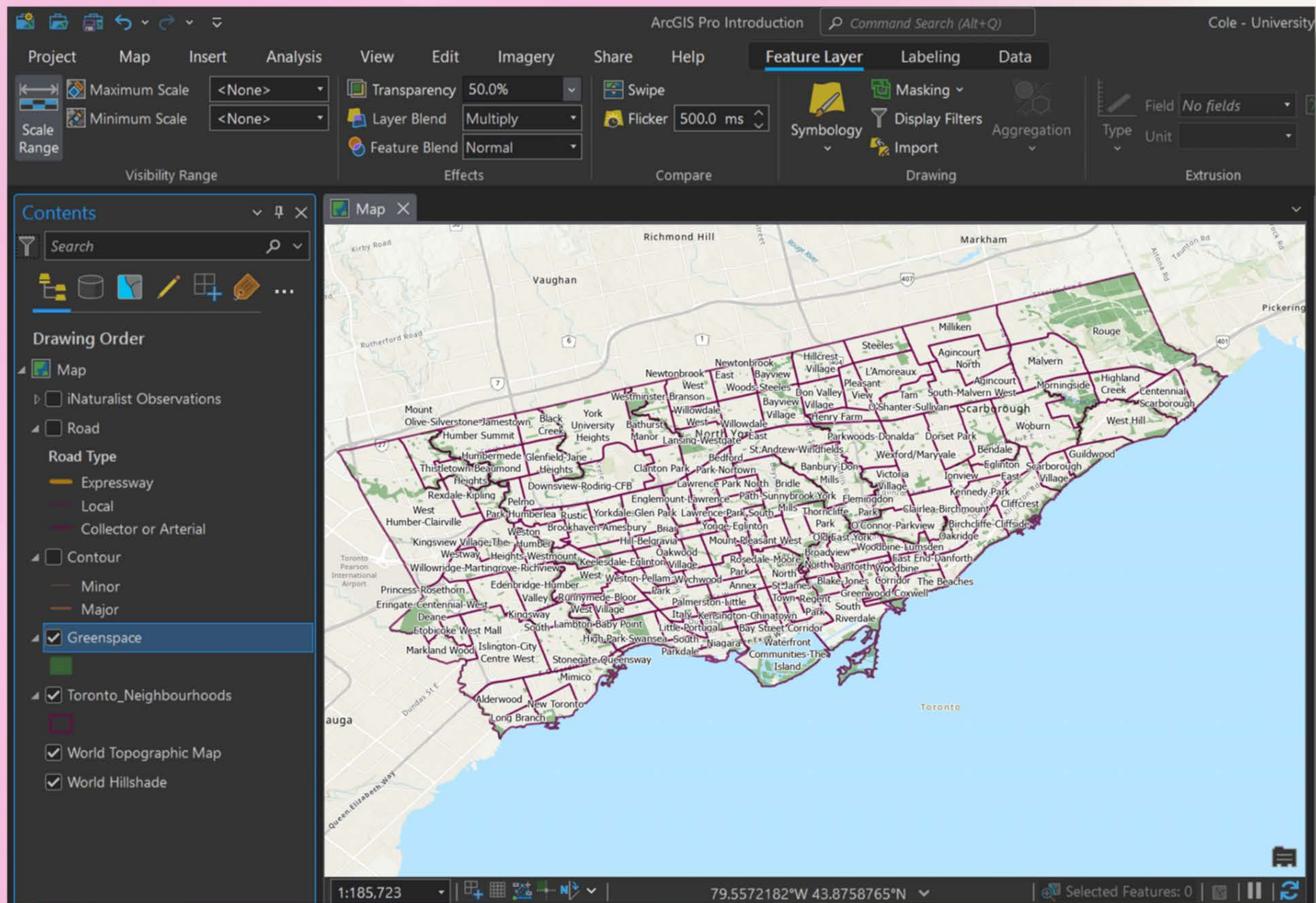
- Turn on the **Toronto Neighbourhood** layer
- Right-click the layer name and choose **Zoom to Layer**



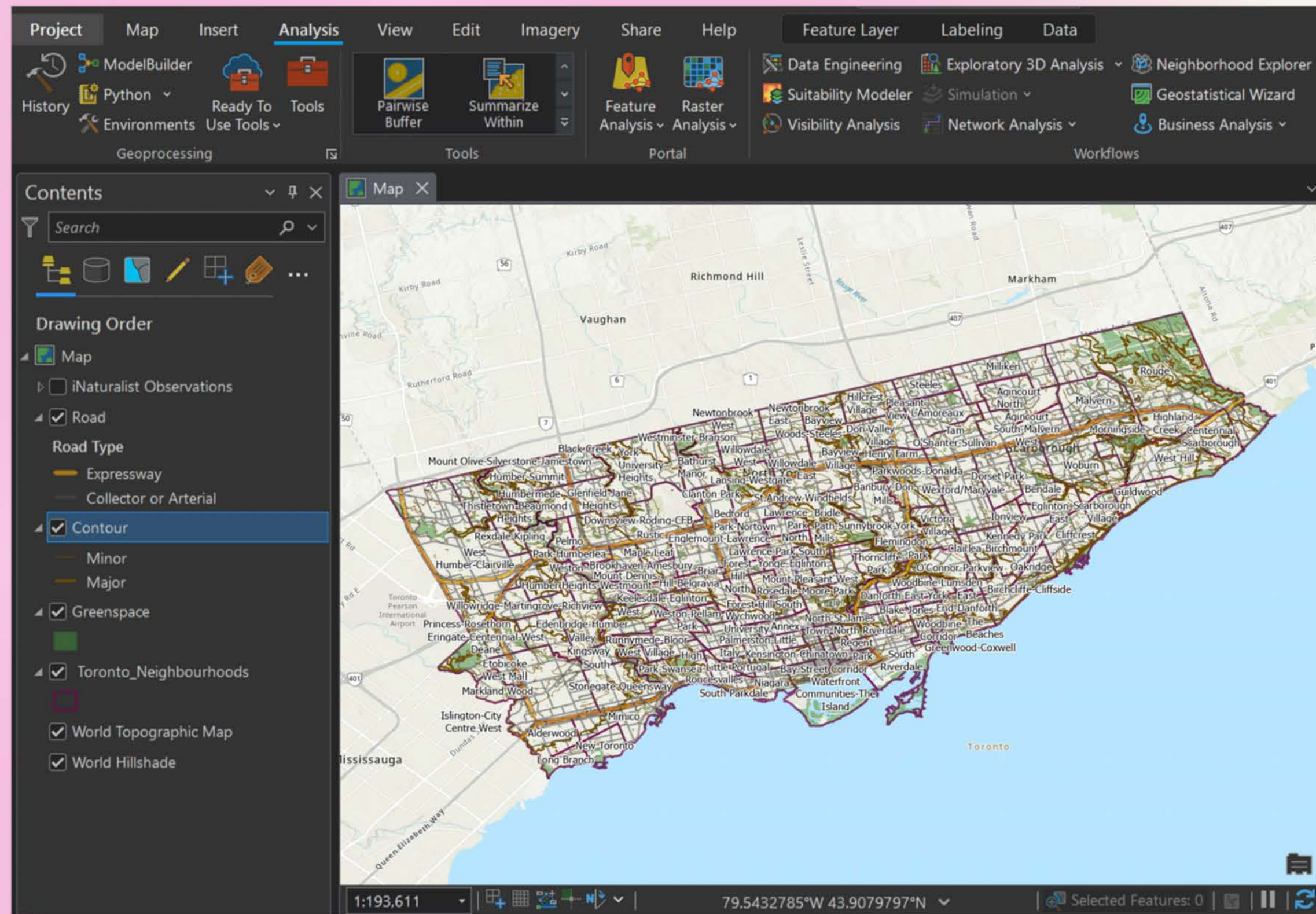
- Right-click the **Toronto Neighbourhood** layer in the Contents Pane
- Click the **Label** menu item to enable labeling



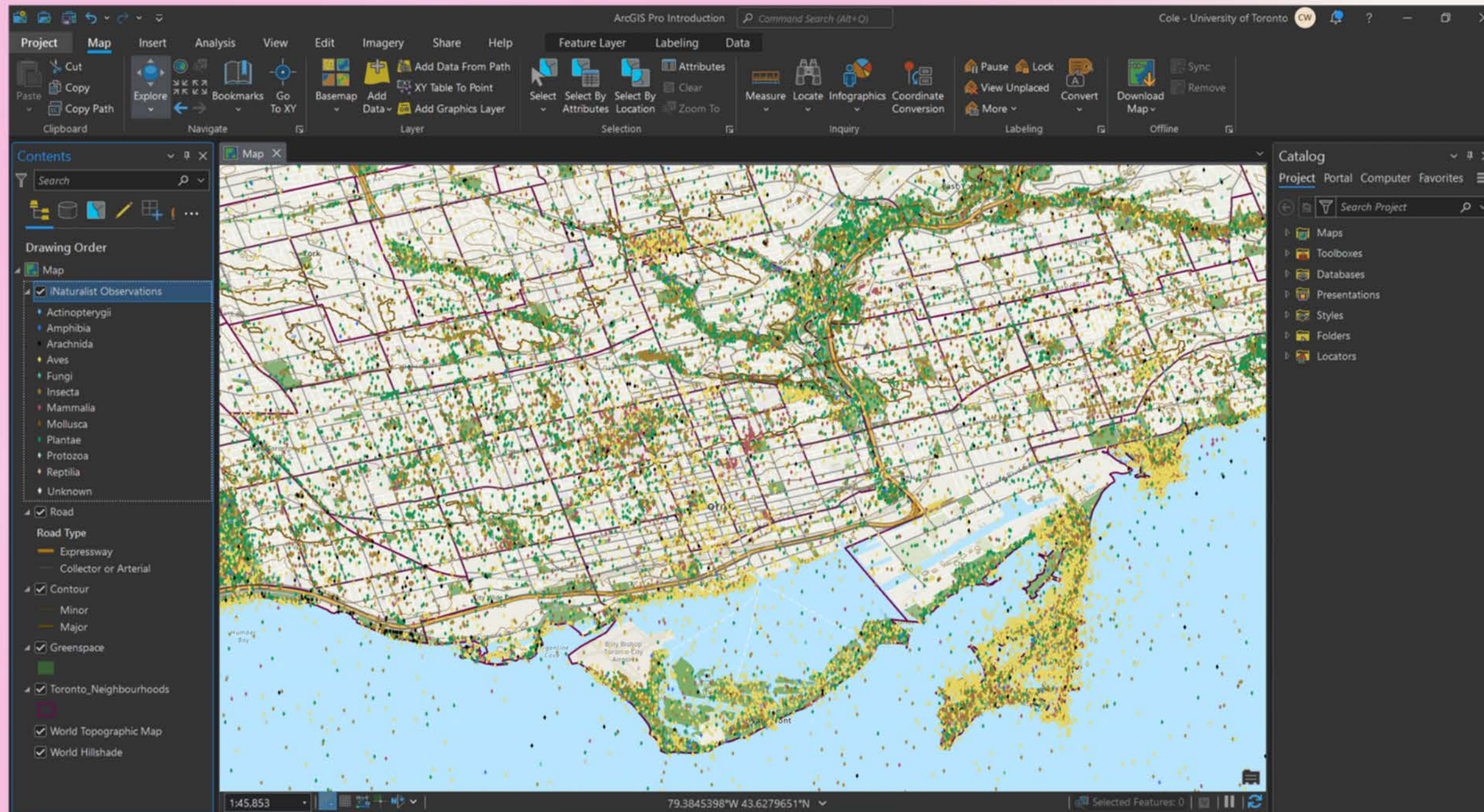
- Turn on the **Greenspace** layer



- Turn on the **Contour** and **Road** layers

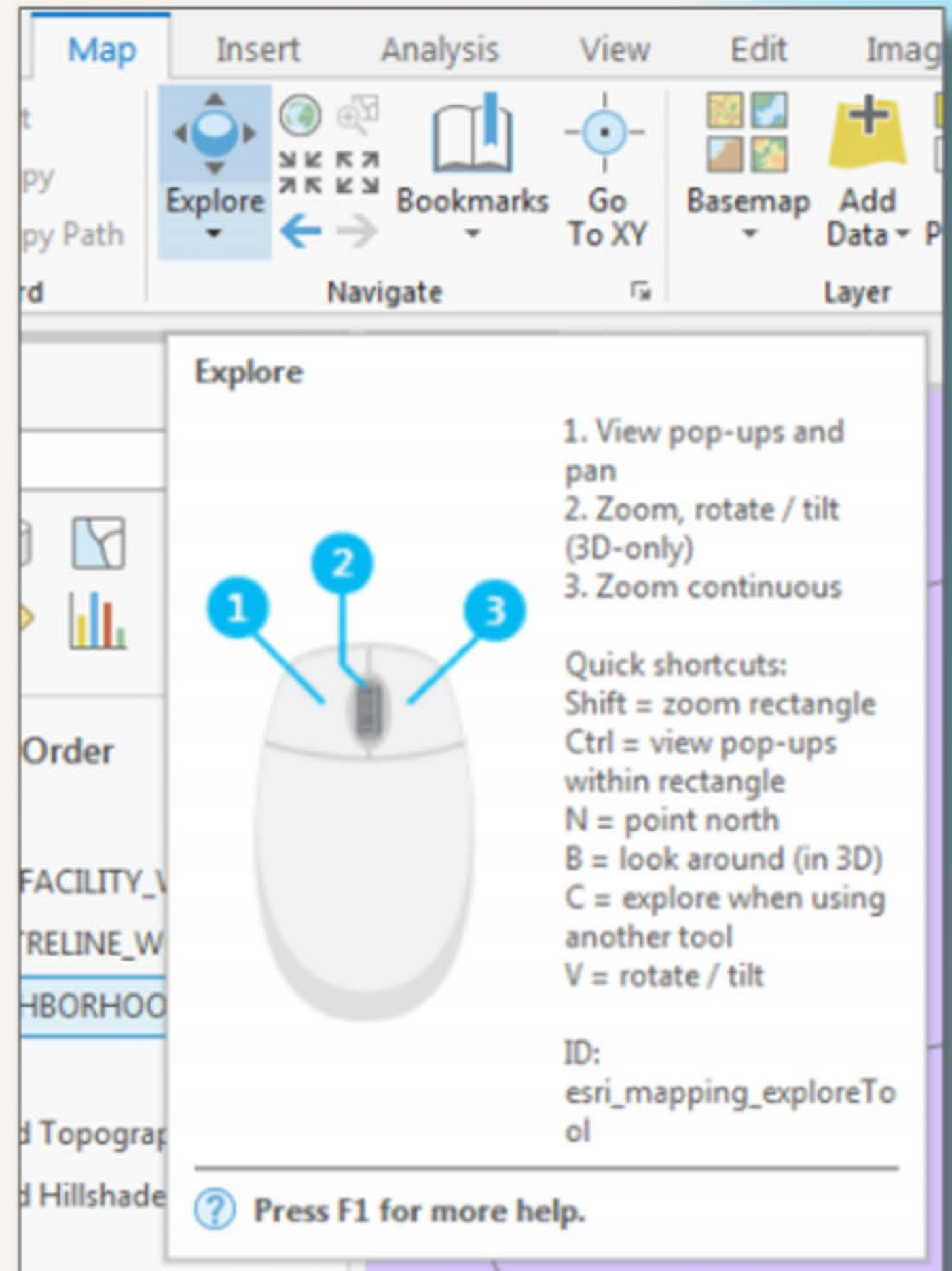


- Turn on the **iNaturalist Observations** layer
 - *iNaturalist is a social network for sharing and identifying biodiversity observations. Esri has made this data available as a web service.*



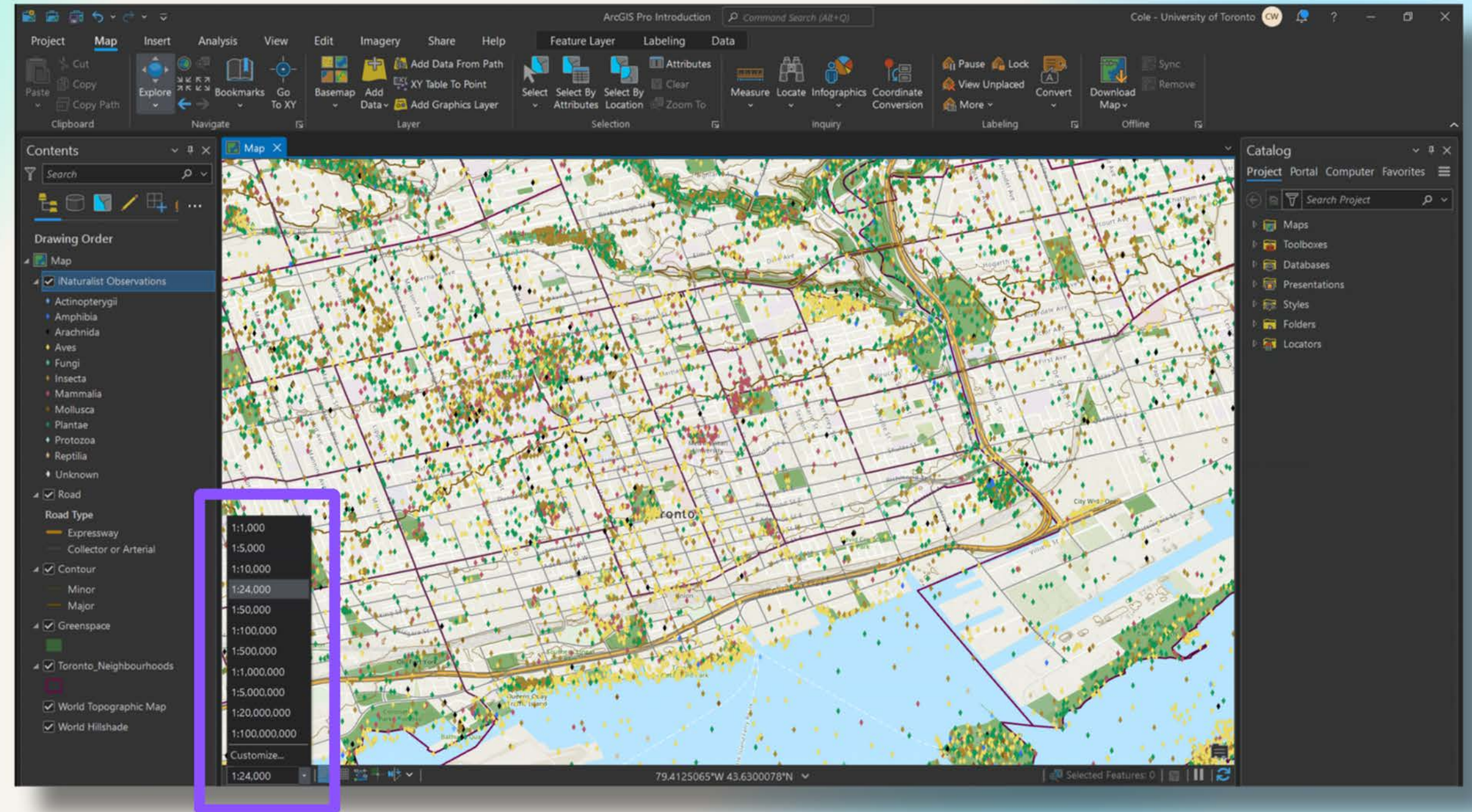
Navigation

- Using the mouse buttons and wheel, navigate around your map.
- To reposition the view on your Toronto data, right-click the Neighbourhoods layer and select **Zoom to Layer**.



Scale

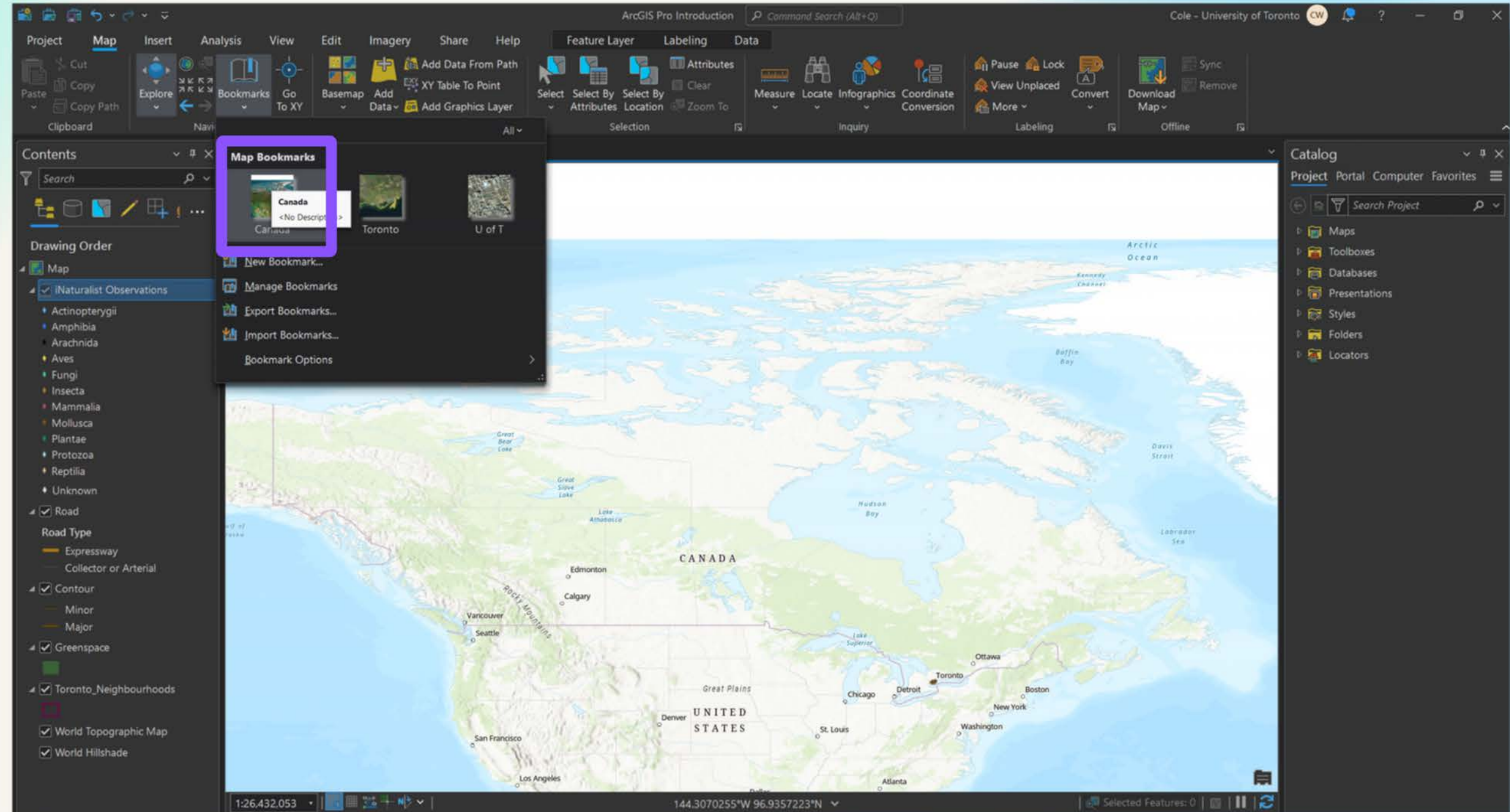
- Various map scales may be selected from the dropdown at the bottom left of the map area.



Bookmarks

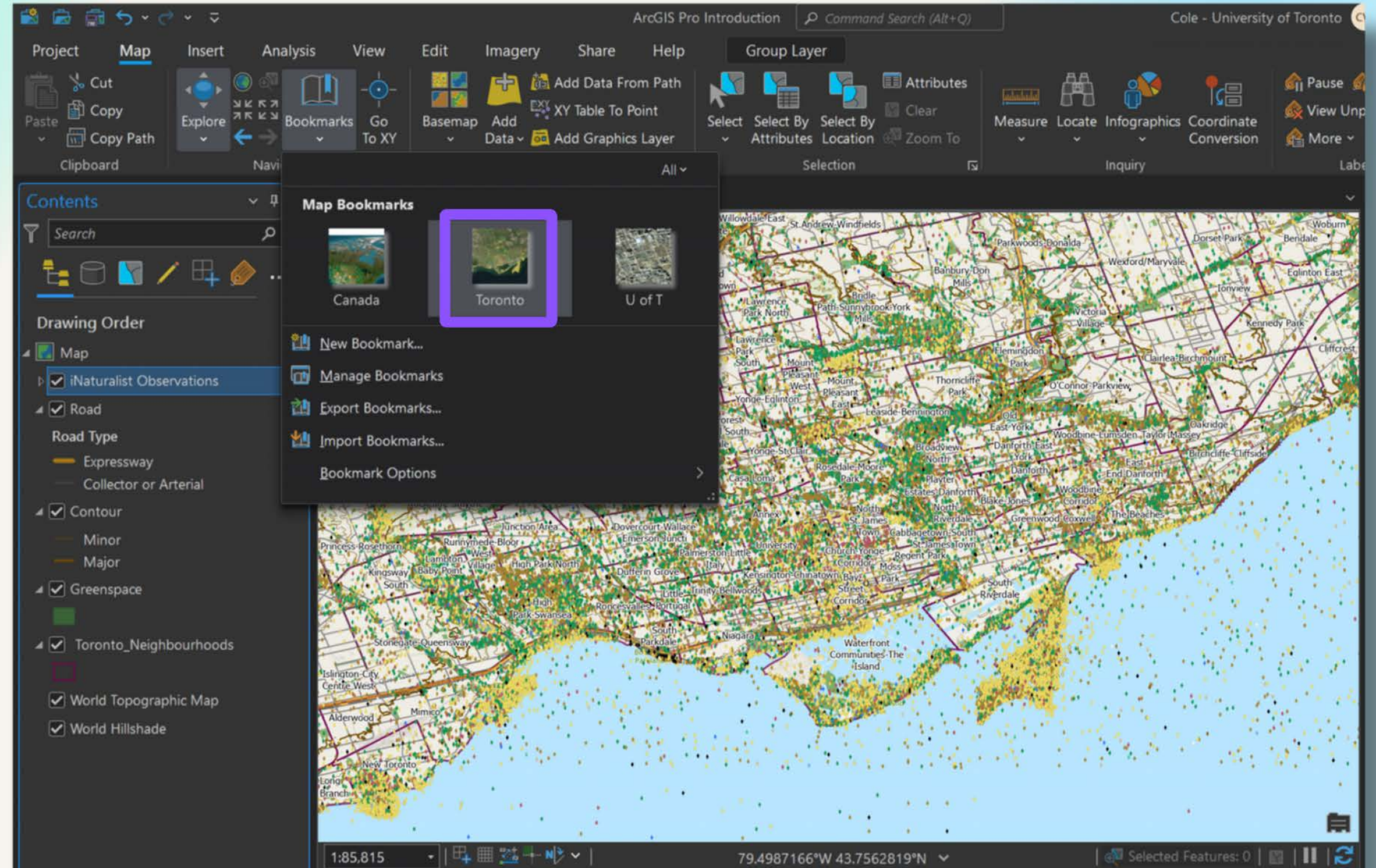
Bookmarks are navigation shortcuts to positions on a map.

- Under the **Map** tab, click the **Bookmarks** button.
- Click on the **Canada** bookmark.



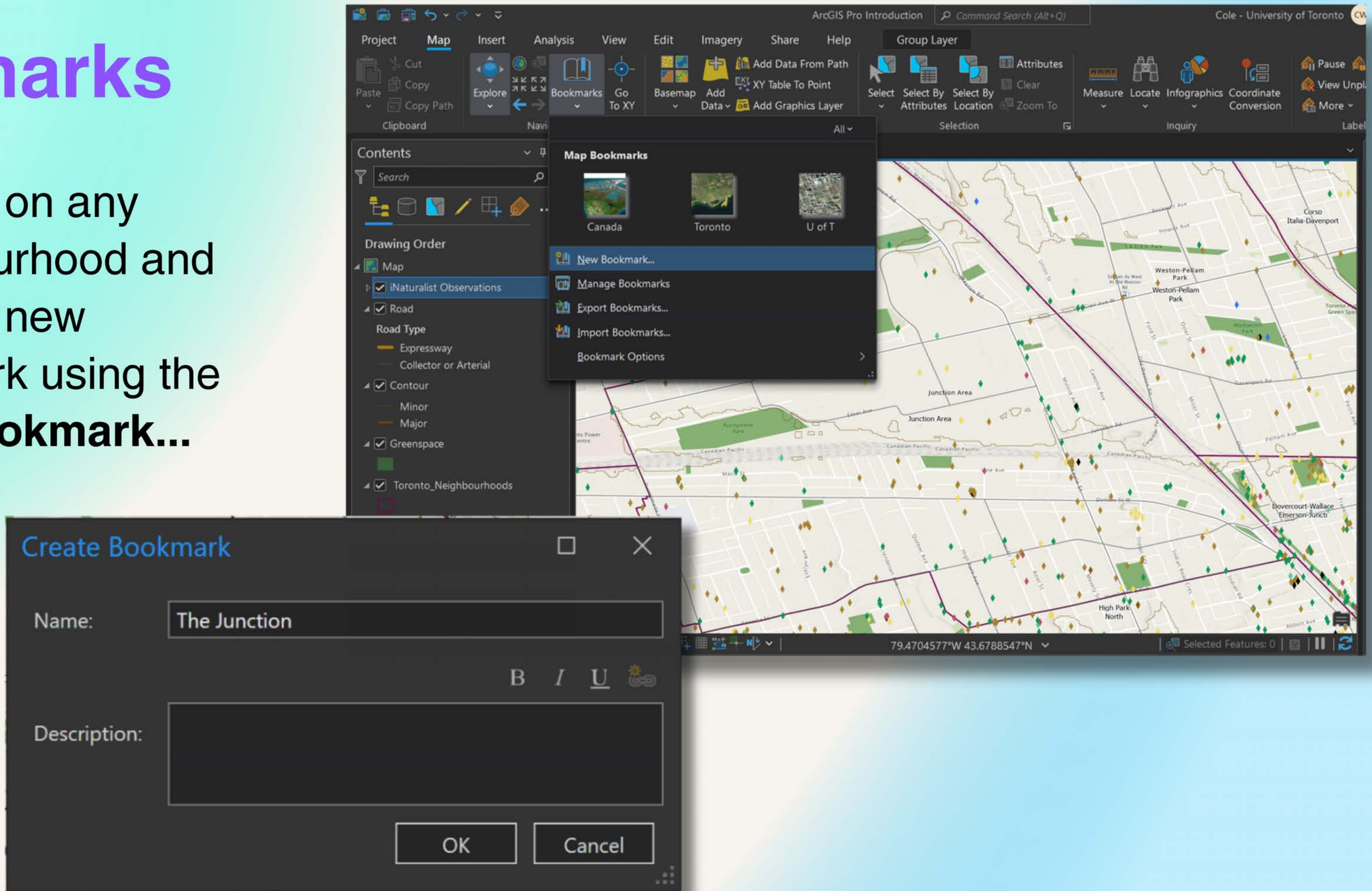
Bookmarks

- Repeat the previous step, but instead choose the **Toronto** bookmark.



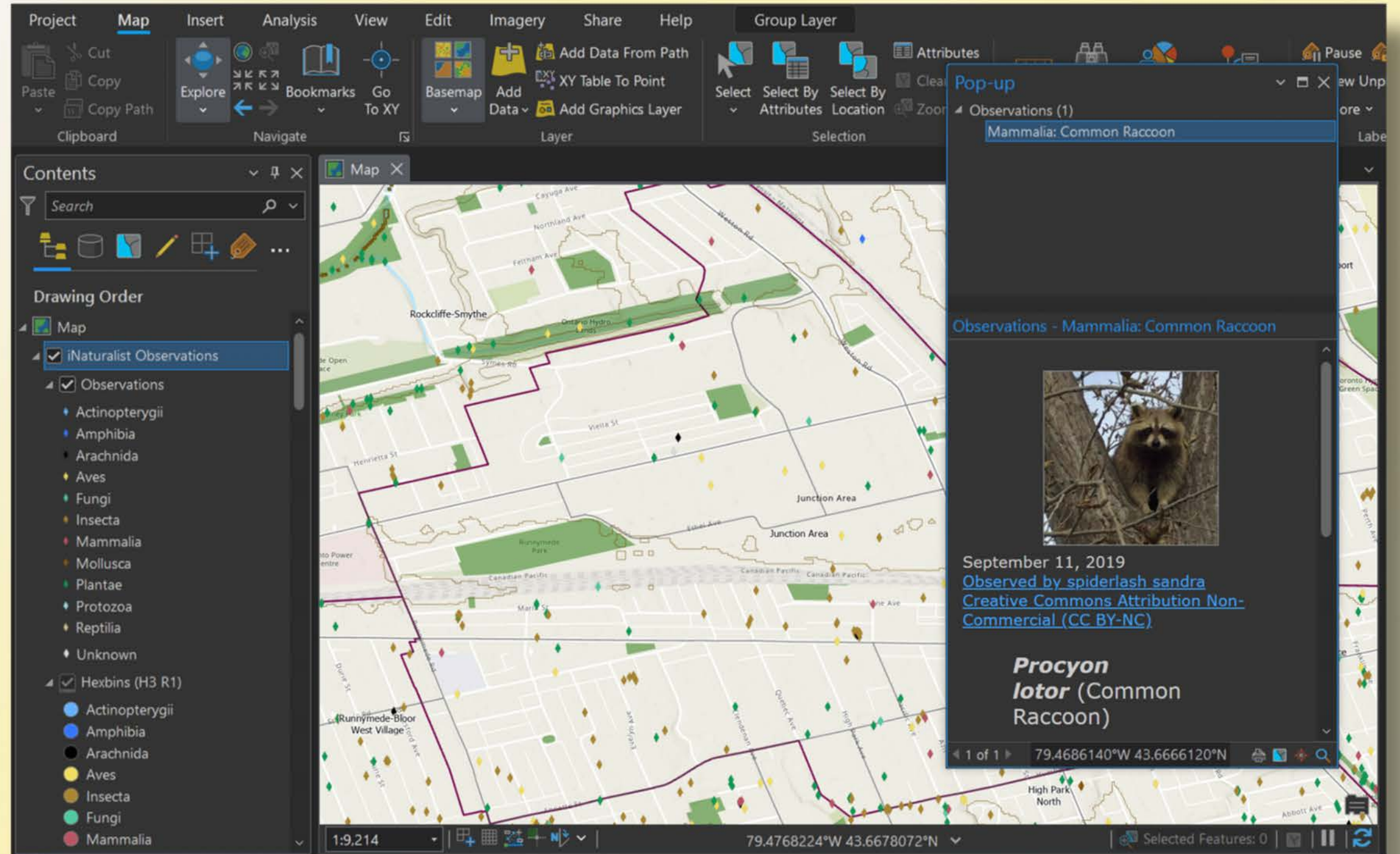
Bookmarks

- Zoom in on any neighbourhood and create a new bookmark using the **New Bookmark...** option.



Exploring Data

- From the **Map** tab, click the **Explore** button.
- Select **iNaturalist Observations** from the Contents.
- Click on one of the diamond symbols on your map to view the feature's **Popup**.



Exploring Data

- Right-click the **Neighbourhoods** layer and choose **Attribute Table** (or press Ctrl + t).
- Click on any record within the table.
- Note that the highlighted row corresponds to the highlighted map polygon.

The screenshot displays the QGIS interface. The 'Attribute Table' menu option is highlighted in the context menu. The table below shows data for various neighborhoods, with the row for 'Kensington-Chinatown' highlighted in blue.

OBJECTID *	Shape *	Neighbourhood	Total_Area	Total_Population	Pop_Males	Pop_Females	Pop0_4years	Pop5_9years	Pop10_14years	Pop15_19y
52	Polygon	Kensington-Chinatown	1.5	18500	9125	9365	570	435	515	
53	Polygon	Kingsway South	2.6	9175	4330	4845	465	630	635	
54	Polygon	Runnymede-Bloor Wes...	1.6	9635	4565	5065	735	600	490	
55	Polygon	Forest Hill South	2.5	10925	4980	5950	365	425	530	
56	Polygon	Henry Farm	2.6	11340	5405	5935	780	745	660	
57	Polygon	Annex	2.8	29180	13745	15415	865	695	635	
58	Polygon	Caladonia-Fairbank	1.5	9055	4075	4975	555	400	550	

Exploring Data

- Right-click the selected row and choose **Zoom To**.

The screenshot shows a GIS application interface. At the top, a map of Toronto is displayed with various colored polygons representing different neighborhoods. A cyan rectangle highlights a specific polygon in the Kensington-Chinatown area. A context menu is open over this polygon, listing several actions: Flash (Ctrl+8), Zoom To (Ctrl+=), Pan To (Ctrl+N), Pop-up (Ctrl+I), Pinned Pop-up (Ctrl+Shift+I), Select/Unselect (Ctrl+Space), Manage Attachments, Duplicate Row, and Delete Row. The 'Zoom To' option is currently selected and highlighted in blue. Below the map, a data table is visible with columns for Total Area, Total Population, Pop_Males, Pop_Females, Pop0_4years, Pop5_9years, Pop10_14years, and Pop15_19y. The row corresponding to the selected polygon (Kensington-Chinatown) is highlighted in teal. The table data is as follows:

	Total Area	Total Population	Pop_Males	Pop_Females	Pop0_4years	Pop5_9years	Pop10_14years	Pop15_19y
52	1.5	18500	9125	9365	570	435	515	
53	2.6	9175	4330	4845	465	630	635	
54	1.6	9635	4565	5065	735	600	490	
55	2.5	10925	4980	5950	365	425	530	

Exploring Data

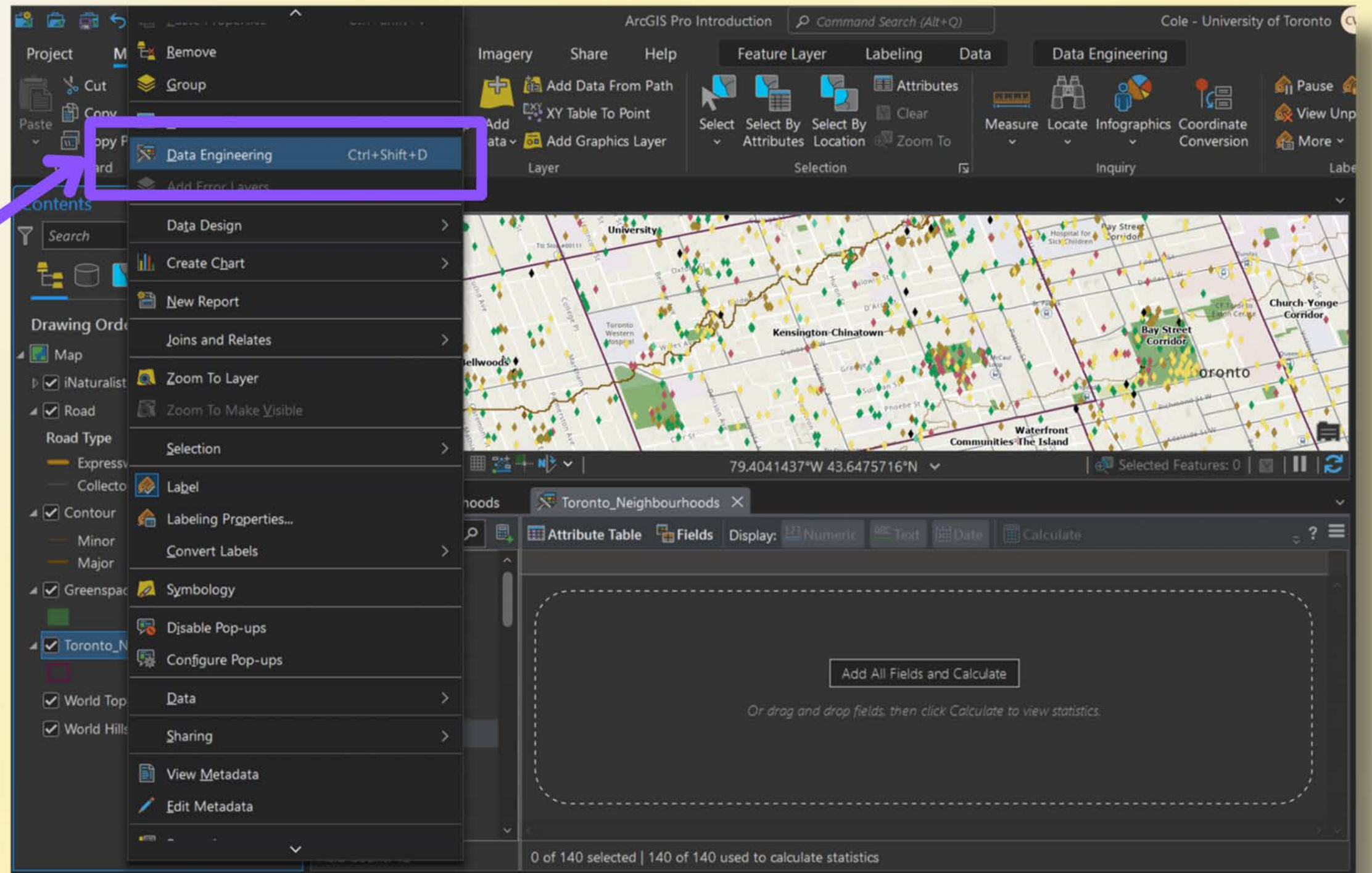
- Click the **Clear** button in the **Selection** group under the **Map** tab to clear the selection.

The screenshot displays the ArcGIS Desktop interface. The **Map** tab is active, and the **Selection** group in the ribbon is highlighted. A purple arrow points to the **Clear** button. The map shows a city area with various neighbourhoods and a selection tool overlaid. Below the map, the **Toronto_Neighbourhoods** table is visible, showing data for several neighbourhoods.

OBJECTID	Shape	Neighbourhood	Total Area	Total Population	Pop_Males	Pop_Females	Pop0_4years	Pop5_9years	Pop10_14years	Pop15_19y
52	Polygon	Kensington-Chinatown	1.5	18500	9125	9365	570	435	515	
53	Polygon	Kingsway South	2.6	9175	4330	4845	465	630	635	
54	Polygon	Runnymede-Bloor Wes...	1.6	9635	4565	5065	735	600	490	
55	Polygon	Forest Hill South	2.5	10925	4980	5950	365	425	530	

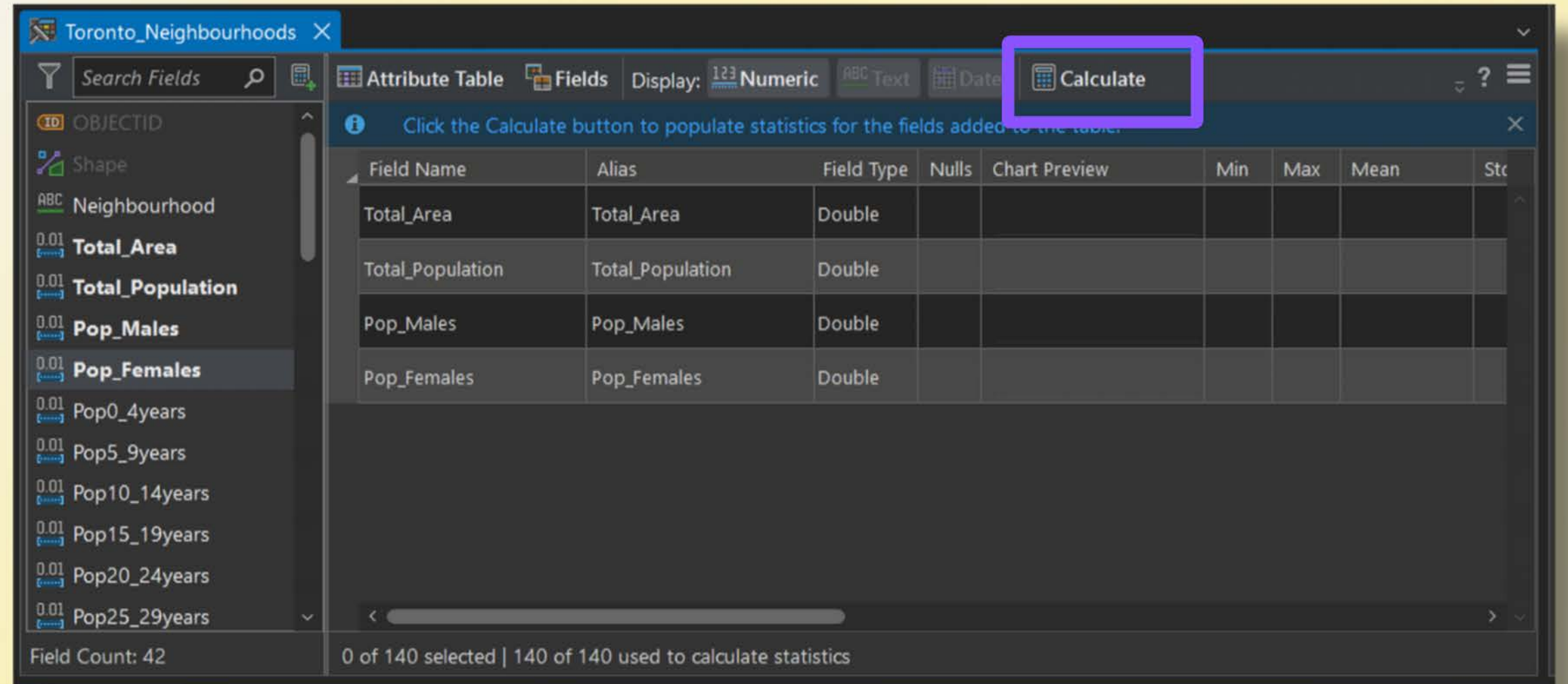
Exploring Data

- Right-click the **Neighbourhoods** layer and select **Data Engineering**



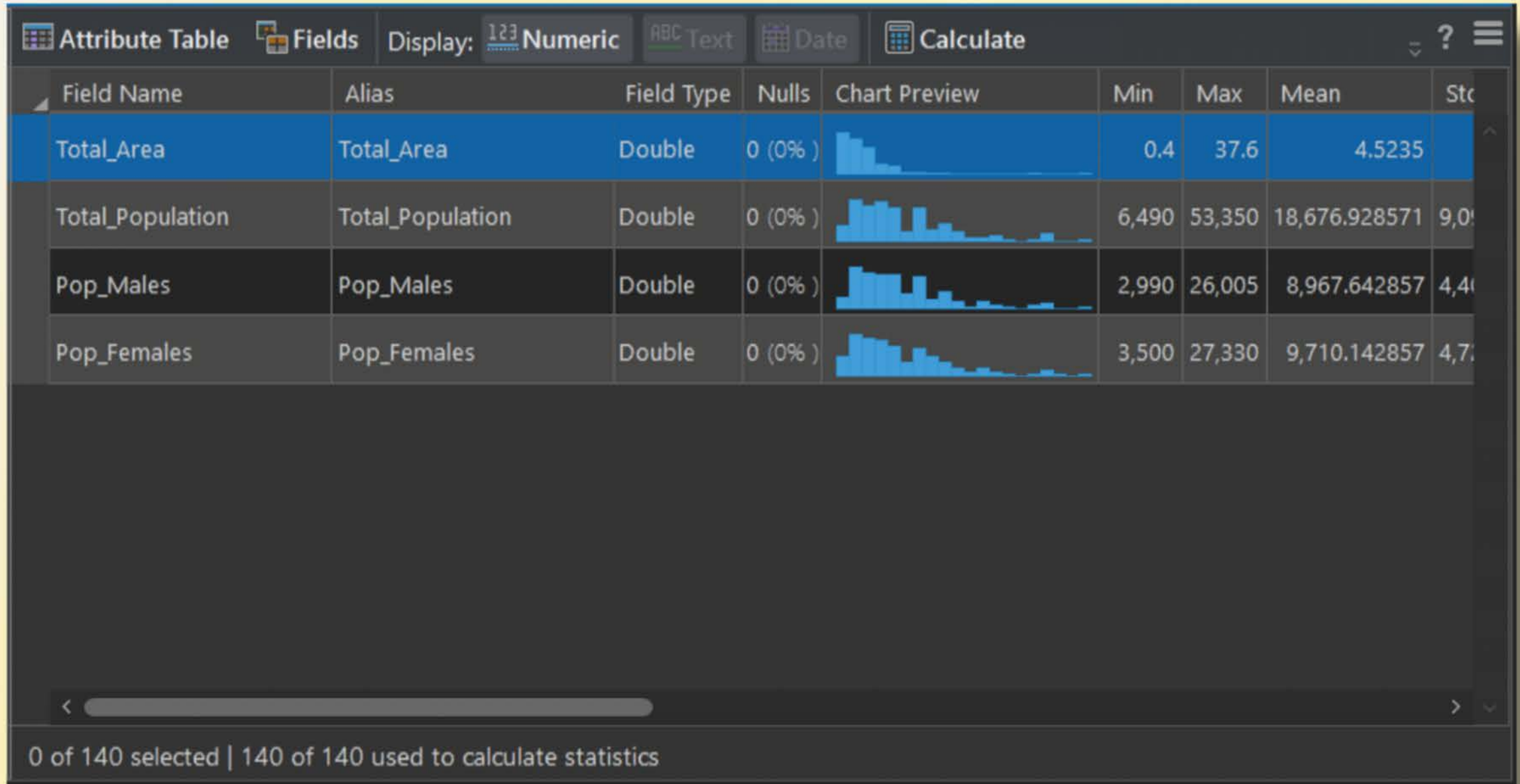
Exploring Data

- In the Data Engineering pane, drag the **Total_Area**, **Total_Population**, **Pop_Males**, and **Pop_Females** fields into the Data Engineering view.
- Click **Calculate**.



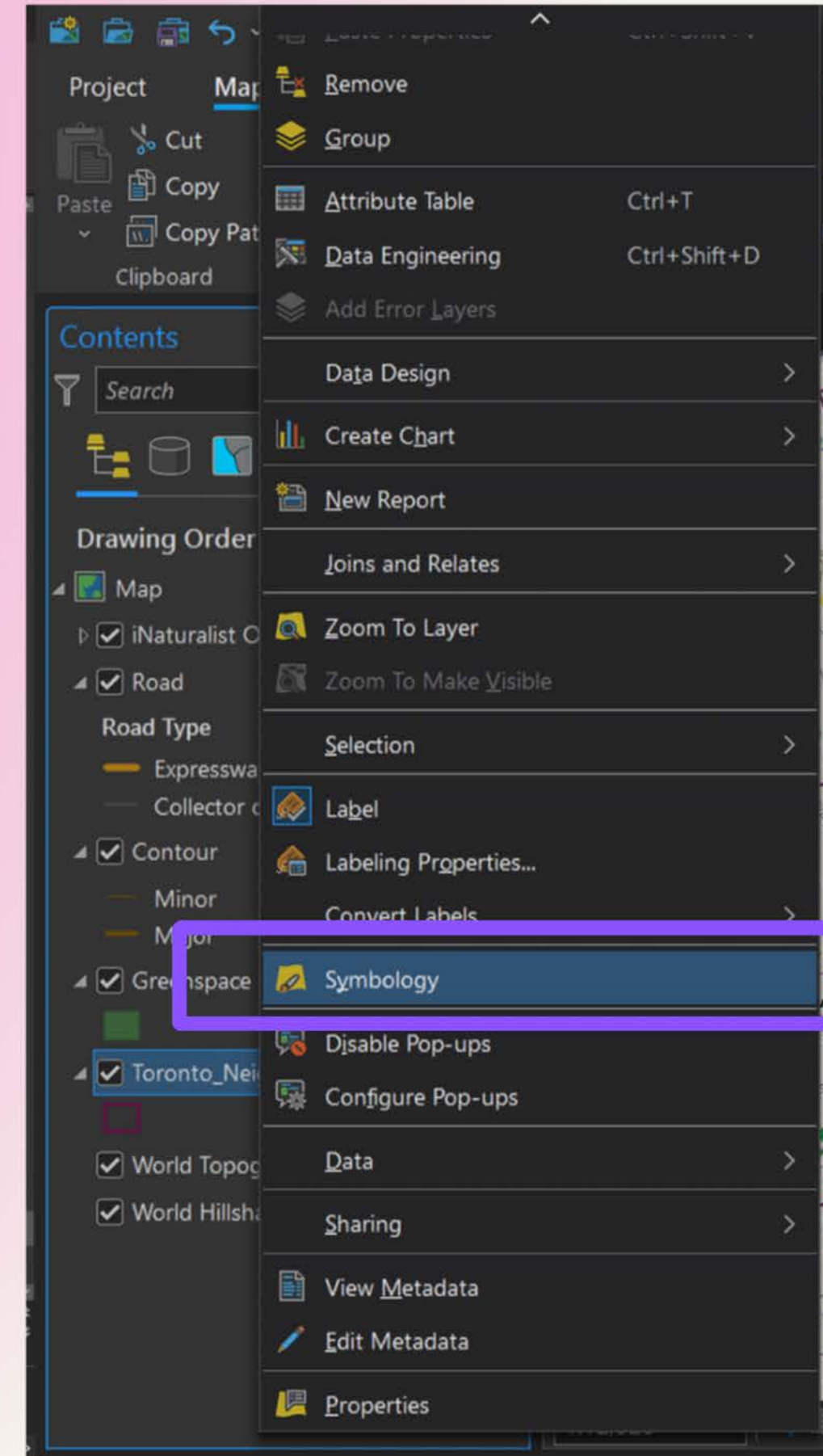
Exploring Data

- Review the statistics that have been generated for this dataset.
- Data Engineering allows you to get an overview of your data, as well as look for outliers, missing values, and other issues.



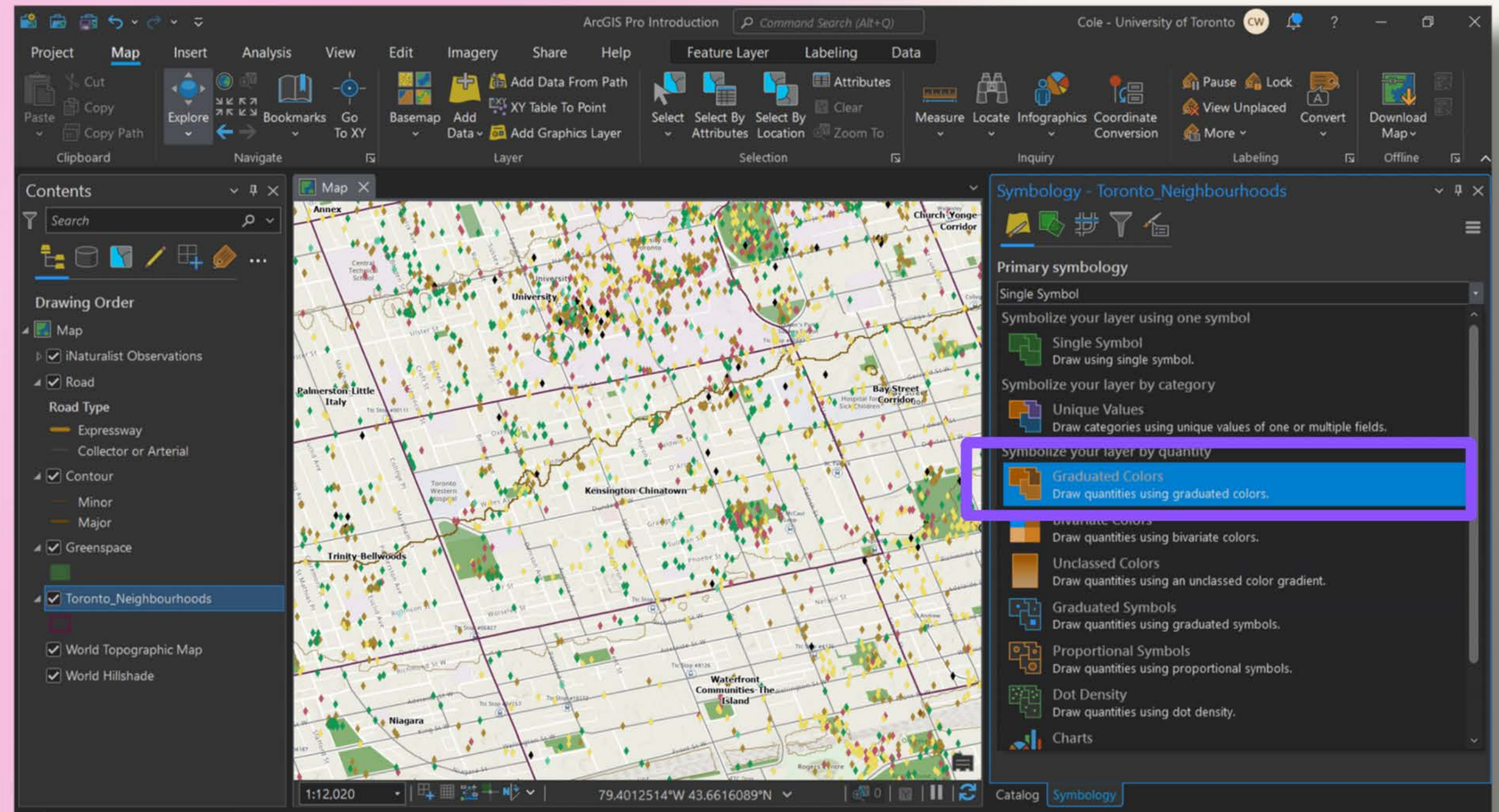
Symbolizing Data

- Right-click the **Neighbourhoods** layer and choose **Symbology**.



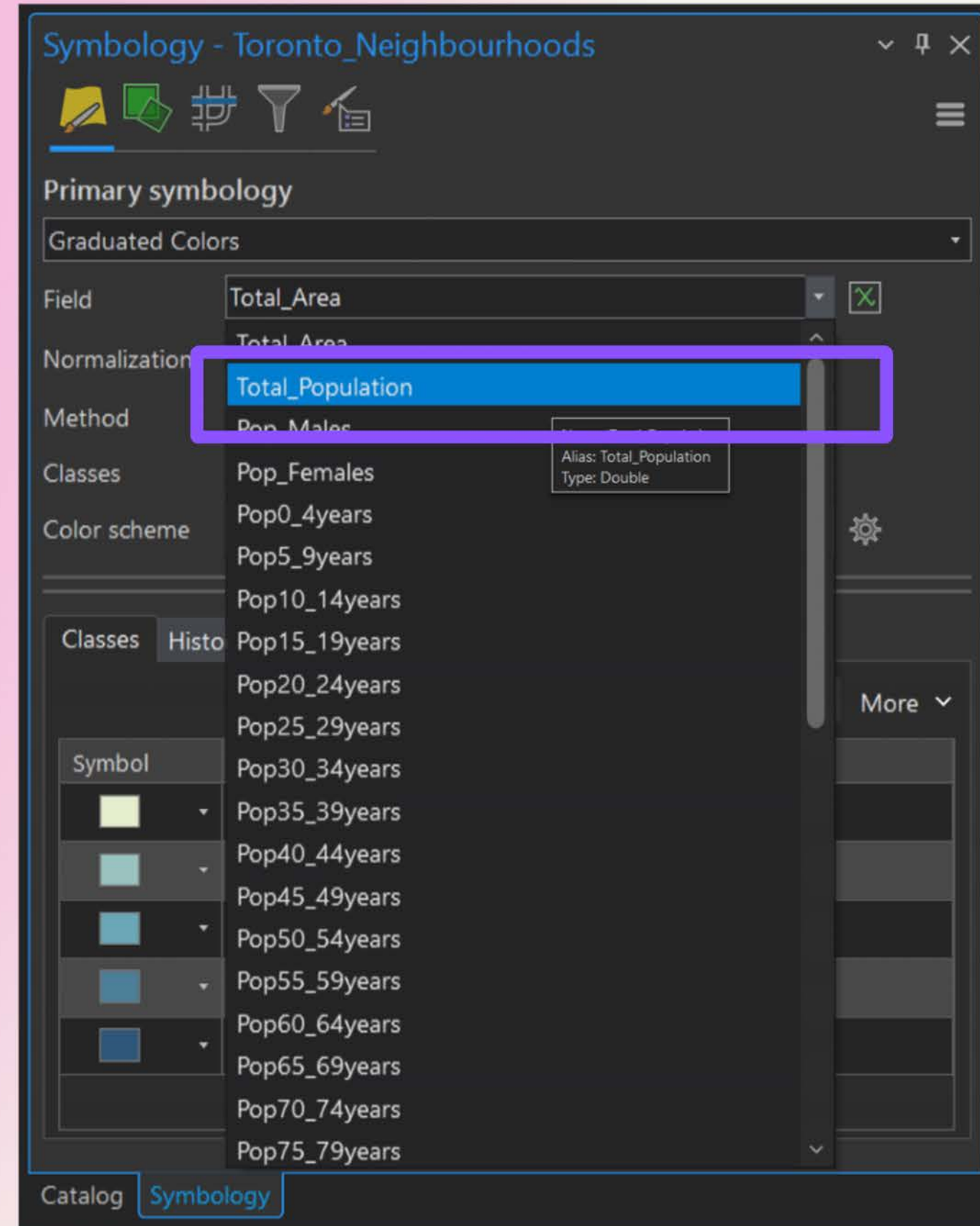
Symbolizing Data

- The **Symbology Pane** will appear.
- From the **Primary Symbology** dropdown, select **Graduated Colors**.



Symbolizing Data

- From the **Field** dropdown, select **Total_Population**.



Symbolizing Data

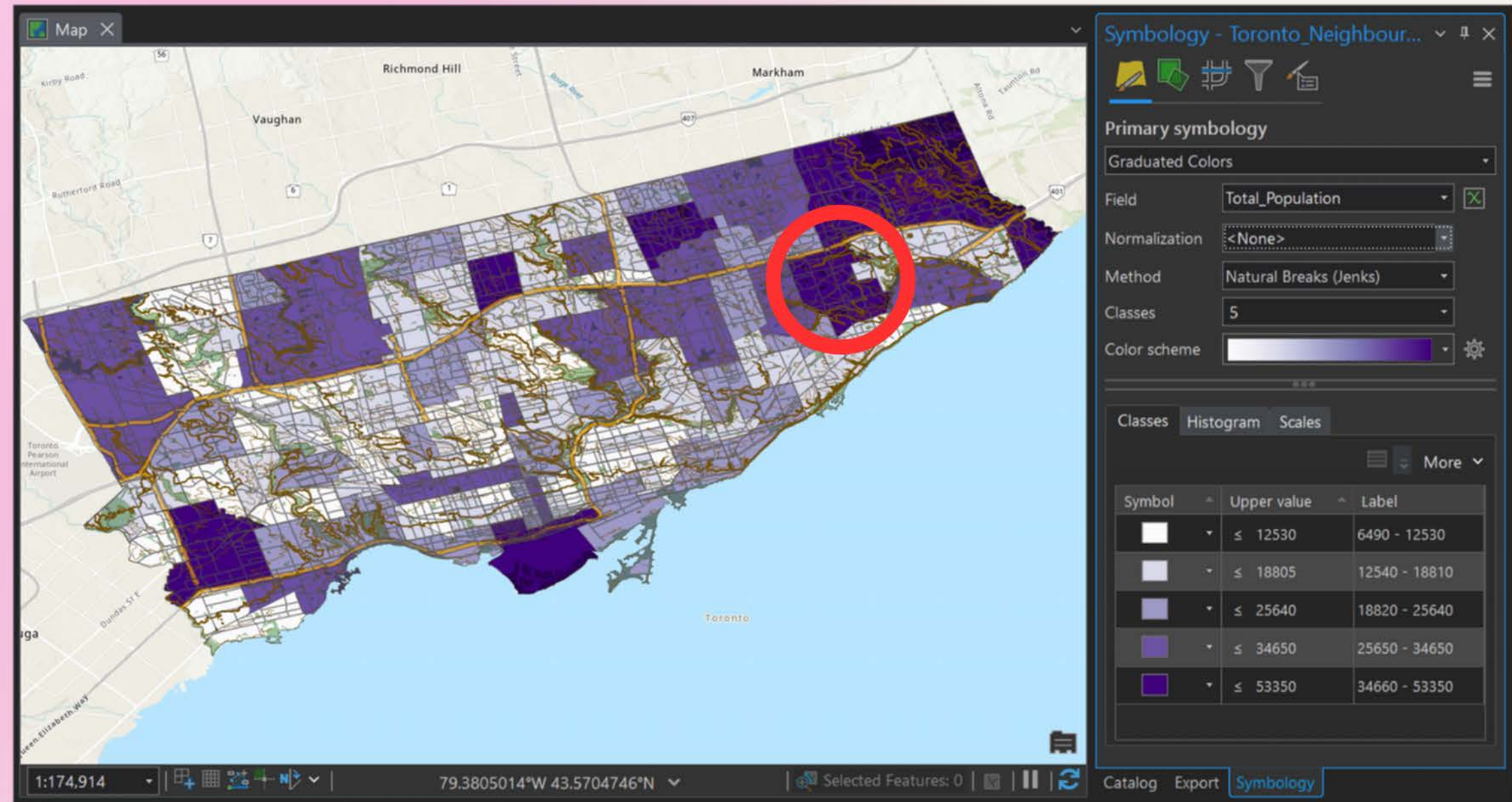
- Choose a colour scheme that begins with a lighter colour and ends with a darker or more saturated colour.

The screenshot shows the Symbology panel for a layer named 'Toronto_Neighbour...'. The 'Primary symbology' is set to 'Graduated Colors'. The 'Field' is 'Total_Population', 'Normalization' is '<None>', 'Method' is 'Natural Breaks (Jenks)', and 'Classes' is 5. The 'Color scheme' is a gradient from light to dark purple. Below these settings, the 'Classes' tab is active, showing a table of five classes with their respective symbols, upper values, and labels.

Symbol	Upper value	Label
White	≤ 12530	6490 - 12530
Light Blue	≤ 18805	12540 - 18810
Medium Blue	≤ 25640	18820 - 25640
Dark Blue	≤ 34650	25650 - 34650
Dark Purple	≤ 53350	34660 - 53350

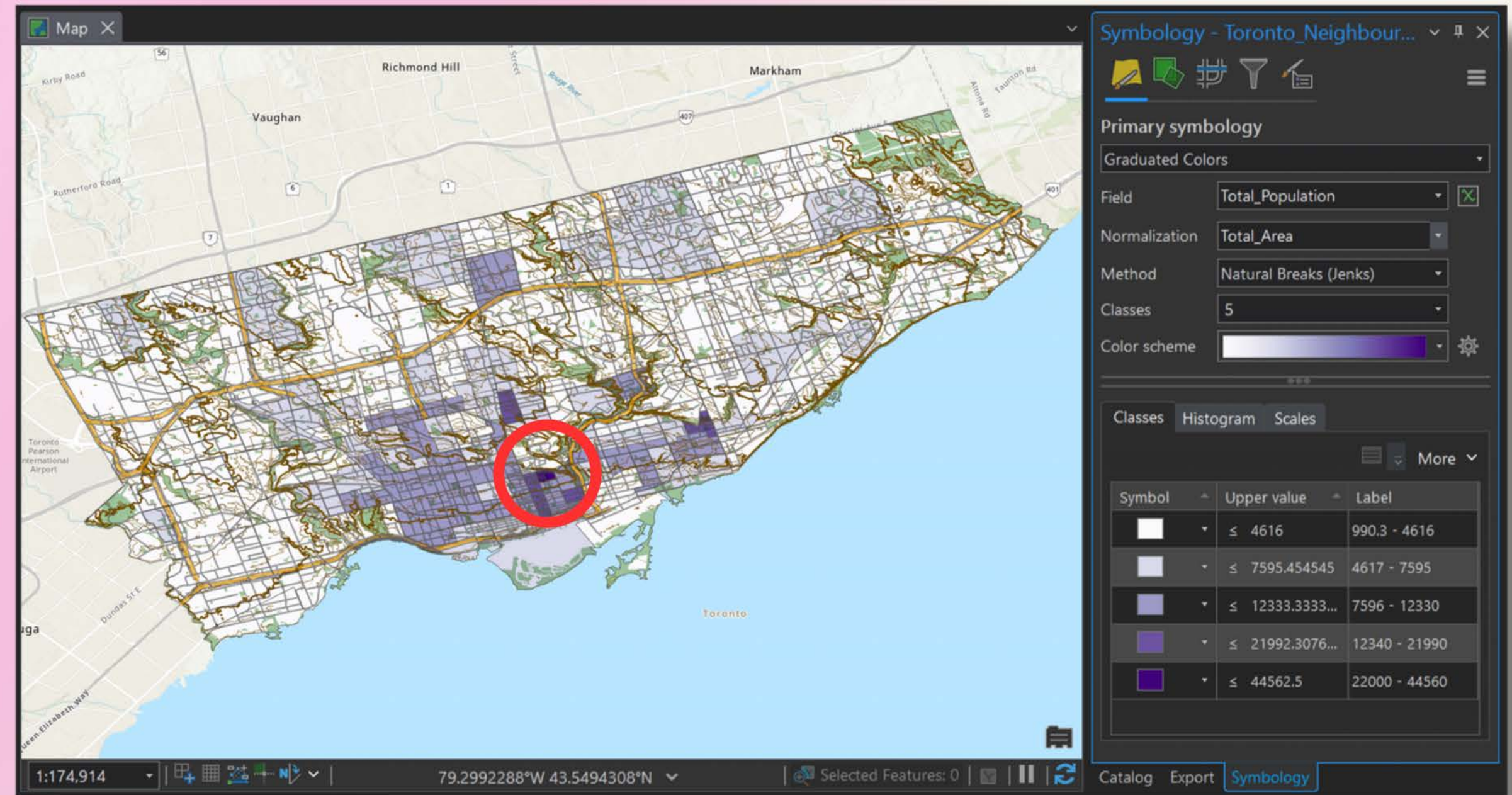
Symbolizing Data

- The neighbourhood polygons have been symbolized as per the underlying attribute values.
 - *Note: I have turned off the iNaturalist layer and neighbourhood labels for visual clarity here.*



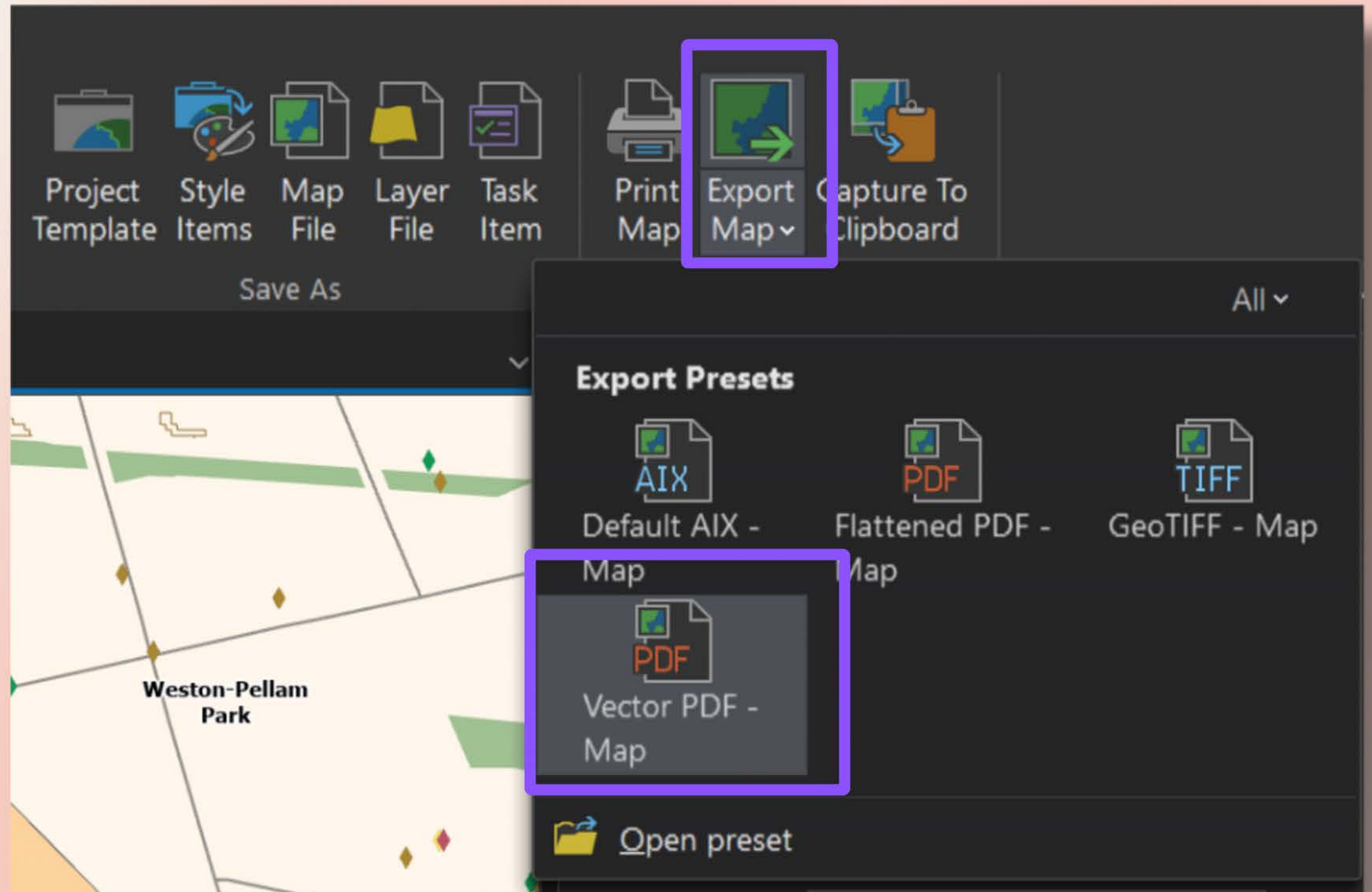
Symbolizing Data

- From the **Normalization** dropdown in the Symbology pane, select **Total_Area**
- The information is now expressed in terms of **population density** rather than raw counts.



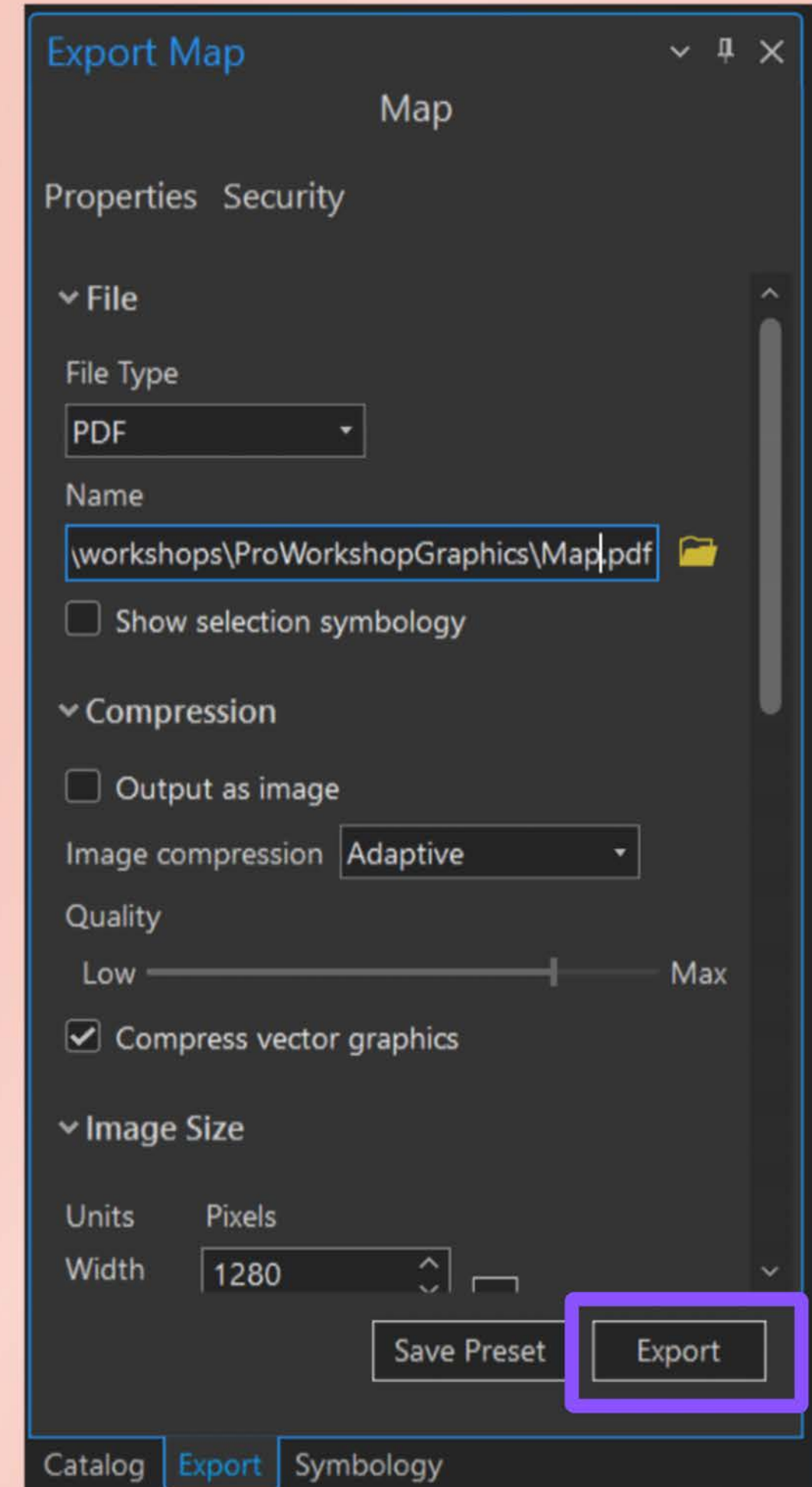
Exporting a map

- From the **Output** group on the **Share** tab, click **Export Map** (or press Ctrl + e).
- Choose **Vector PDF**.



Exporting a map

- From the **Export Map** pane, click **Export**.
- Your map view will be saved to your file system as a PDF.



Other helpful features

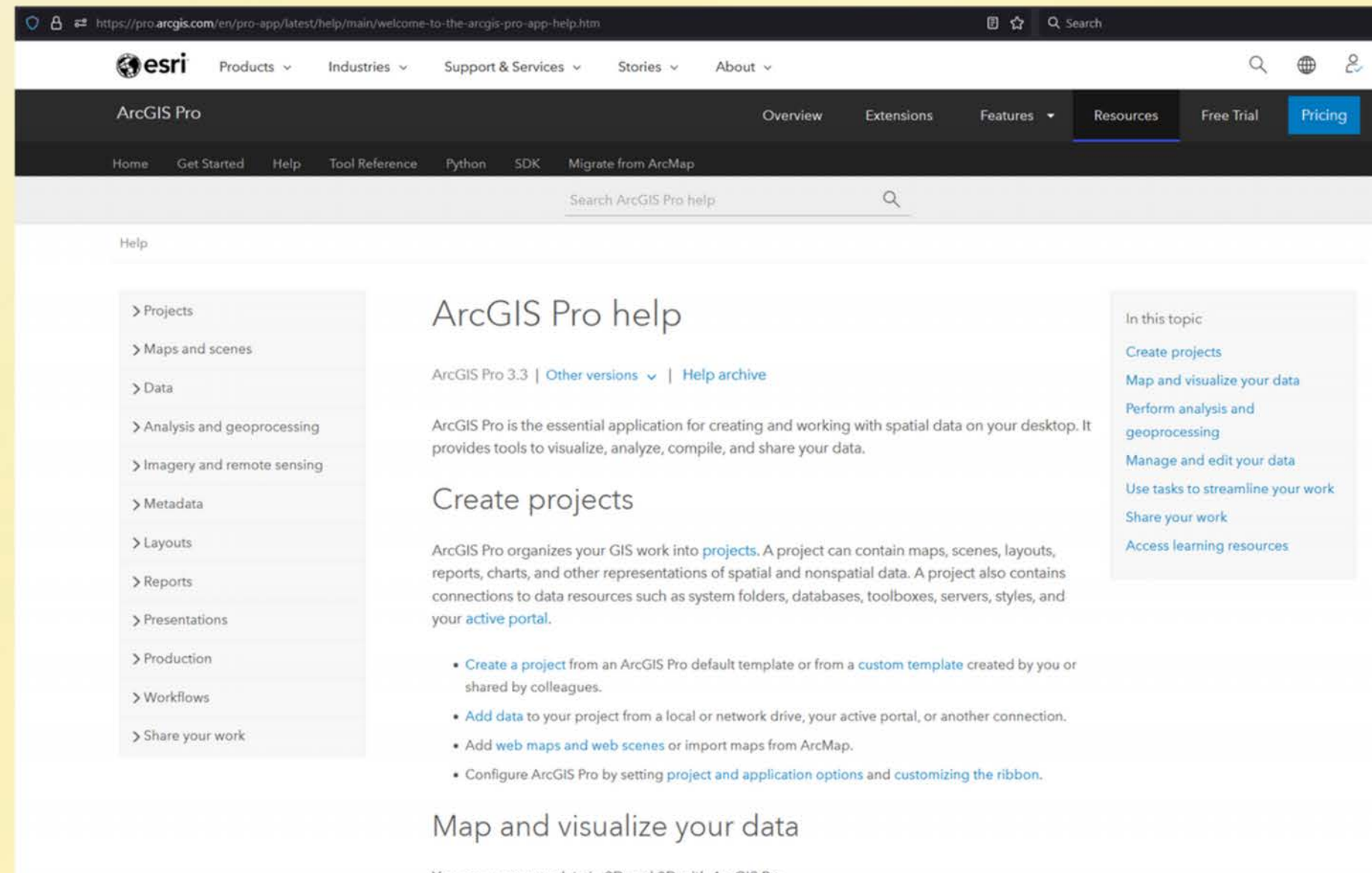
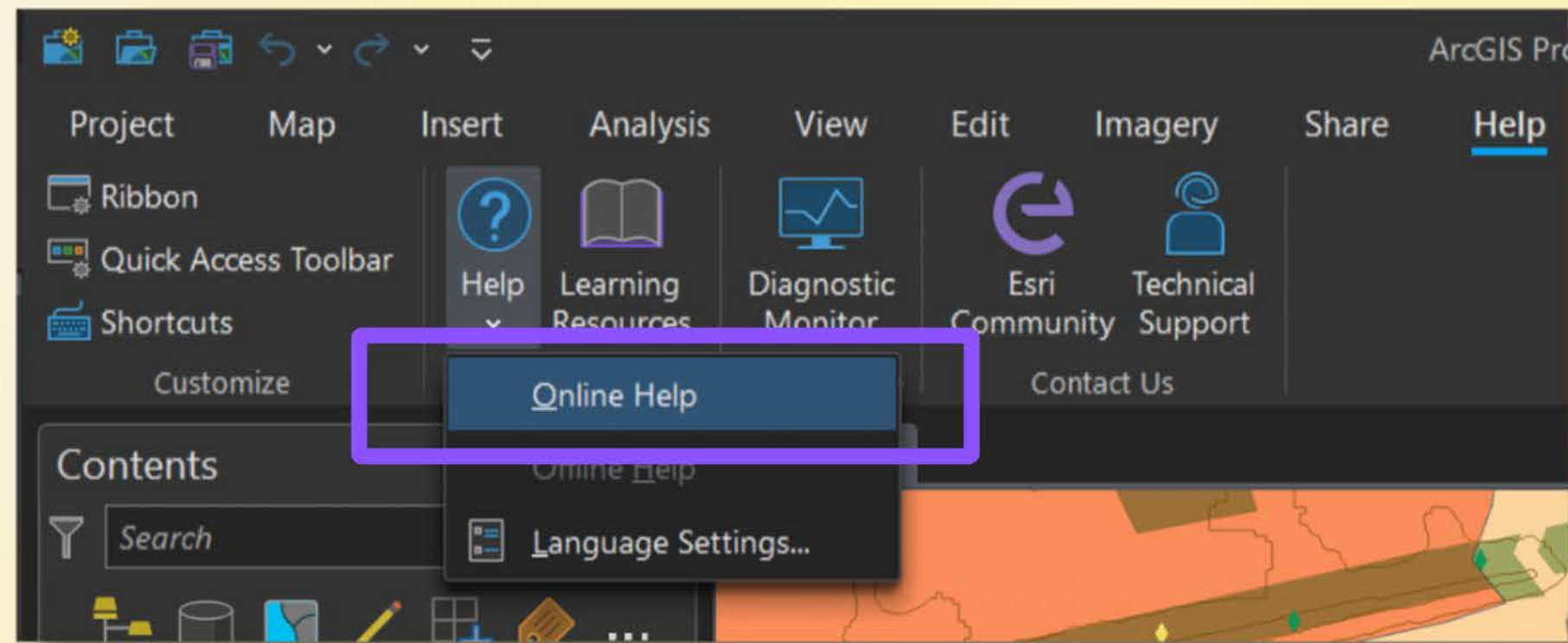
Shortcut Keys

- All of Pro's functionality can be accessed using the keyboard alone.
- See <https://pro.arcgis.com/en/pro-app/latest/get-started/arcgis-pro-keyboard-shortcuts.htm> for a more complete list.

Keyboard shortcut	Action
Ctrl+O	Open a project.
Ctrl+N	Create a project.
Ctrl+S	Save the project.
Ctrl+M	Open a new map.
Ctrl+F1	Show or hide the ribbon.
F12	Open the Keyboard Shortcuts dialog box.
Ctrl+E	Open the Export pane to export a map, layout, or report.
Alt+Q	Search for a command.
Alt or F10	Enable access keys and show KeyTips on the ribbon.
Right arrow key or Left arrow key	Move from one tab to another in the active pane.
Tab or Shift+Tab	Move from one command to the next on a ribbon tab.
Up arrow key or Down arrow key	Move among elements in a list.
Alt+Down arrow key	Open a drop-down menu or list.
Esc	Close a drop-down menu or list.
Enter or Spacebar	Run a command
Shift+Windows key+F10	Open a context menu (pop-up menu) for a selected item.

Getting Help

- From the **Help** tab, choose **Help** -> **Online Help**
- A website will be launched where you can access detailed documentation for the latest version of Pro.



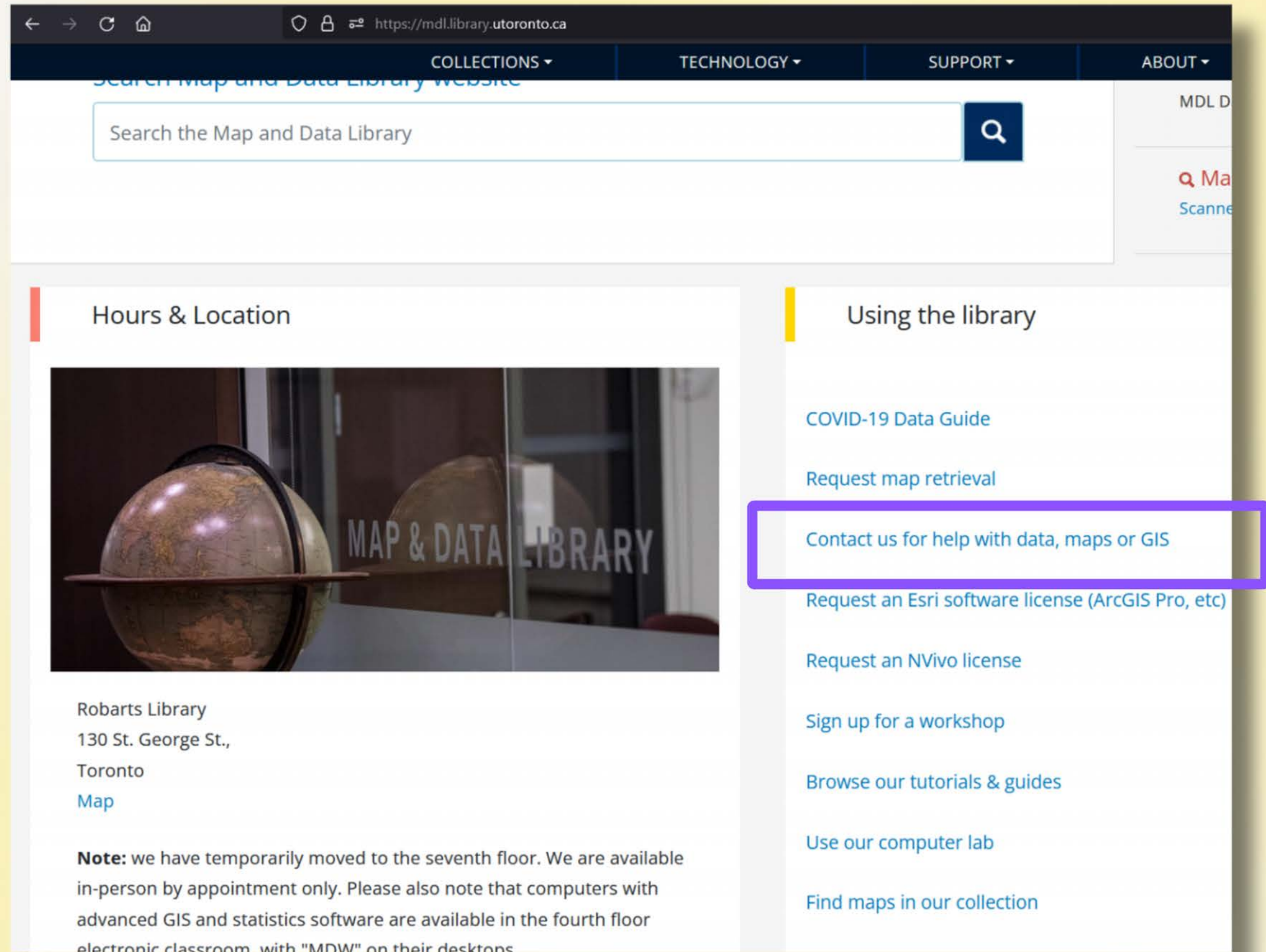
Getting Help

- Visit <https://www.esri.com/training/> and log in with your UTORid.
- The **Course Catalog** contains many helpful, beginner-friendly tutorials.

The screenshot shows the Esri Academy Course Catalog page. At the top, there is a navigation bar with the Esri logo and links for Products, Industries, Support & Services, Stories, and About. Below this is a secondary navigation bar with links for Esri Academy, About, Catalog (which is highlighted), Certification, My Academy, and Help. A third navigation bar contains links for Course Catalog, Courses by Schedule, Courses by Location, New and Retired Training, and Learning Plans. The main content area features a large blue banner with the text "Explore Our Courses". Below the banner is a search bar labeled "Search Courses" with a search icon and a "Search Tips" link. Underneath the search bar is a "Browse by Topic" section with nine icons representing different course categories: Getting Started, ArcGIS Products, Data Management, Mapping, Spatial Analysis & Data Science, Field Operations, Scripting & Development, Imagery & Remote Sensing, and 3D Visualization & Analytics. Below the topic section are filters for FORMATS (Viewing All), PRODUCTS (Viewing All), Maintenance Subscription, and Free. There are also SORT (Recently Added) and VIEW options. The page shows "Viewing Results: 500" and three course cards. The first card is an INSTRUCTOR-LED course titled "Using ArcGIS AllSource for Geospatial Intelligence Analysis" with a duration of "2 Days (16 Hours)". The second and third cards are LEARNING PLAN courses: "Esri ArcGIS Pro Foundation Certification 2025" and "Esri ArcGIS Pro Associate Certification 2025", both added by Esri Technical Certification on August 13, 2024.

Getting Help

- Contact the Map and Data Library



The screenshot shows the website for the Map and Data Library at the University of Toronto. The URL is https://mdl.library.utoronto.ca. The navigation menu includes COLLECTIONS, TECHNOLOGY, SUPPORT, and ABOUT. A search bar is present with the text "Search the Map and Data Library". The main content area is divided into two columns. The left column is titled "Hours & Location" and features a photograph of a globe in a library setting with the text "MAP & DATA LIBRARY" overlaid. Below the photo, the address is listed as "Robarts Library, 130 St. George St., Toronto" with a "Map" link. A note states: "Note: we have temporarily moved to the seventh floor. We are available in-person by appointment only. Please also note that computers with advanced GIS and statistics software are available in the fourth floor electronic classroom with 'MDW' on their desktops." The right column is titled "Using the library" and lists several options: "COVID-19 Data Guide", "Request map retrieval", "Contact us for help with data, maps or GIS" (highlighted with a purple box), "Request an Esri software license (ArcGIS Pro, etc)", "Request an NVivo license", "Sign up for a workshop", "Browse our tutorials & guides", "Use our computer lab", and "Find maps in our collection".

Next Steps

- Layout creation
- Loading and manipulating data
- Analysis
- Working with raster data
- Automation and AI



Thank you!